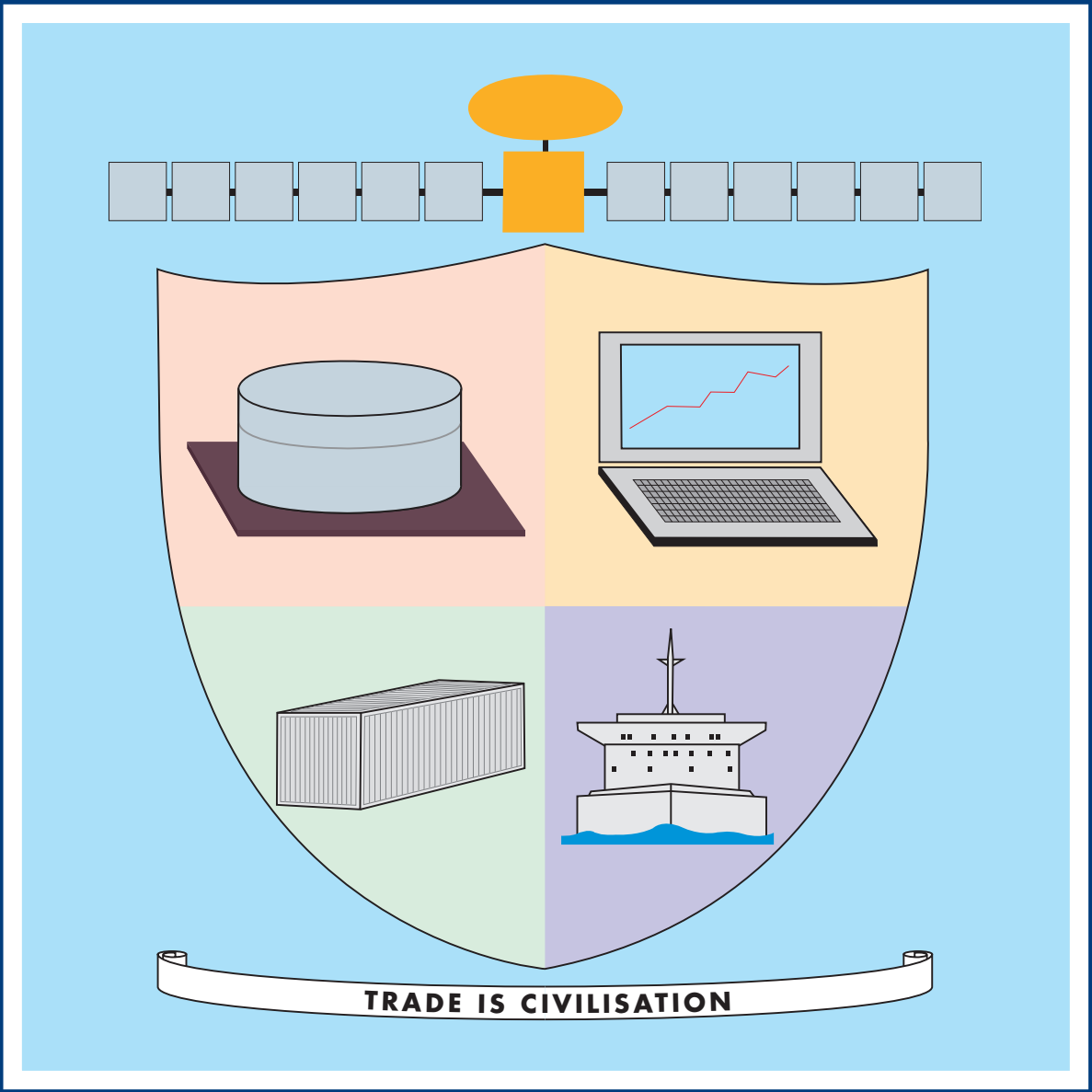
COMMERCIAL MANAGEMENT IN SHIPPING



By
Don L Dykstra BSc MSc MNI

COMMERCIAL MANAGEMENT IN SHIPPING

The definitive desk handbook

Shipping is a highly competitive business. Except for brief periods, margins are usually slim, with relentless pressure to reduce cost. In such an environment the commercial manager has to be well acquainted with the cargo capacity of the ship under various conditions and on what trade routes she will earn optimum freight (back-hauls). Furthermore the commercial manager has to have detailed knowledge about voyage costs, charter parties, the proper wording of bills of lading and the optimum procurement of bunkers. It is also very important to safeguard freight payments and to be well prepared to assist in dispute resolution.

The job entails developing and maintaining good contacts with ship brokers and agents, cargo and insurance interests, bunker suppliers, superintendents, bankers, lawyers, government agencies and regulators, surveyors -and above all- the key representative on board: the master.

This book is both a handy reference and a guide to bridge the knowledge gap between the ship and office staff and the other way around. It can be used for education, or as a reference source. When confronted with a problem, the extensive index, the instructive chapters and the detailed appendices ensure that most of them will be addressed with a clear explanation.

The work starts with a comprehensive review of shipping terms and vessel characteristics, moves on to optimisation of cargo capacity, voyage cost, detailed measurement of liquid cargo with a self correcting ullage sheet and explanation of the wedge formula, dry cargo draft survey plus computerised worksheet, bunker management and financial planning in shipping (buy-lease or charter examples). Shipping is a business and it is essential to quantify all relevant costs, and as such is a necessary component of management.

There are also two detailed chapters on charter parties (time and voyage) and a comprehensive chapter on bills of lading, with references to the Hague-Visby rules and how the shipowner can find protection against cargo claims.

Agreeing to a contract is one aspect, but getting paid is even more important. There is excellent advice on using letters of credit, which is generally not found in shipping literature.

The final chapter illustrates what can happen when a dispute arises. Based on an actual arbitration case, complete with copies of the award(s), the reader is cautioned not to ignore dispute resolution clauses in contracts, as this has a direct bearing on the risk involved.

The appendices contain a wealth of information, which include a comprehensive list of abbreviations, charter party terminology, sample freight and demurrage calculations and invoices, guidelines for masters regarding tendering notice of readiness and signing bills of lading, comprehensive (fill-in-the blanks) letter of protest form, bunker contracts, letter of credit transaction documents and other useful material. Throughout the text reference is made to websites, ensuring that further specific information is only a click away. There is an extensive bibliography for further sources of information. This book is truly a explicit handbook for use in the office and on board ships.

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Chapter 3 Voyage cost estimating

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Chapter 8 Draft survey

Law of Archimedes, calculation of corrections for: draft marks, hog and sag, trim, list, displacement, determination of the constant, errors.

Chapter 9 Fuel management

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Chapter 10 Financial planning

Return on investment, payback period, capital budget factors, compound interest and present value tables explained, rule of 72, odds and probability of success, pv cash-flow analysis, annuity, mortgage payments on a new ship, setting t/c rates, depreciation methods, buy vs bareboat vs time-charter decisions, lay-up vs continue trading.

Chapter 11 Letters of credit

Minimising commercial risks with L/Cs, ICC and UCP rules, actual example of an L/C transaction + supporting documents, 100 L/C subjects explained + practical suggestions for the shipping industry.

Chapter 12 Anatomy of an arbitration case

Actual case + copies of the awards.

Annexes: Comprehensive annexes with examples of documents, specimen letters and calculations.

Index Over 1000 entries making this 500 page work an exceptional source of reference.

COMMERCIAL MANAGEMENT IN SHIPPING

by Don L. Dykstra; BSc, MSc, MNI

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Telephone +44 (0)207 928 1351 Fax +44 (0)207 401 2817
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The book has been prepared to address the subject of commercial management in shipping. This should not, however, be taken to mean that this document deals comprehensively with all of the concerns that will need to be addressed or even, where a particular matter is addressed, that this document sets out the only definitive view for all situations. The opinions expressed are those of the author only and are not necessarily to be taken as the policies or views of any organisation with which he has any connection.

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FOREWORD

by Dr. Phil Anderson,
BA(Hons.), D.Prof., FNI, MEWI, AMIE
President — The Nautical Institute

Probably the first and most basic law of commercial shipping would state something along the following lines: 'The primary purpose of commercial shipping is to make a profit for the owner or shareholders'. I would suggest that the second law would state: '...and they should perform their voyages safely without damage or injury to people, property or the environment'.

If a commercial ship failed to operate profitably then its very reason for existence would be removed. The consequences flowing from that would be loss of jobs at sea and ashore as well as damage to a whole range of related industries and professions; if there is no ship there is no requirement for seafarers or insurance or classification societies or chartering brokers etc. etc. We forget these basic laws at our peril!

It is therefore crucial that the commercial management of ships is undertaken at the highest levels of professional standards, skill and with astute business awareness to ensure that the profitable goal is achieved.

The role of the Commercial Manager is not only wide ranging and extensive but is pivotal to the success of the adventure. To succeed he, or she, must have a handle on everything from the charter party and bill of lading terms to the purchasing of bunkers at the best price, trends in freight and charter rates, cargo stowage factors, currency fluctuations and much, much more. The importance of drawing on the knowledge and experience of other members of the team, whether that be the Master and Officers on board ship or the line managers and superintendents ashore, is crucial to success and the prudent Commercial Manager uses these valuable resources to maximum advantage.

It would take a lifetime to learn it all and even then a wise Commercial Manager would insist that there is much more still to learn and that he / she is learning more every day. That learning curve is long and steep for a budding Commercial Manager who could anticipate many years passing before truly firing on all six cylinders. In this amazing volume Don Dykstra is basically providing a most valuable helping hand to advance up a

number of steps of the learning ladder by sharing some of his vast wealth of relevant knowledge and experience. The book would also prove invaluable to other members of the team involved in the commercial operation and management of the ship both ashore and on board the vessel.

I can only marvel that so much valuable information has been presented in this volume. I thank the author for sharing his knowledge and experience and congratulate him on building a bridge between the office ashore and the ship at sea. It is correct, after all, that both share the same aim which is safe and efficient sea transport.

INTRODUCTION

After more than 40 years in shipping, with extended visits to about 500 vessels, it occurred to me that the "knowledge gap" between people on board and ashore seems to be widening dramatically. People on board may be up to date on the latest safety drills and security requirements, but are quite often unfamiliar with the commercial aspect of ocean shipping. I have met quite a few masters entrusted with hundreds of millions worth of ship and cargo, who have absolutely no idea how much the vessel is earning in freight, what it is based upon and how it is calculated. Even when it comes to determining laytime and demurrage, most masters seem to be operating in the dark, because they haven't received a copy of the c/p or of the complete voyage orders. With regard to the shore-side operation, more and more shipping offices are staffed by people that have perhaps never enjoyed the opportunity to visit a ship; yet they are required to make decisions to operate the vessel at the most efficient level.

This book had its genesis in a lot of odd files, collected over the years and covering a wide variety of shipping subjects. An effort will be made to bridge part of the knowledge gap between ship and shore. The number of subjects covered here is by no means exhaustive. Every field of endeavour has its own experts. This publication is merely a distillation of topics that may serve to improve the commercial operation of ships. Emphasis is on marine transportation of dry bulk cargoes and oil. All of this is in the framework of a safety conscious management team that has the full support of the vessel's owners. Ships operate literally and figuratively in a hostile environment. Therefore, sacrificing safety for the benefit of small gains, will sooner or later lead to financial harm. Managers who try to cut corners, and penny pinchers, will not find a lot of guiding principles here.

The book is primarily geared towards ship and cargo owners, to vessel management company personnel, to senior ship's staff, to ship brokers and vessel agents, to maritime lawyers and arbitrators, to bankers and investors in shipping, to government regulators, to ship surveyors and cargo inspectors and insurance claim adjusters, to terminal operators and anybody else involved in ocean shipping. It is not a blueprint for what is right and what is wrong, but it is a collection of recommendations based on common sense and on my own education background and experience in shipping. I sailed on ships, chartered tankers for a major oil company, performed economic studies directly related to shipping and operated vessels for own account. Hopefully the topics discussed here will lead the reader to carry out their own research and perhaps augment the operating procedures at their place of employment.

An effort has been made to use plain (non-technical) language to explain the various concepts, but it is assumed that the reader has a basic knowledge about ships and their operation. Some simple maths is used in the text, but fortunately the more complicated vessel calculations, such as stability, stress and shear forces, are now performed by on-board computers. Determination of the vessel's cargo capacity and voyage cost will be covered in detail, since it has a direct bearing on the money making capacity of the vessel. Emphasis is also placed on drafting proper charter party clauses and bunker contracts. One chapter is devoted to Bills of Lading and the Hague-Visby Rules. There is also a chapter about measuring oil quantities and a chapter with a detailed explanation of a draft survey and how the process can be computerized. Subsequent chapters cover bunker management, financial management of shipping operations and a chapter about the benefits of Letters of Credit. The final chapter covers an example of dispute resolution by arbitration.

Most marine operations involve a wide variety of people, scattered all over the world, with different cultural backgrounds, operating under a glut of international laws and regulations. It is therefore no surprise that shipping is a fertile spawning ground of commercial disputes. I have always believed in spelling everything out in a contract and even to make use of examples to get my point across and minimize misunderstanding. During the beginning of contract negotiations everybody (except the lawyers, because they know better) are optimistic. Don't be fooled by all the nice people involved in shipping. Once money is involved and there is a dispute, all "niceties" usually fall by the wayside. This book tries to emphasize the importance of being well-informed, detailed and explicit in your dealings.

Several decades ago most shipping companies were managed by people from the alleged developed world and ships were manned by crews from traditional seafaring nations. If memory serves me correctly, we relied mainly on good schooling, but also on tradition and on seat-of-the-pants practices. Today, most ships are operated by crews from so-called developing countries who are for the most part trying to cope with ever increasing rules and regulations, but at the expense of losing sight of the commercial operations of the ship. This book will attempt to describe sound economic and legal practices that may contribute to less risky commercial operating practices.

Chapters are in no particular order and specific topics can be consulted independently. The book should mainly be seen as a reference

work. Calculations, like for example in the chapter on draft surveys and in Appendix 7.1: the wedge formula, are mainly given in support of computerizing these calculations. Most people would be wise to skip right over them. The computer spreadsheets in the text have been developed by the author for his own use. At times they may appear cryptic, but I am a great believer in keeping everything on one page. The spreadsheets are meant primarily to support the text, but also to provide ideas for in-house development by company staff.

The boxes with a lighthouse logo cover subjects somewhat related to the topic at hand in the normal text. They are meant to shed some light on a particular issue, and since there are quite a few tedious parts in this book, the "lighthouse" box portions may offer some lighter fare.

Rest me to express my heartfelt thanks to the enthusiastic support of Julian Parker, BSc, FNI, OBE, the previous Secretary of the Nautical Institute. Julian guided me through the many technicalities to put a book together and his many valuable comments have been incorporated in the manuscript.

Since this work contains a lot of factual information and a great number of calculations, no doubt some mistakes have been made. I take full responsibility for errors and omissions in the text and look forward to reader's comments and suggestions.

Don L. Dykstra
Houston, March 2005
dykstra@hal-pc.org

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Chapter 1

BASIC VESSEL CHARACTERISTICS

Keep thy shop, and thy shop will keep thee.
English proverb

Prologue

It is a gloomy day. You are sitting in your office cubicle, trying to concentrate on your boring 9 to 5 job, when the phone rings. It is the attorney of your favourite uncle Spiros, bringing the sad tidings that Uncle has departed to that great scrapyard in the sky. The good news is that uncle, R.I.P., has left you one of his fine ships named *FRISIAN ENTERPRISE*. She is a 135,160 tons combination carrier or OBO (oil bulk ore); able to carry oil and also dry bulk cargo. The attorney tells you that it was uncle Spiro's dying wish that you take over the commercial operation of the vessel. (*In reality you would probably turn the task over to a commercial management company or to a shipbroker, but we will use this situation to illustrate various concepts about commercial ship management*).

You call the marine superintendent of your uncle's office to get some ideas about the ship's capabilities and trading patterns. The superintendent e-mails you a summary of several cargo offers that have just been received from shipbrokers. To assist you in selecting the next cargo for the vessel, the superintendent has flagged the items (*in italics*) that need special attention.

1. Load a full cargo of iron ore in NW Australia for Qingdao, People's Republic of China (PRC); (*max. dwt cargo capacity*).
2. Load a full cargo of crude oil in Ras Tanura, Saudi Arabia for Texas City, USA; (*max cubic cargo capacity*).
3. Load a cargo of iron ore from Tubarao, Brazil for a port in Italy, but the vessel has to arrive at 15 m even keel, salt water (sw) with lightering; (*quantity to be lightered*).
4. Load a full cargo of iron ore from Saldanha Bay in South Africa for a port in the PRC with max. draft at berth of 14 m in brackish water of density 1.017 (no lightering); (*max cargo to load*).
5. Load a full cargo of iron ore from Mauritania, NW Africa for the PRC; (*cargo vs. bunkers*).
6. Load three grades of fuel oil in Singapore for Montreal, Canada, (*cargo segregation and IWL*).
7. Load a full cargo of soybean meal in New Orleans, USA for Rotterdam, Holland; (*max. cubic cargo capacity*).

Chapter 1

BASIC VESSEL CHARACTERISTICS

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6. Load three grades of fuel oil in Singapore for Montreal, Canada, (*cargo segregation and IWL*).
7. Load a full cargo of soybean meal in New Orleans, USA for Rotterdam, Holland; (*max. cubic cargo capacity*).

8 Load a full cargo of coal from Gladstone, Australia for Swansea, UK via Cape of Good Hope; (*max. draft for various seasonal areas*).

9 Load a full cargo of iron ore from Port Hedland, NW Australia to the PRC; (*max. cargo capacity and time of crossing the bar at high water*).

Table 1.1: Cargo offers

After reading this, you realise that you can use some education about vessel operations and that you need to pay serious attention to the pitfalls you may encounter.

General conversion factors

Before looking at the vessel's characteristics, here are some general conversion factors widely used in shipping:

1 metre	= 3.28084 feet	1 mt	= 1,000 kg
1 foot	= 0.3048 metre	1 kg	= 2.20462 lbs
1 metre	= 39.37 inches	1 lb	= 0.453592 kg
1 inch	= 25.4 mm	1 mt	= 2,205 lbs
1 US gallon (liq.)	= 3.78541 litres	1 long ton	= 1.016 mt
1 m^3 H_2O at 4° C	= 1,000 kg	1 short ton	= 2,000 lbs
1 m^3	= 35.3147 ft^3	1 nautical mile (nm)	= 1,852 metres
1 m^3 *	= 6.28981 US barrels	1 nm	= 6,076 ft
1 US barrel	= 159 litres	1 standard mile	= 1,60934 m
1 US barrel	= 42 gallons	1 standard mile	= 5,280 ft
1 ft^3	= 0.028317 m^3	1 knot	= 1 nm/hr
100 ft^3	= 2.83 m^3 = 1 RT	°C	= (°F-32) x 5/9
		32° F	= 0° C

Some figures are rounded

** Volume conversions are only valid at the same temperature*

Table 1.2: Conversion table

The standard of ***mass*** *in the* ***metric system*** *is represented by a cylinder of platinum iridium alloy, kept in Paris, France. The cylinder has a mass of 1* ***kilogram*** *(kg) in vacuum. One litre of pure water at 4° Centigrade also weighs 1 kg (in vacuum). This makes it easy to convert from weight to volume and back. The only drawback is that weight is in vacuum. One* ***metre*** *is equal to about 1/40,000,000 the circumference of the earth at the equator. For scientific purposes the metre is defined by the speed of light per second in a vacuum.*

Temperatures in the Centigrade scale are expressed in degrees ***Celsius****. At 0°C water freezes, at 100°C it boils. Mr.* ***Fahrenheit*** *based his scale on the temperature of a mixture of crushed ice and salt as 0°F, and on what he believed to be his body temperature as 90°F. He divided this scale by 180. Under the Fahrenheit scale, water freezes at 32°F and boils at 212°F.*

It is unfortunate that the USA is one of the very few countries in the world that has not adopted the metric system, except for scientists, medical professionals and, ironically, illegal drug dealers and users. You wonder what gave this latter group the lucid idea to adopt the metric system.

The beauty of the metric system is that all you have to do is move the decimal point around.

DISTANCE	VOLUME
1 kilometre (km) = 1,000 metres (m)	1 cubic metre (m^3) = 1,000 dm^3 or 1,000 litres (l)
1 metre = 100 centimetres (cm)	1 litre = 1,000 cm^3 or 1,000 millilitres (ml)
1 centimetre = 10 millimetres (mm)	
1 decametre (dm) = 10 centimetres (cm)	

Furthermore, the great advantage of the metric system is the ease of conversion from volume to weight by using density. Density is defined as mass in a vacuum. Density in air is sometimes called apparent density, or litre weight.

$$\textbf{density} = \textbf{mt/m}^3$$

If one m^3 of a substance weighs (in vacuum) 900kg or 0.9mt, the density is: 0.900.

$$\textbf{m}^3 \textbf{ x density} = \textbf{mt}$$

If the density for a particular substance is 0.9876, one m^3 weighs (in vacuum): 987.6 kg or 0.9876 mt.

The density of pure water at 4°C is 1.000 (see also table 7.3). Density for other substances is defined by its weight in mt per $1m^3$. For example, $1m^3$ diesel oil with a density of 0.8602 weighs 0.8602 mt. In the metric system you can convert immediately from volume to weight, or the other way around. However, as mentioned earlier, weight is in vacuum. There are tables (ASTM 56) that convert weight in vacuum to weight in air, or the other way around. (For more on this, see under Notes at the beginning of chapter 2 and see chapter 7).

Water is kind of an oddball substance. Its greatest mass is not at 0°C, but at 4°C. In nature most other substances contract at lower temperatures, but when water turns into ice its volume expands. This makes it possible for people to ice skate, because the (colder) ice floats on top of the water in the canals. If ice was heavier than water, the ice cap covering the North Pole would sink

to the bottom of the ocean. Icebergs from the North and South Polar areas would also sink. All of this would bring profound changes in climate. Ports closed due to ice in the winter might stay permanently closed if the ice just sat at the bottom of fairways and berths. Instead, ice floats and even though floating icebergs may be a danger to shipping, eventually they drift to warmer water and melt.

In shipping the metric and standard sizes are used side by side, so it is important to understand both systems. To get better acquainted with your new ship, you consult a copy of a vessel reference guide[1] to look up her main characteristics.

	— Main Vessel Characteristics —	
Name	m/v ***FRISIAN ENTERPRISE***	
Flag	Liberia	
Year built	2004	
LR-IMO no.	1234567	
Type	OBO; double hull, double bottom; seven holds	
SDWT	135,160 mt	
Lightweight	21,835 mt	
LOA	249.10 m	817.3 ft
LBP	240.00 m	787.4 ft
Beam	45.00 m	147.6 ft
Summer draft	16.86 m	55'-04" (55 ft and 04 inches)
TPC/TPI	100.34	254.86
FWA	39.1 cm	15.39 inches
GRT	70,872 tons	
NRT	39,624 tons	
Suez tonnage	63,886 SCNT	
Engine	M.A.N., 7-cyl 2 S.A. Diesel; 16,100 bhp @ 94 rpm	
Average speed	13 knots	
Consumption FO/DO	49 + 4 mt/day	Bunker cap. 6,473 m^3 (98%)
Grain space	131,039 m^3	4,627,603 ft^3
Oil capacity (98%)	128,676 m^3	809,348 bbl
Ballast capacity	51,017 m^3	
Cargo pumps	Four Turbine main pumps, cap. 2,500 m^3/hr each @ 150 m head and 1500 rpm; 1 Stripping pump, cap 250 m^3/hr and 1 Eductor, cap. 600 m^3/hr	
Max. venting capacity	10,780 m^3/hr	
Bow to centre manifold	122.40 m	401.6 ft
Keel to masthead	55.49 m	182 ft
Special equipment	SBT, COW, ISG, Cl. Load, Gas Freeing, SBM eq., two Derricks SWL 15 ton, Heat; Ore Str.	

Table 1.3: Vessel's main characteristics

Name

The name of the vessel at the time of publication of the reference guide. If she had any previous names, these ex-names will also be listed.

Flag

The ship will fly the flag of the country where she has been registered. Often this is different from the country where the ship owner's office is located. Many ships are registered in Liberia, Panama or Majuro in the Marshall Islands, primarily for tax, liability and crewing reasons.

Year built

This is the year the vessel was delivered from the shipyard to her owner. Do not confuse this with the year when the keel was laid, or when she was launched. Most ships have an economic life of around 20-25 years; depending on how sturdily they were built. Under the USA Oil Pollution Act of 1990 (OPA90) and under regulations promulgated by the International Maritime Organization[2] (IMO) and by the European Union, age limits have been set for single hull tankers and dates for when they need to be taken out of service.

LR/IMO no.

Each commercial vessel over a certain size gets a number assigned when her keel is laid. This number stays with the ship regardless of changes of name, of ownership, or of her main characteristics. The number needs to be painted on the ship's hull or superstructure.

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[1] "Clarkson", a major ship broking company headquartered in London, UK publishes excellent reference guides for Tankers and Bulk Carriers and also for other type ships. Some vessel particulars can be found on their website: http://www.clarksonresearch.com
Another website for vessel data is: "Tankerworld", a British monthly shipping magazine. http://www.tankerworld.com
Of course, the best source of information is the owner of the ship. In case of a tanker ask for a copy of the latest *Vessel Particulars Questionnaire* (VPQ). The VPQ format was designed by the Oil Companies International Marine Forum (OCIMF). It is about 25 pages long. The OCIMF, with London headquarters, acts as a central depository for all VPQs and all vetting inspection reports on file. However, as of this writing, only charterers and cargo owners have access to these reports.
A simple tanker data form of only three pages, is the *Standard Tanker Voyage Chartering Questionnaire 1988*, or Q-88 for short.

[2] IMO is the United Nations' specialised agency responsible for improving maritime safety and preventing pollution from ships. The agency is headquartered in London, UK and publishes a wide range of conventions, codes, regulations, resolutions, agreements, standards, guidelines and promotional materials. See http://www.imo.org

Type (see tables 1.4, 1.5 and 1.6)

This indicates the vessel's main type, such as being a tanker, a bulk carrier; single or double bottom/hull; number of tanks/holds, etc.

Dry bulk carriers

Dry bulk carriers carry bulk cargoes such as grains (wheat, corn, soybeans, soybean meal, oats, barley), coal, petroleum coke, ores (iron, manganese, aluminum or bauxite), fertilisers (phosphate, potash, sulphur), raw sugar, salt, cement, scrap metals, tapioca, copra (coconut pellets), gypsum and forest products (logs, timber, wood chips). Some bulk carriers up to Panamax size also haul steel products, such as plates, coils, beams, pipes, etc. Smaller bulk carriers often have their own loading and unloading equipment and are called **geared.** The larger sizes usually don't have cranes or derricks and are called **gearless.** They rely on shore installations to be loaded and unloaded.

Bulk Carriers are roughly classified by size in the following categories:	
Handies	10-35,000 dwt.
Handymax	35-50,000 dwt.
Panamax	50-70,000 dwt. Max. 32.2 m (106 ft) wide to transit the Panama Canal
"baby" Cape	70-120,000 dwt.
Capesize	120-200,000 dwt. Modern Capesizes are predominantly 170,000 dwt.
VLBC***	Very Large Bulk Carrier: over 200,000 dwt.

Table 1.4: Bulk Carriers by size

Tankers

Tankers haul crude oil and its products, such as heavy fuel oil, diesel fuel, jet fuel, gasoline, feed stocks, etc. Some have the ability to heat their cargoes. Newly built tankers have double hulls and double bottoms as extra protection against cargo leaks caused by collisions or stranding. The larger sizes haul mainly crude oil over longer distances, e.g. from the Arabian Gulf to the USA, to Europe or to the Far East. However, VLCCs also ply between the Arabian Gulf and various ports around the Indian Ocean and the Red Sea. VLCCs also load in West Africa for ports in India or the Far East. Mediterranean ports such Ceyhan in Turkey and Sidi Kerir in Egypt serve as pipeline terminals where VLCCs load crude oil. Some VLCCs even carry heavy bunker fuel oil from Europe or from the Caribbean to Singapore. Part of Venezuela's **orimulsion** is exported in VLCCs.

Tankers are roughly classified as follows:

Panamax	50-70,000 dwt Max. 32.2 m (106 ft) wide to transit Panama Canal Locks.
Aframax	70-120,000 dwt. Originally referring to the upper limit (79,999 dwt) of one of six deadweight groups in the Average Freight Rate Assessment. Now used generically for 70-120,000 dwt tankers.
Suezmax	Predominant size is 1 mil bbl, or about 135,000 mt crude oil. Originally the largest size tanker (140-150,000 dwt) that could transit the Suez Canal fully loaded at 16.1 m (53 ft).
VLCC	Very Large Crude Carrier. Predominant size is 2 mil bbl, or about 270,000 mt crude oil.
ULCC	Ultra Large Crude Carrier: over 320,000 dwt.

Table 1.5: Crude Oil Tankers by size

*Average **Freight Rate Assessment**, or AFRA, is a compilation of various shipping rates for popular trade routes and ship sizes. Every month a panel of London shipbrokers determines these rates, based on a combination of spot rates, time charter rates, oil company's own fleet rates and on long term contracts of affreightment. These rates are published in trade journals and are especially important to crude oil and oil product traders, who incorporate the cost of transportation into their buy and sell decisions. Aframax is one of the ship sizes for which the London brokers panel assembles freight rates.*

***VLCC** and **ULCC** are the rather ill-conceived names for large tankers. After WW II most tankers were of the 16,000 dwt variety. In the early to mid 1950s tankers of 30,000 dwt were called Supertankers. Subsequent bigger ships were called Mammoth tankers. Since it was hard to top this with anything more descriptive, we are now stuck with the rather prosaic VLCC and ULCC.*

Tankers can further be classified as **Product carriers**. These ships haul a wide variety of oil products that have been refined from crude oil. Product carriers are further divided into so-called **clean** tankers that carry "white" products, such as gasoline, kerosene, diesel oil and jetfuel. "**Black oil**" product tankers carry various intermediary feedstocks, such as vacuum gas oil (VGO) and different grades of fuel oil to power ships or power plants. A specialised ship in this group is the **asphalt carrier**. It has special heating equipment to keep the cargo liquid.

In some circles product tankers are classified as follows:

Handies	less than 20,000 dwt.
MR (Medium Range)	20-50,000 dwt.
LR1 (Long Range)	50-70,000 dwt.
LR2 (Long Range)	70-120,000 dwt.

Table 1.6: Product Tankers by size

Chemical tankers carry a wide variety of petrochemical products, such as ethylene, propylene, butadiene, aromatics, toluene, xylene, benzene, methanol, alcohols, styrene, sulphuric, phosphoric and nitric acids. They also carry caustic soda, molasses, animal fats, edible oils, wine, orange juice and other speciality liquid products.

To prevent cargo contamination, most chemical tankers have dedicated lines and pumps for each tank. Some chemical tankers have over 50 tanks. Modern chemical tankers have stainless steel tanks for easier cleaning.

SDWT

This stands for **Summer Deadweight** tonnage It is the maximum tonnage the vessel can carry while on her **Summer Loadline**. It is the weight of the cargo plus the weight of fuel, lubricating oils, water (drinking water, possible ballast water left on board and water in the engine room and cargo hold bilges), food, provisions, paint, tools, supplies and spare parts. Sometimes SDWT is called **DWAT** (deadweight all told), as compared to pure cargo deadweight carrying capacity indicated by DWCC (see also under Displacement).

LOA

Length Overall. It is the distance from the top of the bow to the aftermost part of the stern. This number is important to make sure that the ship will fit a berth.

LBP

Length Between Perpendiculars. This is the distance between the point where the bow and the centre of the rudder shaft intersect the waterline when the ship is on her Summer Loadline. There is more on this in chapter 8.

Beam

This is the maximum **width** of the ship. Many ports/berths and canals have beam restrictions. To transit the Panama Canal your maximum beam cannot exceed 106 ft (32.3 m), because the locks are only 110 ft wide (33.5 m).

Summer Draft

The ship is on her **Summer Draft** when she is immersed to the centre of her **Plimsoll Mark** (see figure 1.1). This mark is located amidships on both sides of the ship. Vessels that only ply inland waters, or government (Navy)

ships, do not have it. The main function of the Plimsoll Mark is to indicate the maximum draft for a ship operating in a specific **Seasonal Zone**.

Without getting too technical, here are some basic concepts regarding the Plimsoll Mark for the vessel of table 1.3. In the top right hand corner of figure 1.1 we see where the ship's deck and the uppermost plate of the hull (sheer strake) intersect. On modern ships the sheer strake is sometimes rounded for extra strength. At — or slightly below — this intersection we find the **Deckline**. It is usually a welded-on strip of steel amidships on both sides of the vessel. The deckline serves as a reference point. It determines where the centre of the Plimsoll Mark circle is to be placed. The exact location of the Plimsoll Mark is determined by **Classification Societies**. These are organisations that develop standards and supervise the design and construction of commercial vessels and its machinery and equipment. They also supervise her construction in the shipyard and issue certificates to attest that the vessel is sound. To "**stay in class**" it is necessary to perform periodic inspections and surveys throughout the life of the ship.

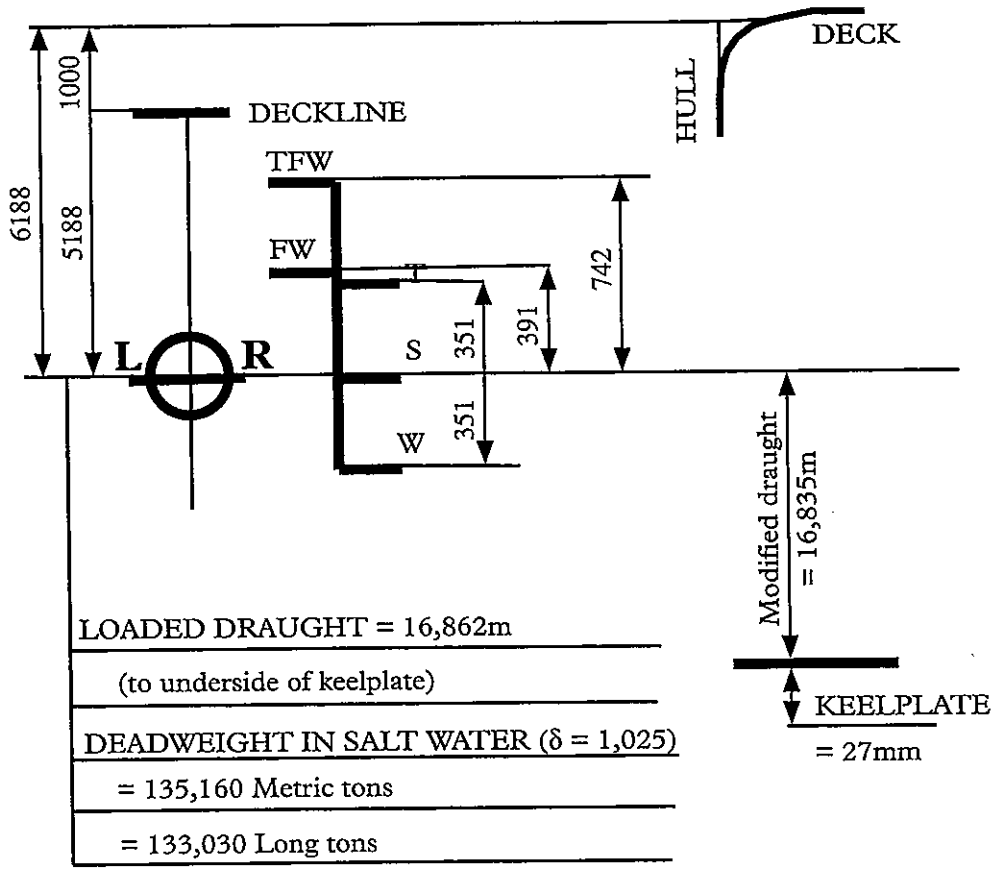


Figure 1.1: Plimsoll Mark (Distances in mm, unless stated differently)

All lines of the Plimsoll Mark are one inch (25.4 mm) high. The circle has a diameter of 300 mm (almost a foot). The top (not the centre) of the

horizontal bar — with the letter L and R on each side — intersects the centre of the circle. The distance from the top of the deckline to the centre of the Plimsoll circle is called **Freeboard**. In our example it is 5,188 mm or 5.19 metres (17 feet). As you may have noticed, the distances in figure 1.1 are not to scale. The amount of freeboard depends on the construction and the type of vessel. For example, a tanker with small deck openings for access to cargo tanks is allowed to sink in deeper than a bulk carrier with large hatches that are more exposed to heavy seas coming over the ship in bad weather.

The **S** line is the maximum allowable draft in sea water in **Summer** zones as indicated on the **Seasonal Zone** chart. This chart is a map of the world, issued by national government authorities and based on the **International Load Line Convention** rules (see Load Line Regulations — Zones, Areas and Seasonal Periods, chart D6083 issued by the UK Hydrographic office). Generally speaking, areas around the equator have been designated as **Tropical** and areas North and South of the Tropical zone as **Permanent Summer**. Normally, Permanent Summer has storms less than 10% of the time (**Beaufort** 8 with winds from 34 to 40 knots). For a Beaufort wind scale see Appendix 1.1. Tropical areas have storms less than 1% of the time. Areas between Permanent Summer and the Polar regions have been designated as **Summer** during summer time and as **Winter** during winter time in that particular hemisphere. There are a lot of exceptions to the general rule and there are many special areas, depending on whether the area is prone to tropical storms, or other peculiar weather patterns (see Seasonal Areas).

Seasonal allowances

The distance S-W and S-T for all ships is 1/48th of the Summer draft. In our example: 1/48 x 16.86 = 35.1 cm or 351 mm.

SAMUEL PLIMSOLL MP, 1824—1898

During the mid 1800s a lot of British coal ships met with disaster and sank due to overloading. A shipowner by the name of James Hall was alarmed about the loss of men and ships and about the resulting increase in insurance rates. In the early 1860s he succeeded in having the London Board of Trade undertake an investigation, but Parliament rejected Hall's proposal to have ships examined before a Certificate of Seaworthiness could be issued. At about the same time Samuel Plimsoll, a coal dealer and a member of Parliament, joined the fight. In 1870 he wrote a book "Our Seamen — An Appeal," which shocked people into indignation. In 1876 Parliament passed a law requiring ships to have a minimum freeboard, marked by a circle and a set of lines painted on the side of each seagoing cargo vessel. It soon become known as the Plimsoll Mark and was subsequently adopted by all seafaring nations of the world.

With reference to figure 1.1, you will notice that the Seasonal Allowance (SA) of 35.1 cm is fairly close to the Fresh Water Allowance (FWA) of 39.1 cm. Since it is harder to calculate FWA than it is SA, multiply SA of 35.1cm by 110% to arrive at the approximate FWA. Use only for rough calculations.

The **T** above the **S** on the Plimsoll Mark stands for **Tropical** and the **W** for **Winter. WNA** stands for **Winter North Atlantic** and is a special mark for ships smaller than 100.58 metres (330 feet), operating in certain areas of the North Atlantic Ocean during wintertime. (WNA is not shown in figure 1.1) The **F** stands for maximum immersion in **Fresh Water** and **TF** stands for **Tropical Fresh.**

Some people may ask: "How is anybody going to check in the middle of the ocean if the ship has exceeded her maximum draft for a particular Seasonal Zone ?" To be honest, no draft inspector will come paddling up to your ship in mid-ocean, but since the departure draft in the load port and the arrival draft in the discharge port have to be recorded in the ship's log, it is easy to reconstruct the actual draft for the time when the ship entered a specific Seasonal Zone.

Salinity

Fresh water with salinity 1.000 is lighter than seawater, which has a salinity of 1.025. This means that if a ship has been loaded in a river port with fresh water, she will have more buoyancy and float higher once she reaches open sea. This is called "**rise.**" For maximum draft purposes, the **International Load Line Convention** applies only to immersion in open sea. The convention does not regulate ships operating in inland waters. This means that on inland waters the ship can load a little deeper than the governing draft mark, as long as she rises to her proper draft once she reaches open sea. On the other hand, if the ship is loaded to a certain draft in salt water, but there are draft restrictions in the load or discharge port, the vessel's carrying capacity may be impaired. For example, if our sample vessel is loaded to her summer draft of 16.86 metres in sea water and the maximum draft in the discharge port is 17.00 metres in fresh water it looks like she can make it. However, once the vessel enters fresh water, she will immerse another 39.1 cm (the FWA) to 17.25 metres and run aground. Our sample vessel is too big to transit the Panama Canal or the locks in the Great Lakes area, but smaller ships need to pay attention to the maximum draft allowed for vessels that transit the Panama Canal or operate in the Great Lakes areas, because both have fresh water. There is a lot more on this in chapter 2.

The letters **LR** in figure 1.1 stand for **Lloyds Register,** the initials of the Classification Society that determined maximum allowable drafts for that particular ship. Other letters are: **AB** = American Bureau of Shipping; USA, **KK** = Nippon Kaiji Kyokai; Japan, **G L** = Germanischer

Lloyd; Germany, **N V** = Norske Veritas; Norway, and **B V** = Bureau Veritas, France

Displacement

According to the law of **Archimedes** the buoyancy of a floating object is equal to the weight of the displaced liquid. Applied to a ship it means that the weight of the ship itself, with everything on board, is equal to the weight of the displaced water. When naval architects design a ship, they calculate the shape of the hull at certain draft intervals and determine its volume. They put these findings in a **Deadweight Scale** (see figure 1.2).

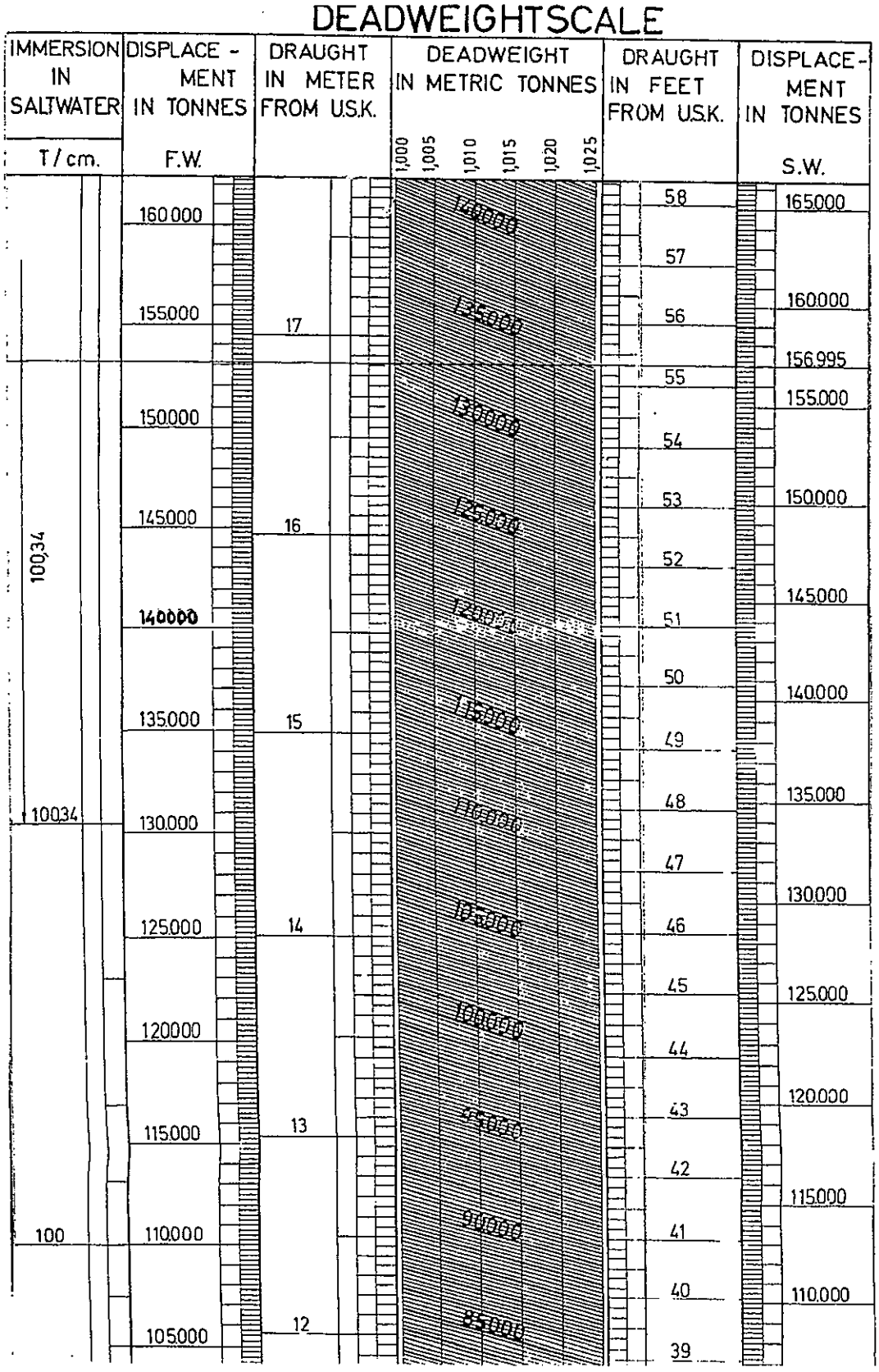
Light ship

The weight of the **light ship** is the weight of everything that is on the vessel when she is delivered by the yard, with a minimal number of spare parts, lubricating oil and supplies; with her boilers filled to capacity and her engines filled with cooling water as required. Light ship weight is a fixed number and is listed on the vessel's deadweight scale at the corresponding draft for empty ship.

Light Ship (weight of the ship itself) = Displacement – Deadweight

As seen under the heading **Summer Deadweight** (SWDT) it is the weight in metric tons of everything on board, such as: cargo and/or ballast, fuel oil (FO) for the ship's propulsion and diesel oil (DO) for her auxiliary engines. Collectively FO plus DO are called **Bunkers**. Furthermore, the ship carries fresh water for her boilers, potable water for the crew and perhaps extra water to clean chemical tankers. The amount of **fresh water** carried is usually fairly constant because most modern ships have water evaporators that make fresh water from seawater. This means that the ship does not have to take in large quantities of fresh water (and perhaps cut into the cargo capacity) to last for a long ocean passage. Also included in deadweight are spare parts, paint, food and cleaning supplies. Whatever is brought on board after the ship leaves the shipyard where she was built, is collectively called **stores**. Examples of deck stores are paint and extra mooring lines. Engine room stores consist of lubricating and cylinder oils, spare parts, tools and equipment. Catering department stores are made up of food and cleaning supplies, bedding and furniture.

Sometimes dry cargo ships carry a certain amount of **dunnage**, consisting of wooden boards and/or plywood. Dunnage is placed between the ship's steel frames and bagged goods, crates, bales or steel products, to protect them from chafing damage against the steel frames, from damage caused by condensation water on the hull, or to prevent the cargo from moving during bad weather.



For our sample ship at Summer draft: Deadweight = 135,160 mt Lightweight = 21,835 mt Displacement = 156,995 mt

Figure 1.2: Deadweight scale

When a ship nears the end of her economic life, her owners have to make the decision if it is better to spend money on repairs, or to send her to the scrapyard. A lot of it has to do with the freight market. If rates are high, it may be more economical to keep the ship trading. However, in a down market a lot of ships are sent to the breakers. When a ship is sold for scrap, the price is usually based on Light Deadweight Ton (ldt). It is the weight of the Light Ship as listed in table 1.3. For example at 21,835 ldt and prevailing scrap rate of $200/ldt, the scrap value is $4,367,000. Scrap values themselves fluctuate; depending on how many ships are sent to the breakers and this is more or less inversely related to freight rates.

For tankers there is often an extra deadweight allowance for **rust, scale and sludge** in the tanks. All of these items, except for the bunkers and water, are usually lumped together as a **constant**. The chief officer monitors the constant and from time to time makes adjustments.

Large boilers are mainly found on tankers. They generate steam to drive the turbine cargo pumps, heat the cargo if necessary, and on older ships provide power for deck and anchor winches. On many modern tankers power for deck machinery is provided by a hydraulic power plant. On bulk carriers most winches are electric. Tankers don't have electric winches because of the danger of explosion.

Deadweight scale (see figure 1.2)

Displacement and deadweight can be found for every metre or foot immersion. The column on the left shows tons per centimetre (t/cm). The second column from the left shows the displacement in fresh water.

The third column from the left shows the draft in metres and a scale subdivided in 1/10 of a metre or decametre (dm). USK stands for "Underside Keel" (see also figure 1.1).

The middle column with all the black lines is used to determine the deadweight at a certain draft for brackish water between salinity 1.000 and salinity 1.025. As you can see, it is not easy to use this column. It is therefore preferable to use a spreadsheet with deadweight calculation formulas, instead of reading from the actual scale. Deadweight scales are kept on board and perhaps the owner has a copy, but charterers and brokers usually do not have access to an actual deadweight scale and have to rely on their own calculations.

The second column from the right shows immersion in feet, and the column on the right shows displacement in seawater. As mentioned before, at the same draft, a ship will displace more tons in seawater than in fresh water.

Displacement = Deadweight + Lightweight

Draft marks

Draft marks are painted on both sides of the ship at the bow, amidships and at the stern; usually in a contrasting colour to the hull. Draft marks in metric are displayed as full metres and every intermediate 20 cm. Draft marks in feet are painted for every foot; either in Arabic or in Roman numerals. The underside of the painted number is the correct draft. For example if the water laps the underside of mark XXIII, the draft is 23 feet. In the same way, if the water touches the underside of 20 between the 11 and the 12 metre mark it means the draft is 11.20 metres. Ship's officers need to develop some proficiency to interpolate for values between the painted draft marks; especially if wave action makes it hard to work out the exact water level. Most modern ships have electronic means to measure draft, with displays on the ship's bridge or in the **cargo control room** (CCR).

The cargo control room on modern tankers has one or more **cargo computers** to indicate tank levels for cargo and ballast. After manually inserting the weight of bunkers and water etc. in their proper compartments the computer will calculate the draft, trim and heel of the ship. Please note, the draft calculated by the computer is more than likely the draft "on the perpendiculars"; not the actual observed draft (for more on this see chapter 8). Cargo computers also calculate stresses on the hull and stability of the vessel.

Sag and Hog

Sometimes the ship is loaded with more weight at the fore and aft holds/tanks, and with less in the middle. This causes the ship to develop a "cat's back" or **hog**, with the Plimsoll mark higher out of the water and the fore and aft marks deeper immersed. Normally a draft inspector will only consider the marks near the Plimsoll mark, but if he suspects that a ship has deliberately been stowed to create **hog** for the purpose of taking in extra cargo, he will average all six marks to arrive at an average draft and at the amount of hog. Port authorities can levy heavy fines against a ship for overloading, or can order cargo to be off-loaded till the ship is on her proper marks. **Sag** is the opposite, with more cargo weight in the centre holds/tanks than fore and aft (for more on this see chapter 8).

Hog or sag create a lot of extra stress on a ship. On the other hand it is perfectly acceptable to give the ship some **trim by the stern**. This can be done by loading extra cargo aft of the longitudinal centre of gravity, or by stowing more bunkers and/or water aft. With the stern deeper in the water, the effectiveness of the propeller is enhanced; resulting in higher speed or lower fuel consumption. It is not uncommon for a 80,000 dwt ship in ballast (no cargo) to have a trim by the stern of 3 m (10 ft). For loaded

ships the trim is much less. Voyage orders often stipulate that a ship has to arrive on **even keel** (fore and aft draft the same) at the discharge port.

TPC/TPI

This stands for **Tons per Centimetre** and **Tons per Inch**. As seen on the deadweight scale, t/cm is listed in the column on the left. Please note, the TPC/TPI listed in table 1.3 is for the ship on her Summer draft. At lesser drafts the underwater portion of the hull gets smaller and TPC/TPI is smaller as well, but initially not by much. In our example the TPC at 12.40 metres draft is still 100 (see figure 1.2). To convert tons per centimetre (TPC) into tons per inch (TPI), just multiply by 2.54, because one inch equals 2.54 cm.

The precise value of TPC/TPI is determined by naval architects. If the TPC/TPI is not readily available, there is a quick and approximate way to calculate its approximate value. Picture a ship as a box, where the length of the box is LBP and the width is B. In our example LBP = 240 m and B = 45 m.

The surface area of this box is: 240 m x 45 m = 10,800 m^2.

Vol. of a 1 cm (= 0.01 m) "slice" is 10,800 m^2 x 0.01 m = 108 m^3.

Seawater has a salinity of 1.025. Therefore the weight of the 1 cm "slice" is 108 m^3 x 1.025 = 110.7 mt.

However, a ship is not a square box because her bow and stern are tapered. It is therefore necessary to deduct about 10% of the calculated "slice" volume. 90% of 110.7 = 99.63. This is pretty close to the actual value of 100.34 tons per centimetre.

FWA

As mentioned earlier, FWA stands for **Fresh Water Allowance**. The FWA can be calculated with the formula:

Deadweight + Lightweight = Displacement

SWDT (135,160 mt) + Lightship (21,835 mt) = 156,995 mt for salinity of 1.025.

Salinity for fresh water is: 1.000. The difference is:

1.025 – 1.000 = 0.025.

156,995 x .025 = 3,924.9 mt.

Rather than working with the actual tonnage difference, it is often easier to express FWA in distance on the Deadweight Scale. As worked out already, one centimetre immersion at Summer Draft represents 100.34 mt. The FWA can be calculated by dividing 3,924.9 by 100.34 = 39.1 cm or 391 mm.

We have been using the term **salinity** to indicate the apparent density of seawater. Scientifically speaking, the term salinity is used to indicate the percentage of dissolved compounds in seawater. Various publications list the salinity of the dock water for various ports, but the best way to determine it is to scoop up a bucket of water from outside the ship and take an actual reading.

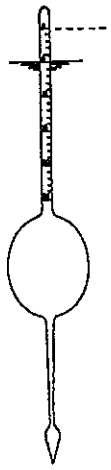


Figure 1.3: Draft Survey Hydrometer

Salinity is measured with a draft survey **hydrometer*** (see figure 1.3). It is a glass tube with a bulb in the middle. The tube has a scale from "0" at the top to "25" just above the bulb. In fresh water the tube is almost totally immersed to 0. In seawater the meter floats up to 25. Make sure the bulb does not touch the bottom of the bucket when you take a reading.

Of course, the ship is not always in pure fresh or pure seawater, but often operates in water with an intermediate salinity of **brackish** water. Let's say the ship has almost finished loading and she is on her Summer draft (in a Summer Zone) in brackish water with a salinity of 1.005. Going from brackish water to seawater, the ship will rise an extra 20/25th of the FWA.

20/25 x FWA = 0.8 x 39.1 cm = 31.28 cm

This represents: 31.28 cm x TPC

= 31.28 cm x 100.34 = 3,138 mt cargo

Thus, the ship can load an extra 3,138 mt of cargo. If the freight rate is $20.00/mt, the well-informed shipowner just made an extra $62,760.

GRT

Stands for **Gross Registered Tons**. It has nothing to do with "weight" tonnage, but it includes all the enclosed space of the ship, expressed in "tons" of 100 cubic feet.

NRT

Stands for **Net Registered Tons**, also expressed in 100 ft^3. It is the actual **revenue earning space**. It is the GRT minus space occupied by the engine room, dedicated ballast and fuel tanks, wheelhouse, galley, crew's living quarters, anchor chain lockers, steering gear room, store rooms and lockers and the pump room for tankers. All of these spaces have to be measured and certified before they can be deducted from GRT. Port

* Hydrometers used for draft surveys may be calibrated for 15°C (59°F). No correction is made for higher or lower water temperature, resulting in expansion or contraction of the glass bulb, because more or less the same happens with the ship's hull (for more on this see chapter 8 under temperature correction).

In some areas fresh water has a density of less than 1. For example, the salinity of water in the Panama Canal is often 0.995 because it is in the Tropics. Warm water has a slightly lower salinity than water the hydrometer has been calibrated for, say: 15°C (59°F). This means that the ship will sink in a little deeper than the standard FWA. In other words, less cargo has to be loaded in the loadport, so the ship will clear the lock floor at salinity of 0.995. If cargo was loaded based on salinity of 1.000 the ship may have to offload part cargo at great expense (for an example of the proper calculation see chapter 2).

In other ports the salinity of seawater is sometimes more than 1.025 and the ship will float above her Plimsoll Mark at SDWT. This does not mean that extra cargo can be loaded, because once the ship gets back to normal seawater of 1.025 she will immerse to her proper draft.

Something else to think about is that salinity can vary significantly; especially in river or estuary ports. During ebb tide the water will be fresher, with lower salinity, than during flood tide.

charges are usually based on NRT. Cargo carrying capacity of most ships is expressed in metric tons. However, the earning capacity of passenger ships comes primarily from the space of her superstructure. Therefore tonnage of passenger ships is usually expressed in GRT.

Ton comes from the Dutch word "ton", which means "barrel" in English. Centuries ago ships primarily carried barrels (tonnen) of fish, salt or wine and the cargo carrying capacity of vessels was expressed in "tons." Even though very few cargoes are still shipped in barrels, the term "ton" is still used, but now to express cargo carrying capacity in weight, such as metric, short or long tons. GRT and NRT is still expressed in (volume) tons of 100 ft^3.

Suez and Panama Canal tonnage

Suez and Panama Canal Authorities perform their own measurements and levy their canal fees accordingly. The Suez Canal Authority measures a ship in Suez Canal Net (Register) Tons and the Panama Canal in Panama Canal Universal Measurement System (PC/UMS) tons. In our example Panama Tonnage is not given in table 1.3 because the *FRISIAN ENTERPRISE* is too wide to fit the locks.

Engine

It is important to know how the ship is propelled. In our example it is by a MAN seven-cylinder, two-stroke, single acting diesel engine; generating 16,100 brake horsepower at 94 rpm.

Some older VLCCs are still propelled by steam turbines instead of the more efficient diesel engines. When VLCCs were first built, diesel engines had to be very massive to propel the ship. This cut into the ship's cargo carrying capacity. The solution was to power the ship with a turbine

installation, which takes up less space. However, during the last 20 to 30 years engineers have developed diesel engines with much higher output per cylinder than before, so the engine is smaller. Diesel engines are much more efficient than steam turbines and use only about half the fuel to maintain the same speed. That is why almost all new large ships now have diesel engines instead of propulsion by turbine. At times when bunker prices are high, ships with steam turbines are not very much in demand and receive a lower time charter rate than ships with diesel engines.

As a rule of thumb, **daily fuel consumption** in mt is:

Gross brake horsepower (or BHP) divided by 300.

For example, if the engine has an output of 15,000 hp (at a certain number of revolutions of the propeller), fuel consumption at normal sea speed will be around 50 mt/day. However, a lot of ships may operate at less than full sea speed and use less fuel. The relationship between speed and fuel consumption will be discussed in more detail in chapter 9.

Average service speed

This is especially important if the ship is on time-charter (lease) for a certain period. The vessel's owner usually guarantees speed for calm weather only with winds up to 4 or 5 (see also chapter 4, clause 24).

Fuel consumption

Our ship burns 49 mt of heavy fuel oil (FO) and 4 mt of diesel oil (DO) for her auxiliary engines. This is important to know, because in addition to working out daily fuel expenses, it also has a bearing on cargo capacity. As we shall see in chapter 2, if the ship is loaded to her maximum draft, it is sometimes more economical to take less fuel, and in its place load extra revenue-paying cargo.

Bunker capacity includes all FO and DO tanks for the vessel's own consumption. To prepare the oil for proper combustion, fuel oil is pumped from the normal storage tank to a settling tank. Here water and coarse impurities, such as sand, sink to the conical tank bottom for easy removal. After that, the fuel is heated and run through a centrifuge to remove more water and impurities. Finally the clean fuel is pumped into a tank that feeds the engine directly.

In case the ship is not loaded to her maximum draft, and her route leads near a port where bunkers are relatively cheap, owners sometimes "fill up", especially if they expect that the price of bunkers will go up. With full capacity bunkers, the vessel can travel for several months.

Grain space

This is the volume of the holds available for bulk cargoes such as grain. Grain capacity is useful when the apparent density of dry cargo is expressed in ft^3/lt (cubic feet per long ton of 1,016 kg). It is called the **stowage factor**. For example, if the ship needs to load a cargo of coal with a stowage factor of 44 and the ship has 4,627,603 ft^3 **grain space** (see table 1.2), she can load: 105,172.8 lt, or 106,855.6 mt of cargo.

Bale space

Bagged or packaged cargo needs to be protected from chafing against the hull frames and bulkheads. This can be accomplished by placing **dunnage** (mainly in the form of pieces of wood) between the cargo and the ship's steel structures. By taking away cargo space between the hull frames, **bale space** is always less than **grain space**.

*Heavy cargoes, such as iron ore, will bring the ship down to her maximum draft, but the holds will only be filled to about one third. Cargoes that bring the ship down to her marks are called "**deadweight**" cargoes. Lighter cargoes that fill up the available cargo space before the ship immerses to her maximum draft are called "**cubic**" cargoes. If the ship is loaded with cargo that causes her to immerse to her Summer draft and also fills up her cubic cargo space, the ship is said to be "**full and down**".*

Oil capacity

This is the volume of oil that a tanker can load. To account for possible expansion of the cargo when it heats up, a tank should never be loaded to more than 98% capacity. Take, for example, North Sea crude oil, loaded at 60°F. It will expand another 2% if the temperature reaches 100°F. If the cargo is hauled to an area of high temperature, the captain should take a bigger safety margin than 2%. On the other hand, oil loaded at 100°F in the Arabian Gulf will contract about 2% after the ship arrives in NW Europe during winter time. In that case the ship will still only load to 98% capacity.

Ballast capacity

When the ship is empty, she needs to be weighted down, so she won't be tossed around like a beach ball in the surf. On most ships water **ballast** is pumped into the double bottom, in the fore and aft peak and in the wing tanks. Sometimes the ballast capacity of a ship is expressed as a percentage of her SDWT (usually +/- 40%).

Modern tankers have **Segregated Ballast Tanks** (SBT) that do not have any pipeline connection with cargo tanks used for oil service. This is done to prevent ballast water from being contaminated with oily residues from the cargo tanks. Not only is an SBT arrangement good for the

environment, but it also allows the ship to ballast and de-ballast during cargo operations, thus saving time.

Some older tankers still have **Clean Ballast Tanks** (CBT). Tanks on these ships need to be cleaned before they can be used for ballast water. The oily slops, resulting from tank cleaning of crude oil tankers are pumped into slop tanks instead of overboard. After a few days in the slop tank, water separates out from the oil and can be pumped off via an **Oil Discharge Monitor System** (ODMS). At the next load port new crude oil is loaded on top of the oil from the slop tanks (**Load-on-Top**), so no oil is discharged into the water.

Cargo pumps

This is for tankers only. Most tankers have three or four steam driven turbine pumps. The turbines are installed at the bottom of the engine room with drive shafts going through the engine room bulkhead to the pump room, where the actual pumps are located. This separation of turbines and pumps is necessary to prevent possible oil fumes in and around the pumps from being ignited by the hot steam in the turbines, or by fire in the boilers. The capacity of the pumps is given in m^3 of water per hour at a certain rpm and against a certain **back pressure** or **"head"**. It is easy for the ship to pump into an empty shore tank located near the dock, but it is much harder to pump into a shore tank miles away and sitting on top of a hill. Refineries and oil terminals like to build their storage tanks at the highest elevation, so the ship does all the pumping to fill up the tanks. When it comes to emptying them, the facility can just use gravity to feed their refinery units, or to load another ship.

Some crude oil and product tankers, and most chemical tankers, have **deepwell pumps**, driven by high pressure hydraulic oil. Generically they are kown as FRAMOs, after the leading deepwell pump manufacturer: Frank Mohn AS of Norway. The pumps are very versatile and reliable, and because they operate on the positive displacement principle, the same unit functions as the main and stripping pump. Most tankers are designed to pump off a full cargo within 24 hours, provided there are no shore restrictions, such as insufficient cargo lines and/or high backpressure.

Stripping pumps and **eductors** are used to pump (strip) the remaining oil from the bottom of tanks when the main pumps are no longer effective.

Maximum venting capacity

Liquid cargo can only be loaded into the vessel's tanks as fast as the air can escape from within. Therefore the maximum loading rate of a particular vessel is usually 80% of the maximum venting rate. Most tankers, large or small, are designed to load a full cargo within 24 hours.

Bow to centre manifold (BCM) or Stern to centre manifold (SCM)

This is an important measurement to show if the tanker fits a specific berth with her manifold positioned directly opposite the shore's loading hoses or arms.

Keel to Masthead

To work out if a ship will be able to pass under bridges or power lines, deduct the ship's draft from the **Keel to Masthead** height to see how high the top of the mast is above the water line. This is sometimes called "**airdraft.**" Then check the chart or a reliable nautical publication to find the clearance space of the bridge or power line. The listed clearance is usually referenced to a specific river stage, because water levels vary. For example during Spring, when there is a lot of run-off in the Mississippi river, the river level is substantially higher than at other times of the year.

Even though charterers have to guarantee that the vessel can safely reach her berth, it is always a good idea to double check with local pilots before sending the ship to an unfamiliar port or berth. See also clause 9 of the ASBATANKVOY c/p in chapter 5, that requires the charterer to provide a safe berth; reachable on arrival.

Maximum Height waterline to hatch coaming[3] or manifold

Most terminals specify that the ship's railing or her hatch coaming can only be at a certain maximum height above the water, so the vessel can fit under the shore's loading or unloading installation. If the ship sits too high in the water, she needs to take on ballast. This is only possible if the ship is empty or partly loaded. (It is usually not advisable to take on extra ballast when the ship is already fully loaded). Also keep in mind that if a ship arrives with part cargo at the terminal, the quantity of ballast that can be taken in, may be less than the cargo taken out, which means that at the end the ship will float even higher in the water.

Special equipment[4]:

As stated above, our particular ship can function both as a dry cargo

[3] A good source of information about dry bulk terminals is: "*Major Coal and Iron Ore Ports*" published by SSY shipbrokers in London, UK. Their website is: www.ssyonline.com. BIMCO also provides current bulk terminal information on their website ("Members only").

[4] Excellent sources of information about technical subjects with diagrams and pictures are to be found in the following publications: *Tanker Practice* by G.A.B King; *Bulk Carrier Practice* by Captain J. Isbester; *Tanker Handbook for Deck Officers* by Captain C. Baptist; *Supertankers, Anatomy and Operation* by Dr. Raymond Solly; *Towards Safer Ships and Cleaner Seas* by John R Dudley, and *Ship Knowledge* by K van Dokkum. Considered by many to be the "bible" of shipping terms is: *BES' Chartering and Shipping Terms* by Norman J. Lopez. For the names of the publishers of these publications, see the bibliography.

bulk carrier and as an oil tanker. That is why special equipment has been listed for both types. Here follows a brief description.

SBT	Segregated Ballast Tanks
COW	Crude Oil Washing
IGS	Inert Gas System
Cl. Ldg.	Closed Loading System
Gas freeing	Gas freeing system on board
SBM	Single Buoy Mooring (capability)
Derricks	On tankers to lift hoses to the manifold
Heat	Heating capability (for oil cargoes)
Ore Str.	Ore strengthened for heavy (dry) cargoes

Table 1.7: Special equipment

SBT

Stands for **Segregated Ballast Tanks**. This pertains to tankers and it means that ballast tanks, lines and pumps are totally segregated from the cargo system.

COW

Crude Oil Washing is a fixed system of pipelines, nozzles and regulators that deliver a jet stream of crude oil to wash the inside of cargo tanks. Crude oil contains solvents that usually have better cleaning power than water. Certain high paraffin crudes, or crude oils with a low pourpoint, are unsuitable for COW because it would create a mess rather than clean the tanks.

IGS

Stands for **Inert Gas System**. In December 1969 three large tankers exploded, during tank cleaning operations. It was later determined that high-pressure water jet streams — used to clean the cargo spaces — created an atmosphere of static electricity in the tanks. This was remedied by an IGS. The system blows exhaust gasses — or flue gasses generated by special boilers — into the tanks. This causes the oxygen to be replaced to such an extent that the mixture of oil vapours is no longer in the explosion range. The cut-off point for most oil vapours is 11% oxygen. As an extra safety margin, the IGS has to be able to bring the O_2 level below 8%. (Most modern inert gas systems are able to go as low as 3%)

Cl. Load

This means **Closed Loading**. When a ship is inerted, there is a slight over-pressure in the tanks (about 500 mm H_2O or about 0.7 psi).

During gauging and sampling through ullage openings or cargo hatches, inert gas would escape and oxygen would enter the tank. To prevent this from happening, gauging and sampling is done through special **vapour locks**.

Gas Freeing

When the ship's crew needs to enter a tank for inspection or repairs, the hydrocarbon vapours need to be driven out and oxygen be brought in. When a tanker is in the shipyard, she needs to be gas-free too. Hydrocarbon levels need to be measured at regular intervals to make sure puddles of oil have not generated new vapours.

SBM/SPM

Stands for **Single Buoy Mooring** and **SPM** for **Single Point Mooring**. A lot of ports are not deep enough for loaded VLCCs to berth. Instead, tankers secure to a buoy and load or discharge the cargo via a couple of floating hoses that are connected to the ship's manifold. In the USA there is only one such offshore port with SBMs. It is located about 18 miles off the coast of Louisiana in 35 metres (115 ft) of deep water and is called **LOOP** (Louisiana Offshore Oil Port). It has three SBMs and crude oil is pumped via a 48 inches submarine pipeline to eight salt caverns ashore that function as initial storage space of five million barrels each. Later on the oil is distributed via pipelines to refineries in Texas, Louisiana and the Midwest.

Derricks

Derricks on tankers and OBOs are used primarily to hoist cargo hoses at SBMs. The derrick or crane boom needs to be long enough to reach a few metres outside of the hull. The lifting capacity needs to be sufficient to hoist the hoses out of the water up to the ship's manifold.

Heat

Many tankers have the capability to **heat** the cargo. Crude oils with a low pour point need to be kept at a fairly high temperature to keep the suspended wax in a liquid state. Product tankers that carry heavy fuel oils need to heat the cargo to keep it pumpable. Most chemical tankers have heating capability also, and of course so do asphalt carriers. Heat can be supplied by steam, fed through small diameter pipes that are laid out in a grid at the bottom of the tanks. Other systems pump the cargo through a heater on deck. In our ship of table 1.3 the cargo is heated by hot oil elements in the stools (spaces between tanks).

Ore Strengthened

To allow loading and support of heavy materials such as ores, the double bottom and tank tops of bulk carriers are built with thicker steel plates.

Final remarks

As demonstrated, there are a lot of factors that have to be taken into account before a ship can be "**fixed**" for a certain voyage. When a ship owner and a charterer conduct negotiations — usually via one or more brokers — and they have agreed on all terms of the transportation contract (called a **charter party**) it is said the the ship has been "fixed."

In chapter 4 on time charters, and in chapter 5 on voyage charters, we will take a closer look at the responsibilities of the ship owner and of the charterer.

Always check and double check to make sure that the vessel is suitable to undertake a specific voyage. It will be very costly and embarrassing if you send your ship halfway around the world and find out that she cannot reach her berth due to draft restrictions, or is unable to continue because she is too big to fit into a lock, or cannot pass under a bridge or power lines. These are just the physical limitations of the ship itself. In the next chapter, we look at other factors that can limit cargo capacity Aside from physical restrictions there are also commercial and legal restrictions that have to be taken into account. Future chapters cover some of those issues.

Chapter 2

MAXIMISING CARGO CAPACITY

The heaviest baggage for a traveller is an empty purse.
English proverb

Introduction

After having learned some of the basic characteristics of the vessel in chapter 1, we now go into more detail and discuss cargo capacity under various scenarios. The main thing to remember is that with heavy cargo you are limited by maximum draft and with light cargo you are limited by space in the ship.

If a ship is going to load at an inland port, but the fairway back to sea is not very deep, she can only take part cargo and needs to "**top-off**" at a port in deeper water. One example that comes to mind is loading grain up the Parana River in Argentina and topping off in Buenos Aires or a surrounding port. Another example is loading coal at a US East or Gulf Coast port to 45 feet draft and topping off in Richards Bay in South Africa for discharge in the Far East.

If a particular ship is too deep to enter the discharge or canal port, there are two options:

1) Load less cargo in the load port.
2) Lighten the cargo prior to entering the discharge port or entrance to a canal.

Freight is usually lower for a larger ship that is able to carry more cargo. Therefore it is to the advantage of a charterer, but also to an owner with large vessels, to load as much as possible and still be able to navigate safely.

Lightering or lightening

These terms are used interchangeably. Lightering or lightening at the discharge port allows the ship to carry more cargo. It is fairly easy to lighter a tanker. A smaller lightering tanker comes alongside the larger tanker that needs to be lightened. Cargo hoses are connected at the manifold of both ships and oil is pumped from one to the other. The smaller tanker with the shallower draft takes the oil to the port of discharge. Dry cargo bulk carriers are usually lightened with the ship's own cranes, or with a floating crane equipped with a clamshell bucket. For grain cargoes **vacuvators** can be used to suck the cargo from one ship and drop it into a hopper that feeds the holds of the lightening vessel. These smaller ships or barges

take the lightened cargo to the discharge berth or to inland destinations. Once enough cargo has been unloaded, the lightened ship can proceed to the discharge berth.

Usually the charterer pays for the actual cost of the lightening vessel and for the equipment used. A ship that needs to lighter can usually obtain a better freight rate, to compensate for loss of time. An additional advantage to the ship owner is that the vessel can carry more cargo when lightering is an option.

Table 2.4 shows a calculation for iron ore to be lightened. Iron ore is a "**deadweight**" cargo. That means that the ship reaches her maximum draft before the cargo holds are filled to capacity.

Table 2.5 is a calculation for a "**cubic**" cargo of Soybean Meal. In this case the ship's holds fill up before she reaches her maximum draft.

Table 2.7 shows an example of a loaded Panamax bulk carrier going through the **Panama Canal** locks. This example covers several restrictions such as maximum cubic capacity, draft restrictions at the load port, maximum draft to traverse the Panama Canal, seasonal restrictions and possible draft restrictions at the discharge port. It is important to figure out the maximum draft for each restriction to avoid having to offload part of the cargo; yet at the same time loading the maximum cargo possible.

Definitions:

Before looking at actual cargo calculations, it is necessary to explain some more definitions. The first one is **API** (American Petroleum Institute) **gravity**, or API for short. It expresses **relative density*** (r.d.) of oil. Use ASTM table 3** to go from API at 60°F to r.d. at 60°F, or use the following formula:

API = (141.5/r.d.) – 131.5 (all at 60° F)

For example, Diesel oil with r.d. of 0.8602 will have an API gravity of:

141.5/0.8602 – 131.5 = 164.5 –131.5. Therefore API = 33.0

To determine r.d. from API, use the following formula:

R.D. = 141.5/(API +131.5) (all at 60°F)

For example a certain crude oil has an API of 21.3. What is the r.d. ?

141.5/(21.3 + 131.5) = 141.5/ 152.8. Therefore r.d. = 0.9260

* ASTM (American Society for Testing and Materials) has discontinued the term Specific Gravity and replaced it with Relative Density

** ASTM table 3 also gives Density at 15°C against API at 60°F.

Don't confuse **density, relative density** and **apparent density.**

- **Density** is mass (weight) in vacuum.
- **Relative density** is the ratio between the volume of a particular fluid and an equal volume of pure water (both measured in vacuum) at 60°F.
- **Apparent density** is weight (in air) per cubic metre (used for dry cargo).

API and density are used primarily for marine purposes. Here are some examples:

Product	API	Density	**Crude Oils**	API	Density
Naphtha	62.0	0.7311	Alaska N. Slope	27.0	0.8922
Gasoline	57.0	0.7504	Arab Light	33.0	0.8597
Kerosene	47.0	0.7924	Maya Heavy	22.0	0.9213
Diesel	33.0	0.8597	Sahara Blend	44.0	0.8059
Heavy F.O.	16.0	0.9588	Tia Juana	10.0	0.9994

Table 2.1: API and Density

For actual liquid cargo calculations API is stated with one or two decimals and Density with four. For example, API 35.8 = Density 0.8556.

Notes: The relationship between weight and volume

Since this book covers a wide variety of topics, perhaps this is a good place to describe some basic concepts:

Oil cargoes

Density: The definition of density is mass in a vacuum. This is fine for scientific purposes, but in the real world oil is measured in air. Since air in effect gives some buoyancy to an object or substance, weight in air is slightly less than when measured in a vacuum. In chapter 7 we see how weight in a vacuum can be converted to weight in air.

Relative Density is the relationship between the volume of a particular fluid as compared to the volume of pure water (both measured in a vacuum) at identical temperatures (60°F for API purposes).

Products like chemicals, bunkers and lubricating oils are usually sold and measured in metric tons (in air). Some ship computers are programmed to use **litre weight**. This is the density (in a vacuum) x a

correction factor to convert from weight in a vacuum into weight in air (table 56) x Volume Correction Factor (VCF). With the litre weight factor, volume in m^3 at a particular temperature can be converted directly into metric tons (in air). (See also chapter 7)

In the USA, cargo surveyors often use the lb/gal method for chemicals; especially for railcar or truckload quantities. For instance, if the lb/gal at 60°F for a particular product is 6.724, its corresponding API per ASTM table 8 is 43.7.

When cargo is measured in barrels, it is customary to use tables 6 with API to reduce the volume to 60°F. When cargo is measured in cubic metres, volume is reduced to 15°C by using density in tables 54 as entry.

To prevent cargo discrepancies, make sure the same parameters (tables) are used at both the load and at the discharge port.

Chapter 7 of this book covers measurement of oil cargoes.

In chapter 8 on oil cargo measurement, we analyse an example of different temperature reduction tables being used in the load and in the discharge port. API table 6A reduces volume to 60°F and table 54A to 15°C (= 59°F). By using one table in the load port and another one in the discharge port, the difference for a VLCC cargo of 270,000 mt can be more than 1,000 bbl. If the cargo is worth $40/bbl (freight included), the amount of the "loss" is $40,000.

Dry cargo

When **density** is used for dry cargo purposes it means metric tons (in air) per cubic metre. For example 1 m^3 of a particular cargo with a density of 0.85 will weight 0.85 mt (in air).

In some countries the term **stowage factor** is used to indicate dry cargo density but, as we see below, the term stowage factor is normally used to indicate cubic feet per long ton. Sometimes the term **specific gravity** is used to indicate dry cargo density. Perhaps a better term would be **apparent density**.

Water the ship floats in

The term **density** is also used in draft surveys (see chapter 8). It is the weight in kg (in air) per litre (dm^3) of the water the ship floats in at a specific temperature (like 15°C). Generally speaking sea water weighs 1.025 kg and fresh water 1.000 kg per litre. In this book we use the term **salinity** to indicate apparent density of sea water even though, strictly speaking, salinity is the scientific term to indicate the total amount of solid materials in grams per 1 kg sea water. For more on density and salinity see *The Mariner's Handbook*, 7th edition, sections 4.42 and 4.44.

For years there has been a battle going on between oil cargo inspectors and draft surveyors, because they both used the same hydrometer, based on density (in vacuum). Draft surveyors needed to make corrections to find apparent density (or salinity) of the water in air. Fortunately, there are now separate hydrometers for oil and for dock water on the market; calibrated for the purposes they are used for.

Stowage factor

The **stowage factor** (s.f.) for a particular bulk product is cubic feet per long ton (ft^3/lt). Let's take a particular grade of soybean meal that "stows" 63. This means 63 ft^3 weighs one long ton (2,240 lbs) or 1.016 mt. To find the **apparent density** (a.d.), 63 ft^3 is converted into m^3:

Table 1.2 in chapter 1 shows that 1 ft^3 = 0.028317 m^3.

63 ft^3 = 1.784 m^3.

If 1.784 m^3 weights 1.016 mt,

1 m^3 weights 1.016 mt/1.784 = 0.57 mt.

Therefore the apparent density of soybean meal is 0.57.

In formula form: **a.d. = 35.88/s.f.**

Please note, the stowage factor for a particular product can vary depending on grade, moisture content and other factors. Here are some stowage factors and their a.d. for dry bulk cargoes:

Ores	ft^3*lt	a.d.	**Grains**	ft^3*lt	a.d.
Aluminium	40	.90	Soybeans	49	.73
Bauxite	32	1.12	Soybean Meal	63	.57
Chrome	16	2.24	Corn	50	.72
Iron	25	1.44	Wheat	45	.80
Coal			**Fertilizers**		
Coal	44	.82	Phosphate Rock	25	1.44
Petcoke	50	.72	Sulphur	39	.92

Table 2.2: Stowage factor and apparent density

Sometimes the stowage factor of grain is quoted in **pounds per bushel.**

1 US **bushel** (dry) = 8 gallons (dry) = 35.24 litres = 0.03524 m^3

If the stowage factor of a particular grade of wheat is given as 62 lbs

per bushel, its a.d. can be determined as follows:

1 bushel = 62 lbs and 0.03524 m^3 = 28.12 kg

Now, divide both numbers by 0.03524

0.03524 m^3/0.03524 = 28.12 kg/0.03524

1 m^3 = 798 kg. This translates into a.d. = 0.798

There are special conversion tables to go from lbs/bu to a.d., or you can use the following formula: **a.d. = .0128717 x lbs/bu.**

Over the years the author has developed computer-generated spreadsheets to calculate **cargo capacity** under various circumstances. Generally speaking, new entries to be made in the spreadsheet for a particular voyage are in **bold.** The computer calculates the rest. Please remember these spreadsheets are not idiot-proof. The computer does the mathematics, but you have to do the thinking ! For example, if you depart from the load port with a draft of one metre less than Summer draft, you don't have to apply the Winter Seasonal Allowance, because your draft is already less than Winter draft.

Secondly, never make a decision on cargo capacity without checking with the captain of your ship. Normally the ship sends cargo capacity reports on a regular basis, but something may have come up at the last minute. For example you may have booked a cargo and a valve in one of the ballast tanks gets stuck, preventing discharging of all the ballast. Another example is an older crude oil tanker without **SBT (Segregated Ballast Tanks)**, but with only **CBT (Clean Ballast Tanks)**, or a product tanker without COW (Crude Oil Washing) systems that carry oily water in their slop tanks, thus reducing cargo capacity.

Of course you also have to think about how much F.O. and D.O. (bunkers) you need to have on board to reach the next bunker port. Every chief engineer and captain has his own comfort level. A rule of thumb is to have 125% in bunkers for the voyage to the next bunker port. Others use five days spare. It all depends on the weather that can be expected and if there are possible "emergency" bunker ports on the way. In chapter 9 on fuel management we calculate the lowest overall cost for various bunker ports, and also fuel savings while steaming at slower speed.

It is important to check with the ship all the time. Never, ever, treat your captain as a mere boat driver because, if you do, pretty soon he will act like one. If the captain is good enough to be entrusted with the lives of the crew and perhaps $100 million dollars worth of ship and cargo, you definitely want to keep him -and the rest of the senior staff- abreast of all the information that has a bearing on the safe and efficient operation of the ship.

Sometimes, while you are in the middle of negotiating a fixture with a broker, there are situations where you do not have enough time to contact the ship, or are unable to do so due to time difference or garbled communications. Tanker fixture negotiations are often "fast and furious". Tanker brokers like to say: "You have to think on your feet!" Some tanker fixtures — representing millions of dollars worth of freight — are concluded with just a few phone calls. In those instances you need to have all the right information at your fingertips. Negotiations for dry cargo fixtures are usually not nearly as hectic and are often negotiated over a span of several days. For both oil and dry cargo fixtures, you have to think one or two voyages ahead, to position the ship close to the next load port.

Now we are going to calculate cargo capacity for some actual voyages based on our ship the *FRISIAN ENTERPRISE,* as listed table 1.3.

Cargo shut-out for deadweight cargo

Orders: Maximum cargo of iron ore with stowage factor 25, from Port Hedland in NW Australia to Qingdao, China. The ship can leave Port Hedland fully loaded to Summer draft "**on-top-of-the-tide.**"

On-top-of-the-tide means that the ship has to traverse the shallowest spot in the fairway at around the time of diurnal (once or twice a day) high water. If the maximum draft in the chart for the fairway from berth to open water is 15 metres, our ship could not leave if she was loaded down to summer draft of 16.86 m. However, if there is a three metre high tide (above chart datum) the ship can leave the berth at around the time of high water and safely negotiate the shallowest spot with an acceptable safety margin. It is best to pass the shallow spot before high water, because if for some reason the ship gets stuck, the chances are that she can still get off as long as the water is still rising. If the ship runs aground on a falling tide, you need to wait until the next high tide and hope to get her afloat again.

Maximum draft at the discharge berth is 14.00 metres in brackish water of a.d. 1.017. The distance between load and discharge port is 3,583 nautical miles. On departure the ship has 2,000* mt F.O. plus 250 mt D.O. and 50 mt water on board. The "constant" is 500 mt.

Question: How much does the ship need to lighten just outside the discharge port, in order to proceed safely to berth?

Answer: The difference between Summer draft of 16.86 m and 14.00 metres at the discharge port (all in sea water) is 2.86 m or 286 cm. Tons

* This is a lot more than needed for this trip, because in this example sufficient bunkers had been taken to reach Vancouver, Canada after discharging in Qingdao, PRC.

CARGO CAPACITY		
DEADWEIGHT CARGO		
Vessel name	*FRISIAN ENTERPRISE*	
SDWT	135,160	mt
Max. cubic capacity	125,658	m^3
Summer Draft	16.86	m
TPC @ S. draft	100.34	
FWA	0.391	m
Light Weight	21,835	mt
Displacement @ S. draft	156,995	mt
Vessel's av. speed	13.0	knots
Consumption FO+DO/day	53.0	mt
Full & Down a.d.	1.05	
LOAD PORT	Port Hedland	
Maximum draft in sea water	17.00	m
Salinity	1.025	
DISCHARGE PORT	Qingdao	
Maximum sea water draft	14.00	m
Salinity (fictional)	1.017	
Cargo to load	Iron ore	
Orders	Max. Cargo	
Stowage factor	25	ft^3/lt
a.d. of cargo	1.44	mt/m^3
DRAFT RESTRICTIONS		
Discharge Port	14.00	m
Diff. from SDWT draft	2.86	m
Cargo shut-out	28,697	mt

SEASONAL ZONES		
Zone allowance 1/48 S. draft	0.351	m
Max. Tropical Draft	17.21	m
Max. Winter Draft	16.51	m
Seasonal Zone cargo allow. +/-	3,522	mt
FWA	0.391	m
Salinity of dock water	1.017	
Diff. from fresh to saltwater	0.008	
Diff. x FWA	0.125	m
Diff. x TPC	1,254	mt
BURN-OFF		
Dist. to restricted draft position	3,583	nm
Steaming days	11.5	days
Burn-off	610	mt
MAX. CARGO TO LOAD	135,160	mt
Bunkers	2,250	mt-
Water	50	mt-
Constant	500	mt-
Cargo capacity	132,360	mt
Less, due draft restriction*	28,697	mt-
Less, due Winter restriction*	0	mt -
Plus, tropical allowance	0	mt+
Less, due brackish water	1,254	mt-
Plus "burn-off"	610	mt+
Cargo cap. w/o lightering,	103,019	mt
or to lighter	29,341	mt

* *Deduct largest amount if applicable*

Table 2.3: Deadweight cargo to lighten

per centimetre is 100.34. Therefore, the **cargo "shut-out"** is 286 x 100.34 = 28,697 mt.

To get to the berth in **"brackish"** water, the ship will sink another 1.025 – 1.017 = 0.008/0.025 x FWA of 39.1 cm = 12.5 cm. This represents 12.5 cm x 100.34 tons per cm = 1,254 mt.

The distance between load and discharge port is 3,583 nautical miles and will take about 11.5 days steaming. In 11.5 days the ship consumes or **"burns off"** 11.5 days x 53 mt/day or 610 mt in bunkers. This means this

610 mt don't have to be lightened. Therefore total cargo to be lightened: 28,697 +1,254 - 610 = 29,341 mt.

Seasonal restrictions

Instead of hauling this cargo to China, the charterers have sold the iron ore to a steel mill in Germany and exercise their option of having the cargo shipped to Rotterdam instead (at a higher freight rate). There are no draft restrictions in Rotterdam and salinity at the discharge berth is 1.025. The ship has enough bunkers on board to make the voyage non-stop.

The owner has the option of going around Cape of Good Hope, or via the Suez Canal. The route via the Suez Canal is 6.3 days shorter, but the ship loses about one day for transit; for a net gain of 5.3 days. Operating expenses of the vessel are $25,000/day. 5.3 days represents a total saving of $132,500. However, the Suez Canal is not free. Canal tolls[1], extra cost for pilots and maybe for tugs and for light dues will be about $200,000. (Calculation of Suez and Panama Canal tolls is discussed in chapter 3). Therefore the captain is instructed to proceed to Rotterdam by going around the Cape of Good Hope, instead of going through the Suez Canal. The ship left NW Australia in early January in the Summer seasonal zone, but she will enter into the Winter seasonal zone off the coast of NW Spain (see Seasonal Zones chart).

Question: How much is the cargo shut-out due to Winter seasonal zone?

Answer: (see table 2.4) "Winter" cargo shut-out is 35.1 cm x TPC of 100.34 = 3,522 mt. The ship will reach the winter zone in 34.2 days and will have burned off: 34.2 x 53 mt of fuel for a total of: 1,813 mt. Net cargo shut-out is therefore: 3,522 – 1,813 mt = 1,709 mt.

Cargo instead of bunkers

This is a good opportunity to take a closer look at bunkers. Let's assume that the owners already knew in Singapore — the last bunker port — that

[1] There are several ways to determine Suez Canal tolls. One good website is: http://www.paceshipping.net/tollscalc/main.htm
Pace Shipping Services Network S.A. is a company in Athens, Greece that offers ship agency services in ports in the Eastern Mediterranean. They also arrange for Suez Canal transits.
In the chapter on Port Charges we show a computer spreadsheet for Suez Canal tolls. These spreadsheets can be used when you do not have access to the Internet.
Another company assisting with Suez Canal transits is World Marine. They have a good website with Suez Canal regulations, tolls and maps of the Canal and of Egyptian ports. www.worldmarine.gr

the ship would proceed to Port Hedland to load the iron ore for discharge in Rotterdam. Instead of ordering 2,250 mt bunkers, they only took half of that, or 1,125 mt. This leaves room for an extra 1,125 mt **revenue paying cargo**. If the freight rate is $15/mt, the owner stands to make an extra $16,875 minus the cost of bunkering in Durban. Hopefully the ship can bunker at Durban Roads, without entering the port, thus saving on port charges (tugs, pilot, dockage fees). These costs, plus loss of ship time, can easily wipe out the $16,875 extra cargo revenue; especially if bunkers

CARGO CAPACITY		
DEADWEIGHT CARGO		
SEASONAL SHUT-OUT		
Vessel name	***FRISIAN ENTERPRISE***	
SWDT	**135,160**	mt
Max. cubic capacity	**125,658**	m^3
Summer Draft	**16.86**	m
TPC @ S. draft	**100.34**	
FWA	**0.391**	m
Light Weight	**21,835**	mt
Displacement @ S. draft	**156,995**	mt
Vessel's av. speed	**13.0**	knots
Consumption FO+DO/day	**53.0**	mt
Full & Down a.d.	1.05	
LOAD PORT	**Port Hedland**	
Maximum draft in sea water	**17.00**	m
Salinity	**1.025**	
DISCHARGE PORT	**Rotterdam**	
Maximum draft in sea water	**21.00**	m
Salinity	**1.025**	
Cargo to load	**Iron ore**	
Orders	**Max. Cargo**	
Stowage factor	**25**	ft^3/lt
a.d. cargo	**1.44**	**mt/m^3**
DRAFT RESTRICTIONS		
Discharge Port	**21.00**	m
Diff. from SDWT draft	0	cm
Cargo shut-out	0	mt

SEASONAL ZONES		
Zone allowance 1/48 S. draft	0.351	m
Max. Tropical Draft	17.21	m
Max. Winter Draft	16.51	m
Seasonal Zone cargo allow. +/-	3,522	mt
FWA	0.391	m
Salinity	**1.025**	
Diff. in salinity	0	
Diff. x FWA	0.00	m
Diff. x TPC	0	mt
BURN-OFF		
Dist. to restricted draft position	10,670	nm
Steaming days	34.2	days
Burn-off	1,813	mt
MAX. CARGO TO LOAD	135,160	mt
Bunkers	**2,250**	mt-
Water	**50**	mt-
Constant	**500**	mt-
Cargo capacity	132,360	mt
Less, due draft restriction*	0	mt-
Less, due Winter restriction*	3,522	mt-
Plus, Tropical allowance	0	mt+
Less, due brackish water	0	mt-
Plus burn-off	1,813	mt+
Max. cargo capacity	130,651	mt
Cargo shut-out	1,709	mt

* *Deduct largest amount if applicable*

Table 2.4: Cargo shut-out due Winter zone

in Durban are more expensive than in the previous bunker port. For high paying cargo and favourable bunker prices, it sometimes pays to take less bunkers, so that more revenue paying cargo can be loaded.

Maximum "cubic" cargo

The next example is maximum cargo capacity for a light cargo, i.e. cargo that fills all the ship's available cargo space before she reaches her maximum draft.

Orders: Maximum cargo of soybean meal with a stowage factor of 63 from New Orleans with maximum draft of 14.00 metres in fresh water to Alexandria in Egypt with maximum draft of 36 feet in sea water.

Question: How much soybean meal can the ship load?

Answer: As seen earlier in this chapter, a stowage factor of 63 corresponds with an a.d. of 0.57. By multiplying the available grain space of 125,658 m^3 by the a.d. of 0.57, it is determined that the ship can carry 71,625 mt cargo. With light cargo the ship runs out of space before she reaches her maximum draft.

Cargo + bunkers + water + constant weight gives a total of 74,425 mt. This corresponds to a sea water draft of 10.81 m. However, in fresh water of the Mississippi River in New Orleans the ship will sink in the full FWA (= 39 cm) for a total of 11.20 m. This is not a problem, because maximum draft in our example for New Orleans is 14.00 m. Once the ship reaches open water, she will rise to 10.81 m.

Since the ship is riding so high, there is no need to worry about possible Winter Seasonal Zone allowance. However, the discharge port has a maximum safe draft of only 36 feet (= 10.97 m. in sea water). During the voyage the ship consumes (burns off) 1,081 mt on bunkers. This decreases the draft by 11 cm. Arrival draft in sea water will be 10.81 m – 11 cm = 10.70 m, which means the ship can enter the discharge port with max. draft of 10.97 m, although an UKC (under-keel clearance) of 27 cm is not much. Most captains and pilots would like to see more, depending on the size and speed of the vessel and on the condition of the sea bed (soft mud or hard rock). In narrow channels the ship may draw deeper due to squat. It is strongly suggested to check with local pilots for tidal information and minimum UKC.

For our particular ship a full ("cubic") load of soybean meal is about 60,000 mt less than a full ("deadweight") load of iron ore. Moreover, it usually takes longer to load and discharge grain than iron ore. Therefore freight rates for "cubic" cargoes are normally higher than for "deadweight" cargoes.

CARGO CAPACITY "CUBIC" CARGO CAPACITY		
Vessel name	*FRISIAN ENTERPRISE*	
SWDT	135,160	mt
Max. cubic capacity	125,658	m^3
Summer Draft	16.86	m
TPC @ S. draft	100.34	
FWA	0.391	m
Light Weight	21,835	mt
Displacement @ S. draft	156,995	mt
Vessel's av. speed	13	knots
Consumption FO+DO/day	53	mt
LOAD PORT	New Orleans	
Maximum draft in sea water	14.00	m
Salinity	1.000	
DISCHARGE PORT	Alexandria	
Maximum draft in s. w. 36 ft	10.97	m
Salinity	1.025	

Cargo to load	Soybean Meal	
Orders	Max. Cargo	
Stowage factor	63	ft^3/lt
a.d. cargo	0.57	mt/m^3
MAX. "CUBIC" CARGO	71,625	mt
Bunkers	2,250	mt +
Water	50	mt +
Constant	500	mt +
Total deadweight	74,425	mt
Diff. from SDWT	60,735	mt
Diff. from S. draft in s.w.	6.05	m
"Cubic" cargo draft in s.w.	10.81	m
BURN-OFF		
Dist. to discharge port	6,368	nm
Steaming days	20.4	days
Burn-off	1,081	mt
Decrease in draft	0.11	m
Arrival draft s.w.	10.70	m

Table 2.5: Cubic cargo capacity

Maximum cargo for Panama Canal transit

Many Panamax size bulk carriers haul grain from the US Gulf Coast to Japan, Korea, Taiwan and China via the Panama Canal, which has a normal maximum draft of 39'-06" "tropical" fresh water (salinity 0.995). However, during times of drought, the lakes and reservoirs that feed the Canal don't receive enough rain, resulting in lower water levels in the Canal. In 1998 the maximum draft for passage was 34 or 33 feet. Some people blamed it on the "El Nino" weather patterns. Except for very light cargoes, lower transit drafts in the Canal diminish the cargo carrying capacity of the vessel.

Table 2.7 (overleaf) is a maximum cargo calculation for a Panamax bulk carrier with the following main characteristics in table 2.6:

Name	m/v *PANAMA PRIDE*	
Flag	Panama	
Year built	2003	
LR-IMO no.	7654321	
Type	Self stowing, seven holds, double bottom; gearless	
SWDT	70,770 mt	
Lightship	11,795 mt	
LOA	225.60 m	740 ft
Beam	32.29 m	106 ft
Summer draft	13.34 m	43'-09"
TPC/TPI	60	152.4
FWA	30.5 cm	12 inches
GRT	36,180 GRT	
NRT	22,104 NRT	
Panama tonnage	31,850 PC/UMS Net tons	
Engine	B & W, 6-cyl 2 S.A. Diesel; 10,300 bhp	
Av. Speed	14 knots	
Consumption FO/DO	27 + 2 mt/day	Bunker cap. 2,580 mt
Grain space	83,300 m^3	2,941,696 ft^3

Table 2.6: Main characteristics of a Panamax bulk carrier

Orders: Maximum cargo of wheat with stowage factor 44ft^3/lt from Galveston (max. berth draft 40 ft. in brackish water of salinity 1.019) to Yokohama, Japan. Max. draft in the Panama Canal has been restricted to 39 feet in "tropical" fresh water with salinity 0.995. To optimise cargo capacity, the ship carries minimum bunkers. Fresh bunkers will be taken in Balboa after transit of the Panama Canal.

Question: How much cargo can the ship load?

Answer: By looking at table 2.7 it becomes apparent that the ship will not be able to load a full deadweight cargo, because available cargo space fills up before she reaches her maximum draft. Secondly, the load port of Galveston has maximum 40 feet draft at berth in brackish water. Thirdly, the Panama Canal authority has restricted maximum draft to 39 feet in "tropical" fresh water.

It is now a matter of calculating three scenarios to see which one forms the greatest limitation. The best way to do this is to calculate maximum draft in sea water for each situation and to work backwards to see how much the ship can load.

1) Available cargo space is 83,300 m^3. Multiplied by the cargo's a.d. of 0.81545 results in cargo capacity of 67,927 mt. (The same number

CARGO CAPACITY		
Panama Canal Transit		
Vessel name	PANAMA PRIDE	
SDWT	70,770	mt
Max. cubic capacity	83,300	m^3
Summer draft	13.34	m
TPC @ S. draft	60	
FWA	0.305	m
Light Weight	11,795	mt
Displacement @ S. draft	82,565	mt
Vessel's av. speed	14.0	knots
Consumption FO+DO/day	29.0	mt
"CUBIC" RESTRICTION	Wheat	
Orders	Full Cargo	
Stowage factor	44	ft^3/lt
a.d. cargo	0.81545	
Max. "cubic" cargo capacity	67,927	mt
Bunkers	300	mt
Water	30	mt
Constant	270	mt
DWT	68,527	mt
Diff. from SDWT	2,243	mt
Diff. from S. draft	0.37	m
"Cubic" draft in sea water	12.97	m
DRAFT RESTRICTION	Galveston	
Max. draft at berth (40 ft)	12.19	m

Salinity	1.019	
Diff. from seawater	0.006	
Diff. x FWA	0.07	m
Max. draft in seawater	12.12	mt
DRAFT RESTRICTION	Panama Canal	
Max. draft "tropical" f.w. (39 ft)	11.89	m
Salinity in "tropical" f.w.	0.995	
Diff. from salinity of sea water	0.030	
FWA for "tropical" fresh water	0.37	m
Max. draft in sea water	11.52	m
LIMITING DRAFT	11.52	m
Diff from S. draft	1.82	m
Diff in dwt	10,920	mt
Max. dwt	59,850	mt
Bunkers	300	mt -
Water	30	mt-
Constant	270	mt -
Max. cargo capacity	59,250	mt
BURN-OFF		
Dist. to restricted draft position	1,485	nm
Steaming days	4.4	days
Burn-off	128	mt
MAX. CARGO TO LOAD	59,250	mt
Burn-off	128	mt+
Max. cargo to load	59,378	mt

Table 2.7: Maximum cargo Panama Canal transit

can be found by dividing the grain space of 2,941,696 ft^3 by the stowage factor of 44 ft^3/lt = 66,856.7 long ton = 67,926.4 mt). Total bunkers, water and constant is: 600 mt. This means maximum deadweight is: 68,527 mt. At this deadweight the ship's draft in sea water is 12.97 m.

2) For Galveston it shows that the ship can load to a maximum draft of 12.12 m. basis sea water.

3) To pass through the Panama Canal locks the ship is limited to load to 11.52 m; basis tropical fresh water with salinity of 0.995.

The Panama Canal draft has been restricted to 39 feet (11.89 m) in

fresh water with salinity 0.995. The FWA for "tropical" fresh water is 37 cm instead of the regular FWA of 30.5 cm. (See chapter 1: 1.025 - 0.995/1.025 x (regular FWA) = 0.30/0.25 x 0.305 m = 0.37 m = 37 cm) In sea water the ship will rise 37 cm from 11.89 to 11.52 metre. This is the lowest sea water draft of the three restrictions in our example.

Summer draft of 13.34 m. minus 11.52 m. is 1.82 m. or approximately 10,920 mt cargo. (1.82 m = 182 cm x TPC of 60 = 10,920 mt). This 10,920 mt is deducted from the SWDT of 70,770 mt to arrive at: 59,850 mt. Since the ship also carries 600 mt of bunkers, water and constant on board, she can only load 59,250 mt cargo. However, on her way from Galveston to the Panama Canal, she also consumes 128 mt bunkers. This allows the ship to load an extra 128 mt; for a total of 59,378 mt.

Maximum oil cargo

The ship of table 1.1 has received orders to load a minimum of 800,000 barrels (800 MB) of Arab light crude oil with API 37 from Ras Tanura (max. sea water draft 20 metres) to Dalian in North China (max. sea water draft 15.50 m). The loading temperature is 45°C (113°F).

Question: Does the ship have enough tank space?

Table 2.8 covers an example of maximum oil capacity for a tanker. In addition to all the maximum draft and "cube" restrictions of a dry cargo vessel, tanker operators also need to calculate expansion of the cargo when the temperature rises.

Answer: Cargo capacity of the main tanks at 98% is: 127,606 m^3. Orders call for 800 MB Arabian Light crude oil with API of 37 at 60°F. This is equivalent to 127,190 m^3. At first glance it looks like there will be enough tank capacity. However, loading temperature is 113°F and the cargo will expand substantially.

API table 6A provides us with the Volume Correction Factor (VCF). At API 37 and temperature 113°F the VCF is 0.9741. Dividing 127,190 by the VCF, shows that that volume at load temperature will be 130,572 m^3. This exceeds the safe capacity (max. 98%) of the main cargo tanks.

Fortunately there are no slops on board and the slop tanks are suitable for loading. This gives the ship another 3,432 m^3 capacity for a total of 131,038 m^3; just enough to take the full 800 MB (at 60°F) cargo.

In case there are draft and/or seasonal restrictions, it is also necessary to check departure and arrival draft. The ASTM table shows that mt/bbl is 0.13321 x 800,000 bll = 106,568 mt. Bunkers, water and constant amount to 2,000 mt, raising the total deadweight to 108,568 mt. Summer deadweight of 135,160 mt – 108,568 mt leaves a balance of 26,592 mt. Divided by the TPC of 100.34 mt/cm results in 265 cm or 2.65 metre less than at Summer draft of 16.86 m. Therefore departure draft in sea

MAXIMUM OIL CAPACITY		
Vessel name	FRISIAN ENTERPRISE	
SWDT	135,160	mt
Capacity main tanks @ 98%	127,606	m^3
Capacity slop tanks @ 98%	3,432	m^3
Total capacity @ 98%	131,038	m^3
Summer draft	16.86	m
TPC @ S. draft	100.34	
FWA	0.391	m
Light weight	21,835	mt
Displacement @ S. draft	156,995	mt
Vessel's average speed	13.0	knots
Consumption FO+DO/day	53.0	mt
LOAD PORT	Ras Tanura	
Maximum draft in sea water	20.00	m
Salinity	1.025	
DISCHARGE PORT	Dalian	
Maximum draft in s. w.	15.50	m

Salinity	1.025	
Cargo to load Arab Light C.O.		
Orders in MB @ 60°F	800	MB
Orders in m^3 @ 60°F	127,190	m^3
API	37.0	
Loading temperature	45	°C
Loading temperature	113	°F
Volume correction factor (6A)	0.9741	
Volume at load temperature	130,572	m^3
Factor from bbl to mt (table 13)	0.13321	
MT	106,568	mt
Bunkers	1,700	mt
Water	50	mt
Constant	250	mt
Total deadweight	108,568	mt
Diff. from SDWT	25,592	mt
Diff. from S. draft in s.w.	2.65	m
Departure draft in s.w.	14.21	m

Table 2.8: Maximum oil cargo

water will be 16.86 – 2.65 = 14.21 m. This is less than max. departure draft of 20 m in Ras Tanura and also less than max. arrival draft of 15.50 m in Dalian. Therefore the ship can load the full cargo as per orders of 800 MB (at 60°F).

Chemicals and bunkers

Cargo quantities for chemicals and bunkers are usually expressed in mt. However, in the USA and in some other markets, most people want everything expressed in barrels (bbl). Here is an example of how to convert weight into volume at a particular load temperature. A ship needs to load 2,000 mt (in air) fuel oil with a density of 0.9924.

Question: How many bbls is this at 86°F?

Answer: ASTM table 3 shows that density of 0.9924 compares to 11 API. Table 13 shows that at 11 API there are 0.15754 mt per bbl.

2,000 mt divided by 0.15754 mt/bbl is 12,695* bbl (at 60°F).

* BBLs at 60°F can also be determined with ASTM table 58. Table 58 shows that at density 0.9924 the bbl/mt factor is 6.347. 2,000 mt x 6.347 bbl/mt = 12,694 bbl (at 60°F).

ASTM table 6B shows for 11 API and 86°F that the VCF is 0.9901. Volume at 86°F is 12,695 divided by 0.9901 is 12,822 bbl.

Appendix 2.1 shows another exercise for chemical tankers.

The above examples show the importance of proper cargo calculations. First of all you want to load maximum cargo — either deadweight or cubic — and secondly you have to make various allowances for draft and/or seasonal restrictions for safe navigation. Moreover, for oil cargoes you have to take into account volume expansion at higher temperatures.

The captain of the ship should be able to provide the ship owner with all the answers when it comes to cargo capacity but, as mentioned before, there is not always time to get the latest information. The above examples can be used as a starting point to develop in-house spreadsheets.

Chapter 3

VOYAGE COSTS ESTIMATING

With money in your pocket, you are wise and you are handsome and you sing well too.

Yiddish proverb

Introduction

In this chapter we discuss voyage costs, including port charges, Suez and Panama Canal tolls and additional transit charges. However, first we explain Worldscale; which is a compilation of nominal freight rates used for oil cargoes.

Worldscale[1] (ws)

N.B. All Worldscale rates and calculations below are fictional and are used as examples only.

"Worldscale" is a collection of about 300,000 calculated nominal freight rates for round trip voyages between tanker load and discharge ports, including SBMs and lightering locations called Transhipment Areas (TSA). The Worldscale Association has offices in London and in New York and updates the rates once a year, or more often if needed. Prior to 2001 ws rates were published in book format with a maximum of about 70,000 rates, but since 2001 ws rates are accessible via the Internet as well. The great benefit of the system is its simplicity of standardised rate making, allowing ship owners to make more or less the same daily rate of return regardless of trade route. Standardised rates also assist oil traders in estimating freight costs before they have to decide on the actual load and discharge ports. Furthermore it facilitates trading cargoes "**on the water**" (buying or selling the cargo while it is on board a tanker).

The system had its genesis during World War II, when first the British — and later the USA government — requisitioned ships from private owners to keep the war effort going. During World War II — and thereafter till about 1948 — governments sometimes out-chartered tankers to oil companies at fixed rate schedules. The underlying principle was that after making allowances for fuel and port charges, each oil company would pay the government more or less the same net daily rate.

[1] To obtain further information, go to the Worldscale Association's website. Enter: http://www.worldscale.co.uk/ and it gets you to their homepage. Click on PREAMBLE for an explanation of the rate-making system

Chapter 3

VOYAGE COSTS ESTIMATING

With money in your pocket, you are wise and you are handsome and you sing well too.

Yiddish proverb

Introduction

In this chapter we discuss voyage costs, including port charges, Suez and Panama Canal tolls and additional transit charges. However, first we explain Worldscale; which is a compilation of nominal freight rates used for oil cargoes.

Worldscale[1] (ws)

N.B. All Worldscale rates and calculations below are fictional and are used as examples only.

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After governments got out of the tanker chartering business, industry groups saw the benefit of standardisation and developed their own set of rates. To allow for actual trading conditions, nominal freight rates needed to be adjusted by a certain percentage to reflect supply and demand of vessels and other market conditions.

Nominal rates for 1989 New Worldscale are based on the following assumptions:

- Rates are expressed in US $ per metric ton.
- Rates are based on round trip voyages with one ballast leg and one loaded trip for the same set of ports; for example, Rotterdam-Houston-Rotterdam.
- The standard vessel is 75,000 SDWT capacity (cargo + bunkers + water + constant if any).
- Fuel consumption is 55 FO mt/day + 100 mt FO for purposes other than propulsion per round trip, plus 5 mt FO for each port. (There is no allowance for Diesel oil).
- The viscosity of the fuel oil is 380 cst.
- The price of fuel oil is determined in the fall (autumn), prior to the new calendar year for which the Worldscale is effective. It is assumed that the price for fuel oil is the same for each port the world over, and remains so till the next calendar year. Moreover, it is assumed that bunkers are readily available at the two ports for which the ws rate is calculated.
- Port time for load and discharge port: 96 hours (used for total voyage duration).
- Free laytime for load and discharge port: 72 hours (used for demurrage calculation).
- Daily hire is $12,000.
- Port costs (PC) are calculated in the fall (autumn) preceding the year for which the ws is effective. They are subject to exchange rates in effect at that time.
- The allowance for Canal transit is 24 hours for the Panama Canal and 30 hours for the Suez Canal. The distance covered in both canals is not* taken into account in the total round trip miles.

* *In the examples of voyage calculations later on in this chapter, distance is taken into account to arrive at more realistic total fuel consumption.*

The great advantage of the system is that it cuts down on having to calculate a great number of freight rates each time a cargo comes on the market. Let's say a trader plans to buy a cargo of gasoline from a US Gulf

coast refiner in either Corpus Christi, Freeport, Houston, Baton Rouge or Pascagoula and plans to sell it to another trader in NW Europe, who may want to take delivery in either Le Havre, London, Antwerp, Rotterdam, Hamburg or Oslo. Five possible load ports and six possible discharge ports requires the calculation of 30 possible freight rates. This becomes rather cumbersome, especially since tanker fixtures are often concluded in a short time span.

Worldscale has taken over the task of calculating a nominal rate for all these combinations. Let's assume the nominal ws rate (ws at 100%, or **ws "flat"**) between Houston and Hamburg is $10.00 per mt. Since market sentiment is pretty much the same for voyages between all the ports mentioned above and for a similar type ship suitable for this cargo, market rate can be expressed as a percentage. Let's assume the market rate for a 30,000 dwt clean product tanker between the US Gulf and NW Europe is 175% or ws 175. Applying 175% to $10.00 yields $17.50 per mt. To calculate actual freight rates for the other possible voyages, all you have to do is apply the current ws market rate to the respective "flat" ws rates for these ports listed in Worldscale. For example if the flat rate between Corpus Christi and Oslo is listed as $11.00/mt, actual rate at ws 175 is $19.25/mt.

In addition to Worldscale spelling out hours, terms and conditions (WSHTC), it also has a section with **fixed and variable rate differentials**. Examples of **fixed differentials** are: Suez and Panama Canal transit cost and USA OPA90 liability insurance assessments. Fixed differentials are to be paid by the voyage charterer in full; regardless of market ws rate. (Fixed differentials are not subject to ws percentage variations).

Sometimes charterers pay Suez or Panama Canal transit expenses directly to the Canal Authorities themselves. In that case the fixed rate differential for Canal transit payment shall not be invoiced by the shipowner to the charterer.

Please note, the Worldscale formula for reimbursement of Canal charges is different from **toll** calculations in tables 3.3, 3.4 and 3.5, because in addition to tolls, other transit charges are included in the ws formula.

Voyages through the Suez Canals have an S behind the published ws flat rate; for the Panama Canal it is listed as ws flat: P. Voyages around Cape of Good Hope are listed as ws flat: C. Sometimes it is a combination of two letters, if the ballast leg is one way and the loaded leg via another route.

Variable differentials apply mainly to additions or reductions to charges for certain ports listed in Worldscale. For example a listed port may have a flat rate based on docking at a wharf, but may also have an SBM, with lower port charges. In that case a variable rate differential needs to be deducted from the listed "wharf" rate to arrive at the flat rate for the

SBM. Usually a rate is listed for one particular berth, like an oil company dock. However, if the ship docks at a Government wharf, dockage may be higher and an adjustment needs to be added to the listed ws rate. Variable differentials are subject to ws percentage variations.

For example if the flat ws rate between port L and port D is $15.00, with a variable differential of $0.80 and the tanker is fixed at ws 110%; actual rate is 1.1 x ($15.00 + $0.80) = $17.38/mt.

Demurrage

WS also has a table with daily demurrage rates for various SWDT tonnage ranges. It is necessary to apply the negotiated ws percentage to the demurrage rate. For example a VLCC of a certain SWDT has a daily demurrage rate of $50,000. If the freight was fixed at ws 43%, daily demurrage rate for the ship is $21,500.

Since ws demurrage rates don't always reflect actual cost, owners and charterers often negotiate a fixed rate outside of the standard ws. Actual demurrage rate is a matter of negotiation and can be used as a bargaining point. For example a charterer may want extra free laytime, such as for lightering. In return an owner may ask for a higher daily demurrage rate or for a higher freight rate. Of course, if the ship is loaded and discharged within the extra allowable laytime, no demurrage is due.

Even though a ship owner and a charterer are free to negotiate any tanker freight rate they wish, most fixtures are based on Worldscale. To have access to the Worldscale rates, it is necessary to be a subscriber. The new electronic system automatically incorporates fixed and variable differentials and offers "through" rates from the Arabian Gulf, Black Sea and Lake Maracaibo, instead of having to use reference points. Port dues and charges for owner or for charterer are referenced together with the ws flat rate. All this makes it simpler to establish proper ws rates than the book version and it cuts down on mistakes. Moreover, instant updates (supplements) to the system are made electronically, instead of by mail. The system can be accessed anywhere in the world with Internet capability on a 24 hours a day, 365 days a year basis.

If there is no immediate access to the Internet, there is a quick way to determine approximate ws rate, based on Worldscale parameters, on distance and on estimated port costs. Our example in table 3.1 shows a voyage between Ras Tanura in the Arabian Gulf and Ulsan in Korea. Fixed ws parameters have already been entered and only the entries pertaining to this particular voyage are listed in **bold**. Estimated ws flat rate for this voyage is calculated as $11.70/mt.

On certain routes, such as from West Africa to India or to the Far East, or from Europe to the Far East, instead of using Worldscale, owners and

Estimated WS Calculation		
Est. F.O. price used for ws 2002	**$ 143.25**	
From		**Ras Tanura**
To		**Ulsan**
Distance	**6,228**	nn
Roundtrip miles in nautical miles	12,456	nm
Speed	14.5	knots
Miles/day	348	nm/day
Sea days	35.79	days
Port days	4	days
Canal days	0	days
Total days	39.79	days
F.O. per day at sea	55	mt
Total F.O. at sea	1,968	mt
Other F.O. + fuel in ports	110	mt
Total F.O.	2,078	mt
Cost of F.O.	$ 143.25	per mt
Total cost of F.O.	$ 297,674	
Daily hire	$12,000	per day
Total hire	$477,480	
Load port cost*	**$ 35,000**	
Discharge port cost*	**$ 50,000**	
Canal cost**	$ 0	
Total voyage cost	$ 860,154	
"ws vessel" SDWT	75,000	mt
Bunkers	**1,000**	mt
Water	**100**	mt
Constant **	**400**	mt
Cargo capacity	73,500	mt
Cost/mt (= ws 100)	$ 11.70	/mt
** Based on 75,000 SDWT vessel*		
*** If applicable*		

Table 3.1: Estimated Worldscale calculation

charterers often agree on a lump sum (ls) payment. Of course, lump sum freight rates are subject to market forces as well and change for every voyage. It is important to specify who pays what. For example: are Suez Canal transit costs included in the lump sum rate? To make things clearer, it is advised to use the abbreviation WSHTC (Worldscale Hours, Terms and Conditions) in the fixture contract.

If the lump sum rate is for a range of ports, it is important to describe the boundaries in detail. The Singapore-Japan range is very wide. In case of multiple port calls, the rotation needs to be specified. For example, a charterer may want the ship to discharge part-cargo first in Augusta in Sicily and the balance in Rotterdam. However, if your next charter is from Sidi Kerir in Egypt to a US East Coast port, you should try to negotiate port rotation with Rotterdam first and then Augusta.

WS in reverse

If the variable cost elements of a particular cargo calculation are quite different from the standard ws parameters, owners may want to calculate voyage cost and cost/mt based on "actuals" and then compare it to the

	Steam VLCC		Diesel VLCC	
Cost F.O. (no D.O.)	**$ 200.00**	$/mt	**$ 200.00**	$/mt
From	**Arabian Gulf**		**Arabian Gulf**	
To	**NW Europe Port**		**NW Europe SBM**	
Distance	**12,000**	miles	**12,000**	miles
Roundtrip miles	24,000	miles	24,000	miles
Speed	**15.5**	knots	**14.5**	knots
Miles/day	372	m/day	348	m/day
Sea days	64.52	days	68.97	days
Port days	**7**	days	**7**	days
Total days	71.52	days	75.97	days
Daily F.O. consumption at Sea	**160**	mt/day	**60**	mt/day
Total F.O. at Sea	10,323	mt/day	4,138	mt/day
Daily F.O. consumption in Port	**5**	mt/day	**5**	mt/day
F.O. in Port	35	mt	35	mt
F.O. for Discharge, ISG, COW	**200**	mt	**200**	mt
Total F.O. per r.t.	10,558	mt	4,373	mt
Total Cost of F.O.	$ 2,111,600		$ 874,600	
Daily TC eq.	**$ 28,000**	per day	**$ 28,000**	per day
Total Op. Cost	$ 2,002,560		$ 2,127,160	
Load port cost *	**$ 35,000**		**$35,000**	
Discharge port cost *	**$ 400,000**		**$10,000**	
Total Voyage Cost	$ 4,549,160		$ 3,046,760	
Cargo Capacity	**270,000**	mt	**270,000**	mt
Actual cost/mt	$ 16.85		$ 11.28	
WS Flat	**$ 23.00**		**$ 22.00**	
Actual ws for these examples	73	%	51	%
Current market rate in ws	**50**	%	**50**	%
** Based on actual vessel size*				

Table 3.2: "Reverse" Worldscale calculation

listed ws rate. Let's say two VLCCs each load 270,000 mt crude oil at a Middle East (ME) Gulf port for discharge in NW Europe. The first ship is turbine driven with high fuel consumption, but with a higher speed than the Diesel propelled ship. The turbine ship will discharge at a berth, but the Diesel ship will lighter its full cargo offshore. That is why there is a difference in port costs and in ws flat rate.

As can be seen, the Diesel ship is losing money, but not nearly as much as the turbine tanker. Break-even point under this scenario for the turbine tanker is ws 73 and ws 51 for the Diesel ship. One of the first things the owner of the turbine tanker can do is slow her down and save a lot of fuel, as discussed in chapter 9. Sometimes fast ships demand a premium, when after a sharp increase of the price of crude oil, producers try to get it to market quickly.

The above calculations demonstrate that market rates may not at all reflect actual cost. If owners just look at ws, they may lose out. If a charterer is really interested in voyage chartering a VLCC, the owner of the Diesel tanker should try to negotiate a rate above the ws 51 break-even point. Of course when the market is at ws 120, charterers can use the same argument that actual voyage cost is much lower than market rate. However, shipping rates are mainly driven by supply and demand of shipping space for a particular category vessel available in a certain part of the world; not by actual operating cost.

For time-charter purposes it is important to determine the time-charter equivalent (TCE) — as discussed later in this chapter — to evaluate daily cost to the owner. (Under a t/c the charterer pays for fuel and for port charges).

Suez Canal

Long before the modern Suez Canal came into being, several attempts were made to connect the Mediterranean with the Red Sea. It is believed that almost four millennia ago a canal was dug to connect the Red Sea — which at that time extended well North of the current Bitter Lakes — with the Nile. Later on several more attempts were made, but the canal either sanded up, or in one instance was closed for security reasons.

In 1859 work was started on the modern Suez Canal. After 10 years of excavation it was officially opened in 1869. The current length of the Canal — including approaches — is about 100 nm and takes about one day to traverse; depending on waiting time. Ships move in convoys. Every day there are two Southbound convoys and one Northbound. Many VLCCs in ballast from European ports move Southbound to a load port in the Arabian Gulf. However, once loaded, they are too deeply laden to traverse the Suez Canal and steam to Europe, or to the USA, via the Cape

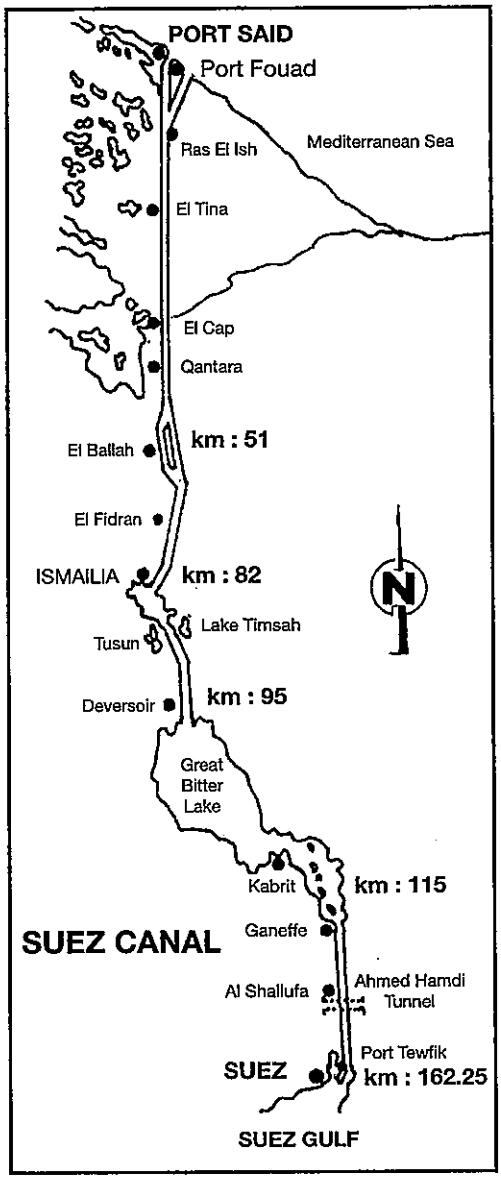

Figure 3.1: Suez Canal

of Good Hope. The same is true for bulk carriers in ballast from Europe on their way to load ports in Australia and returning by way of South Africa.

At the time of writing, maximum draft of the Canal is 19 metres (62 feet), but subject to beam restrictions to allow for squat. Plans to extend this to 22 metres by 2010 have been put on hold for now. It would take an enormous investment to expand the Canal, and would only benefit a limited number of the largest ships.

To entice Capesize bulk carriers that haul coal or iron ore from Australia to Europe to use the Suez Canal instead of going around Cape of Good Hope, Suez Canal Authorities have been offering discounts on tolls of up to 75%.

The Canal also experiences competition from the SUMED pipeline, between Ain Sukhna on the Gulf of Suez and Sidi Kerir, just Southwest of Alexandria on the Mediterranean. The pipeline has a diameter of 42" (1.07 metres) and is 320 km long. Tankers (mainly VLCCs) from load ports in the Arabian Gulf or Red Sea discharge their crude oil at the Ain Sukhna terminal via SBMs. On the other side, at Sidi Kerir, VLCCs or smaller tankers load the crude oil from SBMs and distribute it to ports in the Mediterranean, Europe or to the Americas. Both SUMED ports have large shore tank capacities and can accommodate tankers of up to 500,000 dwt.

There are several Suez Canal toll "calculators" on the Internet. However, computer access to the Internet may not always be available. For those occasions we have developed a simple spreadsheet to calculate Suez Canal Tolls (see table 3.3) Our example shows a ship of less than 70,000 SCNT (Suez Canal Net Tons). For a larger ship it is necessary to use an extra toll tier as per table 3.4. Once the spreadsheet has been set up for the various tiers, all you have to do is enter the proper SCNT for the vessel, the current SDR/US$ conversion rate, and total toll for the ship will show up in the double bordered cells. For example the *FRISIAN*

ENTERPRISE measures 63,886 SCNT. This is 23,886 more than the 20-40,000 tier. Since this is an obo (oil bulk ore), Suez Canal tolls are based on actual — or in case of a ballast trip — on the next cargo carried. If she passes the Suez Canal as a laden tanker, canal tolls will be: $193,617. If she transits the canal in ballast on her way to load a dry cargo, canal tolls will be: $149.883.

Please note; rates are stated in **SDR (Special Drawing Rights)**, which are based on a basket of major currencies. However, most shipping costs are expressed in US dollars. In the top right-hand corner of the table the current SDR exchange rate has been entered. By applying this exchange rate to SDR rates, total toll is calculated in US dollars. The latest SDR rates can be found where currency exchange rates are listed; either in financial publications or on the Internet.

m/v *FRISIAN ENTERPRISE*	SCNT **63,886**			1 SDR = $ **1.34**	
Rates in effect 1 July 2003				SDR changes daily	
C.O. tankers: laden & ballast					
		Rates in SDR		Totals in US $	
SCNT	^SCNT	Laden	Ballast	Laden	Ballast
0-5,000	5,000	6.49	5.52	$ 43,483	$ 36,984
5-10,000	5,000	3.62	3.08	$ 24,254	$ 20,636
10-20,000	10,000	3.25	2.77	$ 43,550	$ 37,118
20-40,000	20,000	1.40	1.19	$ 37,520	$ 31,892
40-70,000	23,886	1.40	1.19	$ 44,810	$ 38,089
			TOTAL	US $ 193,617	US $ 164,719
Product tankers: laden & ballast					
0-5,000	5,000	6.75	5.52	$ 45,225	$ 36,984
5-10,000	5,000	3.77	3.08	$ 25,259	$ 20,636
10-20,000	10,000	3.43	2.77	$ 45,962	$ 37,118
20-40,000	20,000	1.93	1.19	$ 51,724	$ 31,892
40-70,000	23,886	1.93	1.19	$ 61,774	$ 38,089
			TOTAL	US $ 229,944	US $ 164,719
Bulk Carriers: laden & ballast					
0-5,000	5,000	7.21	6.13	$ 48,307	$ 41,071
5-10,000	5,000	4.14	3.52	$ 27,738	$ 23,584
10-20,000	10,000	2.97	2.53	$ 39,798	$ 33,902
20-40,000	20,000	1.05	0.90	$ 28,140	$ 24,120
40-70,000	23,886	1.00	0.85	$ 32,007	$ 27,206
			TOTAL	US $ 175,990	US $ 149,883
Add: Pilotage + Agency + Other Charges					

Table 3.3: Suez Canal Tolls for vessels less than 70,000 SCNT

In the fall (autumn) of 2001 the author had the distinct pleasure of spending a week on board the BERGE STAVANGER. The 306,430 dwt VLCC had loaded a full cargo of crude oil in the Arabian Gulf for the US. Instead of going around the Cape, the owners of the oil wanted it to get it to market quickly and directed the ship to proceed to Ain Sukhna. The ship offloaded part of her cargo at the SUMED pipeline to enable her to traverse the Suez Canal. Once on the other side, she reloaded her cargo at Sidi Kerir and continued her voyage to LOOP in the Gulf of Mexico.

m/v *BERGE STAVANGER* SCNT **148,736** 1 SDR = $ **1.35**

Rates in effect 1 July 2003

C.O. tankers; laden & ballast

		Rates in SDR		Totals in US $	
SCNT	^SCNT	Laden	Ballast	Laden	Ballast
0-5,000	5,000	6.49	5.52	$ 43,808	$ 37,260
5-10,000	5,000	3.62	3.08	$ 24,435	$ 20,790
10-20,000	10,000	3.25	2.77	$ 43,875	$ 37,395
20-40,000	20,000	1.40	1.19	$ 37,800	$ 32,130
40-70,000	30,000	1.40	1.19	$ 56,700	$ 48,195
70,000 +	78,736	1.21	1.03	$ 128,615	$ 109,482
			TOTAL	US $ 335,233	US $ 285,252
Product tankers; laden & ballast					
0-5,000	5,000	6.75	5.52	$ 45,563	$ 37,260
5-10,000	5,000	3.77	3.08	$ 25,488	$ 20,790
10-20,000	10,000	3.43	2.77	$ 46,305	$ 37,395
20-40,000	20,000	1.93	1.19	$ 52,110	$ 32,130
40-70,000	30,000	1.93	1.19	$ 78,165	$ 48,195
70,000 +	78,736	1.93	1.03	$ 205,147	$ 109,482
			TOTAL	US $ 452,738	US $ 285,252
Bulk Carriers; laden & ballast					
0-5,000	5,000	7.21	6.13	$ 48,668	$ 41,378
5-10,000	5,000	4.14	3.52	$ 27,945	$ 23,760
10-20,000	10,000	2.97	2.53	$ 40,095	$ 34,155
20-40,000	20,000	1.05	0.90	$ 28,350	$ 24,300
40-70,000	30,000	1.00	0.85	$ 40,500	$ 34,425
70,000 +	78,736	1.00	0.85	$ 106,294	$ 90,350
			TOTAL	US $ 291,852	US $ 248,368

Add: Pilotage + Agency + Other Charges

Table 3.4: Suez Canal Tolls for vessels over 70,000 SCNT

Table 3.4 shows Suez Canal tolls for the *BERGE STAVANGER*, a 306,430 VLCC. Her SCNT is 148,736. This is 78,736 more than the 70,000+ tier. Total tolls for a cargo of crude oil will be $335,233, on the basis of 1 SDR = US $1.35.

As seen in table 1.6, product tankers are normally no bigger than 120,000 mt. However, since the Summer of 2002 several cargoes of bunker fuel have been shipped from the Gulf of Mexico to Singapore in VLCCs via the Cape of Good Hope. However, if the *BERGE STAVANGER* hauled a cargo of FO through the Suez Canal, tolls would amount to $452,738.

SUEZ CANAL TOLL CALCULATION

VESSEL : *BERGE STAVANGER* EX NAME :

S.C.N.T. : 148,736 DWT : 306,430 DRAFT : 17.98 m - 59 ft

TRANSIT DUES

CATEGORY : Tanker crude oil

CONDITION : Loaded

SDR/USD RATE: 1.35

S.C.N.T TONS	SDR RATE	SDR AMOUNT
5000	6.49	32,450
5000	3.62	18,100
10000	3.25	32,500
20000	1.4	28,000
30000	1.4	42,000
78736	1.21	95,271
TOTAL SDR DUES		248,321
EQUIV. TO USD		335,233

ALL FIGS. ARE US $ ESTIMATED

TOLLS AS ABOVE	$ 335,233
CANAL PROJECTOR/ELECTRICIANS	$ 546
MOORING BOATS/MEN	$ 1,336
PORT AND LIGHT DUES	$ 22,222
PILOTAGE	$ 350
SUNDRY	$ 1,400
GRATUITIES	$ 100
BANK CHARGES	$ 425
TELECOMM	$ 100
ESCORT TUG	$ 17,820
TOTAL	US $ 379,532

Table 3.5: Suez Canal Tolls for BERGE STAVANGER

(1 SDR @ US $1.35). Please note, the ship would not be able to transit the Canal fully laden, but even with a partial cargo, she would still have to pay the full canal toll based on her size; unless the Canal Authorities offered a rebate.

Table 3.5 shows Suez Canal tolls for the *BERGE STAVANGER* as well, but calculated with an Internet calculator. In addition to canal tolls, normal port charges are listed also. The canal tolls in the amount of $335,233 agree with those calculated in table 3.4.

The charges for Canal projector/electricians are for a large searchlight that can be rented from the Suez Canal Authorities. The light is mounted on the ship's bow and a technician scans the waterway and the banks to locate aids to navigation at night. Port and Light dues are a contribution to maintain Egypt's ports, lighthouses and navigation beacons. An escort tug is not always necessary, but may be required if, for instance, the ship had lost an anchor, or is otherwise somewhat impaired due to wide beam and/or deep draft.

FERDINAND DE LESSEPS

1805-1894

Born into a family of distinguished French diplomats, Ferdinand de Lesseps studied law and served in various countries as a consul. In 1832 he was stationed in Alexandria, Egypt, where he became familiar with Napoleon Bonaparte's plans from the beginning of the 19th century, to dig a Canal to connect the Mediterranean with the Red Sea. During his stay in Egypt, Mr. de Lesseps befriended the son of the Turkish Viceroy; the de facto Ruler of Egypt. In 1854 he received an invitation from the Viceroy's son, who had succeeded his father, to discuss the possibility of building a Canal. Although no engineer, Mr. de Lesseps was a tireless promoter. After many setbacks he was able to raise enough money to start excavation of the Canal in 1859. In 1869 it was officially inaugurated.

Unfortunately Mr. de Lesseps' efforts to build the Panama Canal were not successful. Work was started in 1880, but after eight long years of being confronted with geographical obstacles and a hostile climate; resulting in the deaths of thousands of workers, the effort ended in failure. In 1904 the US gained control of the old French Panama Canal company and the project was completed in 1914.

Not only did Mr. de Lesseps have an eminent career in the French foreign service, but after completion of the Suez Canal he became the symbol of France's ingenuity and enterprise. He also had an interesting domestic life. First of all he was related to empress Eugenia; wife of emperor Napoleon III, who ruled France from 1852 to 1870 during the time the Suez Canal was built. De Lesseps was married to his first wife for fifteen years till her death from scarlet fever. The marriage produced six children. In 1869, when Mr. de Lesseps was 64, he married his second wife, who was 20. The marriage produced no less then 11 children; the last of which was born in 1885; the year Mr. de Lesseps turned 80. Some jokers proclaim that this achievement rivalled the construction of the Suez Canal.

Please be aware that during the last few years BIMCO has warned ship operators repeatedly against phoney invoices, issued by non-existing Egyptian companies for bogus charges; like removing trash, or providing extra mooring men. It is important to use a well-known agent to assist your operations department with a safe and expedient Canal transit.

Panama Canal

The Panama Canal was completed in 1914, connecting the Atlantic across the Isthmus of Panama with the Pacific Ocean. Including approaches, the Canal runs for about 50 miles. Coming from the Atlantic, a ship is lifted via a set of three locks at Gatun to an elevation of 85 feet (26 metres) above sea level. She then traverses Gatun Lake and crosses the Continental Divide through the Cut of Gaillard. At the Pedro Miguel lock the ship is lowered to Miraflores Lake, and via a set of two Miraflores locks back to sea level on the Pacific side.

Calculating Panama Canal tolls is simpler than Suez Canal tolls[2], because first of all there are fewer ship categories and fewer size/rate tiers. Furthermore rates are already in US dollars. For example, our bulk carrier in table 2.6 with a cargo of wheat from Galveston to Yokohama with a tonnage of 31,850 PC/UMS NT (Panama Canal Universal Measurement System Net Tons) has to pay $92,373 in Panama Canal tolls.

For both the Suez and the Panama Canal, other charges have to be added, such as possible extra pilot and/or tug charges and agency fees. Some of the rate "calculators" list these additional charges. Transit of the Suez and of the Panama Canal are subject to extensive Rules and Regulations. Please make sure your office has the latest information from agents and brokers, from publications and from up-to-date Internet sites.

Voyage estimating

First some terms used in ship chartering need to be explained:

Owner:

This is the registered owner of the vessel.

Time-chartered owner:

After a party has time-chartered the vessel, they become the **disponent owners** or **head charterers**. When the head-charterer out-charters (**re-lets**, or **sub-lets**) the vessel to another time-charterer or to a voyage charterer, the disponent owner is called the "time-chartered owner" in charter parties. Confusing, isn't it? Therefore it is advisable to spell out to brokers who is the registered vessel owner, who is the disponent owner/ head charterer, who is the sub-let time charterer and who is the voyage

[2] The website for the Panama Canal Authority with information on Canal tolls and regulations is at: http://www.pancanal.com/

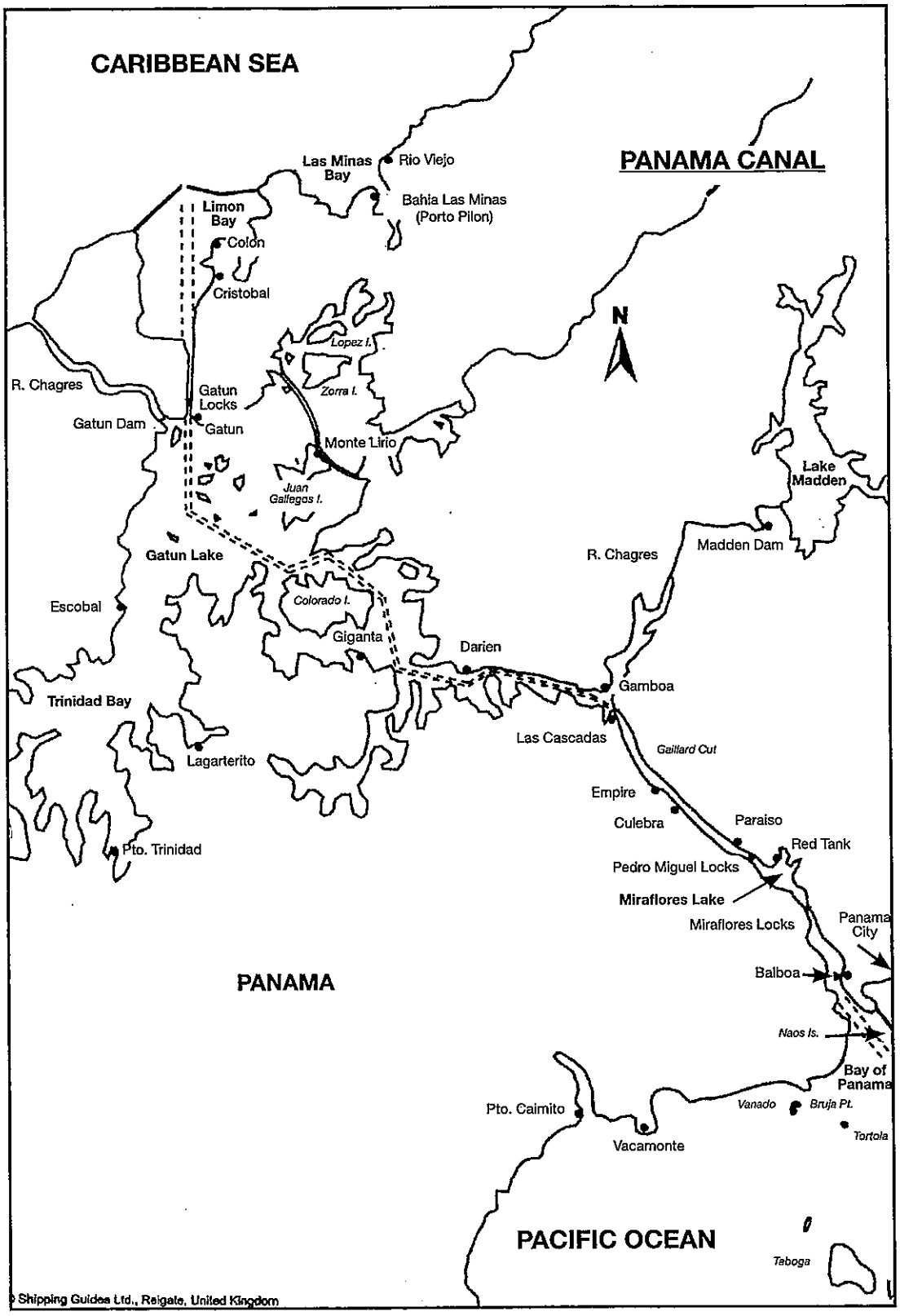

Figure 3.2: Panama Canal map

m/v **Panam Max** PC/UMS NT		**31,850**			
Rates in effect as of 1 July 2003					
Tankers & Bulk Carriers					
		Rate		Total in US $	
PC/UMS NT	^ PC/UMS NT	Laden	Ballast	Laden	Ballast
0-10,000	10,000	$ 2.96	$ 2.35	$ 29,600	$ 23,500
10,000-20,000	10,000	$ 2.90	$ 2.30	$ 29,000	$ 23,000
> 20,000	11,850	$ 2.85	$ 2.26	$ 33,773	$ 26,781
			TOTAL	$ 92,373	$ 73,281

Table 3.6: Panama Canal Tolls (as of 1 July 2003)

charterer. The time-chartered owner pays hire to the registered owner. The voyage charterer pays freight in the form of $/mt.

Demise charterer:

This is when an owner cedes technical and commercial control of the vessel to another party, like under a **bare-boat charter**. The demise charterer is responsible for all operating and voyage costs and needs to employ his own master, officers and crew and pays bare-boat hire to the registered owner.

The cost of owning and operating a ship can be split into various cost elements:

1) **Capital costs**

   Principal and interest.

2) **Operating costs**

   Crew wages + benefits, training, vacation pay, travel expenses.

   Spare parts, lubricating oils, stores.

   Office expenses and overhead.

   Vessel's maintenance and repair costs, surveys, dry-docking costs.

   Hull and machinery insurance, liability (P&I) insurance.

3) **Voyage costs**

   Bunkers (FO & DO).

   Port charges (pilots, tugs, dockage).

   Canal dues.

   Possible insurance for over-age ships, extra war or oil pollution insurance.

   Hold or tank cleaning costs, fumigation.

   Customs and Immigration overtime fees.

If the owner operates the ship for own account to haul cargo for a

specific charterer, or out-charters her to a voyage charterer, the owner pays for items 1, 2 and 3. The voyage charterer pays freight based on $/mt to the ship owner.

Under a bare-boat (bb) charter the ship owner pays for item 1 and the bb charterer pays hire to the owner plus costs listed under items 2 & 3.

Under a time-charter (t/c) the ship owner pays for items 1 & 2. The time-charterer pays hire to the owner plus costs listed under item 3.

4) **Load and discharge costs**

Cost of loading, stowing, trimming, discharging.

For tanker charters the owner of the cargo usually pays for 4. However, under dry-cargo charters sometimes the ship owner — or the charterer — pays for some of the load and discharge costs.

In this chapter only **voyage costs** will be discussed. Table 3.7 is an example of a voyage cost calculation for a tanker in ballast from Rotterdam via the Suez Canal to load at an SBM in Ras Tanura and to proceed via the Cape of Good Hope to a lightering or Transshipment Area (TSA), approximately 60 nm off the coast of Galveston, Texas.

Since table 3.7 looks rather cryptic, the spreadsheet will be explained piece by piece. Just as in previous tables, generally speaking entries to be made in the spreadsheet for a particular voyage are in **bold**. Entries in regular print are those derived from original entries elsewhere in the spreadsheet, or those that are computer generated.

Route	Est. w.s. flat	Market	Frt. rate	Cargo mt	Gross Freight
CO: Ras Tanura SBM-Galveston TSA	**$ 20.00**	**45**	$ 9.00	**270,000**	$ 2,430,000
Cargo 2	$ 0.00	0	$ 0.00		
				Total freight	$ 2,430,000
Vessel SDWT	**305,000** mt			Gross/day	$ 34,714
				1 ws point =	$ 54,000

Listed first are the cargo (CO = Crude Oil) and the load and discharge ports. In our example it is assumed that the ws flat is $20.00 per mt. To find the ws **flat rate**, look under the discharge port in Worldscale. In this case look under the heading Offshore Galveston and find the rate for Ras Tanura SBM. (In the Worldscale book you had to find the rate from Ras Tanura to Quoin Island and from Quoin Island to Offshore Galveston, but the Internet version shows direct "through" rates). In our example the current market rate for VLCCs on this route is ws 45. Applying 45% to $20.00 gives an actual **freight rate** of $9.00/mt. The ship loads 270,000 mt; yielding gross **freight revenue** of $2,430,000. Later on in the spreadsheet the computer will calculate that the total **round trip** takes 70 days. Dividing

Route	Est. w.s. flat	Market	Frt. rate	Cargo mt	Gross Freight
CO: Ras Tanura SBM-Galveston TSA	**$ 20.00**	**45**	$ 9.00	**270,000**	$ 2,430,000
Cargo 2	$ 0.00	0	$ 0.00		
				Total freight	$ 2,430,000
Vessel SDWT	**305,000** mt			Gross/day	$ 34,714
				1 ws point =	$ 54,000

ROUTES			Seadays	Day	Ports	Port Charges
Ballast: Rotterdam-Port Said	**3,274**	nm	9.7	**1**	**Lv. Rotterdam**	
Ballast: Port Said-Ras Tanura	**3,075**	nm	9.2	**10**	**Suez Canal**	**Charterer paid**
CO: Ras Tanura SBM-Galveston TSA	**12,459**	nm	37.1	**21**	**Ras Tanura SBM**	**$ 30,000**
Total Miles	18,808	nm	56.0	70	**Galveston TSA**	**$ 10,000**
Vessel Speed	**14.0**	knots			Total Port Costs	$ 40,000

HIRE					
				Cost/Sea day	$ 35,500
Est. roundtrip sea days	56.0	days		Cost/Port day	$ 26,429
Est. port days	14.0	days			
Est. total days	70.0	days	Daily Hire +	Net rev/day	= daily TC eq.
Time charter hire per day	**$ 23,000**	per day	$ 23,000	$ 3,307	$ 26,307
Total gross hire	$ 1,610,000		Monthly eq.	$ 2.29	per dwt/mo.

FUEL CONSUMPTION			**$ /mt**	Total
FO at sea	**75**	mt/day		
FO in port	**5**	mt/day		
Cargo Heating	**0**	mt/day		
COW, Discharge, Clean, Inert	**100**	mt		
Total FO	4,370	mt	**$ 150**	$ 655,500
MDO at sea	**5**	mt/day		
MDO in port	**5**	mt/day		
COW, Discharge, Clean, Inert	**20**	mt		
Total MDO	370		**$ 250**	$ 92,500
Total FO + MDO				$ 748,000

COMMISSIONS		Comm.
Address; cargo 1	$ 0	**0 %**
Broker 1; cargo 1	$ 30,375	**1.25 %**
Broker 2; cargo 1	$ 0	**0 %**
Commission on demurrage	$ 2,973	**1.25 %**
Total commissions cargo 1	$ 33,348	**1.25 %**

RECAP			Day	Cash-Flow	
Gross freight revenue	$ 2,430,000	+	1	Pay 30 day hire	$ 690,000 -
Demurrage (basis: Cost/Port day)	$ 237,861	+	1	50% bunkers	$ 374,000 -
Total income	$ 2,667,861		21	Ras Tanura SBM	$ 30,000 -
			21	50% bunkers	$ 374,000 -
			30	Pay 30 day hire	$ 690,000 -
Hire	$ 1,610,000	-	60	Pay bal. hire	$ 230,000 -
Bunkers	$ 748,000	-	70	Galveston TSA	$ 10,000 -
Port Charges	$ 40,000	-	75	Freight	$ 2,430,000 +
Mgmt cost, communication, other	**$ 5,000**	-	75	Demurrage	$ 237,861 +
Commissions	$ 33,348	-	75	Commissions	$ 33,348 -
Total trip cost	$ 2,436,348	-	75	Mgnt. fees etc.	$ 5,000 -
Net voyage revenue	$ 231,513			Net voyage revenue	$ 231,513
No. of days	70	days			
Net revenue per day	$ 3,307	per day		Net rev/350 days	$ 1,157,450

Table 3.7: Voyage cost VLCC Arabian Gulf—U.S. Gulf

total freight by number of voyage days, gives us **gross voyage revenue per day** in the amount of $34,714. This number is sometimes listed in "trade publications" to indicate the **gross earning power** of the vessel based on prevailing market forces. The route section also leaves room to enter an intermediate or a **back-haul** voyage. Of course in that case the rest of the spreadsheet needs to be adjusted accordingly.

Also listed in the first block is the **difference one ws** point will make. In our example it is 1% of $ 20.00, or $ 0.20 per mt. For the full cargo this is $ 54,000. During heated charter party negotiations it is sometimes easy to forget that by acceding half a point here and there, you actually give up real cash. Some people refer to this as the Las Vegas syndrome, where casino owners let people gamble with chips to make them forget that real money is involved.

The same spreadsheet can be used for dry cargo as well. The only difference is inserting the **freight rate**. Instead of taking the two-step approach for oil with ws flat and ws percentage, for dry cargo just insert the actual negotiated dry cargo freight rate under Frt. rate. For example, iron ore from Tubarao to Rotterdam.

Route	Est. ws flat	Market Frt. rate		Gross Freight
Iron ore: Tubarao-Rotterdam		**$6.85**	**120,000**	$822,000

Of course, the rest of the spreadsheet has to be modified accordingly for this particular voyage.

A big difference between oil and dry cargo chartering is port costs; especially dockage charges (fees for using the berth). As mentioned before, in Worldscale, **port costs** for the standard ws tanker have been incorporated in the ws flat rate. Moreover, many oil charter parties contain a clause that states that there will be no cost to the ship owner for using the berth (see ASBATANKVOY clause 12). These dock owners recoup the cost of operating their docks by adding it to the price of the products they sell.

The same cannot be said for **dry cargo docks**. In many instances the shipowner (or the time-charterer) is responsible for very high dock charges. For example major grain trading corporations with marine terminals along the lower Mississippi River first negotiate a low freight rate with the ship owner, and at the same time hit him with very high berth fees for using their own docks. A much better system from the shipowner's point of view would be to split dry cargo freight rates into a **transportation** and into a **port cost portion**. The latter is to be billed directly to charterers. No doubt this would result in much more reasonable dockage and port fees.

It is a different story when it comes to government owned terminals. Some high cost **government operated ports** justify their high dockage

fees by claiming that they invest in deep draft ports, modern infrastructure and in up-to-date load and discharge facilities; resulting in faster turn-around times. Sometimes this is true; sometimes it is not. Some ports collect rather nebulous fees, like for example $ 40,000 for (mooring) line handling. It makes you wonder whose pockets are stuffed with this kind of outrageous fee.

The next section lists voyage route distances, the vessel's speed and port charges for our tanker voyage.

ROUTES			Seadays	Day	Ports	Port Charges
Ballast: R.dam-Ras Tanura via Suez	**3,274**	nm	9.7	**1**	**Lv. Rotterdam**	
Ballast: Port Said-Ras Tanura	**3,075**	nm	9.2	**10**	**Suez Canal**	**Charterer paid**
CO: Ras Tanura SBM-Galveston TSA	**12,459**	nm	37.1	**21**	**Ras Tanura SBM**	**$ 30,000**
Total Miles	18,808	nm	56.0	70	**Galveston TSA**	**$ 10,000**
Vessel Speed	**14.0**	knot			Total Port Costs	$ 40,000

Distances[3] are in nautical miles to the load and to the discharge port. In our example total distance is broken up from last discharge port (Rotterdam) to the Suez Canal and from Suez Canal to the load port Ras Tanura. By dividing the vessel's speed of 14 knots x 24 hours into the various distances, the number of steaming days per leg can be calculated. For example, distance from Rotterdam to Port Said on the Mediterranean side of the Suez Canal is 3,274 nm. Dividing this by 14 knots and by 24 hours, yields 9.7 steaming days. This is listed under column: **Seadays**.

The next columns: **Day** and **Ports** show approximately where the ship is expected to be on a particular day into the voyage. The last column shows estimated **port costs**[4]. Suez Canal charges have not been listed, because under Worldscale they will be billed separately to the voyage charterer, so it is just a **pass-through** charge; not an ultimate cost. It is also possible that the charterer pays charges as per Worldscale, directly to the canal authorities.

HIRE			Cost/Sea day	$ 35,500	
Est. roundtrip sea days	56.0	days	Cost/Port day	$ 26,429	
Est. port days	14.0	days			
Est. total days	70.0	days	Daily Hire +	Net rev/day	= daily TC eq.
Time charter hire per day	**$ 23,000**	per day	$ 23,000	$ 3,307	$ 26,307
Total hire	$ 1,610,000		Monthly eq.	$ 2.29	per dwt/mo.

The block above shows the cost of leasing the vessel from an owner.

[3] Distances were obtained from a computer program: BP PORT TO PORT MARINE DISTANCE TABLES developed by BP (British Petroleum).

[4] Intertanko publishes: DISBURSEMENTS FOR TANKERS. Port Costs are also available on their website (on a fee based schedule for non-members): http://www.intertanko.com/

Lease payments for a ship are called **hire**. The computer has already calculated total sea days based on distances travelled. Add to this the estimated days in port. Under Worldscale terms, time for loading and discharging is 72 hours, plus 12 hours on each end for getting in and out of port; for a total of 4* days. In our example an extra day for Suez Canal passage is added plus nine extra days for lightering. Therefore, total port days is 14. The ship owner needs to be paid for the total voyage of 70 days. In our example the daily hire is $ 23,000. Therefore total hire is 70 x $ 23,000 = $ 1,610,000.

* *Please note, a tanker's arrival window (often called LayCan: the time between tendering Notice of Readiness and the cancellation date and time listed in the c/p; see ASBATANKVOY clause B) is often very brief, sometimes only one day. Therefore many tanker owners make sure their ships show up one to two days early. They cannot claim demurrage for this. Cancellation windows for dry cargo chartering are often much wider, like two weeks.*

Cost/Sea day	$ 35,500
Cost/Port day	$ 26,429

The next box shows the average daily operating cost of the vessel at sea and in port, consisting of daily hire and fuel consumption. The main difference is higher fuel consumption at sea. **Cost per Sea day** comes in handy in case the voyage charterer wants to divert the ship from the original voyage plan and it is necessary to come up with a quick answer to see how much difference that makes in total voyage costs. The cost-in-port figure does not include port charges, but it does include fuel consumption (for the boilers and for the auxiliary diesel engines). **Cost per Port day** is a good yardstick to determine daily demurrage rate.

Demurrage is a charge from the shipowner to the voyage charterer if the allowable **laytime** has been exceeded. For example if in a particular charter party (c/p) contract the charterer has negotiated 96 hours free time (instead of the customary 72 hours as per Worldscale) to fully load and discharge the tanker and the ship uses 54 hours in laytime at the load port and 80 hours at the discharge port, total accumulated laytime time is 134 hours. This results in: 134 – 96 = 38 hours demurrage. If the agreed upon demurrage rate is $ 25,000 per day, the voyage charterer owes the owner 38/24 x $ 25,000 = $ 39,583.33 in demurrage.

In chapter 5 laytime and demurrage will be looked at from a contractual standpoint. Appendix 3.2 is an example of a **laytime/demurrage statement**.

As mentioned before, Worldscale has a **demurrage table** for various tanker sizes to which the negotiated ws rate needs to be applied. However, it does not always reflect real cost in port. Therefore owners and charterers

Demurrage for dry cargo can run up to more than the actual freight if the ship has to wait a long time due to port congestion. A couple of decades ago Nigeria ordered a lot of cement to start an ambitious road building programme. Whenever the Government had ordered cement during prior years, they only received partial allotments, so this time they ordered substantially more than what they actually needed. For whatever reason, all purchase contracts were executed in full, resulting in an avalanche of cement. As a result some ships had to spend over a year at anchor in Nigeria; waiting their turn to unload. This resulted in enormous demurrage invoices.

may want to negotiate a fixed per diem rate. Demurrage is often used as a bargaining tool during fixture negotiations. If voyage charterers know they need more time to load and discharge the ship than the standard 72 hours per Worldscale, they may ask for more extra free laytime; like 120 hours. In return, the owner should try to negotiate a higher ws freight rate.

Daily Hire +	Net rev/day	= daily TC eq.
$ 23,000	$ 3,307	$ 26,307

Time-charterer's equivalent (TCE) is used as a barometer of the freight market for a particular type and size vessel, operating in a particular part of the world. Several brokerage houses publish TCEs on their websites. TCE is equal to daily hire plus time-charterer's daily net voyage revenue. If the owner operates his own ship, and hire is zero, TCE is equal to owner's net revenue (voyage revenue – operating costs – voyage costs) per day. The owner uses TCE to evaluate if it is better to out-charter his vessel or to operate it himself. If he gets an offer with a hire rate equal to TCE and he expects the market to fall, it is a good incentive to out-charter his ship. On the other hand if he expects the market to rise, he may continue operating the ship for own account; or demand a daily hire rate exceeding the current TCE.

Monthly eq. $ 2.29 per dwt/mo.

In the old days the monthly hire for ships that were on time-charter for longer periods of time, was sometimes expressed in **$/dwt/mo**. In our example it is 365* days/12 months x hire divided by vessel's SWDT. This is 30.4167 days x $ 23,000/305,000 = $ 2.29/dwt/mo. This number can be used to compare earning capacity between ships of differing deadweight tonnage.

* *For a leap year use 366 days*

Daily hire rates, just like freight rates, fluctuate widely. In the summer of 1999 one year time-charter (t/c) rate for a modern VLCC was around $ 22,000/day. In late 2000 it went up to $ 50,000/day but dropped back to $ 20,000 day in the summer of 2000. In early 2003 it was way up again; driven by a high spot market. In 2004 freight rates for tankers and dry cargo vessels reached record levels.

It is clear from above that trying to figure out a fair t/c rate for both owner and a time-charterer, is tantamount to crystal ball gazing. A t/c rate that will both benefit an owner and a time-charterer would be an **indexed rate** tied to the spot rate. For example a decent rate for a 5-10 year old double hull, double side VLCC would be $ 450 per ws spot rate in effect on the day of fixing. Let's say if the spot market is ws 40, daily t/c rate would be 40 x $ 450 = $ 18,000. If the spot market shoots up to ws 100, daily t/c rate for that particular trip would be $ 45,000. This is attractive for an owner because he does not have to worry about missing a market run-up. It is also good for the time-charterer, because with higher spot rates he will earn enough money to pay the higher t/c rate. It is a self-policing system that is fair and very easy to administer.

Another flexible charter hire rate for VLCCs could be based on the relationship between ws rate and TCE for the standard Rotterdam-Ras Tanura-Rotterdam voyage. There are several Internet sites that show earnings on this route. Platou[5], a prominent Norwegian ship broker, has a website calculator that determines TCE based on a specific ws rate for various routes and various vessel sizes. At the top of the calculator you can change the cost of fuel oil.

Voyage: Ras Tanura/Rotterdam/Ras Tanura

300 000 MTDW	(new)	14(14) / 78.5(61.5) + 0(0)	57	270 000	50	25,959

The vessel is a new (1-2 years old) 300,000 metric dwt VLCC and carries 270,000 mt cargo. Speed in ballast and loaded is 14 knots with a daily FO consumption of respectively 78.5 and 61.5 mt. For this vessel type the "calculator" assumes that there is no consumption of Diesel oil. Total round trip is 57 days. (The vessel goes in ballast through the Suez Canal and returns via Cape of Good Hope to Rotterdam). Above example is based on ws flat rates for 2002. At ws 50 TCE is $ 25,959. This could serve as the actual **flexible hire rate** for this type vessel and on this route. The daily hire rate should be based on the ws spot rate at time of fixing. It gives the owner the advantage of a time-charter that will yield him a higher rate when the market goes up. The time-charterer will be able to pay more hire when his earnings are higher in a rising spot market and pays less when he earns less freight in a weak market.

[5] Platou's WS-TCE calculator can be accessed under "Tankers" at: http://www.platou.com

Other arrangements are based on **profit-sharing**, but this is much harder to manage. If the time-charterer feels he needs to fly around the world in a private jet with lots of pretty ladies in short skirts to check up on his t/c ship, and writes all this off as an expense, the owner may be left with nothing when it comes to profit sharing.

FUEL CONSUMPTION		$/mt	Total $
FO at sea	**75 mt/day**		
FO in port	**5 mt/day**		
Cargo Heating	**0 mt/day**		
COW, Discharge, Clean, Inert	**100 mt/day**		
Total FO	4,370	**$ 150**	$ 655,500
MDO at sea	**5 mt/day**		
MDO in port	**5 mt/day**		
COW, Discharge, Clean, Inert	**20 mt/day**		
Total MDO	370	**$ 250**	$ 92,500
Total FO + MDO			$ 748,000

The next section, see above, covers fuel consumption and cost. As mentioned earlier, cargo heating requirements can add hundreds of tons of FO to the voyage. In this spreadsheet the cost of fuel oil and of marine Diesel oil is an estimate, rather than a combination of the actual cost of the bunkers already on board and bunkers still to be procured. In chapter 9 fuel consumption at various speeds and for various purposes will be discussed in more detail.

COMMISSIONS		**Comm.**
Address commission	$ 0	**0 %**
Broker 1	$ 30,375	**1.25 %**
Broker 2	$ 0	**0 %**
Commission on demurrage	$ 2,973	**1.25 %**
Total commissions	$ 33,348	1.25 %

The section on **commissions** speaks for itself. Generally speaking under a voyage charter the vessel's registered owner pays a brokerage commission of 1.25% of the freight to a ship broker who assists in the c/p fixture between owner and charterer. The spot charterer pays nothing, unless he uses the services of his own broker.

The same is true for a time-chartered owner (disponent owner) versus a voyage charterer. When a registered owner time-charters his ship out to a **t/c operator**, the registered owner pays brokerage commission of 1.25% of the daily hire to the broker that assisted in the t/c fixture.

When the t/c operator owner in turn out-charters the ship to a spot charterer, the t/c operator owner pays for the brokerage commission. In all cases brokerage rates are negotiable. However, if you try to nickel-and-dime your broker ad infinitum, he or she may put your business at the bottom of the stack and you may miss out on some good opportunities. Most brokers work hard; often long after the office has closed, because shipping is such an international business. A good broker definitely deserves the full commission.

Address commission is a fancy name for a rebate to the charterer. Some charterers operate their own, in-house shipping department, funded by address commissions. However, lately there have been charter parties that stipulate that address commission is to be sent to an unidentified party, perhaps with an offshore bank account. When a party requests address commission, it is to be disclosed at the beginning of the fixture negotiations, so it can be accounted for and be built into the rate (see clause J of the amended ASBATANKVOY c/p in chapter 5).

Sometimes more than one broker is involved in a fixture. For example a broker may have to deal via an exclusive broker of the voyage charterer. If so, another 1.25% commission needs to be paid by the ship owner or t/c operator. For small cargoes total commissions can be 5% or more of the freight. It is very important to determine what commissions need to be paid and to whom, otherwise a ship owner or t/c operator may receive some unexpected invoices from brokers he has never heard of.

RECAP		
Gross freight revenue	$ 2,430,000	
Demurrage (basis: Cost/port day)	$ 237,861	+
Total Income	$ 2,667,861	
Hire	$ 1,610,000	-
Bunkers	$ 748,000	-
Port Charges	$ 40,000	-
Mgmt. cost, communication, other	$ 5,000	-
Commissions	$ 33,348	-
Total trip cost	$ 2,436,348	
Net voyage revenue	$ 231,513	
No. of days	70	days
Net revenue per day	$ 3,307	per day

Finally it is time to get to the meat of the matter. The recap lists freight revenue plus possible demurrage. In our example demurrage was based on total port days minus 5 days for loading and discharging, for getting in and out of port and for one day going through the Suez Canal on the

ballast trip. For simplicity sake, daily in-port cost has been used as the demurrage rate. Total port days were 14. Therefore demurrage is: 14 – 5 = 9 days @ $ 26,429 per day = total $ 237,861.

There is also a charge for management costs, communication charges and other expenses. Sometimes a registered or a disponent owner operates the ship through a management company and fees or commissions for that undertaking may be listed here. Communication with the ship is often via satellite phone and fees can be rather substantial. Under this heading it is possible to list "gratuities" in the form of spirits, cigarettes or food items distributed by the master to pilots and Government authorities.

Day	Cash-Flow		
1	Pay 30 day hire	$ 690,000	-
1	50% bunkers	$ 374,000	-
21	Ras Tanura SBM	$ 30,000	-
21	50% bunkers	$ 374,000	-
30	Pay 30 day hire	$ 690,000	-
60	Pay balance hire	$ 230,000	-
70	Galveston offshore	$ 10,000	-
75	Freight	$ 2,430,000	+
75	Demurrage	$ 237,861	+
75	Commissions	$ 33,348	-
75	Mgnt. fees etc.	$ 5,000	-
	Net voyage revenue	$ 231,513	
	Net rev/350 days	$ 1,157,450	

After deducting total trip cost of $2,436,348 from total revenue of $2,667,861 net voyage revenue is $ 231,513. Since the round trip took 70 days, this is equivalent to $3,307 per day.

The **cash-flow schedule** shows the days into the voyage when expenses and revenues are due. Since this portion of the spreadsheet uses the same elements as in the recap — but is calculated independently — it also serves as a check on calculations. If different amounts show up in the two double-lined boxes of table 3.7, the spreadsheet has not been constructed properly. At the bottom of the cash flow statement earnings per year (350 service days) have been calculated as $ 1,157,450.

Obviously there are many different ways to construct a spreadsheet. In fact, there are several commercial computer programs available that are a lot fancier than the above example. BIMCO also offers an Internet based calculator for voyage cost. However, an in-house developed spreadsheet has the great advantage that it can be tailor-made for a specific operation or voyage. Moreover, it is easy to learn, simple to use and can be modified very easily.

Chapter 4

TIME CHARTER PARTIES

An honest man's word is as good as his bond.
Cervantes; Don Quixote

The next two chapters are about freight contracts (charter parties). This chapter covers time charter parties and chapter 5 covers voyage charter parties.

Under a **time charter** (t/c) an owner leases his ship out to a time-charterer or operator, who directs the master where to load and where to discharge the intended cargo. In addition to paying hire to the ship owner, the time-charterer is also responsible for bunkers and port charges. (There are a few exceptions, as listed in clause 7 of the c/p below). Since the time charterer pays for all the time the vessel is on hire, there are no demurrage charges. Even though the time charterer has commercial control over the vessel, the owner is still responsible for operating, manning and insuring the vessel.

Under a **voyage charter** (v/c) a spot charterer just pays freight in $/mt. It is up to the ship owner to get to the load port in his own time. The owner also pays for all bunkers and port charges. As we have seen in chapter 3 under Worldscale for tankers, an owner can claim reimbursement for Suez and Panama Canal transit costs from the charterer. However for dry bulk chartering this is usually not the case. An owner has to pay all his expenses out of the freight received. Under a v/c there is usually a demurrage clause and for dry cargo a despatch clause. **Despatch** is when the charterer loads and discharges the vessel in less than the allowable free time and the owner pays the charterer a bonus for this. Despatch is usually 50% of the demurrage rate.

In this chapter, SHELLTIME 4[1] will be reviewed. SHELLTIME 4 is widely used because it is rather well balanced and fair to owner and charterer. Of course, very few contracts fit the intended purposes. Therefore charter parties usually have a lot of amendments and additional clauses.

Please notice the caption at the top of the c/p (just above the date), describing the way additions to the format are distinguished from the original SHELLTIME 4 printed form.

[1] Complete charter party forms are printed in a wide variety of marine publications (see bibliography at the end of this book). Some c/p forms are available from brokers and/or from commercial printers. BIMCO offers an electronic c/p editor via the Internet for several contract forms. The same program is also available on CDs.

A very important source of further legal information derived from court cases and from marine arbitrations can be found in: ***"Time Charters" by Wilford, Coglen and Kimball****; published by Lloyd's of London Press. It has the complete time c/p forms for: NYPE (New York Produce Exchange), the NYPE 93, the Baltime, the Shelltime 4 and the STB (Standard Tankers of the Bahamas) with legal interpretations under British and under US law.*

Comments pertaining to the various clauses are in yet another font. The amendments to – and comments about – the following clauses are the ones used by the author in his business and in no way constitute legal advice.

This Charter Party form has been scanned electronically from an original Shelltime 4 form and the text has been processed with Optical Character Reader software. Additions to clauses number 1-42 of the original Shelltime 4 form to this contract, are printed in **bold**. *Deletions from the original Shelltime 4 form in this contract are ~~struck through~~. For any typographical errors in the non-altered text of clauses 1-42 between this scanned and retyped contract and the original Shelltime 4 form, the text of the original Shelltime 4 form will govern.* Additional clauses from clause 43 to the end of this contract are in regular print.

Houston, _13 July 2004_

AMENDED SHELLTIME 4 CHARTER PARTY

IT IS THIS DAY AGREED between _**NUSANTARA SHIPPING CO.**_ of _**MONROVIA, LIBERIA**_ (hereinafter referred to as "Owners"), being Owners of the good vessel called _***FRISIAN ENTERPRISE***_ (hereinafter referred to as "the vessel") described as per Clause 1 **and latest OCIMF VPQ** hereof and __**BACK-HAUL TANKERS Inc.** of **George Town, C.I.** ___ (hereinafter referred to as "Charterers"):

Comment: The preamble shows the place and effective date of the c/p. Furthermore, it lists the vessel's owner, the charterer and the name of the ship. The condition of the vessel needs to be in accordance with the description in the current Oil Companies International Marine Forum Vessel Particulars Questionnaire (OCIMF VPQ). It is important that the vessel is described in great detail, especially for a t/c. In fact for a time charter of more than a few weeks, there is usually a so-called on-hire survey as per clause 4 h (1) and (2).

1. DESCRIPTION AND CONDITION OF VESSEL

At the date of delivery **and throughout the period of this charter,** of the vessel ~~under this charter~~:

(a) ~~she~~ shall be classed **with a member of the International Association of Classification Societies (IACS).**

(b) ~~she~~ shall be in every way fit to carry crude **oil** ~~petroleum~~ and/or its products **and in case of an OBO, dry cargoes for which the vessel is suitable.**

(c) ~~she~~ shall be tight, staunch, strong, in good order and condition, and in every way fit for the service, with her machinery, boilers, hull and other equipment (including but not limited to hull stress calculator and **two** radars, **one with ARPA; a gyro compass with off-course alarm; rudder angle and propeller RPM indicators both with bridge wing repeaters; a depth sounder; a speed and distance log; a GPS; a dual-axis Doppler log with rate of turn indicator (for ships over 160 KDWT); a Navtex receiver; a weather fax; a windspeed and direction indicator; a GMDSS installation; a satellite based message system, suitable for e-mail, fax and voice communication; a computer for cargo calculations, including calculation of Stability, Stress and Bending moments; all** in a good and efficient state;

(d) her tanks, **tank openings, hatch covers in case of an OBO,** valves and pipelines shall be oil and gas tight

(e) ~~she shall be in every way fitted for burning at sea - fuel oil with a maximum viscosity of ——— Centistokes at 50 degrees Centigrade/ any commercial grade of fueloil ("ACGFO") for main propulsion; marine diesel oil/ACGFO for auxiliaries in port - marine diesel oil/ACGFO for auxiliaries;~~

(f) ~~she~~ shall comply with the regulations in force so as to enable her to pass through the Suez ~~and Panama~~ Canals by day and night without delay;

(g) ~~she~~ shall have on board all certificates, documents and equipment required from time to time by any applicable law to enable her to perform the charter service without delay; **including but not limited to valid: Certificate of Financial Responsibility for oil pollution; International Tonnage Certificate; Suez Tonnage Certificate; Certificate of Registry and certificates relating to the strength and/or serviceability of the vessel's gear. The vessel to have the latest edition nautical charts and publications on board; regularly updated by Notice of Mariner corrections, or an approved ECDIS.**

(h) ~~she~~ shall comply with the description in ~~Form B~~ **latest OCIMF VPQ** appended hereto, provided, however, that if there is any conflict between the provisions of ~~Form B~~ **OCIMF VPQ** and any other provision, including this Clause 1 of this charter, such other provision shall govern.

Comment: 1) The printed c/p states that the vessel shall be in a certain condition at the beginning of the charter. Since the owner controls the technical management of the ship, it is important to amend this clause to read: "and throughout the period of this charter."

1 a) Previously it was good enough that the vessel was just in class (complying with the building specification of any of the Classification Societies. Modern t/c clauses stipulate that the ship is "classed" by one of the major Classification Societies with membership in the International Association of Classification Societies (IACS).

1 b & d) Since subject vessel is an OBO, it is necessary to amend these clauses to make sure she is suitable for oil, as well as for dry cargoes.

1 e) Fuel oil specifications are covered in rider clause 45.

1 g) This clause has been amended with the requirement for special certificates that were not part of the printed form.

1 h) This is basically repeating what has already been stated in the preamble, that the vessel has to be in conformance with the OCIMF VPQ.

2. SHIPBOARD PERSONNEL AND THEIR DUTIES

(a) At the date of delivery of the vessel **and throughout the period of** ~~under~~ this charter:

(i) ~~she~~ **the vessel** shall have a full and efficient complement of master, officers and crew for a vessel of her tonnage, who shall in any event be not less than the number required by the laws of the flag state, **or the IMO (whichever is greater)** and who shall be trained to operate the vessel and her equipment competently and safely;

(ii) all shipboard personnel shall hold valid certificates of competence in accordance with the requirements of the law of the flag state, **or IMO (whichever standard is higher), and such certificates shall always be available for inspection on board the vessel. Owners guarantee that above mentioned Certificates of Competence are genuine.**

(iii) all shipboard personnel shall be trained in accordance with the relevant provisions of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 **and any amendments thereto.**

(iv) **Owners guarantee that before the due date (and throughout the period of this charter), the vessel will comply with International Safety Management (ISM) regulations. Upon request, Owners shall provide a**

copy of the relevant Document of Compliance (DOC) and Safety Management Certificate (SMC) to the Charterers. Except as otherwise provided in this Charter Party, loss, damage, expense or delay caused by failure of the Owner or "the Company" (as defined by the ISM code) to comply with the ISM code, shall be for Owners' account.

(v) **The master shall be fluent in the English language, and** there shall be on board sufficient **additional** personnel with a good working knowledge of the English language to enable cargo operations at loading and discharging places to be carried out efficiently and safely and to enable communications between the vessel and those loading the vessel or accepting discharge there from to be carried out quickly and efficiently.

(vi) **Owners guarantee that the master and the chief officer have adequate experience with Single Buoy Mooring and with Ship-to-Ship Transfer operations.**

(b) Owners guarantee that throughout the charter service the master shall with the vessel's officers and crew, unless otherwise ordered by Charterers,

(i) Prosecute all voyages with the utmost despatch;

(ii) Render all customary assistance; and

(iii) Load and discharge cargo as rapidly as possible when required by Charterers or their agents to do so, by night or by day, but always in accordance with the laws of the place of loading or discharging (as the case may be) and in each case in accordance with any applicable laws of the flag state.

(c) **The master, who has been appointed by the Owners, shall be under the orders and directions of the Charterers, but loading, stowing, trimming, discharging, and cargo calculations shall be performed under his supervision and responsibility.**

Comment: 2 a i & ii) The International Maritime Organization (IMO) is a special rule making agency of the United Nations. Since many ships now sail under flags of countries that often lack the finances and the staff to enforce shipping regulations of the so-called "flag state" it is important to include IMO requirements.

In certain parts of the world it is not unusual that crew members have bought forged certificates. By amending this clause, the burden of proof that the certificates are genuine is on the ship owner.

2 a iv) Since 1 July 1998 tankers and bulk carriers

have to comply with ISM[2] (International Safety Management) regulations.

2 a v) Most large tankers and bulk carriers have a crew of around 27; sometimes consisting of a dozen different nationalities. It is therefore important that the senior staff speak English, so they can communicate with each other and with shore personnel.

2 a vi) Many tankers load and unload at SBMs, which requires a certain familiarity with securing to the buoy and connecting the hoses. The same goes for lightering operations.

2 c) This clause states that the master is responsible for cargo operations.

3. DUTY TO MAINTAIN

(i) Throughout the charter service Owners shall, whenever the passage of time, wear and tear, or any event (whether or not coming within Clause 27 hereof) requires steps to be taken to maintain or restore the conditions stipulated in Clauses 1 and 2(a) exercise due diligence to maintain or restore the vessel.

(ii) If at any time whilst the vessel is on hire under this charter the vessel fails to comply with the requirements of Clauses 1, 2(a), or 10 then hire shall be reduced to the extent necessary to indemnify Charterers for such failure. If and to the extent that such failure affects the time taken by the vessel to perform any services under this charter, hire shall be reduced by an amount equal to the value, calculated at the rate of hire, of the time so lost.

Any reduction of hire under this sub-Clause (ii) shall be without prejudice to any other remedy available to Charterers, but where such reduction of hire is in respect of time lost, such time shall be excluded from any calculation under Clause 24.

(iii) If Owners are in breach of their obligation under sub-Clauses **1 and** 3(i) Charterers may so notify Owners in writing; and if, after the expiry of 30 days following the receipt by Owners of any such notice, Owners have failed to demonstrate to Charterers' reasonable satisfaction the exercise of due diligence as required in Clause 3(i), the vessel shall be off-hire, and no further hire payments shall be due, until Owners have so demonstrated that they are exercising such due diligence.

[2] In 1993 the IMO adopted resolution A.741(18) which constitutes the International Code for the safe operation and for pollution prevention. In 1994 the IMO resolution was incorporated into the International Convention for Safety Of Life At Sea 1974 (SOLAS) as chapter IX.

Furthermore, at any time while the vessel is off-hire under this Clause 3, Charterers have the option to terminate this charter by giving notice in writing with effect from the date on which such Notice of Termination is received by Owners, or from any later date stated in such notice. This sub Clause (iii) is without prejudice to any rights of Charterers or obligations of Owners under this charter or otherwise (including without limitation Charterers' rights under Clause 21 hereof).

(iv) **At any time while the vessel is continuously off-hire under this clause or clause 21(a) and after the off-hire period has persisted for more than 60 days, either party has the option of terminating this charter by giving notice in writing to the other party, without prejudice to any claims which the parties have against each other.**

Comment: 3 iv) Under normal circumstances it is very difficult to cancel a t/c contract. However, the above clause gives a time-chartered operator the right to re-deliver a ship that persistently fails to perform.

4. PERIOD TRADING LIMITS

(a) Owners agree to let and Charterers agree to hire the vessel for a period of **about** _____ commencing from the time and date of delivery of the vessel, for the purpose of carrying all lawful merchandise (subject always to Clause 28) including in particular **up to a minimum of at least three grades within vessel's natural segregation, which may be loaded at temperatures of maximum 140 degrees F.**

(b) in any part of the world, as Charterers shall direct, subject to the limits of the current ~~British Institute Warranties~~ **Institute of London Underwriters Warranty Trading Limits** and any subsequent amendments thereof. Notwithstanding the foregoing, but subject to Clause 35, Charterers may order the vessel to ice-bound waters or to any part of the world outside such limits provided that Owners consent thereto (such consent not to be unreasonably withheld) and that Charterers pay for any insurance premium required by the vessel's underwriters as a consequence of such order.

(c) **Charterers have the option of extending this charter by an equal period of time at the same hire rate, by giving Owners Notice 30 days before expiration of the original period.**

(d) Charterers shall use due diligence to ensure that the vessel is only employed between and at safe places (which expression when used in this charter shall include ports, berths, wharves, docks, anchorages,

submarine lines, alongside vessels or lighters, and other locations including locations at sea) where she can safely lie always afloat. Notwithstanding anything contained in this or any other clause of this charter, Charterers do not warrant the safety of any place to which they order the vessel and shall be under no liability in respect thereof except for loss or damage caused by their failure to exercise due diligence as aforesaid. Subject to the above, the vessel shall be loaded and discharged at any places as Charterers may direct, provided that Charterers shall exercise due diligence to ensure that any ship-to-ship transfer operations shall conform to standards not less than those set out in the latest published edition of the ICS/ OCIMF Ship-to-Ship Transfer Guide.

(e) **Owners at all times to remain solely responsible for the safe navigation and operation of the Vessel and shall do everything reasonably possible to satisfy themselves as to the safety of any place to which Charterers have ordered the vessel, and, consistent with all applicable laws, regulations, safety and navigational requirements, shall take any and all necessary steps to avoid, mitigate or eliminate any conditions adversely affecting the safety of the vessel, her crew or the operations it is engaged in.**

(f) The vessel shall be delivered by Owners at a port in:

_____

at Owners' option

and redelivered to Owners at a port in

_____

at Charterers' option.

(g) **Vessel to be delivered with load-ready and fully inerted cargo tanks.**

(h) **Prior to delivery the vessel shall undergo a pre-delivery inspection by Charterers, which inspection either fully approves the vessel or provisionally approves the vessel, subject to correction of specified conditions within a time period agreed to by Charterers. This charter shall not come into effect unless — or until — such inspection has occurred and the vessel is fully approved. If such pre-delivery inspection requires the correction of specified conditions, then Owners shall either:**

(1) **correct such conditions within the time period agreed to by Charterers, or**

(2) **state in writing that they are not willing to correct such**

conditions, either at all, or within the time period agreed to by Charterers, in which event this charter shall not come into effect.

Comment: 4 a) This clause stipulates the duration of the time charter. The word "about" is very important here and has been interpreted in different ways by marine courts and arbitrators. Maximum temperature refers to heated oil cargoes. Too high a temperature will cause heat stress in the ship.

4 b) The "Institute of London Underwriters Warranty Trading Limits" pertain to areas subject to ice forming in wintertime. An owner can refuse to follow instructions from the time-charterer to send the ship into the Institute Warranty Limits (IWL) areas during certain periods when navigation is seriously hampered by ice. The main areas are the Baltic and the Great Lakes, the Saint Lawrence River and adjacent seas. The BIMCO website has charts that show IWL areas.

4 c) An option to extend the charter is valuable to a time-charterer in case the t/c market has gone up at the end of the intital t/c period. If the market has gone down, he would probably not extend, and either renegotiate a lower t/c rate, or charter a cheaper ship. Sometimes the extension option comes with a higher t/c rate. For example an owner can insert a clause: "Initial hire is $20,000 per day for the first six months and $21,000/day in case the option is exercised for a second six months."

4 e) This clause says, in effect, that even if the charterer directs the ship to proceed to a certain load or discharge location, the master is still responsible for safe navigation at that location. This is because the master is a specialist and he has the last word when it comes to safe navigation and ship operation.

4 g) Most loading terminals require tankers to be inerted before they are allowed to come to berth. However, for OBOs – with possible residue of dry cargo in the holds/tanks – some terminal inspectors demand to take an actual look into the tanks prior to loading. In that case the tanks should not be inerted. It is advisable to check with the local ship's agent to find out about inerting requirements.

4 h) This clause covers "on-hire" inspection as alluded to in comments under the preamble. It is very important to spell out who is responsible for repairs that have not been completed at the time the ship goes on hire.

5. LAYDAYS/CANCELLING

(a) The vessel shall not be delivered to Charterers before

_____

Inerting means introducing flue gases into cargo tanks for the purpose of bringing down the O_2 level below the explosion limit of the tank's atmosphere. Most hydrocarbons have an Upper Flammable Limit (UFL) of around 10% hydrocarbon gas concentration in air. Above 10% the mixture is too "rich" to explode. The Lower Flammable Limit (LFL) is about 2%. Below that, the mixture is too "lean" to explode. In order to combust, the mixture of hydrocarbon gas needs to be between the UFL and the LFL and furthermore the O_2 level needs to be above 11%. There is not much that can be done to alter the UFL and the LFL. However, the O_2 level in the tank can be changed by introducing N_2 gases, produced by the ship's boilers, into the cargo tanks. The N_2 replaces the O_2, and once the O_2 level has been brought below 8% (accounting for a 3% safety margin), the mixture will not explode.

One of the reasons very few tankers exploded after having been hit by a missile during the Iraq-Iran war in the 1980s, was because cargo tanks were inerted.

Before any Crude Oil Washing (COW) is performed tanks need to be inerted, since COW can result in generating static electricity that may result in sparks.

and Charterers shall have the option of cancelling this charter if the vessel is not, **or cannot be**, ready and at their disposal on or before

---

(b) **If it appears that despite the exercise of due diligence by the Owners, the vessel will not be ready for delivery by the canceling date, and provided the Owners are able to state with reasonable certainty the date on which the vessel will be ready, they may, at the earliest seven days before the vessel is expected to sail for the port or place of delivery, require the Charterers to declare whether or not they will cancel the Charter. Should Charterers elect not to cancel, or should they fail to reply within two working days or by the original canceling date, whichever shall first occur, then the new expected date of readiness for delivery notified by the Owners shall replace the original canceling date. Should the vessel be delayed further, the Owners shall be entitled to require further declarations as per above.**

(c) **Owners to keep Charterers fully advised of vessel's itinerary; starting 30 days prior to intended delivery, and Charterers to do the same for redelivery.**

(d) **Cancellation or acceptance by Charterers shall be without prejudice to any claims for damages Charterers may have against Owners for late delivery of the vessel.**

Comment: 5) This clause protects the owner in case there is a probability that the ship may not arrive in time at the required location as specified under 5a. Let's say a

VLCC has delivered a cargo of crude oil to the US Gulf and is scheduled to commence a t/c in the Arabian Gulf at a certain date. It will take about five weeks steaming at great expense to the owner before the t/c takes effect. If for some reason – after having come halfway around the world – the ship misses the t/c deadline, the owner is out of luck if the charterer cancels. If shortly after departure from the US Gulf the owners realize they will miss the t/c date, they can find a cargo in West Africa instead of continuing all the way to the Arabian Gulf. This clause gives the owner leverage with the time-charterer to learn if he is going to cancel or not.

This kind of clause is common in dry cargo charter parties and should be adopted by the tanker industry as well. Shipping is a serious business. There is no need for guessing games.

6. OWNERS TO PROVIDE

(a) Owners undertake to provide and to pay for all provisions, wages, and shipping and discharging fees and all other expenses of the Master, officers and crew; also, except as provided in Clauses 4 and 34 hereof, for all insurance on the vessel, for all deck, cabin and engine-room stores, **including but not limited to Lubricating Oils, Hydraulic and Cylinder Oils, Greases, Water and Oil Treatment Chemicals and Compounds,** and for water **for domestic purposes and for boilers;** for all drydocking, overhaul, maintenance and repairs to the vessel; and for all fumigation expenses and de-rat certificates. Owners' obligations under this Clause 6 extend to all liabilities for customs or import duties arising at any time during the performance of this charter in relation to the personal effects of the Master, officers and crew, and in relation to the stores, provisions and other matters aforesaid which Owners are to provide and pay for and Owners shall refund to Charterers any sums Charterers or their agents may have paid or been compelled to pay in respect of any such liability. Any amounts allowable in general average for wages and provisions and stores shall be credited to Charterers insofar as such amounts are in respect of a period when the vessel is on-hire.

(b) **Owners' best estimate of daily Fresh Water (F.W.) consumption is: _____MT/day.**

Capacity of the F.W. Generator is: _____MT/day.

(c) **Owners will maintain P&I insurance with a member of the International Group of P&I Clubs throughout the Charter and maintain the vessel free of liens (except for liens as stated in clause 26) and/or arrests. Owners further warrant that they**

will promptly notify Charterers of any cancellation, lapse, reduction of, or condition imposed on Owners' P&I coverage should it occur or become threatened. In the event Owners fail to maintain the vessel's P&I insurance in accordance herewith, Charterers shall have the right to terminate this charter and redeliver the vessel immediately, or upon the conclusion of any then cargo-laden voyage.

(d) **Owners to obtain and/or to renew — at their expense — all certificates and other requirements necessary to enable the vessel to trade as stipulated under this contract.**

Comment: 6 a) Since the time-charterer pays for all bunkers, it is good practice to spell out the items such as lube oils etc. that are the owner's responsibility.

6 b) It is important to know how much fresh water the ship can generate each day. Usually it is more than the daily consumption. If this is the case, it allows the ship to take in a minimum supply of water for emergencies only. For heavy cargoes it could mean that extra (revenue paying) cargo can be carried.

6 c & d) Owners certify that they will keep P&I (= primarily liability) insurance and proper certificates in force.

7. CHARTERERS TO PROVIDE

Charterers shall provide and pay for all fuel (except fuel used for domestic services), towage and pilotage and shall pay agency fees, port charges, commissions, expenses of loading and unloading cargoes, canal dues and all charges other than those payable by Owners in accordance with Clause 6 hereof, provided that all charges for the said items shall be for Owners' account when such items are consumed, employed or incurred for Owners' purposes or while the vessel is off-hire (unless such items reasonably relate to any service given or distance made good and taken into account under Clause 21 or 22); and provided further that any fuel used in connection with a general average sacrifice or expenditure shall be paid for by Owners.

Some t/c forms make reference to fuel oil consumption for domestic purposes, such as for heating, air-conditioning, cooking and freezing purposes to benefit the crew. This should for owner's account, but since it is difficult to verify, most time-charterers don't bother to make a distinction between bunkers for propulsion and for domestic use.

8. RATE OF HIRE

Subject as herein provided, Charterers shall pay for the use and hire of the vessel at the rate of **USD**_____per day, and pro

rata for any part of a day, from the time and date of her delivery (~~local time~~) (**Greenwich Mean Time**) until the time and date of her redelivery (~~local time~~) (**Greenwich Mean Time**) to Owners.

Comment: 8) Instead of using local time for (re)delivery time, it is better to use Greenwich Mean Time, to account for actual total accrued charter time. Let's say a t/c goes into effect at 13.00 local time in Rotterdam, which is in the GMT + 1 hr. time zone and the ship is redelivered 30 days later at 13.00 local time in Honolulu, which is in the GMT-10 hrs.time zone. Under local time the accrued hire is exactly 30 days, but under GMT time, it is 30 days + 11 hours. Therefore the owner can collect 11 hours extra hire. Of course if the same ship was redelivered after 30 days at 13.00 local time in Japan in the GMT+9 hrs. time zone (after going Eastward)the accrued hire under GMT accounting would be only 29 days and 16 hours.

9. PAYMENT OF HIRE

(a) Subject to Clause 3 (iii), payment of hire shall be made in immediately available funds to:

_____

_____

Account: _____

in _____

~~per calendar month~~ **on day 1* and day 15** of each** month in advance, less:

(i) Any hire paid which Charterers reasonably estimate to relate to off-hire periods, and

(ii) Any amounts disbursed on Owners' behalf, any advances and commission thereon, and charges which are for Owners' account pursuant to any provision hereof, and

(iii) Any **net** amounts due or reasonably estimated to become due to Charterers under Clause 3 ~~ii~~ or Clause 24 hereof,

any such adjustments to be made at the due date for the next monthly payment after the facts have been ascertained. Charterers shall not be responsible for any delay or error by Owners' bank in crediting Owners' account provided that Charterers have made proper and timely payment.

In default of such proper and timely payment,

(a) Owners shall notify Charterers of such default and Charterers shall within seven days of receipt of such notice pay to Owners the

amount due including interest, failing which Owners may withdraw the vessel from the service of Charterers **at any time until receipt of late payment by owners** without prejudice to any other rights Owners may have under this charter or otherwise; and

(b) Interest on any amount due but not paid on the due date shall accrue from the day after that date up to and including the day when payment is made, at a rate per annum which shall be 1% above the U.S. Prime Interest Rate as published by the Chase Manhattan Bank in New York ~~at 12.00 New York time~~ on the due date, or, if no such interest rate is published on that day, the interest rate published on the next preceding day on which such a rate was so published, computed on the basis of a 360 day year of twelve 30-day months, compounded semi-annually.

***If hire commences between the 1st and 15th of the month, Charterers to pay daily hire in advance for the balance of that month.**

**** If hire commences between the 15th and the last day of the month, Charterers to pay daily hire in advance from that date through the 14th day of the next month.**

In both cases the second hire payment is due on the 1st and on the 15th calendar day of each month, or on the next banking day if the banks are closed those days.

Comment: 9) The clause is amended to state that hire is payable on the 1st and the 15th of the month instead of monthly. This makes it easier to set up an automatic payment schedule.

10. SPACE AVAILABLE TO CHARTERERS

The whole reach, burthen and decks of the vessel and any passenger accommodation (including Owners' suite) shall be at Charterers' disposal, reserving only proper and sufficient space for the vessel's Master, officers, crew, tackle, apparel, furniture, provisions and stores, provided that the weight of stores on board shall not, unless specially agreed, exceed __**N/A**__ tonnes at any time during the charter period.

11. OVERTIME

Overtime pay of the Master, officers and crew in accordance with ship's articles shall be ~~for Charterer' account~~ **included in the hire rate, even** when incurred as a result of complying with the request of Charterers

or their agents, for loading, discharging, heating of cargo, bunkering or tank cleaning.

Comment: 11) It is difficult for the charterer to monitor overtime payments for the crew. Therefore it is here included as a fixed amount in the charter hire, as agreed upon between owner and charterer when the charter was negotiated.

12. INSTRUCTIONS AND LOGS

Charterers shall from time to time give the Master all requisite instructions and sailing directions, and he (**the Master**) shall keep a full and correct log of the voyage or voyages, which Charterers or their agents may inspect as required. The Master shall, when required, furnish Charterers or their agents with a true copy of such logs and with properly completed loading and discharging port sheets and voyage reports for each voyage, **engine and machinery logs** and other ~~returns~~ **reports** as Charterers may require. Charterers shall be entitled to take copies at Owners' expense of any such documents, which are not provided by the Master.

13. BILLS OF LADING

(a) The Master (although appointed by Owners) to be under the orders of the Charterers as regards employment, agency, or other arrangements and shall sign bills of lading as Charterers or their agents may direct (subject always to Clauses 35(a) and 40) without prejudice to this charter. Charterers hereby indemnify Owners against all consequences or liabilities that may arise

(i) From signing bills of lading in accordance with the directions of Charterers or their agents, to the extend that the terms of such bills of lading fail to conform to the requirements of this charter, or (except as provided in clause 13(b) **and 13(c)**) from the Master otherwise complying with Charterers' or their agents' orders.

(ii) From any irregularities in papers supplied by Charterers or their agents.

~~Notwithstanding the foregoing, Owners shall not be obliged to comply with any orders from Charterers to discharge all or part of the cargo~~

~~(i) At any place other than that shown on the bill of lading and/or~~

~~(ii) Without presentation of an original bill of lading unless they have received from Charterers both written conformation~~

~~of such orders and an indemnity in a form acceptable to Owners.~~

(b) **A discharge port named in bills of lading is not to constitute a declaration of discharge port, and Charterers retain the right to order the vessel to any port within the terms of this charter. Charterers agree to indemnify Owners against claims brought by holder(s) of bills of lading against Owners by reason of change of destination.**

(c) **At their option, Charterers may cause delivery of cargo to be made without presentation of the original bills of lading, by providing Owners with a Letter of Indemnity in the form acceptable to Owners, which shall automatically become null and void upon presentation to Owners of one out of three original bills of lading; or 13 months after completion of discharge, whichever occurs first, provided no legal proceedings have by then be brought against Owners.**

(d) **Notwithstanding the above, the Master is to sign Bills of Lading in person as representative of the Owners. If it is not possible for Master to sign himself due to "Early Departure Procedure" or for any other reason, the Master is to prepare a written Letter of Authorization with proper instructions to allow Agent's to sign Bills of Lading: <u>For and on behalf of the Master</u>.**

Comment: 13 b) In many instances a cargo is sold "on-the-water". Therefore the charterer should be able to direct the ship to another discharge port than the one on the B/L.

13 c) It has become an unfortunate practice that voyage charterers, such as oil companies and traders, require the Master to discharge the cargo without presentation of the original B/L. In return for this privilege, voyage charterers offer a Letter of Indemnity (LOI) that will cover any expenses as a result of a misdirected B/L. This looks fine on paper, but if the LOI has not been backed up with an irrevocable Letter of Credit (L/C), the whole thing is pretty worthless. Even if countersigned by a bank, there is no guarantee that money will be forthcoming to reimburse the shipowner for misdelivery of the cargo without presentation of an original "to order" B/L.

13 d) In certain ports it is customary to let the vessel sail before the Master has signed B/Ls. It is called EDP for Early Departure Procedure. The Master can leave a Letter of Authorization (LoA) with instructions for the agent to sign the B/Ls. Since the master is to sign for the proper cargo quantity listed on the B/L, it is important that the LoA contains the phrase: "For and on behalf of the Master." If EDP is in effect the shipper usually sends a message to the

Master after the ship has departed, with proper cargo intake. Based on his own calculations the Master can ask the agent to sign in accordance with his instruction. If the Master does not agree with shore figure re cargo intake, he can send a Notice of Protest (NoP) to the Shippers and instruct the agent to attach this to the B/L after signing.

14. CONDUCT OF VESSEL'S PERSONNEL

(a) If Charterers complain of the conduct of the Master or any of the officers or crew, Owners shall immediately investigate the complaint. If the complaint proves to be well founded, Owners shall, without delay, make a change in the appointments and Owners shall in any event communicate the result of their investigations to Charterers as soon as possible.

(b) **Owners warrant that they have — and shall maintain for the duration of this charter — a policy on Drugs and Alcohol Abuse that meets or exceeds the standards in the OCIMF "Guidelines for the Control of Drugs and Alcohol Onboard Ship 1995", as amended from time to time. Owners shall exercise due diligence to assure that the Drug and Alcohol Abuse policy is understood and complied with on and around the vessel.**

Comment: 14) Just as for land-based industries, drug and alcohol policies have become much stricter during the last decade.

15. BUNKERS AT DELIVERY AND REDELIVERY. **DELETED AND REPLACED BY RIDER CLAUSE 45**

16. STEVEDORES, PILOTS, TUGS

Stevedores when required shall be employed and paid by Charterers, but this shall not relieve Owners from responsibility at all times for proper stowage, which must be controlled by the Master who shall keep a strict account of all cargo loaded and discharged. Owners hereby indemnify Charterers, their servants and agents, against all losses, claims, responsibilities and liabilities arising in any way whatsoever from the employment of pilots, tugboats or stevedores, who although employed by Charterers shall be deemed to be the servants of and in the service of Owners and under their instructions (even if such pilots, tugboat personnel or stevedores are in fact the servants of Charterers their agents or any affiliated company); provided, however, that

(i) The foregoing indemnity shall not exceed the amount to which **under applicable law (if any)** Owners would have been entitled to limit their liability if they had themselves employed such pilots, tugboats or stevedores (**provided the**

acts of such pilots, tugboats or stevedores were limitable under such applicable law), ~~and~~

~~(ii) Charterers shall be liable for any damage to the vessel caused by or arising out of the use of stevedores, fair wear and tear excepted, to the extent that Owners are unable by the exercise of due diligence to obtain redress therefor from stevedores.~~

(a) Upon discovery of damage caused by stevedores, the Master shall obtain or countersign the written acknowledgement from the responsible party and request that party to have the damaged repaired (if this is possible, and without loss of time) at the responsible party's expense before the vessel sails.

(b) The Master is to notify the Charterers and/or their agents in writing as soon as practical, but no later than 48 hours after the damage has been discovered. Such notice should specify the extend of the damage and should invite Charterers to appoint a surveyor.

(c) If damage mentioned under (a) can not be repaired before sailing of the vessel, Charterer has the option to have the damage repaired concurrently with Owners' work. In such case no hire and/or expenses will be paid for the repairs for which the Charterers are responsible exceed the time and/or expenses necessary to carry out the Owners' work.

17. SUPERNUMARIES

Charterers may send representatives in the vessel's available accommodation upon any voyage made under this charter, Owners finding provisions and all requisites as supplied to officers, except liquors. Charterers paying — **against invoice** — at the rate of **USD 50** per day for each representative while on board the vessel.

18. SUB-LETTING

Charterers may sublet the vessel, but shall always remain responsible to Owners for due fulfillment of this charter.

Comment: 18) This is an important clause. It allows the time-charterer to sub-let the charter to a voyage charterer or to another time-charterer. Without this clause the time-charterer would only be able to use the ship for own account.

19. FINAL VOYAGE

If when a payment of hire is due hereunder Charterers reasonably expect to redeliver the vessel before the next payment of hire would fall due,

the hire to be paid shall be assessed on Charterers' reasonable estimate of the time necessary to complete Charterers' programme to redelivery, and from which estimate Charterers may deduct amounts due or reasonably expected to become due for

(i) Disbursements on Owners' behalf or charges for Owners' account pursuant to any provision hereof, and

(ii Bunkers on board at redelivery pursuant to ~~Clause 15~~ **rider clause 45.**

(iii) **Any amount Charterers may deduct pursuant to clause 9, clause 30 and rider clause 46(b).**

Promptly after redelivery any overpayment shall be refunded by Owners or any underpayment made good by Charterers.

If at the time this charter would otherwise terminate in accordance with Clause 4 the vessel is on a ballast voyage to a port of redelivery or is upon a laden voyage, Charterers shall continue to have the use of the vessel at the same rate and conditions as stand stated herein for as long as necessary to complete such ballast voyage, or to complete such laden voyage and return to a port of redelivery as provided by this charter, as the case may be.

20. LOSS OF VESSEL

Should the vessel be lost, this charter shall terminate and hire shall cease at noon (**GMT**) on the day of her loss; should the vessel be a constructive total loss, this charter shall terminate and hire shall cease at noon (**GMT**) on the day on which the vessel's underwriters agree that the vessel is a constructive total loss; should the vessel be missing, this charter shall terminate and hire shall cease at noon (**GMT**) on the day on which she was last heard of. Any hire paid in advance and not earned shall be returned to Charterers and Owners shall reimburse Charterers for the value of the estimated quantity of bunkers on board at the time of termination, at the price paid by Charterers at the last bunkering port; **all together with interest on such amount at the same rate as specified in Clause 9 (b).**

21. OFF-HIRE

(a) On each and every occasion that there is loss of time (whether by way of interruption in the vessel's service or, from reduction in the vessel's performance, or in any other manner):

(i) Due to deficiency of personnel or stores; repairs; gas-freeing for repairs; time in and waiting to enter dry dock for repairs; breakdown (whether partial or total) of machinery, **pumps,**

boilers, **IGS**, **COW**, or other parts of the vessel or her equipment (including without limitation tank coatings, **cargo contamination caused by vessel**); overhaul, maintenance or survey; collision, stranding, accident or damage to the vessel; or any other similar cause preventing the efficient working of the vessel; and such loss continues for more than three consecutive hours (if resulting from interruption in the vessel's service) or cumulates to more than three hours (if resulting from partial loss of service); or

(ii) Due to industrial action, refusal to sail, breach of orders or neglect of duty on the part of the Master, officers or crew; or

(iii) For the purpose of obtaining medical advice or treatment for or landing any sick or injured person (other than a Charterers' representative carried under Clause 17 hereof) or for the purpose of landing the body of any person (other than a Charterers' representative), and such loss continues for more than three consecutive hours; or

(iv) Due to any delay in quarantine arising from the Master, officers or crew having had communication with the shore at any infected area without the written consent or instructions of Charterers or their agents, or to any detention by customs or other authorities caused by **stowaways**, smuggling or other infraction of local law on the part of the Master, officers, or crew; or

(v) Due to detention of the vessel by authorities at home or abroad attributable to legal action against or breach of regulations by the vessel, the vessel's Owners, or Owners (unless brought about by the act or neglect of Charterers); then without prejudice to Charterers' rights under Clause 3 or ~~to~~ any other ~~rights of Charterers~~ **provision** hereunder or otherwise, the vessel shall be off-hire from the commencement of such loss of time until she is again ready and in an efficient state to resume her service from a position not less favorable to Charterers than that at which such loss of time commenced; provided, however, that any service given or distance made good by the vessel whilst off-hire shall be taken into account in assessing the amount to be deducted from hire.

(b) If the vessel fails to proceed at any guaranteed speed pursuant to Clause 24, and such failure arises wholly or partly from any of the causes set out in Clause 21(a) above, then the period for which the vessel shall be off-hire under this Clause 21 shall be the difference between

(i) The time the vessel would have required to perform the relevant service at such guaranteed speed, and

(ii) The time actually taken to perform such service (including any loss of time arising from interruption in the performance of such service). For the avoidance of doubt, all time included under (ii) above shall be excluded from any computation under Clause 24.

(c) Further and without prejudice to the foregoing, in the event of the vessel deviating (which expression includes without limitation putting back, or putting into any port other than that to which she is bound under the instructions of Charterers) for any cause or purpose mentioned in Clause 21(a), the vessel shall be off-hire from the commencement of such deviation until the time when she is again ready and in an efficient state to resume her service from a position not less favorable to Charterers than that at which the deviation commenced, provided, however, that any service given or distance made good by the vessel whilst so off-hire shall be taken into account in assessing the amount to be deducted from hire. If the vessel, for any cause or purpose mentioned in Clause 21(a), puts into any port other than the port to which she is bound on the instructions of Charterers, the port charges, pilotage and other expenses at such port shall be borne by Owners. Should the vessel be driven into any port or anchorage by stress of weather hire shall continue to be due and payable during any time lost thereby.

(d) If the vessel's flag state becomes engaged in hostilities, and Charterers in consequence of such hostilities, find it commercially impracticable to employ the vessel and have given Owners written notice thereof, then from the date of receipt by Owners of such notice until the termination of such commercial impracticability the vessel shall be off-hire and Owners shall have the right to employ the vessel on their own account. **The rights afforded hereunder shall be in addition to those available under Clause 33 hereof.**

(e) **At Charterers' option,** time during which the vessel is off-hire under this charter may be applied to extend the **original or the extended** charter period; otherwise such off-hire time shall count as part of the charter period.

Comment: 21) When the ship breaks down, or temporarily cannot be used for the intended purpose, the time-charterer puts the ship off-hire. To prevent disagreements, it is important to have a detailed off-hire clause. The above clause pretty much covers all off-hire situations.

21 a iv) Stowaways have become a problem in certain parts of the world and can cause a lot of delays in subsequent ports. However, since most tankers and bulk carriers don't

have regular load and discharge ports, stowaways prefer liner ships as their mode of transportation.

21 e) This clause gives the charterer the option of extending the t/c for the period the ship was off-hire. Let's say a ship on t/c develops severe engine problems and needs to be towed to a drydock for repairs that may take several months. If the time-charterer has an obligation to haul a certain amount of cargo for a shipper, he would need to in-charter another ship, and if in the meantime t/c rates had gone up, he would be in a dire position. Clause 21 e gives him some protection from that. Since it is an option, he does not have to extend the t/c. If t/c rate has come down, he may elect not to extend the original t/c and charter another ship at a lower rate.

22. PERIODIC DRYDOCKING

The vessel was last drydocked: _____

(a) Owners have the right and obligation to drydock the vessel at regular intervals of, _____, **provided that the time for such drydocking is mutually agreed upon between Owners and Charterers**. On each occasion, Owners shall propose to Charterers a date on which they wish to drydock the vessel, not less than **two months** before such date, and Charterers shall ~~offer a port for such periodical drydocking and shall take all reasonable steps to make the vessel available as near to such date as practicable~~ **advise if such proposed date is acceptable. Such acceptance not to be unreasonably withheld. Charterers** shall take all reasonable steps to make the vessel available as near to such **mutually agreed** date as practicable

Owners shall put the vessel in drydock at their expense as soon as practicable after Charterers place the vessel at Owners' disposal clear of cargo other than tank washings and residues. Owners shall be responsible for and pay for the disposal into reception facilities of such tank washings and residues and shall have the right to retain any monies received therefore, without prejudice to any claim for loss of cargo under any bill of lading or this charter.

(b) ~~If a periodic drydocking is carried out in the port offered by Charterers (which must have suitable accommodation for the purpose and reception facilities for tank washings and residues), the vessel shall be off-hire from the time she arrives at such port until drydocking is completed and she is in every way ready to resume Charterers' service and is at the position at which she went off-hire or a position no less favourable to Charterers, whichever she first attains. However,~~

(i) ~~Provided that Owners exercise due diligence in gas-freeing, any time lost in gas-freeing to the standard required for entry into drydock for cleaning and painting the hull shall not count as off-hire, whether lost on passage to the drydocking port or after arrival there (notwithstanding Clause 21), and~~

(ii) ~~Any additional time lost in further gas-freeing to meet the standard required for hot work or entry to cargo tanks shall count as off-hire, whether lost on passage to the drydocking port or after arrival there.~~

~~Any time which, but for sub-Clause (i) above, would be off-hire, shall not be included in any calculation under Clause 24.~~

The expenses of gas-freeing, including without limitation the cost of bunkers, shall be for Owners' account.

(c) If Owners require the vessel, instead of proceeding to the offered port, to carry out periodical drydocking at a special port selected by them, the vessel shall be off-hire from the time when she is released to proceed to the special port until she next presents for loading in accordance with Charterers' instructions, provided, however, that Charterers shall credit Owners with the time which would have been taken on passage at the service speed had the vessel not proceeded to drydock. All fuel consumed shall be paid for by Owners, but Charterers shall credit Owners with the value of the fuel which would have been used on such notional passage calculated at the guaranteed daily consumption for the service speed ~~and shall further credit Owners with any benefit they may gain in purchasing bunkers at the special port~~.

(d) ~~Charterers shall, insofar as cleaning for periodical drydocking may have reduced the amount of tank-cleaning necessary to meet Charterers' requirements, credit Owners with the value of any bunkers which Charterers calculate to have been saved thereby, whether the vessel drydocks at an offered or a special port~~.

Comment: 22) Planned drydocking of the ship can be a source of disputes between owner and time-charterer. The owner usually has a deadline to put the ship in drydock. Moreover, he usually wants to do it at a shipyard of his choice with low rates and quick turn-around times. The time-charterer, on the other hand, wants to haul cargo on routes that may be far away from the shipyard. A good compromise can be reached if the owner takes his ship back at the last discharge port prior to drydocking and tries to find a cargo that takes the ship close to the drydock port. After the vessel has completed drydocking, she may go back on t/c according to the provisions in clause 22 c.

23. SHIP INSPECTION/**APPROVALS**

(a) Charterers shall have the right at any time during the charter period to make such inspection of the vessel as they may consider necessary. This right may be exercised as often and at such intervals as Charterers in their absolute discretion may determine and whether the vessel is in port or on passage. Owners **shall** afford~~ing~~ all necessary co-operation and accommodation on board provided, however,

(i) That neither the exercise nor the non-exercise, nor anything done or not done in the exercise or non-exercise, by Charterers of such right shall in any way reduce the Master's or Owners' authority over, or responsibility to Charterers or third parties for the vessel and every aspect of her operation, nor increase Charterers' responsibilities to Owners or third parties for the same; and

(ii) That Charterers shall not be liable for any act, neglect or default by themselves, their servants or agents in the exercise or non-exercise of the aforesaid right.

(b) Owners guarantee that for the duration of this time charter, the vessel will be in compliance with vessel inspection (vetting) programs of government owned or private oil companies as per their attached list, which will become an integral part of this Charter Party. The list should show the names of the oil companies, together with commencement and expiration dates (if applicable) of the Approval; broken down in the following three categories:

(AA) Approval for vessel to be chartered by a particular company (for example XYZ).

(BB) Approval for vessel to call on marine facilities owned or operated by XYZ

(CC) Approval for vessel to carry oil owned by XYZ, but calling at 3rd party marine facilities.

(c) Owners warrant that at commencement of this charter the vessel is deemed to be acceptable to the following major oil companies: EXXON-MOBIL, CONOCO-PHILIIPS, SHELL OIL, BP-AMOCO-ARCO, CHEVRON-TEXACO, VELA, STATOIL.

(d) Owners warrant that a current Vessel Particulars Questionnaire (VPQ) is on file with OCIMF's SIRE database. Owners are to send Charterers a copy of this VPQ before this charter shall become effective.

(e) **If during the term of this Charter the vessel is rejected by a government or private oil company as listed under 23 (c), and Charterers as a consequence of such rejection are unable to find new employment for the vessel and have given Owners written notice thereof, then from the date of receipt by Owners of such notice and for a period of 45 days thereafter, or until Charterers have found employment for the vessel, whichever is less, the vessel shall be off-hire. In addition, if the vessel is no longer acceptable to at least three oil companies on attached list, under 23 (c) and such loss of approvals persists for 45 days after receipt by Owners of written notice thereof from Charterers, then Charterers may thereafter, during the continued persistence of such loss of approvals, cancel this Charter.**

(f) **If inspection of the vessel is requested by Charterers, or by a third party, Owners to coordinate with the Master to select a suitable time and place that will not interfere with shipboard operations and will not result in delay of the vessel.**

Comment: 23) After a number of ships in the late 1970s caused oil spills due to strandings, collisions or explosions, oil companies started a screening (vetting) programme for the tankers they chartered. The vetting procedure is quite thorough. An inspector not only performs a physical inspection of the ship, but also makes sure the officers and crew are capable of operating her in a safe and efficient manner.

If the ship is acceptable to a certain charterer, it is called "Approval." Approvals used to be good for one or two years but, due to some recent court cases, ship inspections have to be performed on a more or less continuous basis; especially if there is reason to believe that the ship may have developed problems, or has been involved in a recent marine accident. Most charterers also require a new inspection if the ship has changed name, changed ownership, or if she has been placed under new technical management.

Smaller oil companies and oil trading houses that charter tankers, often rely on the approval of a major oil company. If a ship does not have several major oil company approvals, the t/c rate is usually well below the going market rate, because without approvals it is very hard to find employment for the ship. Most companies make a distinction between the level of approval needed as per clause 21 (b) (AA) (BB) and (CC).

24. PERFORMANCE

(a) Owners guarantee that the speed and consumption of the vessel shall be as follows:

LADEN at Sea

Average speed in knots ____ at average bunker consumption of F.O. for main engine propulsion _____ MT/day, plus _____ MT/day D.O. for auxiliary Diesel engines

IN BALLAST at Sea

Average speed in knots ____ at average bunker consumption of F.O. for main engine propulsion _____ MT/day, plus _____ MT/day D.O. for auxiliary Diesel engines.

Est. average consumption for Steaming during Lightering operations:

F.O.: _____MT/hr. DO: _____MT/hr.

ADDITIONAL FUEL CONSUMPTION		
Operation	**F.O. MT**	**D.O. MT**
Inerting all cargo tanks (IGS)	_____	_____
Offloading a full cargo (Pumping)	_____	_____
Crude Oil Washing all cargo tanks (COW)	_____	_____
Est. Cargo Heating full cargo by 1°C (Heating)	_____	_____
Estimated daily "Domestic" Consumption	_____	_____

Prior to commencement of this charter, Owners to furnish Charterers with copies of last 10 loaded and last 10 ballast voyage records to verify speed, and F.O. and D.O. (if applicable) consumption. Furthermore, Owners to provide Charterers with records that show additional fuel consumption for IGS, Pumping cargo, COW and Heating operations based on the last 10 occurrences, or on information provided by the manufacturers of above mentioned equipment that shows fuel consumption.

~~The foregoing bunker consumptions are for all purposes except cargo heating and tank cleaning and shall be pro-rated between speeds shown.~~

The service speed of the vessel is ____ knots laden and ____ knots in ballast and in the absence of Charterers' orders to the contrary the vessel shall proceed at the service speed. ~~However, if more than one laden and one ballast speed are shown in the table above, Charterers shall have the right to order the vessel to steam at any speed within the range set out in the table (the "ordered speed").~~

~~If the vessel is ordered to proceed at any speed other than the highest speed shown in the table and the average speed actually attained by~~

~~the vessel during the currency of such order exceeds such ordered speed plus 0.5 knots (the "maximum recognised speed"), then for the purpose of calculating any increase or decrease of hire under this Clause 24, the maximum speed shall be used in place of the average speed actually attained.~~

~~For the purposes of this charter the "guaranteed speed" at any time shall be the then - current ordered speed or the service speed, as the case may be.~~

The average speeds and bunker consumptions shall for the purposes of this Clause 24 be calculated by reference to the observed distance from ~~pilot station to pilot station~~ **beginning of sea voyage to end of sea voyage** on all sea passages during each period stipulated in Clause 24 (c), but excluding any time which the vessel is (or but for Clause 22 (b) (i) would be) off-hire and also excluding "Adverse Weather Periods", being (i) any periods during which reduction of speed is necessary for safety in congested waters, or in poor visibility (ii) any days, noon to noon, when winds exceed force 5 on the Beaufort Scale for more than 12 hours. **Owners to provide Charterers with copies of Deck Log pages that show the claimed adverse weather conditions.**

Also excluded are:

(i) Any time lost during attempted salvage and/or saving of life.

(ii) Any time Charterers ordered vessel to proceed at other than service speed.

(b) If during any ~~year~~ **90 days** from the date on which the vessel enters service (~~anniversary to anniversary~~) **or from the beginning to the end if the charter period is less than 90 days, or during the period between a multiple of 90 days and the end of the charter**, the vessel falls below or exceeds the performance guaranteed in Clause 24(a) then if such shortfall or excess results

(i) From a reduction ~~or an increase~~ in the average speed of the vessel, compared to the speed guaranteed in Clause 24(a), then an amount equal to the value at the hire rate of the time so lost ~~or gained, as the case may be~~, shall be deducted from ~~or added to~~ the hire paid.

(ii) From an increase ~~or a decrease~~ in the total bunkers consumed, compared to the total bunkers which would have been consumed had the vessel performed as guaranteed in Clause 24(a), an amount equivalent to the value of the additional bunkers consumed ~~or the bunkers saved, as the case may be~~, based on the average price paid by the Charterers for the

vessel's bunkers in such period, shall be deducted from ~~or added to~~ the hire paid.

~~The addition to or deduction from hire so calculated for the laden and ballast mileage respectively shall be adjusted to take into account the mileage steamed in each such condition during Adverse Weather Periods, by dividing such addition or deduction by the number of miles over which the performance has been calculated and multiplying by the same number of miles plus the miles steamed during the Adverse Weather Periods, in order to establish the total addition to or deduction from hire to be made for such period.~~

Reduction of hire under the foregoing sub-Clause (b) shall be without prejudice to any other remedy available to Charterers.

(c) Calculations under this clause 24 shall be made for the ~~yearly~~ periods terminating on each successive **90 day** anniversary of the date on which the vessel enters service, and for the period between the last such anniversary and the date of termination of this charter ~~if less than a year~~. Claims in respect of reduction of hire arising under this Clause during the final ~~year~~ **90 day** period or part year of the charter period shall in the first instance be settled in accordance with Charterers' estimate made two months before the end of the charter period. Any necessary adjustments after this charter terminates shall be made by payment by Owners to Charterers ~~or by Charterers to Owners as the case may require~~.

~~Payments in respect of increase of hire arising under this Clause shall be made promptly after receipt by Charterers of all the information necessary to calculate such increase.~~

Comment: 24) Clause a spells out speed and fuel consumption. At the same fuel consumption, loaded speed is usually a knot slower than speed in ballast. In addition to propulsion, the vessel also consumes fuel for other purposes. This should be specified prior to entering into a t/c contract, so there will be no surprises later on. Speed to be maintained is usually subject to fair weather conditions with winds not exceeding Beaufort force 5(17-21 knots, or 8.0-10.7 metres per second).

25. SALVAGE

Subject to the provisions of Clause 21 hereof, all loss of time and all expenses (excluding any damage to or loss of the vessel or tortuous liabilities to third parties) incurred in connection with — **or as a consequence of** — saving or attempting to save life or in successful or unsuccessful attempts at salvage shall be borne equally by Owners and Charterers provided that Charterers shall not be liable to contribute

towards any salvage payable by Owners arising in any way out of services rendered under this Clause 25.

All salvage and all proceeds from derelicts shall be divided equally between Owners and Charterers after deducting the Master's, officers' and crew's share.

26. LIEN

Owners shall have a lien upon all cargoes and all freights, subfreights, subhire and demurrage for any amounts due under this charter, and Charterers shall have a lien on the vessel for all monies paid in advance and not earned, and for all claims for damages arising from any breach by Owners of this charter.

Comment: 26) The owners have a lien on all cargoes, freight etc. proceeds due charterer. This is an important clause for owners since there have been problems with time-charterers who paid the first t/c hire installment, loaded the ship, cashed the freight and then were never heard from again. Even though the owner did not receive the full hire, he is still legally obliged to deliver the cargo. If the cargo is still on board the owner can put a lien on it, but it will create giant headaches with cargo owners.

The charterer has a lien on the vessel for hire paid in advance. This clause basically gives both owner and charterer the clout to keep each other honest. See also "liens" at the beginning of chapter 5.

27. EXCEPTIONS

(a) The vessel, her Master and Owners shall not, unless otherwise in this charter expressly provided, be liable for any loss or damage or delay or failure arising or resulting from any act, neglect or default of the Master, pilots, mariners or other servants of Owners in the navigation or management of the vessel; fire, unless caused by the actual fault or privity of Owners; collision or stranding; dangers and accidents of the sea; explosion, bursting of boilers, breakage of shafts or any latent defect in hull equipment or machinery; provided, however, that Clauses 1, 2, 3 and 24 hereof shall be unaffected by the foregoing. Further, neither the vessel, her Master or Owners, nor Charterers shall, unless otherwise in this charter expressly provided, be liable for any loss or damage or delay or failure in performance hereunder arising or resulting from act of God, act of war, seizure under legal process, quarantine restrictions, strikes, lock-outs, riots, restraints of labor, civil commotions or arrest or restraint of princes, rulers or people.

(b) The vessel shall have liberty to sail with or without pilots, to tow or go to the assistance of vessels in distress and to deviate for the purpose of saving life or property, **or to take bunkers or water, or to call on a port for emergency repairs or to obtain critical spare parts.**

(c) Clause 27(a) shall not apply to or affect any liability of Owners or the vessel or any other relevant person in respect of

(i) Loss or damage caused to any berth, jetty, dock, dolphin, buoy, mooring line, pipe or crane or other works or equipment whatsoever at or near any place to which the vessel may proceed under this charter, whether or not such works or equipment belong to Charterers, or

(ii) Any claim (whether brought by Charterers or any other person) arising out of any loss of or damage to or in connection with cargo. All such claims shall be subject to the Hague-Visby Rules or the Hague Rules as the case may be, which ought pursuant to Clause 38 hereof to have been incorporated in the relevant bill of lading **or waybill** (whether or not such Rules were so incorporated) or, if no such bill of lading **or waybill** is issued, to the Hague-Visby Rules; **unless the Hamburg Rules compulsorily apply, in which case to the Hamburg Rules.**

(d) In particular and without limitation, the foregoing subsections (a) and (b) of this Clause shall not apply to or in any way affect any provision in this charter relating to off-hire or to reduction of hire.

Comment: 27) This is a clause that should receive close scrutiny from an admiralty lawyer to make sure the interest of both parties to this c/p have been addressed properly. Since ocean shipping always has been – and still is – a hazardous undertaking, the carrier has certain defences against claims as mentioned in clause 27 a.

27 c ii: There are several cargo loss conventions. Some countries have adopted one set of Rules and other countries a different set. The "Rules" apply to cargo shipped under a Bill of Lading or similar document of title and spell out defences to the carrier against cargo claims. Please note, the Rules do not apply to charter parties, but can apply to Bills of Lading issued under a c/p if so stipulated (see clause 38) In the Hague-Visby Rules one of the main requirements is that the carrier shall be bound before and at the beginning of the voyage to exercise due diligence to make the ship seaworthy, to properly man, equip and supply the ship, and to make holds fit and safe for reception, for carriage and for preservation of the cargo. Cargo carried on deck is excluded unless carrier and cargo owner contract otherwise.

28. INJURIOUS CARGOES

No acids, explosives or cargoes injurious to the vessel shall be shipped, and without prejudice to the foregoing, any damage to the vessel caused by the shipment of any such cargo, and the time taken to repair such damage, shall be for Charterers' account. No voyage shall be undertaken, nor any goods or cargoes loaded, that would expose the vessel to capture or seizure by rulers or governments.

29. GRADE OF BUNKERS

DELETED AND REPLACED BY RIDER CLAUSE 45

30. DISBURSEMENTS

Charterers to arrange for payment of items listed in clause 7 of this C/P. However, should the Master require **additional** advances for ordinary disbursements at any port, **such requests are to be directed to Charterers' operations/chartering department for approval. Requests for advances made directly by the vessel to Charterers' agents will not be accepted.** ~~Charterers or their agents shall make such advances to him, in consideration of which Owners shall pay a commission of two and a half percent.~~ **Approved advances made by Charterers will be charged interest at a rate of six percent per annum plus two and a half percent commission,** and all such advances and commissions shall be deducted from hire.

Comment: 30) In the days of limited communications, it was not uncommon for the master to ask the vessel's agent for an advance to pay for ordinary disbursements, which in the printed form are not defined. Since the time-charterer is responsible for all port and cargo related charges, and usually pays those up-front, any additional charges for owner's account should be dealt with directly by the vessel's owner, or by their agent.

31. LAYING UP

(a) Charterers shall have the option, after consultation with Owners, of requiring Owners to lay up the vessel at a safe place nominated by Charterers, in which case the hire provided for under this charter shall be adjusted to reflect any net increases in expenditure reasonably incurred or any net saving which should reasonably be made by Owners as a result of such lay-up. Charterers may exercise the said option any number of times during the charter period.

(b) Charterers shall have the option of using the vessel for floating storage.

Comment: 31) If times are tough, a time-charterer has the option of laying the ship up. Normal hire remains in effect, but extra expenses or savings (perhaps part of the crew is taken off the ship) are to be passed on to the time-charterer. An owner is usually not happy with lay-up or floating storage, because in many instances marine growth, such as barnacles or seaweed, will attach itself to the hull. Idling of the main engine and machinery may result in drying out of seals and equipment may become inoperative. On the other hand, lay-up may be the only option before the owners send the ship to the scrapyard.

32. REQUISITION

(a) Should the vessel be requisitioned by any government, de facto or de jure, during the period of this charter, the vessel shall be off-hire during the period of such requisition, and any hire paid by such government in respect of such requisition period shall be for Owners' account. Any such requisition period shall count as part of the charter period.

(b) Notwithstanding sub-clause (a) hereof, should the vessel remain requisitioned for more than 30 days, Charterers shall have the right to terminate this charter and redeliver the vessel immediately, or upon the conclusion of any then cargo-laden voyage.

33. OUTBREAK OF WAR

~~If war or hostilities break out between any two or more countries: U.S.A., U.S.S.R., P.R.C., U.K., Netherlands, both Owners and Charterers shall have the right to cancel this charter.~~

(a) When a state of "War Risk" as defined in clause 1(b) of BIMCO CONWARTIME 2004 (incorporated in this contract under clause 35) prevents the vessel from navigating safely* through waters that are deemed customary routes to reach and/or to reside and/or to leave scheduled load or discharge ports or SBM's or Lightering locations and/or is unable to load or discharge her intended cargo as a direct result of "War Risk", both Owners and Charterers shall have the right to cancel this charter after giving notice of five working days.**

* Safely in the reasonable judgment of the Master and/or the Owners.

** "Unable" to mean: commercially not viable in the reasonable judgment of Charterers.

(b) Unless agreed otherwise, the vessel is to be redelivered to the Owners at the nearest open and safe location, subject to BIMCO CONWARTIME 2004 provisions.

Comment: 33) The original printed clause has given rise to uncertainty because "outbreak of war" leaves a lot of room for interpretation. For example, if prior to the Gulf War in 1991, which involved several of the countries mentioned above, an owner had fixed his vessel at $12,000 for a multi-year t/c – far away from the theatre of war – and t/c rates had gone up to $20,000/day, he could invoke the original printed clause, cancel the c/p and out-charter his ship to somebody else at the higher rate, even though the operation of the ship was not affected by hostilities at all. In other situations, Charterers have done the same when the t/c rates had dropped and hostilities broke out in some part of the world that had nothing to do with the safe operation of the ship.

The original idea behind this clause was that in case of war between the major powers the economic situation could become so unstable – and affect shipping so severely – that owners and charterers should be allowed to terminate their contract. The Netherlands is probably listed because the headquarters of Shell Oil Co. (the creators of this c/p) are located in The Hague.

34. ADDITIONAL WAR EXPENSES

If the vessel is ordered to trade in areas where there is war (*de facto* or *de jure*) or threat of war, Charterers shall reimburse Owners for any additional insurance premia, crew bonuses and other expenses which are reasonably incurred by Owners as a consequence of such orders, provided that Charterers are given notice of such expenses as soon as practicable and in any event before such expenses are incurred, and provided further that Owners obtain from their insurers a waiver of any subrogated rights against Charterers in respect of any claims by Owners under their war risk insurance arising out of compliance with such orders.

Comment: 34) This looks fine on paper, but owners and charterers should also consider the safety of the crew in a war zone. During the Iran-Iraq war in the 1980s many ships were sent into war zones in the Arabian Gulf; often at great risk to the crew. The ships were usually well insured against explosion or sinking, but unfortunately in many instances the crew was seen as expendable. BIMCO "CONWARTIME 2004" (see next clause 35) addresses crew matters, but this clause is not standard to Shelltime 4.

Comment: (35-42) The rest of the clauses in the printed Shelltime 4 c/p contain a lot of legal subjects and are best handled by your attorney.

35. WAR RISK

The complete SHELLTIME 4, clause 35, has been deleted and replaced by BIMCO War Risk clause for Time Charters (Code name: CONWARTIME 2004) in its entirety as follows:

(a) For the purpose of this Clause, the words:

(i) "Owners" shall include the shipowners, bareboat charterers, disponent owners, managers or other operators who are charged with the management of the Vessel, and the Master; and

(ii) "War Risks" shall include any actual, threatened or reported: war; act of war; civil war; hostilities; revolution; rebellion; civil commotion; warlike operations; laying of mines; acts of piracy; acts of terrorists; acts of hostility or malicious damage; blockades (whether imposed against all vessels or imposed selectively against vessels of certain flags or ownership, or against certain cargoes or crews or otherwise howsoever); by any person, body, terrorist or political group, or the Government of any state whatsoever, which, in the reasonable judgment of the Master and/or the Owners, may be dangerous or are likely to be or to become dangerous to the Vessel, her cargo, crew or other persons on board the Vessel.

(b) The Vessel, unless the written consent of the Owners be first obtained, shall not be ordered to or required to continue to or through, any port, place, area or zone (whether of land or sea), or any waterway or canal, where it appears that the Vessel, her cargo, crew or other persons on board the Vessel, in the reasonable judgment of the Master and/or the Owners, may be, or are likely to be, exposed to War Risks. Should the Vessel be within any such place as aforesaid, which only becomes dangerous, or is likely to be or to become dangerous, after her entry into it, she shall be at liberty to leave it.

(c) The Vessel shall not be required to load contraband cargo, or to pass through any blockade, whether such blockade be imposed on all vessels, or is imposed selectively in any way whatsoever against vessels of certain flags or ownership, or against certain cargoes or crews or otherwise howsoever, or to proceed to an area where she shall be subject, or is likely to be subject to a belligerents' right of search and/or confiscation.

(d) (i) The Owners may effect war risks insurance in respect of the Hull and Machinery of the Vessel and their

other interests (including, but not limited to, loss of earnings and detention, the crew and their protection and Indemnity Risks), and the premiums and/or calls therefore shall be for their account.

(ii) If the Underwriters of such insurance should require payment of premiums and/or calls because, pursuant to the Charterers' orders, the Vessel is within, or is due to enter and remain within, or pass through any area or areas which are specified by such Underwriters as being subject to additional premiums because of War Risks, then the actual premiums and/or calls paid shall be reimbursed by the Charterers to the Owners at the same time as the next payment of hire is due, or upon redelivery, whichever occurs first.

(e) If the Owners become liable under the terms of employment to pay to the crew any bonus or additional wages in respect of sailing into an area which is dangerous in the manner defined by the said terms, then the actual bonus or additional wages paid shall be reimbursed to the Owners by the Charterers at the same time as the next payment of hire is due, or upon redelivery, whichever occurs first.

(f) The Vessel shall have liberty:-

(i) to comply with all orders, directions, recommendations or advice as to departure, arrival, routes, sailing in convoy, ports of call, stoppages, destinations, discharge of cargo, delivery, or in any other way whatsoever, which are given by the Government of the Nation under whose flag the Vessel sails, or other Government to whose laws the Owners are subject, or any other Government, body or group whatsoever acting with the power to compel compliance with their orders or directions;

(ii) to comply with the order, directions or recommendations of any war risks underwriters who have the authority to give the same under the terms of the war risks insurance;

(iii) to comply with the terms of any resolution of the Security Council of the United Nations, the effective orders of any other Supranational body which has the right to issue and give the same, and with national laws aimed at enforcing the same to which the Owners are subject, and to obey the orders and directions of those who are charged with their enforcement;

(iv) to discharge at any other port any cargo or part thereof which may render the Vessel liable to confiscation as a contraband carrier;

(v) to call at any other port to change the crew or any part thereof or other persons on board the Vessel when there is reason to believe that they may be subject to internment, imprisonment or other sanctions.

(g) If in accordance with their rights under the foregoing provisions of this Clause, the Owners shall refuse to proceed to the loading or discharging ports, or any one or more of them, they shall immediately inform the Charterers. No cargo shall be discharged at any alternative port without first giving the Charterers notice of the Owners' intention to do so and requesting them to nominate a safe port for such discharge. Failing such nomination by the Charterers within 48 hours of the receipt of such notice and request, the Owners may discharge the cargo at any safe port of their own choice.

(h) If in compliance with any of the provisions of sub-clauses (b) to (g) of this Clause anything is done or not done, such shall not be deemed a deviation, but shall be considered as due fulfillment of this Charter Party.

36. BOTH TO BLAME COLLISION CLAUSE

If the liability for any collision in which the vessel is involved while performing this charter fails to be determined in accordance with the laws of the United States of America, the following provision shall apply:

"If the ship comes into collision with another ship as a result of the negligence of the other ship and any act, neglect or default of the Master, mariner, pilot or the servants of the carrier in the navigation or in the management of the ship, the Owners of the cargo carried hereunder will indemnify the carrier against all loss, or liability to the other or non-carrying ship or her Owners in so far as such loss or liability represents loss of, or damage to, or any claim whatsoever of the Owners of the said cargo, paid or payable by the other or non-carrying ship or her Owners to the Owners of the said cargo and set off, recouped or recovered by the other or non-carrying ship or her Owners as part of their claim against the carrying ship or carrier".

"The foregoing provisions shall also apply where the Owners, operators or those in charge of any ship or ships or objects other than, or in addition to, the colliding ships or objects are at fault in respect of a collision or contact."

Charterers shall procure that all bills of lading issued under this charter shall contain a provision in the foregoing terms to be applicable where the liability for any collision in which the vessel is involved falls to be determined in accordance with the laws of the United States of America.

37. **GENERAL AVERAGE**/NEW JASON CLAUSE

(a) **General average to be settled and adjusted in New York*/ Houston* pursuant to the custom and usage in existence at the Port of New York*/Houston* and according to the York/Antwerp Rules, 1994. Hire not to contribute to general average.** (**strike out what is not applicable*)

(b) **In addition to any other rights Charterers may have, and if requested by Charterers, Owners will release one or more cargoes to Charterers for transshipment from a port of refuge by and at the expense of Charterers in exchange for a non separation of interest agreement, general average bond from Charterers, and a general average undertaking from Charterers' underwriters in the customary forms. Charterers' transshipment expenses, up to the general average expenses saved, are to be treated like the general average expenses saved, as if those expenses had actually been incurred and paid for by Charterers. Transshipment shall not affect the freight rate, which shall be based on a voyage to the discharge port fixed by the charter, or otherwise declared by Charterers in accordance with the terms of the charter. If freight at risk, Charterers shall be credited for the vessel's daily manning and insurance costs as well as port expenses saved for any part of the voyage not required to be made by reason of transshipment. Bills of lading for such transshipment cargoes are deemed to be accomplished, on completion of transfer to the transshipping vessel, and port of refuge where transfer is made shall be treated as a discharge port, except for purposes of calculating the freight rate.**

(c) **Any amounts allowable in general average for wages, provisions and stores shall be credited to Charterers insofar as such amounts are in respect of a period when the Vessel is on-hire.**

~~General average contributions shall be payable according to York/Antwerp Rules, 1974, and shall be adjusted in London in accordance with English law practice but should adjustment be made in accordance with the law and practice of the United States~~

~~of America, the following provision shall apply~~

(d) The following provisions shall apply to general average adjustments made hereunder:

"In the event of accident, danger, damage or disaster before or after the commencement of the voyage, resulting from any cause whatsoever, whether due to negligence or not, for which, or for the consequence of which, the carrier is not responsible by statute, contract or otherwise, the cargo, shippers, consignees or Owners of the cargo shall contribute with the carrier in general average to the payment of any sacrifices, losses or expenses of a general average nature that may be made or incurred and shall pay salvage and special charges incurred in respect of the cargo."

"If a salving ship is owned or operated by the carrier, salvage shall be paid for as fully as if the said salving ship or ships belonged to strangers. Such deposit as the carrier or his agents may deem sufficient to cover the estimated contribution of the cargo and any salvage and special charges thereon shall, if required, be made by the cargo, shippers, consignees or Owners of the cargo to the carrier before delivery."

Charterers shall procure that all bills of lading issued under this charter shall contain a provision in the foregoing terms, to be applicable where adjustment of general average is made in accordance with the laws and practice of the United States of America.

38. CLAUSE PARAMOUNT

The following provision is hereby incorporated as a term of this charter, and shall likewise be incorporated into all bills of lading or waybills issued pursuant to this charter:

~~Charterers shall procure that all bills of lading issued pursuant to this charter shall contain the following clause:~~

"(1) Subject to sub-clause (2) hereof, this bill of lading shall be governed by, and have effect subject to, the rules contained in the International Convention for the Unification of Certain Rules relating to Bills of Lading signed at Brussels on 25th August 1924 (hereafter the "Hague Rules") as amended by the Protocol signed at Brussels on 23rd February 1968 (hereafter the "Hague-Visby Rules"). Nothing contained herein shall be deemed to be either a surrender by the carrier of any of his rights or immunities or any increase of any of his responsibilities or liabilities under the Hague-Visby Rules."

"(2) If there is governing legislation which applies the Hague or Rules compulsory of this bill of lading, to the exclusion of the Hague-Visby Rules, then this bill of lading shall have effect subject to the Hague Rules **or Hamburg Rules, as the case may be.**

Nothing herein contained shall be deemed to be either a surrender by the carrier of any of his rights or immunities or an increase of any of his responsibilities under the Hague Rules."

"(3) If any term of this bill of lading is repugnant to the Hague-Visby Rules, or Hague **or Hamburg** Rules if applicable, such term shall be void to that extent but no further."

"(4) Nothing in this bill of lading shall be construed as in any way restricting, excluding or waiving the right of any relevant party or person to limit his liability under any legislation and/or law."

39. TOVALOP

Entire Clause deleted, because no longer applicable

40. EXPORT RESTRICTIONS

The Master shall not be required or bound to sign bills of lading for the carriage of cargo to any place to which export of such cargo is prohibited under the laws, rules or regulations of the country in which the cargo was produced and/or shipped.

~~Charterers shall procure that all bills of lading issued under this charter shall contain the following clause:~~

~~"If any laws rules or regulations applied by the government of the country in which the cargo was produced and/or shipped, or any relevant agency thereof, impose a prohibition on export of the cargo to the place of discharge designated in or ordered under this bill of lading, carriers shall be entitled to require cargo Owners forthwith to nominate an alternative discharge place for the discharge of the cargo, or such part of it as may be affected, which alternative place shall not be subject to the prohibition, and carriers shall be entitled to accept orders from cargo Owners to proceed to and discharge at such alternative place. If cargo Owners fail to nominate an alternative place within 72 hours after they or their agents have received from carriers notice of such prohibition, carriers shall be at liberty to discharge the cargo or such part of it as may be affected by the prohibition at any safe place on which they or the Master may in their or his absolute discretion decide and which is not subject to the prohibition, and such discharge shall constitute due performance of the contract contained in this bill of lading so far as the cargo so discharged is concerned".~~

~~The foregoing provision shall apply mutatis mutandis to this charter, the references to a bill of lading being deemed to be references to this charter.~~

41.LAW AND LITIGATION

(a) This charter shall be construed and the relations between the parties determined in accordance with the laws of England.

(b) Any dispute arising under this charter shall be decided by the ~~English~~ **High** Courts in **London** to whose jurisdiction the parties hereby agree.

(c) Notwithstanding the foregoing, but without prejudice to any party's right to arrest or maintain the arrest of any maritime property, ~~either party~~ **the parties** may, by ~~giving written notice of election of the other party~~, **mutual** ~~elect~~ **agreement** ~~to~~ have any such dispute referred to ~~the~~ arbitration ~~of a single arbitrator~~ in London in accordance with the provisions of the Arbitration Act ~~1950~~ **1996**, or any statutory modification or re-enactment thereof for the time being in force **and under the Terms of the London Maritime Arbitrators' Association (LMAA) before a tribunal consisting of three arbitrators; or the parties may by mutual agreement refer their claim to LMAA's latest revised Small Claims Procedure with a single arbitrator**.

~~(i) A party shall lose its right to make such an election only if:~~

~~(a) It receives from the other party a written notice of dispute which -~~

~~(1) States expressly that a dispute has arisen out of this charter~~

~~(2) Specifies the nature of the dispute; and~~

~~(3) Refers expressly to this clause 41 (c); and~~

~~(b) It fails to give notice of notice of election to have the dispute referred to arbitration not than 30 days from the date of receipt of such notice of dispute.~~

~~(ii) The parties hereby agree that either party may -~~

~~(a) Appeal to the High Court on any question of law arising out of an award;~~

~~(b) Apply to the High Court for an order that the arbitrator state the reasons for this award;~~

~~(c) Give notice to the arbitrator that a reasoned award is required; and~~

~~(d) Apply to the High Court to determine any question of law arising in the course of the reference.~~

d) ~~It shall be a condition precedent to the right of any party to a stay of any legal proceedings in which maritime property has been, or may be, arrested in connection with a dispute under this charter;~~

~~that that party furnishes to the other party security to which that other party would have been entitled in such legal proceedings in the absence of a stay.~~

Comment: 41) Arbitration was meant to be cheaper and less time-consuming than going to a court of law. Neither statement is true anymore. Parties to an arbitration procedure are almost always represented by expensive lawyers and cases can drag on for years. The British Arbitration Act of 1996 spells out arbitration procedures fairly clearly and gives the parties some recourse if the arbitrators do not follow the rules. Unfortunately the same cannot be said for the US Arbitration Act of 1925 and since amended a few times. Under the US Arbitration Act parties pretty much have to rely on the skill and integrity of the arbitrators. Most judges are more than happy to keep maritime cases off their dockets. Therefore appeals are seldom successful; especially in the US. (See also chapter 12)

For complicated cases, it is therefore perhaps best to go to court. For straightforward and for small claims, such as for cargo damage or demurrage, parties could – by mutual consent – elect to go to arbitration and choose the Small Claim procedure to resolve their dispute.

42. CONSTRUCTION

The ~~side~~ **clause** headings have been included in this charter for convenience of reference and shall in no way affect the construction hereof.

Comment: The following clauses are not part of the printed form, but are suggested rider clauses.

ADDITIONAL CLAUSES

The following clauses are incorporated in the main charter party.

43. OWNERSHIP OF THE VESSEL

Owners guarantee that the vessel is not in any way directly or indirectly owned, controlled or managed by any Cuban, Iranian, or North Korean interests.

Comment 43: The USA has trade sanctions against countries listed above.

44. BOYCOTT CLAUSE

Owners guarantee that the vessel and her Owners or Managers are not on any boycott list, hindering or preventing the vessel from free trading

according to this Charter.

Comment 44: Some countries may have a boycott against certain flag vessels. For example certain Arab countries do not allow Israeli flagged ships in their territorial waters. Under US law it is illegal for US based operators to comply with these kind of boycotts.

45. BUNKERS AT DELIVERY AND REDELIVERY

(a) Prior to delivery and redelivery, the parties shall, unless otherwise agreed, each appoint surveyors for their respective accounts, who shall, not later than at first loading port/last discharge port respectively, conduct a joint survey for the purpose of ascertaining the quantity and quality of bunkers on board the vessel.

(b) Charterer shall accept and pay for all bunkers on board at time of delivery, based on actual CIF cost of the various bunker parcels at the time and place where loaded. Owners shall accept and pay for all bunkers on board at time of redelivery, based on actual CIF cost of the various bunker parcels at the time and place where loaded. In case this charter terminates other than through normal redelivery at the end of the charter period (examples are: termination due to arrest of the vessel or if the vessel is declared a total loss, or if the vessel goes off hire due to other unusual circumstances), Owners to pay for the estimated quantity of all bunkers on board at the time of such termination based on actual CIF cost of the various bunker parcels at the time and place where loaded. All of the above based on the FIFO principle (bunkers First In are First Out) (see also clause 66 c)

(c) Owners shall give Charterers the use and benefit of any fuel contract that they may have in force; provided the Bunker Supplier(s) agree.

(d) Heavy Fuel Oil specifications shall comply with ISO 8217 RME 25 with a maximum Vanadium content of 300 mg/kg, instead of 200 mg/kg. Marine Gas Oil or Marine Diesel Oil specifications shall comply with specifications provided by Owners.

(e) If the specified fuel is not available at a particular bunker port, Charterers to notify Owners accordingly, and Owners to select a fuel specification that is available at that particular port.

(f) Although replenishment of bunkers will be arranged for and be paid for by Charterers, the operation will be under the supervision and responsibility of the Master.

Comment 45: Most modern ships are propelled by Diesel engines, that are more sensitive to appropriate fuel than steamships. Since the time-charterer buys bunkers for the ship, the owner should furnish him with proper specifications

to avoid engine damage claims based on faulty fuel. Fuel complying with ISO 8217 RME is available in most bunker ports of the world but, if not, invoke clause 45 e.

Even though the invoice may state that the fuel complies with ISO 8217 RME 25 standards, the reality is often quite different. It is easy to measure the correct volume of bunkers and reduce it to 60°F/15°C. However, bunkers are sold by weight and the density provided by the bunker dealer may not always be correct; resulting in erroneous invoicing. Therefore many head-owners and time-chartered owners use the services of bunker fuel inspection companies that analyse bunker samples for quality and quantity.

46. PUMPING CLAUSE

(a) Owners guarantee that the vessel is capable of discharging the loaded liquid cargo within 24 hours, or is capable of maintaining a pressure of 125 psi throughout the bulk discharge at vessel's manifold; provided shore facility permits this and is capable of receiving at that rate. These requirements do not apply during crude oil washing, stripping, or if the vessel is not allowed to pump at maximum rate due to vapor return requirements, or due to raising a floating roof of shore tank(s), or if the vessel is prevented from off-loading at a high rate because of excessive Break and/or Sheer forces, or for reasons of the vessel's Stability.

(b) All time lost, and all extra expenses incurred as a result of Owner's failure to comply with above clause 46 (a), is for Owner's account.

(c) Charterers may deduct from hire all net expenses incurred in connection with pumpable and reachable cargo remaining on board (ROB) as the result of Owner's breach of obligations.

(d) The vessel to have at least three main cargo pumps, and a positive displacement stripping pump. The pumps to be fitted with high temperature alarms and trips. All pumps to have emergency stops near the manifold area or in the CCR.

(e) Vessels without centre bulkhead and/or with U-shaped double bottom ballast tanks must have operating instructions, prominently posted in the CCR, that indicate the maximum number of slack tanks allowed to maintain a positive GM at all times during cargo or ballast operations.

Comment 46 a: Whether a tanker is small or large, both sizes usually have sufficient pumping capacity to discharge the cargo in 24 hours. However, in many instances the receiving installation is not able to receive cargo at that rate. First of all, the terminal may not provide enough (or

not the right diameter) hoses or loading arms to match the ship's pumping capability. Secondly, the shoreline may be of small diameter, resulting in high back pressure. Another reason for high back pressure is if the shore tanks are at a great distance from the ship, or if they are elevated. Shore facilities like to put their storage tanks high up on a hill, so they can feed their refinery units, or other ships from those tanks by gravity, without having to use their own pumps. This means that an offloading ship needs to pump against a lot of back pressure and may not be able to pump off within 24 hours. In that case the ship's pumps need to maintain 125 psi pressure at the manifold throughout the bulk discharge (not for stripping)

46 c: Sometimes a cargo owner claims that not all cargo has been pumped off. There can be many reasons for cargo claims (see chapter 7). Suffice to say here that under this clause the time charterer is allowed to claim all net expenses stemming from the vessel's failure to pump off all the pumpable and reachable cargo. Please note, sludge is not pumpable and liquid cargo clinging to the bulkheads is not reachable by the cargo pumps. Crude oil washing (COW) contributes greatly to minimising cargo Remaining on Board (ROB), but certain marine terminals only allow 25% of the tanks to be COWed.

47. HEATING CLAUSE

Owners guarantee that the vessel is capable of raising to — and maintaining the temperature of a full cargo of oil at — 135 degrees Fahrenheit (57 degrees Celsius). Upon submission of adequate supporting documents, the fuel used for heating purposes is for Charterer's account. Cargo temperatures to be entered daily in the deck log as well as ambient air and sea temperatures.

Comment 47: Many black oil products and certain crude oils need heating to prevent it from becoming un-pumpable, or to prevent wax formation. Most owners do not like oil in their ships over 135°F, because high temperatures have an adverse effect on the vessel's steel structure. Since the charterer has to pay for heating costs, this clause stipulates that the ship's crew needs to keep an accurate record of the fuel consumed for raising and maintaining cargo temperatures.

48. LIGHTERING/(UN)LOADING AT A SUBMARINE LINE (SBM)

(a) Vessel shall be able to, and be allowed to transfer oil to or from a submarine line or to or from a lightering vessel made fast alongside, or underway, in designated lightering areas. Owners warrant that the

vessel complies with the latest edition of OCIMF: "*Recommendations for equipment employed in the mooring of ships at single point moorings*", and with the latest edition of "*Ship to Ship Transfer Guide*" (Petroleum) published by the "International Chamber of Shipping/ Oil Companies International Marine Forum" (ICS/OCIMF), and that copies of these publications are on board.

(b) The vessel must be manned with a master and a chief officer, both experienced in open sea lightering and SBM (un)mooring. At least seven deckhands should be available for (un)mooring.

(c) Owners agree to allow extra personnel on board as may be necessary for such operations; including, but not limited to a Mooring Master and tie-up gang. Charterers shall provide all extra equipment required for lightering operations, at their expense.

(d) For open sea lightering the vessel must be able to maintain a speed of 5.5 knots for at least two hours.

(e) The vessel to be lightened must have a helicopter landing (other than a winching) area in accordance with the latest ICS "*Guide to Helicopter Ship Operations.*"

Comment 48: With this clause the Charterer wants to make sure that the tanker is suitable to load or discharge at an SBM and is equipped to pick up floating hoses with a ship's crane or derrick. She also needs proper chain stoppers on the bow to make fast to an SBM.

For lightering operations the OCIMF has stipulated certain vessel requirements. For most lightering operations a mooring master docks the lightering ship against the vessel to be lightened. Sometimes extra crew come on board to position fenders and tie up the two ships. At some places it is required to have a spill boom, clean-up materials and possibly an oil skimmer at the lightering position.

Comment 49-50: These clauses are best reviewed by your attorney.

49. UNITED STATES REGULATIONS

(a) Owners warrant that if and when the vessel is in U.S. waters, she will be in compliance with — and her Master will abide by — all applicable U.S. shipping laws, rules and regulations (including the laws of any applicable Coastal State of the U.S.).

(b) In case the vessel operates in US waters, a valid US Coastguard Tanker Vessel Examination Letter (TVEL) or like document, is to be on board. If the vessel operates in non-US waters where a similar Certificate is required, such Certificate to be available prior

to entering such waters. If no valid TVEL or like document is on board at time of entering USA jurisdiction, or if a similar Certificate as required in other jurisdictions is not available, all lost time exceeding 12 hours strictly attributable to obtaining a valid TVEL or like document, to count as off-hire. All cost of obtaining a valid TVEL or like document, is for Owners account.

(c) If Charterers require the vessel to discharge at a port within the jurisdiction of the US Customs Service, the Master shall insert Owner's Unique Identifier on each Bill of Lading accompanying a shipment of imported cargo in accordance with US Customs Regulations (19 CFR Part 4, 4.7a) On request, Owners shall provide Charterers and Agents details of their Unique Identifier in respect of any cargo carried hereunder.

50. OIL POLLUTION

(a) Owners guarantee that during the term of this charter, if and when the vessel is in U.S. waters, she will be in full compliance with all applicable U.S. water pollution laws, rules and regulations (including the laws of any applicable Coastal State of the U.S.), including, but not limited to, the Federal Water Pollution Control Act (Title 33 U.S. Code § 1321 *et seq.*) as amended by the Oil Pollution Act of 1990 (OPA 90) (Title 33 U.S. Code § 2701 *et seq.*) and any regulations issued thereunder. Any delays caused by non-compliance shall count as off-hire and any related expenses are for Owners' account.

(b) Owners warrant to hold a Certificate of Financial Responsibility for Oil Pollution that will be valid for at least as long as the vessel is in U.S. waters during this charter.

(c) Owners warrant that they have in place the maximum level of Oil Pollution Cover (currently US $ 1 billion). Before commencement of this charter, Owners to provide Charterers with copies of their Oil Pollution coverage.

(d) Owners warrant that they have an up-to-date, U.S. Coast Guard-approved Vessel Response Plan (VRP) as required by OPA 90 on board the vessel, with a Geographic Specific Appendix for the zone(s) the ship will be traversing.

(e) Owners warrant that the vessel is in full compliance with the regulations of the "International Convention for the Prevention of Pollution from Ships, 1973"; as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), and any amendments thereto which have entered into force.

(f) When there is a threat of escape or discharge of oil from the vessel and causes or threatens to cause pollution, Owners and/or their Technical

Managers will immediately provide Charterers with all available information concerning the nature of the pollution incident; any associated threat to the vessel, life or property; and steps that have been or are to be taken to prevent or mitigate the spill and effects thereof. Charterers may, at their option, upon notice to Owners or the Master, undertake such measures as are reasonably necessary to prevent or minimise such pollution or to remove the threat, unless Owners promptly undertake the same.

(g) Owners agree to hold harmless, defend and indemnify Charterers in respect of any clean-up costs or other pollution damages, losses or claims arising from: (a) negligence on the part of the Owners and/ or their Technical Managers or any of their employees (including, the Vessel's crew); and (b) any strict statutory liability for oil pollution.

(h) Any additional premiums charged by providers of oil pollution cover by reason of loading or discharging at USA ports or in USA waters as stipulated in latest WORLDSCALE, shall be for Charterer's account and shall be reimbursed to Owners within 30 days of Owner's invoice.

51. SEWAGE, GARBAGE, BALLAST WATER, EXHAUST EMISSIONS, ANTI-FOULING PAINT

(a) Vessel to comply with the latest MARPOL Annex IV (Sewage), and Annex V (Garbage) Regulations.

(b) Vessel to comply with Ballast Exchange Regulations for specific parts of the world that are now, or that will become mandatory during the validity of this charter.

(c) Vessel to comply with latest Exhaust Emission and Anti-Fouling requirements.

Comment 51 a: MARPOL has issued strict regulations for garbage and sewage disposal. The crew needs to deposit food residues, paper, plastic, glass and metal containers in separate bins, and dispose of it in the proper manner. Since there are severe restrictions on dumping garbage overboard, most ships have it hauled away by a special service; often at great expense. Some ships have incinerators to burn paper and plastic once the ship is at sea and at a certain distance from the coastline.

51 b: Ballast Exchange regulations have come into effect after scientists discovered alien aquatic species in the Great Lakes. It was determined that these species had been picked up by ships in other parts of the world and had been transported in ballast tanks and subsequently been dumped in waters of the load port. In the Great Lakes it is believed

that some of these alien species, like certain barnacles, started clogging up water intakes of power plants and caused other environmental damage. Other countries, such as Australia, worry about the effect of ballast water on the Great Barrier Reef. The shipping industry and rule-making bodies are trying hard to find a solution to the problem, but is not easy. One of the suggested methods is to pump out old ballast in mid ocean and exchange it for fresh ballast in deep water without the alien species. Unfortunately, this does not work for ships that stay close to coastlines. Moreover, some scientists claim that the alien species may inhabit the sludge at the bottom of ballast tanks and may not be flushed out during mid-ocean ballast exchange.

It is disconcerting that governments are not always doing their fair share of solving the problem. For example, the products refined from a VLCC cargo of crude oil will yield government tax coffers of Western European countries about $0.80 per litre when sold at the pump. On the other hand, just a few years ago an owner of a VLCC, hauling crude oil from the Arabian Gulf to NW Europe would only earn a measly $0.008 per litre (at ws 40), or 1% of what governments collect. It seems that all the expenses for a cleaner marine environment appear to rest on the shoulders of ship owners, who had to pay all their capital costs, all their operating and all their voyage costs out of this $0.008 per litre.

Caveat: If governments or shore installations are going to provide ballast water receiving facilities, it will probably be very expensive to the ship owner. Perhaps the owner of the cargo should also contribute to keeping the environment clean.

52. CLEANING OF CARGO TANKS/SLOPS/ODM

(a) The vessel's crew is responsible for cleaning tanks, pumps and cargo lines to the satisfaction of cargo inspectors. Any overtime for tank cleaning is included in daily hire.

(b) The vessel is capable of safely retaining slops onboard. However, should local port authorities require slops to be discharged, this shall be at the expense and time of Charterers, except in case of ROB as per clause 46 (c), which shall be disposed of — and at the expense of — Owners. The Master shall always restrict the quantity in the slop tanks to a minimum.

(c) Owners warrant that the vessel has an approved and properly working Oil Discharge Monitor (ODM) on board, in compliance with MARPOL's latest requirements.

Comment 52 c: After a day or so, oily water slops separate in oil floating on top, and clean water at the bottom of the slop tanks. Before the clean water can be pumped overboard, it is routed through the ODM system. When the oil ppm reaches a certain level at the water-oil interface, the ODM system shuts off the pumps and no oil enters the sea.

53. CLOSED LOADING/VAPOUR RECOVERY LINES/TANK OVERFILL ALARMS

(a) Owners warrant that the vessel can operate under closed loading conditions, that she has Vapour Recovery System and has Tank Overfill Alarms as per latest ISGOTT.

(b) Owners warrant that the vessel has a certified and calibrated remote electronic gauging system with read-out in the vessel's cargo control room and that she has at least two portable, so-called Ullage-Temperature-Interface (UTI) gauging instruments on board; properly certified by the manufacturer and calibrated from time to time.

(c) Owners warrant that the vessel is capable of a maximum loading rate of: _____m^3/hr.

Comment 53 a: ISGOTT stands for International Safety Guide for Oil Tankers & Terminals. The guide was compiled by the International Chamber of Shipping, by the Oil Companies International Marine Forum (OCIMF) and by the International Association of Ports and Harbors. Many consider it the "bible" for oil transfer operations.

53 b: Most tankers have a fixed gauging system; either measuring cargo levels by radar, or by an electro magnetic floating system. UTIs are portable ullage tapes that can be attached on top of a gauging pipe with a valve that allows closed gauging.

53 c: The maximum loading rate depends on how fast inert gas or air can escape from the tanks being loaded. Most tankers – large or small – have the capacity of receiving a full cargo in less than 24 hours.

54. SEGREGATED BALLAST TANKS

Owners warrant that the vessel has Segregated Ballast tanks and that she can load or discharge ballast water during cargo operations.

Comment 54: Most modern tankers have segregated ballast tanks with their own lines and pumps that are not directly connected to the cargo system. This allows for clean ballast water to be taken on and pumped off independently from cargo operations. Some older ships still have so-called Clean Ballast Tanks (CBT) which require cargo tanks to be cleaned before ballast can be taken on. Many ports no longer allow discharge of clean ballast; only segregated ballast.

55. INERT GAS SYSTEM (IGS)

(a) Owners warrant that the vessel is equipped with a fully functional IGS as per regulation 62 of chapter II-2 of SOLAS 74 as amended, which is in good working order and shall remain so during the

duration of this charter, and that the Master, officers and crew are properly qualified and experienced in the operation of the system. The IGS to be capable of inerting cargo tanks to 5% or less O_2.

(b) If required by cargo shippers, Owners shall arrange for the vessel's tanks to be depressurised to facilitate gauging, sampling or tank inspection.

Comment 55: Most tanker terminals require the ship to be inerted. A well functioning ISG system is also required under the Safety Of Life At Sea 1974 (SOLAS) protocol, as amended.

It is important for the time-charterer to stipulate that the crew is qualified to operate the system and to ask for proof of qualifications; especially of the chief mate.

56. CRUDE OIL WASHING (COW)

(a) Owners warrant that the vessel is equipped with a fully functional COW system as per IMO resolution A.446(XI) as amended by resolutions A.497(XII) and A.897(21), including appendix I, II and III.

(b) Owner warrants that shipboard officer are properly trained and have sufficient experience to operate the COW system

(c) Vessel shall be able carry out COW concurrently with bulk discharge or stripping of the cargo

(d) The Master shall maintain a COW log, identifying each tank washed and he shall comply with minimum MARPOL COW requirements.

(e) Vessel shall have at least two portable Oxygen Meters on board to measure O_2 levels in inerted cargo tanks.

57. WEATHER ROUTEING/TRAFFIC SEPARATION

(a) Unless safety of crew, cargo or vessel prevents him to do so, the Master is requested to follow Weather Routeing Instructions issued by Charterers, (including sub-Charterers) or by their Agents.

(b) Owners shall instruct the Master to observe regulations and recommendations with regard to Traffic Separations and recommended routing as issued from time to time by responsible regulatory authorities.

Comment 57: There have been some recent court cases in which it was decided that the master had to follow a route recommended by a Weather Routeing Service appointed by a charterer. It is the author's opinion that this should be left to the master, but if a subsequent charterer insists on using a Weather Routeing Service, it is best to have this clause included.

58. EXTRA EXPENSES

Charterers to reimburse Owners for expenses made by the Master for communication costs pertaining to Charterers' business and for expenses made for representation or for gratuities in the form of foodstuff, smoking materials and alcoholic beverages. All expenses are to be properly substantiated by vouchers or other proof.

Comment 58: In certain countries, or when the ship passes through the Suez Canal, it is not uncommon that the master is asked for alcohol, cigarettes and foodstuffs for the Authorities that come on board. Some shipping people consider it a nuisance. However, in the greater scheme of things, it is a small price to pay for a smooth operation.

59. OWNERS RESPONSIBILITY FOR SAFETY

Owners are solely responsible for the vessel and for the safe operation, manning, and condition of the vessel. No inspection, review, consent nor the exercise by Charterers of any right given to Charterers by this charter nor anything done or not done by Charterers in the exercise or non-exercise of such right shall relieve Owners or the Master of such responsibility to Charterers and third parties, nor increase Charterers' liabilities to Owners and/or third parties for the same.

In the interest of maritime safety, the Owners undertake to instruct the Master, officers and crew to follow the relevant guidelines provided by the latest ICS/OCIMF edition of INTERNATIONAL SAFETY GUIDE FOR OIL TANKERS & TERMINALS (ISGOTT) and that a copy of the latest edition is on board.

(a) Owners must ensure that all crewmembers working in hazardous areas use appropriate personal protective equipment (PPE).

(b) Owners guarantee that the crew follows smoking, drug and alcohol policies in force on board and in effect at the berth.

(c) Accommodation ladders for pilot embarkation and disembarkation must be as per SOLAS chapter V, regulation 17 and the IMO Recommendation on Arrangement for Embarking and Disembarking Pilots on board Very Large Ships

(d) The vessel must be equipped with fixed or portable certified equipment to detect the presence of flammable, combustible and/or hazardous atmosphere the accommodation, pumproom, ballast tanks, cofferdams, pipe tunnel and other void spaces.

(e) Vessel to have certified detection equipment on board to measure H_2S concentrations around the manifold, pumproom, P/V and closed gauging valves. Gaugers and ship's crew to follow ISGOTT 16.5 procedures.

(f) The vessel must have high-level alarms in the cargo, slop and bunker tanks and high-level alarms in pumproom and engine room bilges.

(g) The vessel must have on board records that verify that cargo lines, P/V, IGS and COW lines and valves have been inspected and tested at the required intervals.

(h) For vessels over 100 KDWT the deck edge spill rail needs to be at least 25 cm high, gradually rising to 40 cm. The transverse spill rail must be 40 cm high.

(i) The vessel must be fitted with at least two valves for each sea chest and a system to monitor or test the spaces between the valves for leakage. All cargo overboard discharge lines need to be blanked off, or shut off by double block valves that are secured with a lock and seal.

(j) The vessel to have at least four intrinsically safe VHF/UHF walkie-talkies on board.

Comment 59: Even though the time-charterer has "commercial" control of the vessel, the master and crew remain responsible for the safe operation and navigation of the vessel.

60. CLASSIFICATION SOCIETY

Owners recognize Charterers' legitimate interests in receiving an on-going demonstration that Owners are properly attending to their responsibilities for the vessel as stated in this charter.

Accordingly, without prejudice to any other provision in the charter, Owners:

(a) Shall allow Charterers full access to the vessel's Classification Society's records both before delivery and at any other time during the charter period, subject to prior notice to Owners.

(b) Shall not change the vessel's Classification Society without Charterers' prior written consent; if such prior written consent is not obtained, Charterers may by written notice, terminate this charter either immediately or at the end of the then current laden voyage.

(c) Shall notify Charterers of any subjects and/or recommendations against the vessel's Class both before delivery and at any time throughout the charter period;

(d) Shall copy Charterers with Owners' report to the Classification Society about any incident or condition in respect of which the Classification Society might make recommendations as to repairs or other action to be taken by Owners; and

(d) Shall allow the Classification Society's inspectors to inspect the vessel during the charter period in accordance with the Classification Society's rules.

Comment 60 b: As stipulated in clause 1, the vessel shall be "classed" with a member of the International Association of Classification Societies (IACS). Generally speaking, classification societies that are a member of IACS are reputable organisations. However, there are also some lesser known classification societies that have perhaps lower standards. In case one of the IACS members de-classes the ship for breach of standards, there have been occasions where certain owners have switched their ship to a society with lower standards. Of course this may make the vessel less attractive to sub-charterers. It is therefore prudent to have above this clause inserted into the c/p.

61. OWNERSHIP AND OPERATION

(a) The vessel's legal Owners and Technical Managers at the effective C/P date are as follows:

Legal Owners name address:

_____

_____

_____

_____

Operators of the vessel:

_____

_____

_____

_____

Technical Management company:

_____

_____

_____

Owners shall not change the vessel's Technical Management company, nor shall they sell the Vessel during the period of this charter except with the Charterers' prior written consent and approval. Should Owners effect a change in the Technical Management company and or sell the vessel without Charterers' prior written approval then Charterers shall have the option to terminate this charter forthwith and Owners shall be liable for the losses Charterers incur by such early termination.

(b) Owners recognise Charterers' legitimate interests in confirming that Owners' Technical Management company are fully qualified to safely and properly manage, man and operate the vessel. Accordingly, without prejudice to any other provision in the charter, upon request, Owners shall provide Charterers with the following information and documentation relating to Owners' Technical Management company:

(i) A copy of any contract or other agreement, and any addenda or changes thereto, defining or regulating the relationship between Owners and their Technical Management company; and/or the latter's management, manning or operation of the vessel;

(ii) If different from the foregoing, a copy of any technical, operational or other manual or guidelines utilised by Owners' Technical Management company in connection with the latter's management, manning or operation of the vessel;

(iii) The identity of the Owners, directors and officers of Owners' Technical Management company;

(iv) The nature of any complaints or charges brought by Owners, other charterers, official authorities or anyone else within the last three years against Owners' Technical Management company or those employed by them in connection with vessel operations, in respect of any alleged failure to safely manage, man or operate any vessel under their control; and

(v) Copies of all documents evidencing any safety, pollution, drug or alcohol violation that Owners' Technical Management company or those employed by them in connection with vessel operations have been found guilty of in the last three years by any official authority.

(c) Owners' failure to promptly provide full and accurate information in their possession or control bearing upon their Technical Management company' competence and safety record, particularly information concerning safety, pollution, drug or alcohol violations by those employed in connection with the vessel's operations, shall constitute grounds for termination of this charter at Charterers' option.

(d) If Charterers complain about the conduct of Owners' Technical Management company, Owners shall immediately investigate the complaint. If the complaint proves to be well-founded, Owners shall, without delay, make such changes in their Technical Management company' policies or appointments or otherwise, as are required to correct the deficiencies complained of, and Owners shall in any event communicate the result of their investigations to Charterers as soon as possible.

Comment 61: Since ocean shipping is a very global and extremely competitive industry, vessels are often registered in one country, operated from another and manned by citizens from yet another country. For example, a ship may have been financed by a bank in Germany for a Russian shipping company, which has the vessel registered in Liberia; showing a Cayman Island company as the legal owners. The vessel was bareboat chartered to an operator in Japan, who may use a technical management company in Cyprus. The ship may be manned by a Philippines crew and insured by a company in the UK. The classification society may be in Norway. The cargo owners may be from Switzerland and the B/L consignees may reside in the USA. This drives authorities and the press mad after a marine incident, because if the controlling principals don't come forward, it is very frustrating to work out who is responsible. Unfortunately, margins in ocean shipping are often razor thin, so stakeholders in shipping have no choice but to scour the globe for the best deals in registration, tax, manning, financing, insurance, etc.

62. EPIDEMIC/ICE

(a) The vessel shall not be ordered to, nor bound to enter:

(i) Any place where fever or epidemics are prevalent

(ii) To which the Master, officers and crew by law are not bound to follow the vessel:

(iii) Any ice-bound place or any place where lights, lightships, marks and buoys are -or are likely to be withdrawn- by reason of ice on the vessel's arrival or where there is risk that ordinarily the vessel will not be able on account of ice to reach the place or to get out after having completed loading or discharging.

(b) The vessel shall not be obliged to force ice. However, the vessel shall follow icebreakers where customs of the port so dictate. If on account of ice, the Master considers it dangerous to remain at the loading or discharging place for fear of the vessel being frozen in and/or damaged, he has liberty to sail to a convenient open place and await the Charterers' fresh instructions.

(c) Any delay or deviation plus consumption of extra bunkers caused by or resulting from ice shall be for charterers account and the vessel shall remain on hire.

63. BREAKDOWNS

Notwithstanding any other provisions of this charter, if at any time during the term of this charter, the vessel, or its equipment breaks down for more than 48 consecutive hours on at least three occasions, or for a cumulative breakdown of more than 144 hours, then Charterers shall have

the right to terminate this charter and redeliver the vessel immediately at any place, or upon the conclusion of any then cargo-laden voyage.

Comment 63: If it turns out that the vessel has a lot of problems that were not apparent during the on-hire survey, the disponent owner can cancel the charter.

64. LABOUR REGULATIONS

Owners warrant that the vessel complies with labour regulations at all ports of call allowed under this charter including Australia and New Zealand.

Comment 64: It is not easy to keep abreast of worldwide labour regulations. It is therefore advisable to consult with local ship's agents to find out if local regulations would preclude a specific vessel from entering port to load/ discharge.

65. I.T.F. COMPLIANCE

(a) Owners guarantee that during the full duration of the charter, the vessel's manning is and will be in accordance with I.T.F. rules and regulations for worldwide trading, and any consequences and losses due to non-compliance to be for Owners' account.

(b) Owners acknowledge that part of the hire paid as consideration for this charter contemplates that the vessel's manning will comply with I.T.F. rules and regulations. If it is determined that the vessel's manning is not in I.T.F. compliance then Charterers shall be entitled to an immediate hire reduction based on the cost differential between an I.T.F. and non-I.T.F. crew. Such reduction shall be retroactive to the time of the vessel's non-I.T.F. compliance and shall be deductible from future hire paid hereunder. At their option, Charterers may continue to employ the vessel with the non-I.T.F. crew at the reduced hire rate or may place the vessel off-hire until such time as the vessel's manning complies with I.T.F. rules and regulations.

Comment 65: I.T.F. is the International Transport Workers' Federation that looks after the interest of seafarers; especially with regard to pay scales, working conditions and vacation time.

If a shipowner agrees to fair labour conditions for the crew, the I.T.F. issues a Blue Certificate, or blue card. This protects the ship from possible I.T.F. boycott actions or strikes against the vessel.

66. ARREST

(a) Should the vessel be arrested during the currency of this charter as

the result of an act or acts for which the Owners are responsible, by any person or authority (including the Charterers), having, or purporting to have, any claim against or any interest in the vessel, the hire, the bunkers and the port costs shall not be payable in respect of actual time lost for any period whilst the vessel remains under arrest, or remains unemployed as the result of such arrest.

(b) Notwithstanding sub-Clause (a) hereof, should the vessel remain under arrest for more than 10 days, Charterers shall have the right to terminate this Charter and redeliver the vessel immediately at any place, or upon the conclusion of any then cargo-laden voyage.

(c) Any stores, bunkers, equipment, and anything else placed on board by the Charterers, is their separate property, and any claim(s) for such property shall have preference over claims by Owners and/or Owners' creditors.

Comment: 66) If the owner falls behind making his mortgage payments, his bank may foreclose on the ship and have it arrested. This can be done in a matter of days. Obviously a disponent owner needs some protection against this.

Clause 66 a) also mentions a claim against (unpaid) bunkers. Since payment of bunkers is the responsibility of the disponent owner, registered owners often post a notice in the ship's office, stating that they are not responsible for expenses incurred by parties other than themselves and that no lien can be attached against the ship for those types of claims.

Clause 66 c: If the ship gets arrested due to acts of the owners, charterers want to make sure that no liens are put on bunkers, because bunkers are most likely to be the property of the charterers.

67. CAPTURE/BLOCKADE

(a) No hire, bunkers or port costs shall be payable for the delay caused by the vessel being captured, seized, blockaded, or detained in any way whatsoever by any person, party, organization, or government in pursuance or in consequence of any interest in or any claim by the government of the nation under whose flag the vessel sails.

(b) Notwithstanding sub-Clause (a) hereof, should the vessel remain captured, seized, blockaded, arrested or detained as described therein for more than 10 days, then Charterers shall have the right to terminate this charter and redeliver the vessel immediately, or upon the conclusion of any then cargo-laden voyage.

68. SECURITY

(a) Owners warrant that:

1. Both the "vessel" and the "company" (as defined in the INTERNATIONAL SHIP and PORT facility SECURITY code (ISPS) as per SOLAS Chapter XI-2, effective 1 July 2004 comply with said Code and with its future amendments for the duration of this charter.
2. They will provide charterers with full details of the Company Security Officer (CSO).
3. The vessel carries a valid International Ship Security Certificate (ISSC).
4. The vessel has an approved Ship Security Plan (SSP) as per SOLAS Chapter XI-2.
5. The vessel has a designated Ship Security Officer (SSO).
6. The vessel keeps a Continuous Synopsis Record (CSR) as per SOLAS Chapter XI-1/5.
7. The vessel is equipped with a Ship Security Alert System (SSAS) as per SOLAS Chapter XI-2/6.
8. The vessel has been fitted with an Automatic Identification System (AIS) as per SOLAS Chapter V/Regulation 19.2.
9. The vessel is marked internally and externally with its permanent identification number (L/R or IMO number) as per SOLAS Chapter XI-1/3.
10. Charterers will provide owners with full details and other information that owners may require to comply with the ISPS code.

(b) Delays, directly due to owner's failure to comply with the ISPS code, are for owner's account.

(c) Delays, directly due to charterer's failure to comply with the ISPS code, are for charterer's account.

(d) Expenses for, but not limited to: vessel security inspection, launch services for security inspection teams are for Owner's account.

(e) Cost of mandatory security guard services, tug escort mandated for security reasons, port security fees, etc. are for owner's account if pertaining to the vessel and crew and for charterer's account if pertaining to the cargo.

69. LETTERS of PROTEST/REPORTS

Owners to encourage Master to file Letters of Protest for the situations as listed on the format provided by Charterers and Master to prepare

narrative reports of any other circumstances that may lead to a claim or to legal action.

70. NOTICES

All notices required hereunder are to be sent as follows:

	OWNERS	CHARTERERS
Company Name:		
Street:		
City:		
Country:		
Contact person:		
Off. E-mail:		
Off. Phone:		
Off. Fax:		
AOH phone:		
Vessel's e-mail:		
Vessel's phone no:		

Chapter 5

VOYAGE CHARTER PARTIES

Peace does not rest in charters and covenants alone. It lies in the hearts and minds of the people.

John F. Kennedy (UN address 9/20/63)

One of the basic differences between dry cargo and tanker chartering is that an owner of a dry cargo ship usually receives 90-95% of the freight within five to ten days after signing the B/L. The balance is paid after discharge, combined with settlement of demurrage or dispatch payment. This means that the owner has the security of money in the bank or, if there are freight payment problems when the ship arrives at the discharge port, the cargo is still on board and the owner can put a lien on it.

A tanker owner is normally not in such a strong position. Most printed tanker charter parties stipulate that payment of freight is due upon delivery of cargo. Please note, ASBATANKVOY clause 2 says: delivery of cargo; not of the cargo. Some people interpret this as giving the owner the right to discharge only part of the cargo and pump off the rest after receipt of freight. However, this type of action may lead to delays at the discharge port. It may also create confusion and is not a way for the owner to endear himself to the charterer. Until a few years ago it has usually been a charterers' market, where owners had to concede a lot of bargaining power.

Some people labour under the impression that having a **lien** on the cargo (see ASBATANKVOY clause 21) will protect them. Unfortunately, as most maritime lawyers will tell you, the power of a lien is pretty much based on possession. In many instances a tanker discharges at a pipeline terminal from where the oil may be pumped thousands of miles inland and be commingled with oil owned by somebody else. In most jurisdictions it would be very hard to attach a lien to the cargo for that situation. For example, at the Louisiana Offshore Oil Port (LOOP) up to 40 different grades of crude oil are pumped into eight salt caverns; supposedly in separate layers because of the different gravity of the oils. Once the oil leaves the caverns it is pumped into pipelines to various refineries. Another example of a potentially sticky situation is when oil is transported on behalf of government owned oil companies. It may be extremely hard, if not impossible, to find proper local legal channels and cooperative civil servants to have a lien attached. Moreover, in many jurisdictions Port Authorities or Government Agencies may have a lien on the cargo for dues and charges that precedes an owner's lien.

Chapter 5

VOYAGE CHARTER PARTIES

Peace does not rest in charters and covenants alone. It lies in the hearts and minds of the people.

John F. Kennedy (UN address 9/20/63)

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In case an owner suspects there may be a problem with **payment of freight**, he should try to have language inserted in the c/p like the amendments to ASBATANKVOY clause 2, described below. Lacking such language, the oil should be stored in a separate shore tank and application should be made to have a lien attached. Please note, in most jurisdictions it is necessary to take legal steps to create a lien; it is not automatic. Again, this will probably result in a hostile relationship with your charterer and cargo owners. Word will spread quickly of such drastic action and may impact future business. Shipping is a service industry, with its ultimate goal to create satisfied clients! It is therefore important to make good contracts to cover those areas that may lead to disputes. If a charterer agrees to eliminate some of the risk an owner is exposed to, perhaps the owner will allow some concessions to the freight rate, or other items in the charter party.

Charterers should understand that most owners are not in a position to play banker. An owner, just like a time-chartered operator, has to pay the bulk of the vessel's operating and voyage expenses up-front. In this post-ENRON era, it is very hard to determine who are the good guys and who are the bad ones. In addition to not receiving freight, an owner also runs the risk of having to pay for the whole cargo in case it is delivered without an original B/L, and the real B/L holder shows up at a later date. This can amount to $100,000,000 (CIF value of $50/bbl) for a VLCC cargo of crude oil. Because the amounts are so large and the risk of non-payment of freight can be very real, an owner should have at least some protection, as per amended ASBATANKVOY clause 2 for the freight payment, and as per amended clause 20 pertaining to Bills of Lading.

Amended clause 20 offers a charterer several alternatives of addressing the potential problems connected with cargo delivery without an original B/L. One of the easiest ways is to issue waybills instead of Bills of Lading. Railroad, trucking and airline companies issue waybills, which are only contracts of transport; not a document of title.

In the real world the B/L often moves slower than the goods and may disappear for a while in the banking system. Especially if the cargo has been resold several times, the B/L may not surface until after the goods have been discharged. If there have been irregularities with the sale of the goods, and a subsequent innocent B/L holder presents the original one, the B/L presenter has — in most jurisdictions — a pretty strong claim to the goods. On the other hand, proponents of delivery of goods without presentation of an original B/L claim that there is more fraud stemming from forged B/Ls, than there is from non-presentation of the B/L. Either way, this is a strong argument for ship owners to protect themselves against deception.

In this day and age most companies place great emphasis on loss prevention and risk management. Ship owners should follow the same

course of action and reduce their risk, instead of being the ones left holding the bag.

Most courts of law consider **Letters of Indemnity** (LoI) not worth the paper they are written on; unless backed by an ironclad bank guarantee, such as a **Letter of Credit** (L/C). Some LoIs call for bankers to countersign, but more than likely they will refuse to do so, unless the charterer puts up collateral with the bank. In that case the charterer may as well open a **Standby L/C** directly to the vessel owner/operator. If something goes wrong with a LoI countersigned by a bank, but the bank is headquartered in an offshore tax haven, or if the charterer is a government owned oil company, it may be a lengthy and costly process to sue for damages.

As most people know, banks always ask for a lot of security when you apply for a loan or mortgage; much more so than an owner would ask from a charterer. When posing the question to a banker friend why this is so, he answered: "Banks make loans with perhaps a margin of only a few percent interest. If a deal goes bad and the bank is left without recourse, it may take 50 similar deals to recover the loss." At average freight markets, the same applies to shipping.

Most charter parties are amended by drafting so-called **rider clauses** that form part of the c/p. Legal specialists agree that the main reason for so many contract disputes is having printed clauses at one place in the contract and rider clauses somewhere else, with the two clauses often contradicting each other. That is the reason why in the example below, similar subjects — as far as possible — have been grouped together. Of course this arrangement is purely voluntary. Owners and charterers are free to draft a contract in any shape or form they wish. However, with one or more intermediaries, such as brokers involved, it is not always easy to work out what a party had in mind. Quite often one clause says one thing and a rider clause says almost the same, but with a slight variation.

Perhaps a better way than the current practice of endlessly amending old c/p forms would be to have a standard contract with a wide variety of options in the form of a choice between various clauses, or of short, fill-in-the-blanks answers. Usually the older the c/p format, the more amendments are required. The main reason for sticking with a known format for a long time is because people are used to it, and the contract has more than likely been scrutinised by the courts, so everybody knows what a particular clause or phrase means. This reasoning makes a lot of sense. Composing a new contract requires skill to incorporate "tested" language, while at the same time making the contract conform to modern working practices.

In the following pages we will go over a typical tanker voyage charter party. In this case it is the ASBATANKVOY charter party form. Since the

original form is over 25 years old, amendments are needed to make it a functional document in the 21st century. Changes and amendments are the author's and are only meant as guidelines for what — in the author's mind — a well-balanced c/p should look like.

Association of Ship Brokers
& Agents (U.S.A.), Inc.
October 1977

CODE WORD FOR THIS
CHARTER PARTY:
ASBATANKVOY

This Charter Party form has been scanned electronically from an original ASBATANKVOY C/P form and text has been processed with Optical Character Reader software. **Additions** to clauses number 1-26 of the original ASBATANKVOY C/P form to this contract are printed in **bold**. Deletions from the original ASBATANKVOY C/P form in this contract are ~~struck through~~. For any differences in the remaining non-bold text of clauses 1-26 between this contract and the original ASBATANKVOY C/P form, the text of the original ASBATANKVOY C/P form will govern. Rider clauses at the end of this contract are printed in regular (non-bold) print.

TANKER VOYAGE CHARTER PARTY

PREAMBLE

Place _____ Date _____

IT IS THIS DAY AGREED between _____

Chartered owner/owner (hereinafter called the "Owner") of the SS/MS_____ (hereinafter called the "Vessel) and _____(hereinafter called the "Charterer")

that the transportation herein provided for will be performed subject to the terms and conditions of this Charter Party, which includes this Preamble and Part I and Part II. In the event of a conflict, the provisions of Part I will prevail over those contained in Part II. **AFTER FIXING, A FULLY PRINTED C/P IS TO BE PRODUCED FOR SIGNATURE BY BOTH PARTIES.**

Comment Preamble: Tanker fixtures are done primarily over the phone, with perhaps e-mail follow up. Sometimes a fixture is made in a matter of minutes. This does not leave a lot of room to study the various clauses and their amendments. For this reason it is preferable to receive a fully printed c/p. Please note, this is not to be confused with acceptance. For acceptance of the contract by both parties, see the clause at the end of the printed c/p.

Part I

A. Description and Position of Vessel:

_____

Deadweight: _____ **MT** tons Classed: _____

Loaded draft of Vessel on assigned summer freeboard: _____ metres ~~ft.~~ ~~in.~~ in salt water.

Capacity for cargo: _____ **MT** tons (~~of 2240 lbs each~~) _____ % more or less, Vessel's option.

Comment A: These days tonnage is usually expressed in metric tons, rather than in long tons of 2,240 lbs.

Coated: ❑ Yes ❑ No

Coiled: ❑ Yes ❑ No Last two cargoes: _____

Now: _____ Expected ready: _____

Description and responses given in a vessel's Questionnaire — that may, or may not be part of this charter — are believed to be correct, but not guaranteed. Charterers are responsible for their own inspection/vetting of the vessel.

Comment Part I: Most charterers ask for a questionnaire with the vessel's details before fixing a ship. To protect an owner from potential liability for changes in the condition of the vessel between the time the questionnaire was completed and the time the vessel was offered for charter, above clause stipulates that vessel description is not guaranteed and that a charterer should perform their own inspection or vetting surveys. Please note, this does not protect an owner from wilful mis-description of the vessel.

B. Laydays:

Commencing:_____ Cancelling: _____

(Minimum time difference between Commencing and Cancelling of Laydays is to be at least one hundred and twenty hours)

Comment B: Charterers usually want to negotiate specific commencement and cancelling (laycan) dates. Often a charter is negotiated more than a month before the ship is to show up at the load port, and it is unrealistic to expect that the owner can guarantee a precise date. Therefore, a window of minimum five days should be negotiated. In dry cargo chartering the laycan window is often two weeks or more. A good compromise may be a 1-day window for every week away from laycan; depending on circumstances. It is much easier to predict ETA when the vessel is already on its way to the load port. However, when she still has to discharge and/or pass the Suez or Panama Canal, it becomes much harder to predict ETA for the next load port.

C. Loading Port(s)

_____ (Charterer's Option)

D. Discharging Port(s):

_____ (Charterer's Option)

E. Cargo:

_____ (Charterer's Option)

(Quantity in MT and grade)

F. Freight Rate:

~~per ton (of 2240 lbs each)~~

In points per Worldscale in effect of c/p date: ws _____,

or US w_____ per MT, or Lump sum in US w_____

Freight is payable on 100% of B/L quantity; subject to clause 3.

Comment F: Quite often there is a dispute about how much cargo has been loaded. The original clause 2 states that "Freight ……..shall be computed on intake quantity ….as shown on the Inspector's Certificate of Inspection." We believe that the B/L figure is more authoritative. After all, this is also the basis for the cost of the goods shipped.

G. Freight Payable to:

Owners Bank as per separate instructions, by wire-transfer, against Owner's faxed or e-mailed invoice. ~~at~~

Comment G: To protect against prying eyes that may use banking details for perhaps less than honourable purposes, it is prudent to send the charterer a separate payment instruction. The owner should be allowed to send the invoice electronically, instead of by "snail mail."

H. Total Laytime in Running Hours:

As per Worldscale in effect of c/p date

Comment H: "Worldscale" offers clear definitions, terms and conditions with regard to freight elements, laytime, demurrage, Canal costs and division of owner's and charterer's port costs.

I. Demurrage per day: **US w_____**

J. Commission

of _____ % is payable by Owner to _____

on the actual amount of freight, when and as freight is paid.

Owner will pay max. 1.25% brokerage commission. Any additional address commission and/or brokerage commission is to be added to Freight Rate as stipulated in F. Address commission and brokerage commissions are not to be deducted from freight, but to be invoiced separately by Charterer/Broker.

For example:

1) *Assume that after a Charterer and an Owner have agreed on ws 60 for a particular voyage, the Charterer asks for 2.5% address commission and Broker(s) ask for an additional 1.25% brokerage commission. Total extra commission is 3.75%. Effective ws rate for freight calculation is now: ws 60/(1 - 0.0375) = ws 62.34.*
2) *If the negotiated freight rate is $ 18.00/mt with 3.75% extra commissions, the new freight rate is now: $ 18.00/(1 - 0.0375) = $ 18.70/mt.*
3) *If the negotiated lump sum freight rate is $ 1,000,000 with 3.75% extra commissions, new l.s. amount is now: $1,000,000/(1 - 0.0375) = $ 1,038,961.*

Comment J: Quite often, after negotiations have been completed, a charterer or a broker demand extra commissions. This can cut severely into an owner's revenue. Therefore any extra commissions need to be declared up-front.

K. The place of General Average ~~and arbitration~~ proceedings to be London/New York/**Houston** (strike out ~~one~~ **two**). **All documents and proceedings to be in English. (For arbitration see clause 24)**

Comment K: To provide transparency and to save money on translation expenses, all documents are to be presented in English.

L. ~~Tovalop: Owner warrants Vessel to be a member of TOVALOP scheme and will be so maintained throughout duration of this charter.~~

Comment L: TOVALOP oil spill pollution insurance for ship owners no longer exists.

M. Special Provisions:

_____

IN WITNESS WHEREOF, the parties have caused this Charter, consisting of a Preamble, Parts I and II, to be executed in duplicate as of the day and year first above written.

Witness the signature of: _____

By: _____

Witness the Signature of: _____

By: _____

PART II

1. WARRANTY-VOYAGE-CARGO. The Vessel, classed as specified in Part I hereof, and to be so maintained during the currency of this Charter, shall, with all convenient dispatch, proceed as ordered to Loading Port(s) named in accordance with Clause 4 hereof, or so near thereto as she may safely get (always afloat), and being seaworthy, and having all pipes, pumps and heater coils in good working order, and being in every respect fitted for the voyage, so far as the foregoing conditions can be attained by the exercise of due diligence, perils of the sea and any other cause of whatsoever kind beyond the Owner's and/or Master's control excepted, shall load (always afloat) from the factors of the Charterer a full and complete cargo of petroleum and/or its products in bulk, not exceeding what she can reasonably stow and carry over and above her bunker fuel, consumable stores, boiler feed, culinary and drinking water, and complement and their effects (sufficient space to be left in the tanks to provide for the expansion of the cargo), and being so loaded shall forthwith proceed, as ordered on signing Bills of Lading, direct to the Discharging Port(s), or so near thereto as she may safely get (always afloat), and deliver said cargo. If heating of the cargo is requested by the Charterer, the Owner shall exercise due diligence to maintain the temperatures requested.

(a) In case heating is required, amend clause 1 as follows:

- **Temp. of full cargo to be raised from ___ °C to ___°C (= C/P Temp.)**
- **Extra bunkers required to raise full cargo to required C/P temp.: ____ MT FO.**
- **Extra bunkers required to raise full cargo to required C/P temp.: ____ MT MDO.**
- **Extra bunkers required to maintain full cargo at ___°C: ____ MT FO per day**
- **Extra bunkers required to maintain full cargo at ___°C: ____ MT MDO per day**
- **The extra bunkers for raising, or for maintaining cargo temperature, is for account of Charterers. The cost of bunkers is to be based on actual CIF cost of the fuel consumed; basis First-In-First-Out (FIFO).**

(b) Owners are not responsible for cargo loss due to evaporation caused by heating, or to damage to the cargo due to localized overheating by heating coils/elements.

(c) To protect the vessel from excessive stress and to prevent damage to valves, max. temperature of the cargo to be loaded, or to be maintained, is 57°C (135°F).

(d) **Above applies only if the vessel has the capability of heating the cargo according to the instructions of the Charterer during the time span between loading and discharge. If that time is too short — as determined by an independent surveyor jointly appointed by Owner and Charterer — and Charterer holds the vessel off the berth or suspends the discharge for further heating, extra time so used to count as laytime, or as time on demurrage if the vessel is already on demurrage.**

Comment: It is important for the charterer to give detailed heating instructions, so that the owner can handle the cargo with the utmost care and also make sure that high heat does not damage the ship. Heating consumes substantial quantities of Fuel Oil, which should be for account of the charterer, unless included in the freight rate.

2. FREIGHT. Freight shall be at the rate stipulated in Part I and shall be computed on intake quantity (except dead freight as per Clause 3) as shown on the ~~Inspector's Certificate of Inspection~~ **Bill of Lading. Freight shall be earned as soon as cargo is on board; vessel and/or cargo lost or not lost.** Payment of freight shall be made by Charterer without discount, ~~upon delivery of cargo~~ **before commencement of discharge at destination, or Charterers to arrange for payment of freight guarantee in the form of a Irrevocable Transferable, Standby Letter of Credit, acceptable to Owner* and confirmed by a major international bank. Payment of freight shall be made by Charterer** less any disbursements or advances made to the Master or Owners agents at ports of loading and/or discharge and cost of insurance thereon. No deduction of freight shall be made for water and/or sediment contained in the cargo. The services of the Petroleum Inspector shall be arranged and paid for by the Charterer who shall furnish the Owner with a copy of the Inspector's Certificate.

Comment: Just as under most dry cargo charter parties, freight should be earned as soon as the cargo is loaded. The main reason is that a cargo owner takes out insurance on the cost of the cargo including the freight, or Cost Insurance Freight (CIF) value. Title passes when the cargo crosses the ship's rail/manifold. If the ship sinks right at the loading dock, the cargo owner can claim the CIF value. Actually, most cargo insurance is for 110% of CIF value to cover possible general average contribution.

By making freight payable upon delivery and the vessel sinks, a Shipper would not have to pay the freight, yet collects from insurance; including for freight. Therefore freight should be due as soon as the cargo is on board.

As mentioned above, freight for oil cargoes is usually payable upon delivery. To make sure the owner/operator gets

paid, freight payment should be guaranteed in the form of a Letter of Credit. Reliable charterers should not object to this, since they buy and sell most of their oil with a (standby) L/C. If a lesser known charterer objects to putting up an L/C for freight, it may be a red flag, and owners/operators should proceed with caution. The next best thing to a L/C is freight due upon signing B/L, or at least prior to commencement of discharge.

**L/C to conform to the following requirements:*

1) L/C to be irrevocable and to be transferable.

2) L/C to be confirmed by a major international bank.

3) L/C to be for 100% of the freight as agreed to in clause F.

4) Validity of L/C to be at least 60 days beyond expected discharge date.

5) L/C procedures in accordance with ICC publication no. 500.

6) Payment to be made against: Draft at Sight + copy of B/L or copy of Letter of Indemnity + copy of signed Freight Invoice + signed Owner's Beneficiary Statement as follows: "PAYMENT OF FREIGHT HAS NOT BEEN MADE BY CHARTERER".

For an example of a Beneficiary Statement, see Appendix 11.8

(a) Any delays due to Charterer's failure to pay Owners for freight prior to commencement of discharge, or failure to establish a Irrevocable Transferable Standby Letter of Credit, acceptable to owners and confirmed by a major international bank, is to count as laytime, or if the Vessel is already on demurrage, as time on demurrage.

(b) Since claims for cargo loss and/or ROB are subject to clauses 19, clause 20 and clause 10 as amended of this charter, these claims are to be filed separately and are not to be deducted from freight. However, charterers are allowed to deduct the freight portion of cargo loss/ROB claims from freight.

Comment: Many charterers manage to insert a cargo retention clause in the c/p, stipulating that they are allowed to deduct the value of the ROB/cargo loss from freight. As discussed in chapter 7, there are numerous reasons for ROB/cargo loss; many of them not attributable to the owner. Moreover, the owner has several legal defenses against cargo loss. Owner/Operators should therefore discourage the use of so-called cargo retention clauses, unless pertaining to well-defined circumstances.

3. DEADFREIGHT. Should the Charterer fail to supply a full cargo, the Vessel may, at the Master's option, and shall, upon request of the

Charterer, proceed on her voyage, provided that the tanks in which cargo is loaded are sufficiently filled to put her in seaworthy condition. In that event, however, deadfreight shall he paid at the rate specified in Part I hereof on the difference between the intake quantity and the quantity the Vessel would have carried if loaded ~~to her minimum permissible freeboard for the voyage~~ **as agreed to in clause E.**

Comment: The clause: "…to her minimum permissible freeboard for the voyage…" is confusing. Most charters are based on a specific quantity of cargo to be loaded, or in case of "light" oils, the maximum cubic capacity may be reached before the vessel reaches her maximum permissible draft (= minimum permissible freeboard).

4. NAMING LOADING. AND DISCHARGE PORTS

(a) The Charterer shall name the loading port or ports at least twenty-four (24) hours prior to the Vessel's readiness to sail from the last previous port of discharge, or from bunkering port for the voyage, or upon ~~signing this Charter~~ **fixing** if the Vessel has already sailed. However, Charterer shall have the option of ordering the Vessel to the following destinations for wireless orders:

	On a voyage to a port or port in:
ST. KITTS	Caribbean or U.S.-Gulf loading port(s)
PORT SAID	Eastern Mediterranean or Persian Gulf loading port(s) (from ports west of Port Said.)

(b) If lawful and consistent with Part I and with the Bills of Lading, the Charterer shall have the option of nominating a discharging port or ports by radio to the Master on or before the Vessel's arrival at or off the following places:

Place	*On a voyage to a port or port in:*
LAND'S END	United Kingdom/Continent (Bordeaux/Hamburg range) or Scandinavia (including Denmark)
SUEZ	Mediterranean (from Persian Gulf)
GIBRALTAR	Mediterranean (from Western Hemisphere).

(c) Any extra expense incurred in connection with any change in loading or discharging ports (so named) shall be paid for by the Charterer and any time thereby lost to the Vessel shall count as used laytime, **or as time on demurrage if the Vessel is already on demurrage.**

(d) Above applies only if the vessel carries cargo for one Charterer.

(e) If Charterer listed in the Preamble has fixed the vessel for only part cargo, Owner shall have the option of loading

and discharging other part cargo(s) for account of other Charterer(s) or Shipper(s) from and to port(s) en route or not en route. In that case rotation of loading/discharging ports to be at Owner's option. Owner warrants minimum 2-valve segregation if the vessel carries different parcels.

Comment: Clauses (a) & (b) look rather anachronistic in light of modern means of communications. However, quite often a ship is directed to a certain area; pending further orders.

5. LAYDAYS

Laytime shall not commence before the date stipulated in Part 1, except with the Charterer's sanction. Should the Vessel not be ready to load by 4:00 o'clock P.M. (local time) on the cancelling date stipulated in Part I, the Charterer shall have the option of cancelling this Charter by giving Owners notice of such cancellation within twenty-four (24) hours after such cancellation date; otherwise this Charter to remain in full force and effect.

(a) **If the vessel arrives before start of the laydays, time shall commence at the beginning of laydays, or at the moment of "all fast"; whichever occurs first.**

(b) **If the vessel arrives after expiration of the laydays, but Charterers have elected not to cancel the charter, laytime to commence at start of loading, or 24 hours after tendering NoR; whichever occurs first.**

(c) **Clause a) shall not apply in case Charterers have failed to nominate specific load port(s) at time of fixture of this charter, or have changed orders from the specific load port(s) originally nominated. Clause a) shall not apply in case Charterer has nominated a range of load ports more than 100 nm apart.**

(d) **If and when it becomes certain that the Vessel will not be ready to load at the canceling date in this C/P, Charterers have the option of canceling this contract. Such option is to be declared within 48 hours after receiving Owners advise of the Vessel's expected delayed arrival. Should the Charterers elect not to cancel, Charterers and Owners to agree on a mutually acceptable new canceling date and time. This provision shall be without prejudice to any claim the Charterers may have as to Owner's possible misrepresentation of the Vessel's expected readiness date and/or laydays/canceling dates contained herein.**

(e) **In the event that the Vessel is not accepted to commence**

loading by Charterer's or by Port Authority Inspectors, the Vessel is to rectify the deficiencies and the cancellation date and time listed elsewhere in this contract shall be extended by 48 (forty eight) hours, or till the Vessel passes Inspection; whichever occurs first. Time used to rectify deficiencies prior to acceptance of the Vessel not to count as laytime, nor as time on demurrage if the Vessel is already on demurrage.

Comment: 5 (a) In case a charterer calls the ship to berth before the laycan days, laytime will start to run when "all fast". Without clause 5 (a) laytime would not start till commencement of laytime, even though operations have started already.

5 (b) Many charterers insert clauses to the effect that when a vessel has arrived after expiration of the cancelling date, but the charter has not been cancelled, commencement of laytime is more or less 'up in the air'. Clause 5 b) counteracts this uncertainty and stipulates when laytime is to start.

5 (c) As mentioned before, laycan windows in the tanker business are very narrow as compared to dry cargo shipping. If a c/p has been negotiated weeks before the ship is due at the load port and the laycan window is only one to two days, an owner is often forced to show up several days early (for which he does not get paid) to prevent missing the laycan. If the charterers have not nominated a specific load port, an owner should not be held to the laycan days.

5 (d) This clause has been taken from dry cargo charter party forms to offer an owner some protection against a charterer canceling the c/p after the ship shows up after the laycan has expired. For example if a VLCC is fixed to proceed in ballast from NW Europe, via the Suez Canal, to a load port in Saudi Arabia, the shipowner or time-chartered owner have to spend considerable sums of money to get the ship to the loadport. Without clause 5 d) a charterer can just cancel the c/p without recourse if the ship shows up just a few minutes late.

5 (e) Sometimes product or chemical carriers show up with tanks that are not load-ready. The owner would direct the crew to rectify the situation, but if the time needed extends beyond expiration of the the laycan, the charterer can just cancel the c/p. Clause 5 e) tries to find a balance between the charterer's and owner's interest by stipulating that laycan will be extended for 48 hours, but time lost due to making the vessel load-ready will not count as laytime or as time on demurrage.

6. NOTICE OF READINESS

Upon arrival at customary anchorage at each port of loading or discharge, the Master or his agent shall give the Charterer or his agent

notice by letter, telegraph, wireless or telephone that the Vessel is ready to load or discharge cargo, berth or no berth, and laytime, as hereinafter provided, shall commence upon the expiration of six (6) hours after receipt of such notice, or upon the Vessel's arrival in berth (i.e., finished mooring when at a sea loading or discharging terminal and all fast when loading or discharging alongside a wharf), whichever first occurs. However, where delay is caused to Vessel getting into berth after giving notice of readiness for any reason over which Charterer has no control, such delay shall not count as used laytime. **Nevertheless, if at the same time the Vessel has to wait for berth or if the cargo is not ready to load, or if the terminal is unable to load due to their installation being out of service, time to count as laytime, or as time on demurrage if the ship is already on demurrage.**

(a) In the event that the vessel requires a USCG safety inspection, or a Certificate of Compliance inspection (previously TVEL) prior to commencement of cargo operations at any United States port, including ship-to-ship transfer (lightening) areas and LOOP, Notice of Readiness (NoR) may be tendered upon arrival, prior to inspection by the U.S. Coastguard. If the vessel passes the inspection, the NoR is valid. If she fails, the NoR is deemed to be invalid and needs to be retendered till the vessel passes inspection. All extra time lost solely attributable to the USCG inspection not to count as laytime and not as time on demurrage if the vessel is already on demurrage.

(b) Charterer is not permitted to cancel this charter as per Clause 5, for having an out-of-date USCG Certificate of Compliance upon arrival in U.S. waters.

(c) Above clause 5(a) and 5(b) to apply to other vessel inspections, including, but not limited to: ISPS, SOLAS, Memorandum of Paris/Tokyo, USCG, Port or Flag State inspections; either for safety, security or health purposes.

(d) Any delays or waiting time directly resulting from measures taken by governments, port authorities, terminal managers or other sort-like agencies for environmental reasons or security reasons, like the ISPS code, or similar regulations is to count as laytime, or as demurrage if the vessel is already on demurrage. If the delay occurs before commencement of laytime, or if laytime or demurrage has ceased, charterers to compensate owners for time lost at the demurrage rate stated in this c/p.

(e) In case of Ship-to-Ship Transfer, time from arrival of the Vessel at designated lightening location (without deduction of 6-hours notice time) till the time of vessel separation or

removal of the hoses and fenders (whatever is latest) after completion of the transfer operation, to count as laytime, or if the Vessel is already on demurrage, as time on demurrage.

(f) Delays in case of ship-to-ship transfer, SBM, or sea island load and discharge operations due to bad weather and/or sea conditions, to count as full laytime, or if the Vessel is already on demurrage, as full demurrage. Furthermore, in case of shifting due to bad weather, either at the request of the Master, the Lightering Mooring Master or of the Charterers, time to count as full laytime, or if the Vessel is already on demurrage, as full demurrage, plus cost of extra bunkers and other shifting expenses as listed in clause 9, to be for Charterers account.

(g) In case the Vessel calls on more than one load or more than one discharge port covered by this charter, there will be no allowance for another six-hour "notice time" already deducted at the first load port or at the first discharge port.

(h) Once the Vessel is on demurrage, the 6-hour notice time allowance in this clause does not apply, but time used for proceeding from sea or from anchorage to place of (un)loading will not count as time on demurrage.

Comment 6: First of all a few words about the Notice of Readiness requirements under this c/p format. Clause 6 states: "... the Master or his agent shall give the Charterer or his agent notice by letter, telegraph, wireless or telephone..." There is no requirement that the NoR has to be in writing. Neither is there a requirement that the NoR needs to be acknowledged or accepted. If NoR is given by voice, it is good practice for the Master to make an abstract of the phone/VHF conversation and to attach it to a subsequent NoR in writing. In all cases it is strongly recommended to make an entry in the deck log; stipulating the time and receiver of the NoR.

NoR can be tendered prior to commencement of laydays. This will start "consuming" the six-hour "free period" and if fully "consumed," laytime will commence as soon as the date and time specified in Part I B.

There have been lots of court and arbitration cases about what constitutes "delay over which the Charterer has no control." In case of congestion, or if the cargo was not ready, charterers have used this clause to cut their demurrage bill in half. First of all, it has to be understood that charterers usually have much more information about possible causes of delay in a particular port than the owners. Secondly, charterers are in a much better position to prevent delays due to berth occupancy or load readiness of the cargo than owners. It is generally understood that

delays over which a charterer has no control are, for example: blockage of a waterway due to sinking of a ship in the fairway, or damage to the loading installation or in the terminal caused by something unexpected, such as an explosion or a sudden bad storm.

It should not include such things as delays due to berth occupancy, or the charterer's inability to provide cargo. It should not include breakdowns of the loading installation in and around the terminal caused by lack of maintenance or other preventable cause. See also comment 8). To remove any doubt, it is best to spell everything out.

6 (a) It is up to the owner to make sure that the vessel's certificates are in-date for the duration of the charter. Most certificates can be renewed by Class surveyors anywhere in the world. However, vessel safety inspections have to be performed by local inspectors. Since it is not always clear where the ship will be heading, an inspection often has to be done after arrival in a certain jurisdiction. Usually these inspections only last a few hours and can be performed while the ship is loading or discharging.

6 (b) Since it is the charterer who directs the vessel to proceed to a certain port, they should not be allowed to cancel the c/p for an out-of-date safety inspection certificate that can only be renewed at that particular location.

6 (e) Ship-to-ship (lightering) operations offer great benefits to both owner and charterer. The owner is able to load much more cargo, or use his ship for areas that are normally served by smaller ships. For the charterer it means lower unit cost by utilising a larger ship for long distance transportation. Moreover, lightering offers a lot of flexibility. For example a VLCC can load four different 500,000 bbl parcels of crude oil for four different consignees, lightered into four Aframax tankers bound for four different refineries. Of course, lightering has its cost, but so does discharging at an SBM.

6 (f) Load or discharge operations carried out in open sea involve a certain amount of risk. Most lightering operations are under control of a Mooring Master, who is employed by the lightering company. This is the person who largely determines when and where operations can be performed. Clause 6 e) gives the owner of the vessel to be lightened some protection against lost time.

6 (g) Logic dictates that if a ship has already started load or discharge operations, there is no need for another 6-hour "free period."

6 (h) Nothing new here, but it doesn't hurt to spell things out.

Appendix 5.1 shows an example of a Notice of Readiness. Please note, every company has their own format. This format

shows: "Signed for receipt only", because a lot of terminal people are not allowed to sign any documents, unless it is for receipt only.

Appendix 5.2 shows general guidelines with regard to tendering a NoR under ASBATANKVOY.

7. HOURS FOR LOADING AND DISCHARGING

The number of running hours specified as laytime in Part I shall be permitted the Charterer as laytime for loading and discharging cargo; but any delay due to the Vessel's condition or breakdown or inability of the Vessels facilities to load or discharge cargo within the time allowed shall not count as used laytime. If regulations of the Owner or port authorities prohibit loading or discharging of the cargo at night, time so lost shall not count as used laytime; if the Charterer, shipper or consignee prohibits loading or discharging at night, time so lost shall count as used laytime. Time consumed by the Vessel in moving from loading or discharge port anchorage to her loading or discharge berth, ~~discharging ballast water or slops~~, will not count as used laytime.

(a) Any time waiting for cargo documents and/or cargo inspector's documentation/calculations or cargo sample test analysis lasting for more than two hours after hoses have been disconnected, is for Charterer's account and detention is payable at the demurrage rate as per clause I of this charter.

(b) If Charterers direct the Vessel to a load or discharge terminal that she can only reach — or depart from — during daylight hours, or to a port that has one-way traffic, or where no pilot or tug(s) are available when the ship is ready to move, the extra waiting time counts as full laytime, or if the Vessel is already on demurrage, as full demurrage.

(c) If for reasons not attributable to the Vessel and/or the Owners:

(i) Charterers fail to give timely loading orders in accordance with clause 4, and such failure has continued for at least 10 (ten) calendar days, or

(ii) if loading has not commenced and 5 (five) days of demurrage have accrued, Charterers shall pay upon demand, full expenses for failing to nominate a loadport, or for demurrage accrued. If Charterers fail to make such payment, Owners have the option of cancelling this charter without prejudice to other claims they may have against Charterers.

Comment 7 (a): Technically speaking the ship is "off the clock" after hoses have been disconnected (see clause 11).

However, if she still is not free to go, due to waiting for documents and/or lab tests, an owner can claim detention for excessive delays. Normally detention charges are based on the demurrage rate in the c/p.

7 b) Since it is the charterer who determines where the ship is to load or discharge, it is fair that extra waiting time is for the charterer's account.

7 c) Sometimes a charterer fails to provide loading orders, or the cargo is not ready yet. This is usually not a good sign, and may indicate that the charterer faces financial adversity. Rather than waiting for things to happen, an owner should have the power to demand demurrage payments. If charterers fail to do so, owners have the option of canceling the c/p.

8. DEMURRAGE/**LAYTIME**

Charterer shall pay demurrage per running hour and pro rata for a part thereof at the rate specified in Part I for all time that loading and discharging and used laytime as elsewhere herein provided exceeds the allowed laytime elsewhere herein specified. If, however, demurrage shall be incurred at ports of loading and/or discharge by reason of fire, explosion, storm or by a strike, lockout, stoppage or restraint of labour ~~or by breakdown of machinery or equipment~~ in or about the plant of the Charterer, supplier, shipper or consignee of the cargo, the rate of demurrage shall be reduced one-half of the amount stated in Part I per running hour or pro rata for part of an hour for demurrage so incurred. The Charterer shall not be liable for any demurrage for delay caused by strike, lockout, stoppage or restraint of labor for Master, officers and crew of the Vessel or tugboat or pilots.

(a) Storm as mentioned in this clause pertains only to Windstorms, Tropical Depressions, Hurricanes, Typhoons, or similar weather conditions that have a sustained wind of more than 50 knots resulting in the vessel experiencing actual delay due to high winds.

(b) There will be no deduction from laytime or from demurrage stemming from fire and/or explosion if caused by negligence or willful act or omission by the Charterer, supplier, shipper or consignee of the cargo or their respective servants or agents.

(c) There will be no deduction from laytime or from demurrage for delays stemming from strike, lockout, stoppage or restraint of labour (other than by Master, officers and crew of the Vessel) if Charterer was aware of expected labour action by plant personnel, tugboats or pilots prior to the vessel tendering NoR, but did not divert the vessel to a place free of labour action.

(d) There will be no deduction from laytime or from demurrage stemming from delays by tugboat(s) if they were owned and operated by Charterer, supplier, shipper or consignee of the cargo.

(e) There will be no deduction from laytime or from demurrage for delays stemming from power outage, computer problems or loss of communication or similar malfunctions in or around the terminal.

(f) If the Port is declared closed by Authorities (including by Pilots) due to bad weather, sea conditions or any other reason, but at the same time the vessel is also waiting for berth or for cargo, time waiting is to count as full laytime or as full time on demurrage.

(g) Demurrage is due as soon as incurred and subject to clause 21 (Lien).

(h) To allow an Owner to file a claim for demurrage or detention, Charterer warrants that they will make necessary documents and signatures -as stipulated by Charterer in this c/p- available upon demand. Supporting documents need to be legible and in English. If Charterer fails to provide Owner with the requested documents within 30 days of demand, any time bar stipulated by Charterer in this charter pertaining to validity of a demurrage claim, does not apply.

Comment 8): First of all, the original printed clause pertains to exemptions to demurrage. It does not pertain to exemptions to laytime.

The original clause contains an exemption of half demurrage for ...breakdown of machinery or equipment....in or around charterer's plant. However, according to clause 7, if the vessel breaks down, or is unable to load or discharge, time is not to count. Therefore delays due to breakdowns in charterer's plant, which may be the result of poor maintenance, should not be charged against the owner, unless the breakdown is caused by some catastrophic event.

8 (a) There have been a lot of debates as to what constitutes a storm. In many cases a charterer has claimed that a vessel was unable to come to berth because there was a storm, while the owner contended that the ship was actually waiting for berth. The word "storm" needs to be well defined, to have any meaning.

8 (b) & (c) These clauses are self explanatory.

8 (d) Many charterers, such as major oil companies or government owned terminals, employ their own tug boats. If their crews go on strike, it should not be held against the shipowner.

8 (e) There are quite a few court and arbitration cases in which half exemption of demurrage, due to waiting for bad weather, has been disallowed to a charterer when at the same time the ship was waiting for berth. On the other hand it can be argued that if a ship at berth had finished cargo operations, but was prevented from sailing due to bad weather, it had an effect on the vessel waiting at the anchorage as well. If a particular port experiences bad weather on a routine basis, it is best to spell out all the different scenarios.

While awaiting berth, the master should keep a daily log of ships going to, occupying, and departing from the berth assigned to own ship. That way it can be established that the berth was occupied or not. If the particular berth is not in view, the master should ask the agent for a daily berth occupancy update and also check the AIS, which gives name, bearing and distance of surrounding ships.

9. SAFE BERTHING-SHIFTING

The Vessel shall load and discharge at any safe place or wharf, or alongside Vessels or lighters reachable on her arrival, which shall be designated and procured by the Charterer, provided the Vessel can proceed thereto, lie at and depart there from always safely afloat, any lighterage being at the expense, risk and peril of the Charterer. The Charterer shall have the right of shifting the Vessel at ports of loading and/or discharge from one safe berth **or transshipment area** to another on payment of all towage and pilotage shifting to next berth **or transshipment area,** charges for running lines on arrival at and leaving that berth, additional agency charges and expense, customs overtime and fees, and any other extra port charges or port expenses **and extra bunkers** incurred by reason of using more than one berth **or transshipment area, or a combination of both.** Time consumed on account of shifting **and/or waiting at an anchorage or at a lay-berth** shall count as used laytime, **or as time on demurrage if the Vessel is already on demurrage,** except as otherwise provided in Clause 15.

(a) If the vessel has to wait for regular high tide to proceed to the place of unloading, time not to count as laytime, or as time on demurrage if the vessel is already on demurrage. However, if the vessel has to wait for high water other than regular diurnal flood tide(s), such as a spring tide, time to count as laytime, or as time on demurrage if the vessel is already on demurrage.

Comment 9) : The phrase "reachable on arrival" is of great importance to an owner and should be kept in the c/p.

NB: This clause pertains to a berth that is safe for the ship. However, with so many ships being boarded by hoodlums

who attack the crew, owners may want to draft a special security clause if the vessel is to call on ports where this kind of assault takes place on a regular basis and where local authorities don't seem to take an active role in protecting ships and their crews.

9 (a) Time to wait for tide is, under normal circumstances, for owner's account. However, certain ports have an extra high tide only once or twice a month. In that case it has to be spelled out in the c/p who is responsible for extra waiting time. It may be to the owner's advantage to load more cargo and perhaps absorb the extra time waiting for a special high tide. It has to be borne in mind though that at certain ports tides are often subject to wind, and are therefore unpredictable.

10. PUMPING IN AND OUT

The cargo shall be pumped into the Vessel at the expense, risk and peril of the Charterer, and shall be pumped out of the Vessel at the expense of the Vessel, but at the risk and peril of the Vessel only so far as the Vessel's permanent hose connections, where delivery of the cargo shall be taken by the Charterer or its consignee. ~~If required by Charterer, Vessel after discharging is to clear shore pipelines of cargo by pumping water through them and time consumed for this purpose shall apply against allowed laytime~~. The Vessel shall supply her pumps and the necessary power for discharging in all ports, as well as necessary hands. However, should the Vessel be prevented from supplying such power by reason of regulations prohibiting fires on board, the Charterer or consignee shall supply, at its expense, all power necessary for discharging as well as loading, but the Owner shall pay for power supplied to the Vessel for other purposes. ~~If cargo is loaded from lighters, the Vessel shall furnish steam at Charterers expense for pumping cargo into the Vessel, if requested by the Charterer, providing the Vessel has facilities for generating steam and is permitted to have fires on board~~. All overtime of officers and crew incurred in loading and/or discharging shall be for account of the Vessel.

(a) Owner warrants that the vessel will discharge the bulk of the cargo in maximum 24 hours (pro-rata for part cargoes), or alternatively maintain a minimum pressure at the ship's manifold of 100 psi, provided the receiving facility can accept at that rate. Excluded from this max. 24-hour requirement is the time between start-up of the pump(s) and reaching normal working rpm's, time to complete shoreline displacement, time to switch grades (if applicable) and time for stripping. Also excluded is stopping time (requested by either ship or by receiving terminal) due to high winds, lightning in the area, or other weather or sea conditions that may lead to unsafe operations.

(b) **The Charterer may instruct the Master to carry out COW of some or all of the tanks used for cargo. In any event, the Master shall be allowed to COW the minimum number of tanks as required under current MARPOL Regulations.**

(c) **The period specified for discharge of the cargo stated elsewhere in this charter shall be increased by 0.75 hours per tank to be COW-ed and time to count as laytime, or as demurrage if the vessel is already on demurrage.**

(d) **In case the Terminal does not allow the Master to COW all cargo tanks, Owners will — after thorough stripping — not be responsible for any cargo ROB in tanks not COW-ed.**

(e) **To allow the Master to provide proper care for the cargo, Charterers to furnish Owners with full particulars; including, but not limited to: name of the cargo or its blend components, API or density, Reid vapour pressure, cloud point, pour point, wax content, viscosity, heating requirements, expected loading temperature, minimum carriage and min. discharge temperature, H_2S level.**

(f) **In case of high paraffin cargoes with a high cloud point COW-ing may foul the ship's tanks, pumps and lines. Therefore the decision to COW in this case is to be left to the Master only. If the Terminal requests COW-ing anyway, the Vessel to be provided — free of charge — with sufficient cutter stock to wash all ship's tanks, lines and pumps thoroughly, and the Vessel to be allowed to pump the cleaning slops ashore; free of charge. Any extra time so used is to count as laytime, or as demurrage if the ship is already on demurrage.**

(g) **Owners are not responsible for ROB in case of high paraffin cargoes that have a cloud point of less than 15°C above ambient sea or air temperature experienced at any time span between loading and discharging.**

(h) **In case of excessive ROB of 0.05% (= 250 bbl per 500,000 bbl), Owner and Charterer to appoint an independent surveyor — acceptable to both — who is to determine ROB by using the wedge formula; if applicable.**

(i) **Charterer shall have the right to require the vessel to remain at berth for clingage rundown or other cargo recovery techniques. Time so spent to count as laytime, or as demurrage if the vessel is already on demurrage.**

Comment 10): Water and oil don't mix. Therefore, an owner should not expose the ship to the risk of having to clean shore pipelines.

If a vessel is to be loaded from lighters, these craft should have their own power and pumping facilities.

10 (a) This is a fairly standard clause; at least the first sentence.

10 (b) Crude Oil Washing (COW) greatly contributes to cleaner tanks, with the added benefit that the maximum amount of cargo will be pumped ashore. However, certain terminal managers are not fond of COW; either from a safety standpoint, or they worry about scale, sediment and/or sludge from the ship's tanks being pumped into their shore tanks and perhaps causing damage to refinery units. Current MARPOL regulations allow COW-ing a minimum number of tanks.

10 (c) Under clause 10 (a) the ship has to be able to pump off in 24 hours. However, with COW, this time is increased by 45 minutes (0.75 hour) per tank washed. All COW time is to count as laytime, or as time on demurrage.

10 (d) If a terminal does not allow COW-ing of all tanks, logic dictates that the ship cannot be held responsible for any ROB, consisting of cargo and perhaps sludge.

10 (e), (f) & (g) These clauses are self-explanatory.

10 (i) Sometimes, in cold climates when the oil is viscous, it takes a while before all of it has run down from the bulkheads. Since cargo owners are entitled to the whole cargo, this clause gives them the option of keeping the vessel at berth until recovering as much cargo as possible.

11. HOSES: MOORING AT SEA TERMINALS (**SBMs**)

Hoses for loading and discharging shall be furnished by the Charterer and shall be connected and disconnected by the Charterer, or, at the option of the Owner, by the Owner at the Charterer's risk and expense. Laytime shall continue until the hoses have been ~~disconnected~~ **lowered into the water and all hose handling equipment has been offloaded and the SBM mooring lines have been disconnected.** When Vessel loads or discharges at a sea terminal, the Vessel shall be properly equipped at Owner's expense for loading or discharging at such place, including suitable ground tackle, **chain stopper(s)**, mooring lines and **lifting** equipment for handling ~~sub~~marine hoses.

(a) If Charterers require the Vessel to transfer cargo to another Vessel, or if the Vessel is the receiving one, the trans-shipment operation shall be carried out in accordance with the recommendations set out in the latest edition of ICS/OCIMF "Ship to Ship Transfer Guide" and Owners undertake that the Vessel and her crew will comply with such recommendations. Charterers to provide -and pay for- all equipment required by law, ordinance or agreement, including but not limited to, suitable fenders and hoses, pollution clean-up craft and/or

equipment, spill booms and absorbent supplies. Owners shall permit supervisory personnel, including a Mooring Master nominated by Charterers, to stay on board during the transfer operation.

All time from arrival of the Vessel at designated lightening location till the time the fenders and hoses have been removed from the Vessel after completion of the transfer operation, to count as laytime, or if the Vessel is already on demurrage, as time on demurrage. There is no six-hour "free time" NoR allowance and no deduction for time lost due to bad weather and/or sea condition as may be stated elsewhere in this charter.

Comment 11): Instead of time to stop when hoses have been disconnected while at an SBM, it is more realistic to count time till the ship is free to vacate the mooring. This is, after all, when the hose handling equipment has been offloaded and after the ship has cast off the SBM mooring lines.

11 a) With lightering we have more or less the same situation. Transfer operations may have been completed, but sometimes hoses and fenders are left on board, either on the mother or on the daughter ship, till they are picked up by the lightering company workboat. Time should count till the vessel is free to go.

Not all the equipment mentioned in clause 11, such as clean-up craft (skimmers) and spill booms are required at a particular lightering area. Owners and charterers should be guided accordingly when negotiating a charter.

12. DUES-TAXES-WHARFAGE

The Charterer shall pay all taxes, dues and other charges on the cargo, including but not limited to Customs overtime on the cargo, Venezuelan Habilitation Tax, C.I.M. Taxes at Le Havre and Portuguese Imposto de Comercio Maritime. The Charterer shall also pay all taxes on freight at loading or discharging ports and any unusual taxes, assessments and governmental charges which are not presently in effect but which may be imposed in the future on the Vessel or freight. The Owner shall pay all dues and other charges on the Vessel (whether or not such dues or charges are assessed on the basis of quantity of cargo), including but not limited to French droits de quai and Spanish derramas taxes. The Vessel shall be free of charges for the use of any wharf, dock, place or mooring facility arranged by the Charterer for the purpose of loading or discharging cargo; however, the Owner shall be responsible for charges for such berth when used solely for Vessel's purposes, such as awaiting Owner's orders, tank cleaning, repairs, etc. before, during or after loading or discharging.

(a) **Division of Assessments, Port Costs, Taxes and any other charges listed in Worldscale, is to be divided between Owners and Charterers as per Worldscale Publication in effect for this c/p.**

Comment 12): Worldscale publication offers a fair division of Port costs etc. into owner's, or into charterer's items. However, not all charges are covered by Worldscale, and negotiators should make special provisions for particular charges that apply to a specific voyage.

13. (a) CARGOES EXCLUDED VAPOUR PRESSURE

Cargo shall not be shipped which has a vapour pressure at one hundred degrees Fahrenheit (100° F.) in excess of thirteen and one-half pounds (13.5 lbs.) as determined by the current A.S.T.M. Method (Reid) D-323.

(b) FLASH POINT

Cargo having a flash point under one hundred and fifteen degrees Fahrenheit (1150 F.) (closed cup) A.S.T.M. Method D-56 shall not be loaded from lighters but this clause shall not restrict the Charterer from loading or topping off Crude Oil from Vessels or barges inside or outside the bar at any port or place where bar conditions exist.

14. (a) ICE

In case port of loading or discharge should be inaccessible owing to ice, **or any place where lights, lightships, navigation marks and buoys are — or are likely to be — withdrawn by reason of ice on the Vessel's arrival, or where there is risk that due to ice the Vessel will not be able to reach the destination, or be able to depart after having completed loading or discharging,** the Vessel shall direct her course according to Master s judgment, notifying by telegraph or radio, if available, the Charterers, shipper or consignee, who is bound to telegraph or radio orders for another port, which is free from ice and where there are facilities for the loading or reception of the cargo in bulk. The whole of the time occupied from the time the Vessel is diverted by reason of the ice until her arrival at an ice-free port of loading or discharge, as the case may be, shall be paid for by the Charterer at the demurrage rate stipulated in Part I, **plus the cost of extra bunkers so consumed.**

(b) If on account of ice the Master considers it dangerous to enter or remain at any loading or discharging place for fear of the Vessel being frozen in or damaged, the Master shall communicate by telegraph or radio, if available, with the Charterer, shipper or consignee of the cargo, who shall telegraph or radio him in reply, giving orders

to proceed to another port as per Clause 14 (a) where there is no danger of ice and where there are the necessary facilities for the loading or reception of the cargo in bulk, or to remain at the original port at their risk, and in either case Charterer to pay for the time that the Vessel may be delayed, at the demurrage rate stipulated in Part I.

(c) The Vessel shall not be obliged to force ice.

(d) At all times the vessel to remain within Institute Warranty Limits.

Comment 14): Some charters specify that a vessel is to follow icebreakers. This is a risky proposition; especially for oil tankers. It should be up to the master to decide if it is safe to reach and to depart from an icebound port.

Comment 14 (d): Before it is agreed that a vessel is to proceed outside the Institute Warranty Limits, such as around NE Canada and in the Baltic in Winter time, permission should be asked from the vessel's insurance company.

If the ship is not built to operate in ice, it is best not to go there, because she may incur a lot of damage to hull, rudder and propeller. Moreover, the risk of an oil spill is greatly increased. In fact some countries try to prohibit navigation of single-hull, or non-ice-class tankers, near their shores.

15. TWO OR MORE PORTS COUNTING AS ONE

To the extent that the freight rate standard of reference specified in Part I F hereof provides for special groupings or combinations of ports or terminals, any two or more ports or terminals within each such grouping or combination shall count as one port for purposes of calculating freight and demurrage only, subject to the following conditions:

(a) Charterer shall pay freight at the highest rate payable under Part I F hereof for a voyage between the loading and discharge ports used by Charterer.

(b) All charges normally incurred by reason of using more than one berth shall be for Charterer's account as provided in Clause 9 hereof.

(c) Time consumed shifting between the ports or terminals within the particular grouping or combination shall not count as used laytime.

(d) Time consumed shifting between berths within one of the ports or terminals of the particular grouping or combination shall count as used laytime.

16. GENERAL CARGO

The Charterer shall not be permitted to ship any packaged goods or non-liquid bulk cargo of any description; the cargo the Vessel is to load under this Charter is to consist of only liquid bulk cargo as specified in Clause 1.

17. (a). QUARANTINE

Should the Charterer send the Vessel to any port or place where a quarantine exists, any delay thereby caused to the Vessel shall count as used laytime, **or as time on demurrage if the Vessel is on demurrage**; but should the quarantine not be declared until the Vessel is on passage to such port, the Charterer shall not be liable for any resulting delay.

(b) FUMIGATION

If the Vessel, prior to or after entering upon this Charter, has docked or docks at any wharf which is not rat-free or stegomyia-free, she shall, before proceeding to a rat-free or stegomyia-free wharf, be fumigated by the Owner at his expense, except that if the Charterer ordered the Vessel to an infected wharf the Charterer shall bear the expense of fumigation.

(c) The Vessel shall not be ordered to, nor required to enter any place, where there is a danger of the Vessel's crew being exposed to wide-spread outbreaks of contagious disease(s).

Comment 17(b): Stegomyia pertains to a type of mosquito, whose eggs can contribute to the spread of encephalitis, dengue and yellow fever. It seems to be fairly common in West Africa.

17 (c) SARS would be a good example.

18. CLEANING

The Owner shall clean the tanks, pipes and pumps of the Vessel to the satisfaction of the Charterer's Inspector. The Vessel shall not be responsible for any admixture if more than one quality of oil is shipped, nor for leakage, contamination or deterioration in quality of the cargo unless the admixture, leakage, contamination or deterioration results from (a) unseaworthiness existing at the time of loading or at the inception of the voyage which was discoverable by the exercise of due diligence, or (b) error or fault of the servants of the Owner in the loading, care or discharge of the cargo.

If Charterers request the vessel to be inerted on arrival at the loadport, but requests cargo Inspector(s) to enter tanks for inspection, sampling or for gauging, extra time for purging, gas-freeing, inspection and re-inerting of the tanks is to count as laytime, or as demurrage if the Vessel is already on demurrage.

Comment 18): The original printed clause often contradicts clauses elsewhere in the c/p or voyage instructions that require the vessel's tanks to be inerted. The original printed clause requires tanks to be clean but, when inerted, obviously an inspector cannot check them for cleanliness.

19. GENERAL EXCEPTIONS CLAUSE

The Vessel, her Master and Owner shall not, unless otherwise in this Charter expressly provided, be responsible for any loss or damage, or delay or failure in performing hereunder, arising or resulting from: -any act, neglect, default or barratry of the Master, pilots, mariners or other servants of the Owner in the navigation or management of the Vessel; fire, unless caused by the personal design or neglect of the Owner, collision, stranding or peril, danger or accident of the sea or other navigable waters; saving or attempting to save life or property; wastage in weight or bulk, or any other loss or damage arising from inherent defect, quality or vice of the cargo: any act or omission of the Charterer or Owner, shipper or consignee of the cargo, their agents or representatives; insufficiency of packing; insufficiency or inadequacy of marks; explosion, bursting of boilers, breakage of shafts, or any latent defect in hull, equipment or machinery; unseaworthiness of the Vessel unless caused by want of due diligence on the part of the Owner to make the Vessel seaworthy or to have her properly manned, equipped and supplied; or from any other cause of whatsoever kind arising without the actual fault or privity of the Owner. And neither the Vessel nor Master or Owner, nor the Charterer, shall, unless otherwise in this Charter expressly provided, be responsible for any loss or damage or delay or failure in performing hereunder, arising or resulting from: -Act of God; act of war; perils of the seas; act of public enemies, pirates or assailing thieves: arrest or restraint of princes, rulers or people; or seizure under legal process provided bond is promptly furnished to release the Vessel or cargo; strike or lockout or stoppage or restraint of labor from whatever cause, either partial or general; or riot or civil commotion.

20. ISSUANCE AND TERMS OF BILLS OF LADING

(a) The Master shall, upon request, sign Bills of Lading **or Straight Bills of Lading or Sea Waybills** in the form ~~appearing below~~ **compatible with this Charter*** for all cargo shipped but without prejudice to the rights of the Owner and Charterer under the terms of this Charter. The Master shall not be required to sign Bills of Lading **or Straight Bills of Lading or Sea Waybills** for any port which, the Vessel cannot enter, remain at and leave in safety and always afloat nor for any blockaded port, **nor sign Bills of Lading or Straight Bills of Lading or Sea Waybills that contain factual information that is incorrect.**

** In addition to standard information and to Clause Paramount as stated below, B/L needs to contain the following clauses, or similar wording: (in English on the front of the B/L)*

- **Shipped in apparent good order and condition.**
- **Cargo quantity and particulars supplied by shipper.**
- **This shipment is carried under and pursuant to the terms of a Charter Party dated: _____ and all the terms, including jurisdiction and dispute resolution clauses as specified in this C/P, to apply and to govern the rights of the parties concerned with this shipment.**
- **Payment of Freight: __AS PER GOVERNING C/P ___**

** Furthermore the B/L needs to have the following information:*

- *The B/L needs to have a named Consignee and a named Discharge Port*
- *B/L needs to have: Name of the cargo(s) and/or grade(s), GSV in bbls at 60° F or in m^3 at 15° C, API at 60°F or density at 15°C and quantity in gross Metric Tons.*
- *(If applicable) USA SCAC B/L identifier as per CFR volume 19, part 4.7a.*
- *The number of original B/Ls the Master, or his authorised representative, has signed.*
- *In case of more than one original B/L, all need to state that if one original B/L has been accomplished, the other(s) shall be void.*
- *Correct B/L date (date loading was completed).*
- *B/L needs to have Terms and Conditions of Carriage on its front or back.*
- *(Optional) Total Laytime used in loadport.*

a-i) Bills of Lading or Straight Bills of Lading or Sea Waybills shall be without prejudice to this Charter and Charterers shall indemnify Owners against all consequences, delays or liabilities which may arise from any inconsistency between this Charter and any Bills of Lading or Straight Bills of Lading or Sea Waybills or other documents signed by Charterers or their Agent(s), or by the Master at their request, or which may arise from error(s) in documents supplied by Charterers or their Agent(s).

a-ii) In case of Early Departure Procedure (EDP), a copy of the pro-forma B/L must be faxed to the Master and to Owners for approval, before master will issue a letter of authorisation to sign B/L's on his behalf,

a-iii) Bills of Lading or Sea Waybills marked "FREIGHT PREPAID" will only be signed by the Master or by his authorised Agent, if full freight has been received in ready cash in Owners' bank account, or if Charterers have provided Owners with an acceptable, Irrevocable Transferable Standby Letter of Credit as per clause 2.

a-iv) Bills of Lading or Straight Bills of Lading or Sea Waybills issued under this charter must be in English; no exception.

(b) The carriage of cargo under this Charter Party and under all Bills of Lading **or Straight Bills of Lading or Sea Waybills** issued for the cargo shall be subject to the statutory provisions and other terms set forth or specified in sub-paragraphs (i) through (vii) of this clause and such terms shall be incorporated verbatim or be deemed incorporated by the reference in any such Bill of Lading **Straight Bills of Lading or Sea Waybills**. In such sub-paragraphs and in any Act referred to therein, the word "carrier" shall include the Owner and the Chartered Owner of the Vessel.

b-1) Notwithstanding any other provision in this contract, Owner shall not have to comply with any orders from Charterer to discharge all, or part of the cargo:

i) At any other port than the one shown on the B/L (Except in case a port is blockaded, or is unreachable due to Ice or due to War)

ii) Without presentation of at least one original B/L.

b-2) If Charterer expects that the original "order" B/L will not be available at the discharge port, Owner will accept one of the following options:

AAA) Shipper needs to leave -against a receipt- one signed original "order" B/L with the Master. The Master is to carry the original B/L to the discharge port where it is to be presented to -and to be endorsed by- Charterers or their Agents (not the Owners Agent). Original B/L is to be handed back to Master, who, upon proper identification of the consignee (or endorsee on behalf of the consignee), will release the cargo for discharge.**

** *B/L needs to be endorsed as follows:*

"THE CARGO REFERRED TO IN THIS BILL OF LADING HAS BEEN DELIVERED IN FULL TO ITS PROPER DESTINATION AND THE VOYAGE HAS BEEN ACCOMPLISHED".

Printed name of consignee: _____

Signature of endorser: _____

Printed name of endorser: _____

BBB) If the cargo under a "to order" B/L has been consigned to a major international bank, an acceptable Letter of Indemnity (LoI) from that bank.

CCC) A non-negotiable B/L, so marked before the Master signs it.

DDD) A Sea Waybill (without the "to order", or similar wording)

EEE) A signed Letter of Indemnity on Charterer's letterhead, acceptable to the P&I Club of the vessel's registered Owner and countersigned* by a major international bank. The original LoI to be mailed to Owners by express mail within five days of this c/p date, or five days before vessel's arrival at discharge port; whichever is earlier.**

*** *The following bank's guarantee must be added to the LoI:*

"IN CONSIDERATION OF YOUR AGREEING TO ABOVE LETTER OF INDEMNITY, WE THE UNDERSIGNED (name of bank)_____

OF (full address; incl. phone & fax no. + e-mail)

_____

_____

WHOSE CUSTOMER IS: (name of creator of LoI)

_____

JOINTLY AND SEVERALLY AGREE TO BE BOUND BY THE TERMS OF THIS LETTER OF INDEMNITY".

Printed name of bank:_____

+ Bank's Stamp

Signed: _____ **date:** _____

Printed name and position of signer:

_____

FFF) An Irrevocable, Transferable Standby Letter of Credit, acceptable to Owner and confirmed by a major international bank for 150% of the C&F value of the cargo.

GGG) Charterers to wire-transfer into Owners account 0.6% of the C&F value of the cargo no later than five calendar days after c/p date, or at least five days prior to arrival at discharge port, whichever is earlier, to cover Owners' cost of insurance against mis-delivery of the cargo.

OPTION SELECTED BY CHARTERERS: _____

b-3) Regardless of other terms agreed to in this charter, in case of Early Departure Procedure (EDP), where the ship has sailed from the load port prior to Bills of Lading having been signed, or in case where no original Bills of Lading will be presented prior to discharge of the cargo, full freight is to be paid -without exception- five days prior to arrival of the vessel at the discharge port.

b-4) Any delays in producing an original Bill of Lading, or failing to institute any one of above mentioned options before commencement of discharge, is time to count as laytime, or if the Vessel is already on demurrage, as time on demurrage.

Comment 20): The next chapter in this book offers more detailed treatment of Bills of Lading. It is strongly recommended to have a skilled maritime lawyer review all of clause 20.

(i) CLAUSE PARAMOUNT. ~~This~~ Bills of Lading, **including Sea Waybills and Straight Bills of Lading**, shall have effect subject to the provisions of the Carriage of Goods by Sea Acts of the United States, approved April 16, 1936, except that if this Bill of Lading **Straight Bills of Lading or Sea Waybill** is issued at a place where any other Act, ordinance or legislation gives statutory effect to the International Convention for the Unification of Certain Rules relating to Bills of Lading at Brussels, August 1924, then this Bill of Lading **or Straight Bills of Lading or Sea Waybill** shall have effect, subject to the provisions of such Act, ordinance or legislation. The applicable Act, ordinance or legislation (hereinafter called the "Act") shall be deemed to be incorporated herein and nothing herein contained shall be deemed a surrender by the Owner of any of its rights or immunities or an increase of any of its responsibilities or liabilities under the Act. If any term of this Bill of Lading **or Straight Bills of Lading or Sea Waybill** ~~be~~ **is** repugnant to the Act to any extent, such term shall be void to that extent but no further.

Furthermore:

"(1) Subject to sub-clause (2) hereof, this Bill of Lading or Straight Bills of Lading or Sea Waybill shall be governed by, and have effect subject to the rules contained in the International Convention for the Unification of Certain Rules relating to Bills of Lading signed at Brussels on 25th August 1924 (hereafter the "Hague Rules") as amended by the Protocol signed at Brussels on 23rd February 1968 (hereafter the "Hague-Visby Rules"). Nothing contained herein shall be deemed to be either a surrender by the carrier of any of his rights or immunities or any increase of any of his responsibilities or liabilities under the Hague-Visby Rules."

"(2) If there is governing legislation which applies the Hague or Hamburg Rules compulsory to this Bill of Lading or Straight Bills of Lading or Sea Waybill, to the exclusion of the Hague-Visby Rules, then this Bill of Lading or Straight Bills of Lading or Sea Waybill shall have effect subject to the Hague Rules or Hamburg Rules, as the case may be. Nothing herein contained shall be deemed to be either a surrender by the carrier of any of his rights or immunities or an increase of any of his responsibilities under the Hague Rules."

"(3) If any term of this Bill of Lading or Straight Bills of Lading or Sea Waybill is repugnant to the Hague-Visby Rules, or Hague or Hamburg Rules if applicable, such term shall be void to that extent but no further."

"(4) Nothing in this Bill of Lading or Straight Bills of Lading or Sea Waybill shall be construed as in any way restricting, excluding or waiving the right of any relevant party or person to limit his liability under any legislation and/or law."

(ii) JASON CLAUSE. In the event of accident, danger, damage or disaster before or after the commencement of the voyage, resulting from any cause whatsoever, whether due to negligence or not, for which, or for the consequence of which, the Owner is not responsible, by statute, contract or otherwise, the cargo shippers, consignees or owners of the cargo shall contribute with the Owner in General Average to the payment of any sacrifices, losses or expenses of a General Average nature that may be made or incurred and shall pay salvage and special charges incurred in respect of the cargo. If a salving ship is owned or operated by the Owner, salvage shall be paid for as fully as if the said salving ship or ships belonged to strangers.

Such deposit as the Owner or his agents may deem sufficient to cover the estimated contribution of the cargo and any salvage and special charges thereon shall, if required, be made by the cargo, shippers, consignees or owners of the cargo to the carrier before delivery.

(iii) GENERAL AVERAGE. General Average shall be adjusted, stated and settled according to York/Antwerp Rules ~~1950~~ **1994** and, as to matters not provided for by those rules, according to the laws and usages at the port of New York, **Houston** or at the port of London, whichever place is specified in Part I of this Charter. If a General Average statement is required, it shall be prepared at such port or place in the United States or United Kingdom, whichever country is specified in Part I of this Charter, as may he selected by the Owner, unless otherwise mutually agreed, by an Adjuster appointed by the Owner and approved by the Charterer. Such Adjuster shall attend to the settlement and the collection of the General Average, subject to customary charges. General Average Agreements and/or security shall be furnished by Owner and/or Charterer, and/or Owner and/or Consignee of cargo, if requested. Any cash deposit being made as security to pay General Average and/or salvage shall be remitted to the Average Adjuster and shall be held by him at his risk in a special account in a duly authorized and licensed bank at the place where the General Average statement is prepared.

(iv) BOTH TO BLAME. If the Vessel comes into collision with another ship as a result of the negligence of the other ship and any act, neglect or default of the Master, mariner, pilot or the servants of the Owner in the navigation or in the management of the Vessel, the owners of the cargo carried hereunder shall indemnify the Owner against all loss or liability to the other or non-carrying ship or her owners in so far as such loss or liability represents loss of, or damage to, or any claim whatsoever of the owners of said cargo, paid or payable by the other or recovered by the other or non-carrying ship or her owners as part of their claim against the carrying ship or Owner. The foregoing provisional shall also apply where the owners, operators or those in charge of any ships or objects other than, or in addition to, the colliding ships or object are at fault in respect of a collision or contact.

(v) LIMITATION OF LIABILITY. Any provision of this Charter to the contrary notwithstanding, the Owner shall have the benefit of all limitations of, and exemptions from, liability accorded lo the owner or chartered owner of Vessels by any statute or rule or law for the time being in force.

(vi) WAR RISKS. **ASBATANKVOY clause 20 (vi) has been deleted in its entirety and has been replaced by: BIMCO War Risk**

clause for Voyage Chartering, 2004 (Code name: VOYWAR 2004).

(a) For the purpose of this Clause, the words:

(i) "Owners" shall include the shipowners, bareboat charterers, disponent owners, managers or other operators who are charged with the management of the Vessel, and the Master; and

(ii) "War Risks" shall include any actual, threatened or reported: War; act of war; civil war; hostilities; revolution; rebellion; civil commotion; warlike operations; laying of mines; acts of piracy; acts of terrorists; acts of hostility or malicious damage; blockades (whether imposed against all vessels or imposed selectively against vessels of certain flags or ownership, or against certain cargoes or crews or otherwise howsoever); by any person, body, terrorist or political group, or the Government of any state whatsoever, which, in the reasonable judgment of the Master and/or the Owners, may be dangerous or are likely to be or to become dangerous to the Vessel, her cargo, crew or other persons on board the Vessel.

(b) If at any time before the Vessel commences loading, it appears that, in the reasonable judgment of the Master and/or the Owners, performance of the Contract of Carriage, or any part of it, may expose, or is likely to expose, the Vessel, her cargo, crew or other persons on board the Vessel to War Risks, the Owners may give notice to the Charterers cancelling this Contract of Carriage, or may refuse to perform such part of it as may expose, or may be likely to expose, the Vessel, her cargo, crew or other persons on board the Vessel to War Risks; provided always that if this Contract of Carriage provides that loading or discharging is to take place within a range of ports, and at the port or ports nominated by the Charterers the Vessel, her cargo, crew, or other persons onboard the Vessel may be exposed, or may be likely to be exposed, to War Risks, the Owners shall first require the Charterers to nominate any other safe port which lies within the range for loading or discharging, and may only cancel this Contract of Carriage if the Charterers shall not have nominated such safe port or ports within 48 hours of receipt of notice of such requirement.

(c) The Owners shall not be required to continue to load cargo for any voyage, or to sign Bills of Lading for any port or place, or to proceed or continue on any voyage, or on any part thereof,

or to proceed through any canal or waterway, or to proceed to or remain at any port or place whatsoever, where it appears, either after the loading of the cargo commences, or at any stage of the voyage thereafter before the discharge of the cargo is completed, that, in the reasonable judgment of the Master and/or the Owners, the Vessel, her cargo (or any part thereof), crew or other persons on board the Vessel (or any one or more of them) may be, or are likely to be, exposed to War Risks. If it should so appear, the Owners may by notice request the Charterers to nominate a safe port for the discharge of the cargo or any part thereof, and if within 48 hours of the receipt of such notice, the Charterers shall not have nominated such a port, the Owners may discharge the cargo at any safe port of their choice (including the port of loading) in complete fulfillment of the Contract of Carriage. The Owners shall be entitled to recover from the Charterers the extra expenses of such discharge and, if the discharge takes place at any port other than the loading port, to receive the full freight as though the cargo had been carried to the discharging port and if the extra distance exceeds 100 miles, to additional freight which shall be the same percentage of the freight contracted for as the percentage which the extra distance represents to the distance of the normal and customary route, the Owners having a lien on the cargo for such expenses and freight.

(d) If at any stage of the voyage after the loading of the cargo commences, it appears that, in the reasonable judgment of the Master and/or the Owners, the Vessel, her cargo, crew or other persons on board the Vessel may be, or are likely to be, exposed to War Risks on any part of the route (including any canal or waterway) which is normally and customarily used in a voyage of the nature contracted for, and there is another longer route to the discharging port, the Owners shall give notice to the Charterers that this route will be taken. In this event the Owners shall be entitled, if the total extra distance exceeds 100 miles, to additional freight which shall be the same percentage of the freight contracted for as the percentage which the extra distance represents to the distance of the normal and customary route.

(e) (i) The Owners may effect war risks insurance in respect of the Hull and Machinery of the Vessel and their other interests (including, but not limited to, loss of earnings and detention, the crew and their Protection and Indemnity Risks), and the premiums and/or calls

therefore shall be for their account.

(ii) If the Underwriters of such insurance should require payment of premiums and/or calls because, pursuant to the Charterers' orders, or in order to fulfill the Owners' obligation under this Charter Party, the Vessel is within, or is due to enter and remain within, or pass through any area or areas which are specified by such Underwriters as being subject to additional premiums because of War Risks, then the actual premiums and/or calls paid shall be reimbursed by the Charterers to the Owners within 14 days after receipt of the Owners' invoice. If the Vessel discharges all of her cargo within an area subject to additional premiums as herein set forth, the Charterer shall reimburse the Owners for the actual additional premiums paid which may accrue from completion of discharge until the Vessel leaves such area or areas referred to above. The Owners shall leave the area as soon as possible after completion of discharge.

(f) The Vessel shall have liberty:-

(i) to comply with all orders, directions, recommendations or advice as to departure, arrival, routes, sailing in convoy, ports of call, stoppages, destinations, discharge of cargo, delivery or in any way whatsoever which are given by the Government of the Nation under whose flag the Vessel sails, or other Government to whose laws the Owners are subject, or any other Government which so requires, or any body or group acting with the power to compel compliance with their orders or directions;

(ii) to comply with the orders, directions or recommendations of any war risks underwriters who have the authority to give the same under the terms of the war risks insurance;

(iii) to comply with the terms of any resolution of the Security Council of the United Nations, the effective orders of any other Supranational body which has the right to issue and give the same, and with national laws aimed at enforcing the same to which the Owners are subject, and to obey the orders and directions of those who are charged with their enforcement;

(iv) to discharge at any other port any cargo or part thereof which may render the Vessel liable to confiscation as a contraband carrier;

(v) **to call at any other port to change the crew or any part thereof or other persons on board the Vessel when there is reason to believe that they may be subject to internment, imprisonment or other sanctions;**

(vi) **where cargo has not been loaded or has been discharged by the Owners under any provisions of this Clause, to load other cargo for the Owners' own benefit and carry it to any other port or ports whatsoever, whether backwards or forwards or in a contrary direction to the ordinary or customary route.**

(g) **If in compliance with any of the provisions of sub-clauses (b) to (f) of this Clause anything is done or not done, such shall not be deemed to be a deviation, but shall be considered as due fulfillment of the Contract of Carriage.**

Comment 20 vi): Due to the ever changing geopolitical situation, the BIMCO war clause is considered to be more suitable and fair to all parties than the original ASBATANKVOY war clause.

(vii) DEVIATION CLAUSE. The Vessel shall have liberty to call at any ports in any order, to sail with or without pilots, to tow or to be towed, to go to the assistance of Vessels in distress, to deviate for the purpose of saving life or property or of landing any ill or injured person on board, and to call for fuel, **water, stores and spare parts, to make emergency repairs, to make test runs to adjust navigation instruments; all this to maintain the vessel in seaworthy condition** at any port or ports in or out of the regular course of the voyage. Any salvage shall be for the sole benefit of the Owner.

Any Laden or Ballast speed agreed upon in this c/p is only valid from beginning to end of sea passage; weather and safe navigation permitting and unforeseen circumstances excepted.

21. LIEN. The Owner shall have an absolute lien on the cargo for all **unpaid** freight, deadfreight, demurrage, **charterer's contribution to general average**, and costs, including attorney fees, of recovering the same, which lien shall continue after delivery of the cargo into the possession of the Charterer, or of the holders of any Bills of Lading covering the same or of any storageman.

In the event that oil cargo has been discharged into consignee's vessel, shore tank or pipeline and is — or is not — commingled with other oil products, and is — or is no longer — identifiable — Owners shall have the right to place a lien on consignee's

worldwide properties corresponding with the value of unpaid freight, deadfreight, demurrage, contribution to general average and costs, including — but not limited to — interest and attorney fees.

Comment 21: As discussed elsewhere, having a lien on a cargo looks better on paper than in the real world. If freight has not been received prior to discharge and when the owner has severe doubts about forthcoming payment, it is suggested to get a good maritime lawyer involved. If freight is payable after discharge, it will be hard to put a lien on the cargo. It is therefore suggested to draft a strong clause 2 with regard to payment of freight; depending how creditworthy the charterers are. It has to be borne in mind that a charterer can have a lien overturned by a Court of Law and even sue an owner for damages if the lien was filed inappropriately.

22. AGENTS. The Owner shall appoint Vessel's agents at all ports.

If the Agent or Agency has been nominated by Charterer, but has been appointed by, and is to be paid for by the Owner, the Agent/Agency is only to act within the authority given by the Owner and by the Vessel's Master. This Agent/Agency is not allowed to sign Bills of Lading, unless authorised in writing by the Master.

Both Owners and Charterers are free to appoint protective Agents at their own expense.

If the Charterer elects to nominate the Agent or Agency, but the Agent or Agency is to be appointed by and to be paid for by Owner:

(i) Agency fees shall not exceed customary applicable fees.

(ii) Charterer warrants that the Agent or Agency they nominated is financially sound and of good reputation. If this Agent or Agency fails to make proper disbursement of the funds sent by Owners, or fails to return any excess funds paid by Owners due to bankruptcy or for any other reason, Charterers will reimburse Owners for any loss so incurred.

Comment 22: Some charterers like to work with their own agent. This is understandable, but may sometimes result in unwanted consequences. If a charterer has strong ties to a particular agency and wants them to attend the ship, it creates a monopoly situation; resulting in perhaps unreasonable fees. Secondly, if a charterer insists on the owner appointing a certain agent, there is a question of divided loyalty.

Since an owner often has to pay large sums of money in advance to cover port charges, the charterer who made the owner appoint a certain agent should stand behind their choice and reimburse the owner in case something goes wrong with the funds.

Sometimes an owner may want to appoint a protective agent. The cost is usually low compared to the cost of the actual agent who attends the ship. Unfortunately quite often the two agencies are competitors and refuse to work together. For example the owner may have sent port cost funds to his protective agent, but the agent nominated by the charterer refuses to clear the ship for entry till the funds are in their own account. Sometimes there is also a problem with the agent, nominated by the charterer, refusing to let the protective agent board the vessel, or refusing to provide proper "statement of fact" data.

23. BREACH. Damages for breach of this Charter shall include all provable damages, and all costs of suit and attorney fees incurred in any action hereunder.

24. ARBITRATION/**LAW**. ~~Any and all differences and disputes of whatsoever nature arising out of this Charter shall be put to arbitration in the City of New York, or in the City of London whichever place is specified in Part I of this charter pursuant to the laws relating to arbitration there in force, before a board of three persons, consisting of one arbitrator to be appointed by the Owner, one by the Charterer, and one by the two so chosen. The decision of any two of the three on any point or points shall be final. Either party hereto may call for such arbitration by service upon any officer of the other, wherever he may be found, of a written notice specifying the name and address of the arbitrator chosen by the first moving party and a brief description of the disputes or differences which such party desires to put to arbitration. If the other party shall not, by notice served upon an officer of the first moving party within twenty days of the service of such first notice, appoint its arbitrator to arbitrate the dispute or differences specified, then the first moving party shall have the right without further notice to appoint a second arbitrator, who shall be a disinterested person with precisely the same force and effect as if said second arbitrator has been appointed by the other party. In the event that the two arbitrators fail to appoint a third arbitrator within twenty days of the appointment of the second arbitrator, either arbitrator may apply to a Judge of any court of maritime jurisdiction in the city abovementioned for the appointment of a third arbitrator, and the appointment of such arbitrator by such Judge on such application shall have precisely the same force and effect as if such arbitrator had been appointed by the two arbitrators. Until such time as the arbitrators finally close the hearings either party shall have the right by written notice served on the arbitrators and on an officer of the other party to specify further disputes or differences under this Charter for hearing and determination. Awards made in pursuance of this clause may include costs, including a reasonable allowance for attorney's fees, and judgement may be entered upon any award made hereunder in any~~

~~Court having jurisdiction in the premises~~.

(a) **The construction, validity and performance of this contract, shall be governed by English law. The High Court in London shall have exclusive jurisdiction over disputes that may arise out of this charter.**

(b) **Notwithstanding the aforesaid, the parties may, but only by mutual agreement, elect to have disputes referred to arbitration in London pursuant to the Arbitration Act 1996, or any modification or re-enactment thereof for the time being in force, and under the Terms of the London Maritime Arbitrators Association (LMAA) before a tribunal consisting of three arbitrators; or may by mutual agreement refer their claim to LMAA's latest revised Small Claims Procedure with a single arbitrator.**

(c) **All documents and proceedings to be in English.**

Comment 24: As discussed in chapter 12, arbitration can be a risky proposition. It is a rather unstructured process and arbitration awards are hard to overturn; no matter how ill-conceived. Arbitration is considered a private agreement between parties, with little or no support from courts of law to review and perhaps overturn arbitration cases.

25. SUBLET. Charterer shall have the right to sublet the Vessel. However, Charterer shall always remain responsible for the fulfillment of this Charter in all its terms and conditions.

26. OIL POLLUTION CLAUSE. Owner agrees to participate in Charterer's pro-gram covering oil pollution avoidance. Such program prohibits discharge overboard of all oily water, oily ballast or oil in any form of a persistent nature, except under extreme circumstances whereby the safety of the Vessel, cargo or life at sea would be imperiled. Upon notice being given to the Owner that Oil Pollution Avoidance controls are required, the Owner will instruct the Master to retain on board the Vessel all oily residues from consolidated tank washings, dirty ballast, etc., in one compartment, after separation of all possible water has taken place. All water separated to be discharged overboard. If the Charterer requires that demulsifiers shall be used for the separation of oil/water, such demulsifiers shall be obtained by the Owner and paid for by Charterer.

The oil residues will be pumped ashore at the loading or discharging terminal, either as segregated oil, dirty ballast or co-mingled with cargo as it is possible for Charterers to arrange. If it is necessary to retain the residue on board co-mingled with or segregated from the cargo to be loaded, Charterers shall pay for any deadfreight so incurred.

Should it be determined that the residue is to be co-mingled or segregated on board, the Master shall arrange that the quantity of tank washings be measured in conjunction with cargo suppliers and a note of the quantity measured made in the Vessel's ullage record.

The Charterer agrees to pay freight as per the terms of the Charter Party on any consolidated tank washings, dirty ballast, etc., retained on board under Charterer's instructions during the loaded portion of the voyage up to a maximum of 1% of the total deadweight of the Vessel that could be legally carried for such voyage. Any extra expenses incurred by the Vessel at loading or discharging port in pumping ashore oil residues shall be for Charterer's account, and extra time, if any, consumed for this operation shall count as used laytime, **or if the Vessel is already on demurrage, as time on demurrage.**

BILL OF LADING (**Deleted**)

THERE WILL NOT BE A FIXTURE UNTIL ALL MAJOR** TERMS AND ALL DETAILS OF THIS CONTRACT PROPOSAL HAVE BEEN AGREED UPON IN WRITING BY BOTH PARTIES AND AFTER ALL SUBJECTS (BY OWNER AND BY CHARTERER) HAVE BEEN LIFTED.**

**** **During negotiations major terms are subject to renegotiation, depending on Owner's or Charterer's request for special terms, conditions and clauses they want to include in this charter.**

Final comment: In some jurisdictions, like the USA, there is case law that supports the notion that there is a valid charter party contract when there is agreement on the major terms. This is acceptable if the c/p covers an uncomplicated, low-cost voyage. However, this is seldom the case. Parties should therefore stipulate that there will only be a valid contract if there is agreement on ALL terms, and after all subjects have been lifted.

For example, after having agreed on the main terms, a charterer may stipulate extra laytime. An owner may grant this, but in return may want to ask for a higher freight or demurrage rate.

Chapter 6

BILLS OF LADING

Live together like brothers and do business like strangers.

Arab proverb

Thousands of pages have been devoted to the subject of **Bills of Lading** (B/L). In this chapter we will restrict ourselves to a general overview and to B/L practices that are primarily applicable to the dry bulk and to the tanker trades. The approach here — at least for the most part — will be a practical one, with some legal background added for precision.

The subject of Bills of Lading is closely interwoven with the **Carriage of Goods by Sea Acts (COGSA)** of various countries and with the **Hague**, or **Hague-Visby Rules** (see Appendix 6.1). Since the **Hamburg Rules** (see heading 36) have not been widely adopted, and since they pertain primarily to the Liner trade, they will only be mentioned occasionally. For a list of signatory countries see Appendix 6.2[1]. While the subject of Bills of Lading is already complicated enough, there is no escape describing their important function in connection with documentary **Letters of Credit** (L/C).

INTRODUCTION

A Bill of Lading has basically three **functions**:

1. It is a **receipt** for the cargo delivered to the ship
2. It is a **contract** of carriage; spelling out the transportation terms and conditions
3. If the B/L has been made out:
   - To the order of
   - Unto order of
   - To XYZ company or order of
   - Unto XYZ company or order
   - To XYZ company or order
   - To XYZ company or assigns
   - To consignee XYZ company or order
   - Consigned to XYZ company or order

   or similar wording, it is a **negotiable instrument** and it is a document of **title**.

[1] Attorney George Chandler, listed at the end of the document, is the founder of the Houston Maritime Arbitrators Association; http://www.hmaatexas.org/

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For hundreds of years, before modern means of communication, ship captains were sent overseas to trade with merchants in other countries. Initially a ship would show up at a particular harbour and the crew would announce that they were ready to receive cargo for another port. For example, when the Dutch started trading with Indonesia in the early 1600s, a ship would anchor near one of the spice-islands and offer to buy spices and local wares. In the early days a ship's captain would pay cash for the goods and then proceed to load them on board. Once the ship's cargo holds were full, or after the captain had run out of money, the ship set sail for the return trip — for example to Amsterdam — where the goods would be sold for a handsome profit.

Later on, when trade had developed on a regular basis, and after trading houses had set up shop overseas, a captain would issue a B/L to a local merchant for the goods received. The local merchant would take the B/L, plus his draft, to the local agent of the trading house and exchange his B/L and draft for cash. The trading house would send the B/L to the ultimate overseas buyer, who could claim the goods once the ship arrived. Sometimes it would take the ship a year or more to return to its home port. Even 350 years ago, a year was a long time to sit on a B/L. Therefore the overseas buyer often resold the goods to somebody else by endorsing the B/L on the back, or he used the B/L as collateral to borrow funds from an international trading bank. In essence the B/L represented symbolic ownership of the actual goods. It is for that reason that a B/L is sometimes called "the key to a floating warehouse".

While in the old days the B/L would usually arrive before the ship, nowadays the ship often arrives before the B/L has made its way through the banking system. This creates problems, since the captain is only allowed to deliver the cargo against presentation of an original B/L. If the " order" B/L is not available and the captain delivers the cargo without it, and later on a genuine B/L holder shows up, the shipowner is legally obliged to indemnify the B/L holder for the full value of the cargo. For example, a VLCC cargo of crude oil — based on CIF value — can amount to $100,000,000; all represented by a simple piece of paper.

In the Liner (container) trade, carriers usually know their shippers and receivers and have the goods in their possession for quite some time (often from door-to-door). This makes it pretty easy for a carrier to deliver the goods to the right party. Even if they make a mistake, it is usually just a few containers or less.

However, if a tanker or bulk carrier captain shows up in the dead of night at some terminal, especially a public one, there are very few clues as to who will be the proper receiver if no original B/L has been presented. Ship owners are not clairvoyants and if no original B/L is presented, they should not have to bear the responsibility of mis-delivery of the goods. The cargo

may have been bought and sold many times during the voyage without the shipowner knowing who the ultimate B/L holder is. As described in Chapter 5: Voyage Charter Parties clause 20, there are several options for the owner to protect himself against the consequences of delivery of the cargo without presentation of a B/L.

With regard to the danger of delivering cargo without an original "order" B/L, Shell Oil put in their c/p contract **SHELLVOY 5** clause 33 (6):

"Notwithstanding any other provisions of this charter, Owners shall not be obliged to comply with any orders from Charterers to discharge all or part of the cargo

(i) at any port other than that shown on the bills of lading (except as provided in Clauses 22 (ice) or 34 (war) and/or

(ii) without presentation of an original bill of lading

unless they have received from Charterers both written confirmation of such orders and an indemnity acceptable to Owners."

In the airline industry planes almost always arrive before the B/L does. However, there is no need to produce an original B/L, because airlines issue an **Air Waybill**, instead of an "order" B/L (a document of title).

The difference between an "order" B/L and a Waybill is that the latter one is non-negotiable. It is just a receipt and a contract of carriage and not a document of title. It cannot be traded to somebody else. When a Waybill is made out to a particular consignee, all the carrier has to do is verify the identity of the consignee and the goods will be delivered. Upon proper identification, the carrier no longer bears responsibility for the value of the goods; other than perhaps a claim for damage or shortage. This is in stark contrast to the risk an ocean carrier runs when they deliver the cargo without presentation of the "order" B/L.

A B/L with the following characteristics is a **Waybill**:

- When the B/L does not contain the words: **"to order"** or similar language
- When a B/L — before it is signed — is clearly marked: NON NEGOTIABLE
- A **Straight or Named B/L** is kind of a hybrid between an "order" B/L and a Waybill.

In this time of fast voyages and slow banking procedures, the "order" B/L can be a risky liability to a shipowner. Under many international trade contracts title passes with **possession** of the goods. A lot of oil cargoes are nowadays traded based on **sale and purchase contracts**, where title passes when the cargo is loaded or delivered. This way, passing of title is no longer tied to actual possession of a B/L.

Some trading banks that issue **Letters of Credit**, like to be listed as the **consignee** on the "order" B/L instead of the actual buyer. The actual buyer is listed as the "Notify Party." That way the bank has title to the goods and is afforded extra protection in case the buyer does not come up with the money. However, this is a rather theoretical proposition. Very few banks like to get stuck with a load of goods. If the buyer is a small company with few assets and not an extensive loan record, the bank will most likely require 100% collateral in the form of liquid assets, such as cash or certificates of deposits, before they will issue an L/C.

For that reason there is no longer a strict need for banks to require "order" B/Ls. As mentioned above, almost without exception, all air freight cargoes are shipped on Air Waybills that are not documents of title. A bank may still require to be named as Waybill consignee, so an opener of an L/C does not run off with the goods by just identifying him or herself to the carrier. However, banks are extremely conservative when it comes to issuing a L/C. Some banks may have suffered losses from forged documents, but there are very few cases where a bank lost money because of **Waybills** instead of "order" B/Ls, as one of the required documents for an L/C.

The best example is the **Stand-by L/C**, where a bank will pay a L/C beneficiary based on a simple statement, such as: *"Freight has not been paid as agreed to in c/p dated....."* (see Appendix 11.8). A Stand-by L/C is usually simpler to administer than a "Documentary Credit."

Some people object to Waybills because they are non-negotiable and as such are not subject to the Hague or **Hague-Visby Rules** (see Appendix 6.1). However, it is very easy to have Waybills covered by the Hague-Visby Rules by simply stating so in the contract of carriage.

Below are headings of the most common terms associated with Bills of Lading. The list is far from complete and certainly not all-encompassing. Coverage of the various subjects is meant as a practical guide for commercial managers and ship captains. There will be quite a bit of "referencing" from one heading to the other, which may be annoying to some readers, but perhaps less so than repeating the same subject matter over and over again. For a thorough understanding of the latest court and arbitration decisions, it is strongly advised to consult with an experienced admiralty lawyer. Cases are decided differently in different parts of the world, and what may be regarded as the latest ruling today, may be overturned tomorrow.

No.	B/L Subject
	Introduction
1	Accomplished
2	Apparent Good Order and Condition
3	As presented, or as directed
4	Authority to sign
5	Backdated or Antedated/Postdated B/L
6	Bearer B/L
7	Blank B/L
8	Blank B/L Form
9	Blank endorsed B/L
10	BOLERO (Electronic B/L)
11	Breach (of B/L or of c/p contract of carriage)
12	Burden of proof
13	Carrier B/L (Owner's and Charterer's B/L)
14	Charter Party B/L
15	Clean and claused B/L
16	COGSA (Carriage of Goods by Sea Act)
17	Conditions
18	Contract of Carriage
19	Damages for inaccurate B/L
20	Deck cargo
21	Delivery of goods without presentation of the B/L
22	Demise clause in B/L; Identity of the Carrier
23	Deviation
24	Due diligence
25	Early Departure Procedure (EDP)
26	Electronic Data Interchange
27	Endorsement
28	Estoppel
29	Exception/Exemption
30	Form/Format of B/L
31	Forum/Jurisdiction
32	Fraud (Forgery)
33	Freight and B/L
34	Freight prepaid
35	Function of B/L; see Introduction
36	Hague Rules, Hague-Visby Rules, Hamburg Rules
37	Himalaya clause
38	House B/L
39	Identifier of the B/L (SCAC)
40	Identity of the Carrier; see Demise clause in B/L
41	Identity of the Shipper/Consignee
42	Inconsistency
43	Incorporation into the B/L
44	Indemnify
45	Indorsement; see Endorsement
46	Letter of Indemnity (LoI)
47	Lien
48	Limitation of Liability
49	Limitation of Time
50	Marks
51	Mate's Receipt/Dock Receipt
52	Misdescription
53	Non-negotiable B/L
54	Notify Address (of "order" B/L)
55	On-board B/L
56	On-board carried B/L
57	Order B/L; see Introduction
58	Paramount clause/Clause Paramount
59	Parties to B/L
60	Port of Discharge in B/L
61	Prima Facie evidence; see headings: 2, 12 and 15
62	Qualifying statements on B/L
63	Quality; see Apparent Good Order and Condition
64	Quantity
65	Receipt; see Introduction
66	Received for shipment B/L; Shipped B/L
67	Recourse
68	Sales Contract and B/L
69	Seaworthiness
70	Set-off
71	Sets of B/L
72	Shipped B/L; see Received for Shipment B/L
73	Shipper's right to a B/L
74	Short form B/L
75	Signing B/L "as presented"; see As presented
76	Stale B/L - Documents
77	Stamping B/L
78	Straight B/L
79	Terms and Conditions
80	Terms of Trade
81	Title
82	Transshipment
83	UCP
84	Unclean B/L; see Clean and claused B/L
85	Unlawful Act
86	Waybill; see Introduction
87	War
88	Wording of B/L; see headings: 2, 15 and 48

Table 6.1: Bill of Lading subjects

1) Accomplished

In most cases Bills of Lading are signed in sets of three originals. They usually have a notation ORIGINAL printed or stamped on the face. Sometimes a B/L states: FIRST ORIGINAL, SECOND ORIGINAL and THIRD ORIGINAL. In addition, duplicate copies may be distributed with the word COPY, or NON-NEGOTIABLE stamped on them. The master only signs original B/Ls. At the bottom of the original B/L, just above the master's signature, is a clause with the following (or similar) wording:

In witness whereof the Master or his Agent has signed _3_ (THREE) ORIGINAL) Bills of Lading, all of this tenor and date; one of which being ***accomplished****, the others will be void.*

This means that as soon as a B/L holder present one of the three original B/Ls (not necessarily the first one), the master will deliver the cargo. This is the reason why a bank, negotiating a Letter of Credit that covers the cargo, will always ask for the full set of B/Ls. This is to prevent other B/L holders from legally claiming the cargo before the bank does. Remember, as soon as a B/L has been accomplished, the others are void.

Sometimes the master or the owner's agent can cancel an original "order" B/L (to avoid further trading) by endorsing the back with the following phrase, or similar wording:

The cargo referred to in this Bill of Lading has been discharged in full at its proper destination and the voyage has been ***accomplished****.*

____signature of master_____; date: _____

Another example:

XYZ company hereby acknowledges receipt of the cargo described herein, without prejudice to possible claims with regard to quantity and/or quality of the cargo delivered. The voyage under this Bill of Lading has been ***accomplished****.*

____signature of consignee_____, date: _____

Of course, a B/L can also be cancelled by stamping ACCOMPLISHED or CANCELLED plus the ship's stamp and the master's signature on its face or on the back. A B/L holder should never just sign the back of a B/L that has not been voided yet, because without any specific "accomplished" phrase, it would turn into a bearer B/L (see heading 6).

2) Apparent Good Order and Condition

The Hague-Visby Rules state in Art III, 3:

After receiving the goods into his charge the carrier or the master or agent of the carrier shall, on demand of the shipper, issue to the shipper a bill of lading showing among other things:.... .....

(c) The ***apparent order and condition*** *of the goods.*

Provided that no carrier, master or agent of the carrier shall be bound to state or show in the bill of lading any marks, number, ***quantity****, or* ***weight*** *which he has reasonable ground for suspecting not accurately to represent the goods actually received, or which he has had no reasonable means of checking.*

Art III, 4 goes on to say:

Such a bill of lading shall be ***prima facie*** *evidence of the receipt by the carrier of the goods as therein described in accordance with paragraph 3 (a), (b) and (c). However, proof to the contrary shall not be admissible when the bill of lading has been transferred to a third party acting in good faith.*

This means that if a carrier receives damaged or off-spec cargo, but issues a B/L without any adverse remarks about the condition of the cargo (a **clean** B/L) the B/L holder is fully entitled to receive undamaged, on-spec cargo. After the carrier has issued a clean B/L, they cannot later on claim that the cargo actually had been received in a damaged or off-spec condition.

Of course for bulk cargoes it is not always easy to determine if the cargo is in **apparent good order and condition**. Sometimes B/Ls have the notation: Weight, measure, quality, condition, content and value unknown, or B/Ls have a typed clause that states **shipper's load and count; quantity unknown**. In the container trade carriers often receive sealed containers, which they are not supposed to open. In that case it is pretty much acceptable that the carrier takes the shipper's word for what is inside the container. Under the **Uniform Customs and Practices for Documentary Credits**[2] (UCP) 500 art. 31 ii, banks accept **shipper's load and count**, or **said by shipper to contain**, or words of similar effect. However, there are court cases where the same qualifying phrases on the B/L rendered it "unclean"; supposedly because the carrier should have known that the cargo had been short-loaded.

Condition pertains to the external condition of the cargo, such as torn bags, damaged packaging, rusty coils of steel, off-colour chemicals, foreign matter in grain cargoes, etc. This is something that is visible and the master is able to ascertain. In case of flawed cargo, the B/L should be "claused" accordingly.

On the other hand it is usually not easy for the master to determine **quality** of the cargo, because it refers to the internal condition of the goods and he is not expected to make an assessment. If in doubt about the condition or quality of the cargo, loading should be stopped and the

[2]The International Chamber of Commerce (ICC) first published the Uniform Customs and Practices for Documentary Credits (UCP) in 1933. The UCP Rules have been universally recognized by banks in more than 100 countries. ICC Publication no 500 contains the revisions issued in 1993. These revised Rules are commonly referred to as UCP 500.

local P&I Club representative be consulted. In addition, shipper and carrier should appoint an independent cargo inspector to perform a detailed inspection.

Perishable goods may be in **apparent good order and condition** at receipt. However, in addition to the goods being in good condition, they should also be able to withstand the ocean voyage. For example, bananas may be yellow when they come on board and look fine, but if it takes several weeks to get them to market, they may turn brown before they get to the discharge port. Therefore bananas are usually loaded before they are fully ripened.

Weight is another nebulous term. The weight for dry and wet bulk cargoes on the B/L is usually based on shore figures. Invariably the ship's figure will be different. If the difference is small in percentage (for that particular trade), the master should accept shore figures and sign the B/L. However, if the difference is large, the master should issue a **Notice of Protest** (NoP) and leave the B/L unsigned. (For a copy of a Notice of Protest for tankers see Appendix 6.3). Obviously it is not always easy to determine what is a "small" and what is a "large" difference. It is therefore good practice for the master to issue a NoP; every time there is a difference between shore and ship's figures of for example 0.05% (250 bbl on a 500,000 bll cargo); depending on company policy.

In the 1950s, when crude oil was $3.00/barrel and a tanker's capacity was perhaps 100,000 bbl, it was generally accepted that a cargo receiver would not issue a claim for ROB (Remaining on Board) quantity when it was less than 0.5%, or 500 bbls; worth about $1,500. However 0.5% on a two million bblVLCC cargo at $30/bbl translates into $300,000. Therefore cargo receivers are much more demanding when it comes to receiving the cargo as listed on the B/L, because that is the quantity they pay for. Consequently a carrier should make sure that the quantity listed on the B/L is the quantity actually loaded on board.

There is a lot of pressure on masters to issue **clean** Bills of Lading, because it enables the seller of the goods to get paid under a L/C. In the absence of specific wording in the L/C, banks will only accept clean transport documents. (See UCP art. 32 a, b, c). This can put a carrier in a bind. On the one hand owners like to please their customer i.e. the shipper or charterer, by issuing clean B/Ls. However, the carrier leaves itself wide open against cargo claims, and perhaps fraud, if it issues clean B/Ls, when the received cargo or packaging was actually flawed.

Sometimes a shipper will offer a **Letter of Indemnity (LoI)** in which the shipper promises to indemnify the carrier against cargo claims and related expenses, in exchange for the carrier issuing a clean B/L. Unless the LoI has been backed by a **bank guarantee,** it is really a pretty worthless piece of paper. In the post-ENRON world it may be rather imprudent

to believe in the verbal promises or in the unsecured bank guarantees of managers of even the largest trading companies. It has to be borne in mind that most companies are operated by reputable executives, but that it may take only a single over-ambitious trader in the back-room to carry out shady tricks with the cargo documentation.

Generally speaking P&I Clubs do not cover claims of Bills of Lading that have been issued inappropriately. Of course there is no sympathy to be found in courts of law either. Therefore, a carrier should NEVER issue a clean B/L in exchange for a LoI.

3) As presented, or as directed

Most charter parties require the master to sign the B/L: ...**as presented,** ... **as charterers or their agents may direct**...., or similar wording. See amended SHELLTIME 4, clause 13:

13. BILLS OF LADING

(a) The Master (although appointed by Owners) to be under the orders of the Charterers as regards employment, agency, or other arrangements and shall sign bills of lading as Charterers or their agents may direct (subject always to Clauses 35(a) and 40 without prejudice to this charter. Charterers hereby indemnify Owners against all consequences or liabilities that may arise

(i) from signing bills of lading in accordance with the directions of Charterers or their agents, to the extend that the terms of such bills of lading fail to conform to the requirements of this charter, or (except as provided in clause 13(b)) and 13 (c) from the Master otherwise complying with Charterers' or their agents' orders;

(ii) from any irregularities in papers supplied by Charterers or their agents.

For voyage charters there is clause 20 of the amended ASBATANKVOY:

20. ISSUANCE AND TERMS OF BILLS OF LADING

(a) The Master shall, upon request, sign Bills of Lading or Sea Waybills in the form ~~appearing below~~ compatible with this Charter for all cargo shipped but without prejudice to the rights of the Owner and Charterer under the terms of this Charter. The Master shall not be required to sign Bills of Lading or Sea Waybills for any port which, the Vessel cannot enter, remain at and leave in safety and always afloat nor for any blockaded port, nor sign Bills of Lading or Sea Waybills that contain factual information that is incorrect.

Generally speaking a shipper under a t/c can be more demanding when it comes to the master's obligation to **sign** the B/L "**as presented.**" In exchange of the master's signature, the time charterer offers an indemnity clause to the owner. Another advantage to an owner of a t/c vessel is that in most instances, hire has already been received, while under a v/c freight is sometimes not paid till after delivery; exposing the owner to additional risk. This means that under normal circumstances a v/c B/L should be subjected to greater scrutiny than a B/L under a t/c.

A master does not have to **sign** a B/L that does not reflect the truth. An example would be to sign the B/L that the goods are stowed under-decks, while in actuality they are on deck. Moreover he should never sign a blank B/L or sign a B/L that shows the wrong "on-board" date. A master can refuse to sign a B/L if it does not have the proper discharge port (for examples see heading 60). He can also refuse to sign a B/L if the c/p expressly requires that the B/L needs to have a specific clause and it does not. When he is asked to sign a B/L with the notation "**Freight Prepaid**" he should check with his owners to verify that freight has indeed been received, before signing the B/L.

4) Authority to sign

As we have seen above, when a master or the owner's agent signs the B/L, even as directed by the charterers, they bind the vessel's owner. Sometimes the c/p has an **Early Departure (EDP)** clause (see heading 25) that states that the vessel will leave the loading berth before the B/L has been signed. A master should be very careful as to who is authorised to sign the B/L on his behalf. To make sure the master's orders and guidelines for signing the B/L are followed, Appendix 6.4 shows an example of a Letter of Authority for the Agent to sign a B/L. Appendix 6.5 shows General Guidelines for Masters to sign B/Ls.

5) Backdated or Antedated and Postdated B/L

Backdate or **antedate** means to date a document before the true date. **Postdate** means to date a document for a later date than the actual date. The "**on-board**" B/L date is the date that cargo operations pertaining to this B/L were completed. If there is only one B/L covering the whole cargo, it is the date on which the last metric ton, or the last barrel passed the ship's rail/manifold. A parcel is any cargo lot shipped under its own B/L, even if there are several parcels of the same cargo. If the shipment consists of several parcels, the "**on-board**" B/L date is when loading for that particular parcel was completed; not when all parcels were loaded.

For certain cargoes it may take days, or even weeks to finish loading. For example, copra or palm oil may be loaded in several ports, or may be loaded from several lighters. If the cargo is covered by a sole B/L, the

"**on-board**" date is that day when the last portion was loaded. The same is true for grain shipped at an inland river port, but "topped off" in a tidal water port. The B/L date is the day when topping-off was completed. For the same token if a ship leaves without loading the full cargo, because the shore ran out of product, the B/L date is the day loading was stopped.

The **B/L date** is very important for shippers. First of all, many sales contracts are tied to posted prices effective for a particular day, week or month. These prices can fluctuate widely, especially if they only change once a week or once a month. For example, Brent crude oil may be posted at $30.00/bbl one day, but $29.40 the next. If loading was completed at 00.15 hours of the day the price had dropped to $29.40/bbl, a shipper may be tempted to present the master with a B/L dated for the day when oil was still $30.00/bbl. On a VLCC cargo of 2 million bbls, this can make a difference of $1.2 million — not something to sneeze at.

In case the market of the shipped commodity goes up, cargo sellers may have quite a bag of tricks to get a later B/L date. One of them is to delay loading of the cargo in a rising market. (Of course if the buyer chartered the vessel, they want an earlier B/L date in a rising market). Delayed loading may result in extra demurrage and storage costs, but if it is less than the extra revenue from the cargo, it is worth it. It is therefore important for a commercial manager to keep an eye on the price of the commodities being shipped. Rapid fluctuations can have a profound influence on how soon the ship will be loaded. There are extreme cases where charterers even went so far as to cancel a c/p with some flimsy excuse, when the real reason was the rise or drop in price of the cargo being shipped.

The other reason for the correct **B/L date** is when the cargo is shipped under a Letter of Credit (L/C) and the L/C stipulates that **latest shipment date** is, for example, 30 June 2004. If cargo was completed on 00.10 hours of 1 July 2004, the B/L has to be dated 1 July 2004. However, this is one date after **latest ship-date** and the bank won't accept the B/L. In fact the L/C applicant does not have to pay for the cargo at all because the terms of the L/C were not complied with and he or she can just walk away from it. Of course the bank does the same and the shipper is stuck with an unsold cargo that has already been loaded in a ship they had chartered; all at great expense.

If the L/C beneficiary (the seller) expects that the cargo cannot be loaded before the latest ship-date, he or she should ask the buyer to amend the L/C with a new **latest ship-date**. If the buyer refuses, the seller should try to sell the cargo to somebody else, or at least prevent it from being loaded on a ship.

It is therefore extremely important that the **B/L date** is correct and the master should never be persuaded by shippers to **backdate** (antedate) the B/L because, in doing so, he commits fraud and the ship owner will

probably lose all his defences listed in the Hague-Visby Rules. Under no circumstances should the master accept a **Letter of Indemnity (LoI)** in exchange for a falsely dated B/L. If the master expects pressure from shippers to **backdate** the B/L, he should alert his owners and the local P&I representative.

6) Bearer B/L

A B/L can be made out just "to order", or to "**bearer**". This makes it a **bearer** B/L. Also, if an "order" B/L is endorsed on the back with just a signature without the words "to order" the B/L becomes a **bearer B/L** and goods can be transferred by mere presentation of the B/L. Moreover, if the face of the B/L contains the "to order" phrase, but the endorsement on the back does not, the B/L is no longer a **negotiable instrument**, and as such is not subject to the Hague-Visby Rules, unless expressly stated in the B/L that it will be.

7) Blank B/L

If the c/p contains an **Early Departure Procedure (EDP)** (see heading 25) clause, a master is sometimes asked to sign **blank** B/Ls, to be completed after the ship has sailed. The master should never agree to do this, but instead ask for a completed B/L, including the correct consignee, load port and B/L date, with only the space for final cargo figures left blank.

After the ship has sailed, the agent can send the B/L figures to the ship and the master can approve or disapprove. If he approves, he can authorise the agent to sign the B/L as per instructions in Appendix 6.4 of this book. If he disapproves, he should contact his owners and wait for further instructions. At the same time he should prepare a LoP with ship and shore figures and send it to the agent with a copy to the charterer.

8) Blank B/L Form

For certain trades it is possible to buy **blank** or generic B/L forms from an office supply store or directly from shipping or brokers' organisations. Moreover, in this day and age it is extremely simple to copy an old form or even print an original B/L form from the Internet and use it as an authentic one. It is therefore very important for the master or his agent to subject any B/L that is presented by shippers for signature, with the utmost scrutiny. Always make sure the terms of carriage are printed on the front or on the back. Never sign B/Ls that have been copied with just the front of the B/L form, with additional clauses that may have been printed on the back, left off. Liner companies should keep their forms under lock and key. Never forget that an "order" B/L is more than just a document. It represents the full value of the cargo; possibly including freight and insurance.

9) Blank endorsed B/L

In some shipping and trading circles a B/L that does not contain the name of the consignee, but just the phrase: "to order" is known as a **blank endorsed** B/L. Sometimes the cargo has not been sold yet and thus the consignee is unknown. However, rather than leaving the consignee's name blank, shippers can protect themselves against fraud by consigning the B/L to themselves with the addition "or to order." Once the buyer is known, sellers can always endorse the B/L over to the new holder.

10) BOLERO (Electronic B/L)

BOLERO stands for Bill of Lading Electronic Registry Organization. In 1993 the European Union (EU) studied the possibility of electronic exchange of trade documents. When the study was completed, the EU turned the project over to the Society for Worldwide Interbank Financial Communications (SWIFT) and to the Through Transport Mutual Insurance Association (TT Club) as an independent joint venture. BOLERO started operating on a commercial basis in 1999. See their Internet site at: http://www.bolero.net/

SWIFT was founded in 1973 and is the organisation that created a secure telex message service to transfer trillions of dollars per day between thousands of banks all over the world. TT was established in 1968. It offers liability insurance to ship operators, NVOCCs, freight forwarders, stevedoring companies and other transport related entities.

The electronic B/L contains the same information as the paper document, and just like "order" B/Ls, can be subject to the Hague-Visby Rules if so stated in the contract of carriage and if local laws have provisions for electronic B/Ls (see BOLERO's Rulebook clause 3.2 (4).

A carrier with an agreement with the BOLERO organisation can electronically originate and transmit a B/L. BOLERO verifies the carrier's electronic signature and forwards the B/L to the shipper. The shipper can transfer title to a subsequent B/L holder by way of a unique set of instructions sent to BOLERO.

This last feature will go a long way to protecting a shipowner against mis-delivery of a cargo where the B/L has not been presented in the discharge port. It will also probably eliminate the problem of forged B/Ls. Liner operators, that often have to produce hundreds of B/Ls per voyage, will save a lot on the documentation costs. A list of "BOLERO" standard documents can be found at: http://www.bolero.net/boleroxml/docdef/index.php3. To study the semantics of the various documents go to: http://www.bolero.net/boleroxml/semantics/Semantics.htm.

At first glance it looks like BOLERO will speed up banking procedures. However, there are still a lot of obstacles before electronic transfer of

trade documents will replace paper documents. The main problem is that most local laws do not contain provisions yet for paperless trading. For example, under most jurisdictions insurance contracts and special clauses, such as arbitration clauses, need to be in writing. Presumably judges will interpret this as written on paper; not written in electronic form. It will take several years till countries have passed proper legislation to make paperless trading possible. Another reason for BOLERO's slow start is that advanced technology is not available in all parts of the world. Right now the cost of BOLERO membership may also be a factor for carriers that do not produce a lot of Bills of Lading, such as in bulk shipping. In the long run though it is anticipated that the BOLERO system may greatly contribute to improved standardisation of Bills of Lading and other trade documents, to less duplications and errors, to more reliable delivery of documents, to elimination of fraudulent practices, to faster banking operations and to greater efficiency of international trade.

So far, P&I Clubs do not automatically cover liability for damages stemming from using BOLERO that would not have occurred under paper documentation, but carriers can apply for coverage through a special endorsement. Of course, shippers remain responsible to carriers for providing the proper B/L description; including the proper classification of dangerous goods. For an excellent treatise of BOLERO, see Florian Gehrke's 2001 research dissertation under supervision of Prof. John E. Hare at the University of Cape Town at: http://web.uct.ac.za/depts/shiplaw/theses/gehrke.pdf

11) Breach (of B/L or of the c/p contract of carriage)

An example of a B/L **breach** is the intentional mis-statement of the nature, quantity and perhaps the value of the goods listed on the B/L. Another example is cargo carried **on deck**, while the B/L states that it was stowed under-decks. According to the Hague-Visby Rules Art. 1 (c) goods carried on deck are not covered anyway. However deck cargo can be subject to the Hague-Visby Rules by simply stating so in the B/L.

A **breach** occurs under a c/p if charterers require the master to sign B/Ls that impose greater liability on the vessel owners than under the c/p. If charterers prepare a B/L that is not in compliance with the c/p requirements and the owners suffer a loss, they are entitled to recover their damages under a **breach** of contract. Most time-charters already have an **indemnity clause**, protecting the owner against consequences of complying with time-charterers' orders (see heading 19). However, most voyage charter parties do not have this indemnity clause. Clause 23 of ASBATANKVOY states: *Damages for* ***breach*** *of this Charter shall include all provable damages, and all costs of suit and attorney fees incurred in any action hereunder.*

Some people consider this less than an indemnity clause, but just a clause to define damages in case of a breach.

If the B/L is subject to the Hague-Visby Rules, a **breach** may cause the carrier to lose the protection of these Rules. It is therefore very important to prepare a proper B/L.

12) Burden of proof

As already seen under heading 2, Art. III 4 of the Hague-Visby Rules states:

Such a bill of lading shall be prima facie evidence of the receipt by the carrier of the goods herein described in accordance with paragraph 3 (a), (b) and (c). However, ***proof*** *to the contrary shall not be admissible when the bill of lading has been transferred to a third party in good faith.*

In case of cargo loss and/or damage, the initial **burden of proof** is on the cargo receiver. However, if the B/L does not contain any notation of observed damage (in other words it is a clean B/L) it is implied that the goods were received in good order and condition and the **burden of proof** shifts to the carrier to bring itself under one or more of the exceptions as listed in Art. IV 2, provided the carrier complied with Art. III of the Hague-Visby Rules.

13) Carrier B/L (Owner's and Charterer's B/L)

Normally the shipowner or the bare-boat charterer (charterer by demise) is the **carrier**. However, a carrier can also be a NVOCC that has chartered space on a ship and issues their own B/L and signs the B/L "**as carrier.**" (See UCP 500 art. 23 a i, 24 a i and 26 a i). If a NVOCC B/L does not carry the notation "as carrier" banks will not accept the B/L for negotiation against a L/C (see also heading 22).

It is important for a B/L holder to know to whom freight is due and to whom to turn to in case of cargo claims. A time-chartered operator is normally not the carrier; unless it is stated specifically so in the c/p under a **demise clause**. Notwithstanding the fact that — commercially speaking — the master and crew are under the control of the time-charterer, the shipowner is still responsible for cargo claims. Even if the stevedoring company that had been hired by the t/c operator causes damage to the cargo, claims are still the responsibility for the ship owner; not the t/c operator. This is the reason that most time charter parties have indemnity clauses that protect the owner from the adverse consequences of actions taken by the t/c operator and from the master signing the B/L "**as presented**" (see heading 3).

If B/Ls are signed by the charterer or their agent without any qualifying statements, or if the master signs "**as agent for charterers**", the contract

of carriage is with the charterers; not with the ship owner. Of course a lot depends on the circumstances. Quite frequently shipping documents are shoddy in composition and are signed rather carelessly. If the documents are not clear, judges and arbitrators often look at the intentions of the parties; rather than at their poor documentation.

14) Charter Party B/L

Under a c/p, the B/L is basically a receipt for the cargo to the original B/L holder and the c/p is the contract of carriage. However, to a third party B/L holder, the "order" B/L is a document of title.

UCP 500 Art. 25 states:

a) If a Credit calls for or permits a ***charter party bill of lading****, banks will, unless otherwise stipulated in the Credit, accept a document, however named, which:*

i) contains any indication that is subject to a charter party, and ..... (additional conditions ii-viii)

However, paragraph b of the same article states:

b) Even if the Credit requires the presentation of a charter party contract in connection with a ***charter party bill of lading****, banks will not examine such charter party contracts, but will pass it on without responsibility on their part.*

Paragraph a) says banks will accept a c/p B/L, but paragraph b) says banks will not look at charter party contracts, even if they are sent a copy. It is therefore important to have the proper terms and conditions in the B/L.

Just so you know! UCP 500 Art. 25 (a) vii states that B/Ls of vessels propelled by sail, are not acceptable.

There have been several court cases where it was ruled that the statement: *...all terms whatsoever of said c/p.....to apply and to govern the rights of the parties concerned with this shipment...* is no longer sufficient to incorporate c/p terms into a c/p B/L.

If it cannot easily be determined by 3rd party B/L holders that they are dealing with a c/p B/L, it is a good idea to type on the face of the B/L:

ALL TERMS AND CONDITIONS OF GOVERNING C/P DATED ...(fill in C/P date) .....ARE INCORPORATED HEREIN, INCLUDING LAW & ARBITRATION CLAUSES.

This supposedly also covers the jurisdiction where General Average is to be settled.

15) Clean and "claused" (= unclean) B/L

Art. 32 of UCP 500 defines **Clean** Transport Documents as:

a) *A clean transport document is one which bears no clause or notation which expressly declares a defective condition of the goods and/or the packaging.*

b) *Banks will not accept transport documents bearing such clauses or notations unless the Credit expressly stipulates the clauses or notations which may be accepted.*

Banks will only accept **clean** B/L for L/C negotiations, because a **clean** B/L is **prima facie** evidence of the apparent order and condition of the goods. Bank are very meticulous and for good reason. Under an L/C large sums of money are often involved, and there is no room for error. Banks that negotiate L/Cs follow accepted guidelines in the form of UCP 500 Rules (see heading 83) that serve as their "bible." Shipping companies could get rid of most of their headaches if they were equally picky when it comes to contracts such as Bills of Lading and charter parties. Spell it all out in standard charter party and B/L clauses and do not accept an unreasonable amount of risk !

Sometimes a B/L may be **clean** under one set of circumstances, but not under another. For example if the sales contract and/or the L/C covers 1,000 bales of XYZ grade of cotton and the B/L has a notation that the jute coverings are torn, the B/L will most likely be considered "claused" and rejected by banks. However, if the L/C states: 1,000 bales of grade XYZ cotton; torn coverings acceptable, the B/L with the notation that the coverings were torn, will most likely be considered **clean** and acceptable to the bank.

For bulk cargoes it is important to have a surveyor confirm and to issue some sort of a statement that the cargo is in good order and condition. Moreover, a draft survey may be required to determined quantity of the cargo loaded on board. If everything is in conformance with the wording on the B/L, it makes it a lot easier for the master to sign **clean** bills of lading.

Under no circumstance should the master accept a Letter of Indemnity (see heading 46) in exchange for a **clean** B/L. Deliberately misstating a B/L is considered fraud. P&I Clubs will not cover fraudulent claims and no sympathy will be found from a court of law either. Therefore carriers should NEVER accept LoIs in exchange for a clean B/L that clearly covers goods that are not **in apparent good order and condition**. Again, in case of doubt, consult with the owner's P&I Club for guidance.

Some obvious examples of incorrect B/Ls:

- Wrong cargo description.
- Incorrect "on-board" B/L date (see heading 5).

- Listing the wrong consignee.
- Port of discharge not stated, or outside the range specified in the c/p.
- Signing a B/L for cargo not loaded, or the quantity is obviously short.
- Signing a "freight prepaid" B/L when freight has not been received or guaranteed yet.
- A B/L that shows cargo has been stowed below decks, while actually it is stowed on deck.
- A B/L that contains "marks" not in conformance with actual marks on the cargo.
- Wording not in conformance with the L/C.

*In the **DAVID AGMASHENEBELI** (name of the vessel) case, a master testified that during loading some of the cargo of fertiliser appeared to be discoloured and wet. In his opinion it also contained foreign materials and impurities, such as plastic, rust, rubber, stone and black particles. The **Mate's Receipt** had been "claused" accordingly and the master refused to sign **clean** B/Ls. This set off a chain of events, resulting in the usual shipping deadlock. The voyage charterer refused to pay freight to the time-chartered operators, who refused to pay hire to the ship owners. The ship owners threatened to put a lien on the cargo. Eventually three "claused" B/Ls were produced, but the bank refused to honour the L/C. To make things worse, the price of fertiliser had fallen since the purchase contract was signed, and buyers refused to take delivery, unless the price was reduced. There is no doubt that all of this put a grin from ear to ear on the faces of the maritime lawyers that were involved in this case.*

The cargo was discharged in due course and a surveyor established that the cargo was in normal condition. His report stated that a small part of the lot had wet stains and contamination, which had been caused by the unclean condition of the vessel's cargo holds.

*The court ruled that, based on the evidence, there was no reason to believe that the cargo was contaminated prior to loading, or that perhaps only a very small portion of the lot was discoloured, and that the master should have signed **clean** B/Ls. One of the problems for the ship owners was that there were two survey reports; both with the same date, but describing the condition of the cargo quite differently.*

*If a master has doubts about the condition of the cargo, he should employ the services of an independent and reliable cargo surveyor to establish **apparent good order and condition**. Of course, if ship owners try to submit false cargo survey reports, all bets are off.*

16) COGSA (Carriage of Goods by Sea Act)

Many countries have incorporated the Hague, the Hague-Visby, the Hamburg, or similar Rules in their own COGSA. However, not all countries have adopted the Rules verbatim and therefore small differences can exist between the various jurisdictions. The USA COGSA was enacted in 1936 and has not been revised since, even though there have been several

proposals for revision before Congress. The UK COGSA was enacted in 1924 and revised in 1971. See heading 36 for a website containing a list of signatory countries that have signed the various Rules conventions.

Please note, the UK COGSA of 1992 is a revision of the 1855 Bills of Lading Act and is not to be confused with the 1971 UK COGSA, even though they both carry the same name.

17) Conditions

When it comes to describing the condition of the cargo on a B/L, it is best to be brief. Article III 3 of the Hague-Visby Rules requires the B/L to show:

a) The marks on the cargo.

b) The number of packages or pieces or quantity, or weight.

c) The apparent order and **condition** of the goods.

Condition pertains to the outward appearance; it does not say anything about the quality of the cargo. **Condition** is also used in connection with the phrase: All terms and **conditions** of the governing c/p are incorporated in this B/L. As mentioned under heading 14, this phrase is not always sufficient; especially if it pertains to third party B/L holders.

18) Contract of Carriage

One of the functions of a B/L is as a contract of carriage. If the B/L is issued under a c/p, the terms of the contract of carriage between owner and charterer are spelled out in the c/p. However, if the B/L is "to order", and the cargo is sold to a third party B/L holder, it is wise for the shipowner to repeat the main clauses on the B/L to afford him the benefit of the various

There is an interesting Feb. 2003 English Court of Appeal ruling regarding **contract of carriage** *clauses in the c/p and in the B/L. The* ***JORDAN II*** *was loaded in India with a cargo of steel coils destined for Spain. The c/p contained a clause specifying FIOST - (free in and out, stowed and trimmed) ... lashed/secured/dunnaged. There was also a clause that specified that Shipper/Charterers/Receivers were to put the cargo on board, free of expense to the vessel. The c/p was governed by English law; with the Hague-Visby Rules incorporated. Cargo interests sued for cargo damage and the central question was whether the shipowner was liable. Hague-Visby Art. III 2 states:* Subject to the provisions of Article IV, the carrier shall properly and carefully load, handle, stow, carry, keep, care for, and discharge the goods carried. *Cargo claimants relied on this article and also on Art. III 8 that states in essence that the carrier cannot "contract-out" their responsibility of having to take care of the cargo. It was held that the c/p stated that the Shipper/Charterers/Receivers were to load the cargo and that the shipowner was not liable for cargo damage under the Hague-Visby Rule Art IV 2 (i) and 2 (q). Art III 2 merely states what the shipowner has to do in case they are the ones that load the cargo. However, since they did not, they were not liable for cargo damage.*

Carriage Of Goods by Sea Acts that have the Hague, the Hague-Visby Rules, or similar Rules incorporated.

The **contract of carriage** does not necessarily have to be in the form of a c/p or a B/L. When a shipper books cargo with a carrier, he probably receives a booking note that stipulates that the shipper will abide by the **contract of carriage** as published in some form by the carrier, or a group of carriers.

19) Damages for inaccurate B/L

Art. III 5 of the Hague-Visby Rules states:

The shipper shall be deemed to have guaranteed to the carrier the ***accuracy*** *at the time of shipment of the marks, number, quantity and weight, as furnished by him, and the shipper shall* ***indemnify*** *the carrier against all loss, damages and expenses arising or resulting from* ***inaccuracies*** *in such particulars. The right of the carrier to such indemnity shall in no way limit his responsibility and liability under the contract of carriage to any person other than the shipper.*

SHELLTIME 4 t/c clause 13 states:

BILLS OF LADING

(a) The Master (although appointed by Owners) to be under the orders of the Charterers as regards employment, agency, or other arrangements and shall sign bills of lading as Charterers or their agents may direct (subject always to Clauses 35(a) and 40) without prejudice to this charter. Charterers hereby ***indemnify*** *Owners against all consequences or liabilities that may arise*

(i) from signing bills of lading in accordance with the directions of Charterers or their agents, to the extend that the terms of such bills of lading fail to conform to the requirements of this charter, or (except as provided in clause 13(b) and 13(c) from the Master otherwise complying with Charterers' or their agents' orders;

(ii) from any ***irregularities*** *in papers supplied by Charterers or their agents.*

(b) Notwithstanding the foregoing, Owners shall not be obliged to comply with any orders from Charterers to discharge all or part of the cargo

(i) at any place other than that shown on the bill of lading and/or

(ii) without presentation of an original bill of lading unless they have received from Charterers both written conformation of such orders and an indemnity in a form acceptable to Owners.

It has to be borne in mind that under a t/c the time-charterer plays a much bigger role with regard to the commercial employment of the ship than under a v/c. The practical implication for the master is that he may find it easier to sign a B/L under a t/c than under a v/c; even though in both cases he binds his owners. One of the great benefits to an owner with his ship under a t/c contract is that hire has most likely been paid up-front, while under a v/c the freight is often not paid till after delivery of the cargo (especially for oil cargoes). Everything else being equal, the risks of the owner incurring liabilities for **inaccurate** B/Ls under a t/c is therefore smaller than under a v/c.

Just like under a t/c, the owner with a ship under a v/c is able to put a lien on the cargo, but as mentioned before, the effectiveness of a lien has a lot to do with possession of the cargo. After a cargo of oil has been pumped off and has vanished into a pipeline, a ship owner does not have a lot of clout left in case there are problems with an **inaccurate** B/L.

The best defence for a Liner company is to have an elaborate clause on the back of the B/L, stating that the shipper guarantees the accuracy of the **description** of the goods and that the shipper will **indemnify** the carrier against any losses stemming from inaccurate and/or incomplete description of the cargo.

20) Deck cargo

Almost all bulk cargoes — wet or dry — are carried under **deck**, where they are well protected from the elements. However, there are instances where a bulk carrier carries timber, or pieces of steel pipe on **deck**.

Art. I c of the Hague-Visby Rules states:

'Goods' includes goods, wares, merchandise, and articles of every kind whatsoever except live animals and cargo which by the contract of carriage is stated as being carried on ***deck*** *and is so carried.*

This means that unless it is specifically mentioned in the B/L that the cargo may be carried on deck, **deck cargo** does not fall under the Hague-Visby Rules.

Art. 31 of UCP 500 states more or less the same. Banks will not accept a B/L that actually shows that cargo was carried on **deck**, unless so stipulated in the L/C. Banks will accept B/Ls that contain a provision that the goods may be carried on deck, ...provided that it does not specifically state that they are, or will be, loaded on **deck**. From this somewhat complex language it looks like banks do not want to get drawn into a discussion whether the cargo should, or should not have been carried on **deck**.

21) Delivery of goods without presentation of an original B/L

As mentioned in chapter 5 and in the introduction to this chapter,

*The **HOUDA** case centered mainly on the question of the master's obligation to follow charterer's orders, but is also cited in connection with the vessel's master refusal to deliver the cargo without production of an "order" B/L.*

*The HOUDA was a tanker chartered on an amended Shelltime 4 form c/p to Kuwait Petroleum Corp. (KPC). One of the standing instructions was that the ship was to follow directives issued by KPC in Kuwait. However, Kuwait was invaded by Iraq on 2 August 1990 and KPC moved its management office to London. On 8 August 1990 the ship received orders from the London office to discharge the cargo of crude oil in Ain Sukhna in the Red Sea. Due to the confusing political situation created by Iraq's invasion of Kuwait, and with orders coming now from London instead of from Kuwait (as originally stipulated) the owners initially refused to comply with KPC's orders. Subsequently the owners refused to discharge the cargo without presentation of bills of lading, which had been lost during the invasion of Kuwait. The charterers brought suit in the UK for all the delays they had suffered and initially won, but the case was overturned by the Court of Appeal, which held that:.....**time-charterers (like voyage charterers) cannot require owners or masters to discharge the cargo without production of the B/L.** This shows that even under these rather peculiar circumstances, a charterer still has no right to insist on delivery of the cargo without a B/L.*

it is very risky for a shipowner to deliver cargo without presentation of an "order" B/L. However, it is a fact of life that nowadays ships often travel faster than the B/L moves through the banking system, and that most cargo owners want to take delivery as soon as the ship docks at the discharge port. There is nothing wrong with this, but in return for the ship owner's cooperation, charterers should at least arrange for one of the options as mentioned in chapter 5 clause 20 to alleviate the enormous risk an owner incurs when delivering the cargo without presentation of the "order" B/L.

Sometimes an oil company or trader may buy 2,000,000 bbl (1 xVLCC cargo) of crude oil, and resell it in 4 x 500,000 bbl (4 x AFRAmax) lots to various buyers. If the Charterer wants the vessel to deliver the parcels separately and directly to the new buyers, the shipowner must collect the full set of the original two million bbl B/L and issue four new B/L sets; covering each 500,000 bbl lot. This is another reason that "to order" B/Ls should be presented prior to delivery. If the old B/Ls are left floating around, a genuine B/L holder for the original two million bbl parcel can claim the full value for the oil from the shipowner.

Look at it this way. You buy four trucks for your business through a car broker and write him a check for $100,000. Upon receipt of the check, the car broker informs you he needs 4 x $25,000 checks; one for each truck seller. Would you just send four new checks for $25,000 without collecting the old $100,000 one?

P&I Clubs have understandably taken a cautious approach. Even though they suggest using standard language for a Letter of Indemnity

(LoI), they DO NOT cover the risk of loss when a cargo is mis-delivered without production of a B/L. P&I coverage, just like marine insurance in general, is sometimes governed by murky rules and policies. It is not unusual to find a clause that states that it is up to the Directors' discretion whether the insurance company will accept a claim or not. Perhaps P&I Clubs should include in their wording that sanctioning the language does NOT necessarily mean that they also accept the risk of **mis-delivery without presentation of a B/L**. This would make it easier for owners to convince charterers of the gravity of the situation. Something else to keep in mind is that mis-delivery is not covered by the Hague-Visby Rules, because it happens after the cargo has been discharged and the Rules only cover "tackle-to-tackle." (See art. I e)

Some humourist once compared Marine Insurance to Swiss cheese; full of holes and voids. Of course it is incumbent upon insurance companies to make sure they limit their exposure against unacceptable risk, but language in Marine policies is often completely mystifying. Nobody in their right mind should take out insurance if they do not fully understand its terms and conditions.

An LoI in exchange for delivery of the cargo without presentation on the original "order" B.L can be most useful, but only if backed up by a bank guarantee; preferably in the form of a Stand-by L/C, or in the case of a fairly well known charterer, in the form of the bank co-signing the LoI. If the charterer objects to having the LoI co-signed by a bank, perhaps it is time for the ship owner to subject the charterer's creditworthiness to closer scrutiny. Of course if the charter is with a major oil company or an importer with a lot of assets in the owner's country, or assets that can easily be attached, such as ships, the charterer may be insulted if asked for too much security and call the potential fixture off.

There is a story making the rounds in which a party required EXXON to come up with a bank guarantee in support of a LoI. The EXXON folks replied: "Which bank do you want us to guarantee?"

On the other hand, traders with barely more than a desk and a telephone, often conduct huge transactions. In that case it is important to let them know that the ship owner is willing to work with them, but that there need to be adequate protection against mis-delivery of the cargo. A bona fide trading company should not object to this, because they themselves make sure they have adequate bank guarantees in place to cover payment of the goods. Be very alert when an unknown trading company wants to charter your vessel, but does demand that the goods have to be delivered without presentation of a B/L, and wants to pay freight after delivery of the cargo. Appendix 6.6 shows an example of an LoI (countersigned by a bank) in exchange for delivery without presentation of an original B/L.

One problem an owner runs into, is the sometimes low level of legal expertise of ship brokers. Brokers are very good at keeping in touch with the market and seeing opportunities to bring owners and charterers together. However, once there is a match, they don't like to dwell on details such as bank guarantees for payment of freight, or coverage for **delivery of goods without presentation of an original B/L**. It is comparable to a salesman who is eager to make a sale and lets his company's accounting department worry about how payment will be made. The difference is that a broker does not bear any risk; it all falls on the shoulders of the shipowner. As mentioned under heading 19, an owner with his ship under t/c usually runs less risk with regard to **delivery without B/L** than a ship under v/c.

22) Demise clause in B/L; Identity of the Carrier

In maritime law the word **demise** means that an owner has relinquished control of possession, command and navigation of the vessel from himself to somebody else, as in the case of a bare-boat charter. The owner is only left with the legal title of the ship and the **bare-boat** charterer needs to appoint his own captain and crew, is responsible for all operating and voyage costs, including dry-docking and insurance and has absolute commercial control over the vessel.

Art. I (a) of the Hague-Visby Rules states:

"Carrier" includes the owner or the charterer who enters into a contract of carriage with a shipper.

In case of a chartered vessel, a subsequent B/L holder may not be aware who the carrier is. Therefore some B/Ls contain a special clause, identifying the carrier. This is known as the **demise clause**. Sometimes a Liner company (let's say XYZ Co.) charters a vessel to supplement their fleet and issues B/Ls under their own name. If there is no **demise clause** in the B/L, it depends on how it is signed to determine who the carrier is. If the master just signs the B/L, or an agent for the master signs on his behalf, the shipowner is the carrier. Even if the Liner company, as time-charterers of the vessel, are authorised to sign B/L on behalf of the master, it is an "owner's B/L. However, if the master signs "as agent for XYZ line" (the time-charterers), it is presumed that the master does not bind his owners.

One way to shift the burden to the party responsible for claims under a B/L, is to include a clause in the c/p that states that charterers or their agents are to sign B/Ls on their own behalf. This is sometimes done when a Liner company, a **NVOCC** or Feeder Line issue their own **"House" B/Ls**. It is very important for an owner to check the terms of such a document. Sometimes the name and details of the Liner Co., the NVOCC or Feeder Line are printed all over the B/L, but in small lettering on the

back it may state that the vessel owner is the carrier; not the entity whose name is on the B/L.

*In a recent case (the **STARSIN**) it was determined by the House of Lords that a signature box on the front of the B/L with the typed words: "As agent for the t/c owner of the vessel", overruled the printed clause on the back that stated in tiny letters that the contract of carriage was between B/L holder and the shipowner. The Judges stated that if a normal person sees the typed clause on the front of a B/L, he or she is not going to analyse the back with a magnifying glass to see if there are any contradictions.*

23) Deviation

Art. IV 4 of the Hague-Visby Rules states:

*Any **deviation** in saving or attempting to save life or property at sea or any reasonable **deviation** shall not be deemed to be an infringement or breach of these Rules or of the contract of carriage, and the carrier shall not be liable for any loss or damage resulting therefrom.*

Here **deviation** pertains to geographical **deviation,** whereby a ship does not follow the normal ocean voyage route. There have been cases where cargo had been transshipped and sent to the wrong discharge port. The cargo owner claimed **deviation** and was awarded full reimbursement for the goods. Other examples of geographical **deviations** are ships — especially Liner vessels — that advertise that they'll accept cargo from load port A and that they will deliver it at discharge port B at a specific date. If the ship diverts from it's regular route to pick up cargo at an unscheduled port C and the goods destined for B arrive late, a shipper has a good case to claim reimbursement from the carrier for **deviation**; especially if the cargo was subject to spoilage, or if the cargo was "seasonal." The same is true if the ship interrupts its normal voyage for extensive dry-docking, or repairs, without letting shippers know beforehand.

On the other hand, if it is normal for a cargo of — for example oil-well equipment — from Houston to Nigeria to be transshipped in a NW European port, there may not be **deviation.** The key words are **scheduled** or **reasonable deviation.**

The term **deviation** is also used in the sense of breach of the contract — as under a B/L — which can result in the carrier losing their exemptions under the Hague-Visby Rules. For example, if the shipper had requested that his cargo be stowed below deck, but the carrier stowed it on deck, there is **deviation**. Courts have ruled differently on the consequences of the **deviation**; depending on the severity of the breach.

Art. IV 5 (a) states:

Unless the nature and value of such goods have been declared by the shipper before shipment and inserted in the bill of lading, neither the carrier nor the ship shall

in any event be or become liable for any loss or damage to or in connection with the goods in an amount exceeding the equivalent of 666.67 units of account per package or unit or units of account per kilo of gross weight of the goods lost or damaged, whichever is the higher.

In recent cases, some courts have ruled that even if carriers **deviate** from (breach) the Rules, they still are "**in any event**" only liable to the maximum allowable compensation under the Hague, or under the Hague-Visby Rules. The reasoning is that if the cargo owner wanted to claim the full value of the lost or damaged goods, he should have declared the higher value to the carrier before shipment. It therefore appears that under certain circumstances carriers can still limit their liability, even in case of **deviation** of the Hague/Hague-Visby Rules. It depends if the **deviation** (breach) is a fundamental breach or not. Some courts have ruled that a carrier that stowed the goods on deck, while cargo interests had required "under-deck" stowage, was in fundamental breach of the Rules; denying the carrier the protection under the Rules, while other courts did not consider unjustified on-deck stowage as a fundamental breach. One of the reasons courts may have relaxed their viewpoints as to what constitutes "fundamental breach," may be related to the fact that insurance companies have expanded their coverage of cargo loss.

More and more charterers try to have clauses in the c/p, stipulating that the vessel has to maintain a certain min. speed between load and discharge port and ask for detailed explanations when the ship's ETA has fallen back, even as little as one hour in a three week voyage. Owners should therefore leave themselves some manoeuvring room, so they'll be allowed small and reasonable **deviations** from the intended route for taking bunkers, stores, drinking water, landing sick persons etc. (see chapter 5 clause 20 vii).

24) Due diligence

The phrase "**due diligence**" is found in the Hague-Visby Rules in Art. III 1; Art. IV 1 (mentioned twice) and in Art IV 2 (p).

Although **due diligence** is — legally speaking — a rather fuzzy term, it can be described as doing something thoroughly, carefully, meticulously, attentively. When the term is used in assessing the condition of a ship to see whether she is **seaworthy**, it applies to defects that can be ascertained with the naked eye; not latent defects, nor conditions that can only be detected when the ship is in dry dock.

On the other hand such things as failure to carry out routine maintenance, or failure to carry updated navigation charts, or failure to check if the licenses of the ship's officers are in-date and genuine, will most likely be considered failures to exercise **due diligence**.

Art IV 1 of the Hague-Visby Rules states that **due diligence** shall be exercised ……..*to make the holds, refrigerating and cool chambers and all other parts of the ship in which goods are carried fit and safe for their reception, carriage and preservation*…….

For a cargo of grain this does not just mean that the holds are clean and dry and free of insect infestation, it also means that the bilge wells have been covered with burlap, so they won't fill up with grain; preventing the bilge pump from functioning properly in case the hull springs a leak. For coal cargoes it often means that daily temperatures have to be taken to detect possible hot spots in the cargo holds. Due diligence for chemical carriers may entail that absolutely no wash water is left in the tank, because it may react with, or ruin, the cargo.

*The case of the **FJORD WIND** demonstrates that owners may have a heavy burden to prove that they exercised **due diligence**. The vessel was steaming up the Parana River when an engine room alarm indicated a hot crankshaft bearing. For a while the ship was unable to stop, resulting in seizure of the crankshaft, and the ship subsequently ran aground. It took a long time for the damaged crankshaft to be repaired and therefore the cargo was transshipped at high cost. When cargo interests sued for damages, it was held that the ship was **unseaworthy** at the beginning of the voyage, because she had a history of recurring crankshaft problems. Owners claimed they had relied on the professional advice of the engine manufacturer, who had declared that after the last repairs, the crankshaft was in good working order. However, owners did not substantiate their claim with proof that they had followed the manufacturer's recommended maintenance procedures, and the Court sided with cargo interests.*

*In the **AMSTELSLOT** case the vessel was also delayed due to engine breakdown that had been caused by metal fatigue. Prior to the voyage the engine had been examined by a competent Lloyds surveyor who did not detect the metal fatigue. It was held that owners had exercised **due diligence**.*

The prevailing viewpoint of judges and arbitrators seems to be that if a carrier accepts the cargo, it is up to them to take good care of it, and of course that is exactly what a lot of carriers advertise. However, for unusual cargoes, carriers should always ask shippers for detailed cargo characteristics and instructions on how they want their cargo shipped; especially when it comes to heating or cooling. In case shippers do not furnish clear shipping instructions, the owner's P&I Club should be consulted. An excellent Internet site with detailed information on cargo loss prevention: http://www.tis-gdv.de is the site of the German Marine Insurers.

In Art III 8 of the Hague-Visby Rules we find that the duty to exercise **due diligence** cannot be "contracted out." Having said that, owners are most likely covered under the Hague-Visby Rules when they rely on the expertise of skilled surveyors and technicians to inspect the ship and the

cargo spaces etc. for seaworthiness. However, they would be skating on thin ice if they tried to seek protection under the broad **Classification Society** Certificates as a substitute for **due diligence.** The same goes for Port Inspections. Generally speaking an owner can not use an inspection report by Port or Flag State surveyor as a substitute for **due diligence.** On the other hand if a Port State Inspection results in detainment due to one or more violations, the owner should make doubly sure that the next **due diligence** examination by the crew is a thorough one.

Due to documentation and the resulting "paper trail" of the new **ISM Code** it should be easier to establish if a ship owner has exercised due diligence in making the ship seaworthy. Of course a "paper trail" bears the risk of being a two-edged sword; especially in the hands of people who do not have shipboard working experience and might misinterpret routine survey or damage reports.

25) Early Departure Procedure (EDP)

Some oil terminals have adopted a policy of instructing the vessel to leave the loading berth or SBM before the master, or his authorised agent, has signed the B/L. Quite often this practice finds its way into the c/p. If owners agree to EDP, they should develop strict guidelines for the master to follow. For example, the master should never sign a **blank B/L** (see heading 7).

It is very important for the master to make sure that the B/L is in accordance with the Mate's Receipt. If, for instance, the cargo loaded is not in apparent good order and condition, but the shipper/charterer presents the master with a clean B/L, the master should refuse permission for the agent to sign the B/L. This is true also if the vessel operates under a t/c and the c/p contains a clause stating that charterers shall indemnify owners against all consequences or liabilities that may arise from signing bills of lading in accordance with the directions of charterers or their agents. The master is not obligated to sign "fraudulent" B/Ls. If in doubt, the master should contact owner's P&I Club for advice.

26) Electronic Data Interchange (see also BOLERO, heading 10)

During the 1980s attempts were made (no doubt propelled by the ever increasing use of computers) to cut down on the volume of shipping documents, by substituting paper documents with electronic ones. The main idea was to enter information only once in a standardised format that would serve as the basis for generating shipping documents such as Invoices, Mates or Dock Receipts, Bills of Lading, Insurance documents etc. Not only would this save preparation time, but it would also reduce the number of typing errors. Moreover, it would facilitate document distribution and speed up their transmission.

Various organisations have contributed to developing standards to streamline the process of **electronic data interchange**, but there are still a lot of obstacles before "paperless trade" will be a reality. First of all, not all parties have easy access to proper computers and/or software. Secondly, not all jurisdictions accept electronically generated documents as evidence, although most major trading nations now have passed legislation to accept so-called "electronic signatures."

Of course most of the efforts to reduce paperwork are geared towards the Liner trade, where the benefits are much more apparent than for the dry bulk or tanker trade. As mentioned before, electronic transmission of bills of lading would greatly reduce the risk to a shipowner of cargo being mis-delivered without presentation of an original B/L. (See heading 21)

27) Endorsement (also spelled Indorsement)

Endorsement is the act of assigning a negotiable instrument, such as a check, a draft, or a B/L. By just signing a B/L on the back (**endorsement in blank**), it turns into a **bearer's** B/L. The rights of the instrument can be transferred to somebody else by signing: *Deliver to the order of ....*, or similar wording (see Introduction). This is called an **endorsement in full**. If the endorsement states: *Deliver to:.....* (without the "to order" phrase), the B/L is turned into a non negotiable **Straight B/L**.

28) Estoppel

Estoppel is a legal term meaning: *a bar or impediment, preventing one from asserting a fact or a claim arising from a previous action, or failure to act, by which one has admitted, implied or established the contrary*. For example, if cargo received by the ship showed some damage prior to loading, but the master signed a clean B/L, the carrier is prevented (stopped) from claiming that the cargo showed damage before being loaded.

29) Exception/Exemption

The terms **exception** or **exemption** refer to a carrier's specific immunity from liability for damage to cargo shipped under a B/L. A formal list of immunities had its genesis under the US Harter Act of 1893. This list of exemptions became part of the Hague Rules of 1924 and of the Hague-Visby Rules of 1968 (see Appendix 6.1). Art. IV 2 (a-q) lists 17 exemptions.

The first exception (2 a) has drawn a lot of criticism, especially by cargo interests:

2 Neither the carrier nor the ship shall be responsible for loss or damage arising from:

(a) Act, neglect, or default of master, mariner, pilot,

or the servant of the carrier in the navigation or in the management of the ship.

This provision is not in the Hamburg Rules, which are perceived to favour cargo interests more so than the Hague-Visby Rules. One of the arguments is something like: "Why should the carrier be exempted from liability if their drunken captain runs up on the beach, and as a consequence my cargo gets ruined."

This is a rather short-sighted argument. First of all, the IMO has promulgated very strict alcohol policies for people on board ships, and particularly with regard to watch-standers. Secondly, errors in navigation can often be traced back to somebody else, such as:

- Incompetent pilots.
- Ineffectual tugboats.
- Failure of governments to update navigation charts or dredge.

*A good example of things gone bad is the **NISSOS AMORGOS**, an Aframax tanker that hit a submerged object in the Maracaibo Channel in 1991 and spilled part of its oil cargo. Local Pilots had complained numerous times to the authorities that the maximum draft was 38 feet instead of 40; presumably due to a fishing boat having sunk in the channel. Instead of accepting part of the blame, the Venezuelan authorities threw the master in jail.*

*Another example of government authorities absolving themselves from blame for oil spills is the **ERIKA**, a laden tanker that was not allowed to seek shelter at a French port of refuge in December 1999. She was sent back out into a storm and, as a result, broke up and spilled oil on France's Atlantic coast.*

*An even more disgraceful case is the **PRESTIGE**. She was fully loaded with fuel oil and ran into a bad storm off the coast of N. W. Spain in November 2002. The master feared that the ship might break up, had the crew evacuated and asked the Spanish authorities for permission to move his ship to a sheltered area near the coast, so the tanker could be lightered. The Spanish government refused and forced the master to return to his stricken ship to take it out into a raging storm with a skeleton crew. The ship sank and the oil polluted the beaches. Instead of praising the captain for saving his crew and cooperating with authorities to take the ship back out to sea, he was thrown in jail. He was only allowed to go home several years later.*

*Another case that insults the intelligence of reasonable people is the stranding of the **TASMAN SPIRIT**, a tanker that ran aground in the Port of Karachi. The ship could only reach Karachi "at-the-top-of-the-tide." However, the Karachi Port Authorities asked the master to wait, so they could bring in another ship first. The master protested, since there would not be enough water for the vessel to reach berth safely. He was overruled by the Karachi Port Authority, and over the master's objection, the pilot took the ship in and put her on the rocks, resulting in a huge oil spill. The master and part of the crew were put under house arrest and left there for months.*

The above examples of misguided conduct by government officials are reason enough to keep Art. IV 2 (a) in the Hague-Visby Rules.

- Erroneous weather reports.
- Failure by governments to remove wrecks or mark navigational hazards.

With regard to management of the vessel, most tanker charterers stipulate that the owner has to appoint the agent selected by the charterer. Moreover, many terminals use their own mooring masters and tugs. If the servants of the charterer fail in their duties with regard to safe navigation or proper management of the vessel, it is quite untenable to put all the blame on the master if something harmful happens to the cargo.

30) Form/Format of B/L

Quite often the c/p stipulates which B/L **form** the charterer is to present to the master for signature. For example Orevoy B/L for ore cargoes; Genwaybill is a general Sea Waybill; combined Transport B/L for the Liner trade, Tanker Bills of Lading issued by various major oil companies/producers; special Bills of Lading for the chemical trade; Norgrain B/L to be used with the Norgrain c/p for grain shipments; Pocoalbill for shipments of coal from Poland. A good sampling of various B/L and Waybill **formats** can be found at: http://www.bimco.dk/. In the box, click on Bimco Documents, Bills of Lading or Waybills and click on the individual documents. **Format** can also pertain to a generic B/L, but with specific clauses to be incorporated as stipulated in the c/p, such as clause Paramount, Jurisdiction and Arbitration clauses. A shipper/charterer has wide-ranging liberty with regard to the **format** of the B/L, as long as it reflects the true facts.

31) Forum/Jurisdiction

Forum is another word for **jurisdiction**. For example a c/p or B/L clause may stipulate that all disputes are to be settled under English law. If no jurisdiction is specified, often a legal battle ensues as to where a lawsuit can be brought. A cargo claimant would rather bring suit in a country that has adopted the Hague-Visby Rules, which allows recovery of up to SDR 2 per kilogram of the lost or damaged goods, or SDR 666.67 per package; whichever is greater. This is more than in the USA, which adopted the Hague Rules in the 1936 COGSA, with liability limited to $ 500/package. (Please note, $ 500 in 1936, was worth a lot more than today)

Jurisdiction also applies to where a company does business and where a creditor is allowed to bring suit if it is not specifically mentioned in the contract. Depending on governing laws, it can be where plaintiffs or defendants have their principal place of business, or where the contract was made. Sometimes it is where a party to a lawsuit has a bank account.

Sometimes the c/p contains a **jurisdiction** clause for disputes to be settled in a particular country, but in the absence of a **clause Paramount**,

A foreign company had a bank account in New York and used it to pay for all its international transactions. A Court ruled that suit could be brought in the USA. On the other hand, if a foreign person or company just has an account in a particular country, unrelated to the business transaction in question, it may not be possible to establish jurisdiction in that country just based on the location of the bank account.

the B/L may stipulate another **jurisdiction.** The same situation can occur with a string of charter parties such as between owner, charterer and sub-charterer.

32) Fraud (Forgery)

In this day and age it is very easy to buy or copy a B/L form, or to download it from the Internet. It is even possible to copy multicoloured B/L forms that can easily pass for the genuine article. BOLERO (see heading 10) should eliminate most of the forgeries. However, it does not solve the matter of establishing the identity of the proper B/L receiver. The master should therefore scrutinise all B/Ls for authenticity before signing them. In case of doubt he should leave the B/L unsigned and give it to the charterer's agent with a Letter of Protest attached.

33) Freight and B/L

In exchange for hauling cargo, a shipowner or t/c operator is compensated in the form of **freight**. It is usually expressed in US $/mt, or in the case of oil, freight is often tied to worldscale as discussed in chapter 3. Freight for chemicals is usually in US $/mt also. For voyage charters the freight rate is stipulated in the c/p, but usually not on the B/L. In the Liner trade freight may be listed on the B/L, or reference is made to a freight agreement between shipper and carrier, or to a special tariff applicable to that particular trade. Freight can also be in the form of a **lump sum** payment. In some instances, where the charterer may have an agreement whereby the buyer of the goods is responsible for demurrage, expired laytime may be listed on a B/L to signal to 3rd party B/L holders that demurrage may be due.

Unless stipulated differently, freight is based on intake quantity. It is usually the quantity listed on the B/L. For oil cargoes no deduction from freight shall be made for sediment and water (S&W) in the cargo.

Many dry cargo charter parties stipulated that: `Freight shall be earned as soon as cargo is on board; vessel and/or cargo lost or not lost.` This makes a lot of sense and is comparable to passengers having to pay in advance for airline or cruise tickets, instead of paying after they have arrived at their destination. Before a ship shows at the load port, the owner or t/c operator has spent considerable sums of money during the ballast voyage. It is therefore important to amend

charter parties that state that freight is due upon delivery (see also chapter 3 ASBATANKVOY amended clause 2).

34) Freight prepaid

UCP 500 art. 33 covers freight payable and **prepaid freight**. Unless stated otherwise in the L/C, banks will accept B/Ls that state that freight still has to be paid. If the L/C stipulates that freight has to be prepaid, the B/L has to have a notation: FREIGHT PREPAID. Banks will not accepts B/L that state: "freight prepayable" or "freight to be prepaid" or words of similar effect, because it is not a clear indication that freight has actually been paid.

If a shipper presents a B/L that states that freight has been prepaid, the master should verify with his principals that freight has actually been received (see also Appendix 6.5 B/L Guidelines). There have been instances where a t/c operator chartered a ship; paid perhaps two weeks hire and had the master sign "**prepaid B/Ls**". Once the cargo was loaded, the t/c operator absconded, or went bankrupt, and the ship owner was forced to deliver the cargo to the B/L holder without receiving additional hire and unable to collect freight, since the B/L showed that freight had already been paid.

35) Function of B/L

See Introduction.

36) Hague Rules, Hague-Visby Rules, Hamburg Rules

All of the above international conventions regulate the responsibilities and rights of ocean carriers with regard to cargo damage. The Hague Rules came into being in 1924 and were incorporated into the USA COGSA of 1936. The Hague-Visby Rules were agreed upon in 1968 and were more or less an extension of the Hague Rules. The US never adopted the Hague-Visby Rules, but the UK adopted them in COGSA of 1971. For a comprehensive lists of the signatory countries to above-mentioned Rules and limits of liability, see Appendix 6.2

A good website showing the differences between the various Rules is at: www.uncitral.org/english/workinggroups/wg_3/WP.27-e.pdf

The full name of the file is: A/CN.9/WG.III/WP.27 The UNCITRAL Draft Instrument on the Carriage of Goods by Sea and other transport Conventions Comparative tables. The comparison starts on page 7 (out of 88).

The Hamburg Rules came about in 1978 and generally favour cargo interests rather than ship owners. However, only a few countries — several of which are not even seafaring nations — have adopted the Hamburg Rules. Therefore, these Rules have not been widely implemented. A

copy of the complete Hamburg Rules can be found at: http://www.admiraltylawguide.com/conven/hamburgrules1978.html

There are several other Internet sites that list the Hamburg Rules and can be found with an Internet search engine. In addition to above, several regional variations of the Rules have been adopted, that apply to specific areas only.

37) Himalaya clause

This is a clause in a B/L stating that exemptions available to the carrier and their employees also extend to 3rd party service providers/contractors, such as a stevedoring company.

*Some people may be led to believe that the word **Himalaya** may have something to do with all encompassing — from top to bottom — coverage. Actually the word came from a 1954 English case: **Adler vs. Dickson.** Mrs. Adler was a passenger on a cruise ship, the **HIMALAYA.** Coming back from a shore visit, she fell from a gangway and injured herself. Since her ticket had an exclusion-of-liability clause, to bar action against the carrier, she successfully sued the Captain (Mr. Dickson) and the boatswain of the vessel.*

38) House B/L

In the Liner trade a cargo consolidator can act for a group of shippers and may issue a receipt for the cargo that contains the terms of transport. This receipt is sometimes called a House B/L (see also heading 22). The contract between the consolidator and the carrier is the real B/L. Banks will accept House B/Ls if they have been signed "as carrier". See UCP Art. 23 a. i and Art. 24 a. i. (see also heading 22).

*The **BRIJ** case centered on misdelivery of goods that were covered by two B/Ls; each listing a different shipper. The goods were delivered without production of a B/L. A Hong Kong based company sold a shipment of garments to a buyer in Venezuela. The seller had contracted with a local NVOCC and received a B/L, listing the seller as the shipper and the consignee: "to order." The NVOCC's agent was listed as the "notify party". However, the NVOCC operator made a separate contract of carriage with a container line operator that shipped the goods on the BRIJ, a vessel operated by, but not owned by, that NVOCC. Unbeknownst to the sellers the container operator issued straight B/Ls with the NVOCC as shippers and with the buyers as consignee. The buyers took possession under the straight B/L by just identifying themselves, but without producing the B/L. Buyers failed to pay for the shipment and sellers filed suit against the owners of the BRIJ for mis-delivery of the goods. It was held that the NVOCC and the container operators had acted as principal-to-principal and that the owners of the BRIJ were not in breach of their duty of care under the B/L issued by the NVOCC to the sellers. Therefore seller's action failed.*

*NB: In the **RAFAELA S.** case the English Court of Appeal held that a straight B/L still has to be produced before the cargo can be delivered. The House of Lords decided that a straight B/L is a document of title and as such falls under the Hague/Visby rules.*

39) Identifier of the B/L (SCAC)

Ocean B/Ls that cover cargoes destined for the USA, need to have a unique Standard Carrier Alpha Code (SCAC) in accordance with US Customs regulations contained in 19 CFR part 4, section 4.7a. The unique identifier may be 16 characters long; consisting of two parts. For example: `SHEL-QXYZ-071304-02`. The first portion needs to identify the carrier (4 characters). In above example the other twelve characters consist of the vessel's call sign, the B/L date (13 July 2004) and the specific B/L number for that particular day (the 2nd B/L for that day). The carrier shall not use the same unique identifier for at least three years (see also chapter 5 clause 49 c).

40) Identity of the Carrier

See under heading 22: Demise clause in B/L; Identity of the Carrier.

41) Identity of the Shipper/Consignee

Who is listed as shipper on the B/L, depends on the **Terms of Trade** agreed upon between Seller and Buyer (see heading 80).

Export shippers may want to check local Customs requirements with regard to who is listed as the shipper on export documentation. For statistical purposes Customs want the domestic seller listed as the shipper, but if the goods have already been sold before they have left the country, the seller may prefer (for legal purposes) to list the buyer as the shipper on the B/L.

As gathered from above, and as seen under heading 38 in the BRIJ case, it is extremely important that the B/L shows the proper shipper and the proper consignee.

42) Inconsistency

When B/L terms are inconsistent with c/p terms, the master may refuse to sign the B/L. It is entirely possible that with a string of charter parties between owner, charterer and sub-charterer, several key c/p clauses may have been changed along the way. Since under the Paramount clause, c/p clauses are deemed to be incorporated in the B/L, it is important for the master to check for inconsistencies between the clauses in the c/p he is operating under, and the B/L terms presented to him for signature.

43) Incorporation into the B/L

In chapter 5, covering the amended ASBATANKVOY, clause 20. (b) states:

(b) The carriage of cargo under this Charter Party and under all Bills of Lading or Sea Waybills issued for the cargo shall be subject to the statutory provisions and other terms set forth or specified in sub-paragraphs (i) through

(vii) of this clause and such terms shall be incorporated verbatim or be deemed incorporated by the reference in any such Bill of Lading or Sea Waybills. In such sub-paragraphs and in any Act referred to therein, the word "carrier" shall include the Owner and the Chartered Owner of the Vessel.

This language used to be sufficient, but for the protection of B/L holders that may not know that a B/L is subject to c/p terms, several courts have lately decided that **incorporation** of specific clauses, such as jurisdiction and arbitration clauses, need to be mentioned specifically. If not spelled-out specifically, a third party B/L holder may not be bound by clauses that were incorporated with a general **incorporation** clause. This is important if a plaintiff goes "**forum shopping**" i.e. looking for jurisdiction under which he can maximise his claim (see also heading 31 and Appendix 6.2).

44) Indemnify

Many time-charter parties contain a clause whereby the t/c operator will **indemnify** the master for signing B/Ls. See heading 3 for amended SHELLTIME 4, clause 13.

45) Indorsement

See endorsement under heading 27: Endorsement.

46) Letter of Indemnity (LoI)

As already discussed above, a master who is aware that the cargo is not in apparent good order and condition, but signs a clean B/L in exchange for a **Letter of Indemnity**, exposes himself to possible fraud charges.

A **Letter of Indemnity** (see Appendix 6.6) received in exchange for delivery of the cargo without presentation of the "order" B/L, may not constitute a fraudulent act, but it is a risky proposition for the owner if the LoI is not backed up by an acceptable bank guarantee.

If a charterer wants the master to deliver the cargo to another Port or to another Consignee than the one specified in the c/p, the best course of action is to collect the old B/Ls and issue new ones (perhaps in exchange for a revised freight rate). If this is not possible, the Charterer may ask the Owner to accept a LoI backed by a bank guarantee.

47) Lien

The printed lien clause 26 in SHELLTIME 4 states:

*26. **LIEN***

*Owners shall have a **lien** upon all cargoes and all freights, subfreights, subhire and demurrage for any amounts due under this charter, and Charterers shall have a **lien** on the vessel for all monies paid in advance and not earned, and for all*

claims for damages arising from any breach by Owners of this charter.

Amended clause 21 of ASBATANKVOY voyage c/p states:

*21. **LIEN***

*The Owner shall have an absolute **lien** on the cargo for all unpaid freight, dead freight, demurrage, charterer's contribution to general average, and costs, including attorney fees, of recovering the same, which **lien** shall continue after delivery of the cargo into the possession of the Charterer, or of the holders of any Bills of Lading covering the same or of any storageman.*

First of all, it is important to note that there cannot be a **lien** if no debt is due. In other words, if the time-charterer has paid hire in advance, the head owner cannot file a **lien** against the cargo for freight that is due to the t/c operator. For the same reason an owner or a t/c operator cannot put a **lien** against the cargo for unpaid freight if the freight is not payable till after delivery of the cargo. The same is true for demurrage. Therefore the c/p should have a clause that states that demurrage is due when accrued.

Bunker supply contracts (see below) may also have a lien clause. Again, if suppliers offer buyers 30 days credit, they cannot put a **lien** on the ship, its cargo, or on the bunkers for 30 days.

However, when payment of freight is overdue, an owner may consider putting a **lien** on the cargo. As mentioned at the beginning of chapter 5, having a **lien** on the cargo is closely tied to having possession of that cargo; or at least not having it co-mingled with other cargo, such as oil disappearing into a cross-country pipeline.

It is important to weigh the consequences of refusing to deliver the cargo. Charterers and/or cargo receivers will no doubt come up with all kinds of reasons why the cargo should be released. If they find a "sympathetic" judge, an owner may be charged with delay, having to pay damages to cargo interests and may not be able to claim detention or demurrage for the delay.

Something else to keep in mind is that in certain countries a **lien** on unpaid port charges may have priority over a **lien** for unpaid freight. It is therefore imperative to consult with a local admiralty lawyer before putting a **lien** on the cargo.

If an owner is worried that the charterer may fail to pay freight, it is permitted to make a notation on the B/L that freight is due. Under UCP 500 Art. 33. a) banks will pay under an L/C if the B/L states that freight is still due. Furthermore, the Hague-Visby Rules and US COGSA do not address the presence of a "freight due" clause on the B/L. This means that a "freight due" notation does not make the B/L unclean.

Lien on bunkers

Clause 10 of the BIMCO's "Standard Bunker Contract" of 2001 covers:

Risk and Title:

Risk *in the Marine Fuels shall pass to the Buyers once the Marine Fuels have passed the Sellers' flange connecting the Vessel's bunker manifold with the delivery facilities provided by Sellers.*

Title *to the Marine Fuels shall pass to the Buyers upon payment for the value of the Marine Fuels delivered, pursuant to the terms of Clause 8 hereof. Until such time as payment is made, on behalf of themselves and the Vessel, the Buyers agree that they are in possession of the Marine Fuels solely as Bailee for the Sellers. If prior to payment, the Sellers' Marine Fuels are commingled with other marine fuels on board the Vessel, title to the Marine Fuels shall remain with the Sellers corresponding to the quantity of the Marine Fuels delivered. The above is without prejudice to such other rights as the Sellers may have under the laws of the governing jurisdiction against the Buyers or the Vessel in the event of non-payment.*

This clause goes a long way towards protecting bunker suppliers in case a ship is arrested and subsequently auctioned off. Instead of receiving perhaps a few cents on the dollar, like other creditors, a bunker supplier has a good chance of reclaiming part — or all the bunkers delivered — since marine fuels are usually stored in specific tanks and thereby remain the separate and distinct property of the bunker supplier.

Please note, generally speaking, a lien by itself does not imply that the goods can be sold right away without a judgment from a court of law.

48) Limitation of Liability

Under the Hague Rules a carrier is able to limit their liability to a specific maximum amount. Under US COGSA, with the Hague Rules incorporated, the maximum amount a shipowner is liable for in case of cargo damage, is $500 per **package**; unless the shipper has declared a higher value for the goods. Very few shippers actually declare a higher value, because it usually results in higher freight and insurance rates.

For decades, USA courts have been cluttered with cases about the proper definition of the word "package" under US COGSA. For example if the B/L states: one 20-foot container with Oochi Goochi shoes, a judge will more than likely rule that the container is the "**package**." However, if the B/L states: One 20-foot container with 20 pallets, each stowed with 108 cartons of Oochi Goochi shoes; in most jurisdictions it will mean: 2,160 packages. It is therefore important to clause the B/L properly. Don't leave it up to a shipping clerk to compose the wording on your B/L, and

check the B/L after it has come back from the carrier to see if they have not changed your intended wording.

*In a case involving the disappearance of a container load of French perfume in Miami, the Shipper's Agents had declared shipment of four containers with 138 pallets of cosmetics. However, the carrier had changed "pallets" as provided by Shippers, to "**packages**."The contents of the missing container were described as: 42 packages STC (Said to Contain) 2,268 cartons + two (loose) cartons. The District Court ruled that there were 2,270 packages, but the Court of Appeal ruled that the missing container only contained 44 "COGSA" **packages** (42 pallets + two loose cartons). The lesson seems to be: Always have the carrier list the number of smallest packaging units directly in the column: NO. AND KIND OF PACKAGES.*

As seen under heading 31, the limitation of liability under the Hague-Visby Rules Art. IV 5. (a) is SDR 2 per kilogram of gross weight of the lost or damaged goods, or SDR 666.67 per package; whichever is higher. At website: http://www.imf.org/external/np/tre/sdr/basket.htm. the latest SDR exchange values can be seen.

49) Limitation of Time

Art. III 6, 3rd paragraph of the Hague-Visby Rules states:

`Subject to paragraph 6bis the carrier and the ship shall in any event be discharged from all liability whatsoever in respect of the goods, unless suit is brought within one year of their delivery or of the date when they should have been delivered. This period, may however, be extended if the parties so agree after the cause of action has arisen.`

***Trafigura Beheer BV** chartered the tanker **SONIA** under a voyage c/p for a shipment of jet fuel from Saudi Arabia to Lagos, Nigeria. The Hague-Visby Rules applied to the B/L. Buyers in Nigeria refused to take delivery because they claimed the cargo was off-spec, due to unclean tanks caused by a previous cargo. Trafigura then ordered the ship to the port of Abidjan in the Ivory Coast, where the cargo was not discharged either. The **SONIA** was then ordered to proceed to Greece where the cargo was finally discharged. Approximately 14 months after the arrival of the vessel in Lagos, and less than a year after delivery in Greece, Trafigura filed a claim for cargo damage against the shipowner. The owners claimed that the claim was time-barred because of the one-year time limitation as per Hague-Visby Rules. The initial court sided with the owners, but a court of appeal ruled that carriers liability would only have ceased if suit had not been brought within* `one year of their delivery or of the date when they should have been delivered`. *The court held that the Hague-Visby rule regarding delivery, did not include the phrase: "whichever is earlier", or "whichever is later." Trafigura had brought suit just within the one-year time limit since the vessel was actually discharged in Greece, and it did not matter when she should have been discharged. Therefore charterer's appeal was allowed.*

The *SONIA* case gives a good illustration how courts have interpreted **Limitation of Time.**

50) Marks

Art. III 3 (a) of the Hague-Visby Rules states:

(a) The leading ***marks*** *necessary for identification of the goods as the same are furnished in writing by the shipper before the loading of such goods starts, provided such* ***marks*** *are stamped or otherwise shown clearly upon the goods if uncovered, or on the cases or coverings in which such goods are contained, in such a manner as should ordinarily remain legible until the end of the voyage.*

If a shipment is made under a L/C, it is very important that the **marks** on all the documents, such as on the B/L, the Invoice, Packing List and Certificate of Insurance etc. are all the same. (See UCP art. 13 a, that states that the contents of documents need to be **consistent** with one another)

Art. III 3 (b) pertains to bulk shipping:

(b) Either the number of packages or pieces, or the ***quantity****, or* ***weight****, as the case may be, as furnished in writing by the shipper.*

51) Mate's Receipt/Dock Receipt

A **Mate's Receipt** describes the quantity, marks and condition of the goods when received by the carrier. It is still used for break bulk shipping, but usually no longer for dry or liquid bulk shipments.

If goods have been delivered to a carrier's warehouse near the docks, a **Dock Receipt** may be issued with the same information as on the **Mate's Receipt**. It is especially important that the quantity and condition/packaging of the cargo upon receipt is listed correctly, since this information is transferred to the B/L.

Even though a **Mate's or a Dock Receipt** is not a document of title, both serve as the basis for the B/L description. In other words, if the carrier receives cargo and issues a clean **Mate's or Dock Receipt**, a shipper is entitled to a clean B/L. If the carrier issues a clean **Mate's or Dock Receipt**, but then issues a "claused" B/L, the former counts with regard to description of the cargo; not the B/L.

52) Mis-description

Art. III 5 of the Hague-Visby Rules states:

5. The shipper shall be deemed to have guaranteed to the carrier the ***accuracy*** *at the time of shipment of the marks, number, quantity and weight, as furnished by him, and the shipper shall indemnify the carrier against all loss, damages*

and expenses arising or resulting from ***inaccuracies*** *in such particulars. The right of the carrier to such indemnity shall in no way limit his responsibility and liability under the contract of carriage to any person other than the shipper.*

It is up to the shipper to provide the carrier with an accurate description of the goods. For a variety of reasons some shippers describe goods in a less than truthful manner. It is important for a seller to get paid under a L/C. This requires that the B/L description is identical to the L/C description. Quite often clerks at the L/C opening bank make typing mistakes when it comes to the proper L/C description. If there is an unacceptable error in the L/C description, the L/C beneficiary (the seller) should apply for a L/C amendment. However, this can be time consuming; resulting in the seller perhaps missing the L/C stipulated latest ship date. For insignificant typing errors it is usually easier to forgo an amendment and just have the same error copied on the shipping documents. One way to prevent **mis-description** of the cargo, is for the seller to provide the buyer with a pro-forma invoice with a proper description of the goods. The buyer can take this to his or her bank to open a L/C.

Sometimes a shipper, or NVOCC, may have a special rate agreement with a carrier for shipment of particular cargo at a lower rate. An example would be OWE (Oil Well Equipment). If the shipper or NVOCC wanted to save some money, they might be inclined to label shipments of valves or pipe as OEW, even though it may not be used for OWE purposes. If the carrier finds out about the **mis-description**, a shipper may lose the rights under the Hague or Hague-Visby Rules and wind up paying the higher freight rate anyway.

Most trading nations use the Harmonized Tariff System (HTS) to classify goods for customs and duty purposes. Certain countries may want to protect their domestic industry against cheap imports and levy steep duties to keep out competing products. For example, a particular country may have a 25% import duty against polyethylene film, while at the same time duty for plastic film n.o.s. is only 5%. It may be tempting for an importer to label the goods "plastic film n.o.s." on the shipping documents to pay less duty. However, if Customs find out about this **mis-description**, they may not be amused. The likely result will be confiscation of the goods, and heavy fines against shipper and importer.

Hazardous cargoes often require special packaging and handling and demand high freight rates. Again, if a shipper tries to cut corners by **mis-describing** the goods, the result may be catastrophic injuries and/or damage to ship and cargo. If caught, the shipper may face confiscation of the goods, heavy fines and perhaps jail time.

Certain countries may have export restrictions on shipments of certain strategic goods to a particular country. An export license may be required before these goods can be shipped. Circumventing government export regulations, through **mis-description** of the goods on shipping documents may result in very serious consequences for the shipper. A master is fully in his right to refuse signing a B/L if the goods are clearly **mis-described.**

53) Non-negotiable B/L

With reference to the introduction, a B/L is **Non-Negotiable**:

1) If it does not contain the phrase "to order" or similar wording (Waybill).
2) If the B/L is clearly marked NON-NEGOTIABLE.
3) A Straight B/L.

A B/L can also be rendered **Non-Negotiable** by endorsement. (See heading 27).

54) Notify Address (of "order" B/L)

Sometimes a B/L is just made out "to order" with the name of the consignee left blank (see heading 9), and the **Notify Address** may be seller's agent in the discharge port. When goods are covered by a L/C, the bank is often listed as the consignee, and the buyer as the **Notify Address.** The Notify Address party does not have any rights under the B/L, but the address is used for notification purposes at the discharge port. The carrier notifies the **Notify Address** that the goods are on its way and that cargo receivers should make arrangements for contacting Customs and for taking delivery.

55) On-board B/L date

UCP 500 art. 23 (a) ii mentions several times that an Ocean B/L needs to have an "**on-board**" notation. This is the date when the last metric ton of cargo passed the ship's rail or manifold (see also heading 5).

56) On-board carried B/L

As mentioned several times above, a shipowner is exposed to very high risk if the cargo is discharged without presentation of an "order" B/L. If charterers expect that the B/L will not be available in the discharge port upon arrival of the vessel, the owner needs to look for protection against mis-delivery of the cargo. One way to do that is to have the master keep on board one of the original "order" B/Ls signed in the loadport. (See also heading 21 and chapter 5 clause 20, b-2, AAA for the proper procedure for the master to follow). If the shipment is made under a Letter of Credit and the L/C requires that a "**full set**" of B/Ls is to be submitted, the

master should hand all the original signed B/Ls to charterers and should not keep one of the original B/Ls on board.

57) Order B/L

See Introduction of this chapter.

58) Paramount clause/Clause Paramount

Clause Paramount assigns rights and responsibilities in a contract of carriage between a shipper and a B/L holder with regard to cargo loss or damage. The function of the clause is to subject the contract of carriage to the Hague, the Hague-Visby, the Hamburg or similar Rules incorporated in the COGSA of each country that have adopted these Rules.

Amended ASBATANKVOY clause 20 in chapter 5 states:

*(i) CLAUSE **PARAMOUNT**. ~~This~~ Bills of Lading, including Sea Waybills and Straight Bills of Lading, shall have effect subject to the provisions of the Carriage of Goods by Sea Acts of the United States, approved April 16, 1936, except that if this Bill of Lading, Straight Bills of Lading or Sea Waybill is issued at a place where any other Act, ordinance or legislation gives statutory effect to the International Convention for the Unification of Certain Rules relating to Bills of Lading at Brussels, August 1924, then this Bill of Lading or Straight Bills of Lading or Sea Waybill shall have effect, subject to the provisions of such Act, ordinance or legislation. The applicable Act, ordinance or legislation (hereinafter called the "Act") shall be deemed to be incorporated herein and nothing herein contained shall be deemed a surrender by the Owner of any of its rights or immunities or an increase of any of its responsibilities or liabilities under the Act. If any term of this Bill of Lading or Straight Bills of Lading or Sea Waybill ~~be~~ is repugnant to the Act to any extent, such term shall be void to that extent but no further.*

Clause Paramount does not prevent parties from including extra provisions, or to delete certain portions, of above-mentioned Rules, as long as it is by mutual consent. If the terms of the contract of carriage are less burdensome than those in the Rules, the Rules prevail, because they are of overriding (**paramount**) importance. On the other hand, if the terms in the B/L are inconsistent with those in the c/p, the master may refuse to sign the B/L.

59) Parties to B/L

- See heading 6: Bearer B/L.
- See heading 22: Demise clause in B/L; Identity of the Carrier.
- See heading 37: Himalaya clause.
- See heading 38: House B/L.

- See heading 41: Identity of the Shipper/Consignee.

60) Port of Discharge in B/L

Inconsistencies between the c/p and B/L often centre on the discharge port, such as:

- The discharge port in the B/L is different from the one in the c/p, or the discharge port is outside the range of ports listed in the c/p.
- The port of discharge is outside IWL (Institute Warranty Limits).
- The discharge port is closed due to ice.
- The discharge port may be blockaded due to war.

61) Prima Facie evidence

See under headings: 2, 12 and 15.

62) Qualifying statements on B/L

A B/L without qualifying statements is a "clean" B/L (see heading 15). See also remarks under heading 2 regarding a B/L claused as follows: **"Shipper's Load and Count; Quantity unknown"** and **"Said to contain"** or similar wording are acceptable (see also heading 52).

63) Quality

See under headings 2 and 17.

64) Quantity

See under headings 2 and 15.

A master can refuse to sign a B/L if he has reasonable information about the true **quantity**. For example, if ship's figures for a dry or a liquid bulk cargo are markedly different from shore figures, the master should prepare a Notice of Protest (NoP). The NoP should be stapled to the B/L with the ship's figures, and how they were derived at, and handed back to the shippers. Caution: the master should substantiate his refusal to sign the B/L with good evidence that the cargo has been short-loaded; especially if the ship is under time-charter and the c/p states that the master should sign B/Ls "as presented." He should also notify the owner's local P&I Club representative and perhaps arrange for a re-survey by a cargo inspector who is acceptable to both owner and cargo interests.

65) Receipt

See Introduction.

66) Received for shipment B/L; Shipped B/L

The difference between a **Received for shipment B/L** and a **Shipped B/L** is that the former is issued upon receipt by the carrier at

their warehouse or dock, but before the goods are loaded on board. A **Shipped B/L** is the one issued after the goods have actually been loaded on board. At first glance this does not seem to make much of a difference, because in both cases the goods are in the care of the carrier. However, upon closely reading the Hague-Visby Rules, it turns out that a **Received for Shipment B/L** is not covered by the Rules. Art. I b which defines "contract of carriage" and Art. I e defines: *'Carriage of goods' covers the period from the time when the goods are loaded on to the time they are discharged from the ship.* In other words carriage of goods only applies to the time between loading the goods on board, till they are discharged from the ship. If parties want to include other periods of time, they should stipulate this in the contract of carriage.

Art III 3 of the Hague-Visby Rules states that the carrier shall issue a B/L if so demanded by a shipper. Art. III 7 states that the carrier shall issue a **Shipped B/L** if so requested by the shipper. Most B/Ls in the dry or liquid bulk trades are **Shipped B/Ls** and are covered by the Hague or by the Hague-Visby Rules.

67) Recourse

If the c/p contains a clause that stipulates that the B/L needs to have a specific clause, and the charterer fails to issue a B/L accordingly, the ship owner will have **recourse** to the charterer if non-inclusion of that particular clause in the B/L has a underlying link to a claim for cargo damage or loss. The ship owner also has **recourse** if cargo damage or loss is the result of mis-description of the goods on the B/L and the master had no way of knowing this.

Time charters usually (and voyage charters sometimes) contain an indemnity clause whereby charterers will indemnify owners against the consequences and liabilities of signing B/Ls "as presented" (see also headings: 3, 11, 13, 19 and 44).

68) Sales Contract and B/L

The process of transferring ownership of goods shipped under a B/L has to be in accordance with the terms of the **sales contract** between seller and buyer, or what their intentions were (see also heading 80).

69) Seaworthiness

Art III 1.(a) of the Hague-Visby Rules states the following:

1. The carrier shall be bound before and at the beginning of the voyage to exercise due diligence to

(a) Make the ship ***seaworthy***

Please note the ship needs to be found **seaworthy** before and at the beginning of the voyage. Nothing is mentioned about during the voyage.

Seaworthiness of a vessel is a term that is not strictly defined, but depends on the circumstances. It basically means that the vessel is considered fit to load and carry the cargo safely to the port of discharge; taking into account the various circumstances the vessel will operate under and the normal perils she may encounter. An informal test of seaworthiness is posing the question: "Would a prudent owner load and ship his own goods on his own vessel; knowing its characteristics and history, and being familiar with the perils she may encounter?" If the answer is no, chances are a court would consider the vessel **unseaworthy**.

The concept of **seaworthiness** is closely related to the requirements listed in the Hague or Hague-Visby Rules Art. III 1:

(b) Properly man, equip and supply the ship

(c) Make the holds, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage and preservation.

VERY IMPORTANT:

The above article is an "**overriding**" obligation. If the requirements in Art. III 1 (a, b & c) are not adhered to and there is cargo damage, the carrier loses the protection of the exemptions in Art. IV (2) a-q.

A vessel has to be manned by a minimum number of licensed officers and ratings. The master and officers need to have experience with the type of ship they are serving on. For example, you would not want to man a tanker with senior officers that have only bulk carrier experience. Masters and senior deck officers of tankers that load or discharge at SBMs need to have experience with such mooring operations. Skill and knowledge can also extend to such things as being familiar with stability calculations for a particular vessel. For example, in rough seas a deck cargo of timber may absorb up to 25% of water, which may result in the ship becoming top-heavy. A master or chief mate needs to know what to do in such circumstances. Tankers without a centre bulkhead may need special loading and unloading instructions to prevent her from capsizing due to excessive free surface effect, which causes a decrease of stability.

The crew needs to be medically fit and well-rested before their next watch. The ship needs to have all necessary "in-date" certificates. Furthermore it is necessary to have sufficient food, drinking water, supplies and spare parts on board. One area that always attracts a lot of attention by marine inspectors is the requirement to have up-to-date nautical charts and publications on board; as well as adequate and proper life-saving and fire-fighting equipment.

A specific vessel may be considered fit to carry a particular cargo, but she may be considered **unseaworthy** for loading something else. This last

example also pertains to the proper cleaning of holds and tanks. Certain products cannot be loaded unless all residues of a previous cargo have been removed. The same is true for insect infestation of dry cargo holds. In the old days, before containers, deck officers had to be familiar with a long list of what should not be stowed with what. Some obvious examples are: do not load wet cowhides on top of bags of rice or coffee; don't put heavy pieces of machinery on top of cartons of transistor radios (see heading 24 for guidelines on proper cargo handling).

A ship may be considered **seaworthy** with regard to receiving cargo while still at the dock, but she may be **unseaworthy** for the intended ocean voyage. A ship may be **seaworthy** for an ocean crossing during summer time, but not during winter season. On the other hand hurricanes happen in the North Atlantic during summer time. Departure with insufficient bunkers to reach the next bunker port of the intended itinerary may be considered **unseaworthy**; even if under a t/c the charterer is responsible for supplying the ship with fuel.

A vessel needs to have properly functioning cooling or heating installations on board to handle specific cargoes. For example, a banana carrier needs to make sure that her holds can be kept at a certain temperature for a certain period of time. For a tanker it may mean having proper functioning cargo heating equipment in place. For instance, para-xylene freezes at around 13°C (55.4°F). Certain high paraffin crude oils may need to be heated, to prevent solidifying. Loading gear and cargo pumps need to be in good condition to make the ship **seaworthy** (see also heading 24).

70) Set-off claim

In the USA, courts have ruled that unless stated differently in a c/p or a B/L, payment of freight is independent and separable from a counter claim for cargo shortage. In other words there can be no **set-off**. However, many tanker charter parties now contain **cargo retention clauses** that allow charterers to deduct the value of the cargo remaining on board (ROB) from freight. Most of these cargo retention clauses state that the cargo has to be **pumpable**, as determined by an independent surveyor, but generally speaking, oil cargo surveyors will not declare oil as **unpumpable**. Chapter 7 on Oil Measurement contains a lot of reasons for cargo ROB; many of them not attributable to the ship or its owner.

71) Sets of B/L

As already seen under heading 1, the master often signs more than one original B/L: *In witness whereof the master has signed __3 (THREE) ORIGINAL __Bills of Lading, all of this tenor and date; one of which being* ***accomplished****, the others will be void.*

Sometimes the cargo on board the vessel is sold to a new B/L holder, who wants delivery at a discharge port other than the one on the B/L. In that case ship owner (carrier) and charterer may agree to issue new B/Ls with the new discharge port. It is important to gather the **full set** of old B/Ls before the master signs new ones (see also heading 21).

L/C negotiating banks always require that the **full set** of B/Ls has to be submitted. To prevent problems as listed in the *BRIJ* case (see heading 38) it is important that the **full set** of NVOCC House B/Ls is exchanged for the **full set** of Master B/Ls; issued by the carrier that will actually carry the goods.

72) Shipped B/L

See heading 66.

73) Shipper's right to a B/L

The Hague-Visby Rules Art III 3 states:

After receiving the goods into his charge the carrier or the master or agent of the carrier shall, on ***demand of the shipper****, issue to the shipper a bill of lading showing among other things:*

See also Article VI of the Hague-Visby Rules, which allows parties to operate under "private" terms and conditions for special shipments. However, if they do so, the B/L needs to be non-negotiable.

74) Short form B/L

This is a B/L without all the terms and conditions of the contract of carriage printed on it, but instead refers to another document or agreement between carrier and shipper that does contain all the contract terms. The short form should not be used for "order" B/Ls, because a subsequent B/L holder would be uninformed about the terms and conditions of carriage.

75) Signing B/L "as presented"

See heading 3 and also 64 and 67.

76) Stale B/L or Documents

Expiration date of the L/C and latest presentation of documents is covered by UCP 500 in Art. 42 and 43. A L/C has to have a date and place of **expiration** for **latest presentation** of documents. In addition to this, a L/C that calls for presentation of a transport document has an **expiration** date for presentation of such document. If no such date is stated in the L/C, it is 21 days after shipment. Most banks consider "shipment" to mean within 21 days after the "on board" date on the B/L, and not the date the B/L was actually signed. In addition, a L/C usually states a "latest ship

date" which of course has to be earlier than the L/C expiration date. If documents are submitted later than 21 days after B/L "on board" date, or after the L/C expiration date, banks consider the documents **stale** and will not accept them for negotiation.

77) Stamping B/L

It is a good idea to stamp the Original B/Ls as: ORIGINAL and the non-negotiable ones as: NON-NEGOTIABLE.

78) Straight B/L

A **straight B/L** is non-negotiable as opposed to an "order" B/L, which is a document of title. Recent court rulings seem to suggest that even if cargo is shipped under a **straight B/L**, it still needs to be presented before discharge of the cargo, while under a Waybill mere identification of the cargo consignee is required (see also Introduction and headings 27, 38 (*RAFAELA S.* case) and 53).

79) Terms and Conditions

For the proper clause to incorporate the **Terms and Conditions** of the c/p into the B/L, see heading 14 (also heading 58: Paramount clause).

CODE	DEFINITION
EXW	Ex Works + named place
FCA	Free Carrier + named place
FAS	Free Alongside Ship + named (air)port of shipment
FOB	Free On Board + named (air)port of shipment
CFR	Cost and Freight + named (air)port of destination
CIF	Cost, Insurance and Freight + named (air)port of destination
CPT	Carriage Paid To + named place of destination
CIP	Carriage and Insurance Paid to + named place of destination
DAF	Delivered At Frontier + named place
DES	Delivered Ex Ship + named (air)port of destination
DEQ	Delivered Ex Quay + named (air)port of destination
DDU	Delivered Duty Unpaid + named place of destination
DDP	Delivered Duty Paid + named place of destination

Table 6.2: INCO terms and definitions

80) Terms of Trade

The International Chamber of Commerce (ICC) in Paris, France has compiled and distributed standardised Terms of Trade in the form of **INCO TERMS**; revised in the year 2000. Table 6.2 shows the terms used. The terms always have to be accompanied by the location to which they apply.

FOB	
Seller	**Buyer**
• Supplies the goods in conformity with the sales contract • Delivers the cargo to the named port and vessel at Seller's expense • Obtains an export license, if required, but at Buyer's expense • Provides a Certificate of Origin (CoO) if requested by buyer and at buyer's expense • Pays export fees and taxes, if applicable • Pays for export documentation, packing, storage, dunnage, heating/cooling, other; if applicable • Pays for checking, tallying and loading costs* • Procures a clean "on board" receipt, so buyer can obtain a B/L * Technically speaking loading costs apply to where the cargo passes the ship's rail (or manifold). Therefore stowing and trimming of grain is for Buyer's account. Sometimes the Seller pays for loading costs by selling FOBST (Free On Board Stowed and Trimmed). Please note, ST can also mean "Spout Trimmed." To avoid confusion, it is best to spell everything out in the Sales contract.	• Charters a vessel or books space on a ship and advises seller accordingly • Pays for the freight and possible demurrage costs • Issues loading and carriage instructions • Pays cost of obtaining CoO** • Pays costs of obtaining B/L** • Pays unloading cost (if not included in the freight) • Procures and pays for the cost of an import license, if required • Pays import duties ** Often the seller pays for these costs and includes them in the price of the goods sold. To avoid confusion, the Seller should prepare a pro-forma invoice that spells out who is responsible for what. (See Appendix 11.1a)
• Risk of loss or damage is transferred from seller to buyer as soon as the cargo passes the ship's rail/manifold at the loadport.	

Table 6.3: Free on Board (FOB)

Only the requirements under FOB and CFR/CIF sales are discussed here, since these are the terms most used for ocean bulk shipments:

**(*Table 6.4*) At first glance it seems odd that risk of loss or damage is transferred as soon as the cargo is loaded, since the seller pays for everything up till the time the cargo is discharged. However, transfer of risk ties in with transfer of title under a negotiable B/L. For example, the cargo may have already been sold before the ship left the load port, and risk of ownership transfers to the new B/L holder as soon as the cargo is loaded on board.

CIF terms of sale are the same as for C&F, with the additional requirement that the seller has to procure, at his own cost, a transferable insurance policy covering the cargo.

C&F = CFR	
Seller	**Buyer**
• Charters a vessel or books space on a ship • Supplies the goods in conformity with the sales contract • Delivers the cargo to the named port and vessel • Obtains and pays for an export license, if required • Provides a Certificate of Origin (CoO), if requested by buyer • Pays export fees and taxes, if applicable • Pays for export documentation, packing, storage, dunnage, heating/cooling, other; if applicable • Pays for checking, tallying, loading, stowing and trimming costs • Issues loading and carriage instructions • Furnishes buyer with a clean "on board" B/L at Seller's expense • Pays for the freight and possible demurrage costs	• Pays unloading cost (if not included in the freight) • Supplies the goods in conformity with the sales contract • Pays for the cost of the CoO* • Delivers the cargo to the named port and vessel • Procures and pays for the cost of an import license, if required • Pays import duties * Often the seller pays for these costs and includes them in the price of the goods sold
• Risk of loss or damage is transferred from seller to buyer as soon as the cargo passes the ship's rail/manifold at the loadport.**	

Table 6.4: C&F = CFR

Under FOB/C&F or CIF terms of sale, the name of the seller is usually listed on the ocean B/L and the buyer — or the buyer's bank — as the consignee. However, if sellers want to keep title to the goods, they can consign the goods to themselves. In case of a CAD sale (see Appendix 11.2), the name of the bank that will handle the CAD transaction should be listed as the consignee. If the goods are sold EXW (Ex Works or Ex Factory the seller may want to list themselves as shippers on the ocean B/L, but if they have already received payment for the goods and do not want to be involved in the ocean transportation part of the transaction, they may want to list the buyers as shippers.

81) Title

See Introduction and headings: 10,14, 47, 51, 78, 80.

Title is closely related to possession and to ownership. A document of **title**, such as a Bill of Lading, represents ownership rights in the goods.

This ownership, or **title** to the goods, can be transferred to somebody else by indorsing the B/L.

Art. I (b) of the Hague-Visby Rules states: *'Contract of carriage' applies only to contracts of carriage covered by a bill of lading or any similar document of* ***title****, in so far as such document relates to the carriage of goods by sea, including any bill of lading or any similar document as aforesaid issued under or pursuant to a charter party from the moment at which such bill of lading or similar document of* ***title*** *regulates the relations between a carrier and a holder of the same.*

This means that a B/L that is not a document of title, such as a Waybill or a Straight B/L, is not covered by the Hague-Visby Rules, unless stated specifically in the contract of carriage that the Hague-Visby Rules will apply.

82) Transshipment

In the Liner trade big container ships only call on large ports to load or discharge their cargo. Containers to or from smaller surrounding ports are shipped by smaller, so-called feeder vessels. For example, a container originates in Bremen, Germany, where it is loaded on a feeder vessel to Rotterdam. There the container is loaded on board a large container ship to Singapore. From there the container is shipped on a smaller ship to Palembang on Sumatra, Indonesia. In this case the container is **transshipped** in Rotterdam and in Singapore; not counting perhaps inland modes of transportation, such as by barge, truck or railway. The whole voyage from the seller somewhere in Germany to the buyer somewhere in Indonesia is usually under one B/L, with the right of **transshipment**. This is convenient for buyer and seller. However, as seen under heading 23 in connection with deviation, and under heading 38 with regard to who is the shipper and who is the consignee on the B/L of **transshipped** goods, it is important to understand beforehand how the goods will travel. For **transhipment** of goods covered by a L/C, see UCP article: 26 b.

83) UCP

Since 1933 the International Chamber of Commerce (ICC) has published a set of rules entitled: Uniform Customs and Practice for Commercial Documentary Credits (UCP) to deal with Letters of Credit (L/C). As of this writing, the latest revision has been in effect since 1 January 1994 and is contained in ICC publication no. 500. The Rules facilitate clear and unambiguous application of uniform standards. Bankers, importers, exporters, traders and transport executives rely heavily on the Rules for clear interpretation of the Letter of Credit process.

The L/C usually contains a statement such as: This documentary credit (=L/C) is subject to ICC publication no. 500. See chapter 11 for a more detailed treatment of L/Cs.

84) Unclean B/L

See heading 15.

85) Unlawful Act

A good example of an **unlawful** act is the acceptance of a Letter of Indemnity (LoI) in exchange for the master issuing a clean B/L (see heading 15). A contract to indemnify, like the above-mentioned LoI, cannot be enforced if the action that gave rise to a claim, was deliberately **unlawful**.

86) Waybill

See Introduction.

87) War

Article IV (2) (e) of the Hague-Visby Rules states: Neither the carrier nor the ship shall be responsible for loss or damage arising or resulting from:.....

e) Act of **war**.

War is not defined in the Hague-Visby Rules. For a more detailed description of war, please turn to chapter 5 clause 20 vi: **BIMCO STANDARD WAR RISKS CLAUSE FOR VOYAGE CHARTERING, 2004 Code Name: VOYWAR 2004.**

88) Wording of B/L

See heading 2, 15 and 48.

To conclude, it is necessary to have a thorough knowledge of the express and implied warranties in B/Ls and charter parties. When in doubt do not hesitate to consult reference books or relevant commercial advisers who may include the master, commercial manager, insurance manager, agent, brokers, P&I Club representative, company lawyers or colleagues.

Chapter 7

OIL CARGO MEASUREMENT

A man who is always ready to believe what he is told, will never do well.

Old Roman proverb

This chapter covers some basic concepts about measuring oil cargoes, with emphasis on proper procedures as a defence against claims for shortage and/or contamination. At first glance it seems rather simple to measure a quantity of oil in either a shore tank or in a ship's tank. The basic principle is to measure the level of the liquid in the tanks and to determine its volume by way of tank calibration tables. This volume is then reduced to a volume at a standard temperature such as 60°F or 15°C. Volume is usually measured in cubic metres (m^3) or in barrels (bbls). At the same temperature 1 m^3 = 6.28981 bbls. Cargo can also be measured by weight in metric tons.

The American Petroleum Institute (API) and the British Institute of Petroleum (IP) have developed standards for oil cargo measurement, which are printed in a wide variety of publications. The 2003 API catalog of Publications, Programs and Services with prices can be located on the Internet at:

http://api-ep.api.org/filelibrary/ACF1BE.pdf

The API standards are contained in Chapter 17: Marine Measurement. Chapter 17 is divided in the following sections:

17.1 Guidelines for Marine Cargo Inspection.

17.2 Measurement of Cargoes on Board Tank Vessels.

17.3 Guidelines for Identification of the Source of Free Waters Associated with Marine Petroleum Cargo Movements.

17.4 Method for Quantification of small Volumes on Marine Vessels (OBQ/ROB).

17.5 Guidelines for Cargo Analysis and Reconciliation.

17.6 Guidelines for determining Fullness of Pipelines between Vessels and Shore Tanks.

17.7 Recommended Practices for developing Barge Control Factors.

17.8 Marine measurement — Guidelines for pre-loading Inspection of Marine Vessel Cargo Tank.

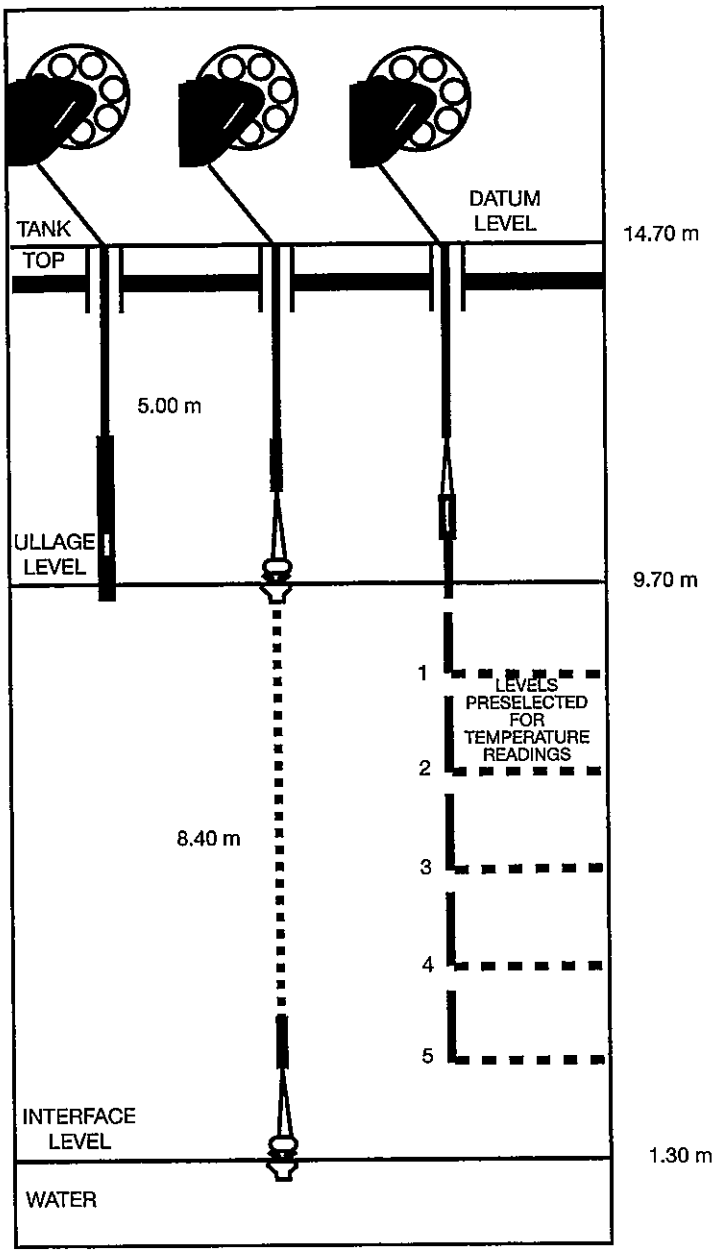

Figure 7.1: Measuring a cargo tank for ullage, interface and temperature.

Figure 7.1 shows a diagram of an oil tank and the various ways its contents can be measured. The tape on the left measures the **ullage** of the tank. This is the distance from the liquid level to the **datum level**. It is basically the depth of the tank minus liquid level. Unless the tank is almost empty, it is easier — and less messy — to measure the distance above the liquid level, than to lower the tape all the way down to the bottom and end up with an oily tape. In our example the ullage is 5.00 metres. The reverse of the ullage is the level of the liquid, or the **sounding** or **innage**. In our example it is 14.70 – 5.00 = 9.70 m.

Ullages or soundings can be measured with an electronic measuring tape, or a so-called **UTI**[1] (**Ullage Temperature Interface**). In addition to measuring ullage, it also measures temperature and the interface level between oil and water. If it is expected that a cargo may have a different temperature at various levels, it is recommended to take several readings at different tank levels and to average them for volume correction purposes.

Normally a ship's tank has only one main sounding point but, for ease of explanation, fig. 7.1 shows three ullage openings. The example shows a

[1] The most prominent manufacturers of UTI and Vapour Locks are Tanksystems in Swizerland at website: http://www.tanksystem.com/products/products.htm and MMC of Inwood, NY at website: http://www.mmcintl.com/index.html

tank with a depth of 14.70 metres from the bottom of the tank to the top of the ullage opening. This is the **datum level** or **reference point** on which the tank calibration table is based. When a cargo inspector takes ullages, it is important to note the reference height. It is often painted on deck next to the ullage opening. If it is not, it may be necessary to measure the distance from the bottom of the tank to the reference point and to compare this value with the reference point stated in the **calibration tables**.

Especially on older ships, the original ullage opening reference point may have been altered after installation of a **closed ullaging system** with **vapour locks**. The new vapour locks are either installed on a short standpipe on deck, on top of the ullage opening, or on top of a cargo tank hatch. Proper allowance needs to be applied to observed ullage.

It is also important to note the distance between the zero-reference point and the window on the portable UTI where the ullage level is read. In most instances this is around 50 cm. The exact distance needs to be subtracted from the ullage obtained.

The tank in fig. 7.1 has 1.30 metres of water. This is not normal for a regular cargo tank, but it can be quite common for a slop tank that serves as a collection reservoir for tank washings mixed with oil. After a few days the water settles out on the bottom and the oil floats on top.

Most UTIs work on the principle of sensors embedded in the tip of the sounding bob, connected to a capacitor. In air or vapour, conductivity is low or non-existent, but in oil or in water a weak current will run between the sensors. Depending on the medium, a different audio signal is generated. The pattern of the beep tells the operator whether the bob is in air or vapour, in oil, or in water. As soon as an operator hears a change of the audio, the tape is pulled up a bit till the sound stops and then lowered again till it starts again. This way an accurate tank level reading can be obtained. The ullage level is read from the tape through the UTI's window.

Another way to measure water under oil is to smear **water-detecting paste** on the UTI bob, or on a separate gauging rod. When the paste comes into contact with water instead of with oil, it changes colour. For example if the bottom of the bob, or rod is lowered to the tank bottom and shows 5 cm of red paste, there is 5 cm water in the tank. Many cargo inspectors use the paste method, because it is considered more reliable than interface detection by way of a UTI.

A UTI can also be used during loading operations to alert ship's staff that the tank has been filled to a certain level. For example the tape can be lowered to 2.00 metres while the liquid level is still below that. As soon as the level reaches 2.00 metres, the UTI starts to beep. The operator can either raise the tape to a new level, or close the valve(s) and stop loading that tank.

UTIs come with tapes from 15 to 50 metres long. They can be graduated in inches or in centimetres, or both. Inches can be read in 1/16th and metric sizes to 1 mm. Temperatures can be read from the UTI in degrees Celsius or Fahrenheit. The gastight and intrinsically safe housing contains the (9V) battery. The bob and lower end of the tape are stored and protected by a stainless steel tube extending about 50 cm from the housing. The tube has a special fitting that can be attached to vapour control standpipes to conduct closed gauging. Most manufacturers guarantee accuracy of ullage or interface detection of 2 mm. It is important to remember not to drop the bob hard to the bottom of the tank, because it may damage the sensitive tip. Some of the newer UTI models have a digital read-out from an LED window. UTIs need to be calibrated and checked regularly by authorised testing companies that will issue a calibration certificate.

Many modern tankers — in addition to portable gauging tapes — have fixed gauging instruments that can be read at a remote location; such as in the cargo control room. The oldest models work on the **float** principle. Unfortunately a float sometimes gets stuck in the sounding pipe, which leads to erroneous readings.

A better system is based on two electrodes in a tube or embedded in a tape; running from bottom to top of the tank. Submerged in liquid, a weak electric current runs between the two conductors, which is translated into tank levels. The more sophisticated systems have **sensors** at various distances to measure pressure differences to determine the relative density of the cargo. By way of special vapour sensors, an allowance is made for the effect of vapour pressure of the cargo and/or inert gas vapours in the top of the tank. This system also measures cargo temperature at various tank levels.

Another system is based on **radar**. A special transmitter is housed on top of a tank that measures the distance the radar beam travels back and forth between the unit and the liquid level. Half this distance is the ullage. This system works fine with tanks that are full or partially loaded. However, when almost empty, steel parts of the tank bottom structure start to emerge from the liquid, and throw off the radar readings to the point of becoming unreliable. Of course, it does not detect water/oil interface and temperature. To measure this, the system needs auxiliary equipment. Overall, radar is very reliable for ullaging and seems to require little maintenance. It is important for the cargo officer to know the distance from the radar-housing unit and the reference height of the tank. For example, a tank may be 98% full at 30 cm below the deck. However, if the radar unit is mounted 1.20 m above deck, it reads an ullage of 1.50 m. This may give the misguided impression that there is still plenty of room in the tank.

Even though ullages obtained by remote gauges are often quite accurate, determination of cargo quantity for Bill of Lading and/or custody transfer and for Customs purposes is still almost exclusively based on gauging each compartment by hand; either with a regular tape or with an UTI. Sampling is done by hand as well as by an automatic drip sampler at the ship's manifold or in the shoreline.

Cargo Calculations

Converting a volume of dry cargo to weight or the other way around is rather simple because dry cargo does not noticeably expand or contract at different ambient temperatures. However, the volume of a fluid depends on its temperature. The volume of petroleum products is reduced to volume at a standard temperature. To make the corrections Petroleum Measurement Tables are used.

Whenever tables are mentioned in this chapter (other than actual printed tables as part of the text), reference is made to the ASTM (D 1250-80) Petroleum Measurement Tables. The main volumes are:

Volume	Table	Description
I	5A & 6A	Volume correction factors of Crude Oils to 60°F against API
II	5B & 6B	Volume correction factors of Oil Products to 60°F against API
VII	53A & 54A	Volume correction factors of Crude Oils to 15°C against density
VIII	53B & 54B	Volume correction factors of Oil Products to 15°C against density
XI/XII	1, 2, 3, 4, 8, 9, 10, 11, 12, 13, 14	Conversion tables entered with API gravity
	21, 22, 26, 27, 28, 29, 30, 31, 33, 34, 51, 52, 56, 57, 58	Conversion tables entered with relative density and density

Table 7.1: ASTM Petroleum Measurement Tables

It is important for tanker officers and cargo surveyors to note which tables have been used for cargo calculations by shore terminals, so that possible cargo shortage claims can be resolved by using the same tables at both ends of the loaded voyage.

Prior to 1980, tables 6 and 54 were used for crude oil as well as for dirty and clean petroleum products. However, all these product groupings have quite different **coefficients of expansion** on which the **Volume Correction Factors** (**VCF**) are based. ASTM D 1250-80 Volume X

explains in great detail how the VCF has been calculated and how its values have been compiled.

Old tables 6 and 54 have been recalculated and reissued as tables 6A & 54A for crude oils, 6B & 54B for petroleum products. Tables 6C, 24C and 54C are used for fluids with a known Thermal Expansion Coefficient to determine volume at 60°F with a high degree of accuracy. Table D-1555 lists volume correction factors to 60°F for specific industrial aromatic hydrocarbons such as: benzene, xylenes, styrene and toluenes. Some producers compile their own volume correction tables for custom-made products that are shipped to a particular client.

There are also certain waxy crude oils that do not have accurate VCF values and loading terminals may use modified tables. Also bear in mind that new crude oils come onto the market all the time and their characteristics have not been included in the parameters on which the VCF tables have been based. Finally, in some trades and for certain products, VCF corrections may be based on other standard temperatures than 15°C or 60°F.

In some parts of the world, terminals still use old table 6. At temperatures over 60°F this results in an overstatement of quantity as shown in table 7.2. For example a certain crude oil with API 30°, loaded at 120°F, but reduced to 60°F, will show a 0.16% higher volume than new table 6A. For a 2,000,000 bbl VLCC crude oil cargo this overstatement is 3,200 bbls. At $30 per bbl, this represents an error of $96,000.

	% over actual at 60°F	
Crude Oil	90°F	120°F
API 20°	.01	.04
API 30°	.07	.16
API 40°	.09	.21
Products		
API 20°	.06	.14
API 30°	.04	.11
API 40°	.19	.41

Table 7.2: Average error between old table 6 and new table 6A

Terminology (see also "NOTES" at the beginning of chapter 2):

"**Density**" referred to in the ASTM tables is based on mass, or weight in a vacuum. If we say a particular crude oil has a density of 0.8469, it means that 1 m^3 at 15°C weighs 0.8469 mt or 846.9 kg in a vacuum. For conversion from API to density or the other way around, use table 3. Density of 0.8469 at 15°C is equal to API 35.5 at 60°F. Please note the listing for density is actually x 1,000. For example API 33.0 has a density

of 0.8597, but it is listed as 859.7.

Cargo "floats" in air and therefore it weighs slightly less than in a vacuum. To make the conversion from mt in a vacuum to mt in air, use ASTM table 56.

Relative Density (r.d.) is the relationship between the weights in a vacuum of equal volumes of oil and of pure water at identical temperatures.

API gravity is for 60°F. To determine API when Relative Density is known, use formula:

API = (141.5/r.d.) – 131.5 (60/60°F*)

* *60/60°F means that the weight of one m³ oil at 60°F is compared to the weight of one m³ of pure water at 60°F; both weighed in a a vacuum.*

Here is an example:

A particular grade of Diesel oil has a **relative density** (r.d.) of 0.8602

Q: What is the API:

A: 141.5/.8602 – 131.5

164.5 –131.5

API = 33.0

If API is known you can find **r.d.** with the same formula, but reversed:

R.D. = 141.5 /(API +131.5) (60/60°F)

To find the Volume Correction Factor with relative density, use ASTM tables 24A and 24B. Tables 6A & B and 54A & B are used primarily for tankers.

ASTM volume X gives detailed explanations on how all the petroleum measurement tables have been compiled. It is rather confusing as table 7.3 demonstrates.

	Relative Density		Density (mt/m³)	
Temp.	T° F/60°F in vacuum	T° F/4°C in vacuum	True Density in vacuum	Apparent Density in air
4°C	1.0010	1.0000	1.0000	0.9989
15°C	1.0001	0.9991	0.9991	0.9980
60°F	1.0000	0.9990	0.9990	0.9979

Table 7.3: The relationships between Relative Density and Density at various temperatures

The table shows that the various "density" factors are rather close together. For small volumes it does not matter much if you pick the wrong

value. However, for large volumes — such as for oil products — a small error will result in a substantial volume error. Therefore it is obligatory to use the proper ASTM tables.

Cargo calculation

Here is an example of determining a particular quantity of crude oil at standard temperature and its weight in metric tons. There are basically two ways to determine standard volume in the marine industry:

1) In barrels at 60°F with API (Calculation in Standard measurements).
2) In m^3 at 15°C with density (Calculation in Metric measurements).

Your tanker has loaded 523,963 bbls of crude oil with an ambient temperature of 68°F (in the ship's tanks) and with an API of 23.00. There is no Free Water under the cargo.

Q: How much is the Gross Standard Volume (GSV) and what is the weight of the cargo?

First we will calculate using Standard measurements.

To reduce the volume at ambient temperature to 60°F, we need to use table 6A (the A is for crude oils) with API 23.0 and temperature 68°F. This gives a VCF of 0.9967. Multiply the quantity at ambient temperature with the VCF to get GSV at 60°F.

To find the weight of the cargo, we need to find the mt/bbl in table 13. This is 0.14529. Multiply this with the GSV to arrive at 75,875.4 mt.

STANDARD		
Total quantity in the ship's tanks	523,963	bbl at ambient temp.
Temperature	68.0	°F
API	23.0	
VCF (table 6A)	0.9967	
Gross Standard Volume	522,233.9	bbls at 60°F
Table 13	0.14529	mt per bbl
Total weight	75,875.4	mt in air

Now we will use Metric measurements for the same cargo.

As long as it is at the same temperature, barrels can be converted into m^3 by dividing bbls by 6.28981. This results in 83,303.5 m^3.

Instead of using API in "Standard", we use density in "Metric". Density is in a vacuum and can be found in table 3 against the corresponding API. For API 23.0 we find density of: 0.9153.

Degrees in Fahrenheit (°F) can be converted into degrees Celsius (°C) by formula, or by looking into table 2. 68°F is equal to 20°C.

To determine the VCF, we use table 54A and find: 0.9963

By applying the VCF to the volume in m^3 at ambient temp, we find volume in m^3 at 15°C. (Please note GSV for "Standard" is at 60°F and for "Metric" it is at 15°C (= 59°F) a difference of 1°F. Therefore you cannot use the conversion factor of 6.28981, because temperatures are not the same. Table 52 can be used to make the proper conversion)

To find weight in mt, gross standard volume needs to be multiplied by the density. In our case: 82,995.3 m^3 x 0.9963 = 75,965.6 mt. However, this is in a vacuum. To convert to weight in air, use table 56 to find weight factor 0.99880. Since the cargo "floats" in air, weight in air is always less than weight in a vacuum. By applying the weight factor we find 75,874.4 mt (in air).

METRIC		
At same temp. divide 523,963 bbls by 6.28981	83,303.5	m^3
°C = (°F -32) x5/9 (or see table 2)	20.0	°C
VCF table 54A	0.9963	
Gross Standard Volume	82,995.3	m^3 at 15°C
Density (in vacuum) at 15°C (table 3)	0.9153	
Weight in a vacuum	75,965.6	mt in vacuum
Weight factor (table 56)	0.99880	
Weight in air	75,874.4	mt in air
Litre Weight = Dens. x table 56 x VCF	0.910819	
Litre Weight x m^3 at ambient temp.	75,874.4	mt in air

This is very close to the value that was calculated by using "Standard" measurements. The difference of 1 mt. is due to rounding of table values. Comparing metric tons calculated in "Standard" and in "Metric" is an easy way to see if the correct table values have been selected and if the various calculations have been done correctly.

Many modern tankers have computers connected to automatic gauging and temperature sensing equipment. This, combined with software containing the ASTM tables, or formulas for the coefficient of expansion, shows corrected cargo volumes and weights every few seconds. This is easier than having to look up correction factors in the tables and perhaps having to interpolate* between values.

* *For the VCF it is not recommended to interpolate between values in the current printed tables, since the computer has already selected rounded formula values. With regard to selecting the proper VCF ASTM table X states: "Interpolation between either temperature or gravity is not intended since there is no practical method of interpolation that will produce the accuracy obtainable from the Standard."*

After load. [XX]	Bef. disch. [ ]		B/L	77,415.0	mt in air		Grade C/O	Terra Nova				API	32.2	grav. in air		
Date	29-Feb-2004		VEF	0.99835			Draft Fwd/Aft	11.98/11.98	m			Table 3	0.8639	dens. @ 15°C in vac.		
Vessel	*AFRA QUEEN*		OBQ @ 15°C	4.8	m³		List/Sag/Hog	0/0/0	cm			Table 56	0.99875	from mt in in air	vac. to mt	
Port	Come-by-Chance		OBQ @ 60°F	30.1	bbl		Salinity water	1.025				LW at 15°C	0.86282	mt/m³ in air		
Berth	Whiffen Head						Sea condition	calm				Table 13	0.13712	mt per bbl		
												Table 1	1.0160474	from lt to mt		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Vessel's			x 6.28981		Free Water				Temperature		Table 54 A	GSV @ 15°C	in air	Table 6A	GSV 60°F	
Tank	Corrected Ullage m	TOV m³	TOV bbl	Dip cm	m³	bbl	GOV m³	GOV bbl	°C	°F	VCF 15°C	m³	mt	VCF @ 60°F	bbl	
1P	2.16	7,016.2	44,130.6	2	7.0	44.0	7,009.2	44,086.6	37.9	100.2	0.98106	6,876.4	5,933.1	0.9815	43,271.0	
1S	2.19	6,995.0	43,997.2	2	7.0	44.0	6,988.0	43,953.2	38.1	100.6	0.98089	6,854.5	5,914.2	0.9813	43,131.3	
2P	7.69	6,487.0	40,802.0	3	16.5	103.8	6,470.5	40,698.2	38.4	101.1	0.98064	6,345.2	5,474.8	0.9811	39,929.0	
2S	7.66	6,500.0	40,883.8	0	0.0	0.0	6,500.0	40,883.8	38.6	101.5	0.98048	6,373.1	5,498.8	0.9809	40,102.9	
3P	2.55	9,256.0	58,218.5	0	0.0	0.0	9,256.0	58,218.5	38.5	101.3	0.98056	9,076.1	7,831.0	0.9810	57,112.3	
3S	2.50	9,282.0	58,382.0	3	14.8	93.1	9,267.2	58,288.9	38.5	101.3	0.98056	9,087.0	7,840.4	0.9810	57,181.4	
4P	9.53	5,495.0	34,562.5	0	0.0	0.0	5,495.0	34,562.5	36.6	97.9	0.98214	5,396.9	4,656.6	0.9826	33,961.1	
4S	9.12	5,717.0	35,958.8	0	0.0	0.0	5,717.0	35,958.8	36.1	97.0	0.98255	5,617.2	4,846.6	0.9830	35,347.5	
5P	4.48	8,224.0	51,727.4	0	0.0	0.0	8,224.0	51,727.4	38.5	101.3	0.98056	8,064.1	6,957.9	0.9810	50,744.6	
5S	4.47	8,227.5	51,749.4	0	0.0	0.0	8,227.5	51,749.4	38.4	101.1	0.98064	8,068.2	6,961.4	0.9811	50,771.3	
6P	2.22	9,086.4	57,151.7	0	0.0	0.0	9,086.4	57,151.7	37.8	100.0	0.98114	8,915.0	7,692.0	0.9816	56,100.1	
6S	2.23	9,075.2	57,081.3	0	0.0	0.0	9,075.2	57,081.3	38.6	101.5	0.98048	8,898.1	7,677.5	0.9809	55,991.0	
Slp PS	20.15	1.5	9.4	0	0.0	0.0	1.5	9.4	38.0	100.4	0.98098	1.5	1.3	0.9814	9.2	
Slp C	20.51	1.2	7.5	0	0.0	0.0	1.2	7.5	38.0	100.4	0.98098	1.2	1.0	0.9814	7.4	
Slp SB	0.00	0.0	0.0	0	0.0	0.0	0.0	0.0	38.0	100.4	0.98098	0.0	0.0	0.9814	0.0	
Lines		94.3	593.1			0.0	94.3	593.1	38.0	100.4	0.98098	92.5	79.8	0.9814	582.1	
						0.0							0.0			
						0.0							0.0			
On board		91,458.3	575,255.2		45.3	284.9	91,413.0	574,970.3				89,667.0	77,366.5	mt	564,242.2	bbl
											+ FW	45.3	39.1	mt	284.9	bbl
											- OBQ	4.8	4.1	mt	30.1	bbl
											TRV	89,707.5	77,401.5	mt	564,497.0	bbl
														Table 13	77,403.8	mt
												B/L	77,415.0	mt		
												B/L - ship flg.	13.5	mt		
												% of B/L	0.0174	%		
												B/L	76,192.3	Long ton		
For vessel:					For terminal:							Cargo surveyor:				
Signature _____					Signature _____							Signature _____				
Name/rank _____					Name/pos. _____							Name _____				

Table 7.4: Ullage Calculation spreadsheet

Table 7.4 shows an example of an oil cargo calculation based on a shipment carried by an AFRA-max tanker. Cargo quantity can be calculated in m^3 at 15°C, or in barrels at 60°F. For the first option we use ASTM table 54A and for the latter ASTM table 6A. It seems that every shipping company, every tanker and every cargo inspection company uses a different calculation format. However, all ullage sheets pretty much contain the same information. The example in table 7.4 is a combination of the two calculations on one sheet, metric and standard. By having both formats on one sheet, is easier to convert from one to the other. For example, volume may be required to be in bbls, but the ship's strapping table gives volumes in m^3. Furthermore, temperatures may have been observed in °F, but for volumes reduced with table 54, we need to use °C.

As seen above, "metric' Gross Standard Volume is for 15°C, but for "Standard" it is for 60°F; a difference of 1°F. All this makes it hard to compare volumes calculated in "Metric" to those in "Standard." However, if volumes obtained with table 54A and with table 6A are both converted into metric tons, they are the same (except for small rounding errors) because weight is not noticeably influenced by temperature.

Ullage calculation spreadsheet (see table 7.4)

First we'll look at the top section of the page. In the left hand top corner we check off what the ullage calculation is after loading or before discharge. Usually there is a difference, mainly in the quantity of water having dropped out of the cargo and having settled at the bottom of the ship's tank during the voyage and also due to cargo loss caused by evaporation and venting. Since most tankers have a closed ullage system, escape of vapours should not be a problem, unless the cargo has high **Reid vapour pressure**. In our example we find 45.3 m^3 of Free Water (FW) right after loading (see col. 6 of the spreadsheet). This is somewhat high and the master should issue a Notice of Protest.

Furthermore we list the date, name of the vessel, port and berth in the top left-hand corner of the spreadsheet.

The next block gives the Bill of Lading figure to make a comparison between shore and ship's figures at the end of the ullage calculation. The B/L figure is usually based on shore figures. However, if the B/L quantity differs by more than a few metric tons from ship's calculations, the master should issue a Notice of Protest before he signs the B/L.

Also listed is the **Vessel's Experience Factor (VEF)**. This value is the sum of the ship's loaded figures for a number of recent voyages, divided by the sum of B/L figures. For instance if the vessel in our example loaded a total of 8,848,895 bbl for the last 19 (qualifying) voyages, and the total B/L figure shows 8,863,541 bbl, the VEF factor is 0.99835.

Only certain voyages are included in the VEF. If for some reason there is a large difference — for example more than the **standard deviation** — the trip is not included in the VEF. Voyages for cargo received from a lightered vessel are usually not included either, because the VEF is supposed to compare ship to shore figures; not ship to ship. It has to be borne in mind that the VEF can change over time. Be especially alert after the ship has been in drydock and may have undergone cargo tank and/or pipeline alterations. Sometimes cargo tanks are re-calibrated after they have been altered. For example tanks on chemical tankers that carry high value cargo, are sometimes calibrated by filling them up with water, measured with an accurate meter to determine proper tank volume.

Legally speaking the VEF does not mean anything. Due to the many variables it is not to be used as a factor in custody transfer calculations. It may only be fairly accurate if a particular ship loads regularly at the same terminal from the same shore tank(s), via the same dock lines and there appears to be a consistent cargo variation between ship and shore.

Sometimes the VEF is used as a loss control tool, to help identify where losses may have occurred during the voyage. The proper way to apply the VEF (for comparison purposes) is to divide ship's figures by the VEF.

There seems to be anecdotal evidence that a majority of tank ships show less cargo loaded than B/L figures. This is odd, because mathematically speaking, some ships should show more and some should show less cargo than shore figures.

The ***Institute of Petroleum*** *(IP) in the UK has an excellent website at: http://www.oil-transport.info/. By clicking on Voyage Data you can find a list of crude oils with average outturn gains and losses as compared to B/L figures. Of course, outturn figures are not the same as on-board quantities at the load port, but it can give an indication if certain shore terminals consistently overstate B/L figures and/or if there are consistent losses due to evaporation during transit.*

The IP site also has a long list of crude oils and their assays. It shows API/Gravity, RVP, Wax content, Pour Point and Cloud Point, Viscosities, min. loading and discharge Temperatures, COW recommendations, H_2S and Benzene content.

In our spreadsheet the **On Board Quantity** (**OBQ**) is listed as well. This is the oil already on board before loading. **ROB** (**Remaining On Board**) quantity is the oil left on board after discharge from the prior trip. OBQ and ROB are usually the same oil, but a different quantity. For instance, a ship may show 20 bbl ROB quantity after discharge, but at the load port OBQ may be 40 bbl. The most likely reason is run-off from the bulkheads during the ballast voyage from the last discharge port to the next load port.

A contributing factor to ROB quantity is caused by shore installations draining or blowing back their dock lines, loading arms or hoses back to

the ship after completion of discharge. If that is the case, an inspector should gauge the ship's tank that will receive the hose drainings prior to blow-back, so the vessel will receive proper credit for having pumped off the complete cargo. After hose draining or blow-back, the remaining ship's cargo tanks will be gauged to determine total ROB quantity. Inspectors re-gauge the tank that has received the blow-back and note the volume "**as reference**" on the ROB sheet.

Before commencement of loading, the OBQ (On Board Quantity) from the previous trip is listed and its volume is reduced to either m^3 at 15°C, or to bbls at 60°F. Some inspectors just use the OBQ figures uncorrected for temperature, since temperature correction applied to a small amount does not have a measurable effect. In our example OBQ quantities are 4.8 m^3 or 30.1 bbl.

At the time when most crude oil tankers did not have **Segregated Ballast** tanks, water ballast was carried in **Clean Ballast** tanks. Rather than pump the ballast (and the oily slops from the cargo tanks) overboard and pollute the oceans, clean water was drained from under the oil and the new cargo was "**loaded on top**" of oily slops. This way the buyer of the cargo obtained some extra barrels of crude oil for the price of the freight. However, a lot of refineries don't want water in their distilling units and are not very happy with "watery" OBQ. A few barrels of pure oil OBQ per tank are ok, but if the oil is mixed with tank wash water, it should be transferred to a separate slop tank that will not be used for cargo. In that case OBQ will not be deducted from the received cargo figure, but is listed on cargo surveyor's ullage sheets "**as reference**." Of course, charterers of clean petroleum products, chemicals and lubricating oils demand completely clean and dry ship tanks; free from all residues from previous cargoes and/or wash water, before cargo is allowed to be loaded.

The next block in fig. 7.4 lists the **grade** of oil and the ship's draft, possible list, sag or hog, the salinity of the water in which the ship floats and sea condition. It is important to note the correct ship's **draft**, because as seen in the next chapter, the cargo on board can be determined by draft survey. This extra ability to measure cargo quantity is an advantage that ships have over shore terminals. On the other hand, the quantity of oil in a particular shore tank can be measured by ullaging and again by a calibrated meter when the oil is transferred to another tank, or into a pipeline.

Very few loaded tankers come in port with a **list**. If they do, it usually means there is something very wrong; like the cargo having leaked from the main cargo tanks into the segregated ballast tanks without offsetting ballast on the other side. It is not unusual for a loaded ship to have a slight **trim** by the stern while at sea, because it puts the propeller deeper in the water; resulting in higher speed or less fuel consumption. However, most tanker charterers stipulate that a vessel needs to arrive at the discharge

port "**on-even-keel**". If there is trim while the ship is gauged, a correction needs to be made for observed tank levels by way of special trim tables that are included in the ship's regular tank calibration or **strapping tables**.

Hog and **Sag** pertain to the shape of the vessel. If cargo is in fore and aft tanks, but not in the middle, the ship will most likely develop a so-called cat's back or **hog**. If most of the weight is in the middle, the ship may develop **sag**. In the next chapter we will discuss how to make corrections for the effect of hog and sag.

It is also important to note if the ship was moving when ullages were taken. For example when a port is exposed to heavy **swell**, or if the ship is tied to an SBM, or is involved in lightering it is not easy to obtain proper readings, unless the ullage opening is in the centre of the tank. However this is seldom the case. If it is expected that the cargo is moving back and forth, or from side to side, it is best to take multiple ullage readings and to take the average.

In the top right-hand corner of table 7.4 the **gravity** of the cargo in **API** is listed. The corresponding density can be found in table 3 based on API. As mentioned before, **density** is mt/m^3 in **a vacuum**. Under USA laws — and in many other countries — weight for commercial purposes needs to be stated in air; not in a vacuum. Table 56 lists the conversion factor from mt in a vacuum to mt in air. Density multiplied by weight factor of table 56 is 0.86282 in our example. It is mt (in air) per m^3.

Table 13 is used to convert bbls at 60°F for a particular API into mt. In some countries buyers want to know the quantity in long tons (lt) instead of in metric tons. A long ton weights 1.0160474 metric ton.

Ullage sheet terminology

TOV: Total Observed Volume. It is the total liquid quantity in the tank, including OBQ, Free Water and **Sediment**. Suspended sediment is usually in the form of fine sand and is not to be confused with loose dirt and scale at the bottom of the tank. Suspended water — as opposed to Free Water — is an integral part of the cargo (primarily crude oils) and can turn into sludge when it bonds with suspended impurities. Sediment and suspended water (S&W) quantity is determined by a laboratory and is expressed as a percentage of the cargo. For example S&W is 0.2% by weight or by volume. S&W is part of the cargo over which freight has to be paid (see ASBATANKVOY clause 2 in chapter 5).

FW: Free Water. This is water that may have been loaded as water, or it may have dropped out of the cargo during the ship's voyage. In almost all cases water is heavier than oil, so FW settles at the bottom of the tank. Its quantity can be determined with the UTI interface method or with water finding paste. For claim purposes Free Water should be sampled if

possible, so its source may be identified.

GOV: Gross Observed Volume. This is the TOV volume at observed temperature minus Free Water.

VCF: Volume Correction Factor. It is the factor that reduces the volume at observed temperature to standard temperature (to 15°C with table 54 and to 60°F with table 6).

GSV: Gross Standard Volume. It is the GOV observed volume reduced to the standard temperature (15°C or 60°F).

TCV: Total Calculated Volume. It is the GSV + FW.

TRV: Total Received Volume: It is TCV – OBQ.

NSV: Net Standard Volume. It is the GSV corrected for S&W.In a competitive oil market, some buyers are able to negotiate NSV, where they only pay for the actual oil (dry barrels) without Sediment and Free Water.

We will now discuss the actual ullage calculation spreadsheet in fig 7.4. For ease of explanation we have labeled the various columns from 1 to 16:

Column 1 lists the vessel's cargo compartments; including slop tanks and cargo lines if they contain product. The volume of the cargo lines is either included in the tank volume in the strapping tables, or it needs to be added separately under the heading: **Lines.** If one or more slop tanks contain OBQ that is not to be discharged as cargo, it should be excluded from the ullage calculation and be listed "**as reference.**"

*In our example the Port slop tank has only 1.5 m³ of OBQ. However, chances are that the chief officer will use this tank for **COW** and/or for **stripping**. For COW operations it is filled partly with crude oil from a regular cargo tank that has no water bottoms (water can cause static electricity when expelled by the COW nozzles). Slop tanks are also used to collect cargo during stripping operations. When a tank gets low, the main turbine cargo pump may start sucking air or cargo vapours and will no longer be effective. At this point the chief officer will switch from the large main cargo suction line to a smaller diameter stripping suction head. When the main cargo pumps are no longer effective, the remaining cargo is removed from the cargo tank by eduction or by a stripping (positive displacement) pump. At the end of the discharge operation the contents of the slop tank(s) can be pumped ashore via a 4" (MARPOL) line.*

*If a slop tank will be used during the discharge operation to store cargo temporarily, its content needs to be included as part of the TOV by the cargo inspector when gauged before commencement of discharge. Of course in many instances slop tanks function as regular cargo tanks as well. This is especially the case if there are three slop tanks. The centre one can function as slop tank and the wing tanks are filled with regular cargo. Some OBOs have a **deeptank** forward of no. 1 cargo tank which is listed on an ullage sheet as DT.*

Column 2 gives the corrected ullage. In our example it is in metres and centimetres. As mentioned above, tank ullages sometimes need to be corrected if the original reference height has been changed, when a UTI is used and in case of list/trim.

Column 3 shows TOV; either in m^3 or in bbl, depending on what is listed in the ship's ullage or strapping tables. If the tables list bbls, the ullage values should be listed in column 4. To go from col. 3 to col. 4 multiply by 6.28981. To go from col. 4 to col. 3, divide by 6.28981. Please note, this is only valid for equal temperatures. This is the case here, because we work with observed temperature as listed in column 10 or 11. However, once the volume has been corrected to 15°C or 60°F, we can no longer use the 6.28981 conversion factor. Table 52 offers conversion factors to go from bbl at 60°F to m^3 at 15°C and the other way round.

Column 5, 6 & 7 show Free Water. Col. 5 is for cm water found at the bottom of the tank. Col. 6 lists the volume in m^3 and col. 7 is in bbls. Just as for col. 3 (bbls) and col. 4, cubic metres (m^3) can be converted into each other by using the conversion factor 6.28981.

If shortly after completion of loading a substantial amount of Free Water is found that originated from either the shore or from a lightened ship, the master should issue a Notice of Protest to the supplier of the crude oil as a defence against a possible future claim at the discharge port. As mentioned above, water is bad for refining equipment. Some refineries may ask the master to transfer free water to a slop tank instead of pumping it ashore as part of the cargo. Water in a cargo tank also has an adverse effect on Crude Oil Washing (COW), because water — instead of crude oil spray — can cause static electricity. It is for the above reasons that it is important to show water bottoms for each tank. Sometimes OBQ is listed for each separate tank, but in our example it is lumped together.

Column 10 shows **temperature** in °C and in col. 11 in °F. Temperatures may have been observed in °C, but for table 6 we need °F. ASTM volume XI/XII table 2 gives temperature conversions. However, it may be easier and faster to use formulas. For example 20°C divided by 5 and multiplied by 9 + 32 is 68°F. To go from 86°F to °C we deduct 32 from 86, divide the result by 9 and multiply by 5 to get 30°C. It is easy to build these formulas into a computer spreadsheet.

Column 12 shows **Volume Correction Factor** to reduce volume to 15°C.

Column 13 shows **GSV** in m^3 and is obtained by multiplying col. 8 with col. 12.

Column 14 shows the weight of the cargo in metric tons (mt) in air. Col. 14 is obtained by multiplying col. 13 by density in table 3: 0.8639 and by the weight factor in table 56: 0.99875. For example see col. 14: number 1 Port tank contains 6,876.4 m^3 x 0.8639 x 0.99875 = 5,933.1 mt (in air)

In addition to ballast, fuel and water quantities, the chief officer will use cargo weights in col. 14 for each tank as the basis for various calculations. The main ones are: ship's draft, trim, list, **metacentric height*** used for stability purposes, stress and bending moments of the hull. Most modern tankers have computers to perform these calculations on a continuous basis, even during loading and discharge operations.

The **metacentric height determines the ship's capacity to right itself if, for instance, she has been hit by a wave. If a ship has a lot of weight in the lower part, like a bulk carrier loaded with iron ore, the ship jerks back and forth and is called "**stiff**." However, if a ship has a lot of weight in its upper portion, like a passenger ship, the vessel will roll gently and is called "**tender**." When the ship has too much weight at the top it may heel over to one side, or even capsize. This is a problem for vessels that carry timber on deck that has absorbed water caused by heavy seas. The stability of a ship is also influenced by the **free surface effect**. It manifests itself in a ship with slack (partially filled) tanks and is directly related to the 3rd power of the width of the tank. In other words, if tanks have been divided by a centre bulkhead, the free surface effect is only 1/8th as compared to undivided tanks. Therefore tankers with cargo and ballast tanks divided by a centre longitudinal bulkhead don't normally have stability problems. However, tankers that have cargo and ballast tanks that extend nearly over the full width of the vessel may become unstable if too many tanks are slack. Shipyards usually provide enough information to the owner to make sure that ship will have a positive metacentric height under almost all conditions.*

Some charterers used to shun OBOs in oil service because these ships don't have centre bulkheads. However, many modern tankers don't have one either. With proper loading and discharge procedures, there is little danger of the ship becoming unstable.

Column 16 shows GSV in bbl and is obtained by multiplying col. 9 with col. 15. Total volumes in the ship's tanks are listed in the "On board" row.

To determine what has actually been received on board, add the FW in col. 6 to col. 13, or FW in col. 7 to col. 16. Thereafter deduct OBQ and arrive at **Total Received Volume (TRV)** of 89,707.5 m^3 in col. 13, or its equivalent 654,397.0 mt in col. 14.

Self-correcting ullage calculation

TRV in col. 16 in the amount of 564,497.0 bbls is multiplied by the mt/bbl value in table 13 (0.13712) to arrive at 77,403.8 mt. As can be seen, the two mt values in col. 14 and in col. 16 (in boxes) are virtually the same, even though they have been calculated independently. The difference of 2.3 mt is the result of rounding errors. This comparison serves as a check to see if the proper table values have been selected and proper calculations have been performed correctly.

Another way to check if "Standard" and "Metric calculations agree with each other is to use table 52. It is best to use the m^3 per bbl column, rather than the bbl to m^3 column, because the former has more numbers after the decimal point and is therefore more accurate. In our example density is 0.8639. This gives a value of 0.158915 (interpolated). Multiply this by the total blls in col. 16 to arrive at total m^3 in col. 13: 564,242.2 bbls x 0.158915 = 89,666.6 m^3. This is very close to 89,667.0 m^3 as per col. 13.

Crude Oil and many dirty and clean petroleum products are bought and sold based on volume. However, chemicals are usually sold by weight. In both cases freight is almost always based on weight. We therefore need to calculate both volume and weight of the cargo.

At the bottom of column 14 ship's figures are compared to B/L (shore) figures. Table 7.4 shows the B/L to be 13.5 mt more than ship's figures, or 0.0174%. This is actually very close and there is no need to issue a Notice of Protest. However, if depending on company policy, the shore-to-ship difference is more than perhaps 0.1%, it is good practice for the master to issue a Notice of Protest to alert the receivers of the difference; especially if the B/L shows a larger quantity than ship's quantity, because cargo receivers may file a claim if delivered quantity is less than B/L quantity.

The bottom of column 14 shows B/L figure in **long tons**.

Since a few years petroleum cargo computer programs use **Litre Weight (LW)**. It is the ratio: mt/m^3 at a certain temperature. LW makes it easy to convert weight in mt into volume in m^3 (or bbl) or the other way around. There are several ways to calculate LW.

1) Litre Weight = Density at 15°C x weight factor (table 56) x VCF (table 54)

Assume a tanker has to load 50,000 mt Heavy Fuel Oil (HFO) with Density = 0.9587 (at 15°C). Loading temperature is 30°C (30°C = 30/5 x 9 + 32 = 86°F)

Q: What is the Litre Weight at 30°C ?

A: Density = 0.9587

Table 56 shows for density: 0.9587 that the weight factor (to go from density in a vacuum to weight in air) is: 0.99885

Table 54B for (Petroleum products) shows with density 0.9587 and temp. 30°C that the VCF is: 0.9893

Using the above formula:

LW = 0.9587 x 0.99885 x 0.9893 = 0.9474

50,000 mt. occupies: 50,000/0.9474 = 52,776.0 m^3 at 30°C, or 331,951.1 bbl (multiply m^3 by 6.28981)

Another tanker needs to load 300,000 bbl HFO as per above.

Q: How much is this in m^3 and what is the weight in mt ?

A: 300,000 bbl (at 30°C or 86°F) divided by 6.28981 = 47,696.2 m^3

47,696.2 m^3 x LW of 0.9474 = 45,187.4 mt.

There is another way to calculate Litre Weight with API and VCF of table 6.

2) Litre Weight = mt/bbl (table 13) x 6.28981 x VCF (table 6)

From table 3 it is determined that Density of 0.9587 corresponds with API = 16.0

In table 13 we find that at API 16.0 there are: 0.15219 mt/bbl

In table 6B we find under API = 16.0 and temp. of 86°F that the VCF = 0.9897

Multiply these three factors: 0.15219 x 0.9897 x 6.28981 = 0.9474

This is the same Litre Weight as found above.

In the above examples we found the VCF with 54B and 6B (products). However, for VCF of crude oils we would use table 54A or 6A. For speciality chemicals or lubricating oils, use the VCF in the tables provided by the supplier of the specific product. Be sure to use the proper VCF table with proper temperature; either °C or °F.

A little known trick: *Now that cargo quantities are often determined with the help of computers, more and more ships seem to be lacking proper Petroleum Measurement Tables. Some ships only carry tables 6. To find the VCF for tables 54 you can use table 6* by adding 1°F to the table entry. For example to find VCF in table 54B for above example, you can use table 6B and look under 87°F (86°F + 1°F). This gives a VCF of: 0.9893; the same as under 30° C in table 54B. The same is true for other temperatures.*

3) Litre Weight = lb/gal x .1198266 x VCF (table 6)

Instead of Density or API gravity, in the USA density of a product is sometimes expressed in lb/gal. Petroleum table 8 can be used to convert API into lb/gal. If API = 16.0, lb/gal = 7.989.

1 gal = 3.78541 litre. There are 1,000/3,78541 =264.172177 gallons per 1,000 litres (= 1 m^3). Furthermore, we know that there are 2,204.62 lbs per mt.

264.172177/2,204.62 = 0.1198266

The VCR from table 6B for 86°F is 0.9897 (The same as already found under 2).

* Or a VCF table based on °F used for speciality products.

LW = 7.989 x 0.1198266 x 0.9897 = 0.9474

Again, this is the same as found under 1) and 2).

Some Terminals provide the ship with the LW based on 15°C or 60°F and the Chief Mate can look up and apply the VCF for cargo temperatures other than 15°C or 60°F. Below are examples in table format, showing the various ways to determine LW:

Product	Product A	Product B
Density at 15°C	0.7946	0.8922
API at 60°F	46.5	27.0
lb/gal at 60°F	6.618	7.434
Temp in °F	80.0	80.0
Temp in °C	26.7	26.7
Method 1 (Density)		
LW = Density at 15°C x weight factor (table 56) x VCF (table 54B)		
Density at 15°C	0.7946	0.8922
Weight factor (Table 56)	0.99865	0.99880
LW at 15°C	0.7935	0.8911
VCF at 26.7°C (Table 54B)	0.9889	0.9909
LW at 26.7°C	**0.7847**	**0.8830**
Method 2 (API)		
LW = mt/bbl (table 13) x 6.28981 x VCF (table 6B)		
MT/BBL (Table 13)	0.12609	0.14162
Factor	6.28981	6.28981
LW at 60°F	0.7931	0.8908
VCF (Table 6B) for 80°F	0.9895	0.9913
LW at 80°F	**0.7847**	**0.8830**
Method 3 (lb/gal)		
LW = lb/gal x .1198266 x VCF (table 6B)		
lb/gal (Table 8)	6.618	7.434
Factor	0.1198266	0.1198266
LW at 60°F	0.7930	0.8908
VCF (Table 6B) for 80°F	0.9895	0.9913
LW at 80°F	**0.7847**	**0.8830**

Table 7.5: Various ways of calculating Litre Weight

Errors in cargo calculations

Understandably, when it comes to oil measurements a lot can go wrong.

Here is a partial list — not in particular order of significance — of reasons for cargo discrepancies:

1. Mathematical calculation errors on board or ashore. Calculations are pretty tedious and it is easy to make mistakes. The use of computers should be encouraged.
2. Mis-calibrated instruments. Old ullage tape may have stretched.
3. Metering equipment installed ashore may become unreliable when air enters the meter during stripping operations. Air may also cause damage to the meter's propellers.
4. Sampling errors. For example cargo may be layered and only one sample, instead of multiple depth samples, may have been taken.
5. Use of wrong tables and/or conversion factors. It is best to develop a routine that is followed consistently. As mentioned above, some terminals use special volume correction tables for custom-made products.
6. Inconsistent use of tables. For example quantity at the load port may have been determined with table 6, but in the discharge port with table 6A.
7. Incorrect ullage reading. When heavy crude oil is ullaged, the tip of the bob may pull up some of the viscous oil and give a lower ullage reading than actual level. On the other hand, if the bob penetrates the layer of heavy oil on top of water, the tip of the bob may still be covered with a layer of oil and not register the interface level properly.
8. Incorrect reading of temperatures due to layering of oil.
9. Incorrect rounding. There are reports that certain terminals consistently round ullage or temperature readings up or down to their own benefit.
10. Laboratory test errors. For example erroneous determination of gravity or density.
11. Certain high-wax crude oils need special tables to obtain proper Volume Correction Factors.
12. Incorrect determination of ROB/OBQ; mistaken application of the **wedge formula.**
13. Mis-calibrated ship's tanks; erroneous application of VEF.
14. Erroneous ship's tank reference height due to altered ullage opening.
15. Mis-determination of Free Water on board ship.
16. Erroneous, or non-application of ship's trim correction.
17. Erroneous readings due to ship moving in swell.

18. Vessel may have a buckled tank bottom due to grounding; resulting in sounding errors.
19. Evapouration loss during voyage or during COW and/or clingage on ship's bulkheads after discharge. For cold and viscous cargo, some terminals ask the vessel to stay extra time at berth after discharge to collect clingage.
20. At the end of the discharge the ship's cargo lines should be drained and its contents be pumped ashore.
21. Leaks on board the ship from cargo to non-cargo space such as to the pumproom, to non-cargo slop tank(s), duct keel, pipe tunnel, cofferdam(s), ballast tank(s), stool space(s), or to dry cargo bilges on an OBO. When it is suspected that there is a leak, these spaces should be sounded. It is very important to observe all safety precautions to prevent inhalation of vapours and also to prevent generation of any kind of static electricity, since these spaces are normally not inerted.
22. Sometimes cargo lines go through ballast tanks and these spaces need to be monitored closely for possible leaks.
23. Oil in a long shoreline may have different temperatures at various locations.
24. Oil already in a shoreline may have a different density than the oil subsequently pumped into it.
25. Mis-calibrated shore tanks[2], or erroneous shore tank reference height. Some large shore tanks may develop a bulge when filled up.
26. Volumes may also be off if the sun shines all day on one side and the oil does not have the same temperature throughout the tank.
27. **Shell correction** factor of the shore tank. In hot climates the metal shell of the tank expands. There is no shell correction for ship tanks.
28. Active shore tanks should not be gauged within 30 minutes of cargo movement in or out of that tank.
29. No — or erroneous — floating roof correction; possible caused by large amount of precipitation and/or debris, or roof still resting on its supports.
30. Floating roof tanks readings can become unreliable in moderate and high wind conditions.

[2] An interesting article on shore tank calibration has been written by R.I. Wallace, BA, Chairman of the Institute of Petroleum Calibration Panel. The article is printed in: *The Nautical Institute on the Work of the Nautical Surveyor*; first published in 1989 and reprinted in 1991 by The Nautical Institute in London, UK

31. Large amount of sludge at bottom of shore tank.
32. Contents of pipe lines on board or ashore not taken into account. Shore lines not completely full or empty (no line pack, or line displacement). This is especially important for long and large diameter underwater pipelines from SBMs to shore tanks.
33. Cargo loss, due to oil spill ashore or on board.
34. Cargo diverted ashore or on the ship (Theft). Unfortunately there are reports of bunker suppliers sometimes delivering less product than what they put on the invoice. There are also court cases about fuel oil in the cargo tanks having been diverted to the ship's bunkers. It is important for a cargo surveyor to obtain proper bunker quantities after loading and again prior to discharge, and to record the vessel's bunker consumption for various working conditions of the vessel.

In case of cargo shortage disputes, judges and arbitrators need to be made aware that shore people are often sent aboard the ship to witness gauging and to verify the whole cargo measuring procedure, but that ship's people are seldom allowed to do the same at the shore terminal. In theory cargo inspectors are independent, but since there is so much competition to get inspection business, the relationship between the cargo inspection companies and their regular customers should on certain occasions be viewed with a certain amount of scepticism.

It also has to be borne in mind that an AFRAmax tanker may have 14 tanks and that her full cargo of perhaps 500,000 bbl may be pumped into only one shore tank. Errors in temperature and ullage readings and in determination of density are perhaps canceled out in case of the 14 ship's tanks, but with only one set of measurements from a shore tank, shore figures can be off substantially.

The **wedge formula** is applied if the ship has trim and the remaining liquid in a tank has gathered in the back without extending to the tank's forward bulkhead. In other words the volume forms a triangular wedge at the back of the tank. Since there is no cargo in the forward part of the tank, regular ullage readings will lead to errors. Many tankers carry a wedge table with values listed to where liquid will extend to the forward tank bulkhead. Beyond that point no values are listed and regular strapping tables and trim corrections should be used.

Appendix 7.1 shows an explanation of the wedge formula.

Cargo claims[3]

Most cargo discrepancy claims can be prevented, by practicing proper operating and calculation procedures. If it looks like there may be a real problem, for example a large quantity of ROB, it is recommended to get the ship owner's P&I Club involved early on, and to appoint an independent surveyor, who is acceptable to both owner and terminal or cargo interests.

Processing cargo claims initially involves comparison of shore tank quantitiy and quantity received on board at the load port. Secondly, a comparison is made between cargo on board at the discharge port and cargo received by the shore terminal. Be sure to account for cargo remaining in the shore and ship pipelines. By comparing shore-to-shore figures and ship's figures after loading and before discharge it usually becomes obvious where the loss may have occurred.

However, before getting bogged down into all kind of comparisons, the main rule is: If the ship's tanks are empty after discharge, and there has not been excess evapouration and no diversion of cargo during the voyage, there is no solid basis for a cargo claim against the ship. Furthermore, if the ship delivered the B/L quantity, even if there is ROB, cargo receivers do not have much of a claim. (*Please note, a vessel should deliver the full cargo, not just pump off the B/L quantity*).

Prior to the Arab oil embargo in 1973 crude oil was around $3/bbl and not many people paid much attention to cargo claims, unless the discrepancy exceeded the so-called trade allowance of 0.5%. This percentage was used by cargo insurance interests, but was never a legal defence; especially not in USA courts. When crude prices quadrupled and later on went up to $20, and even $50/bbl, cargo claims for crude oil and petroleum products became a serious matter.

Of course for high value petroleum products, chemicals or lubricating oils, it has always been required that the vessel pumps all cargo ashore. Chemical tankers with relatively small stainless steel tanks with their own individual deepwell pumps, can be discharged to within a few gallons per tank.

With regard to claims for **in-transit-loss** or **ROB** quantities it is most important that the ship owner/operator receives proper cargo information from the shipper (see chapter 5: ASBATANKVOY amended clauses 10e).

[3] One of the best books on tanker operations and cargo claims is: "*Towards Safer Ships and Cleaner Seas, A Handbook for Modern Tankship Operations.*" It has been compiled by John R Dudley et al, and is sponsored and published by the Norwegian P&I Association GARD. The book is very comprehensive, is well written, easy to understand and contains a lot of graphics to explain tankers and their systems. Throughout the book examples of claims (not just for cargo loss) are cited. Anybody who is even remotely involved in the marine transport of oil should have a copy.

Some of the reasons for high ROB quantities:

1. Ship unable to pump off full cargo due to malfunctioning pumps, boilers, auxiliary power generators, or due to inoperable valve(s) or other ship related problems.
2. The ship's tanks may contain scale at the bottom that may have clogged up limber holes and prevent cargo from flowing to suction heads.
3. Ship not allowed to COW by shore terminal.
4. High Reid vapour pressure cargo may cause vapour-lock in the pump(s).
5. Clingage on tank bulkheads and bottom due to high viscosity cargo.
6. Improper cargo heating instructions.
7. Crude oil with high S&W content that remains at the tank bottom as sludge. More than likely it is not pumpable.
8. Some high-wax cargoes with high pour point may solidify; especially when the cargo level drops below heating coil level, or when the suction heads are in a double bottom well; surrounded by cold ballast water.
9. Ambient temperature may be too low to discharge the cargo. For example, para-xylene freezes at 55°F.
10. Defective terminal equipment, like leaking hoses, arms or pipelines.
11. Non-operable vapour recovery systems; floating roof stuck.
12. Very high back-pressure from shore; pipeline booster pump(s) not operating properly.

Responsibility for high ROB quantity caused by 1) and 2) should be attributed to the ship. However, the ship owner cannot be blamed for the other items, unless specific cargo handling instructions have been received. Owners should therefore strongly object to so-called c/p **cargo retention clauses** that stipulate that the charterer can deduct the value of ROB quantity from the freight for the following reasons:

1. The ship owner is by law entitled to cargo claim defences as per ASBATANKVOY clause 19* and 20*
2. With reference to amended ASBATANKVOY clause 10 b, d, f and g*, an owner cannot be held responsible for cargo loss if he is not allowed to, or is not able to COW. (See also amended ASBATANKVOY clause 2 b* with regard to ROB quantity)
3. If a charterer deducts the value of the ROB quantity from the freight invoice, the owner is subject to double jeopardy, because a

subsequent B/L holder most likely will lodge a claim for cargo loss as well.

** The clauses referred to here are listed in amended ASBATANKVOY c/p in chapter 5.*

For years a big debate has been going on whether a ROB cargo is **pumpable** or not. If it is nothing but **sludge**, an owner is absolved from ROB claims. However, it is very hard to determine the condition of the substance at the bottom of a closed (inerted) tank. An inspector should try to take dips at different tank openings installed for this purpose, to determine if the cargo is liquid or not. Even if an inspector finds mainly grit and sludge at the end of the sounding bob, he still may be reluctant to declare the ROB quantity **unpumpable**.

It is also possible that the cargo is liquid, yet it may still be **unreacheable** by the pumps. For example if there is a lot of clingage on the ship's bulkheads, the cargo may eventually make it down to suction heads and become pumpable. However, as long as it is still clinging, it is **unreacheable**. **Unpumpable** and **unreacheable** are not defined in any petroleum standard (API, IP or ISO) and as such petroleum inspectors will not declare cargo **unpumpable** or **unreacheable**. If a lot of money is at stake, claimants should consider engaging the services of a pumping specialist, or perhaps a naval architect to perform a detailed on-board survey.

Something else to keep in mind for cargo claims purposes: OBQ should be deducted from ROB (and from all slops in case of Load-On-Top cargo). This is to prevent a cargo owner from first obtaining cheap OBQ for just the cost of the freight, and then collecting again for ROB quantity.

Cargo contamination

As the reader may have noticed, so far very little attention has been paid to possible cargo contamination. The main reason is that this subject is usually handled by the company's Marine Operations Department, rather than by the Affreightment section. However, there are several concepts with which a commercial manager needs to be familiar.

Especially for petroleum products, chemicals and lubricating oils it is imperative that ship's cargo compartments are **clean and dry**. Furthermore the "golden rule" to prevent cargo contamination is to make sure that different parcels are **separated** by at least **two valves** at all times. Sometimes a ship pumps slops ashore via the stripping line, or may take bunkers via a header at the cargo manifold. If at the same time cargo operations are in progress, this may leave only one-valve separation.

Special attention should also be paid to possible **leaks in bulkheads** between adjoining cargo compartments, or leaks in cargo lines going through a tank filled with a different product.

Most cargo contamination claims are based on laboratory reports. It is therefore very important for ship's staff to take their own manifold samples before the cargo enters the ship's tank. If the product is already off-spec before it enters the ship, a manifold sample offers a great defence to the vessel. If the ship's crew does not take manifold samples, the shore may blame the ship for the problem. The ship should also get subsequent "first foot samples" and final samples upon completion of loading. Be sure sampling bottles are clean and are properly labeled. In case of a claim, the samples kept by the vessel should be submitted to an independent laboratory for analysis.

Acknowledgement

This chapter contains several valuable comments and suggestions made by Mr. Arthur Kay, MNI, Group Head of Technical Governance of SGS Oil, Gas and Chemical Services. In addition to his busy profession, Mr. Kay is also Chairman of several ISO and API Technical Committees, covering petroleum measurement and sampling on board marine vessels.

Chapter 8

DRAFT SURVEY

Trust in the Almighty, but tie your camel.
Persian proverb

Normally a commercial manager of a shipping company may not get involved in the details of a draft survey, but since it is sometimes used to determine the quantity of cargo loaded on board, it is important to have some understanding of the ground rules involved. Determination of the weight of a ship, with everything on board, is based on the principle of Archimedes*, i.e. an object floating in liquid experiences an upward buoyancy force that is equal to the weight of the displaced liquid. In other words the weight of a ship afloat, with everything on it, is equal to the weight of the water displaced by the immersed part of the hull.

$$\mathbf{D = V_u \times d_a}$$

D = Displacement in mt

V_u = Volume of immersed part of the hull in m^3

d_a = salinity of the water in which the ship floats

**Archimedes was born at around 287 BC in Syracuse, Sicily and is credited with discovering the Law of Buoyancy. There is a somewhat related story that has been making the rounds for a couple of thousand years now. For a while Archimedes was employed by a King, who had given a bar of pure gold of a certain dimension and weight to a local goldsmith to make a new solid gold crown. When the completed crown was presented to the King, its weight was the same as the original bar of gold, but it felt funny and the King suspected that the goldsmith had perhaps used some other (lighter) materials and had pocketed part of the gold. However, this was hard to prove without taking the crown apart. He gave the task of solving the mystery to Archimedes. For a while Archimedes thought about the problem, till one day, while he was taking a bath, the thought occurred to him to dunk a bar of pure gold — of similar weight as the King had given to the goldsmith — and also the new crown in the nearby washbasin. Archimedes noticed that the new immersed crown made the water rise higher than the bar of gold. This proved that the crown had a larger volume than the bar of gold and that it more than likely contained (lighter) materials than just pure gold; perhaps copper or lead. Archimedes was so exited about this discovery, that he ran naked from his tub directly into the street, yelling: "Eureka, eureka!" (I found it, I found it!).*

Archimedes is also credited with inventing the helix screw, still used today to pump water upwards. Another invention was a set of focused mirrors that could be used to set the sails of enemy ships aflame. He also contributed greatly to the field of mathematics (notably calculus and defining π), mechanics and astronomy.

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When a ship is built, naval architects calculate the underwater portion of the ship's hull at various levels of immersion. By applying the salinity of the water to the underwater volume, the weight of the displaced water can be determined (see hydrostatic scale in chapter 1, fig. 1.2). For example, if the underwater volume of a ship is 20,000 m^3 and the salinity of the dock water it floats in is 1.023, the weight of the ship with everything on it (**displacement**) is 20,460 mt.

At first glance it seems fairly easy to read the displacement from the hydrostatic scale. However, hydrostatic data is based on a ship on even keel with fore and aft **draft marks** located at the **perpendiculars** and the midship draft marks located exactly in the middle of the ship. Since all these conditions are seldom met, and since the vessel may have **sag** or **hog**, it is necessary to apply corrections to determine the true displacement.

Correction for draft marks that are not on the ship's perpendiculars

The displacement scale is based on average draft on the perpendiculars. However, draft marks are usually not placed exactly on the ship's perpendicular (PP) lines[1].

Fig. 8.1 shows a table with perpendicular corrections based on the following parameters:

- The forward marks are located at 6.00 metres aft of the forward perpendicular (FPP).
- The aft marks are located at 1.80 metres in front of the aft perpendicular (APP).
- The midships marks are 2.10 metres aft of midships (L/2).
- Observed trim for this example is 1.39 metres by the stern (see table 8.1 cell B14).
- LBM (Length between Marks) = 232.20 metres.

When the ship has trim by the stern, the FPP comes out of the water more than the forward marks do and it is necessary to make a correction. With reference to fig. 8.1, the **forward marks correction** FD can be calculated in (enlarged) triangle P_fDF. Basic geometry demonstrates that the angle α between legs P_f-D and P_f-F is equal to the ship's observed trim.

[1] "*Draught Surveys, a Guide to Good Practice*" by W J Dibble and P Mitchell, has some fine pictures of misplaced draft marks. The booklet also offers explanations of the various corrections and gives examples of the calculations involved in a draught survey. NB: The booklet's wedge formula is for small ships only.

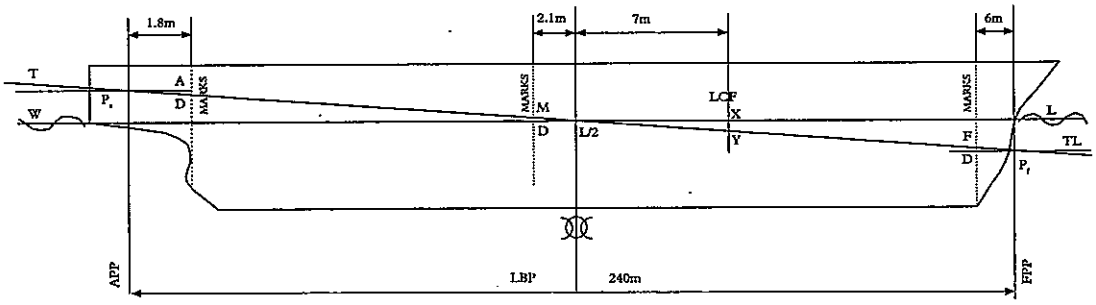
Table 8.1 shows an actual draft survey for the *FRISIAN ENTERPRISE.* This example will be used to explain the various corrections and how they need to be applied. People with an aversion to mathematics may want to skip this portion. The calculations are only given to build a better understanding of why the corrections are necessary.

CORRECTION TABLE TO FIND DRAFTS ON P.P.

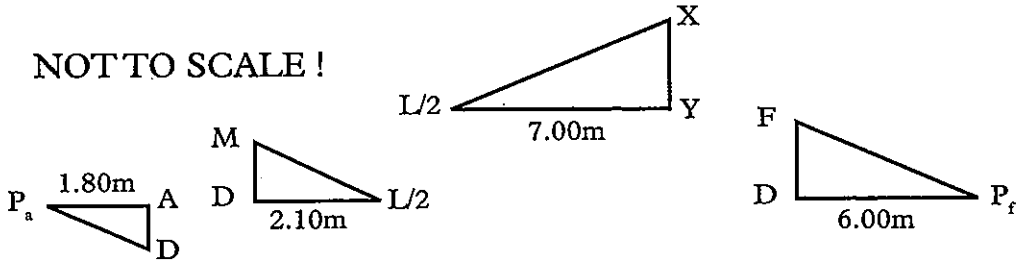
The draughts to be corrected are these on the marks

1. ONLY FOR DRAFT AFT UP TO 17.80m

(marks on Rudderhorn and higher up)



(see also larger version of this diagram at Appendix 8.1)



A.P.P. / L/2 / F.P.P. CORRECTION in millimetres													
Trim (m) /Correct	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	Trim (m) /Correct
F.P.P	13	26	39	52	65	78	90	103	116	129	142	155	F.P.P
A.P.P.	4	8	12	16	19	23	27	31	35	38	43	47	A.P.P.
L/2	5	9	14	18	23	27	32	36	41	45	50	54	L/2

1. When trimmed by the stern:
   Forward correction is MINUS (—)
   Stern correction is PLUS (+)
   L/2 correction is MINUS (—)
2. When trimmed by the head:
   Reversed sign !
3. Correction values, with their signs, should be added to measured draughts

Figure 8.1: Perpendicular corrections

A few words about table 8.1 itself:

- **Bold** words in col. A are used to make it easier to follow the various parts of the survey.
- Regular font in col. B and F and **bold** font words in col. D indicate the numbers that need to be entered into the spreadsheet. The numbers in italics are computer generated.
- It is very, very important to insert the proper signs in cells B7 and F4 to F7.

FD is the forward draft correction.

FD is to DP_f as Trim is to LBM (distance between marks), or in mathematical terms:

$FD : DP_f = Trim : LBM$ (distance between marks)

$FD \times LBM = DP_f \times Trim$

$FD = DP_f \times Trim/LBM$

$FD = 6.00 \times 1.39/232.20$

$FD = 0.036$ metres

Since the forward marks are immersed deeper than if they had been placed at the FPP mark, 0.036 m has to be deducted from the observed forward draft.

The aft draft correction is equal to distance AD in triangle P_aAD.

$AD : P_aA = Trim : LBM$

$AD \times LBM = P_aA \times Trim$

$AD = P_aA \times Trim/LBM$

$AD = 1.80 \times 1.39/232.20$

$AD = 0.011$ m

Since the marks are immersed less than if they had been placed on the aft APP, 0.011 m has to be added to observed aft draft.

Please note, sometimes the aft draft marks are put on the transom. On other ships the upper draft marks may be on the hull and the lower ones may be on the rudderstock. While performing a draft survey, make sure to use the proper tables and/or formulas to make corrections for these situations.

Midship draft correction is equal to distance MD in triangle MD $L/_2$

$MD : L/_2D = Trim : LBM$

$MD \times LBM = L/_2 \times Trim$

MD = $L/_2$ x Trim/LBM

MD = 2.10 x 1.39/232.20

MD = 0.013 m

Since the midship marks are immersed deeper than if they had been placed at the $L/_2$, deduct 0.013 m from observed midships draft.

Sign convention

When the draft marks are **aft** of the perpendiculars and the ship has **trim** in the **same direction** (aft-aft), the correction is **negative**. In our example deduct the PP corrections from observed forward and midships drafts and add the correction to the observed aft draft to arrive at draft at the perpendiculars.

Please note, on older ships the forward draft marks are sometimes placed **parallel to the bow**. By definition the FPP is the line perpendicular to the water level at the Summer Loadline. At this draft the forward mark is right on the FPP and no correction is needed. For drafts less than Summer Draft, the marks are aft of the FPP (for example see distance "x" in fig. 8.2). The hydrostatic tables should give the values of "x" for various drafts. If this information is not available, the surveyor can determine the distances between forward marks and FPP with simple trigonometry.

As an example, let's say angle ß between the FPP and the bow (the **rake**) = 18.5^0. Draft at Summer Loadline for a particular ship is 9.00 metres and observed draft is 6.00 metres. To find the horizontal distance "x" between the 6.00 m draft mark on the bow and FPP, the following formula applies:

x = tg ß x (Summer draft minus observed draft)

x = tg 18.50 (9.00m – 6.00m)

x = 0.333 x 3.00m

x = 1.00 metre

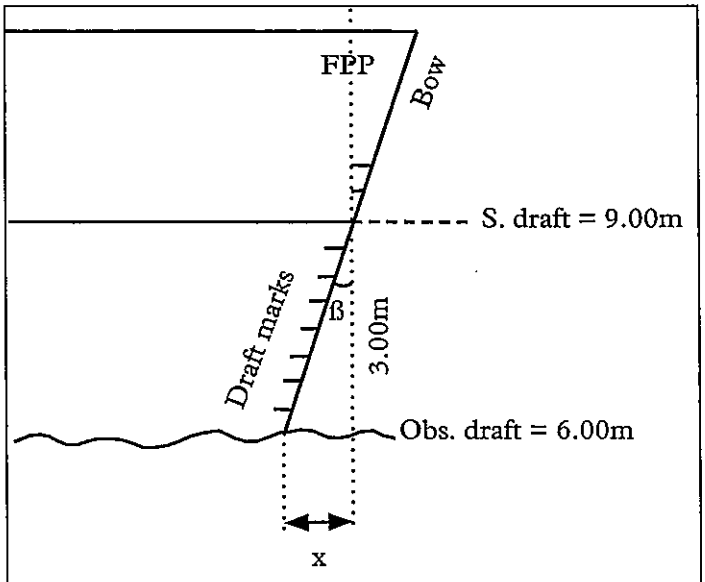


Figure 8.2: Draft marks on the bow

In this example the forward bow mark at 6.00 metres draft, is 1.00 metre aft of the FPP. Now the forward draft correction can be calculated just like FD calculated earlier. Please note, if the forward mark in figure 8.2 is

immersed deeper than Summer draft (in the Tropical zone or in Fresh water), the mark is in front of the FPP and the sign of the correction is reversed.

Correction for hog and sag

Hog means that the midship draft is less than the average of forward and aft drafts. There are several ways to account for most of the hog and **sag** effect, but one of the most common methods is based on assigning more emphasis on the midship drafts than to the end drafts. The United Nations Economic Commission for Europe (UN ECE) has developed guidelines for draft surveys for coal ships[2]. They use the following formula:

(6 x average midship draft + average forward draft + average aft draft)/8 (all drafts have been corrected for PP effect)

It is called **Mean of Means** (MoM) rule, or 3/4 rule (6/8).

For box shaped vessels use the formula:

(4 x average midship draft + average forward draft + average aft draft)/6. It is called the 2/3 rule. In our example MoM is calculated as follows:

(6 x 7.257 + 6.734 + 8.171)/8 = 7.306 metres (see table 8.1: cell B33).

With this properly corrected MoM draft the ship's displacement (62,813 mt see cell B34) can be determined from the hydrostatic scale. Please note, the MoM formula is not exact, but it is a close approximation for hog and sag correction. If the ship carries a special table with corrections for hull deflection, these corrections should be used instead of the calculated ones.

1st trim (layer) correction

Displacement for MoM draft is based on the assumption that the ship is on even keel. However, most ships have trim when they arrive at the loading berth. Very few ships trim exactly around the middle, or to be more precise at 1/2 LPP, but rotate around the **longitudinal centre of flotation (LCF)**. From the hydrostatic table it is determined that our ship's LCF before loading is 7.00 metres forward of L/2 (see cell B7). Please note LCF is not stationary like draft marks. After loading the LCF is only 0.5 m forward of L/2 (see cell F7).

[2] Code of Uniform Standards & Procedures for the Performance of Draught Surveys of Coal Cargoes. UN ECE standardised forms and their explanation can be downloaded from: http://unece-draughtsurvey.ath.cx/win95-2000.html.
Once downloaded, the forms can be filled out on the computer like a spreadsheet.

Just like the corrections applied to arrive at draft on the perpendiculars, the distance XY in triangle XYL/2 (see fig. 8.1) can be determined the same way, except now trim between the perpendiculars (see cell B26) is used instead of observed trim, and LBP (see cell F2) is used instead of distance between the Fore and Aft draft marks.

XY : YL/2 = (PP)Trim : LBP

XY x LBM = YL/2 x (PP)Trim

XY = YL/2 x (PP)Trim/LBP

XY = 7.00 x 1.437/240.00

XY = 0.0419125 m

Since the midship marks were immersed deeper than if they had been placed at the LCF mark, this 0.0419125 m needs to be deducted from Mean of Means draft.

The sign of the correction is as follows:

Trim	LCF forward of midships	LCF aft of midships
Aft	—	+
Forward	+	—

Rather than calculating the correction for distance (0.0419125 m) to MoM, this distance can be converted directly into metric tons by multiplying it by Tons Per Centimetre (TPC). At 7.306 metres TPC is 93.3 (see cell B8) and 0.0419125 metres is 4.19125 cm x 93.3 mt/cm = 391 mt (see table 8.1 cell B35). The above sign convention table dictates that this quantity has to be deducted from the observed displacement.

Second trim correction

When a ship trims, the position of the LCF changes as well. The second trim correction is needed to correct the first trim correction. The value of the second is usually small compared to the first and can be calculated in mt with the following formula:

50 x (Trim)^2 x (MCTC2 – MCTC1)/LBP

Trim moments for MoM +/- 0.5 metres can be found in the hydrostatic tables (see table 8.1 B37 and B39 respectively). The correction is always positive. Sometimes the first and second trim corrections are combined in the ship's correction tables. However it is not always clear if this is the case. It is therefore preferable to use formulas. Moreover, tables require interpolation, which can lead to errors.

	A	B	C	D	E	F	G
1		IN BALLAST		*Signs applied to*	LOADED		
2	Cargo	Iron ore		*Cell B7 and F4-7*	LBP	240.00	m
3	Load Port	Pt. Hedland		**Trim Aft + Fwd -**	**Length between Marks**	*232.20*	m
4	Destination	China		Aft of LPP - Fwd +	**Fwd marks** aft of LPP	-6.00	m
5	Type Vessel	OBO		Aft of LPP - Fwd +	**Aft marks** fwd. of LPP	1.80	m
6	**SDWT Draft** (incl. keel)	16.862	m	Aft of LPP - Fwd +	**Mid marks** aft of L/2	-2.10	m
7	**LCF fwd** of L/2 in ballast	-7.00	m	Aft of L/2 + Fwd -	**LCF fwd** of L/2 at SDWT	-0.5	m
8	**TPC** at MoM bef. loading	93.3	t/cm		**TPC** at MoM after loading	100.3	t/cm
9	**Light Ship**	21,835	mt		**Displacement** SDWT	156,995	mt
10	**Before-loading survey**	16 Nov. '98		**Explanation (for col. B)**	**After-loading survey**	20 Nov. '98	
11	Sea condition	Choppy			Sea condition Calm		
12	Mean draft Fwd.	*6.77*	m	B17	Mean draft Fwd.	*16.85*	m
13	Mean draft Aft	*8.16*	m	B22	Mean draft Aft	*16.78*	m
14	**Trim** (Observed)	*1.39*	m	B13-B12	**Trim** (Observed)	*-0.07*	m
15	Draft Fwd. PS	6.74	m	**Observed**	Draft Fwd. PS	16.85	m
16	Draft Fwd. SB	6.80	m	**Observed**	Draft Fwd. SB	16.85	m
17	Mean draft Fwd.	*6.77*	m	(B15+B16)/2	Mean draft Fwd.	*16.85*	m
18	PPD Fwd correction	*-0.036*	m	F4*B14/F3	PPD correction	*0.002*	m
19	Corrected **Fwd** draft	***6.734***	m	B17+B18	Corrected **Fwd** draft	***16.852***	m
20	Draft Aft PS	8.16	m	**Observed**	Draft Aft PS	16.78	m
21	Draft Aft SB	8.16	m	**Observed**	Draft Aft SB	16.78	m
22	Mean draft Aft	*8.16*	m	(B20+B21)/2	Mean draft Aft	*16.78*	m
23	PPD correction	*0.011*	m	F5*B14/F3	PPD correction	*-0.001*	m
24	Corrected **Aft** draft	***8.171***	m	B22+B23	Corrected **Aft** draft	***16.779***	m
25	Mean Fwd. & Aft draft	*7.453*	m	(B19+B24)/2	Mean Fwd. & Aft draft	*16.816*	m
26	**Trim between PP**	*1.437*	m	B24-B19	**Trim between PP**	*-0.073*	m
27	Draft Mid. PS	7.10	m	**Observed**	Draft Mid. PS	16.87	m
28	Draft Mid. SB	7.44	m	**Observed**	Draft Mid. SB	16.93	m
29	Mean draft mid.	*7.27*	m	(B27+B28)/2	Mean Draft mid.	*16.90*	m
30	PPD correction	*-0.013*	m	F6*B14/F3	PPD correction	*0.001*	m
31	Corrected **Mid** draft	***7.257***	m	B29+B30	Corrected **Mid** draft	***16.901***	m
32	Hog	0.20	m	B25-B31	Sag	0.09	m
33	**Mean of Means**	*7.306*	m	(6*B31+B19+B24)/8	**Mean of Means**	*16.880*	m
34	Displacement	62,813	mt	**Hydrostatic table**	Displacement	157,176	mt
35	**1st.Trim corr. (Layer)**	***-391***	mt	B7*B26*B8*100/F2	**1st.Trim corr. (Layer)**	***2***	mt
36	Mean of Means + 0.5 m	*7.81*	m	B33 + 0.5m	Mean of Means + 0.5 m	*17.38*	m
37	Mom. of change 1 cm trim	1,410	tm	**Hydrostatic table**	Mom. of change 1 cm trim	1,722	tm
38	Mean of Means - 0.5 m	*6.81*	m	B33 - 0.5m	Mean of Means - 0.5 m	*16.38*	m
39	Mom. of change 1 cm trim	1,337	tm	**Hydrostatic table**	Mom. of change 1 cm trim	1,722	tm
40	Diff. trim moment	*73*	tm	B37-B39	Diff. trim moment	*0*	tm
41	**2nd.Trim correction**	***31***	mt	50*(B26)²* B40/F2	**2nd.Trim correction**	***0***	mt
42	TPC of B27	92.93		**Hydrostatic table**	TPC of E27	100.34	
43	TPC of B28	93.48		**Hydrostatic table**	TPC of E28	100.34	
44	**List correction**	***1***	mt	6*(B28-B27)*(B43-B42)	**List correction**	***0***	mt
45	Total Displacement @1.025	*62,454*	mt	B34+B35+B41+B44	Total Displacement @1.025	*157,178*	mt
46	Salinity of dockwater	1.023		**Hydrometer**	Salinity of dockwater	1.022	
47	True displacement	*62,332*	mt	B46/1.025*B45	True displacement	*156,718*	mt
48	Light ship	*21,835*	mt	B9	Light ship	*21,835*	mt
49	Deadweight bef. loading	*40,497*	mt	B47-B48	Deadweight after loading	*134,883*	mt
50							
51	Ballast	37,410	mt	**Observed**	Ballast	54	mt
52	Fresh Water	182	mt	**Observed**	Fresh Water	150	mt
53	FO + DO + Lubes	1,225	mt	**Observed**	FO + DO + Lubes	1,178	mt
54	Slops + Other	1,258	mt	**Observed**	Slops + other	1,258	mt
55	Total known weights	*40,075*	mt	B51+B52+B53+B54	Constant (see B56)	*422*	mt
56	Constant	*422*	mt	B49-B55	Total known weights	*3,283*	mt
57				F49-F56	**Cargo loaded**	***131,821***	**mt**

Table 8.1: Draft survey results

List correction

When a ship sits high in the water, the hull at the bow and at the stern is curved at the waterline. If the ship is listing to one side, TPC at the deeper draft is more than for the lower draft (see table 8.1 B42 and B43). To correct for list we use the formula:

6 x (difference in PS and SB draft in metres) x (difference in TPCs)

6 x (7.44 m – 7.10 m) x (93.48 – 92.93) = 1.122 (see cell B44 of table 8.1)

The correction is always positive. When the list occurs near Summer draft, there is very little change of TPC and therefore the list correction is zero (see table 8.1 cell F44).

Appendix 8.1 is an example of a freight invoice.

Salinity of dock water

Here are some of the things to keep in mind when determining the salinity of the water in which the ship floats[3]:

- Be sure to take the salinity of the dock water shortly before and shortly after reading the draft marks.
- When in a tidal port, take dock water samples preferably during slack water, because during a strong flood tide the salt water near the bottom may have a higher salinity than the water on the surface. In case of doubt take samples at various depth levels with a special sampling thief to obtain a water sample from that particular depth.
- It is best to take several samples alongside the ship: at the bow, amidships and at the stern. Take the water samples at a depth of half the ship's draft.
- Be sure to avoid taking samples from shore run-off or near the ship's cooling water outlet.
- Do not mix samples. If the results vary substantially, increase the number of sample points.
- Make sure the bucket or thief (and possible sample bottles for later analysis) are clean and have been rinsed out.
- Use a hydrometer suitable for draft surveys. Use one that measures apparent density (in air) (kg/l). The use of hydrometers that are designed for other purposes can lead to errors.

[3] An excellent step-by-step approach to draft surveys was published by the late Captain A. R. Hanily, MNI of Tampa, Florida in the March 1994 issue of *SEAWAYS*; the official publication of The Nautical Institute.
Additional explanations and examples of draft surveys can be found in Chapter 13 and in Appendix 10.X1 of "*Bulk Carrier Practice*" by Captain J Isbester, FNI; published by The Nautical Institute.

- Keep the bucket with sample water out of the wind and out of direct sunlight.
- Make sure the hydrometer floats freely and does not touch the bottom or sides.
- When reading the hydrometer, make sure the bucket is filled to the top to avoid eye level parallax.
- Read the hydrometer at the water level; not at the top of the meniscus. Some surveyors place a mirror behind the hydrometer for a more accurate reading.
- Hydrometers should be made out of glass; not metal such as brass, because metal is subject to corrosion and to deformation. This makes it hard to calibrate them.
- The hydrometer needs to be calibrated, and corrections for apparent density (in air) have to be furnished by the manufacturer. Use a draft survey hydrometer that reads 1.000 when floating in fresh water (usually at 15°C).

Temperature correction

There is no temperature correction for draft surveys. The hydrometer is calibrated for a certain temperature; say 15°C. At a higher temperature the hydrometer expands and produces a false salinity reading. However, at a higher temperature the ship's underwater portion of the hull expands as well. Since the coefficient of expansion for glass is not all that different from that of steel, for practical purposes the two temperature corrections cancel each other out.

Displacement correction

From the hydrostatic scale it is determined that the vessel's corrected displacement is 62,454 mt (see table 8.1 cell B45). This is for salinity of 1.025. However, in the example the ship floats in dock water, with salinity of 1.023. Therefore total displacement is 1.023/1.025 x 62,454 mt = 62,332 mt (cell B47)

Please note, on some older ships the hydrostatic scale may be based on 35 cu ft/long ton, instead of on salinity = 1.025 (1 m^3 sea water weighs 1,025 kg).

35 cu ft is 0.99109 m^3 and a long ton weighs 1,016 kg

1.016/0.99109 = 1.025

This shows that both expressions: salinity = 1.025 and 35cu ft/lt express the same ratio. If the hydrostatic scale is based upon some other salinity ratio, proper conversion needs to be made to arrive at correct draft survey calculations.

Once the weight of the ship (plus everything on it) has been determined, deduct the weight of the ship itself, the weight of ballast water, fresh water, bunkers and lubes, to arrive at the unaccounted weight. In the example this is 422 mt (cell B56). This number is often called the **constant**.

The constant consists of all **unaccounted weights** and all errors of calculation. It is not always possible to account properly for such factors as:

- Un-measurable water and sludge remaining in the ballast tanks and/or bilges.
- Amount of old paint and scale in cargo tanks of tankers.
- Weight of clingage on the bulkheads of tankers.
- Weight of dunnage and possibly shifting boards of dry cargo ships.
- Weight of deck, engine room and catering stores and supplies.
- Weight of old accumulated equipment and spare parts (junk).
- Weight of the crew and their personal effects.

The Chief Officer should keep a record of the value of the **constant** derived from previous draft surveys and use it as a "milepost". If a subsequent **constant** differs substantially from a previous value, it may mean that certain weights have not been accounted for, or that the observations and/or calculations are incorrect.

If the draft survey is used to determine how much cargo has been loaded, the value of the constant in itself is not all that important, because the same value is used before and after loading (see cell B56 and F55 in table 8.1).

When a ship is delivered to her owners, the shipyard that built her normally conducts a detailed **deadweight survey** that accounts for all the weights on board. After applying all the proper calculations, theoretically the value of the constant should be zero.

Light ship

The weight of the light ship should include the weight of the empty ship itself; fully equipped with a full set of engine room spare parts; with her boilers filled up with water and the engine(s) filled with necessary cooling water and lubricating oils. Everything else on board is supposed to be extra and needs to be accounted for separately. If in doubt, a draft surveyor may want to check the vessel's capacity plan to see what has been included by the yard and what not. The vessel's deadweight survey should show the various compartments, such as a whole series of small tanks, mainly for the engine room. It should also show additional weights that were not included in light ship tonnage.

Light ship weight may increase due to barnacle or algae growth and

because of many layers of old paint. However, these same factors also increase the volume of the immersed part of the hull, so that the overall effect may not be significant for most ships.

The extra weight due to underwater growth does not have an effect on a cargo draft survey results either, since the weight at the initial and at the after-loading survey are more or less the same; unless there is a significant time-span between the surveys.

Preparation for draft survey

The ship's staff should assist the draft surveyor by:

- Having the ship arrive with modest trim and no list.
- The water level in the ballast tanks should be in the measurable range and should be covered by the sounding/ullage tables (sounding rods may get stuck in the rounded pipe near the bilge, or sounding pipes may be full of mud/rags).
- During the time of the before and the after-loading survey, all operations that will influence the outcome such as: loading or unloading; (de)ballasting; taking on water and stores; lowering life boats; moving hatches; (un)loading or shifting heavy pieces of equipment; operation of booms or cranes, should be suspended.
- During the survey there should not be movement of the vessel caused by: strong winds, waves/swell, passing ships, prop-wash of tugs, etc.

Ship's Records

Most of the information at the top of table 8.1 such as SDWT draft, TPC, Light Ship, LCF, LBP, LBM and positions of the draft marks in relation to their PPs, Displacement and moments of change at various drafts, etc. can be found in the vessel's hydrostatic scale. Hold and tank capacities can be found in the ship's capacity or tank plans, or in the sounding tables.

Sounding tables for cargo tanks and for ballast spaces should be checked for accuracy. Make sure the observed distance (sounding) from the reference point on deck to the strike plate at the bottom of the tank agrees with the value given in the table. To calculate the volume of tank bottoms it may be necessary to apply **trim and list corrections** or the **wedge formula**. It is suggested to sound the bottoms of inactive tanks during the after-loading cargo survey, when most likely there is negligible trim or list. However, there could be a problem if the ship winds up with trim by the head. Since sounding pipes are usually at the aft end of the tank, there is a chance that no tank bottoms will be detected at all.

At the before-loading survey the Chief Engineer should provide the surveyor with weights in metric tons (not volume) of fuel oil, Diesel oil, fresh water and lubricating oils on board at time of the before-loading survey, plus typical consumption in port. The surveyor should also ask ship's staff if any bunkers, fresh water or stores will be loaded and if any slops will be pumped ashore. As a precautionary measure many surveyors witness the gauging of fresh water in person.

Ballast water

Usually the biggest change of known weights between before and after-loading draft survey is ballast water discharged/remaining on board.

- Ballast tanks should be without air pockets. This can be achieved by overflowing the tanks. Watch out for the possibility of causing damage to the cargo, or creating short circuits of exposed electric wires on deck. Don't wash oily water overboard. Do not cause water damage ashore.
- For large ships check if tank capacities do, or do not, include contents of the ballast lines.
- Determine the salinity of ballast water in the various tanks, because they may have been pumped up at various locations. For example, one tank may contain fresh water from a river, another brackish water from a tidewater port and another tank pure sea water. (The Chief Officer should have a ballast water record book).
- Make sure the salinity is representative for the whole tank. If in doubt, draw water samples at various tank depths with a special "thief", or with a hand pump.
- Some bulk carriers carry ballast in a cargo hold; especially if a lot of ballast is needed so the vessel will fit under bridges, power lines and under the loading installation. If no proper sounding tables are available for the ballast hold, it is preferable to have the hold pumped up into the hatch coaming. The hold's ballast volume can be determined by deducting the empty coaming space from the hold's grain space (which includes the coaming space). Measure the distance from the four coaming corners to the ballast water level and divide by four. This is the average depth of the empty space in the coaming. Multiply this number by the Length and by the Width of the coaming to arrive at the volume of the empty coaming space. Deduct this from the hold's grain space. Determine and apply the salinity of the ballast water to determine its total weight.

Possible errors in a draft survey can be caused by:

- Tight mooring lines causing improper draft readings due to listing of (small) ships.
- Ship touching the bottom.
- Swift tides or currents may cause squat.
- Salinity of the water may vary for different points of the ship.
- On the incoming tide the water at the bottom has a higher salinity than at the top.
- Spilled cargo, snow, ice, water or debris on deck.
- Swimming pool water may not have been taken into account.
- Lifeboat(s) may have been swung out, or lowered into the water.
- Heavy piece(s) of equipment may have been (un)loaded or shifted.
- Liquid levels in deep tanks may not have been accounted for.
- Bilge water in duct keels, pipe tunnels, cofferdams and other void spaces is hard to determine and perhaps has not been accounted for.
- Anchors may be out and chains may be resting on the bottom.
- Accumulated mud in the anchor lockers.
- Hatch covers moved around between initial and after-loading survey.
- Cranes or loading booms in different position at initial and after-loading survey.

Some additional considerations:

- Draft marks need to be clearly visible; if possible use a boat for added accuracy to read the marks.
- In case of wind, waves or swell, or if the vessel is rolling, a surveyor can obtain fairly accurate draft readings by holding a clear piece of plastic tubing alongside the draft marks. The tube should be open-ended at the top and the bottom needs to stay immersed.
- Since midships draft marks are most important, a prudent surveyor should measure freeboard from the deck line to make sure draft marks have been placed properly. A tape with a float will make this a fairly easy operation. First measure the distance rail-water and then rail-deckline. The difference is actual freeboard and should agree with the position of the draft marks. Make sure that the position of the midship draft marks and the deck line agree with the vessel's Load Line Certificate.

NB: If the midships draft is obtained by measuring freeboard directly below the deck line, and the deck line is positioned at exactly 1/2 LBP, there is no need to apply the midships PP correction.

- When checking the hydrostatic scale, make sure drafts are measured from the underside of the keel plate.
- Some ships use standard and metric sizes side-by-side, or sometimes the ship has draft marks in feet on one side and in metres on the other side. Make sure to use proper and compatible measurement units in the formulas.
- Observe proper sign conventions for the various calculations.
- When a draft survey is done at the load port and again at the discharge port, it is important to keep a record of the quantity of moisture that may have been drained or evaporated out of the cargo in transit. Drained moisture collects in the bilges. If it is not possible to determine the bilge contents accurately, it should be pumped into a slop tank where it can be measured, before being pumped overboard (making sure it is allowed to pump cargo drainage overboard). A cargo buyer should ask for a Moisture Content Certificate from the shipper.

After all the proper corrections have been made and all the known weights have been deducted from displacement, what is left is the weight of the cargo loaded (see table 8.1 cell F57)

Acknowledgement

Captain Michael Holloman, MNI of Beaumont, Texas, who performs dry cargo draft surveys at US Gulf ports, offered several valuable suggestions for this chapter.

Chapter 9

FUEL MANAGEMENT

Cheat me in price, but not in the goods I purchased.
Spanish proverb

The first part of this chapter is about the relationship between a vessel's **speed** through the water and **fuel consumption**. By operating at a lower speed, very significant savings in fuel can be obtained. There is also a section about **economic speed** and **optimum bunker port**. At the end of the chapter is a brief discussion about bunker fuel **specifications**. A new **bunker fuel contract** (Appendix 9.1) developed by BIMCO and an example of a **bunker purchase confirmation note** (Appendix 9.2) are in the back of the book.

Fuel Consumption vs. Speed

When a ship makes headway, she experiences resistance through the water. This force depends mainly on the vessel's displacement and on speed. Furthermore, wave action and wind resistance play a role, but only a minor one, as long as the conditions are light to moderate.

Before the final design of a ship is agreed upon, naval architects build a scale model of the underwater part of the hull and test it in a **special towing basin**. Such a basin is often part of a marine research facility and is used to determine the resistance experienced at various speeds of the hull through the water. The test findings are also used to calculate approximate engine and propeller size needed to propel the ship. Experiments have shown that the vessel's water resistance can be expressed as follows:

$\mathbf{R = C \times D^{2/3} \times V^2}$

R = resistance through the water

C = the vessel's constant (different for each ship)

D = vessel's displacement

V = vessel's speed (velocity) through the water

For differing speeds we can state:

$R1 = C \times D^{2/3} \times V_1^2$

$R2 = C \times D^{2/3} \times V_2^2$

Since we are talking about the same ship, at the same displacement, C and D stay the same[1]. Therefore we can combine the two statements as follows:

[1] The output efficiency of the engine, drive shaft and propeller need to be the same as well.

$R_1 : R_2 = V_1^2 : V_2^2$ (Base Formula)

In other words, the resistance through the water is directly proportional to the squares of the speeds. R is the force that the propeller — powered by the engine — has to overcome to give the ship speed through the water.

Equal distance can be expressed as:

$d_1 : d_2 = 1 : 1$

Base formula: $R_1 : R_2 = V_1^2 : V_2^2$

Multiplying resistance x distance (d) results in energy. Resistance can be expressed in kg or in lbs. Distance (d) can be expressed in metres or in feet. Resistance x distance = energy in kgm or in foot pounds.

$energy_1 : energy_2 = V_1^2 : V_2^2$

Energy generated over a specific time period can be expressed in horsepower (hp). For our purposes energy is directly proportional to hp, therefore:

$hp_1 : hp_2 = V_1^2 : V_2^2$

HP is directly proportional to fuel consumption (F), therefore:

$\mathbf{F_1 : F_2 = V_1^2 : V_2^2}$ **(1)**

In words:

For **equal distances,** fuel consumption is directly proportional to the squares of the speeds.

F_2 can be determined as follows:

$F_2 = F_1 \times V_2^2 / V_1^2$

We also know that distance traveled during a specific time interval is directly proportional to the speed.

$d_1 : d_2 = V_1 : V_2$

Base formula: $R_1 : R_2 = V_1^2 : V_2^2$

As seen above, resistance x distance = energy.

$energy_1 : energy_2 = V_1^3 : V_2^3$

Following the same reasoning as above, we find:

$\mathbf{F_1 : F_2 = V_1^3 : V_2^3}$ **(2)**

In words:

For **equal times,** fuel consumption is directly proportional to the 3rd power of the speeds.

These formulas can be used in several practical applications that are best explained by examples. Table 9.1 shows the relationship between

speed and fuel consumption for a ship of about 100,000 mt, propelled by a 12,000 bhp Diesel engine. Please note, we are only talking about fuel consumption for propulsion. This does not include fuel used by boilers and auxiliary Diesel engines for proper operation of the vessel (see heading: "Fuel consumption for other than propulsion" later on in this chapter).

knots	actual mt/day
8	5.4
9	7.9
10	11.5
11	16.2
12	21.8
13	29.3
14	41.1

Table 9.1: Actual fuel consumption per day (for propulsion only)

Actual fuel consumption is usually determined during **sea trials** when the ship is handed over from the shipyard to the new owner. The ship traverses a **measured mile** in calm sea conditions at various speeds. For each run her **speed** and **fuel consumption** are measured with a high degree of accuracy and translated into speed per hour (knots) and related fuel consumption; usually in mt/day.

If this vessel consumes 41.1 mt fuel per day at normal seaspeed, we can calculate her consumption per day at other speeds (e.g. at 12 knots) with formula (2):

$$F_1 : F_2 = V_1^3 : V_2^3$$

$$41.1 : F_2 = 14^3 : 12^3$$

$$F_2 \times 14^3 = 41.1 \times 12^3$$

$$F_2 = 41.1 \times 1728/2744$$

$$F_2 = 25.9 \text{ mt/day}$$

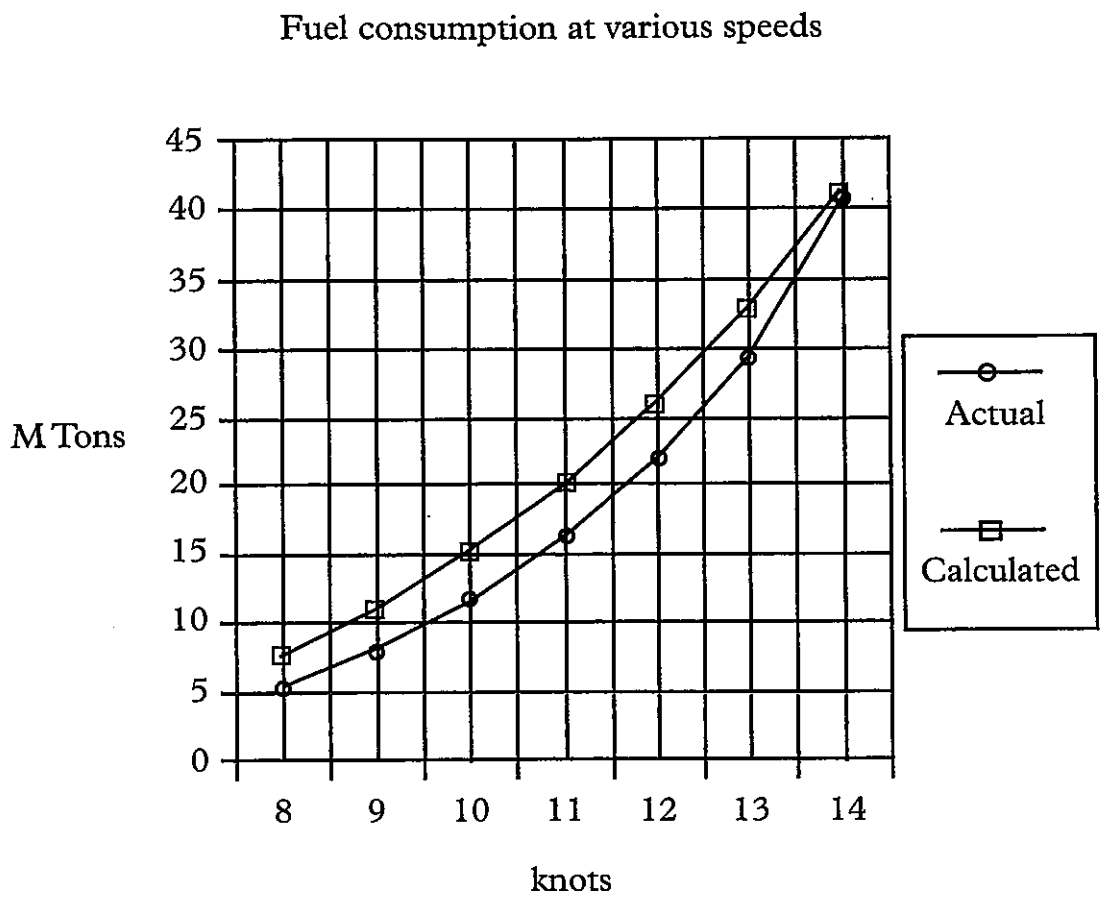
With the same formula we can find fuel consumption for other speeds:

knots	actual mt/day
8	7.7
9	10.9
10	15.0
11	19.9
12	25.9
13	32.9
14	41.1

Table 9.2: Calculated fuel consumption per day (for propulsion only)

Graph 9.1 displays actual fuel consumption at various speeds based on sea trials as listed in table 9.1 and consumption at various speeds based on calculations as listed in table 9.2. As can be seen, the calculated values are fairly close to actual consumption; especially for the higher (normal) speeds. Please bear in mind that actual values were determined during sea trials, when the ship still had a clean and smooth hull with little water friction. Once the ship is a few weeks old, barnacles and slime start to collect on the underwater portion of the hull; slowing her down, or resulting in higher fuel consumption to maintain the same speed. Therefore "calculated" fuel consumption as listed in table 9.2 may be more accurate than the "actuals" as listed in table 9.1

Most ship's officers keep a log of daily fuel consumption in loaded or in ballast condition, but since a ship is almost always traveling at — or near — maximum speed, fuel consumption at other speeds can only be



Graph 9.1: Actual and "calculated" fuel consumption at various speeds

determined by performing another sea trial, or by calculation. For a variety of reasons it is not very practical, or cost effective, to perform sea trials and therefore it is preferable to determine fuel consumption at various speeds by way of calculation.

Fuel consumption per nautical mile per voyage at various speeds

Instead of expressing fuel consumption per equal time, like per hour or per day, we can also express fuel consumption per equal distance, like per mile or per length of the voyage. For this we use formula (1):

$$F_1 : F_2 = V_1^2 : V_2^2$$

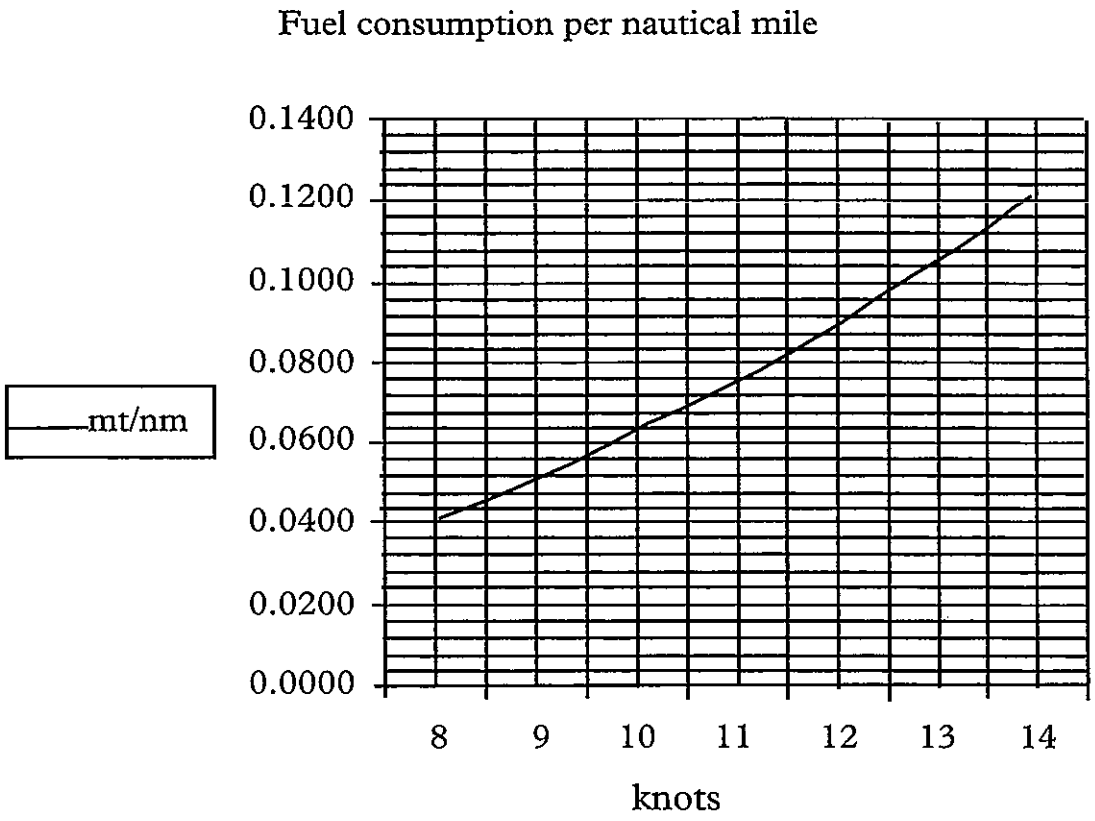
Table 9.3 shows daily consumption at various speeds and daily distances covered at these speeds. For example, at 10 knots, daily consumption is 15.0 mt/day and daily distance is 240 nm. This means that consumption per mile at 10 knots is:

15 mt/240 nm = 0.0625 mt/nm (see Graph 9.2)

Instead of fuel consumption per mile, we can also calculate total fuel consumption for a certain distance, while maintaining a certain speed.

knots	mt/day	nm/day	mt/nm
8	7.7	192	0.0401
9	10.9	216	0.0505
10	15.0	240	0.0625
11	19.9	264	0.0754
12	25.9	288	0.0899
13	32.9	312	0.1054
14	41.1	336	0.1223

Table 9.3: Fuel consumption per nautical mile at various speeds



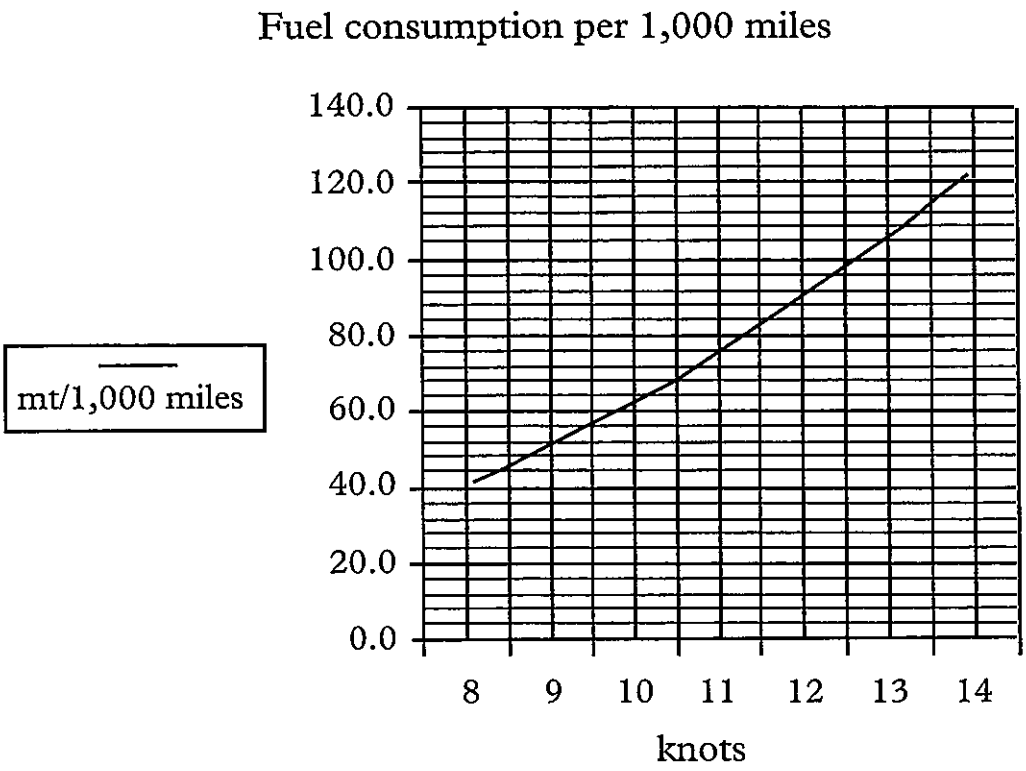
Graph 9.2: Fuel consumption per nautical mile at various speeds

Here is an example:

At 10 knots the ship consumes 15.0 mt/day and covers 240 nm. To cover 1,000 nm she consumes 1,000/240 = 4.1666 days x 15.0 mt/day = 62.5 mt (Table 9.4, Graph 9.3). If the quantity of fuel remaining on board is known, and we want to know the distance that can be covered at certain speeds, the following table and graph (Table 9.5) can be used. For example at 10 knots the distance covered is 240 nm/day, and fuel consumption is 15.0 mt/day. On 100 mt. the ship can travel 100 mt divided by 15 mt/day = 6.6666 days x 240 nm/day = 1,600 nm.

knots	mt/day	nm/day	mt/1,000 nm
8	7.7	192	40.1
9	10.9	216	50.5
10	15.0	240	62.5
11	19.9	264	75.4
12	25.9	288	89.9
13	32.9	312	105.4
14	41.1	336	122.3

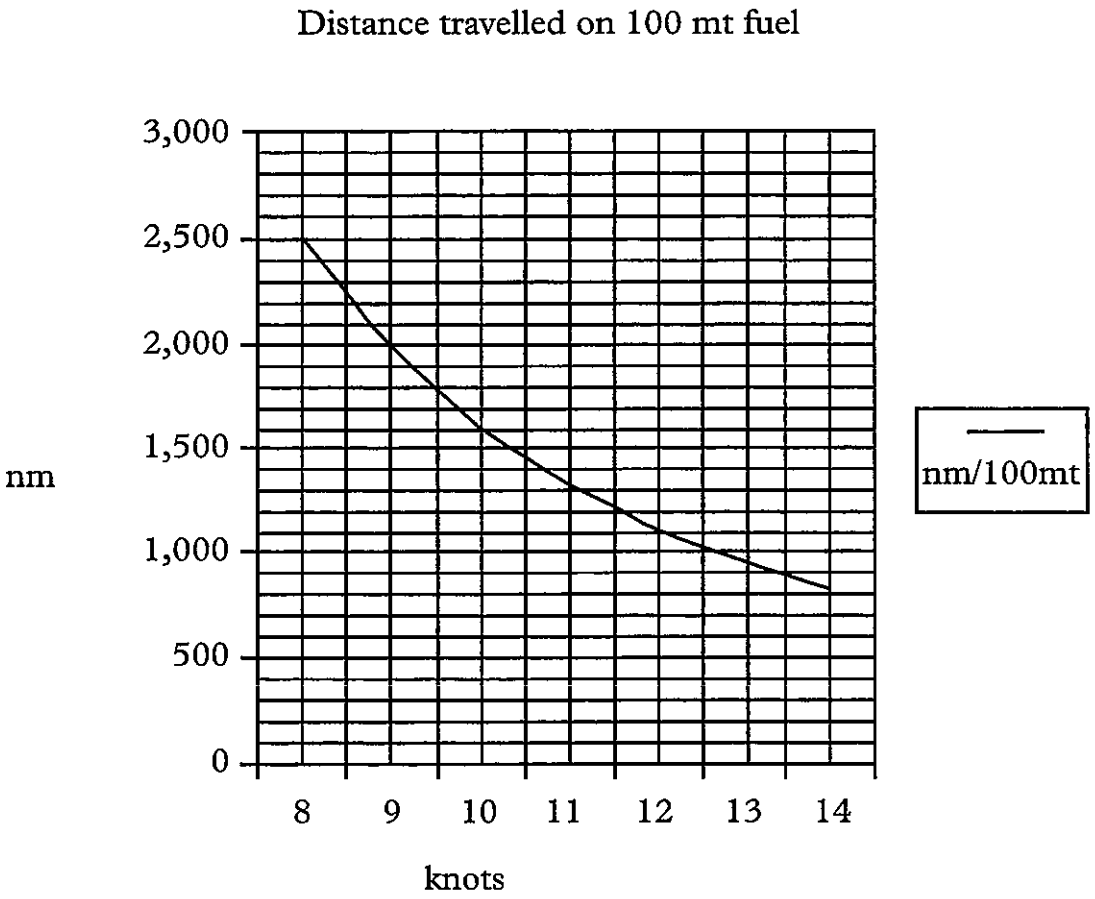
Table 9.4: Fuel consumption per 1,000 nautical miles at various speeds



Graph 9.3: Fuel consumption per 1,000 nautical miles at various speeds

knots	mt/day	nm/day	nm/100 mt
8	7.7	192	2,494
9	10.9	216	1,982
10	15.0	240	1,600
11	19.9	264	1,327
12	25.9	288	1,112
13	32.9	312	948
14	41.1	336	818

Table 9.5: Distance travelled on 100 mt. fuel at various speeds



Graph 9.4: Distance travelled on 100 mt. fuel at various speeds

Economic Speed

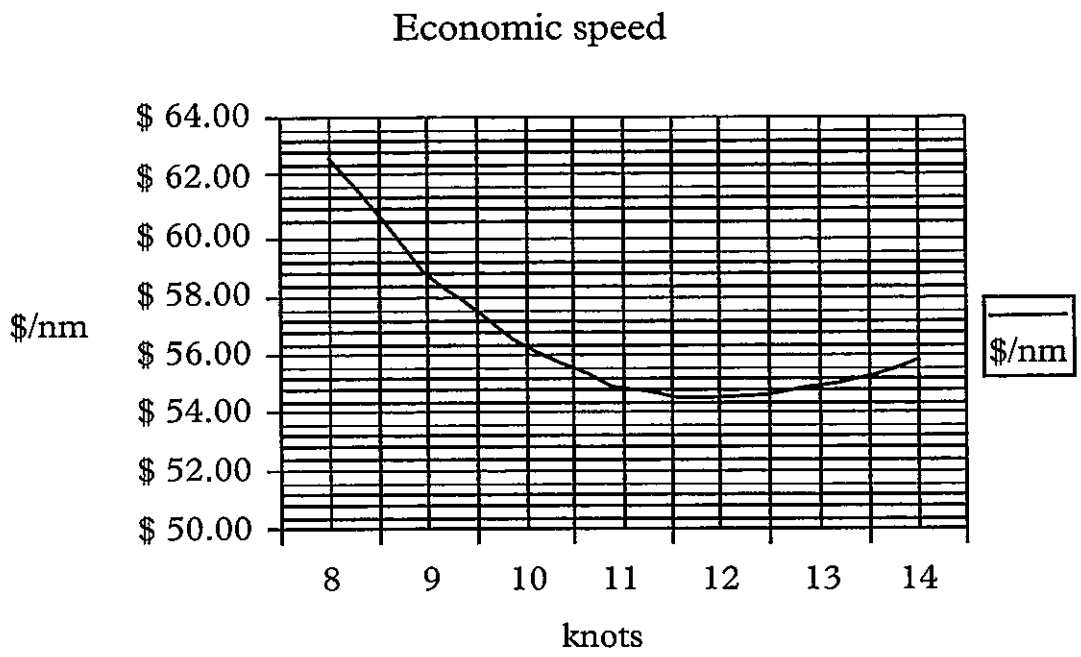
As seen above, at slower speed a ship consumes a lot less fuel. However, at slower speed it also takes longer to complete the intended voyage. Based on the variables in table 9.6, we can calculate the optimum speed of the vessel where the cost per mile is lowest. The table is based on the cost of main engine fuel oil of $200/mt. Daily operating cost, or t/c hire is $10,000/day. The vessel also consumes 2.5 mt (fixed) fuel for her auxiliary engines, also at $200/mt or $500/day. This combined with daily operating cost, or t/c hire of $10,000/day results in $10,500/day.

As can be seen from table 9.6 and from graph 9.5, the lowest cost per nm is at 12 knots. At higher fuel prices and the same daily operating cost, it pays to slow down more. However, with the same fuel cost but at higher daily operating cost, speed becomes more important and the most economical speed will be higher than in our example.

Many ships, such as liners, passenger and container ships, operate almost always at full sea speed to arrive at their scheduled time at the next port. Tanker and bulk carrier charter parties often have a clause that stipulates that the ship has to maintain a certain speed, so the charterer can do their planning for load and discharge operations. Moreover,

Variables		knots	mt/day	nm/day	fuel cost per day	daily op. cost	total cost per day	$/nm
M.E. Fuel $/mt	$ 200	8	7.7	192	$ 1,540	$ 10,500	$ 12,040	$ 62.71
Daily op. cost	$ 10,000	9	10.9	216	$ 2,180	$ 10,500	$ 12,680	$ 58.70
"fixed" fuel/day	2.5 mt	10	15.0	240	$ 3,000	$ 10,500	$ 13,500	$ 56.25
		11	19.9	264	$ 3,980	$ 10,500	$ 14,480	$ 54.85
"Fixed" fuel/day	$ 500.0	12	25.9	288	$ 5,180	$ 10,500	$ 15,680	$ 54.44
Daily op. cost	$ 10,500	13	32.9	312	$ 6,580	$ 10,500	$ 17,080	$ 54.74
		14	41.1	336	$ 8,220	$ 10,500	$ 18,720	$ 55.71

Table 9.6: Economic Speed (lowest cost per nautical mile)



Graph 9.5: Economic Speed (lowest cost per nautical mile)

Diesel engines operating at less than full load may result in incomplete combustion and excessive deposits of fuel contaminants. Therefore owners may be reluctant to operate their Diesel powered vessels at slow speed for extended periods of time. On the other hand there are situations where a ship is not in a hurry and speed can be lowered to save fuel.

Practical applications

Now that we know how to calculate fuel consumption at various speeds and to determine fuel required to cover a particular distance, we can put this knowledge to practical use in the form of some examples:

1) Our vessel steams at 14 knots and consumes 41.1 mt FO per day (for propulsion only). To cover 2,000 miles, she will consume 2,000 miles/(24 hours x 14 knots) x 41.1 mt = 244.64 mt FO.

After the Suez Canal was closed in 1967, tanker owners started building larger ships (VLCCs) to make the trip from the Middle East to Europe and to NorthAmerica around the Cape of Good Hope. Because the route was so much longer, a lot more tanker space was required; resulting in high freight rates. During that time many owners ordered a great number of new ships, which eventually caused a glut of tonnage; especially after the Arab Oil embargo that followed the Yom Kippur war in 1973 and after reopening of the Suez Canal in 1975.

In the early 1970s, bunker fuel was still very cheap. Many VLCCs were powered by turbines; consuming on average 170 mt of fuel per day. In 1973 the Arab oil embargo caused the price of crude oil (and of fuel oil) to increase dramatically. Due to high crude oil prices, demand dropped considerably; resulting in a dramatic drop of tanker freight rate. This lasted through much of the 1980s.

In 1979, after the Iran crisis, there was another big increase in the price of oil. With low freight rates and high bunker prices, ship owners decided to operate their ships at lower speeds to save on fuel. Some tankers travelled so slowly that it took them two to three months steaming from NW Europe, or from the US Gulf, to a load port in the Persian Gulf.

To put things in perspective, here is an example.

Q: At 15 knots a turbine-driven VLCC consumes 170 mt. How much will she consume at 8 knots?

A: Since we are talking about fuel consumption at equal times (per day), we need formula (2):

$F_1 : F_2 = V_1^3 : V_2^3$

$170 : F_2 = 15^3 : 8^3$

$F_2 \times 3{,}375 = 170 \times 512$

$F_2 = 87{,}040/3{,}375$

$F_2 = 25.8$ *mt/day*

By slowing down from 15 to 8 knots, the ship achieved a dramatic savings of 170 mt – 25.8 mt = 144.2 mt/day.

Since fuel consumption of a turbine ship is much higher than for a comparable Diesel ship, t/c hire for the former is usually less than for the latter, because the t/c operator has to pay for the (extra) bunkers. Most turbine driven VLCCs are now more than 20 years old and are sent to the breakers, or are converted into FPSOs.

Q: ***How far can the ship travel at 11 knots with the same quantity of fuel?***

A: For fuel consumption during equal times (per day) use formula (2):

$F_1 : F_2 = V_1^3 : V_2^3$

$41.1 : F_2 = 14^3 : 11^3$

$F_2 = 41.1 \times 1{,}331/2{,}744$

$F_2 = 19.94$ mt/day

244.64 mt/19.94 mt/day = 12.269 days x 11 knots x 24 hours = 3.239 miles.

We can also look at table 9.4 and notice that at 11 knots the ship consumes approximately 75.4 mt/1,000 miles. If the ship has 244.64 mt. FO left, she can travel another 244.64/75.4 x 1,000 miles = 3,244 miles; almost the same answer as calculated above.

2) Our vessel left port with enough fuel to reach the next bunker port at 14 knots normal seaspeed. However, about halfway into the voyage, the Chief engineer receives an e-mail from Head Office, notifying him that the test results of the bunkers loaded in the last port were off spec. and cannot be used. Fortunately the ship still has 240 mt. good bunkers left for propulsion. Distance to go is 2,600 nm.

Q: ***At what speed should the vessel proceed to reach the next port?***

A: If she maintains a speed of 14 knots, fuel consumption will be:

2,600 miles /(24 hrs x 14 knots) = 7.738 days x 41.1 mt/day = 318 mt.

Looking at table 9.4 we notice that it takes 122.3 mt to cover 1,000 nm. at 14 knots. Therefore it will take 2,600/1,000 x 122.3 mt = 318 mt to cover 2,600 miles.

Instead of 318 mt, the vessel only has 240 mt FO. For fuel consumption at equal distance use formula (1):

$F_1 : F_2 = V_1^2 : V_2^2$

$318 : 240 = 14^2 \times V_2^2$

$318 V_2^2 = 196 \times 240$

$V_2^2 = 47{,}040/318$

$V_2^2 = 148$

$V_2 = \sqrt{148}$

$V_2 = 12.16$ knots

Q: ***How long will it take to reach the next bunker port at this new speed?***

A: 2,600 miles/(12.16 knots x 24 hrs) = 8.9 days

3) Our vessel departs Rotterdam in ballast for orders US East Coast, intention Baltimore, but vessel has not been fixed yet (no new cargo transportation contract). Total bunkers (for propulsion) on board at departure: 535 mt. Vessel is proceeding for 8½ days at economic speed, when her course is about to cross the projected path of a hurricane. The master decides to outrun the hurricane at full sea speed of 14 knots. He does so for 60 hours, at which time he receives orders to head for Mobile; a distance of 1,600 miles to go. Laydays are not to start for seven days and no other ship is scheduled to arrive ahead of us.

Q: ***What is the economic speed of the vessel?***

A: From graph 9.5 we can see that the most economical speed is 12 knots.

Q: ***How much FO did the ship consume during the first 8½ days?***

A: Table 9.2 shows that at 12 knots daily consumption is 25.9 mt/day. For 8½ days consumption is: 220.2 mt.

Q: ***How much fuel did the ship consume during the 60 hours to outrun the hurricane?***

A: Fuel consumption at 14 knots is 41.1 mt/day.

60/24 hrs x 41.1 mt = 102.8 mt.

Q: ***How much fuel is available to reach Mobile; providing 100 mt. is kept in reserve?***

A: 535 mt – 220.2 – 102.8 – 100 = 112 mt.

Q: ***At what speed does the vessel need to proceed to reach Mobile on 112 mt fuel?***

A: At normal seaspeed of 14 knots and 1,600 miles to go, the ship would consume 1,600 miles/(14 knots x 24 hrs) x 41.1 mt = 195.7 mt

P.S. We can also look at table 9.4 and notice that it takes 122.3 mt to cover 1,000 nm. at 14 knots Therefore it will take 1,600/1,000 x 122.3 mt = 195.7 mt to cover 1,600 miles.

For fuel consumption at equal distance use formula (1):

$F_1 : F_2 = V_1^2 : V_2^2$

$195.7 : 112 = 14^2 : V_2^2$

$195.7 \times V_2^2 = 196 \times 112$

$V_2^2 = 21{,}952/195.7$

$V_2^2 = 112.2$

$V_2 = \sqrt{112.2}$

$V_2 = 10.6$ knots

Q: ***How long will it take the ship to reach Mobile at this new speed?***

A: 1,600 miles / (10.6 knots x 24 hrs) = 6.29 days

4) Our ship is steaming at 14 knots in ballast from Hamburg for orders EC Brazil, but she has not been fixed yet. Eight days after dropping outward Elbe pilot, vessel is fixed for a cargo of iron ore from Tubarao to China. Laydays are not to start for another 10 days, and no other ships are scheduled to arrive ahead of us. Distance from Hamburg pilot station to Tubarao is 5,200 miles.

Q: ***How many miles to go after 8 days?***

A: 5,200 miles – (8 days x 24 hrs. x 14 knots) = 2,512 miles.

Q: ***To what speed can the vessel reduce and still reach Tubarao in 10 days?***

A: 2,512 miles/ (10 days x 24 hrs) = 10.46 miles per hour; say 10.5 knots.

Q: ***What is daily fuel consumption at 10.5 knots?***

A: At full seaspeed of 14 knots daily consumption is 41.1 mt of FO.

For fuel consumption at equal times we use formula (2):

$F_1 : F_2 = V_1^3 : V_2^3$

$41.1 : F_2 = 14^3 : 10.5^3$

$2{,}744\ F_2 = 41.1 \times 1{,}157$

$F_2 = 47{,}553/2{,}744$

$F_2 = 17.3$ mt per day

Q: ***If the cost of FO is $ 200/mt, how much did the ship save by slowing down from 14 to 10.5 knots for 10 days?***

A: At 14 knots fuel consumption is 41.1 mt/day. At 10.5 knots it is 17.3 mt/day. Total savings (41.1 – 17.3 mt) x 10 days x $ 200 = $ 47,600.

Optimum Bunker Port

After we have calculated how much fuel we need, it may be interesting to work out what the best port is to call on for bunkers. In the example listed in table 9.7 we find our ship discharging in Qingdao, China, and her next load port is Port Hedland in NW Australia. (*Please note, all figures that make up the cost of bunkers and assumptions about the bunker ports (except distances) are pure fiction and are for illustrative purposes only*).

There are several bunker ports in the area. If the price of bunkers were the same in every port, the best option would be to bunker in Qingdao; right at the discharge berth. In that case there will be no **barging cost** and no **lost ship's time**. However, the cost of bunkers (in this case **IFO 380 cSt**) is pretty steep in Qingdao, and we will check for alternative bunker ports/suppliers. Please note, bunker prices vary in each port and change all the time; sometimes several times per day. Moreover, different suppliers in the same port may quote different prices for the same fuel. To get a rough idea, it is best to check current bunker prices in various marine publications, or on the Internet, or check daily e-mail updates from **bunker brokers**. After doing some initial checking, the commercial manager of the vessel starts gathering quotations from other bunker ports that are not too far from the intended Qingdao-Port Hedland route. It turns out that Singapore has the lowest "posted" price ($170.00/mt).

In many instances it is possible to negotiate a **discount**; depending on quantity, creditworthiness, payment terms, market situation, etc. After

FO to stem: IFO 380 cSt		3,000 mt			
Currently in port of:	Qingdao				
Next loadport	Port Hedland				
Direct distance to load port in nm		3,583 nm			
Seaspeed/Daily distance		13 knots	312 nm		
Cost of vsl. at Sea (incl. fuel)	$ 25,000	per day			
Bunker ports	**Qingdao**	**Yosu**	**Kaohsiung**	**H.K.**	**Sing.**
Posted price US $/mt	$ 195.00	$ 172.00	$ 171.00	$ 178.00	$ 170.00
Discount in %	2.0	5.0	3.0	0.5	2.0
Discounted $/mt	$ 191.10	$ 163.40	$ 165.87	$ 177.11	$ 166.60
Delivery cost/mt (barging)	$ 0.00	$ 5.00	$ 0.00	$ 5.00	$ 5.00
Subtotal $/mt	$ 191.10	$ 168.40	$ 165.87	$ 182.11	$ 171.60
Taxes + Brokerage Comm. in %	5.0	5.0	6.0	5.0	2.0
$/mt	$ 200.66	$ 176.82	$ 175.82	$ 191.22	$ 175.03
Subtotal cost of bunkers	$ 601,980	$ 530,460	$ 527,460	$ 573,660	$ 525,090
Pilot, Tugs, Port Dues	$ 0	$ 0	$ 15,000	$ 0	$ 0
Agencies cost + launch, other	$ 0	$ 500	$ 1,000	$ 700	$ 1,500
Total	$ 601,980	$ 530,960	$ 543,460	$ 574,360	$ 526,590
$/mt	$ 200.66	$ 176.99	$ 181.15	$ 191.45	$ 175.53
Distance last port to bunker port in nm	0	447	876	1,100	2,463
Distance bunker port to load port in nm	3,583	3,459	2,716	2,774	1,678
Dist. via bunker port to loadport	3,583	3,906	3,592	3,874	4,141
Dist. direct disch. to load port in nm	3,583	3,583	3,583	3,583	3,583
Deviation in nm	0	323	9	291	558
Extra cost due lost ship's time	$ 0	$ 25,881	$ 721	$ 23,317	$44,712
Bunker cost + lost ship's time	$ 601,980	$ 556,841	$ 544,181	$ 597,677	$ 571,302
Real incurred cost/mt	**$ 200.66**	**$ 185.61**	**$ 181.39**	**$ 199.23**	**$ 190.43**
			lowest		
Cons. at sea for propulsion + aux.	45	mt/day			
ROB departure current port in mt	200	200	200	200	200
Consumption to bunker port in mt	0	64.5	126.3	158.7	355.2
OBQ bunker port in mt	200	135.5	73.7	41.3	- 155.2
Min. OBQ 3 days reserve	135	135	135	135	135

Table 9.7: Optimum bunker port

applying the discount, Yosu is lowest ($163.40/mt). We also need to account for **delivery cost**; usually by barge. Please note, if it is decided to call on Kaohsiung for bunkers, in this example the ship will go to a layberth and take her bunkers **ex-wharf**. Based on this scenario, cost of delivered bunkers is lowest in Kaohsiung ($165.87/mt).

Usually there are **fuel taxes** and/or **brokerage commissions**. After applying those, Singapore is lowest again ($175.03/mt). We also need to include the cost of pilot, tugs and port dues if the ship takes her bunkers ex-wharf instead of at an anchorage from a barge. Sometimes pilot charges

are incurred even if the vessel takes her bunkers at an anchorage. In addition we need to pay a local **agent** who will coordinate the bunkering operation. After having accounted for **port charges**, Singapore is still lowest ($175.53/mt).

However, there is also the matter of lost ship's time, depending on how far the ship has to deviate from her intended track Qingdao-Port Hedland to get to the bunker port. The easiest way to calculate deviation is to list the distance from the current port (Qingdao) to the next load port (Port Hedland) and to compare this to the sum of the distance from Qingdao plus distance from bunker port to Port Hedland. If the ship takes bunkers in Qingdao there is, of course, no deviation cost. If the ship heads for Yosu, deviation is 323 nm; slightly over a day's steaming or $25,882 in lost ship's time (basis $ 25,000/day operating cost including fuel). After we add lost ship's time to the actual cost of bunkers, we notice that the lowest cost is Kaohsiung ($181.39/mt).

Now it is important to check if the proper specification and sufficient quantity is readily available in Kaohsiung. In some ports you can only stem (obtain) IFO 380 cSt and not IFO 180 cSt, or the other way around. The same is true for MDO and MGO. We also need to check with a local agent or with a local bunker supplier if there are any restrictions, such as daylight bunkering operations only or, in case of Kaohsiung, if and when a particular layberth is available.

If bunkers are taken at an anchorage, we want to make sure which is the correct one. Some bunker companies are allowed to operate only in one particular anchorage but not in another (Fujairah/Khor Fakkan comes to mind). If your company has a contract with a particular supplier, such as with a major oil company, it is important to check if they have delivery capability in the designated port/anchorage.

Sometimes the ship gets delayed or is diverted, and it may not be feasible to take the ordered bunkers. In that case there is often a **cancellation charge**. It is important to know this up-front, rather than having to haggle over the amount after the ship has gone elsewhere. Sometimes the supplier is willing to waive the cancellation fee if bunkers are still bought through them, but at a different port as initially agreed upon.

Everything is negotiable and it is important to nail down all loose ends before the actual bunkering operation takes place, because the barge captain and the captain of your ship will only have limited bargaining power to make any last minute changes.

Something else we may want to check is the Remaining On Board (ROB) quantity of bunkers. As we can see in our example in table 9.7, to reach Singapore at full sea speed, the ship needs 355.2 mt. fuel, while there is only 200 mt left. Therefore Singapore is out.

Many companies or chief engineers have a policy of always having at least three days spare bunkers on board. In our case this is 3 x 45 = 135 mt. This means that in addition to Singapore, Kaohsiung and Hong Kong drop out as well as a suitable bunker port. This leaves Yosu; which can be reached with just three days spare FO left (135.5 mt).

The above example demonstrates that a lot of variables are involved and that cost is not always the main factor in selecting the best bunker port. Availability, proper specifications and distance to nearest bunker port often determine which port to call on. Rather than trying to rely on hunches and wild guesses, a commercial manager is much better off spending a few minutes putting all the variables in a simple spreadsheet to arrive at the proper decision as to which bunker port is most suitable.

Fuel consumption other than for propulsion

The above fuel oil consumption calculations were for consumption by the main engine only. The main engine propels the ship and is — generally speaking — not used for anything else. Most modern Diesel main engines burn heavy fuel oil such as 180 or 380 cSt. Below are some fuel consumption figures for other purposes than propulsion, for a large AFRAmax or small Suezmax tanker with double bottom and double sides:

Boiler Fuel	mt/day
Heating full cargo @ 2.5°C /4.5°F per day	50 FO
Maintaining cargo temp. @ 57°C/135°F	18 FO
Tank Cleaning (hotwash); depending on previous cargo	50 FO
Inerting/Purging	30 FO
Discharging: 3 COPs @ max. rpm & back pressure	72 FO
Auxiliary Diesel Engines	
Average consumption at sea or in port; all purposes	5 DO

Table 9.8: Fuel consumption other than for propulsion

The above numbers are very subjective. For example it will take a lot more fuel to heat a cargo in a single hull/single bottom tanker in the winter in the North Atlantic, than it is to do the same on board a double hull/double bottom tanker operating in the tropics. The boilers produce steam to heat the cargo (if necessary) and to drive the turbine cargo pumps (COP). Fuel consumption for the latter depends on the pump's RPMs, on the viscosity of the cargo and on the back pressure. Some tankers have an extra cargo pump that operates on electricity instead of steam. That way the cargo can still be pumped off in case of boiler failure.

The main function of auxiliary Diesel engines is to generate electricity to drive pumps, winches and cranes. Fuel consumption in port or at sea is fairly constant; except when electric cranes for dry cargo ships or main cargo pumps on tankers are in operation. Nowadays cranes on dry cargo ships and winches on tankers are often powered by a high-pressure hydraulic pressure installation. Auxiliary Diesel engines consume either Marine Gas Oil (MGO), which is pure gas oil, or Marine Diesel Oil, which is a blend.

Fuel grades and specifications [2]

Now that we have calculated how much fuel we need and where to buy it, we need to spend a few words on fuel specifications.

Prior to 1980, when fuel oil was cheap and usually supplied directly by a major oil company, there was little concern about quality. Most of the bunker oil came straight from a refinery and was delivered directly to a ship, without blending in other fuel stocks. However, when the price of crude oil went up, refineries sought ways to increase the yield of "light ends" such as gasoline, jet fuel, kerosene, gas oil and Diesel oil by thermal and by catalytic cracking processes. After extracting all the "light ends" what is left at the "bottom of the barrel" is heavy fuel oil, of poorer quality and with a heavier concentration of contaminants than in the original crude oil or feedstock. Moreover, all these different processes lead to many different heavy fuel oil stocks, which are often incompatible and can therefore not be blended.

When major oil companies started to concentrate more on production of lighter fuels ends, most of them got out of the bunker business and their place was taken over by independent suppliers. To make the heavy residual oil suitable for Diesel engines, it was necessary to blend in lighter fuel stocks. Reliable fuel oil providers use correct blending fuels, but at times of high prices, some of the less reputable suppliers use blending stocks of questionable pedigree.

In the old days Diesel main propulsion engines were fueled with actual Diesel oil, instead of with residual heavy fuel oil. However, engine manufacturers have developed methods to heat and purify heavy fuel oil on board and make it suitable for Diesel engines. (It is very important to remove all impurities and water from fuel oil before injecting it into a Diesel

[2] A good book on the subject of fuel oils, their specifications, handling, treatment and testing is: "*Bunkers: an analysis of the practical, technical and legal issues*" by Christopher Fisher and Jonathan Lux; published by Lloyd's of London Press in London.

Another useful, but slightly outdated, publication is "*Bunkers, A guide for the ship operator*" by W.D. Ewart; published by Fairplay Publications.

engine). When during the 1960s and 1970s very large tankers and bulk carriers were constructed, Diesel engines needed to be very big as well. This meant that the engine took up a lot of the vessel's cargo space and carrying capacity. Therefore these large ships were propelled by turbines, which are much smaller in size than Diesels, but a lot less efficient. Over the last few decades, power output per cylinder has increased dramatically and almost all big ships are now propelled by Diesel engines. Higher fuel efficiency also requires that fuel specifications have to be more stringent than before.

Oil companies used to provide fuel according to their own specifications; mainly centered around **density** and **viscosity**. However, after they abandoned the bunker business, selecting proper bunkers became rather a nightmare. To create some order, several organisations developed and published marine fuel standards during the 1980s. The main ones are **CIMAC**, the International Council on Combustion Engines. This organisation concentrates mainly on the suitability of fuels for specific types of engines.

The other main standard is ISO (International Standards Organization). Their latest revision **ISO 8217**[3] was published in 1996. Table 9.9 is a

Parameter	Limit	RME 25	RMG 35	DMA	DMB
Comparable to:		IFO 180*	IFO 380*	MGO	MDO
		* Viscosity @ 50°C			
Appearance		black	black	clear	black
Density @ 15°C mt/m³/liter	Max.	0.991	0.991	0.890	0.900
Viscosity 100°C for FO (mm²/sec)	Max.	25	35	6 **	11 **
				** Visc. @ 40°C	
Flashpoint in °C	Min.	60	60	60	60
Pour point in °C (winter climate)	Max.	30	30	- 6	0
Carbon Residue (ppm by weight)	Max.	15	18		0.3
Ash (ppm by weight)	Max.	0.1	0.15	0.01	0.01
Water (% by volume)	Max.	1	1		0.3
Sulfur (% by weight)	Max.	5	5	1.5	2
Vanadium (ppm by weight)	Max.	200	300		
Aluminium + Silicon (ppm by weight)	Max.	80	80		

Table 9.9: ISO 8217; 1996 Fuel Standards RME 25, RMG 35. DMA and DMB

[3] The standards are the property of ISO in Geneva, Switzerland. Copies can be procured on-line at: http://www.iso.ch/iso/en/CatalogueDetailPage.Catalogue Detail?CSNUMBER =23697&ICS1=75&ICS2=160&ICS3=20

ISO fuel standards and related information can also be found at BUNKERWORLD's Internet site: http://www.bunkerworld.com/technical/iso8217_res.htm

composite of some of the values that may be listed in ISO 8217; 1996 fuel standard. Please note, IFO 180 and IFO 380 (both viscosities at 50°C) are comparable to respectively RME 25 and RMG 35. DMA is Marine Gas Oil and DMB is Marine Diesel Oil.

Table 9.10 is a copy of a Certificate of Analysis, based on an actual shipment of 1,500 mt. no. 6 Fuel Oil IFO 380, stemmed in the USA.

Test	Test method	no. 6 oil
Gravity, API @ 60°F	D-1298	11.9
Density @ 15°C	D-1298	0.986.2
Viscosity 50°C	D-445	335.1
Viscosity 100°C	D-445	32.1
Flashpoint in °C	D-93 B	83.3
Pour point in °C	D-97	- 6.0
Carbon Residue (ppm by weight)	D-4530	16.1
Ash (ppm by weight)	D-482	0.017
Water (% by volume)	D-95	0.05
Sulfur (% by weight)	D-4294	2.82
Vanadium (ppm by weight)	AAS	39.1
Aluminium (ppm by weight)	IP-377	9.5
Silicon (ppm by weight)	IP-377	5.6

Table 9.10: Actual certificate of Analysis no. 6 Fuel Oil IFO 380

Here is a brief description of the various parameters. Please note only maximum values are listed here, with the exception of Flashpoint.

Density

Density (in a vacuum) is measured in metric tons per m^3. A metric ton = 1,000 kg. In the USA and in many other countries, the law requires that for commercial purposes weight has to be based on measurement in air; not in a vacuum. When density is given, the weight of oil is converted into standard volume at 15°C (59°F). For an explanation of other terms, such as relative density, API and specific gravity, you may want to go back to the beginning of chapter 2 and look under NOTES. Density of heavy fuel oil is typically in the 0.900 to 1.000 range. The lower the density, the "lighter" the fuel.

Density level is important when it comes to separating water from the fuel. If the fuel has a density close to one, the same as for water, it is hard to separate it out by way of a conventional centrifuge on board ship.

Taking bunkers

Since fuel is usually sold by weight, but is measured in volume, it is important that the supplier provides the buyer with the correct density.

Let's say the ship owner ordered 3,000 mt (in air) bunkers with a declared density of 0.9811. Temperature of the fuel in the bunker tanks is 32°C (89.6°F). Cost is $200/mt.

While the bunkers are loaded, the chief engineer calculates what volume to expect. 3,000 mt in air x weight factor of 1.00105 (see table 56) gives weight in a vacuum of 3,003.2 mt. (If no table 56 is at hand, you can estimate weight in a vacuum by adding about 1 mt per 1,000 mt for densities near 1.000). The reason we need to calculate weight in a vacuum is because densities are stated in a vacuum. 3,003.2 mt in a vacuum divided by density of 0.9811 gives 3,061.1 m^3 at 15°C. To correct for temperature, the chief engineer uses table 54B and finds with entries; 0.9811 for density and 32°C for temperature that the VCF is 0.9882. This means that the fuel will occupy tankspace of 3,061.1 m^3 divided by 0.9882 = 3,097.7 m^3 at 32°C in the bunker tanks.

After completion of bunkering the chief engineer gauges the ship's tanks for ullage and temperature and finds that he has received 3,097.7 m^3 bunkers. This is exactly what he had expected. However when the bunker supplier presents him with the delivery slip, he only signs for volumes and temperature; not for weight.

Here is the reason why. During bunkering operations the chief engineer took samples and sent them off to a laboratory to check not only for quality of the fuel, but also for the proper density. After a few days he receives a messages from the testing laboratory that the fuel is within all specifications, except for density; which is actually 0.9511; not 0.9811 as stated on the delivery order.

The chief engineer knows that he had 3,061.1 m^3 at 15°C on board (the GSV). By applying the real density of 0.9511 he finds out that actual weight is only 2,911.4 mt in a vacuum. To this number he applies the weight factor from table 56 amounting to 0.99895 and finds that he only received 2,908.3 mt in air. This is short 91.7 mt from what the ship will be billed. At $200/mt, this difference amounts to $18,340.

Of course, some people will say that the ship received "lighter" oil (lower density) that what had been ordered. Depending on how the bunkers were blended, lighter oil may have a higher calorific value. In other words the ship owner may have been short-changed on the quantity, but perhaps received fuel of a higher quality.

The main purpose of this exercise is that it pays to check. Sometimes temperatures are mis-stated, which will result in quantity errors as well.

Table 9.11 is a summary of the above calculations.

Before filing a claim, it has to be borne in mind that (for a variety of reasons) different samples may show different densities and temperatures. One of the reasons is that the fuel oil — especially blends — may have

Bunkers ordered	**3,000.00**	mt in air
Density billed	**0.9811**	
Temperature in ship's tank	**32**	°C
Orders	3,000.0	mt in air
Weight factor Table 56	1.00105	
Weight	3,003.2	mt in vacuum
Density (in vacuum)	0.9811	
Volume (GSV)	3,061.1	m^3 at 15°C
Temperature	32	°C
VCF Table 54 B	0.9882	
TOV in ship's tanks	3,097.7	m^3 at 32°C
Volume (GSV)	3,061.1	m^3 at 15°C
Real density per lab.	0.9511	
Actual weight	2,911.4	mt in vacuum
Weight factor Table 56	0.99895	
Weight	2,908.3	mt in air
Short	91.7	mt
'Cost	**$ 200.00**	per mt
Over-invoiced	$ 18,340.00	

Table 9.11: Bunker fuel quantity calculations

stratified while in the shore tank or in the delivery barge. It is therefore preferable to take in-line drip samples if this is feasible.

Viscosity

Strictly speaking viscosity of a substance is an indication of resistance of the internal molecules among themselves, or its deformation under influence of an external force. This is called **absolute viscosity**. Molasses is highly viscous, water is less so, and the viscosity of gasses is very small. However, what we are really interested in is the **kinematic viscosity**. It is the ratio of absolute viscosity to the density of the substance; fuel oil in our case.

Since a viscous substance flows easier after it has been heated, **kinematic viscosity** is tied to a specific temperature. Viscosity as specified in ISO 8217 is based on 100°C for heavy bunker fuel and 40°C for distillate fuels. Please note, in many cases heavy fuel oil is still ordered as 180 cSt or 380 cSt; based on 50°C. Over the years there have been many different ways to measure kinematic viscosity, such as Engler degrees, Saybolt Universal Seconds, Saybolt Furol Seconds, Redwood

no. 1 seconds. This system led to a lot of confusion when a viscosity of one scale was based on a one specific temperature, but viscosity on another scale was based on another temperature. The industry now seems to have settled on **Kinematic Viscosity Scale** in centistokes (cSt). One cSt is 1 mm^2/second.

The lower the kinematic viscosity at a specific temperature, the faster the oil will flow. This is important for pumping the fuel. For instance if the fuel is stored in the double bottom tank of a vessel operating in Arctic waters, it may be hard to move the fuel from primary storage to the settling and service tanks. Viscosity also has a bearing on how easy it is to inject and atomise the (heated) fuel into the cylinder of a Diesel engine, because the speed of combustion is directly proportional to the size of the fuel droplet. The smaller the droplet, the larger the surface area of the same amount of fuel and the more complete the combustion. Improper injection may result in uneven and/or incomplete combustion.

Flashpoint

This is the lowest temperature where the fuel gives off enough vapours to be ignited when an external flame is applied. **Flashpoint** is determined according to the **Pensky-Martens closed cup** (PMCC) method of testing.

The higher the flashpoint of a liquid, the safer it is for storage and handling. Lubricating oils have a high flashpoint and are low risk when it comes to storing and handling. However, gasoline with a flashpoint of - 40°C/- 40°F is extremely **flammable** and is not allowed as a fuel on board cargo ships. In fact the lowest acceptable flashpoint temperature for shipboard fuel is 60°C (140°F). It is therefore important to order fuel oil with a flashpoint substantially above 60°C, because if subsequent tests show that it is below that temperature, safety regulations require that the bunkers have to be offloaded again.

To prevent the fuel from generating excess fumes and perhaps igniting, it is important when bunkers are loaded, that the fuel is not exposed to hot surfaces such as exposed hot steam coils in the bottom of a tank. Combustible vapours, combined with oxygen in an empty tank can lead to an explosion. Bunker fuels in storage or service tanks should always be kept at a temperature of at least 10°C below its flashpoint.

For distillate fuels it is important to avoid static electricity build-up. ISGOTT chapter 7, section 4 describes the proper procedures for handling "**static**" cargoes and fuels. Black oils, such as heavy fuel oil, generally do not accumulate static electricity.

Pour Point

This is the temperature when wax will settle out and the oil becomes unpumpable. Once waxy fuel starts to solidify to the consistency of shoe

polish, it may be hard to make it liquid again, because the wax acts as an insulator. The oil directly in contact with the heating coils may melt, but the rest stays solid. It may be necessary to empty the fuel tank with shovels at great expense. To keep the fuel liquid at all times, it needs to be heated and kept at a temperature of about 10°C/18°F above **pour point**. Our example shows a pour point of 30°C for heavy fuel oil. This means that under practically all circumstances the fuel needs to be heated while in the ship's primary storage tanks. Special care should be taken if the heating installation is limited and the vessel trades in cold climates with fuel stored in a tank directly adjacent to the water.

Pour point of distillate fuel oil is much lower and this fuel normally does not require heating while in the ship's storage tanks. Of course it is heated before injection into a Diesel engine.

Carbon Residue

This parameter gives an indication of the amount of deposits that may be formed after incomplete combustion of the fuel. Fuel with a high level of carbon residue is difficult to burn and can foul up the engine, especially the manifold exhaust/turbocharger intake space. Ask any engineering cadet who had to crawl into the cylindrical space that runs along the engine, what a dirty job it is to clean out this mess. The actual amount of carbon deposits depends on the type of engine and how it is operated. With proper injection, and with the engine operated at full load, formation of **carbon residue** may be greatly prevented.

Ash

The inorganic non-combustible material in the fuel such as: iron, lead, zinc, nickel, sodium, calcium, magnesium, silicon and vanadium contribute to the formation of ash. Some of these components are abrasive and may cause damage to the engine injection nozzles, valves and seats. Ash deposits may cause excessive wear or even breakage of the piston rings; causing escape of hot gases. Proper centrifuging of the fuel may reduce the level of non-soluble ash components.

Water

Water in fuel oil may have a variety of sources. It can be the result of tank leakage from either adjacent ballast tanks, or from seawater leaking through the ship's hull. Another potential cause is tank condensation or leakage from steam heating coils. Of course the fuel may already contain water when it is delivered. Since you only want to pay for pure fuel, it is advisable to put a special clause in the fuel-purchasing contract, stating that you will only pay for fuel net of BS&W (basic sediment and water). Sodium in salt water may — at high temperatures — cause a chemical reaction with other components in the fuel and result in sticky, corrosive deposits on valves and seats. Water in fuel also leads to corrosion of the tanks and pipelines of the fuel system and may lead to increased sludge

formation. In addition to retarding combustion, water in the fuel may also disrupt the atomised spray pattern and cause deterioration of the lubricating oil film on the cylinder wall.

There are a lot of reasons you don't want water in your fuel, but one of the most obvious ones is money. Let's say you ordered 3,000 mt. fuel at $200/mt; containing 2% (by volume) of water. 3,000 mt with a density of 0.900 has a volume of 3,333 m³. 2% of 3,333 = 66.7 m³ = 66.7 mt of water; costing $200/mt, for a total of $13,340. That is why it is important to put a clause in the fuel purchasing contract that stipulates that price is net of BS&W (basic sediment and water). See bunker fuel confirmation note in Appendix 9.2.

Before the fuel is injected into a large Diesel engine, it is pumped from the storage tank into a tall settling tank in the engine room Here it stays for a day or so to let water, sludge and impurities settle at the bottom, which are subsequently drained off. After settling, the fuel is run through a special centrifuge system to remove additional water and dirt. Fuel oil with a density close to 1.000 or higher is often cheaper than lighter grades, but before placing a bunker order, it is important to check if the vessel has the proper centrifuge system on board to clean this type of fuel.

Sulphur

Sulphur is dissolved into the fuel and cannot be centrifuged out. During combustion sulphur oxides may be formed. Combined with water condensate these sulphur oxides may lead to sulphuric acids that will corrode the low temperature zones of the engine exhaust system. The use of proper lubricating oils neutralises the effect of sulphur in the engine itself. For environmental reasons, IMO and the EC have developed guidelines for maximum sulphur content in marine distillate fuels. Once adopted by member states, it may be necessary to burn one kind of distillate fuel oil at sea, and another grade while in port.

Vanadium

Vanadium levels depend mainly on the kind of crude oil the fuel oil has been distilled from. Venezuelan crude oils have a high vanadium content and therefore a lot of bunker fuels in USA and Caribbean ports may have high vanadium levels. Vanadium is soluble in oil, and its level can only be reduced by blending it down with low vanadium stocks. Combined with sodium, vanadium ash may corrode steel, or cause deposits on exhaust valves and seats.

Aluminum and Silicone

These are mainly byproducts from the catalytic cracking process and may cause abrasive wear of the engine.

Time Charter clauses (See chapter 4, clause 45)

If a ship is offered for time-charter and requires specific bunker fuel, obviously the owner should say so in the c/p; directing the t/c operator what type of fuel to buy. Without special fuel specifications it will be very hard for an owner to lodge a subsequent claim for engine damage against the t/c operator, claiming that the vessel was operated with improper fuel.

Just as a pre-emptive measure, t/c operators may want to put a clause in the c/p, specifying the fuels they plan to buy for the vessel while in their employ. Depending on where the ship will operate, the t/c operator will select a suitable fuel grade that is widely available and reasonably priced.

Another important consideration is to put a special clause in the t/c contract specifying that the bunkers paid for by the charterers remain their separate property, even if the ship is arrested or impounded, or is declared a total loss (see clause 45 b in chapter 4).

Bunker Fuel purchasing contract

See Appendix 9.1 for the **BIMCO Standard Bunker Contract** published in November 2001 and for an example of a **Confirmation Note** see Appendix 9.2.

The **confirmation note** is exchanged between buyer and seller to confirm specific quantity and specifications of the fuel and to confirm or amend the terms of the standard contract. The confirmation note in our example also gives basic contact information, place and means of delivery, additional fees and charges, payment terms, minimum delivery rate, demurrage rates in case of delay, and selection of the laws and place for dispute resolution.

Conclusion

Bunker fuels form a large part of a vessel's daily operating cost and, as demonstrated in this chapter, a company can achieve substantial savings by developing proper fuel management guidelines. To get a better insight into shipboard operations and to optimise fuel consumption, it is important that the commercial manager stays in close contact with the vessel's chief engineer and master.

Chapter 10

FINANCIAL PLANNING

He who possesses most, must be most afraid of loss.
Leonardo Da Vinci

Shipping, just like any other business, requires sound financial planning, and since nobody — not even ship brokering analysts — can predict the future, it is important to evaluate business decisions in the best way possible, based on the data that is available.

Non-economic decisions

Of course not all business decisions are based on pure economic or financial considerations. With regard to shipping it may be necessary to send a ship to the breakers because of imposed age limits, even though the ship may have several years of economic life left. Another example is owners having to replace single hull tankers with double hulled ones, because charterers demand it. A port may have been deepened, enabling larger ships to come in. Some ships, instead of winding up on the scrap heap, are converted for a special purpose, like an FPSO, where cost of the ship itself is not the over-riding factor. A particular owner may want to buy somebody else's fleet just to expand market share. Some of the decision-making processes may be guided by family traditions.

Return on investment

In this chapter we will look at financial considerations that may have a profound effect on the well-being of your business. Since shipping is a capital-intensive industry, it is important to know if investing in a particular project will generate an acceptable **rate of return** on investment. There are several ways to look at investments. Only the most fundamental concepts will be covered here and can perhaps best be explained by examples.

Payback period

This crude method measures how long it will take to recover a capital outlay through a stream of income, or savings in labour and material. It is primarily used for fairly small investments with a relatively short asset life. Let's say you have been using your neighbour's copier or had to run to a copy shop to make copies. In either case you pay $0.15 per page. You estimate you make about 1,000 copies per year, for a total cost of

$150. A new copier costs $300 and annual expense for paper, toner and maintenance is $50 per year.

Q: ***What is the payback period for your new copier?***

A: By buying a new copier you save $150 per year, but your expenses are $50, for a net savings of $100 per year.

Payback period in years = net cash outlay/annual net savings = $300/($150-$50) = 3 years

If the copier remains productive for more than three years, with the same annual expenses, it is a good investment. Moreover, in addition to saving money, you also gain the convenience of not having to bother your neighbour and not having to go over to a copy shop and perhaps have to wait in line.

Here is another **payback** example.

You travel to sporting events to sell hotdogs. You have noticed that people are also interested in BBQ beef and in roasted chicken, so you are thinking about expanding your business. A BBQ Smoker costs $1,000 and a Chicken Roaster also costs $1,000. After doing some research you estimate you will earn the following profits:

Year	BBQ Smoker	Chicken Roaster
1	$ 200	$ 100
2	$ 300	$ 100
3	$ 350	$ 100
4	$ 150	$ 100
Subtotal	$ 1,000	
5	$ 100	$ 300
6	$ 0	$ 300
Subtotal		$ 1,000
7	$ 0	$ 500
8	$ 0	$ 700
Total	$ 1,100	$ 2,200

Table 10.1: Payback period BBQ Smoker and Chicken Roaster

As you can see the BBQ Smoker pays for itself after four years. Initial demand for roasted chicken is slow and it takes six years for the Roaster to pay for itself. Based on this, the BBQ Smoker seems to be the better investment. As we shall see later on in this chapter, the big flaw of this method is that it does not take into account:

1) Profits generated after the payback period.
2) The time value of money.

Another **payback** example is a merchant needing some quick cash to market a popular product for the Christmas season. He is offering to pay investors $120,000 after three months for each $100,000 invested now. The $120,000 is guaranteed by an Irrevocable Letter of Credit; confirmed by a major bank. Return on investment is $20,000 in three months, or 80% on an annual basis. In this case there is no need to perform complicated calculations to figure out that this is a profitable investment, provided return of the $120,000 is covered by an ironclad guarantee.

Average rate of return (Av. R of R)

This is the average annual net income over the life of the asset divided by the average (one half) of the cost of the asset minus its salvage value. Let's say an asset produces $150,000 in 10 years. The cost of the asset is $210,000 and the salvage value is $10,000.

Av. R of R = $150,000/10 years, divided by half of ($210,000 — $10,000)

Av. R of R = $15,000/$100,000

Av. R of R = 15%

Average rate of return is sometimes called the "bookkeeper" method, since it is not really a rate of return, because the time-value of money has not been taken into account.

Capital budgeting

A more sophisticated method than payback period or average rate of return is **capital budgeting**; a process utilised to evaluate return on investment of assets employed over a number of years. Basically capital budgeting compares the initial capital outlay against the forecasted (time-value-adjusted) flow of returns.

Most capital investment decisions centre on buying a new piece of equipment to replace an old, worn-out one. In other instances it is necessary to replace a cost or labour intensive or obsolete asset with a new and more efficient one. A good example is replacing a turbine driven ship with a Diesel powered vessel.

Most companies have their own procedures to arrive at "ground-rules" to evaluate capital investments. Here are some of the main considerations that may pertain to shipping:

1. Size of initial capital outlay.
2. Duration of capital outlay.
3. Total cost of the asset; (quality).
4. Expected income over life of the asset.

5. Expected inflation.
6. Currency exchange risks.
7. Special legal and regulatory requirements; (OPA90, IMO).
8. Lag-time between order and delivery; (changes in supply & demand).
9. Comparison of alternative investments (buy, lease, charter).
10. Ability to finance the project; (self-finance, loans, bonds, issue new stock).
11. Financing cost, or cost of capital employed.
12. Allocation of funds; (which type of investments have company priority).
13. Effect on company's income statement and balance sheet.
14. Increased or decreased level of working capital.
15. Tax considerations; (income/property/tonnage tax; registration fees).
16. Depreciation rate and loss/gain of book value.
17. Risk considerations (oil spills).
18. Obsolescence; technological changes.
19. Ability to respond to market changes; (OBOs can haul oil or dry bulk).
20. Level of competition; (tankers vs pipelines).
21. Political climate; (countries may elect to haul cargo in their own ships).
22. Availability and cost of a trained labour force.
23. Risk of over-capacity.
24. Cost of installation/commissioning/delivery.
25. Operating cost; (fuel is a major portion of daily operating cost).
26. Maintenance and repair costs.
27. Periodic dry-docking costs.
28. Cost of insurance.
29. Lay-up cost.
30. Conversion of the asset for other use; (storage vessel, FPSO).
31. Salvage value.
32. Disposal cost.
33. Office overhead and management costs.

Even though capital budgeting itself is an accurate calculation method, it has to be borne in mind that the above variables need to be considered

in the decision making process and that each one of them can have a profound effect on whether the investment will be profitable or not. For long-term investments, such as in shipping, it is prudent to offset as much **risk** as possible. One approach is to out-charter the ship on a long-term basis with a guaranteed t/c rate. To cover against fluctuations of operating costs that are for owners account, it is advisable to include **escalation clauses** in the c/p. For example if crew costs are based on a fixed amount, but are expected to go up 5% each year, an owner should try to recoup this; either directly, or in the form of increased hire. The same is true for other cost elements. Of course, under a t/c the t/c operator pays for the fuel (but not for lubricating oils) and port charges, so there is no need to have escalation clauses for those costs. Unless agreed to differently, under a bareboat charter all voyage and all operating costs are for the charterer, so there is less need for escalators. However, financing costs may be subject to floating interest rates.

Compound interest

Most people are familiar with this. Let's say you invest $500 at 6% interest.

Q. ***To what amount will this $500 grow in 5 years?***

A. The long way is to calculate it all out:

After year 1: $500.00 x 1.06 = $530.00

After year 2: $530.00 x 1.06 = $561.80

After year 3: $561.80 x 1.06 = $595.51

After year 4: $595.51 x 1.06 = $631.24

After year 5: $621.24 x 1.06 = $669.11

After 5 years at 6% interest the $500 has grown to $669.11

The same answer can be found by consulting a **compound interest table** (see table 10.2). Explanation of table 10.2: (PV = **present value**)

Col.	Description	Formula
A	At the end of year 1,2,3....	
B	Interest rate; applied once each year end	
C	Sum of 1; after each year	(1 + interest rate)^ no of years
D	PV of 1; after each year	Reciprocal of col. C
E	PV of an annuity	Sum of PV values in col. D
F	Partial, or mortgage payments	1/col. E

The intersect of year 5 in column A with column C, shows a factor of 1.338226. This is the same as: 1.06 x 1.06 x 1.06 x 1.06 x 1.06.

A	B	C	D	E	F
End yr.	**Int. rate**	**Amount of 1**	**PV of 1/yr.**	**PV of 1 ev. yr.**	**Partial pmt.**
1	**6%**	1.060000	0.943396	0.943396	1.060000
2	6%	1.123600	0.889996	1.833393	0.545437
3	6%	1.191016	0.839619	2.673012	0.374110
4	6%	1.262477	0.792094	3.465106	0.288591
5	6%	1.338226	0.747258	4.212364	0.237396
6	6%	1.418519	0.704961	4.917324	0.203363
7	6%	1.503630	0.665057	5.582381	0.179135
8	6%	1.593848	0.627412	6.209794	0.161036
9	6%	1.689479	0.591898	6.801692	0.147022
10	6%	1.790848	0.558395	7.360087	0.135868
11	6%	1.898299	0.526788	7.886875	0.126793
12	6%	2.012196	0.496969	8.383844	0.119277
13	6%	2.132928	0.468839	8.852683	0.112960
14	6%	2.260904	0.442301	9.294984	0.107585
15	6%	2.396558	0.417265	9.712249	0.102963
16	6%	2.540352	0.393646	10.105895	0.098952
17	6%	2.692773	0.371364	10.477260	0.095445
18	6%	2.854339	0.350344	10.827603	0.092357
19	6%	3.025600	0.330513	11.158116	0.089621
20	6%	3.207135	0.311805	11.469921	0.087185

Table 10.2: Compound interest, present value and partial payment table at 6%

In formula form:

$\mathbf{S_n = (1 + i)^n}$

S_n = the sum after n periods

i = interest rate per period

n = number of periods

Once the **compound interest factor** has been found, it can be applied to the **principal** to find the total sum after n years. In our example $500 x 1.338226 = $669.11.

It is very easy to construct your own table on a spreadsheet with the above formula. In MS Excel the "power to" sign is ^. For example: 2 x 2 x 2 = 2^3 = 8. The above table is constructed in such a way that by just altering the discount rate printed in **bold** in the $\boxed{\text{box}}$, the whole table will change (compare to table 10.6C).

Most financial institutions calculate interest rates more often than once a year; like once a month. To find total sum of S, compounded once a month, at 6% for 5 years, the same formula can be used; except n is now: 5 years/12 months = 60, and interest factor is: 6%/12 = 0.005.

$S_{60} = (1 + 0.005)^{60}$

If you enter this into your spreadsheet, you'll find a factor of 1.34885. Principal of $500 x 1.34885 = $674.43. This is slightly more than the $669.11 found above. The reason is that interest has been earned on top of interest. The more often interest is calculated, the larger the end amount. In fact a lot of banks compound interest **continuously**; especially on loan payments and credit card balances.

Please note, some courts in the USA stipulate **simple interest** in their judgment awards. Assume you won a $100,000 award. The judge declares that 6% pre-judgment interest needs to be paid over an eight year period. The total amount you can claim is:

$100,000 + interest of 6% of $100,000 = $100,000 + $6,000 x 8 years = $148,000

If the interest had been **compounded** once per year, the total amount would be:

$100,000 x 1.593848 (see table 10.2 under col. C at 8 years) = $159,384.80.

The rule of 72

A rough way to find out how long it will take to **double your money** invested at a certain interest rate can be determined with the **rule of 72**. Divide 72 by the interest rate. Let's say 6%. It will take roughly 72/6 = 12 years to double your money. At 9% it is 72/9 = eight years; at 12% it is 72/12 = six years. For example $1,000 invested at 6% will grow to about $2,012.20 in 12 years (see table 10.2 under 12 years and factor 2.012196 in column B).

Present Value (PV)

Now let's take the opposite tack. From above we learned that $500 invested for five years at 6% interest, compounded at the end of each year, yields $669.11.

Assume somebody owes you $500, payable after five years at 6% interest. You tell your debtor that you can use the money now. Your debtor knows a thing or two about finance and offers to pay you now, but a lesser amount.

Q. ***How much would be a fair amount?***

A. Actually we can use the same methodology, but backwards:

$ 500/1.06/1.06/1.06/1.06/1.06 =$373.63.

You could have found the same answer by looking in table 10.2 under five years in column A and find the **present value factor** in column D:

0.747258. Multiplying this by $500 yields $373.63; the same amount as found the long way.

The whole idea behind the **present value** concept is to take the time-adjusted value of money and compare it to the initial cash outlay. You are better off receiving $500 today than five years from now. The same is true for all kind of business situations. On many occasions there are several options to choose from. Later on we will look at a particular project where you need to decide whether it is better to buy, to lease, or to charter a ship. Rather than flying by the seat of your pants or seeking divine intervention, try using the pv method to make rational decisions.

To illustrate the time-adjusted value of money, we'll take a closer look at **lotteries**.

You have just delivered your last ship, the *HAPPY HAULER*, to the Quagmire & Muck Demolition Company and will use the proceeds to pay off all your debts. As soon as you have left the shipping business, your luck turns miraculously and you win $4,000,000 in the lottery. Your spouse is very excited and starts looking for a mansion in the fancy part of town. Actually there are quite a few houses for sale in the $4 million price range that can be bought without any money down. (Later on you learn from a local real estate broker that after a government crackdown on corporate corruption, some of the occupants of the empty dwellings now reside in a much bigger house; one surrounded by tall barbed-wire fences).

The winning lottery ticket is your only asset and you have no other income that you want to spend on the new house. After cashing in the lottery proceeds, your tax rate will be 30%.

Q. ***Should you make an offer on one of the mansions?***

A. Don't order the movers yet! Here are the sobering facts. The $4 million is payable in 20 yearly installments of $200,000 each. Another option is to get the cash now, but discounted at 6%. The PV factor of 6% at 20 years is 0.311805. Therefore you will receive: $4,000,000 x 0.311805 = $1,247,220 as a one-time cash payment. After you pay 30% tax on this you get to keep: $1,247,220 x (1- tax rate) = $1,247,220 x 0.7 = $873,054; not nearly enough to pay cash for the abode.

Option 2:

Instead of paying cash, you may want to get a mortgage and make annual payments. You will receive $200,000 x 0.7 (1-tax rate) = $140,000 per year.

After consulting with your CPA firm: Street Walker & Hooker, you learn that for a 20-year 6% fixed mortgage, annual payments will be $348,738.23*; much higher than the $140,000/year net you'll collect from winning the lottery. Nice, but forget about the mansion.

**You could have found the same answer by looking in table 10.2 under column F at 20 years. The factor is: 0.087185. Multiply this by $4,000,000 = $348,740.00. The difference is due to rounding of the table values.*

If ever there was an award for false advertising, lotteries would take the first prize. All you hear about is big prize money, but as we have seen above, the pay-off is usually over 20 or even 25 years. Moreover, the odds of winning are astronomical. For example the odds of picking the winning four numbers from 1 to 100 is one chance in 3.9 million. The odds of picking six winning numbers from 1 to 50, is one in 15.8 million. When a few years ago the Texas Lottery folks noticed a loss of interest and sluggish ticket sales, they came up with a fancy TV commercial; proclaiming that the lottery had been expanded with four "lucky" numbers from 50 through 54, with a chance to win much bigger prizes. What they failed to broadcast was that by just expanding the pool from 50 to 54 numbers, the odds of winning went from one in 15.8 million to one in 25.8 million.

Actually lotteries are a giant rip-off, but since governments are sponsoring them, it is legitimate. Most lotteries only spend 50% of "intake" on prize money. (Some of that money is used for promotion and administering the scheme). Then they only pay about one third or less, based on present value. On top of that, most governments collect a hefty tax on the prize money.

Odds/Probability of Success

Assume you receive one of those promotional flyers in the mail where you can win a million dollars without having to buy anything. All you have to do is return the card (so the sponsor can sell your name & address to a telemarketer). Looking at this through the eyes of a statistician, the following ground rule applies:

Reward x Odds = Expected Pay-off

If the expected Pay-off is more than the theoretical expenditure, accept the proposal.

Since everybody else may have received the same flyer, the chances of winning are very slim; let's say one in five million.

Q. ***Should you return the flyer; considering the stamp will cost you $0.30?***

A. No!

Using the above formula:

$ 1,000,000 x 1/5,000,000 = $0.20

In other words, you have the potential of making 20 cents by spending 30 cents. This is not a sound proposition.

Now let's take a shipping example.

A charterer needs to move some cargo really quickly and the first suitable vessel that tenders a Notice of Readiness will get the charter that is $50,000 over what the ship would normally make for a similar trip. There are five other ships in the running that have an equal chance of getting the business. You check with the ship's Chief Engineer and he says the ship can increase speed, but at higher fuel consumption. The total extra fuel will cost $10,000.

Q. ***Should you give the order to increase speed and hope to beat the other ships?***

A. Reward x Odds = Expected Pay-off

$50,000 x 1/5 = $10,000

This is equal to the expense of the extra fuel. Therefore, from a business standpoint, it does not matter whether you're going to spend extra money for the potential reward, or do nothing and look for other cargo.

Of course, not everything can be expressed in a mathematical formula. Let's say your little girl-scout daughter and her troop are selling **raffle tickets** at $1.00 each to raise money for a new clubhouse. The girls sold 1,000 tickets and the only prize is five boxes of brownies (biscuits); worth a total of $20,00.

Q. ***Would you buy a raffle ticket?***

A. Using our formula: $20.00 x 1/1,000 = $0.02. In other words you spend $1.00 to potentially make two cents. Not a good bet, but of course when it comes to your little darling, all bets are off and you're going to buy lots of raffle tickets.

Here is another "non-mathematical" example. Let's say you stand to make $5,000,000 extra by sending your tanker into a dangerous war zone. Your ship is fully insured and all you have to pay is $10,000 in extra war insurance. There is only a 1% chance that the vessel will be attacked and destroyed, with the loss of all hands.

Reward x Odds = Expected Pay-off

$5,000,000 x 1/100 = $50,000

The "pay-off" is five times more than the expense of $10,000 on extra insurance, so it is a good bet. However, would you want to look the widows of your crew in the eyes for some ill-gotten monetary gain?

Cash-flow PV analysis

For more capital intensive and longer lasting investment options you may want to use the **present value** method. The PV value method takes the **time-adjusted value of money** into account. The objective of the analysis is to determine if the time-adjusted return on investment is more, or less than the initial cash outlay.

For example, the PV of a cash-flow stream is $1,100 on an investment of $1,000. The **net present value** (NPV) of this investment is a positive $100 and the investment is a valid one, based on the **objectives** you have set for yourself.

Another way is as follows: $1,100/$1,000 = 1.1. As long as the factor is larger than 1, the project exceeds your investment objective.

The main parameters you have to determine are **time** in years and the **discount rate**. The discount rate is the **standard**, or yardstick, against which you measure your investment. An investor would most likely look at the rate of return on a safe investment such as a savings account, a certificate of deposit or a government bond. If the rate of return on the above safe investments is 5%, this could be called your **opportunity cost**, because if you invest into something else, you forgo the almost automatic 5%.

Private businesses often base their **discount rate** on the interest rate of their bank loans. Obviously an investment will not be considered profitable if its rate of return is less than its cost of the loan. In other words you are not going to invest in something with a 7% rate of return if it costs you 8% to borrow the money.

Public companies base their discount rate most likely on their **cost of capital**, consisting of bank loans, bonds, preferred stock and the cost of underwriting, distributing and paying dividends on shares. Determination of the cost of capital of a large company is not an easy task. For example, if a company borrows more money or floats more bonds, it gets deeper into debt, and as a result may have to pay higher interest rates on those loans or bonds. If it issues new shares there will be dilution of the old shareholders' stake.

In general, the more **risk** you take, the higher return you require. For example, an oil company may want to set a high discount rate of 20% for an offshore drilling project to account for the high risk of the operation; including hitting a dry hole. Another example is a venture capital company that requires a high rate of return to compensate for the deals that don't work out.

Annuity

You receive $750 per year for five years on a 6% annuity for a total of $3,750.

Q. ***What is the present value of this income stream?***

A. Column E of table 10.2 shows the PV value of an **equal deposit made every year** and having the same interest rate. As mentioned in the table explanation, the value in col. E at five years is equal to the sum

of the values in col. D from year 1-5.

0.943396

0.889996

0.839619

0.792094

0.747258

4.212363

(The small difference from the listed value in table 10.2 is due to rounding).

Apply factor 4.212364 to $750 for a total PV amount of $3,159.27

Another example:

Let's assume you inherit $100,000 after taxes and want to use the money for your retirement years. You take the $100,000 to a bank or life insurance company and buy a 10-year, 6% annuity to receive 10 equal payments, starting after year one.

Q. ***How much will you receive at the end of each year?***

A. If you put $xyz in the bank every year for 10 years, at 6% interest, the amount will have grown to $xyz x 7.360087 (see table 10.2, col. E at 10 years). Receiving an annuity is just the opposite:

Annuity amount = $100,000/7.360087 = $13,586.80

You could have found the same in table 10.2 col. F at 10 years. The factor is: 0.0135868. Multiply this by $100,000 to yield $13,586.80.

Loan or mortgage payments

Assume you want to buy a new car for $27,000. The dealer takes your old car worth $2,000 as a trade-in and offers to make you a $25,000 loan for five years at 6% interest.

Q. ***How big are your annual payments?***

A. Look in table 10.2 col. F under five years. You find factor 0.237396. Multiply this by $25,000 and you find annual payments of $5,934.90, or about $494.58 per month. (As seen above, to get the correct monthly payment amount, you need to use 5 years x 12 months = 60 periods and monthly interest rate of 6%/12 = 0.5%)

NPV examples

This is a good opportunity to take another look at which is the better investment: the BBQ Smoker or the Chicken Roaster of table 10.1. Instead of evaluating this investment by way of the payback period, the NPV method will be applied.

Year	Profit BBQ Smoker	Factor	PV	Profit Chicken Roaster	Factor	PV
1	$200.00	0.943396	$188.68	$100.00	0.943396	$94.34
2	$300.00	0.889996	$267.00	$100.00	0.889996	$89.00
3	$350.00	0.839619	$293.87	$100.00	0.839619	$83.96
4	$150.00	0.792094	$118.81	$100.00	0.792094	$79.21
5	$100.00	0.747258	$74.73	$300.00	0.747258	$224.18
6				$300.00	0.704961	$211.49
7				$500.00	0.665057	$332.53
8				$700.00	0.627412	$439.19
Totals	$1,100.00		$943.09	$2,200.00		$1,553.90
Cost			$1,000.00			$1,000.00
NPV			- $56.91			$553.90

Table 10.3: NPV BBQ Smoker vs. Chicken Roaster at 6% discount rate

As seen earlier, based on payback period, it was determined that the BBQ smoker was the better investment. However, the NPV method shows quite a different story. The BBQ Smoker is paid off after four years and generates another $100 in year 5. After that it is worn out and disposed of without salvage value. The NPV of this investment is negative. Actually the investor would have been better off putting his money into a 6% savings account.

The Chicken Roaster generates a total of $2,200 in eight years, or a positive $553.90 in NPV. Obviously this is the better investment.

This clearly demonstrates that the payback period is a poor way of evaluating investments. However, keep in mind that the NPV calculation is only as good as the figures you forecast.

Here are some other examples based on imaginary situations.

1) Your spouse wants you to invest $1,000,000 in tax-free five-year, 6% government bonds, floated by the First Presbyterian Bank & Trust.

2) Your investment firm: Churn Flopp & Dudd recommends that you put your $1,000,000 into a mutual fund that specialises in distressed, unsecured, shipping junk bonds. Average return is 16%, but 25% of the issues fail, with the underlying company going bankrupt. This makes the effective rate of return 0.75 x 16% = 12%. Some of the bankrupt companies reorganise and issue new stock in a new company. The mutual fund company sells these shares and returns a $80,000 bonus for every $1 million invested for five years. The bonus is guaranteed in the form of an Irrevocable Standby Letter

Project:	**Tax-Free bonds**					
	Initial Investment	$1,000,000				
6%	**Discount rate**					
0%	**Tax rate**					
Year	**Transaction**	**Income**	**Tax**	**Net Inc.**	**PV factor**	**PV**
1	Dividend	$60,000	$0	$60,000	0.943396	$56,604
2	Dividend	$60,000	$0	$60,000	0.889996	$53,400
3	Dividend	$60,000	$0	$60,000	0.839619	$50,377
4	Dividend	$60,000	$0	$60,000	0.792094	$47,526
5	Dividend	$60,000	$0	$60,000	0.747258	$44,835
5	Face value bond	$1,000,000	$0	$1,000,000	0.747258	$747,258
Totals		$1,300,000	$0	$1,300,000		$1,000,000
Initial investment						$1,000,000
					NPV	$0
	Shorter method					
Project:	**Tax-Free bonds**					
	Initial Investment	$1,000,000				
6%	**Discount rate**					
0%	**Tax rate**					
Year	**Transaction**	**Income**	**Tax**	**Net/yr.**	**PV 1 ev. yr**	**PV**
5	Dividend ea. yr.	$60,000	$0	$60,000	4.212364	$252,742
5	Face value bond	$1,000,000	$0	$1,000,000	0.747258	$747,258
Totals			$0			$1,000,000
Initial investment						$1,000,000
					NPV	$0

Table 10.4A: Tax free bonds

Project:	**Junk Bond**					
	Init. Investment	$1,000,000				
12.00%	**Discount rate**					
10.00%	**Tax rate**					
Year	**Transaction**	**Income**	**Tax**	**Net Inc.**	**PV factor**	**PV**
1	Bond income	$120,000	$12,000	$108,000	0.892857	$96,429
2	Bond income	$120,000	$12,000	$108,000	0.797194	$86,097
3	Bond income	$120,000	$12,000	$108,000	0.711780	$76,872
4	Bond income	$120,000	$12,000	$108,000	0.635518	$68,636
5	Bond income	$120,000	$12,000	$108,000	0.567427	$61,282
5	Bonus	$80,000	$8,000	$72,000	0.567427	$40,855
5	Ret. of init. inv.	$1,000,000	$0	$1,000,000	0.567427	$567,427
Totals		$1,680,000	$168,000	$1,612,000		$997,598
	Init. investment					$1,000,000
					NPV	-$2,402

Table 10.4B: Junk bonds with "late" bonus

of Credit; confirmed by a major bank. Your tax rate is 10%.

Q. ***Which option will yield the most money?***

A. The government bonds will yield $ 60,000 per year for five years tax-free.

A couple of things can be derived from table 10.4A. If the interest payment and the discount rate are equal, the NPV will be zero. Secondly, instead of calculating the NPV of similar interest payments separately for each year, with individual factors listed in table 10.2 col. D, it is much easier to use one factor in col. E (4.212364); especially for long time spans.

Now let's take a look at the junk bonds.

You notice that the NPV is negative. This means that on NPV basis your investment is not acceptable at the planned discount and tax rate. Therefore the unglamorous, but "sure-thing" government tax-free bond is a better investment; especially since a lot can go wrong with the junk bonds.

Now we will make a slight modification to demonstrate the power of time-adjusted value of money. Suppose you can convince the manager of the mutual fund into paying you the $80,000 bonus after year 1 instead of after year 5. Would this make much of a difference? Let's see.

Project:	**Junk Bond early bonus**					
	Ini. Investment	$1,000,000				
12.00%	**Discount rate**					
10.00%	**Tax rate**					
Year	**Transaction**	**Income**	**Tax**	**Net Inc.**	**PV factor**	**PV**
1	Bond income	$120,000	$12,000	$108,000	0.892857	$96,429
1	Bonus	$80,000	$8,000	$72,000	0.892857	$64,286
2	Bond income	$120,000	$12,000	$108,000	0.797194	$86,097
3	Bond income	$120,000	$12,000	$108,000	0.711780	$76,872
4	Bond income	$120,000	$12,000	$108,000	0.635518	$68,636
5	Bond income	$120,000	$12,000	$108,000	0.567427	$61,282
5	Ret. of init. inv.	$1,000,000	$0	$1,000,000	0.567427	$567,427
	Totals	$1,680,000	$168,000	$1,612,000		$1,021,029
	Init. investment					$1,000,000
					NPV	$21,029

Table 10.4C: Junk bonds with "early" bonus

Table 10.4C shows a positive NPV. Therefore it is a good investment as measured against the objectives you have set for yourself. This shows that cash-flow received early makes a big difference, when measuring investment options.

You are still not too excited about investing $1 million and only getting

a return of 6%. Your brother-in-law (the one married to the mail-order bride) has put you in touch with an investment opportunity in Asia. The Amalgamated Wicker Basket Weaving Company has received an order to produce one billion commemorative baskets; to be distributed to the masses. You can buy yourself in for $1 million in return for a stream of dividends as listed below. Dividends are guaranteed in the form of an Irrevocable Standby L/C; confirmed by a major international bank in your home country.

Year	Amount
1	$200,000
2	$300,000
3	$400,000
4	$500,000
5	$600,000
Total	$2,00,000

At first glance, this looks like a pretty good deal. You invest $1,000,000 and get $2,000,000 back. However, you may have noticed that most of the pay-off is in the later years. You want to make at least 15% on this rather high-risk investment. Your tax rate is 25%.

Q. ***Is this a good deal?***

A. Let's do an NPV analysis.

Project:	Basket Co.					
	Init. Investment	$1,000,000				
15.00%	Discount rate					
25.00%	Tax rate					
Year	**Transaction**	**Income**	**Tax**	**Net Inc.**	**PV factor**	**PV**
1	Dividend	$200,000	$50,000	$150,000	0.869565	$130,435
2	Dividend	$300,000	$75,000	$225,000	0.756144	$170,132
3	Dividend	$400,000	$100,000	$300,000	0.657516	$197,255
4	Dividend	$500,000	$125,000	$375,000	0.571753	$214,407
5	Dividend	$600,000	$150,000	$450,000	0.497177	$223,730
	Totals	$2,000,000				$935,959
	Init. investment					$1,000,000
					NPV	-$64,041

Table 10.4D: Return on investment Basket Weaving Co. at 15% discount rate

Even though you receive back twice as much as your investment, the NPV balance shows a negative amount of $64,041. Therefore, this investment does not meet your criteria.

Now let's take the same example, but you have lowered your sights and calculate the NPV against a discount rate of only 10% instead of 15%.

Project:	Basket Co.					
	Init. Investment	$1,000,000				
10.00%	Discount rate					
25.00%	Tax rate					
Year	**Transaction**	**Income**	**Tax**	**Net Inc.**	**PV factor**	**PV**
1	Dividend	$200,000	$50,000	$150,000	0.909091	$136,364
2	Dividend	$300,000	$75,000	$225,000	0.826446	$185,950
3	Dividend	$400,000	$100,000	$300,000	0.751315	$225,395
4	Dividend	$500,000	$125,000	$375,000	0.683013	$256,130
5	Dividend	$600,000	$150,000	$450,000	0.620921	$279,414
	Totals	$2,000,000				$1,083,253
	Init. investment					$1,000,000
					NPV	$83,253

Table 10.4E: Return on investment Basket Weaving Co. at 10% discount rate

At 10% discount rate the NPV balance is positive and meets with your investment objective. After looking at exotic investments, you turn your attention to real estate. Crestfallen Manor Property Company has a vacant lot for sale in the less desirable part of town. After spending an initial $50,000 on striping, the lot can be used for parking. Net parking fees, after expenses and property taxes, are $80,000 per year. In year 1, year 3 and year 5 the circus comes to town and they offer to reimburse you for lost parking revenue, plus an extra $10,000 to pitch their tent. With stagnant property values, you figure that after five years you can sell the land again for $1,000,000. Your discount rate is 6% and your tax bracket is 10%.

Q. ***Is this a good deal? A. Here is the NPV analysis.***

Project:	Parking lot	Lot	Striping	Total			
	Initial Investment	$1,000,000	$50,000	$1,050,000			
6%	Discount rate						
10%	Tax rate						
Year	**Transaction**	**Income**	**Exp.**	**Tax**	**Net Inc.**	**PV factor**	**PV**
1	Park + Circus	$90,000	$0	$9,000	$81,000	0.943396	$76,415
2	Parking Fees	$80,000	$0	$8,000	$72,000	0.889996	$64,080
3	Park + Circus	$90,000	$0	$9,000	$81,000	0.839619	$68,009
4	Parking Fees	$80,000	$0	$8,000	$72,000	0.792094	$57,031
5	Park + Circus	$90,000	$0	$9,000	$81,000	0.747258	$60,528
5	Sale Lot	$1,000,000	$0	$0	$1,000,000	0.747258	$747,258
	Totals	$1,430,000	$0	$143,000	$1,287,000		$1,073,321
	Init.investment						$1,050,000
					NPV	$23,321	

Table 10.5A: Parking Lot; tax rate 10%

The NPV is positive. Therefore the investment is acceptable.

However, you are still not sure and consult with your tax advisor of the firm: Hogg Wash Balder & Dash. They inform you that there will be an increase of your tax rate, so you calculate the NPV for an 18% tax rate.

Project:	Parking lot	Lot	Striping	Total
	Initial Investment	$1,000,000	$50,000	$1,050,000
6%	Discount rate			
18%	Tax rate			

Year	Transaction	Income	Exp.	Tax	Net Inc.	PV factor	PV
1	Park + Circus	$90,000	$0	$16,200	$73,800	0.943396	$69,623
2	Parking Fees	$80,000	$0	$14,400	$65,600	0.889996	$58,384
3	Park + Circus	$90,000	$0	$16,200	$73,800	0.839619	$61,964
4	Parking Fees	$80,000	$0	$14,400	$65,600	0.792094	$51,961
5	Park + Circus	$90,000	$0	$16,200	$73,800	0.747258	$55,148
5	Sale Lot	$1,000,000	$0	$0	$1,000,000	0.747258	$747,258
	Totals	$1,430,000	$0	$257,400	$1,172,600		$1,044,338
	Init. investment						$1,050,000
						NPV	- $5,662

Table 10.5B: Parking Lot; tax rate 18%

After an 8% tax increase your project will no longer have a positive NPV balance.

The above examples show that it may be wise to subject your investment options to a NPV analysis under different scenarios.

Shipping Examples

After analysing investment possibilities in general, the same principles can be applied to shipping.

Let's assume that after the lucrative tanker market of the last few years you want to invest in a VLCC. The shipyard is offering you a 20-year loan at a low (subsidised) interest rate of 6% and a 20% down payment. Your company is incorporated in a tax-free country. Below are the main factors (in simplified form) that need to be considered:

NPV in Table 10.6A is negative, so this is not a good investment based on the criteria you have set yourself. However, if you are able to negotiate a slightly higher daily t/c rate of $29,000/day, NPV will be positive. (see Table 10.6B)

This shows that the NPV method is a good way to determine minimum t/c rates. If the market does not support the t/c rate you have determined, you may have to accept a lower rate initially and try to get an increase for later years. However, always remember that it is preferable to have a high cash-flow in the early, rather than in the in the later, years.

NEW VLCC; 20 year @ 6% interest loan and 20% down payment	PV @ 6%
New-building cost of VLCC	$70,000,000
Down payment percentage	20%
Down payment amount	$14,000,000
Mortgage	$56,000,000
6%-20 yr factor (Table 10.2 col. F)	0.087185
Annual Mortgage Payment	$4,882,360
Annual Operating Costs	
Mortgage Payments + Banking Fees	$5,000,000
Crew Wages + Overtime Pay + Vacation + Travel + Training	$1,000,000
Maintenance & Repair (M&R), incl. drydocking (d.d.) portion	$1,000,000
Hull & Machinery (H&M) + Protection & Indemnity (P&I) Insurance	$1,000,000
Spare Parts + Stores + Lubes	$500,000
Office Overhead + Travel	$500,000
Total annual cost	$9,000,000
Annual Revenue	
Long-term daily t/c rate (with escalators to cover increased op. costs)	$28,000
Annual operating days	350
Annual t/c income	$9,800,000
Annual cash-flow (Revenue - Cost)	$800,000
PV factor 6%-20 yr (Table 10.2 col. E)	11.469921
PV (Revenue – Cost)	$9,175,937
Salvage Value after 20 years (42,000 LTD @ $250/LTD)	$10,500,000
PV factor 6% -20 yr (Table 10.2 col. D)	0.311805
PV Salvage Value	$3,273,953
Total PV	$12,449,890
Initial cash outlay (down payment)	$14,000,000
NPV	- $1,550,110

Table 10.6A: Cost and NPV of a new VLCC at $28,000/day at discount rate of 6%

For long-term charters it is a good idea to incorporate "**escalating clauses**" into the c/p to compensate for the increased cost of operating expenses paid for by the owner, such as wages, insurance, maintenance, repair and dry-docking costs, lube oils, stores, etc.

As a final thought, a 6% rate of return is rather inadequate on such a costly and long-term investment. You may be able to invest your money in the bond market and make the same 6%, but virtually risk-free return.

Total annual cost (same as in table 10.6A)	$9,000,000
Annual Revenue	
Long-term daily t/c rate (with escalators for increase of op. costs)	$29,000
Annual operating days	350
Annual t/c income	$10,150,000
Annual cash-flow (Revenue - Cost)	$1,150,000
PV factor 6% 20 yr (Table 10.2 col. E)	11.469921
PV Revenue - Cost	$13,190,409
Salvage Value after 20 years (42,000 LTD @ $250/LTD)	$10,500,000
PV factor 6% -20 yr (Table 10.2 col. D)	0.311805
PV Salvage Value	$3,273,953
Total PV	$16,464,362
Initial cash outlay (down payment)	$14,000,000
NPV	$2,464,362

Table 10.6B: Cost and NPV of a new VLCC at $29,000/day at discount rate of 6%

Table 10.6D shows that with a daily t/c rate of $31,812 and a discount rate of 15% (use Table 10.6C) the NPV is almost zero. This was determined by trial and error in a spreadsheet. Anything over this daily t/c rate makes the investment more profitable.

Internal Rate of Return (IRR)

Instead of changing the daily t/c rate to arrive at an NPV of near zero, we can of course leave the t/c rate the same and vary the discount rate (15% in table 10.6D) to arrive at an NPV of zero. Arriving at NPV = 0 is a trial and error method and somewhat tedious, but there are computer programs that can do it for you. Some companies rank their investments based on IRR. For example, they may accept projects with IRR over 12% for closer scrutiny, but reject anything below IRR of 12%.

Depreciation

You may have noticed that there is no mention of **depreciation** in the above VLCC examples. Depreciation can be deducted from income to lower income and corporate taxes, but in the above shipping examples it has been assumed that income was tax free.

There are several **depreciation methods**. The tax laws under which you operate determine which method you are allowed to use. Some countries try to stimulate investment and let you use accelerated depreciation, or let

A	B	C	D	E	F
End yr.	**Int. rate**	**Amount of 1**	**PV of 1/yr.**	**PV of 1 ev. yr.**	**Partial pmt.**
1	15%	1.150000	0.869565	0.869565	1.150000
2	15%	1.322500	0.756144	1.625709	0.615116
3	15%	1.520875	0.657516	2.283225	0.437977
4	15%	1.749006	0.571753	2.854978	0.350265
5	15%	2.011357	0.497177	3.352155	0.298316
6	15%	2.313061	0.432328	3.784483	0.264237
7	15%	2.660020	0.375937	4.160420	0.240360
8	15%	3.059023	0.326902	4.487322	0.222850
9	15%	3.517876	0.284262	4.771584	0.209574
10	15%	4.045558	0.247185	5.018769	0.199252
11	15%	4.652391	0.214943	5.233712	0.191069
12	15%	5.350250	0.186907	5.420619	0.184481
13	15%	6.152788	0.162528	5.583147	0.179110
14	15%	7.075706	0.141329	5.724476	0.174688
15	15%	8.137062	0.122894	5.847370	0.171017
16	15%	9.357621	0.106865	5.954235	0.167948
17	15%	10.761264	0.092926	6.047161	0.165367
18	15%	12.375454	0.080805	6.127966	0.163186
19	15%	14.231772	0.070265	6.198231	0.161336
20	15%	16.366537	0.061100	6.259331	0.159761
16	15%	9.357621	0.106865	5.954235	0.167948
17	15%	10.761264	0.092926	6.047161	0.165367
18	15%	12.375454	0.080805	6.127966	0.163186
19	15%	14.231772	0.070265	6.198231	0.161336
20	15%	16.366537	0.061100	6.259331	0.159761

Table 10.6C: Compound interest, present value and partial payment table at 15%

	PV @ 15%
Total annual cost	$9,000,000
Annual Revenue	
Long-term daily t/c rate (with escalators for increased op. costs)	$31,812
Annual operating days	350
Annual t/c income	$11,134,200
Annual cash-flow (Revenue - Cost)	$2,134,200
PV factor 15% 20 yrs (Table 10.6C col. E)	6.259331
PV Revenue - Cost	$13,358,664
Salvage Value after 20 years (42,000 LTD @ $250/LTD)	$10,500,000
PV factor 15% -20 yr (Table 10.6C col. D)	0.061100
PV Salvage Value	$641,550
Total PV	$14,000,214
Initial cash outlay (down payment)	$14,000,000
NPV	$214

Table 10.6D: Cost and NPV of a new VLCC at $32,000/day at discount rate of 15%

you shorten the number of years an asset can be written off. Both result in initial higher depreciation values, thus lower taxes. Another reason for accelerated depreciation is that in the early years maintenance and repair costs are low, but are higher in the later years. To balance things out it is sometimes beneficial to use accelerated depreciation if allowed to do so.

Let's look at some examples of a new asset costing $1,100, with a salvage value after 10 years of $100.

The most common depreciation methods are:

Straight line

= cost of new asset – salvage value/no of years

= ($1,100 –$100)/10 years

= $100/year

Double declining balance

After year 1:

2 x 100%/10 years

= 20% of $1,100 (depreciation only on the new value; no salvage value)

= $220.00 for year 1

After year 2:

20% (1,100 -$220)

= 20% of $880

= $176.00 for year 2

After year 3:

20% ($880-$176)

= 20% of $704

= $140.80 for year 3

Sum of the years digits

Add the digits of the number of years over which the asset will be written off. In out example it is 1+2+3+4+5+6+7+8+9+10 = 55.

Depreciation in year 1:

10/55 x($1,100 - $100)

= 10/55 x $1,000

= $181.82

Depreciation in year 2:

9/55 x ($1,100 - $100)

=9/55 x $1,000

= $163.64

Depreciation in year 10:

1/55 x ($1,100 - $100)

=91/55 x $1,000

= $18.18

Table 10.7 is a simple example that shows how depreciation effects income.

Assume an asset costs $10,000 and (for tax purposes) is written off in five years. There is no salvage value. Straight Line depreciation is $2,000 per year. The asset produces income after expenses of $3,000 for seven years. Your tax rate is 20%.

Year	Income	Depreciation	Inc. – Depr.	Tax 20%
1	$3000	$2,000	$1,000	$200
2	$3000	$2,000	$1,000	$200
3	$3000	$2,000	$1,000	$200
4	$3000	$2,000	$1,000	$200
5	$3000	$2,000	$1,000	$200
6	$3000	$0	$3,000	$600
7	$3000	$0	$3,000	$600

Table 10.7: Effect of depreciation on tax

As you can see, you pay substantially less tax over the years you are allowed to deduct depreciation. If your company is headquartered in a tax-free country, you won't benefit from deducting depreciation from regular operating income, because you don't pay taxes anyway. However, you hate to see this benefit go to waste.

Leasing

During the last few years several ship owners have sold their ships to high-income institutions, like insurance companies or partnerships of wealthy people, residing in countries where income taxes are high. For example, in Germany **KG**s (Kommanditgesellschafts) buy ships; claim the depreciation allowance and perhaps receive tax investment credits from their government. Often they lease the ship straight back to the original owner (**sale-leaseback**). By applying depreciation and possible tax credits against income, they save themselves quite a bit of money. This enables the lessor to offer lower leasing rates.

A further advantage to a shipping company is for financial statement reasons. Most ships are financed, and the debt is listed on the company's balance sheet. When the company sells the vessel and leases it right back, the debt is removed from the balance sheet and perhaps lease payments are

only listed as a footnote in the financial statements. With debt decreased, the shipping company shows a stronger balance sheet and can perhaps qualify to buy and finance another ship.

One drawback is that the salvage value goes to the lessor; not to the original ship owner. Another danger is that the tax laws of the lessor's country may change. Often leasing contracts contain clauses that require reimbursement to the lessor for lost tax credits. Tax authorities can create tax incentives, but they can take them away too; especially if there is a change of government.

There are several other similar sale-leaseback institutions in other NW European countries with high tax rates. In essence the taxpayers of these countries subsidise ship owners/operators, who probably don't pay income or corporate tax in the first place. Paraphrasing the legendary soul singer Sam Cooke: "What a wonderful world this is !"

Many airline companies lease, rather than own their aircraft outright. Leasing is an attractive alternative if a company does not have the financial strength to come up with a large down payment to buy an expensive asset. Another reason for leasing is that operators residing in a tax levying country can usually deduct the full lease payment. On regular mortgage payments only the interest portion is tax-deductible. When a mortgage has almost been paid off, the greatest portion of the regular payment constitutes principal; not interest.

Buy vs Bareboat vs Time-Charter decisions

Assume your company secured a Contract of Affreightment to haul iron ore from Tubarao in Brazil to Rotterdam in Holland. The contract is for five years for a total of 8,750,000 mt, to be transported in a Capesize bulk carrier with 175,000 mt cargo carrying capacity per trip. Minimum number of round trips: 10 per year. Freight for all five years $ 8.25/mt. Your company does not have a suitable ship available and faces three options:

1) Buy a 10-year old Capesize bulk carrier at $25,000,000 with a 20% down payment and a 10 year 6% mortgage. After five years the company will pay off the mortgage and the vessel will be sold at $ 8,000,000. The company will evaluate this type of investment at a PV discount factor of 15%. Operating costs are listed in table 10.8A.

2) Bareboat charter a Capesize bulk carrier for five years at daily hire of $10,000 per day and operating costs as listed in table 10.8B. PV discount fact or is 15%.

3) The third option your company will consider is time-chartering a Capesize bulker with operation costs as listed in table 10.8C. Again the PV discount factor is 15%.

Buy 10 year old Capesize; 20% d.p. @ 6% 10 year mortgage		
Financial Costs		
Cost of 10 year old Capesize		$25,000,000
Down payment percentage		20%
Down payment amount		$5,000,000
Mortgage		$20,000,000
6%-10 year factor (Table 10.2 col. F)		0.135868
	Annual Payment	$2,717,360
Operating Costs		
No. of operating days		350
Bunkers mt/day (at sea and in port)		60
Av. cost of bunkers		$180
	Total bunkers per year	$3,780,000
Port charges loadport		$70,000
Port charges discharge port		$130,000
	Total PC per trip	$200,000
Distance		4,950
Roundtrip distance		9,900
Speed in knots		14.5
Days at sea		28.4
Days in port		6.6
Days per roundtrip		35.0
No. of trips per year of 350 op. days		10
Revenues		
Cargo in mt		175,000
Freight rate $/mt		$8.25
Revenue per voyage		$1,443,750
Annual revenue (10 voyages)		$14,437,500
Annual Operating Costs		
Annual mortgage payment		$2,717,360
Crew Wages + Overtime Pay + Vacation + Travel + Training		$1,000,000
Maintenance & Repair (M&R), incl. drydocking (dd) portion		$1,000,000
Hull & Machinery (H&M) + Protection & Indemnity (P&I) Insurance		$500,000
Spare Parts + Stores + Lubes		$300,000
Office Overhead + Travel		$200,000
Annual bunker cost		$3,780,000
Annual port charges		$2,000,000
	Total annual operating cost	$11,497,360
Summary		
Annual cash-flow (Revenue - Cost)		$2,940,140
PV factor 15%-5 yr. (Table 10.6C col. E)		3.352155
PV net revenue for 5 years		$9,855,805
Sale of vessel; value after 5 years		$8,000,000
Pay off mortgage balance (calculated with special program)		-$11,446,505
Vessel sale – mortgage balance (net mortgage balance)		-$3,446,505
PV factor 15% -5 yr. (Table 10.6C col. D)		0.497177
PV net mortgage balance		-1,713,523
PV (net revenue for 5 years - net mortgage balance)		8,142,282
Initial investment (down payment)		-$5,000,000
	NPV	$3,142,282

Table 10.8A: Buy a Capesize bulker

BB charter Capesize for 5 years	
No. of operating days	350
Daily hire	$10,000
Annual bareboat hire	$3,500,000
Bunkers mt/day (at sea and in port)	60
Av. cost of bunkers	$180
Total bunkers per year	$3,780,000
Port charges loadport	$70,000
Port charges discharge port	$130,000
Total PC per trip	$200,000
Distance	4,950
Roundtrip distance	9,900
Speed in knots	14,5
Days at sea	28.4
Days in port	6.6
Days per roundtrip	35.0
No. of trips per year of 350 op. days	10
Cargo in mt	175,000
Freight rate $/mt	$8.25
Revenue per voyage	$1,443,750
Annual Freight (10 voyages)	$14,437,500
Annual Operating Costs	
Annual hire	$3,500,000
Crew Wages + Overtime Pay + Vacation + Travel + Training	$1,000,000
Maintenance & Repair (M&R), incl drydocking (dd) portion	$1,000,000
Hull & Machinery (H&M) + Protection & Indemnity (P&I) Insurance	$500,000
Spare Parts + Stores	$300,000
Office Overhead + Travel	$200,000
Annual bunker cost	$3,780,000
Annual port charges	$2,000,000
Total annual operating cost	$12,280,000
Annual cash-flow (Revenue - Cost)	$2,157,500
PV factor 15%-5 yr (Table 10.6C col. E)	3.352155
NPV	$7,232,274

Table 10.8B: Bareboat charter of a Capesize bulker

Time charter Capesize for 5 years		
No. of operating days		350
Daily hire		$18,000
Annual t/c hire		$6,300,000
Bunkers mt/day (at sea and in port)		60
Av. cost of bunkers		$180
	Total bunkers per year	$3,780,000
Port charges loadport		$70,000
Port charges discharge port		$130,000
	Total PC per trip	$200,000
Distance		4,950
Roundtrip distance		9,900
Speed in knots		14.5
Days at sea		28.4
Days in port		6.6
Days per roundtrip		35.0
No. of trips per year of 350 op. days		10
Cargo in mt		175,000
Freight rate $/mt		$8.25
Revenue per voyage		$1,443,750
Annual Freight (10 voyages)		$14,437,500
	Annual Operating Costs	
Annual hire		$6,300,000
Annual bunker cost		$3,780,000
Annual port charges		$2,000,000
	Total annual cost	$12,080,000
Annual cash-flow (Revenue - Cost)		$2,357,500
PV factor 15% 5 yrs (Table 10.6C col E)		3.352155
	NPV	$7,902,705

Table 10.8C: Time charter of a Capesize bulker

Based on the scenarios and assumptions employed in above spreadsheet the company's options have all been reduced to Net Present Value (NPV), which allows for a valid comparison:

Option	Vessel	NPV
1	Buy and sell a suitable vessel	$3,142,282
2	Bareboat charter a similar vessel	$7,232,274
3	Time-charter a similar vessel	$7,902,705

As seen, the time-charter T/C option yields the greatest NPV, followed by the bb charter option and thirdly by buying and selling a ship. Above calculations are only as good as the numbers used. With slight differences in revenue or cost, the picture could change dramatically. However, by utilising the Present Value, or "today's money" method, an owner or operator can make an educated guess as to what the best alternative will be under the circumstances. The above examples do not include tax considerations (see under the headings Depreciation and Leasing).

Continue Trading vs Lay-up

The final spreadsheet in this chapter makes a comparison between trading at a low freight rate and lay-up costs. The example in table 10.9 is based on a similar ship as in table 10.8A. At a freight rate of $4.29/mt for iron ore from Tubarao, Brazil to Rotterdam, Holland in a Capesize bulk carrier, the annual loss is almost $4 million. Your first instinct would be to lay the ship up if she is trading at a loss.

The lay-up column shows that the mortgage wages for a skeleton crew and some M&R and an allowance for drydocking and office overhead costs still need to be paid. Furthermore the ship needs to keep insurance, albeit at a lower cost than if she would be trading. The ship still consumes some stores, and lubes and 5 mt fuel per day to keep her generators going. At certain anchorages there may also be lay-up fees. Adding all this up in the "lay-up" column comes to almost $4 million as well.

The calculation shows that even if the ship loses money while trading, her earnings still contribute to fixed costs that will be incurred regardless. When laid up, there are no revenues to contribute to fixed costs; only expenses. That is why most owners keep a vessel trading; even at a loss.

The selected freight rate of $4.29/mt shows that annual losses for trading and for lay-up are about the same. A freight rate higher than $4.29/mt will result in a smaller loss than the lay-up option. If the freight market is less than $4.29/mt, it may be better to lay the ship up. However, before deciding on lay-up, an owner may make an interim decision by leaving the ship idle at anchor or at an inexpensive lay-berth. Operating costs will be lower than when trading.

In addition to lay-up cost listed in table 10.9, an owner should also take into consideration the following potential costs before deciding on lay-up:

Continue Trading vs. Lay-up	Keep trading	Lay-up
Cost 10 year old Capesize	$25,000,000	$25,000,000
Down payment percentage	20%	20%
Down payment amount	$5,000,000	$5,000,000
Mortgage	$20,000,000	$20,000,000
6%-10 year factor (Table 10.2 col. F)	0.135868	0.135868
Annual Payment	$2,717,360	$2,717,360
No. of operating days	350	350
Bunkers mt/day	60	5
Av. cost of bunkers	$180	$180
Total cost of bunkers per year	$3,780,000	$315,000
Port charges loadport	$70,000	0
Port charges discharge port	$130,000	0
Total PC per trip	$200,000	0
Distance	4,950	
Roundtrip distance	9,900	
Speed in knots	14.5	
Days at sea	28.4	
Days in port	6.6	
Days per roundtrip	35.0	
No. of trips per year of 350 op. days	10	
Revenue		
Cargo in mt	175,000	0
Freight rate $/mt	$4.29	0
Revenue per voyage	$750,750	0
Annual Freight (10 voyages)	$7,507,500	0
Annual Operating Costs		
Annual mortgage payment	$2,717,360	$2,717,360
Crew Wages + O.T. Pay + Vacation + Travel + Training	$1,000,000	$100,000
Maintenance & Repair (M&R), incl. drydocking (dd) portion	$1,000,000	$150,000
Hull & Machinery + P&I Insurance	$500,000	$250,000
Spare Parts + Stores + Lubes	$300,000	$50,000
Office Overhead + Travel	$200,000	$50,000
Annual bunker cost	$3,780,000	$315,000
Annual port charges/Lay-up fees	$2,000,000	$360,000
Total annual cost	$11,497,360	$3,992,360
Net annual (loss)	($3,989,860)	($3,992,360)

Table 10.9: Continue trading vs. lay-up

- Steaming to and from the lay-up area.
- Lay-up and re-commissioning cost.
- Crew repatriation and re-embarking travel costs.

Furthermore, it is important to realise that the machinery of a laid up ship will usually deteriorate faster than when she is trading. Seals dry out and machinery and equipment may need extensive refurbishing. Moreover in some areas the hull is subject to fouling by barnacle growth that may have to be cleaned off before the vessel can return to service.

Conclusion

As a final thought, all the examples in this chapter were based on fictitious numbers. The reader may want to use these spreadsheets as a tool to do their own calculations, but with their own numbers and arrive at different conclusions as discussed above.

Chapter 11

LETTERS OF CREDIT

It is foolish to bolt a door with a boiled carrot.
English proverb.

Introduction

Normally commercial managers of shipping operations don't have to deal with **Letters of Credit** (L/C). Moreover, most people find the subject rather tedious. Still, it may be of some benefit to dedicate a separate chapter to L/Cs for the following reasons:

(1) Since a lot of international trade is covered by L/Cs, readers of this book that are involved in international commodity trading may find some useful information in this chapter.

(2) Mis-delivery of the cargo without production of the original "negotiable" Bill of Lading is usually one of the greatest risks to a shipowner. One of the main reasons that the B/L is not available at the discharge port is because it may be "hung up" in the banking system. Very often this is because shipping documents are not in compliance with the L/C requirements and the bank needs to send the documents back to the seller, or the seller's bank needs to ask the L/C opening bank for permission to pay. In both cases this may take several weeks or more. If shippers would just prepare shipping documents without discrepancies the first time, the chances are that the bank will process the L/C quickly and the buyer will have the original B/L available in the discharge port; at least for voyages longer than a few weeks.

(3) If the shipment is covered by a L/C, shippers often prepare a B/L in a certain format, so it complies with L/C requirements. Therefore owners and master should have a basic understanding of the L/C process, to assist shippers in producing the proper B/L.

(4) A Standby L/C is an ideal tool to serve as a payment guarantee for hire, for freight and for demurrage. Documentation and fees for a Standby L/C are minimal; yet virtually eliminate all the risk of non-payment.

(5) Instead of accepting a Letter of Indemnity (LoI) (which may not be worth the paper it is written on, unless countersigned by a reputable bank) owners should demand a Standby L/C if they are asked to deliver cargo without production of the original, negotiable B/L. Even if a LoI has been issued by a large, reliable company, it may

take years of costly litigation to get paid under the LoI. Under a Standby L/C payment is automatic and immediate.

(6) With a L/C in place, an owner can easily — and without risk — offer delayed payment terms for freight. This may be attractive to large trading companies that do not want to spend a lot of cash up-front and may wish to pay for the freight after they have received payment for the goods.

A **Letter of Credit** is a very versatile financial arrangement between buyers and sellers of goods or services, who may not know anything about each other. Without a L/C both sellers and buyers assume a great deal of risk. If sellers ship goods and send the B/L to the buyers, they hope that the buyers will send the money. If buyers send payment to sellers, they hope that sellers will ship the proper goods.

Buyers and sellers have various ways of dealing with each other; all with a certain amount of risk to either the buyer or seller, or to both:

No.	Transaction	Risk to seller	Risk to buyer
1	Cash in advance	none	high
2	Open account	high	none
3	Consignment sales	high	none
4	Cash-against-documents (sight draft)	low to medium	low to medium
5	Cash-against-documents (time draft)	medium	fairly low
6	Letter of Credit	low	low

(1) Cash in advance

The seller prepares a pro-forma invoice (see Appendix 11.1a and 11.1 b) with cost of the goods, handling, banking and freight charges; all in accordance with the Terms of Trade (see chapter 6, heading 80). The pro-forma invoice also shows general conditions and banking information (see Appendix 11.1b). If buyers agree, they will wire-transfer funds to the bank of the sellers and issue shipping instructions. As soon as sellers have received the funds, they will ship the goods and advise shipping details to buyers. It is good practice for the sellers to mail two original invoices marked PAID to the buyers, plus a copy of the B/L, so buyers can make preparations for Customs clearance in their country.

Under "**cash in advance**" procedure the risk to sellers is virtually non-existent, as long as the funds received are in readily available cash and not in the form of some sort of time draft or promissory note. Buyers on the other hand are exposed to a high degree of risk, because if sellers are dishonourable, they may collect the money but not ship the goods. Since it is difficult and costly to file a lawsuit in another country, the buyers may lose their money.

(2) Open account

This is pretty much the reverse of no. 1, with sellers shipping the goods, but having to rely on the good faith of the buyers to pay. Again, it can be difficult and costly to haul a renegade buyer into court in a foreign country.

(3) Consignment sale

This is more or less the same as no. 2. Buyers will only pay for the goods that they actually sell. One of the problems under a **consignment** sale is what to do with unsold goods. Sellers may have to abandon them, or have them shipped back at their own expense.

(4) & (5) Cash against Documents (CAD)

This is a fairly easy and low risk payment arrangement (see Appendix 11.2). Please note the added risk of time drafts.

(6) Letters of Credit

This is the optimum payment arrangement for both seller and buyer with greatly reduced risk to both parties[1]. Due to the availability of credit reports, the simplicity of communication and an effective legal system, trade between sellers and buyers within the domestic borders of a major trading country is usually fairly safe. However, transactions outside one's own country can be fraught with obstacles.

A L/C is basically an instrument whereby the **creditworthiness** of a buyer is substituted by the creditworthiness of a major bank. A seller may not trust the credit information of a foreign buyer, but he or she probably will trust a well-known bank that acts as intermediary.

Added security can be obtained if a major bank in seller's country **confirms** the L/C. The L/C opening bank (the **applicant's** bank) needs to ask the reimbursing bank in seller's country to confirm the L/C. This means that the beneficiaries will get paid, even if the L/C opening bank defaults, goes out of business, or is prevented from paying due to exchange controls. The fee for this type of "insurance" is typically a fraction of one percent, depending on the financial standing of the L/C opening bank, in which country it is located, and depending on the duration of the L/C's validity.

In some instances Governments offer credit insurance against default by a foreign bank. This is usually for large projects in countries with an unstable currency and with foreign exchange controls.

[1] In the course of owning and operating an export trading company, the author has personally administered hundreds of L/Cs for more than 25 years.

Under a **documentary** L/C the seller has to submit certain documents in order to get paid, such as: a draft, a B/L, an invoice, a packing list, an insurance certificate, test or weight certificates, a certificate of origin, etc. A **Standby** L/C usually requires only a short statement, stating that payment has not been received. It is like a bond and is used extensively as a contract guarantee and for commodity transactions such as oil, ore, coal, grain, etc, where seller and buyer usually know each other fairly well. Since documentary and Standby L/Cs have a lot in common, coverage in this chapter will be concurrent for both, but with emphasis on the former.

A documentary L/C anticipates a **positive** event, as in the seller shipping the goods and receiving payment from the buyer. As long as the seller follows the L/C requirements in minute detail and submits the proper documents without **discrepancies**, he or she will receive payment for the shipped goods. By contrast, the principle of a Standby L/C is based on the occurrence of a **negative** event, as in a buyer failing to pay the seller. Payment under a Standby L/C is usually triggered by a **beneficiary statement** that funds have not been received (see Appendix 11.8). No further documents are required, other than perhaps a draft (depending on the requirements of the Standby L/C).

Since 1933 the **International Chamber of Commerce** (ICC) has published Rules entitled: **Uniform Customs and Practice** (UCP) for Documentary Credits (= L/Cs). From time to time the Rules are revised and updated. As of this writing, the latest Rules have been in effect since 1 January 1994 and are published in **ICC No. 500**[2]. That is why these latest Rules are also called **UCP 500**.

The Rules facilitate clear and unambiguous application of uniform standards for banks all over the world. For a L/C to be effective, it has to contain the phrase: "This L/C is subject to UCP 500".

The **Rules for Standby L/Cs** are published in **ICC No. 590**: International Standby Practices (**ISP98**). Before ISP98 became effective on 1 January 1999, Standby L/Cs were often subject to UCP 500. However, there are distinct differences between UCP 500 and ISP98. For interesting examples, see under headings: "Force majeure" and "Instalment drawings", later on in this chapter.

To get a better insight into Standby L/Cs, the reader may want to consult articles and publications written by Prof. James E. Byrne. A good place to start is at:

http://www.law.gmu.edu/faculty/pubs.php?fac=10

[2] A more recent publication is ICC No. 645: International Standard Banking Practice (ISBP). It contains the UCP 500 Rules, as well as detailed information about how banks interpret the UCP 500 Rules and how they treat the various documents submitted for payment against a documentary L/C.

There are several other excellent articles by other authors, explaining the pros and cons of Standby L/Cs compared to Documentary L/Cs.

If there are problems with a Documentary L/C, discrepancies can often be remedied and sellers still have the means at their disposal to effect payment or to have the goods returned. The same cannot be said of a Standby L/C, and since the amounts of Stand-by L/Cs are often large, it is very important to structure the L/C properly. One of the best ways is to make the Standby L/C subject to ISP98 and NOT to UCP 500.

Bankers, importers, exporters and transport executives rely heavily on the Rules. However, the universal complaint about L/Cs and the UCP Rules is that there is very little room for error, and the slightest omission or spelling error can result in non-payment of a million dollar shipment. The main reason is that banks **deal strictly in documents** (see UCP 500 Art. 4) and that the L/C transaction is totally **separate** from the underlying commercial contract (see UCP 500 Art. 3). In other words, the L/C agreement that the opening bank has with the L/C applicant (the buyer) and with the beneficiary (the seller) is separate and independent from the underlying sales contract between buyer and seller; even if the sales contract is referenced in the L/C. If the documents are in order, the bank will pay, regardless if there is a dispute between buyer and seller over the goods or services provided. If the seller is a crook and ships inferior goods, yet produces proper documents as required by the L/C, the bank will pay. There are only two exceptions to this:

(1) If the bank has conclusive evidence that the documents have been **forged.**

(2) If the bank has conclusive evidence that the underlying transaction is **illegal.**

See also UCP 500 Art. 15 and ISP98 Rule 1.05.

Once the L/C is in place and the seller has submitted the proper documents, the L/C opening bank is obligated to pay, even if the buyer becomes insolvent. That is why most banks require that the L/C applicant puts up sufficient collateral in the form of readily available cash, so the bank can cover the L/C and won't have to pay out of their own pocket.

Any lingering disputes after the L/C has been paid, need to be resolved between buyer and seller; **independent** from the L/C. This makes the L/C such an attractive and powerful instrument. As long as sellers comply with the L/C, they get paid immediately, without having to fight the buyers in arbitration or court procedures.

Of course if the buyer has doubts about the quality of the goods shipped, especially for bulk commodities such as oil, coal, iron ore or grain, he or she should arrange for a proper **inspection** in the load port and stipulate that the **cargo inspector's certificate** is to be a required document of

the L/C. As a rule banks will only pay against clean Bills of Lading (see chapter 6, heading 15). This offers some protection to the buyer, but not much, since the master will usually only make a notation on the B/L if there is visible damage to the cargo and/or packing. A ship's captain is no expert on bulk cargoes like oil, ore, coal and grain and cannot attest to the quality (and exact quantity) of the goods. It is therefore customary for buyers and sellers to engage the services of a cargo surveyor.

Because a L/C eliminates almost all the financial risk to seller and buyer, they are most likely willing to conclude transactions on a much larger scale than without a L/C. As seen later, a properly drafted L/C may also serve as a financing tool for exporters to procure the goods they are selling. Moreover a L/C can be used to offer **credit terms** to the importer, virtually without risk and without extra cost.

Example of a Documentary letter of Credit

Table 11.1 is an example of a Documentary Letter of Credit covering the shipment of merchandise from a seller in the USA to a buyer in Korea, but with shipment from Germany. Generally speaking, when sellers and buyers mutually agree on using a L/C to cover their transaction, the usual procedure is for the sellers (the L/C beneficiary) to issue some general L/C requirements to the buyers (the L/C applicant) (see payment terms on page 2 of the pro-forma invoice, Appendix 11.1b).

A L/C can arrive in different formats from the **advising bank**. Often it is in the form of a **tested telex** via the Interbank **SWIFT** system. Sometimes the L/C is printed on fine bank paper. The **advising bank** in the buyer's country may send the original (either telex or bank paper variety) or a copy of the L/C to the seller. The L/C is accompanied by a covering letter from the advising bank. Sometimes advising banks list their L/C handling fees, but often they do not. The covering letter usually has a phone number of the bank's L/C department and the name of a contact person. It is prudent to call this number to make sure the L/C is not a fake and to find out about possible L/C handling fees if they are not listed in the covering letter.

Before seller and buyer elect to have the transaction covered by a L/C, there are several things they need to agree on before the L/C is drafted.

It is a good idea for the beneficiary to stipulate that the L/C should be in a specific **language**, like English, for example. It is expected that the L/C documents submitted by the beneficiary will be in the same language as the L/C is in.

DOCUMENTARY CREDIT
TESTED TELEX COPY; ORIGINAL L/C RETAINED BY ADVISING BANK

a	APPLICANT'S BANK	COMMERCIAL BANK OF KOREA, LTD SEOUL
b	FORM OF DOC. CREDIT	IRREVOCABLE
c	DOC. CREDIT NO.	M1708503NS01757
d	DATE OF ISSUE	18 MARCH 1995
e	EXPIRATION DATE	20 JULY 1995 AT COUNTER OF NEGOTIATING BANK
f	APPLICANT	KOCHIAM INTERNATIONAL INC. SEOUL KOREA
g	BENEFICIARY	AMERICAN TRADE CO. 1314 TEXAS AVE. SUITE 1419 HOUSTON, TEXAS77002-3515 U.S.A.
h	AMOUNT	USD20,300.00
i	DRAWEE	BANK OF KOREA, LTD., THE AGENCY
j	PARTIAL SHIPMENT	PROHIBITED
k	TRANSSHIPMENT	PROHIBITED
l	PORT OF LOADING	HAMBURG PORT; GERMANY
m	FOR TRANSPORT TO	BUSAN PORT; KOREA
n	LATEST SHIPDATE	30 MAY 1995
o	DESCRIPT. OF GOODS	ORDER NO: AC-5009 ULTRALON IV:WHITE 10 ROLLS ATUSD2,030/RL USD20,300.00 5 X 32 METER SHIPPING TUBES 10EA INCLUDED USD0.00 TOTAL AMOUNT : USD20,300.00 ORIGIN GERMANY FOB HAMBURG
p	DOCUMENTS REQUIRED	+ FULL SET OF CLEAN ON BOARD BILLS OF LADING MADE OUT TO THE ORDER OF THE COMMERCIAL BANK OF KOREA LTD. MARKED FREIGHT COLLECT AND NOTIFY ACCOUNTEE
q		+ SIGNED COMMERCIAL INVOICE IN 5 FOLD
r		+ PACKING LIST IN 5 FOLD
s		+ CERTIFICATE OF ORIGIN
t	DETAILS OF CHARGES	ALL BANKING CHARGES (INCLUDING POSTAGE, ADVISING AND PAYMENT COMMISSION, NEGOTIATION AND REIMBURSEMENT COMMISSION) OUTSIDE KOREA ARE FOR ACCOUNT OF BENEFICIARY
u	PRESENTATION PERIOD	DOCUMENTS MUST BE PRESENTED WITHIN 21 DAYS AFTER THE DATE OF SHIPMENT OF B/L OR OTHER TRANSPORTATION DOCUMENTS
v	CONFIRMATION	WITHOUT
w	REIMBURSEMENT BANK	COMMERCIAL BANK OF KOREA, LTD., NEW YORK AGENCY NEW YORK, NY
x	INSTRUCTIONS	1) T/T REIMBURSEMENT IS PROHIBITED 2) YOU MAY REIMBURSE YOURSELVES BY SENDING BENEFICIARY'S DRAFT TO THE REIMBURSEMENT BANK 3) YOU MUST FORWARD ALL DOCUMENTS TO US BY COURIER SERVICE

Table 11.1: Example of a Documentary Letter of Credit

Here are some comments regarding the L/C as listed in table 11.1:

(a) Applicant's Bank

It is usually up to the buyers (the L/C applicant) to select the bank of their choice. Once the beneficiaries receive the L/C, they should verify via the Internet, via international banking directories in major libraries, via their own bank, or via the advising bank, that the applicant's bank is a major reputable international bank.

(b) Irrevocable L/C

It used to be that this had to be specified in the L/C, but under UCP 500 Art. 6 c, a L/C is considered to be "**irrevocable**" unless stated differently. It speaks for itself that a revocable L/C is basically worthless, because a buyer could wait till the goods had been shipped and revoke the L/C. This would put the seller in a very weak position.

(c) Document credit (L/C) number

Every L/C has a specific number that usually needs to be shown on all documents required by the L/C.

(d) Date of issue

Quite often L/Cs stipulate that goods cannot be shipped before the L/C opening or issue date, but that is not the case in this L/C (see UCP 500 Art. 22).

(e) Expiration Date

This is a very important date. Sellers should make sure that they have enough time to ship the goods and prepare all the documents before the L/C expires. The bank will not accept L/C documents after the L/C has expired. That is why the seller should communicate to the buyer how long it will take to have the goods ready for shipment and stipulate the minimum validity of the L/C (see L/C instructions on the pro-forma invoice Appendix 11.b).

(f) Applicant

This is the buyer and opener of the L/C.

(g) Beneficiary

This is the seller. Quite often, clerks of foreign banks don't speak English and type up L/Cs that contain a lot of errors, even in the name and in the address of the beneficiary. Rather than ordering new stationary with erroneous name and address in accordance with the L/C, banks will usually accept corrections made by hand. However, this is only allowed for documents issued by the beneficiary him or herself. If the L/C shows an error in — for example — the port of shipment or of destination, the beneficiary should instruct the carrier or their Freight Forwarder to copy on the B/L the error(s) stated in the L/C.

(h) Amount

Seller and buyer should agree on the L/C amount and in what currency.

(i) Drawee

This is the bank that will pay the beneficiary (the **paying or reimbursing bank**). Sometimes this is the L/C opening bank itself, or one of their branch banks in seller's country, or a bank in seller's country with which the opening bank has an account. If the paying bank is in a country that has **exchange controls**, a beneficiary should ask for a reimbursing bank in another country. Another solution is to have the L/C confirmed by a major bank in the seller's country.

(j) Partial shipment

Quite often a large order is shipped in several lots, but for simple transactions a buyer often likes to receive the whole order in one shipment. In case of partial shipments, the seller should add extra L/C handling fees to the price of the goods, because the bank will charge L/C handling fees every time a shipment is made and documents are presented for payment.

(k) Transshipment

Buyers often insist that a shipment must not be unloaded and reloaded, because it increases the risk of theft, damage and loss. However, there are instances where goods are **transshipped**, but banks will still honour the L/C anyway (See UCP 500 Art. 23 b, c, d) (see also under the heading: "Transshipment" later on in this chapter).

(l) Port of loading

Sometimes a specific port is listed, sometimes a range of ports, or "any port" in a specific country or region.

(m) Port of destination

See under: Port of Loading.

(n) Latest ship date

This is a very important date, and the beneficiary should make sure that the goods will be available and ready for shipment in a timely manner. Something else to think about is that there may be only a limited shipping service between the port of shipment and port of destination. If there is only a service once every two months, the seller should advise the buyer that the latest ship date needs to be three months after goods will be ready for shipment.

(o) Description of goods

It is best to copy this verbatim — with errors and all — on all documents to be submitted for L/C payment. Make sure the total amount does not exceed the L/C amount. Also check that: quantity x unit cost = total amount. The terms of sale (here FOB Hamburg) should be the same as listed in the **pro-forma invoice** (see Appendix 11.1) Sometimes a seller quotes FOB terms, yet the buyer opens a L/C with CIF terms. This means the seller will be responsible for freight and insurance, yet they may not

have included these extra expenses in the total cost of the goods. Sellers should not accept this and ask that the L/C be amended, either changing the terms of sale to FOB, or changing the total amount to cover freight and insurance.

(p) Documents required; B/L (See Appendix 11.3)

This is pretty straightforward. In many instances the B/L needs to be **consigned** to the L/C opening bank. That way they can claim title to the goods in case the buyer does not pay the L/C opening bank. The B/L in table 11.1 also needs to have a notation: **FREIGHT COLLECT** and **NOTIFY ACCOUNTEE.**

The name of the buyer is listed in the "**Notify**" box of the B/L, so the steamship line can contact them with ETA and for delivery instructions. Many L/Cs stipulate that the B/L contains an "**ON-BOARD DATE**" notation; signed and stamped by the master or his representative. If the B/L does not have a specific "on-board" notation, it is the date when the master or his representative signed the B/L. The true B/L date is the day when loading was completed, or when the goods were taken into custody by the carrier.

(q) Commercial invoice (See Appendix 11.4)

Most L/Cs require that the invoice bears a signature. It is also a good idea to stamp the words INVOICE and ORIGINAL on it.

(r) Packing list (See Appendix 11.5)

Unless stated in the L/C, the Packing List (P/L) does not have to be in a specific format and usually does not have to be signed. It is advisable to copy the description of the goods verbatim as listed in the L/C and in the invoice. The P/L is also a good place to show the **shipping marks** applied by the seller. Make sure that the marks on the B/L are the same as on the P/L. If this is not the case, the L/C beneficiary should change the P/L, because it is easier and faster than having the shipping company change the B/L.

(s) Certificate of Origin (See Appendix 11.6)

Quite often a **Certificate of Origin** has to be authenticated by the embassy or consulate of the buyer's country. This takes extra time and expense.

See also under heading: "Certificate of Origin" later on in this chapter.

(t) Charges

To get an even distribution of charges, a seller should specify (see pro-forma invoice page 2, Appendix 11.1 b) that all banking fees outside of seller's country are for account of buyer. This usually results in the reciprocal terms as listed here under item "t". Some sellers stipulate that <u>all</u> L/C charges are for buyer's account. When the L/C does not mention

banking charges, it is assumed that they are to be paid by L/C applicant (the buyer) (see also UCP 500 Art. 19). In case of doubt as to which party will pay the banking fees, the L/C beneficiary should call the advising bank for an opinion.

(u) Presentation period

Unless stated differently, UCP 500 Art. 43 states that banks will only accept transport documents if presented within **21 days of shipment** and within the validity (see item "e") of the L/C.

(v) Confirmation

Since Korea has a pretty stable banking system, beneficiary accepted the L/C without confirmation by a USA bank.

(w) Reimbursing bank

After approval of the L/C documents, the advising bank will contact the reimbursing bank in New York for payment. It is usually faster and cheaper to bypass the seller's local advising bank and to send the L/C documents directly to the reimbursing bank. However, the advising bank will still send a bill for L/C advising charges.

(x) Instructions

These are instructions for the **advising** bank to the **reimbursing** bank.

The above items pertain to a specific L/C. Below are additional L/C considerations and guidelines.

Often the L/C contains errors, or the beneficiary may have questions about the documents required under the L/C. That is why it is a good idea to get in touch with the advising bank before the goods are shipped, to find out how to handle errors in the L/C, to ask them what is acceptable, and what is considered a discrepancy. It is estimated that 50 to 75% of all L/C documents have discrepancies, that result in delay and higher banking fees, and sometimes payment is not made at all. It is therefore of paramount importance to prepare the L/C documents properly the first time.

The following subject headings provide general explanations of common L/C terms. Coverage will be far from all-encompassing, but there will be extra emphasis on the importance of L/Cs to the ocean shipping community.

(1) Abbreviations

Generally accepted abbreviations such as Ltd. instead of limited, co. instead of company, kgs or kos instead of kilos, mt instead of metric ton(s) may not make a document discrepant. However, to prevent rejection by the bank, it is always best to copy verbatim the terms and descriptions (errors and all) as stated in the L/C.

No.	L/C Subject
1	Abbreviations
2	About, Approximately, Circa (See UCP 500 Art. 39 a)
3	Acceptance; see Payments, L/C
4	Advising bank (See UCP 500 Art. 7)
5	Alterations/Corrections
6	Ambiguity (UCP 500 Art. 20 a)
7	Amend (UCP 500 Art. 5)
8	Amendment (UCP 500 Art. 9 d)
9	Amounts
10	Applicant (L/C)
11	Assignment of Proceeds (AoP) (UCP 500 Art. 49)
12	Attachments
13	Authentication (UCP 500 Art. 20 d)
14	Authenticity
15	Banker's Acceptances/Discounting
16	Banking charges (UCP 500 Art. 44)
17	Banking Days/Hours (UCP 500 Art. 45)
18	Beneficiary Statement
19	Bills of Lading (UCP 500 Art. 23-30)
20	Calculations
21	Certificate of Origin (CoO) see table 11.1 under "s" and Appendix 11.6
22	Certification/Declaration
23	Certification; see under Authentication
24	Certified (UCP 500 Art. 20 d); see under Legalized
25	Clean B/L (UCP 500 art 32)
26	Collection basis
27	Compliance
28	Conditions (UCP 500 art 13 c)
29	Confirmation (UCP 500 Art. 9)
30	Conformity
31	Consignee
32	Consignor (UCP 500 Art. 31 iii)
33	Consistency (UCP 500 Art. 13 a)
34	Contents (UCP 500 Art. 21)
35	Contract vs. L/C (UCP 500 Art. 3)
36	Copies; see Originals
37	Corrections; see Alterations/Corrections
38	Dates (UCP 500 Art. 22, 46, 47)
39	Deck shipment, on (UCP 500 Art. 31)
40	Deferred payment; see Payments, L/C
41	Demurrage (UCP 500 Art. 33 d)
42	Description of goods
43	Details, excessive (UCP 500 Art. 5 a i)

44	Discounting; see Banker's Acceptances
45	Discrepancies (UCP 500 Art. 14)
46	Draft (UCP 500 Art. 9 a iv and 9 b iv)
47	Endorsement
48	Examination of documents (UCP 500 Art. 13)
49	Expiration date and place (UCP 500 Art. 42)
50	Force majeure (UCP 500 Art. 17)
51	Freight payable/prepaid (UCP 500 Art. 33)
52	Full set of originals
53	Guarantee vs. L/C
54	Inconsistencies (UCP 500 Art. 13)
55	Independence Principle; see Contracts vs L/C
56	Installment drawings (UCP 500 Art. 41)
57	Instructions (UCP 500 Art. 5, 12)
58	Insurance (UCP 500 Art. 34, 35, 36)
59	Invoice (UCP 500 Art. 37)
60	Irrevocable L/C (UCP 500 Art. 6)
61	Language
62	Latest shipdate
63	Legalization; see Authentication
64	Loaded on Board notation (UCP 500 Art. 23 a ii, 24 a ii, 25 a iv, 26 a ii)
65	Marks and numbers
66	Maturity
67	Negotiable instrument
68	Negotiating or Reimbursing Bank
69	Negotiation, by; see Payments, L/C
70	Notify Party on B/L
71	On board notation; see Bills of Lading
72	On deck shipment (UCP 500 Art. 31)
73	Originals (UCP 500 Art. 20 a, b, c)
74	Partial shipments (UCP 500 Art. 40 and 41)
75	Payments, L/C (UCP 500 Art. 9, 10)
76	Port of Loading/Discharge
77	Prepaid freight
78	Quantity (UCP 500 Art. 39)
79	Recourse
80	Reimbursement (UCP 500 Art. 19 e)
81	Revocable L/C (UCP 500 Art. 8)
82	Said to Contain (UCP 500 Art. 31)
83	Scams; see Negotiable Instruments
84	Shipper's Load and Count (UCP 500 Art. 31)
85	Sight, at; see Payments, L/C
86	Signatures (UCP 500 Art. 20 b)
87	Spelling and Typing errors

88	Stale documents (UCP 500 Art. 43)
89	Tenor
90	Time Draft; see Tenor
91	Title of Documents
92	Tolerance (UCP 500 Art. 39); see Invoice and see Quantity
93	Transferable L/C (UCP 500 Art. 48)
94	Transport Documents
95	Transshipment (UCP 500 Art. 23 b, c, d; Art. 24 b, c, d; Art. 26 b; Art. 28 c, d)
96	UCP, application of (UCP 500 Art. 1)
97	Unit price; see Invoice and see Quantity
98	Validation (UCP 500 Art. 20 d); see Authentication
99	Waybill (UCP 500 Art. 24)
100	Weight (UCP 500 Art. 38)

Table 11.2: Letter of Credit subjects

(2) About, Approximately, Circa (See UCP 500 Art. 39 a)

If these words, or similar expressions, are used in connection with the unit price, or with total L/C amount, or in connection with the quantity, the actual difference from L/C figure is not to exceed 10% more or less.

When the expression "on or about" or similar expressions are used in connection with shipment dates, banks will accept documents that show five days before, or five days after the specified date in the L/C. (See UCP 500 Art. 46 c)

Do not use words or expressions like: **"prompt"**, **"immediately"**, **"as soon as possible"**. (See UCP 500 Art. 46 b)

(3) Acceptance

See: "Payments, L/C"

(4) Advising or Notifying bank (See UCP 500 Art. 7)

This is the bank that sends the L/C to the beneficiary. Sellers may request buyers to advise the L/C through a particular bank. In many instances sellers specify their own bank, at least if it has an L/C department. However, it is usually cheaper — and payment is often received faster — if sellers send their L/C documents directly to the **Reimbursing bank**. (See table 11.1 item "w" and also Appendix 11.1 b)

Advising bank reference no.

Most advising banks use their own **reference number**; separate from the L/C no, which has been assigned by the issuing bank. The advising bank's reference no. is usually stated in the covering letter to the L/C beneficiary. It is good practice to state this no. on the L/C document transmittal letter to the advising bank and to refer to it any time you have contact with the advising bank.

In many instances the advising bank states in their covering letter that advisement is without engagement or involvement in the L/C. Translated, this means that the advising bank will not pay the L/C beneficiary till they have received payment from the reimbursing bank. Do not interpret this non-involvement to extend to the L/C advising fees. If you bypass the advising bank by sending the L/C documents directly to the reimbursing bank, the staff at the advising bank can get pretty nasty when it comes to collecting their advisement fees.

(5) Alterations/Corrections

The L/C beneficiary can make **alterations** and/or **corrections** in documents they created themselves, like invoices, packing list, certificates of mailing, etc. Alterations and/or corrections of other documents must be **authenticated** by the party that issued them.

Corrections or alterations of a **draft** must be authenticated by the drawer. In some countries it is not allowed to show corrections or alterations. The opening bank should stipulate this in the L/C that no corrections are allowed on certain (listed) documents.

Corrections and/or alterations of an "order" **B/L** must be authenticated by the carrier, by the master, or by their agent. Corrections and/or alterations of non-negotiable B/Ls don't have to be authenticated.

Corrections and/or alterations of document that have been **legalised**, such as an Invoice or a Certificate of Origin, must show the name and signature of the party that made the corrections or alterations.

(6) Ambiguity (UCP 500 Art. 20 a)

Words and terms such as: **"first class"**, **"well-known"**, **"independent"**, **"local"** **"qualified"**, **"official"**, **"competent"**, and the like shall not be used in a L/C.

(7) Amend (UCP 500 Art. 5)

Instructions to issue and to **amend** a L/C should be **complete** and **precise**, but **without excessive detail**.

(8) Amendment (UCP 500 Art. 9 d)

The L/C beneficiary can request revision of L/C terms, conditions, description or dates. Permission to amend the L/C can only be granted by the issuing bank. Requests to amend the L/C have to be done via the advising bank. If the L/C has been confirmed, the confirming bank needs to agree to the amendment(s) as well.

(9) Amounts

The amount in words in a L/C must be the same as the amount in figures if both are shown. The **currency** needs to be stated as well.

The amount on the invoice and draft must be the same as in the L/C, except for partial shipments. The total amount of the partial shipments shall not exceed the L/C amount (see also under heading: "About, Approximately, Circa").

(10) Applicant (L/C)

This is the party, or company, that asked for the L/C to be issued; usually the buyer of goods or services.

(11) Assignment of Proceeds (AoP) (UCP 500 Art. 49)

The L/C beneficiary has the right (whether the L/C is transferable or not) to assign the L/C proceeds to a third party. For example, an exporter has received an order to ship goods to an overseas importer. If the order is substantial and if the exporter does not have enough cash, or enough credit from his supplier, he should insist that the importer open a L/C.

Once the L/C is in place, the exporter can suggest to his supplier that payment of the goods or services can be **guaranteed** with an **Assignment of Proceeds**. If the supplier agrees, the L/C beneficiary (the exporter) asks the advising bank for a special form to assign part of the L/C proceeds (equal to the cost of the goods) to his supplier. The AoP format has to be copied onto the exporter's letterhead, and his signature needs to be **authenticated** by his own bank. The AoP is then sent to the L/C paying bank for acceptance. After the L/C documents have been approved, the paying bank will pay the supplier first and the balance goes to the exporter; minus deductions of the L/C banking fees.

The only disadvantage to a supplier is that he or she won't get paid if there is a discrepancy that cannot be corrected before the L/C expires. To remedy this, a supplier can request the exporter to transfer the L/C to him or her, (provided the L/C allows for this) so that the supplier can negotiate the L/C him or herself; without being dependent on the exporter (see also **Transferable** L/Cs).

Conditions for Assignment of Proceeds for Standby L/Cs are spelled out in ISP98 Rules 6.06 to 6.10.

Under certain circumstances, and with approval of the vessel's owner, a time-charter operator can apply the same technique. The t/c operator should ask for a (Standby) L/C from the voyage charterer for the ***freight*** *and then* ***assign*** *part of the L/C proceeds as* ***hire*** *to the vessel owner. That way payment to everybody is* ***guaranteed*** *at only minimal cost in L/C banking fees. This procedure is especially attractive to tanker operators, since freight is usually not received till the vessel's arrival at the discharge port, while t/c expenses such as hire, fuel and port charges need to be paid up-front.*

As seen elsewhere, if there are no discrepancies, payment under a L/C will be made regardless of conflicts between parties to the underlying contract. That is why a L/C is so much more preferable than having to rely on a **lien** on the cargo. On the other hand there is some danger that a standby L/C beneficiary may unlawfully call for payment without a breach of the underlying contract. It is therefore advisable to consult with an attorney and with a banker, who are both familiar with L/C transactions,

in order to strike a proper balance between the interests of the commercial parties involved.

(12) Attachments

Pages **bound** or **stapled** together, or **numbered** sequentially, are considered to be one "document". If the L/C requires the document to be signed, or endorsed without any specific instructions, the **signature** is usually placed on the first and last page of the "document". In case of doubt, call the bank that will check the L/C documents, for advice.

(13) Authentication (UCP 500 Art. 20 d)

Unless specified otherwise in the L/C, **authentication, validation, legalisation, visation, certification,** or similar actions, can be satisfied by any signature, mark, stamp or label on such document that on its face appears to meet above requirements.

(14) Authenticity

The L/C beneficiary should verify that the L/C opening bank is **legitimate**. This can be done by checking international banking directories; either in a library, or on the Internet. (See also Appendix 11.2 re authentication of a bank that will handle **Cash-against-Documents** method of payment)

(15) Banker's Acceptances/Discounting

If the L/C specifies **deferred** payment by way of a **time-draft**, the L/C negotiating bank will stamp the draft for **acceptance**, but does not pay till the draft's **maturity**. Since it is a negotiable instrument, the bank may sell the draft to another bank or to an investor. The L/C beneficiary can ask the bank to **discount** the draft and pay out immediately. For example, if the time-draft is for $100,000 with maturity of 90 days after **acceptance**, and the discount rate is 6% per year, the bank will pay the L/C beneficiary $98,500* instead of the full $100,000 after 90 days. In either case the bank will also deduct L/C fees; if any.

**Sellers can recoup this loss of $1,500 in interest by adding it to the cost of goods or services.*

(16) Banking charges (UCP 500 Art. 44)

The issuing, the advising, reimbursing and the confirming bank all have their own set of L/C fees and charges. Sometimes the L/C fees are listed on the covering letter from the advising bank. If not stated, call them to find out exactly what all the fees are. Often seller and buyer agree to a division of the L/C charges. If nothing is stated in the L/C, all banking charges are for the L/C applicant (the buyer).

(17) Banking Days/Hours (UCP 500 Art. 44, 45)

L/C documents need to be presented during normal banking hours. If the L/C expiration date falls on a day the bank is closed, document presentation date is extended to the next day the bank is open. See also

under heading: "Stale documents".

(18) Beneficiary Statement

Payment under a Standby L/C is usually made after the beneficiary submits a statement, claiming that payment has not been received for the specific contract mentioned in the Standby L/C (for an example of a **Beneficiary Statement** see Appendix 11.8).

(19) Bills of Lading (UCP 500 Art. 23-30)

For more detailed coverage of this subject see chapter 6. Emphasis here is on B/Ls in connection with L/Cs. Art. 23 covers "**order**" B/Ls.

Here are some of the general requirements a B/L has to comply with under an L/C:

- The B/L **description, quantity, packing units** etc. should conform with the L/C and with other L/C documents. For example the **shipping marks** that the exporter wants to be applied to the shipment are often stated on the **Packing List**. The B/L should show the same marks. **Quantities** should be in compliance with the L/C description.
- **Name of the carrier** or their agent.
- **Signature**: see under heading: "Signatures".
- If the master signs the B/L, the word "master" needs to be identified with the signature.
- Name of **Carrier** and of agent, plus his capacity, needs to be stated on the B/L.
- **Number** of signed **original B/Ls.**
- If the L/C states **load port** and **discharge port**, these ports need to be listed on the B/L as well.
- Often the L/C requires a specific "**loaded on board**" notation on the B/L to be signed by the master and stamped with the ship's stamp. This "on board" notation is considered the ship date for L/C purposes; not the date the B/L was signed. If there is no "**on board**" notation, the shipment date for L/C purposes is the date the B/L was signed.
- The B/L date needs to be **dated** before or on the last shipment date.
- Under most L/Cs a B/L needs to be presented for payment within 21 days of shipment (see **Stale documents**).
- B/L needs to contain the **conditions of carriage**, or make reference to such terms (short form B/L). However, banks will not examine the contents of these **terms and conditions.**
- An "order" B/L should not indicate that it is a **charter party** B/L,

unless allowed for in the L/C.

- The vessel should not be propelled by **sail.**
- Under certain conditions banks will accept a B/L covering **transshipped** goods (see also under heading: "Transshipment").

Sea Waybills and Non-negotiable B/Ls

are covered in UCP 500 Art. 24

Charter Party B/Ls (UCP 500 Art. 25)

- Bankers will only accept c/p B/Ls if the L/C specifically allows for it.
- A c/p B/L does not have to state the **name of the carrier.**
- Even if the L/C requires presentation of the charter party document, banks will not examine its terms and conditions.

Multimodal B/L (UCP 500 Art. 26)

Freight Forwarder B/L (UCP 500 Art. 30)

B/Ls issued by a Freight Forwarder (F.F.) are sometimes called **House Bills of Lading**. Banks will accept a F.F. B/L if:

- It contains the name of the F.F. or its agent.
- The F.F. or its agent signs "**as carrier**".

Please note, documents such as: Certificate of Receipt, of Shipment, of Transport, Delivery Order and Mate's Receipt do not reflect the terms of contract of carriage and are not transport documents under UCP 500.

For more detailed B/L requirements, see the L/C **checklist at** Appendix 11.9.

(20) Calculations

Banks will not check detailed mathematical **calculations**, only totals. Some shippers of dry or oil cargoes put a lot of information on the B/L. The chances are that an ambitious L/C checker may try to recalculate those numbers and compare them to other L/C documents Most banks will not accept the slightest discrepancy between the L/C itself and the documents, or discrepancies between the documents themselves. It is therefore advisable to keep L/C descriptions to a minimum.

(21) Certificate of Origin (CoO)

See table 11.1 under "s" and Appendix 11.6.

- If the L/C does not state who is to issue the CoO, banks will accept a CoO issued by any party; including the L/C beneficiary.
- The CoO needs to be a signed and dated document; certifying the origin of the goods.
- Some L/Cs require a CoO to be issued, or to be authenticated, by a local Chamber of Commerce.
- Other L/Cs require that a CoO needs to be legalised or authenticated

by the consulate or embassy of buyer's country, located in seller's country.

- The CoO may show the manufacturer's name, or the shipper's name shown on the B/L, as the party that issued the CoO. It doesn't have to be the name of the L/C beneficiary (the seller), unless stated differently in the L/C.

(22) Certification/Declaration

Many L/Cs require certifications, like a statement (certification) that goods have actually been **shipped**. Other examples are: certification of having taken out **insurance**, certification of having **mailed** documents to the buyer. Make sure that all these documents have the proper name printed or stamped at the top of the document identical to the L/C certificate description. For example; CERTIFICATE OF MAILING. Moreover, put the L/C number on all documents.

Certification of Insurance often needs to have a special **coverage number**, provided by the insurance company and listed in the L/C. Sometimes the L/C requires that a special **import licence number** needs to be quoted. Make sure all of this is on the proper documents.

(23) Certification (UCP 500 Art. 20 d)

See under heading: "Authentication".

(24) Certified (UCP 500 Art. 20 d)

See under heading: "Legalisation".

(25) Clean B/L (UCP 500 art 32)

Banks will not accept a B/L that contains notations that the cargo or packing is defective. However, the word "clean" does not have to be stated in the B/L — even if stipulated in the L/C — as long as the B/L complies with the UCP 500 requirements.

(26) Collection basis

In case there are a lot of discrepancies, it may not be possible to submit all the corrected documents to the bank before the L/C expiration date. Negotiating banks often suggest sending the documents on a "**collection basis**." This means that the negotiating bank will ask the issuing bank for **permission to pay**. Under this scenario, the L/C beneficiary loses a lot of control and will have to rely on the good graces of the buyer to approve payment of the L/C, even though there are discrepancies. If the L/C applicant (the buyer) does not give permission to pay, it may be necessary to ship the goods back. This can be expensive and time consuming;

If you expect trouble with the L/C and if you don't have a lot of faith in your customer, it is advisable to ship the goods C&F or CIF. That way the buyer has invested freight in the goods and will be less likely to abandon the goods.

especially if the goods have to go through overseas and domestic Customs again. Another possibility is to sell the goods in the buyer's country, or the buyer may agree to take the goods after all, but at a reduced price.

(27) Compliance

The L/C beneficiary is entitled to be paid if the documents are in **compliance** with the L/C. For the same token, the L/C issuing bank does not have to pay when there are discrepancies.

(28) Conditions (UCP 500 art 13 c)

If the L/C contains **conditions**, but does not state to which document they apply, banks will ignore the conditions.

(29) Confirmation (UCP 500 Art. 9)

Even though a L/C eliminates a lot of non-payment risk, there are still situations where payment under a L/C may be in jeopardy such as:

- **Force majeure** (see heading: "Force majeure").
- **Political risk** and **foreign exchange controls**. Some countries may have in force — or may establish in the future — foreign exchange controls during times of political instability, or when they fear a "run" on their currency by speculators.
- **Non-repatriation**. Other nations don't allow so-called **hard currencies** to leave their country and a seller can only draw local currencies that are usually weak and can only be spent in that country. If the seller is a large international company that does business in that particular country, it can perhaps put the funds to work locally. However, for a small exporter that may not be the case, and he or she should seriously consider calling off the transaction.

In the above cases it is wise to have the L/C confirmed by a large reputable bank. The issuing bank has to request, or to authorise, **confirmation** of a L/C by another bank. The L/C confirming bank will pay the beneficiary even if the original issuing bank defaults on the L/C (provided there are no discrepancies and no force majeure). A L/C cannot be amended without permission from the issuing bank and the confirming bank. However, a confirming bank may choose not to lend its confirmation to an amendment, while still keeping the confirmation of the original L/C in place. Confirmation of some of the amendments, and not of others in the same L/C, is not allowed.

If the issuing bank is operated from the kitchen table of buyer's brother-in-law, chances are that it is not a legitimate institution. Asking for confirmation of an L/C is a good way to test the authenticity and creditworthiness of the L/C opening bank. The seller/exporter should request the buyer/importer to instruct the issuing bank that confirmation will be permitted (see Appendix 11.1 b). If no bank in seller's country is willing to confirm the L/C, the original L/C may have a dubious pedigree, and the seller should seriously consider calling the transaction off.

(30) Conformity

Terms of the L/C must be in **conformance** with its own requirements. For example it will be pure nonsense if the L/C calls for air freight, but specifies that the transport document must be an Ocean B/L. In cases like this, the issuing bank should make a correction without charging amendment fees. The L/C should also be in conformance with the underlying commercial contract. Before accepting the L/C, here are some things the L/C beneficiary should check:

- **Reputation** of the L/C issuing and reimbursing banks.
- **Accuracy**: The name and address of both seller and buyer should be spelt correctly.
- **Draft**: The draft should be a sight or a time draft. For example if the exporter and importer negotiated payment "at sight" for a $100,000 shipment, but the importer opens a L/C stipulating payment 90 days after acceptance of the draft, the exporter stands to lose. How much, depends on the bank's discount draft. At a discount rate of 4% per year, the bank will discount the draft and only pay $99,000. Of course the exporter can wait till maturity and collect the full $100,000, but the exporter will lose about $1,000 in interest over these 90 days (see under heading: "Banker's Acceptances").
- **Total L/C amount**: This should be in conformity with the underlying commercial contract.
- **Currency**: L/C amount should be in the currency as agreed upon in the commercial contract. Please note, in certain countries a L/C can only be payable in local currency (to preserve foreign "hard" currency).
- **Confirmation**: If the country of the issuing bank has a high level of political unrest, and/or strict exchange controls, the L/C beneficiary should insist on having the L/C confirmed by a major bank in exporter's own country.
- **Terms of Trade**: The load and discharge ports should be in compliance with the underlying contract. For example, if the exporter quoted FOB Houston, but the importer opens a L/C with CIF Lagos, Nigeria terms, the exporter should ask for a L/C amendment; either to change the terms to FOB Houston, or to have the L/C amount increased to allow for coverage of the extra freight and insurance.
- **Quantity**: Make sure the quantity of the goods (and possible variance) in the L/C agrees with the commercial contract.
- **L/C expiration**: The L/C should allow enough time for the beneficiary to get the goods ready for shipment and allow a couple

of weeks extra, in case the bank rejects the documents and the beneficiary needs to collect corrected ones.

- **Latest ship date**: If the exporter quoted goods to be ready in 60 days after receipt of an acceptable L/C, but the importer opens a L/C with latest ship date 30 days from L/C issuing date, the exporter will not be able to meet latest ship date and should ask for a L/C amendment.
- **Mode of transport**: This should be in conformity with underlying contract. If total cost was based on shipment by water, L/C should not state shipment by air.
- **Transshipment**: Banks will accept transshipment if not prohibited by the L/C and if the entire ocean carriage is on the same B/L. Quite often a buyer stipulates in the L/C that transshipment is not allowed. However, to get the goods from A to B without transshipment may not always be possible and the seller should ask for the L/C to be amended accordingly. Banks will accept transshipment of containers; provided the entire carriage is on one B/L.
- **Shipping service**: Make sure there is a shipping service between the port of export and port of import as stipulated in the L/C.
- **Insurance**: If the L/C calls for insurance, make sure it can be obtained and at reasonable cost.
- **Transferable**: If parties have agreed that L/C should be transferable, the L/C should read accordingly.
- **Partial shipment**: If partial shipments have been agreed upon in the sales contract, make sure it is allowed in the L/C. Sometimes partial shipments need to be made by different modes of transportation and from and to different locations. For example: part of the order needs to be shipped by air from airport A and the rest by ocean from port P. To allow for this, the L/C should be worded accordingly.
- **Certificates**: Make sure that the certificates required by the L/C can actually be obtained. For example if the L/C stipulates that a Certificate of Origin needs to be legalised by an embassy, consulate or chamber of commerce in a certain city, make sure these entities exist and will be able to perform the functions required.
- **L/C required documents**: Assume the documentary L/C between buyer and seller of the goods requires a full set of original B/Ls, but the Standby L/C between shipper and carrier also asks for an original B/L. Since there is a conflict here, the Standby L/C requirement should be changed to a copy of an original B/L.
- **L/C fees**: It is important to check that payment of the L/C fees is in conformity with the agreement between seller and buyer.

- **Sanctions**: Governments may prohibit trade with particular countries. Don't be creative and try to work around this, because if caught, perpetrators of the law will most likely have the goods confiscated, pay a hefty fine, or even wind up in jail.
- **Export license**: Export of certain high-tech or military goods may require an export licence from the country of origin. If the L/C calls for this, make sure it can be obtained, and within a reasonable amount of time, so the seller can meet latest ship date and L/C expiration date.

(31) Consignee

This is the party on the B/L the goods are consigned to: either "to order", or "straight consignment". Banks often require that they be listed as the consignee on the B/L, so they have title to the goods and can claim them in case the buyer defaults on the L/C. If the L/C calls for a "straight consignment" to a specific party or bank, the B/L consignment box should not contain "to order" or similar wording.

(32) Consignor (UCP 500 Art. 31 iii)

The consignor is the party from whom the goods have been received for shipment (the shipper). Banks will accept a Transport Document that shows the consignor to be somebody else other than the L/C beneficiary.

(33) Consistency (UCP 500 Art. 13 a)

As seen under the heading "Conformity", documents need to be consistent with the L/C stipulations and with each other.

(34) Contents (UCP 500 Art. 21)

Except for the invoice, the B/L and the insurance documents, the L/C should stipulate which party is to issue a particular L/C document, including their wording or content. If not listed in the L/C, banks will accept documents as presented; provided that the data in such documents is not inconsistent with other L/C documents.

(35) Contract vs. L/C (UCP 500 Art. 3)

A L/C is a separate contract and **independent** from the underlying commercial contract; even if referenced in the L/C. Therefore, if there are no discrepancies, the bank will pay; regardless of any claims or defences raised by the L/C applicant (the buyer).

(36) Copies

See under heading: "Originals".

(37) Corrections

See under heading: "Alterations/Corrections".

(38) Dates (UCP 500 Art. 22, 46, 47)

- A draft, a B/L and insurance documents need to be dated.

- Certificates of Shipment, of Inspection, of Cargo Analysis and similar documents, should be dated prior to, or on the date of shipment; not after.
- Unless stated differently in the L/C, banks will accept a document with a date prior to the L/C issuing date (see UCP 500 Art. 22).
- Unless the L/C states differently, B/Ls need to be presented to the bank no later than 21 days after date of shipment and no later than L/C expiration date (see table 11.1 item "u").
- Under no circumstances should a B/L be **backdated**, because it is considered fraud. The correct B/L date is the date the cargo, or the parcel to which the B/L pertains, was loaded in its entirety on board.
- Unless stated differently in the L/C, it is understood that expressions such as: "**loaded on board**", "**dispatch**", "**accepted for carriage**", "**date of pick-up**", and the like are allowed to be used instead of date of shipment.
- Banks will interpret the phrase: "**on or about**" in connection with the ship date to mean five days before and five days after the date of shipment; both dates included.
- The term **within xx days** indicates a period of xx days prior and xx days after the event; excluding the date of the event itself.
- Dates may be expressed in all kind of formats. However, to prevent confusion it is always best to spell out the month. For example 2/3/04 would mean 3 Feb. 2004 in the USA, but in Europe it would probably be conceived as 2nd March 2004.

(39) Deck shipment (UCP 500 Art. 31)

Unless stated differently in the L/C, banks will accept documents that are silent on whether the goods have actually been loaded on deck or not. Please note, deck cargo is not covered by the Hague-Visby Rules art 1 c.

(40) Deferred payment

See under heading: "Payments, L/C".

(41) Demurrage (UCP 500 Art. 33 d)

A B/L sometimes states that freight is "collect" (see table 11.1 item "p"). If the goods had been shipped under a charter party, demurrage may be due as well. Under UCP 500 Art. 33 d, banks will accept L/C documents that make reference to costs in addition to freight, such as cost of loading, unloading or similar operations. It is therefore assumed that banks will accept a B/L stating "demurrage due". To make sure, check with the advising or negotiating bank if this is acceptable to their L/C documents checkers. Please note, the L/C has to state specifically that a charter party B/L is allowed.

See also under heading: "Freight payable/prepaid"

(42) Description of goods

Description of the goods — especially on invoices and B/Ls — need to be in compliance with the L/C, although it is acceptable that the L/C description is listed in different areas of L/C documents. Since all L/C documents have to be in conformity with each other, it is advisable to copy the L/C description of the goods **verbatim** on all documents. Also make sure that the L/C no. is listed on all documents.

In case of partial shipments, a set of documents for each parcel needs to be submitted for L/C negotiation. Documents must reflect actual cargo quantity and amount per lot. The total quantity and amount of all the partial shipments must not exceed the L/C quantity and amount.

Terms of Trade listed in the L/C should be the same in the documents.

If the L/C states that (bulk) quantity may vary 5% more or less, and 5% more cargo has been loaded, the amount of the invoice and draft can still not exceed the amount of the L/C, unless specifically allowed for in the L/C.

It is not easy to estimate the exact quantity of bulk cargo (dry bulk or oil) that will be loaded. It is therefore fairly complicated to compose a proper Documentary L/C and prepare appropriate documents to get paid for the quantity actually shipped. To keep it simple, a Standby L/C may be more appropriate for bulk shipments.

(43) Details, excessive (UCP 500 Art. 5 a i)

To prevent confusion, issuing banks should discourage incorporation of excessive details in the L/C and its amendments.

(44) Discounting

See under heading: "Banker's Acceptances".

(45) Discrepancies (UCP 500 Art. 14)

The advising, confirming or issuing bank needs to give the beneficiary notice within reasonable time (seven banking days) of any L/C **discrepancies** that are grounds for dishonouring the L/C. The notice must spell out the specific discrepancies and to what documents or L/C requirements they apply.

For a checklist of common Documentary L/C discrepancies, see Appendix 11.9.

For Standby L/Cs see ISP98 Rule 5.01 for **Notice of Dishonour** issued by the bank.

If there are **discrepancies**, the bank will not pay. The L/C beneficiary is allowed to correct the documents they produced themselves, but other documents, such as B/L and Insurance documents have to be corrected and

authenticated by the party that issued them. This can be time consuming. It is therefore a good idea to compose a **sample B/L** with all the required L/C elements and to send it to the carrier or Freight Forwarder that is going to produce the B/L.

It has to be kept in mind that in quite a few **court cases** it has been determined that slight, innocuous **variances** between documents, or hyper critical interpretation of L/C language, will not excuse banks from making payment. However, to avoid the time and expense of going to court and perhaps having to wait years before payment is made, it is good practice to be a stickler for detail and to submit documents that do not leave room for dubious interpretation by L/C document checkers.

If in doubt, call the bank that will examine the documents and ask for their recommendations. Try to arrange with the buyer for a late L/C expiration date and try to submit the L/C documents early. That way, if there are discrepancies, there will still be time to submit corrected documents.

(46) Draft (UCP 500 Art. 9 a iv and 9 b iv)

For an example, see Appendix 11.7.

A **draft** is prepared by the L/C beneficiary to draw funds from the bank. If payment is "at sight", the draft should be marked: AT SIGHT. If it is a time draft, it should state: xxx DAY AFTER SIGHT, or similar wording. Quite often a L/C stipulates that the draft needs to bear the following clause: DRAWN UNDER .... ..*issuing bank*... , L/C NO. ....., ISSUED ON ....*date*....

The draft should be drawn on the issuing or on the reimbursing bank, not on the L/C applicant. It should list the name of the beneficiary as stated in the L/C on the "to order" line above the signature line. The beneficiary's signature needs to be accompanied by his or her capacity; like Export Manager, VP Sales, Managing Director, etc.

(47) Endorsement

If the draft is to serve as a negotiable instrument, the L/C beneficiary needs to endorse the draft on the back, and sign the same way as on its face.

For Standby L/Cs see ISP98 Rule 4.18.

(48) Examination of documents (UCP 500 Art. 13)

Banks have seven banking days to examine the documents for discrepancies and decide to accept or reject them for payment. Documents not stipulated in the L/C will not be examined. If the L/C had been confirmed, the confirming bank has another seven banking days to examine the documents.

(49) Expiration date and place (UCP 500 Art. 42)

The L/C needs to state an **expiration date** and a **place** where documents need to be presented (see table 11.1 item "e").

(50) Force majeure (UCP 500 Art. 17)

Banks do not accept liability or responsibility in case of **force majeure** that affects their business. Examples are: acts of God, civil commotion, riots, insurrection, war, strikes or lock-outs. If it is expected that there may be trouble in the country of the issuing bank, it is a good idea to ask for confirmation of the L/C by a well-known bank in the L/C beneficiary's country. If confirmation is refused, the beneficiary may want to reconsider if he or she still wants to do business with a client in the problem country. Please note, force majeure provisions mentioned here apply to the affected banks only; not to the underlying contract. For example, if an earthquake brings a particular commercial contract to a halt, but the banks involved in the L/C are not affected, payment will still be made under the L/C. On the other hand, if the banking system has been affected by the earthquake, but the commercial undertaking has not, banks may have grounds to refuse payment under the L/C. Please remember, a L/C is a contract that is totally separate from the underlying commercial contract.

Rule 3.14 of ISP98 differs markedly from UCP 500 Art. 17, in that it allows presentation under a Standby L/C of up to 30 days after the place for presentation re-opens for business. Furthermore the issuer of the Standby L/C may authorise another reasonable place for presentation.

(51) Freight payable/prepaid (UCP 500 Art. 33)

Unless stated differently in the L/C, banks will accept B/Ls that state that freight still has to be paid. If the L/C stipulates that the B/L needs to show that the freight has to be prepaid, it should be typed or stamped on the B/L. In table 11.1 item "p" the B/L needs to show: "**Freight Collect**" and "**Notify Accountee.**" Phrases such as: "freight pre-payable", "freight to be prepaid", are not acceptable.

As seen in chapter 6, heading 34, the master or his agent must never sign a FREIGHT PREPAID B/L, if actual funds have not been received yet.

(52) Full set of originals

This usually pertains to a B/L. The full set is the number of original B/Ls the master or his authorised representative has signed. It can also apply to a full set of Insurance documents.

(53) Guarantee vs. L/C

The term **guarantee** ordinarily implies a secondary obligation, while a L/C is a primary obligation. This can be illustrated with an example. A charterer approaches an owner to voyage-charter his vessel, with payment of freight after delivery of the cargo. The owner is not impressed with

the creditworthiness of the charterer and asks for payment guarantees. Charterers call on their parent company (a large international oil company) to guarantee the freight. The shipowner agrees to this arrangement and undertakes the voyage. After delivery of the cargo the owner expects payment of the freight. However, charterers and guarantor refuse to pay; claiming cargo contamination. The shipowner is now faced with perhaps years of arbitration or litigation to get his money. If instead of a guarantee, the owner had insisted on an acceptable **Standby L/C**, freight would have received almost immediately after delivery, because a L/C is **independent** of the underlying charter party.

(54) Inconsistencies (UCP 500 Art. 13)

Documents called for by the L/C need to be consistent with one another. See also L/C checklist; Appendix 11.9.

The requirements with regard to inconsistencies for Standby L/Cs under ISP98 Rule 4.03 are less strict than for Documentary L/Cs under UCP 500 Art. 13.

(55) Independence principle

See under heading: "Contracts vs. L/C".

(56) Instalment drawings (UCP 500 Art. 41)

If the L/C stipulates that shipments have to be made by certain dates and that L/C documents have to be submitted before certain dates, and an **instalment** has not been shipped and/or drawn in time, the L/C expires and no longer covers subsequent shipments.

If the Standby L/C is subject to UCP 500, instalment shipments and drawings can lead to major problems. Suppose there are multiple partial shipments and the applicant pays the L/C directly for the first partial shipment. Since payment has been received, there is no need for a drawing on the Standby L/C. However, in accordance with UCP 500 Art. 41, the L/C now ceases to exist, and subsequent shipments are no longer covered under the Standby L/C. It is therefore advisable to stipulate that Standby L/C be made subject to ISP98 (see Rule 3.07) instead of to UCP 500.

(57) Instructions (UCP 500 Art. 5, 12)

Instructions for the issuance of a L/C, or of an amendment, should be **precise** and **complete**. The use of **excessive detail** should be discouraged. If an advising bank receives unclear instructions, they may contact the L/C beneficiary, or the issuing bank, for further information, without any engagement or responsibility.

(58) Insurance (UCP 500 Art. 34, 35, 36)

- Make sure that the **date** of effective insurance coverage is on or before the date of shipment.
- L/Cs should spell out the type of **insurance** required and what risk is covered.

- Unless stated otherwise in the L/C, insurance coverage needs to be in the same **currency** as in the L/C.
- To avoid confusion, generally speaking, risk should be covered as per **INCO terms** (see chapter 6 under heading 80).
- Phrases like: "**usual risk**", or "**customary risk**" should not be used.
- Unless stipulated differently in the L/C, banks will accept insurance cover that is subject to a **deductible.**
- Unless stated otherwise in the L/C, banks will accept "**open cover**" insurance certificates.
- Generally speaking, insurance coverage is **110%** of the L/C amount.
- Coverage needs to be issued by an insurance company. **Cover notes** issued by brokers are not acceptable, unless authorised in the L/C.
- If there is more than one "**original certificate**", the full set needs to be presented for L/C payment.
- Insurance documents need to be **signed.**

(59) Invoice (UCP 500 Art. 37)

- Unless stipulated differently in the L/C, invoices need to be **issued** by the L/C beneficiary* and be **made out** to the L/C applicant.

** Since a lot of typists of overseas banks don't speak the language the L/C is drafted in, it is quite common for the beneficiary's name and address to have been misspelled. One way to correct this is to have the L/C amended, but this costs money and is time-consuming. Most banks accept handwritten corrections on the beneficiary's letterhead. Of course, with a computer and a printer it is quite easy to make a new letterhead with errors and all.*

- Invoices need to be **signed,** unless the L/C is mute on this.
- The invoice **amount** cannot exceed the L/C amount.
- The sum of the invoices covering **partial shipments** needs to equal the L/C amount.
- The **description** of the goods in the invoice should be consistent with the L/C description and be consistent with the description in the other L/C documents. It is recommended to copy the L/C description verbatim, errors and all, so there will be no room for disputes with L/C documents checkers.
- Invoices should properly be labelled with the word: INVOICE at the top. If the L/C calls for original invoices, stamp them with the word: ORIGINAL. (Actually if the invoice has been signed with an original signature, the invoice is considered an original). Banks will

not accept documents marked: "Pro-forma" invoice.

- If so stated in the L/C, **Terms of Trade** must be stated in the invoice.
- **Quantities, weights,** etc. listed on the invoice should be consistent with the L/C and with other required documents, such as the B/L, Packing List, Weight Certificates, Ullage reports.
- If the L/C does not stipulate a specific quantity, a **tolerance** of +/- 5% is allowed, but this does not apply to the L/C amount

Even though a Standby L/C usually requires only a **Beneficiary's Statement** (see Appendix 11.8), sometimes an invoice is required as well. If the applicant of the Standby L/C requires more than just a Beneficiary Statement and an invoice, it is recommended to have a documentary L/C issued instead of a Standby L/C. Please note, ISP98 Rule 4.05 stipulates that — unless stated differently in the L/C — any document required under a Standby L/C must be issued by the beneficiary.

(60) Irrevocable L/C (UCP 500 Art. 6)

If the L/C is mute, it is considered **irrevocable**. As seen under comment "b" of table 11.1, a **revocable** L/C is basically a worthless undertaking.

(61) Language

It is expected that documents issued by the L/C beneficiary are in the same language as the L/C itself. Usually the L/C is issued in the working language between the parties to the underlying commercial contract. However, it is not unusual for a L/C opened by government authorities, to be issued in their own language. To avoid confusion and extra expense, it may be prudent for a L/C beneficiary to specify in the pro-forma invoice or in the business proposal, the L/C language to be used.

(62) Latest ship date

Most L/Cs contain a latest ship date. The B/L needs to be dated, or have an "on-board" notation no later than the latest ship date.

(63) Legalisation (UCP 500 Art. 20 d)

See under heading: "Authentication".

(64) Loaded on Board notation (UCP 500 Art. 23 a ii, 24 a ii, 25 a iv, 26 a ii)

Quite often a L/C requires that the Transport Document shows a stamped and signed "loaded on board" notation. If this is the case, the date of the notation is the shipment date for L/C purposes.

(65) Marks and numbers

If stated on the B/L, shipping marks and container seal numbers should be the same as on other documents, like the Packing List and perhaps Insurance Certificates.

(66) Maturity

See under "**Banker's Acceptances**" and under "**Tenor.**"

(67) Negotiable instrument

A cheque and a draft are examples of **negotiable instruments.** With a cheque person A pays person C via bank B. When C gets the cheque, he or she can cash it, or endorse it over to somebody else. A draft can be "**at sight**" for immediate payment, or it can be a "**time draft**" with payment at maturity. In case of a "sight draft" drawn by party D, party D demands immediate payment from the bank. In case of a "time draft", D can endorse the draft on the back, so the bank can sell it in the commercial paper market and pay D the discounted value, or pay D at maturity of the draft.

Negotiable instruments hold the **unconditional promise** to pay a fixed amount 'to order" or to "bearer". Since a L/C is a **conditional** promise to pay, it is not negotiable. That is the reason why there is no market for trading L/Cs. Once in a while you see offers to invest in "first class Bank Letters of Credit", typically with high rates of return. These deals are total **scams**; aimed at defrauding the public.

(68) Negotiating or Reimbursing bank

This is the bank (usually in seller's country) that pays the L/C beneficiary. Sometimes the L/C issuing bank (the bank that opened the L/C in buyer's country) is the negotiating or the reimbursing bank.

(69) Negotiation, by

See under heading: "Payments, L/C".

(70) Notify Party on B/L

See table 11.1 item "p".

The L/C issuing bank normally wants the B/L to be consigned to them. That way they can claim title to the goods in case the L/C applicant (the buyer) defaults. The "Notify Party" box on the B/L is normally where the name and address of the buyer is listed. That way the carrier can contact the buyer with ETA and ask for instructions with regard to Customs Regulations and pick-up location of the goods.

(71) On board notation

See under heading: "Bills of Lading".

(72) On deck shipment, on (UCP 500 Art. 31)

See under heading: "Deck shipment, on".

(73) Originals (UCP 500 Art. 20 b, c)

Unless stated otherwise in the L/C, banks will accept as **original** documents: if produced by carbon copy, or by computer, provided these documents are marked: ORIGINAL. Banks will accept documents as **copies**, if so labelled, or not marked as an original.

If the L/C requires multiple documents, for example "**duplicate**",

Banks will usually accept as an original, a photocopy of the original document with the word ORIGINAL stamped on its face. If the L/C calls for a signed document, the signature needs to be original.

"in **two-fold**", or "two copies", banks will accept one original and the remaining ones as copies. For any questions regarding "originals" and "copies", contact the advising or paying bank for clarification. For Standby L/Cs see ISP98 Rule 4.15 with regard to Originals or Copies.

(74) Partial shipments (UCP 500 Art. 40 and 41)

L/Cs often prohibit **partial shipments** (see table 11.1 item "j") because due to extra handling of the complete order, there is a greater risk of loss or damage to the cargo. If the L/C does allow partial shipments, a full set of L/C documents is to be submitted for payment of each lot. The banks charge L/C handling fees for each set of documents. A L/C beneficiary should therefore make some extra allowance for these fees in their sales proposal.

Just as for a complete shipment, partial shipments have to be made before, or on the latest ship date. If not, the L/C expires; not just for that one partial shipment, but for all subsequent shipments as well. See also under the heading: "Instalment shipments/drawings."

Sometimes the L/C stipulates that the first parcel has to go by air, and subsequent shipments have to go by sea. A beneficiary needs to make sure that the L/C wording allows for this and that it calls for the proper documents. As discussed before, if the L/C calls for shipment by air, but requires Ocean B/Ls, there is a problem and the L/C needs to be amended.

If the L/C prohibits partial shipment, but more than one set of original B/Ls for different consignees are submitted, covering the same load and discharge port, areas, or geographical ranges as stipulated in the L/C, banks will accept such documents; provided the parcels were shipped on the same ship and the same voyage. The B/L with the most recent date will determine the "shipment" date for L/C purposes. However, shipments on two different vessels of the same carrier, leaving the same day from the same port and proceeding to the same discharge port, are considered partial shipments.

(75) Payments, L/C (UCP 500 Art. 9, 10)

The L/C must clearly state under what conditions payment is to be made. If there are no L/C discrepancies the bank will pay:

- At **Sight** (the bank will pay the draft immediately).
- By **Deferred Payment** (time draft; for example 60 days after B/L date).

- By **Acceptance** (see under heading: "Banker's Acceptances/ Discounting").
- By **Negotiation** (drafts can be presented to any bank for payment).

(76) Port of Loading/Discharge

If the L/C states a range of ports, like Bordeaux-Hamburg range and the cargo was actually loaded/discharged in Rotterdam, the actual loading/discharge port must be in the range and must be stated by name on the B/L.

It is important for the L/C beneficiary to make sure that a vessel can reach the stated load port or discharge port. For example, many ports are closed during winter time due to ice.

Special L/C rules apply to containers with regard to load and discharge ports, because containers are often "received for shipment" at another place than the actual Port of Loading (see UCP 500 Art. 23 c, d and 24 c, d) For shipment of containers under an L/C, it is advisable to stipulate the use of "Multiple Transport Document" (see UCP 500 Art. 26).

(77) Prepaid freight (UCP 500 Art. 33)

See under heading: "Freight payable/prepaid".

(78) Quantity (UCP 500 Art. 39)

A **tolerance** of 5% more or less in quantity is acceptable, unless the L/C stipulates that the **quantity** of the goods must not be increased or reduced, or if the L/C states a specific number of packing units. This tolerance does not apply to the L/C amount.

(79) Recourse

When a draft is negotiated with **recourse**, and the bank pays the L/C beneficiary, but later on it turns out that the draft will not be honoured by the L/C issuing bank, the paying bank will ask their money back from the L/C beneficiary. If the draft is negotiated "**without recourse**" and the draft is no good, the paying bank has to look at the L/C issuing bank for payment; not at the beneficiary.

(80) Reimbursement (UCP 500 Art. 19 e)

This article states that the reimbursing bank's charges should be for the account of the issuing bank (the buyer's bank). However, table 11.1 item "t" shows that reimbursing commission (read reimbursing charge) is to be paid by the seller. Rather than relying on Art. 19 e, buyer and seller often split L/C banking fees (see also Appendix 11.1 b under Payment terms). The seller should add L/C fees and banking charges to the cost of the goods.

(81) Revocable L/C (UCP 500 Art. 8)

A Revocable L/C is basically a worthless piece of paper, since it

can be revoked at any time by its applicant (the buyer). Accept only an irrevocable L/C.

(82) Said to Contain (UCP 500 Art. 31 ii)

Unless otherwise stated in the L/C, banks will accept phrases such as: "**Said to Contain**" and "**Shipper's Load and Count.**"

(83) Scams

See under heading: "Negotiable Instrument".

(84) Shipper's Load and Count (UCP 500 Art. 31 ii)

See under heading: "Said to Contain".

(85) Sight, at

See under heading: "Payments, L/C".

(86) Signatures (UCP 500 Art. 20 b)

A document may be signed by handwriting, by facsimile or by perforated signature, by stamp, by symbol or any other mechanical or electronic method of authentication.

UCP 500 Art. 23 a, Art. 24 a, Art. 25 a and Art. 26 a.

Banks will accept a transport document which:

- Appears on its face to indicate the name of the carrier and has been signed by the carrier or by its named agent. If signed by the carrier's agent, the agent's name and the name of the carrier must be stated on the B/L.
- If signed by the master, the signature must show: `by master`, or `as owner/carrier`. If the master has issued a letter of authorisation to a named agent to sign the B/L on his behalf, (see Appendix 6.4) the agent should sign: FOR AND ON BEHALF OF MASTER'S AUTHORITY. The agent's and master's name must be stated on the B/L.

Even if not stated in the L/C, drafts, "Order" B/Ls, Certificates of Declaration and Insurance documents need to have an original signature. A photocopy of a signed document, or a faxed original document does not qualify as being a signed original.

Under Rule 4.07 of ISP98, a required document does not have to be signed, unless so stated in the Standby L/C. Since signature requirements are generally less strict under ISP98 than under UCP 500, Standby L/Cs lend themselves better to electronic presentation. (See ISP98 Rule 3.06)

(87) Spelling and Typing errors

Small spelling and typing errors that do not affect the meaning of the words should not make a document discrepant. However, transposition of numbers could easily result in a discrepancy. To be safe, copy verbatim (errors and all) the L/C description of the goods, the names and addresses

of L/C applicant, of the beneficiary and of the banks involved. That way the L/C beneficiary will not get into an argument with an over-ambitious L/C document checker.

As mentioned under the description "g" of table 11.1, if the name and/or address of the beneficiary has been misspelled in the L/C, rather than asking for an amendment, it may be easier to change the beneficiary's letterhead by handwriting, or by producing a new letterhead on a computer and a printer with error(s) as listed in the L/C; whether it makes sense or not. Please remember, banks deal in documents only (that comply to the letter with the L/C), whether they make sense or not.

(88) Stale documents (UCP 500 Art. 43)

It is common for L/Cs to specify a maximum period for L/C documents to be submitted to the bank (see table 11.1 item "u"). If no date is listed in the L/C, the maximum submittal period is 21 days after B/L date. In any event, documents need to be presented before the L/C **expiration date**; and during regular banking hours at the place (bank) stated in the L/C. For example, if the L/C expires at midnight of 7 April 2004 with the bank closing at 5 pm and you drop off the documents at 5.15 pm of the 7th, the L/C will be discrepant.

(89) Tenor

The **tenor** of a draft indicates if it is payable "**at sight**", or at a later date. Drafts not payable at sight are referred to as "**time-drafts**". A time draft may be payable at a specific date, or after a number of days (for example 60 days after B/L date), or a number of days after the bank's acceptance. If there are no L/C discrepancies, the bank will sign, or stamp the time draft for **acceptance** and pay out the amount at **maturity**. Upon presentation, the L/C beneficiary must sign the draft on its face and endorse it on the back. Drafts are **negotiable instruments** and the bank can "**discount**" the amount at the going discount (interest) rate. The L/C beneficiary receives the discounted amount minus L/C banking fees. See also under Banker's Acceptances/Discounting.

(90) Time Draft

See under heading: "Tenor".

(91) Title of Documents

Always label the documents as stated in the L/C. For example, if the shipper received a Certificate of Weight, but the L/C calls for a Weight Certificate, type "Weight Certificate" at the top of the document. If an ullage sheet has been submitted, but the L/C called for a Certificate of Quantity, just type "Certificate of Quantity" on the ullage sheet. It is also advisable to copy the exact L/C description of the goods and L/C number on these documents.

To make sure that the people responsible for preparation of L/C

documents use proper wording, it is a good idea for the L/C beneficiary to prepare and to send a sample sheet (as for the example for a B/L) with the proper L/C requirements.

(92) Tolerance (UCP 500 Art. 39)

See under heading: "Invoice" and also under heading: "Quantity".

(93) Transferable L/C (UCP 500 Art. 48)

As seen under the heading: "Assignment of Proceeds" a L/C beneficiary can instruct the negotiating bank to pay part of the L/C proceeds to a third party, like a supplier of the beneficiary. This gives the supplier a lot more security than selling on "open account." However, there is still the slight risk that the L/C beneficiary will not perform and the supplier will not receive payment. Therefore some suppliers insist on a **Transferable L/C**. That way the supplier prepares his or her own documents, and submits them to the bank for payment; independently from the original L/C beneficiary. Actually a L/C can be transferred to more than one supplier.

Let's say the original L/C is for $1,000,000 to cover a shipment of four parcels from four different suppliers. Cost of the first parcel is $175,000, of the second parcel $350,000, of the third parcel $150,000 and of the fourth parcel $225,000. The original beneficiary of a transferable L/C can request the paying bank to issue four L/Cs to the four suppliers for the amounts as indicated. The terms of these L/Cs have to be the same as in the original one, except:

- Amount.
- Unit price.
- Expiration date.
- Latest ship date.
- Last day for document presentation.

After the four suppliers have submitted their L/C documents and have been paid, the paying bank usually turns the four sets of documents from the suppliers over to the original L/C beneficiary, who will prepare his or her own set of L/C documents. The beneficiary submits an invoice and draft for the remaining L/C amount (in this case $100,000) plus the four sets of documents from the suppliers. If there are no discrepancies the paying bank will pay the $100,000, minus banking fees to the original L/C beneficiary. Sometimes the above arrangement is called **back-to-back** L/C and it is an easy, rather low cost, and virtually risk-free way of financing a transaction. However, UCP 500 Art. 48 lists a lot of details that have to be complied with. It is therefore advisable to work closely with the paying bank.

(94) Transport Documents

"To Order" B/Ls; Straight Consignment B/Ls, Waybills; Charter Party B/Ls; Multimodal B/Ls; Air waybills, Road, Rail and Inland Waterway B/Ls; Freight Forwarder's "House" B/Ls; Courier or Postal Receipts are collectively referred to as **Transport Documents**.

(95) Transshipment (UCP 500 Art. 23 b, c, d; Art. 24 b, c, d; Art. 26 b; Art. 28 c, d)

Transshipment increases the risk of damage, pilferage, loss, delay and seizure of the cargo. That is why most L/Cs prohibit transshipment (see table 11.1 item "h"). However, it is not always possible to get the goods from origin to final destination without transshipment.

Take, for example, a container originating in the middle of Iowa, USA, that needs to be shipped to an inland port in Germany. The container will most likely be moved by truck to a nearby Container Freight Station, where it may be loaded on a train to New York. From there the container may be loaded onto a feeder vessel to Halifax, Nova Scotia. There the container is loaded on a large container vessel for Rotterdam, Holland. From there the container is transported by train, truck or barge to the inland port in Germany. This example shows a lot of transshipments. For multimodal shipments it is recommended to follow closely the L/C rules in UCP 500 Art. 26.

Unless the L/C prohibits transshipment, banks will accept a B/L that indicates that goods will be transshipped, provided that the entire carriage is covered by the same Transport Document.

(96) UCP, Application of (UCP 500 Art. 1)

To incorporate the UCP 500 Rules in a L/C, include a statement like: THIS L/C IS SUBJECT TO UCP 500.

(97) Unit Price

See under heading: "Invoice" and under heading: "Quantity".

(98) Validation (UCP 500 Art. 20 d)

See under heading: "Authentication".

(99) Waybill (UCP 500 Art. 24)

See chapter 6 for more detailed coverage of waybills. L/C requirements for a Waybill are about the same as for a "To Order" or to a "Straight Consignment" B/L. A Waybill is not a document of title, but it is a receipt for the goods and serves as a contract of carriage between shipper and carriage.

(100) Weight (UCP 500 Art. 38)

If the L/C calls for an **Attestation**, or of a **Certification of Weight** on a Transport Document other than for a shipment by Ocean, banks will accept a stamp or a Declaration of Weight on the Transport Document. However, to be safe, it is best to submit a separate document that shows the

same weight as on the Transport Document and on other L/C documents. Label the document with the same name as stated in the L/C; like for example: WEIGHT CERTIFICATE.

Final comment

For detailed information on L/C Rules and practices, readers are advised to consult **ICC publication No. 645** for documentary L/Cs. It contains detailed guidelines for exporters, importers, freight forwarders, people in shipping and bankers on how to interpret the various L/C document rules. **ICC publication No. 590** covers Standby L/Cs.

Chapter 12

ANATOMY OF AN ARBITRATION CASE

A good lawyer knows the law; a great lawyer knows the judge.
Unknown

Introduction

Arbitration is a voluntary procedure to settle a dispute between private parties by one or more arbitrators. The primary intent is to arrive at a speedy decision made by one or more — supposedly knowledgeable and impartial arbitrator(s) — who have been appointed by the parties themselves. Another aim is to incur lower legal costs as compared to having the dispute settled in a court of law.

Shipping, which provides transport for over 90% of the world's trade, is a cooperative and highly efficient industry. However when a dispute arises, the atmosphere changes immediately. There is nobody to support the claimants except the claimants themselves and they can only prevail if they have all the facts, the evidence and the costings fully laid out.

For this reason managers must ensure that they have accurate records of all transactions and must also think clearly about the way disputes are to be settled in contracts as this also is part of the associated risks of commerce.

The case which follows involved the author's company which, having been settled unfavourably led to an appeal which was unsuccessful. Necessarily the dialogue is written from our point of view but the lessons are instructive.

The arbitration, whose ruling is given in Annex 12, was decided by a panel of three arbitrators of the Society of Maritime Arbitrators (SMA) in New York. The arbitration was conducted in two stages, first for the claimant as a partial final award and secondly for the owners as the SMA final award. The claims were as follows:

BBC submitted claims for the following:

- Reimbursement for spare parts, repairs, labour, newly bought stores, equipment, excess hire paid, excess diesel oil consumption, slow speed claim, lubricating oils and greases, totalling $366,243.28.
- Loss of earnings in the amount of $2,133,425.
- Punitive damages.
- Interest at 7.5% p.a. from December 28, 1998 to the date of the award.

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- Reimbursement for spare parts, repairs, labour, newly bought stores, equipment, excess hire paid, excess diesel oil consumption, slow speed claim, lubricating oils and greases, totalling $366,243.28.
- Loss of earnings in the amount of $2,133,425.
- Punitive damages.
- Interest at 7.5% p.a. from December 28, 1998 to the date of the award.

- A reasonable allowance towards attorneys' fees, travel and out-of-pocket expenses, including the cost of this arbitration.

Falcon reject Charterers' claims and in turn assert a counterclaim for $938,178.12, representing unpaid hire, crew wages paid by Owners, expenses incurred in releasing the vessel from arrest, repairs, together with interest, an allowance towards attorneys' fees and costs and the cost of this arbitration.

For the final award Owners (Falcon) subsequently amended the quantum of their claim to $339,346.25 in conformity with the panel's ruling covering the following items:

a.	Crew wages	$ 190,399.43
b.	Expenses related to release from arrest	$ 72,109.32
c.	Expenses incurred while the vessel was under arrest	$ 11,212.50
d.	Hull cleaning	$ 5,625.00
e.	Attorneys' fees	$ 60,000.00

Background of the SMA case

For part of 1998 the author's company Back-Haul Bulk Carriers Inc. (BBC) had time-chartered a 135,160 mt. OBO, the *PEREGRINE X* (P-10) from Falcon Offshore Inc. (Falcon). Falcon had bought the P-10 to have her converted into a deep-sea drilling vessel. BBC had the vessel on time-charter between the time Falcon bought the ship, and arrival at the conversion shipyard. BBC put the vessel in the crude oil trade.

Time-charter

When BBC time-chartered the P-10, she was 16 years old. Based on many conversations with her previous owners and with their technical management company, she seemed to be in reasonably good shape. When Falcon took possession of the vessel from the previous owners, they manned her with their own crew and provided their own technical management. The new Falcon crew had a hard time operating the ship in an efficient manner. They had trouble keeping the boilers going to generate enough steam for the cargo pumps and the electric generators failed to reach their normal output. In one of the ports the crew could not get the main engine started for over an hour. All of this did not go unnoticed by BBC, but every time there was loss of time, the ship was put off hire.

Lay-up

After the P-10 had been redelivered to Falcon, they decided against conversion to a deep-sea drilling ship and put her up for sale. At the same

time the vessel was laid up at Singapore Roads. The ship did not attract any buyers and Falcon feared that lay-up would be detrimental to the vessel's machinery and equipment. They therefore offered the P-10 again to BBC for time-charter. BBC agreed to the same terms and conditions as the previous t/c. The Falcon division that owned the vessel then changed their mind and insisted on a bareboat (bb) charter. BBC advised Falcon that they were not at all interested in such an arrangement because it would greatly increase BBC's risk. After a few weeks Falcon contacted BBC again and expressed the wish for a short (six months +/- 60 days) bb charter, so they could sell the vessel in the near future. Again BBC declined.

Bareboat charter proposal

A few weeks later Falcon made a proposal to BBC to overhaul and repair the machinery and equipment that had been the cause of trouble for some time. Agreement was reached between Falcon and BBC with regard to the extent of the repairs and overhaul. A standard bb c/p form with amendments was drafted and signed by Falcon and BBC. The bb c/p required that the vessel was of the description contained in a recent OCIMF Questionnaire, which formed an integral part of the c/p. Furthermore the owners warranted in the bb c/p (among other requirements) that the vessel:

- Could pump off a full cargo in 24 hours/maintain 100 psi at the ship's rail.
- Was able to heat and maintain the cargo at 135°F.
- Had a properly working Inert Gas and Crude Oil Washing system.
- Complied with the latest ISGOTT requirements.

Repairs

Falcon provided BBC with copies of the work orders for the intended repairs, which were started early in October 1998 at Singapore Roads. At about the same time BBC contracted with Wallem Ship Management Ltd. (WSM) in Hong Kong for crewing and technical services. BBC and Falcon had agreed that once the repairs were underway, the new (WSM) master and chief engineer were to come aboard in mid-October, followed later on by other officers and crew. The new crew conducted in-depth surveys and made an inventory list of everything on board.

It soon became apparent that after BBC had redelivered the P-10 at the end of the t/c period, a lot of equipment had been removed from the ship. The Falcon lay-up crew had transferred large quantities of stores and spare parts to several other Falcon drilling ships that were laid-up at the same Singapore anchorage. BBC complained to Falcon's marine

department that the ship was not seaworthy without sufficient spare parts. To make the ship seaworthy again BBC was forced to buy new spare parts and stores at a cost of several hundred thousand dollars. According to bb c/p clause 10, Falcon had to repay BBC upon redelivery of the vessel for all the spares, stores and non-perishable supplies (with perhaps a slight discount) but they never did.

By the third week of October 1998, it became obvious from reports and from on-board surveys by the new WSM master and WSM superintendents, that a lot of work still had to be done. Falcon assured BBC that all the repairs that had been agreed upon would be finished by the end of October. Based on that, BBC fixed the vessel for a cargo of iron ore from W. Australia to China. Laycan dates were 8-15 November.

Hand-over of the P-10 from Falcon to BBC was on 10/29/98, with documented proof that many repairs had been left unfinished. Initially Falcon claimed that they had run out of money. It appeared that Falcon's ship-owning division had been "orphaned" from the main company and that no more funds were available. However, after a few days an extra allotment was made available and BBC agreed to postpone departure from Singapore to W. Australia for a week, so Falcon could finish the repairs.

Falcon had produced a four-page hand-over summary, dated 29 October 1998, showing basically that everything was OK with the ship. The new WSM master had sent a copy to BBC, explaining why he refused to sign. During the arbitration, Falcon submitted a copy of the same hand-over document, but with the initials of the Falcon and the BBC master at the bottom; trying to pass it off as the genuine agreement. BBC alerted the SMA panel that Falcon tried to submit a fraudulent hand-over list, but the panel never mentioned the incident in their awards. This was perceived by BBC as a severe case of bias on the part of the arbitrators.

New WSM crew

In late October the full WSM crew came on board and offered to assist the Falcon crew to put the vessel in good working order. Many systems needed to be checked after lay-up of the vessel. It soon became apparent that the WSM and the Falcon crew had very different viewpoints. The experienced WSM crew followed the new ISM guidelines that had become effective the previous July 1. On the other hand the Falcon lay-up crew did not seem to be very familiar with the vessel. In fact the Falcon master in one of his reports stated: "There is no one at Falcon who is really experienced (more than a few months) of the operation of this ship."[1]

BBC had asked WSM to send an experienced OBO master and it

[1] Falcon captain's 20 October 1998 report

turned out that he was very good at his job. He and his officers and crew put in long hours to examine the ship, test its systems and write extensive reports. The WSM master started asking a lot of questions about the latest survey reports, but the Falcon master was most uncooperative. One of the WSM superintendents observed:

"The testing procedures presently being implemented are being carried out largely as proof that the particular item is starting and not defunct. A thorough testing can only be done after take-over, as the present staff are clearly reluctant to demonstrate that the equipment can do what it is supposed to, largely because of their own misgivings and fears that something may go wrong if a thorough going-over is done."[2]

Boilers

The WSM engineers noted that the boilers were malfunctioning and asked the Falcon chief engineer to arrange for a manufacturer's technician to come on board and perform a check-out. The Falcon master and chief engineer refused to allow a technician to come on board till after hand-over of the vessel. From 2 to 4 November 1998 an Aalborg technician checked out the two main boilers and the auxiliary boiler. He found numerous defects as listed in his service report.[3]

Generators

The WSM crew suspected that the generators were not producing enough electricity and asked permission from the Falcon crew to put a full load on the units. This was refused. After hand-over it became clear that the generator output was far below par.

Hatch covers

The new WSM master and chief officer performed a chalk test on the (obo) hatches and detected major problems with the packing. They asked the Falcon master for the latest McGregor survey. The Falcon master stated that to his knowledge there had not been any recent surveys. It turned out that McGregor had performed a major survey a few days before the WSM master came on board. The survey report listed numerous deficiencies with the hydraulic lifts and with the packing, and strongly suggested to have them fixed. The Falcon master was on board when the McGregor survey was performed, but deliberately withheld the McGregor survey report from WSM and BBC.

[2] WSM Superintendents 27 October 1998 report, page 10

[3] Aalborg service report job no: 72124

Request for sea trial

A few days before sailing, the WSM superintendents asked Falcon to have the vessel perform a short sea trial to make sure all systems would be in good working order. The Falcon staff vehemently opposed this. The only thing they allowed was running the main engine (ME) at half speed for 20 seconds. Even during this brief interval it became clear that the ME injection fuel pumps were leaking badly. All the units were sent ashore for repair, at great expense to BBC.

Gyrocompass/Ballast pump

On 7 November the vessel finally weighed anchor to proceed to W. Australia. As soon as the ship gained speed, the gyrocompass started turning erratically. In the pump room the casing of one of the ballast pumps blew off; resulting in several feet of water in the pump room bilges. The vessel returned to the anchorage and the gyroscope technician of Navtronics was called out. He said he had been on the ship on 9 October 1998 and had strongly recommended replacement of the gyroscope sphere because it was three years overdue. He had brought a copy of his service report and gave it to the new WSM master. Again the Falcon master and crew had failed to make full disclosure to BBC. After the gyrocompass and the ballast pump had been repaired, the vessel finally proceeded to Port Hedland in West Australia at economic speed.

Dry cargo bilge

During the ballast trip the crew discovered that the dry cargo bilge lines were totally plugged up, which made the ship unseaworthy because in case of a leak the bilge pumps would be unable to pump out the holds. Falcon thereby violated the bb c/p by not delivering a seaworthy vessel.

Oil stripping lines

Once the WSM crew had taken over from the Falcon crew and were able to check out the cargo systems, it turned out that a number of stripping lines in the main cargo and in the slop tanks were all plugged up with rags. This prevented the vessel from pumping off a full cargo of oil and made her unsuitable as a tanker till the lines had been cleared.

Loadport

Loading iron ore in Port Hedland went without a problem and the first few days of the voyage to Qingdao (the discharge port in the PRC) went relatively well in nice weather and flat seas. However, once the vessel entered the trade winds, her speed dropped off dramatically.

Oil charter offers

While the vessel was proceeding toward Qingdao, BBC was offered several lucrative oil charters from Korea and N. China back to Singapore and for heated crude oil from Dumai on Sumatra to SE Asia options. However, the WSM superintendent strongly recommended against fixing the vessel for an oil charter, since the boilers were unreliable and it was not certain if the cargo hatches would be gas tight.

Redelivery

Since the vessel was not in compliance with the bb c/p, BBC decided to redeliver the vessel to the owners. The P-10 was put off hire after discharge in Qingdao on 12/20/98. Qingdao Port authorities did not allow hand-over of the vessel at the anchorage near the discharge berth. Hand-over would only be allowed at an anchorage 35 miles away in open sea. Since this would be very impractical, BBC decided to take the vessel to Singapore. BBC faxed Falcon a formal off-hire and redelivery notice and advised them of the vessel's ETA: late 12/30, or early 12/31 at Singapore Roads.

Falcon accepted redelivery[4] and promised in writing to have a relief crew ready upon arrival in Singapore[5]. Unfortunately when the vessel arrived on 31 December, Falcon's relief crew consisted of only a captain and a chief engineer. Under SOLAS Rules the WSM/BBC master was precluded from handing over the ship to just two people. Moreover, Falcon did not have ISM certification. BBC offered to keep the WSM crew for a few days longer at Falcon's expense, but BBC was never given an answer.

After arrival of the P-10 in Singapore, BBC considered the bb c/p to have ended. BBC was all paid up with WSM, including for crew cost through December 31 1998. In fact after all the figures were in, WSM still owed BBC for extra P&I insurance that had initially been based on the vessel trading wet (oil), but the vessel only hauled dry cargo (iron ore) with a much lower P&I premium. WSM never paid BBC's P&I claim. BBC did not want to pay for any more crew wages, since the charter had come to an end and since Falcon had failed to come up with a crew of their own.

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[4] See 12/28/98 Falcon fax to BBC ref. HOU-MSN/PX/002: With regard to your queries, regarding destination port, kindly arrange to redeliver vessel at safe anchorage OPL, Singapore.

[5] See 12/29/98 Falcon fax to BBC ref. HOU-MSN/PX/003: I also draw your attention to my fax 28th Dec 98, and subsequent telephone conversation, where I expressed to you that arrangements are being made for a lay-up crew to be available for the *PEREGRINE X*, subsequent to the acceptance of the vessel upon redelivery at OPL Singapore.

BBC advised WSM management that they considered themselves relieved from further monthly payments. WSM suggested to have the vessel arrested to force Falcon to send a crew, but BBC declined because of the bad publicity this would generate. WSM then terminated the "Shipman 98" manning contract with BBC, so the master came under WSM control again. The next day WSM ordered the vessel arrested.

Falcon did not arrange for a crew and refused to pay for the stores, lubricating oils and spare parts left on board. BBC pointed out that clause 10 of the bb c/p was very clear on this. After a few months of negotiations it became clear that Falcon was not going to reimburse BBC and BBC filed for arbitration.

SMA Arbitration

Rather than rehash the whole arbitration procedure, it may be more informative to review the arbitration panel's findings.

Remarks re SMA Partial Final Award (see Appendix 12.1) *(Line numbers from 1-183 were added for clarity)*

Incorrect date

In lines 78/79 the panel states: `upon return of the vessel to Singapore in December 1998, Wallem cancelled the management contract with BBC on January 18, 1999.`

This is not true. The correct date is 8 January, 1999.

Crew wages

In line 86 the panel states: .... `the fact remains that Falcon does not have any involvement with crew activities.`

BBC begs to differ. Here are some of the reasons why:

- The panel determined that Falcon had not lived up to the bb c/p and that BBC was allowed to redeliver the vessel.
- Since Falcon had breached the terms of the bb c/p, the charter had come to an end and BBC was no longer bound by its terms.
- After expiration of the bb c/p BBC's only responsibility (under an entirely different contract that was not part of this arbitration) was for repatriation of the crew in the amount of US$14,378.[6]
- The panel awarded BBC delivery cost in the amount of US$60,219.50[7] for bringing the ship back from Qingdao to Singapore, thereby clearly establishing that after the vessel had been

[6] Box 16 of "SHIPMAN 98" contract between WSM and BBC dated 8 October 1998
[7] Line 110 of appendix 12.1

put off hire, subsequent expenses (including crew costs) were for Falcon's account.

- Falcon accepted redelivery and promised to have a relief crew upon arrival of the vessel in Singapore, but failed to do so.
- The panel awarded BBC wage costs for bringing the vessel back from Qingdao to Singapore (see next two paragraphs).

In line 101 and 102 the panel states:

In view of this finding, BBC was entitled to redeliver the vessel upon completion of discharge at Qingdao. BBC is also entitled to the expenses incurred to bring the vessel to Singapore.

The panel awarded BBC $60,219.50. Since reimbursement for bb hire was dealt with separately, this $60,219.50 was for bunkers and for BBC wage costs. The vessel proceeded from Qingdao to Singapore at economic speed and consumed a bit over $40,000 on bunkers. The balance of $60,219.50 - $40,000 is for wage costs. The panel had therefore unambiguously decided that Falcon was responsible for wage costs after the vessel had been put off-hire on 12/20/98.

In line 141-142 the panel awarded Falcon $52,000 for expenses incurred during the arrest periods in Singapore. This is odd since owners never submitted a documented claim for this[8]. It was felt by BBC that the panel gravely exceeded their authority by deciding matters that had not been submitted to them.

Stores, spare parts, lubricating oils, paint and greases on board at redelivery

BBC claimed $366,243.28[9]. The panel awarded BBC $44,416.67[10] for overpaid hire, but denied BBC's claims for slow speed $16,527.92[11] and for excess DO consumption ($22,766.75)[12] . This still leaves close to $300,000 worth of stores, spare parts, lubricating oils, paints etc. that was never paid to BBC and which claim was denied by the SMA panel. This was totally contrary to what had been agreed upon in the bb c/p.

In line 111-115 the panel states:

The panel denies BBC's general claim for stores, spares and lubes placed on board the PEREGRINE X. For reasons of their own, BBC took no affirmative action when requested

[8] This is confirmed by the judge in her order, page 4, 2nd paragraph: The Arbitration Panel bifurcated the proceedings to first hear Charterer's claims against Owner and then Owner's claims against charterer.

[9] See line 25 of Appendix 12.1

[10] See line 106 of Appendix 12.1

[11] See line 120 of Appendix 12.1

[12] ibid

to remove the items from the vessel. Their lack of action is akin to the abandonment of those supplies. Having failed to do so, BBC cannot now claim that Owners should be responsible for the value of those stores/spares, although they are the ultimate beneficiaries.

This is perhaps one of the most incomprehensible statements produced by the panel. Clause 10 of the bb c/p reads:

10. FUEL AND STORES

The Charterer shall accept and pay for all fuel and consumable stores on board at time of vessel's delivery, and the Owner shall accept and pay for all such fuel and stores left on board on redelivery (with the exception of perishable stores) at the current market prices at the respective port of delivery and redelivery; but if redelivery be taken at a port other than the port of redelivery named in the Charter, the Owner shall pay for the fuel and stores left on board on redelivery at the current market prices at the port of redelivery named in the Charter Party.

The clause clearly states that owners shall ACCEPT AND PAY for all such fuel and stores left on board on redelivery. The clause does NOT say that BBC should take affirmative action when requested to remove the items from the vessel. The panel's remark in line 113:

"Their (BBC) lack of action is akin to the abandonment of those supplies".....is therefore untenable[13].

The alert reader will notice that the panel used the exact same clause 10 of the bb c/p to award Falcon $10,493.83[14] (see the panel's poorly written lines 107-108). The refund was based on BBC's claim 83; spelling out bunkers o/b at delivery and at redelivery. It turned out that at redelivery BBC owed Falcon $10,493.83 as per clause 10 of the bb/cp. Falcon never submitted their own claim. Since Falcon never put in a claim, shouldn't this be considered "abandonment" too?

Even if BBC would have been afforded the opportunity to remove stores and spare parts from the ship, it would have made the ship unseaworthy and would have caused a lot of legal trouble. Above-mentioned clause 10 is standard in t/c and bb charter parties and has been applied for decades.

Final Award (see Appendix 12.2)

(Line numbers from 200-333 were added for clarity)

In response to the Partial Final Award, BBC asked the panel to review

[13] See BBC's 12/28/98 invoice to Falcon, claiming reimbursement for spare parts + durable supplies + repairs that were performed by BBC's crew, but were for Falcon's account.
[14] See lines 107-108 of Appendix 12.1

their decisions. Lines 227-231 of the Final Award states:

> The panel rendered its decision based upon the presentation made, its understanding of the facts and the underlying contract terms. We are not persuaded by the arguments that the panel has the power to revisit its Partial Final Award for corrections and/or amendments. The panel considers itself functus officio with respect to the rulings made in the October 20, 2000 award which were final and dispositive of the issues.

In other words the panel's decisions reached in the Partial Final Award were final. BBC had been awarded crew wages for bringing back the vessel to Singapore and Falcon was awarded $52,000 for crew related matters during the arrest period (even though Falcon never submitted a claim for this).

The arbitrators declared that they will not make corrections and/or amendments with regard to crew matters. However, in lines 254-262 they flip-flop and do exactly the opposite.

In line 269 the panel acknowledged that BBC had a maximum exposure of $14,375 in severance cost under the "Shipman 98" contract with Wallem. During negotiations with Wallem, BBC brought up the fact that Falcon was trying to sell the P-10 and that the crewing contract with BBC might have to be terminated prematurely. BBC did not want to be saddled with a lot of crew severance pay and negotiated a maximum amount. During the negotiations WSM advised that there would not be much in terms of severance cost, because the officers stayed on the WSM payroll and the ratings had been hired via a Bombay crewing agency and would no longer be on WSM's payroll as soon as they had travelled home.

Box 16 of the "Shipman 98" contract shows a maximum severance cost of US$14,378. As explained above, this amount was almost entirely for crew repatriation cost. Clause 8.4 (ii) states: The Owners shall pay an equitable proportion of any Severance Cost which may materialise, not exceeding the amount in Box 16.

What is really problematic is that the SMA panel members involved themselves with a contract between WSM and BBC that had nothing to do with the arbitration procedure at hand. BBC paid WSM the extra $30,000 early termination penalty as per clause 8.4, even though the early termination penalty was the direct result of Falcon's failure to provide a crew. By paying WSM the early termination penalty, BBC fully complied with all the terms of the "Shipman 98" contract. It is ironic that "Shipman 98" was subject to English law and that all disputes were to be referred to LMAA arbitration. Not only did the SMA panel rule on a contract that was none of their business, but they also elevated BBC's maximum exposure for crew wages way beyond what was stated in that contract.

It is puzzling how the US$14,378 could grow first into $52,000 and subsequently into $190,399.43.

For the record, BBC's total monthly crew cost was about $60,000. It is perplexing how the SMA panel managed to effectively award $190,399.43 for crew wages to Falcon for the arrest period of less than two weeks.

In lines 273-275 the panel states:

"...Owners counter that the total lack of cooperation by Charterers is why their legal expenses are substantially higher than Wallem's cost of arresting the vessel."

In line 278 the SMA panel awards owners $68,986.15. This is a lot more generous than Falcon asked for. Trying to reconstruct the panel's maths, it appears that costs were based on Singapore dollars, yet the panel awarded US dollars. The reader is again reminded of the remarks made by the judge when the case was appealed:

With respect to contract interpretation in particular, "a reviewing court is not to substitute its own judgment ....., even when convinced that (the arbitrators) were plainly wrong."

Proceedings

BBC submitted a proposed schedule of proceedings[16] for consideration by the panel and by Falcon. The panel never responded to BBC's proposal, but instead pretty much followed the schedule and proceedings suggested by Falcon's attorney.

Hearings

On 4 November 1999 an initial hearing was held in New York before the panel in the office of Falcon's attorney. The hearing was limited to establishing procedural guidelines. No witnesses were called to present testimony. Once the arbitration procedure got underway, BBC asked several times for additional hearings[17], but all requests were denied.

Below is paragraph 11 of the U.S. Federal Arbitration Act U.S.C Title 9:

[16] See BBC's 13 October 1999 fax to the arbitration panel's chairman

[17] BBC's 11/14/00 Charterer's Memorandum in response to Partial Final Award; page 2: We are very much interested in another oral hearing at a neutral location, to testify with regard to reimbursement to BBC for repairs, spare parts etc.
See also 1/19/01 Charterer's Memorandum in response to Owners claims, request for correction to Partial Final Award, and request for further oral proceedings: ....Charterers request that the panel set further oral proceedings before awarding or denying any pending claims in this matter.

§ 11

SAME; MODIFICATION OR CORRECTION; GROUNDS; ORDER

In either of the following cases the United States court in and for the district wherein the award was made may make an order modifying or correcting the award upon the application of any party to the arbitration -

(a) Where there was an evident material miscalculation of figures or an evident material mistake in the description of any person, thing, or property referred to in the award.

(b) Where the arbitrators have awarded upon a matter not submitted to them, unless it is a matter not affecting the merits of the decision upon the matter submitted.

(c) Where the award is imperfect in matter of form not affecting the merits of the controversy.

The order may modify and correct the award, so as to effect (sic) the intent thereof and promote justice between the parties.

BBC alleged that:

(a) There was a gross miscalculation of the $190,399.43 in crew wages during the arrest period

(b) The panel made an award based on matters not submitted to them ($52,000 award to Falcon for crew wages) and for legal expenses in the amount of $68,986.15

(c) The panel failed to promote justice between the parties.

Appeal

Based on above, BBC appealed the SMA panel's decisions to the US District Court Southern District of New York. (02 Civ. 1209 (BJS)

Here are some more quotations gleaned from the Honorable Judge's Order.

With regard to partiality the judge wrote on page 17 of her order:

"Charterer has adduced simply no proof of either bad faith or gross error on the part of the arbitrators."

With regard to hearing further evidence:

….."arbitrators are not required to hear all evidence proffered but only to give each party an adequate opportunity to present its evidence and argument."

"Arbitrators are afforded broad discretion in determining whether additional evidence is necessary or would prolong the proceedings."

With regard to stores etc. left on board the Judge wrote on pages 13, 14 and 16 of her order:

..."Even if the arbitrators did misinterpret the contract, the Court is not convinced that their interpretation connotes anything more than a mistake..... It is a truism that an arbitration award will not be vacated for a mistaken interpretation of law."

The appeal failed without further recourse.

Closing remarks

The above analysis shows that there can be considerable risks involved in arbitration and it is interesting to speculate if the award would have been different if the arbitration had been heard, for example, under the London Maritime Arbitrators Association's rules, where the appeal process examines both the principles and the content of the award.

There are a lot more arbitration associations other than London and New York[18].

Conclusion

To many readers it may appear a little odd to end a book on commercial management in this way. After all, making money from shipping services is supposed to be the purpose of successful shipping enterprise.

This last case is, however, instructive for a number of reasons. Commercial management in shipping depends upon an accurate assessment of costs, clearly agreed contract terms, competent operations, good record keeping and impartial, knowledgeable resolution of disputes. Whilst always looking for good business opportunities the successful commercial manager also defines the level of risk through which costs are controlled. It is a fascinating occupation and a rewarding career in support of which this book sets out to provide insight into both the hope and the reality.

[18]see website: http://www.mlaus.org and click on: web links

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Appendix 0.1

SHIPPING ABBREVIATIONS

Below is a list of abbreviations that are common to ocean shipping and their related organisations. Entries marked with an asterisk* denote abbreviations used mainly by shipbrokers. In the days of telegrams it paid to be brief, and a lot of charter party terms were abbreviated to acronyms. However, now that most communication between owners, charterers and their brokers is done by fax or e-mail, there is no need to be cryptic. Even though you may think you can decipher an abbreviation, you always need to double check; which takes extra time and effort. Moreover, several abbreviations can have multiple meanings. When you are in the middle of charter party (C/P) negotiations, there is no time to do word puzzles. It is of paramount importance that everybody is "singing from the same sheet" and that everybody knows exactly what the other party means. Sometimes it seems that brokers are involved in a contest to see who can come up with the most obscure abbreviations. There is no room for this. A slight misunderstanding can make a difference of thousands of dollars. If your broker is not willing to spell out incomprehensible terms, find somebody else.

	A
A/S	At Sight (*draft*)
A/S*	Alongside
AA*	Always Afloat (*the vessel should not touch bottom at low tide*)
AA*	Always Accessible (*vessel must be able to reach berth at any stage of the tide*)
AAAA*	Always Afloat, Always Accessible
AAR*	Against All Risk (*Insurance term*)
ABS	American Bureau of Shipping; a Classification Society in the USA
Abt*	About
ACCT*	Account
Ad. Val. (A/V)	Ad Valorem (*tax*)
ADCOMM*	Address Commission
ADR	Alternative Dispute Resolution
AE	Auxiliary Engine
AF*	Advance Freight
AFRA	Average Freight Rate Assessment; by London ship brokers' panel
AFS	Anti-fouling System (*bottom paint*)
AFSPS*	Arrival First Sea Pilot Station
AG	Arabian Gulf
AGW*	All Going Well
AGWWP*	All Going Well, Weather Permitting
AHL*	Australian Hold Ladder (*for bulk carriers*)
AHT	Anchor Handling Tug

AIS	Automatic Identification System (*to identify and track surrounding ships electronically*)
AMLA	American Maritime Law Association
AMVER	Automated Mutual-Assistance Vessel Rescue system (*operated by the US Coast Guard*)
AMVER (orig.)	Atlantic Merchant Vessel Reporting system
AMVER (recent)	Automated Mutual-assistance Vessel Rescue
AP	Aft Peak (*tank*)
API	American Petroleum Institute; also an expression of the relative density of oil cargoes
APS*	Arrival Pilot Station
ARA*	Antwerp-Rotterdam-Amsterdam (*range of ports*)
ARC	Admiralty Raster Chart
ARPA	Automatic Radar Plotting Aid
ASBA	Association of Ship Brokers and Agents (*USA*)
ASTM	American Society for Testing and Materials
ATA	Air Transport Association
ATAUTC*	All Time Actually Used To Count
ATDN*	Any Time Day or Night
ATDNSHINC*	All Time Day or Night Sundays and Holidays Included
ATG	Automatic Tank Gauge
ATS*	All Time Saved
ATUTC*	Actual Times Used to Count
AWB	Air Waybill
AWIWIL*	Always Within Warranty Institute Limits

B

B	Beam
B/D	Barrels per Day
B/H	Barrels per Hour (*pumping rate*)
B/L	Bill of Lading
B/Ls	Bills of Lading
B/N	Booking Note (*cargo*)
BAF	Bunker Adjustment Factor
BB	Break Bulk (*generally cargo that does not fit in a container*)
BB*	Ballast Bonus
BBB*	Before Breaking Bulk (*before starting discharge*)
BBL	Barrel (= 42 gallons = 159 litres of oil)
BBL	"BOLERO" Bill of Lading
BC	Bulk Carrier
BCF*	Billion Cubic Feet (*gas*)
BCM	Bow Centre Manifold distance
BDI*	Both Dates Inclusive
BDLS	Bundles
BENDS*	Both Ends
BFC*	Baltimore Form C (*grain c/p form*)
BFI	Baltic Freight Index
BHP	Brake Horsepower (*engine output*)
BI*	Both Inclusive

BIFFEX	Baltic International Freight Futures Exchange (*in London*)
BIMCO	Baltic and International Maritime Council (*an organisation of ship owners, charterers and brokers; headquartered in Denmark*)
BL	Bale
BM	Beam (*width of a ship*)
BM	Breath Moulded
BN	Booking Note (*cargo*)
BO*	Best Offer
BO*	Buyer's Option
BOB*	Bunkers On Board
BOFFERS*	Best Offers
BoL	Bill of Lading
BRM	Bridge Resource Management
BROB*	Bunkers Remaining On Board
BS	British Standards
BS & W	Basic Sediment and Water (*in oil cargoes*)
BSC	Bunker Surcharge
BSL*	Bills of Lading
BSS 1/1*	Basis one load and one discharge port
BSS*	Basis
BT*	Berth Terms
BU	Bushel
BV	Bureau Veritas; a ship's classification society in France
BW*	Brackish Water
BWAD*	Brackish Water Arrival Draft
BX	Box

C

C & F	Cost and Freight
C & I	Cost and Insurance
C/P	Charter Party (*contract of affreightment between ship owner and charterer*)
C/W*	Clean Water
CA	Central America
CAD	Computer Assisted Design
CAF	Currency Adjustment Factor
CALM	Catenary Anchor Leg Mooring
CAP	Condition (*of the vessel*) Assessment Program Survey
CAR*	Caribbean
CAS	Condition (*of the ship*) Assessment Scheme
CBD	Cash Before Delivery
cbl	Cable (*length*)
CBM	Cubic Metres
CBT	Clean Ballast Tanks (*ballast carried in cargo tanks that have been washed*)
CBT	Computer Based Training
CC	Compass Course
CCAI	Calculated Carbon Aromaticity Index (*bunkers*)
CCI	Calculated Cetane Index (*bunkers*)
CCR	Cargo Control Room (*on board a tanker*)

CE	Chief Engineer
CF	Cubic Foot
CFR	Code of Federal Regulations (*USA*)
CFS	Container Freight Station
CGO*	Cargo
CHABE*	Charterer's Agents Both Ends
CHOPT*	Charterer's Option
CHTRS*	Charterers
CI	Commercial Invoice
CIF	Cost Insurance and Freight
CII	Calculated Ignition Index (*bunkers*)
CIMAC	Congrès International des Machines A Combustion (*International Council on Combustion Engines*)
CIP	Carriage and Insurance Paid
CL	Car Lot, Container Load, Car Load
CLC	Civil Liability Convention; for oil pollution claims
CLS*	Clause
CMI	Comité Maritime International
CNR	Charterer Not Reported
CoA	Contract of Affreightment; to haul a certain amount of cargo in a specified period of time
COB	Centre of Buoyancy
COB*	(at) Close of Business
COD	Cash On Delivery
CoE	Coefficient of Expansion (*oil and gas cargoes*)
CoFC	Container on Flat Car
COG	Centre of Gravity
COG	Course Over the Ground
COGSA	Carriage of Goods by Sea Act
COLREGS	Collision Regulations; "Rules of the Road" for ships
COMM*	Commission
CONS	Consumption
CONT*	Continent (*Europe*)
CoO	Certificate Of Origin
CoO	Country of Origin
COP	Captain of the Port
COP	Cargo Pump
COP*	Custom of the Port
COW	Crude Oil Washing; to clean tanks with its own cargo
CP	Cathodic Protection
CP*	Charter Party
CPA	Closest Point of Approach (*radar plot*)
CPD*	Charterers Pay Dues
CPP*	Clean Petroleum Products
CQD*	Customary Quick Despatch (*instead of well-defined laytime; try to avoid this term*)
CR*	Charterers' Risk
CRISTAL	Contract Regarding an Interim Supplement to Tanker Liability (*oil pollution damage coverage*)

CRN*	Crane
CROB*	Cargo Remaining On Board
CSA	Chamber of Shipping of America
CSI	Container Security Initiative (*US Customs*)
CSO	Company Security Officer (*part of ISPS code*)
CSR	Continuous Synopsis Record (*part of ISPS code*)
CST (cSt)	Centistoke (*oil viscosity*)
CTL*	Constructive Total Loss
CUFT	Cubic Feet
CUM	Cubic Metres
CWT	Hundredweight (*100 lbs*)
CY	Container Yard
CZ	Contiguous Zone

D

D	Depth (*of cargo hold*)
D*	Dirty
D/A*	Discharge Afloat
D/O	Delivery Order
D/P	Documents against Payment
DA	Document Acceptance
DAP	Di-ammonium Phosphate (*fertiliser*)
DAP	Documents Against Payment
DAP*	Days All Purposes
DAPS*	Days All Purposes
DB	Double Bottom
DC*	Deviation Clause
DD	Demand Draft
dd	de dato (*from date*)
DDP*	Delivered Duty Paid
DDU*	Delivered Duty Unpaid
DEL*	Delivery
DELREDEL*	Delivery and Redelivery (*of a vessel on time or bare-boat charter*)
DEM*	Demurrage
DEQ	Delivery Ex Quay
DES	Delivery Ex Ship
DES*	Despatch
DESP*	Despatch
DET*	Detention
DEV*	Deviation (*from intended track*)
DEV	Deviation (*compass error*)
DF	Direction Finder (*radio navigation aid*)
DF*	Dead Freight
DGPS	Differential Global Positioning System (*an electronic satellite navigation system*)
DH	Double Hull
DHD*	Demurrage Half Despatch
DHDATSBE*	Despatch Half Demurrage (*on*) Actual Time Saved Both Ends

DHDLTS*	Demurrage Half Despatch Laytime Saved
DHDWTSBE*	Despatch Half Demurrage (*on*) Working Time Saved Both Ends
DHS	Department of Homeland Security (*USA*)
DISCH	Discharge
DK	Deck
DLOSP*	Dropping Last Outward Sea Pilot
Dm	Decimetres
DNRSOCLONL*	Discountless (and) Non-Returnable; Ship or Cargo Lost or Not Lost
DNV	Det Norske Veritas; a classification society in Norway
DNVPS	Det Norske Veritas Petroleum Services
DO	Diesel Oil
DoA	Department of Agriculture (*USA*)
DoC	Document of Compliance
DoD	Department of Defense (*USA*)
DOP*	Drop Outbound Pilot
DoT	Department of Transport(ation)
DP	Dynamic Positioning; of drill ships
DPP*	Dirty Petroleum Products
DR	Dead Reckoning; (*deduced reckoning*) a method to determine a vessel's position, based on course(s) steered and distance(s) traveled
DS	Double Sided
DSC	Direct Select Calling (*on VHF*) / Digital Select Calling
DT	Deep Tank
DWAT	Deadweight All Told
DWCC	Deadweight Cargo Capacity
DWCT	Deadweight Cargo Tons
DWT	Deadweight Tons; the weight of the cargo, bunkers, water and everything else on board

E

E	East
E&O	Errors and Omissions
E&O E.	Errors and Omissions Excepted
EAON*	Except As Otherwise Noted
EB*	Eastbound
EC	East Coast
ECDIS	Electronic Chart Display and Information System
ECM*	East Coast Mexico
ECS	Electronic Chart System
ECSA*	East Coast South America
EDI	Electronic Data Interchange
EDP	Early Departure Procedure; sometimes the vessel departs before the master has signed the B/L
EE*	Errors Excepted
EEC	European Economic Community
EEZ	Exclusive Economic Zone
EFTA	European Free Trade Agreement
EIN	Employer Identification Number (*USA*)
EIU*	Even If Used (*laytime*)

ENC	Electronic Navigation Chart
EOM	End of Month
EPBIRB	Emergency Position Indicating Radio Beacon
ESPA	European Sea Ports Association
ETA	Estimated Time of Arrival
ETC	Estimated Time of Completion
ETC	Export Trading Company
ETD	Estimated Time of Departure
ETR*	Estimated Time of Readiness
ETS	Estimated Time of Sailing
EU	European Union
EUC*	Except Unforeseen Circumstances
EWRIP*	Extra War Risk Insurance Premium
EX DEC	Export Declaration
EXW	Ex-Works

F

F&D*	Freight and Demurrage
FA	Free Alongside
FAA*	Free of All Average
FAC*	Fast As Can
FAF	Fuel Adjustment Factor
FAK	Freight All Kinds
FAS	Free Alongside Ship
FC*	Full Cargo
FCA	Free Carrier
FCC*	First Class Charterer (*meaningless phrase*)
FCL	Full Container Load
FCS*	Free of Capture and Seizure
FCSRCC*	Free of Capture, Seizure, Riots and Civil Commotion
FD&D*	Freight, Demurrage and Defence (*type of insurance*)
FD*	Free Discharge
FD*	Free Delivery/Discharge
FD*	Free Despatch
FDD*	Freight, Demurrage, Deadfreight
FDIS*	Free Discharge
FE*	Far East
FEU	Forty Foot (*container*) Equivalent Unit
FFA*	Free From Average
FHEX*	Friday and Holidays Excepted (*laytime not to count*)
FHEX*	Fridays and Holidays Excluded
FHINC*	Fridays and Holidays Included
FICS	Fellow Institute of Chartered Shipbrokers
FIFO	Free In First Out (*inventory*)
FILO	First In Last Out (*inventory*)
FILO*	Free In/Liner (*terms*) Out
FIO*	Free In and Out
FIOS*	Free In and Out and Stowed

FIOSLSD*	Free In/Out Stowed, Lashed, Secured and Dunnaged
FIOT*	Free In and Out and Trimmed
Fl. Pt.	Flash Point
FLT*	Full Liner Terms
FM	Fathom (= 6 feet = 1.83 metres)
FMC	Federal Maritime Commission (*in Washington DC*)
FMLA	Federal Maritime Liens Act (*USA*)
FNI	Fellow Nautical Institute
FO	Fuel Oil
FO	Free Out
FOB	Free On Board
FOB*	Free On Barge
FOC	Flag of Covenience
FOC*	Free Of Charge
FONASBA	Federation Of National Associations of Shipbrokers and Agents
FOR*	Free On Rail
FOT*	Free On Truck
FOW*	First Open Water (*pertains to ice-bound ports*)
FOW*	Free On Wharf
FP	Fore Peak (*tank*)
FPA	Free of Particular Average (*Insurance*)
FPAAC*	Free of Particular Average American Conditions (*Insurance*)
FPAEC*	Free of Particular Average English Conditions (*Insurance*)
FPSO	Floating Production Storage and Offloading vessel
FR&CC*	Free of Riots and Civil Commotion
FRT	Freight
FSA	Formal Safety Assessment
FSO	Floating Storage and Offloading (*vessel*)
FT	Foot
FTA	Free Trade Agreement
FTZ	Free Trade Zone
FW	Fresh Water (s.g. = 1.000)
FWAD*	Fresh Water Arrival Draft
FWD	Forward
FWD*	Fresh Water Damage
FWDD*	Fresh Water Departure Draft
FYG	For Your Guidance
FYI	For Your Information
FZ	Fishery Zone

G

GA (G/A)*	General Average (*Insurance*)
GATT	General Agreement on Trade and Tariffs
GC	Great Circle (*course*)
GEN	Generator (*Diesel Electric*)
GL	Germanischer Lloyd; a ship's classification society in Germany
GL*	Great Lakes
GLESS*	Gearless (*bulk carrier*)

GMDSS	Global Maritime Distress and Safety System
GMT	Greenwich Mean Time (*global time is counted from the zero meridian in London*)
GNCN*	Gencon; c/p form
GNP	Gross National Product
GO	Gas Oil
GOV	Gross Observed Volume
GPS	Global Positioning System
GR*	Grain
GRD*	Geared (*bulk carrier*)
GRT	Gross Registered Tons
GSB*	Good Safe Berth
GSBP*	Good Safe Berth/Port
GSP*	Good Safe Port
GSV	Gross Standard Volume
GT	Gross Tonnage

H

H&M	Hull and Machinery (*insurance*)
H/H	House-to-House (*delivery*)
H/H*	High Heat
HA	Hatch
HAZMAT	Hazardous Material
HBL	Hydrostatic Balanced Loading (*for tankers to diminish oil outflow from leaking tank*)
HD*	Half Despatch (*50% of Demurrage rate*)
HDWTS*	Half Despatch Working Time Saved
HDWTSBE*	Half Despatch Working Time Saved Both Ends
HF	High Frequency
HL	Heavy Lift
HLV*	Heavy Lift Vessel
HMAA	Houston Maritime Arbitration Association (*Houston, Texas*)
HMS	Her Majesty's Ship
HMS*	Heavy Metal Scrap
HO	Hydrographic Office
HO*	Hold
HP	Horse Power
HP	High Pressure
HR*	Hampton Roads (*coal cargoes*)
HRD	Human Resources Department
HS	Harmonised Schedule (*used by Customs to classify goods*)
HSC	High Speed Craft
HSS*	Heavy Grains, Soybeans, Sorghums
HT	Height
HW	High Water
HWOST*	High Water Ordinary Spring Tides

I

IAC*	Including Address Commission
IACS	International Association of Classification Societies
IATA	International Air Transport Association
IBIA	International Bunker Industry Association
IBS	Integrated Bridge System
ICC	International Chamber of Commerce; publishes Terms of Trade definitions and Letter of Credit procedures
ICC	Interstate Commerce Commission (*USA*)
ICS	International Chamber of Shipping
ICS	Institute of Chartered Shipbrokers
IFO	Intermediate Fuel Oil
IGS	Inert Gas System
ILO	International Labour Organization
ILOHC*	In Lieu Of Hold Cleaning
ILU	Institute of London Underwriters
IMDG	International Maritime Dangerous Goods (*code*)
IMO	International Maritime Organization; a UN agency that promulgates shipping regulations
INCOT*	Including Overtime
INDO*	Indonesia
INMARSAT	International Marine Satellite Organisation
INS	Integrated Navigation System
INTERCARGO	International Cargo Owners association
INTERTANKO	International Association of Independent Tanker Owners
IOPC	International Oil Pollution Compensation (*Fund*)
IP	Institute of Petroleum (*UK*)
ISBP	International Standard Banking Practice (*for L/Cs*)
ISF	International Shipping Federation
ISGOTT	International Safety Guide for Oil Tankers and Terminals
ISM	International Safety Management; code of safety management regulations
ISMA	International Ship Managers' Association
ISO	International Standards Organization
ISPS	International Ship and Port facility Security (*IMO code*)
ISSC	International Ship Security Certificate (*part of ISPS code*)
ISU	International Salvage Union
IT	Information Technology
ITF	International Transport Workers Federation
ITOPF	International Tanker Owners Pollution Federation
IUATUTC*	If Used Actual Time Used To Count (*laytime*)
IUHATUTC*	If Used Half Actual Time Used To Count (*laytime*)
IWL*	Institute Warranty Limits (*Baltic and Great Lakes area in Winter*)

J

JIT	Just in Time (*delivery*)

	K
K	thousand (*kilo = 1000*)
K*	Knots
KD	Knocked Down (*refers to packaging*)
kg	Kilogram
kHz	kilo Herz
km	kilometres
kn	knot
KR	Korean Register; a ship's classification society in Korea
KTM	Keel To Mast (*distance*)
kW	kiloWatt
	L
L	Length
L&D*	Loss and Damage
L/C	Letter of Credit
L/C*	Laycan (*start laydays and canceling date*)
LA	Letter of Authority
LAN	Local Apparent Noon; time when the sun is due South (*used for Noon Sight*)
LASH	Lighter Aboard Ship (*vessel type*)
Lat.	Latitude
Laycan	Laydays/Canceling date
LBM	Length Between (*draft*) Marks
LBP	Length Between Perpendiculars
LCB	Longitudinal Centre of Buoyancy
LCF	Longitudinal Centre of Flotation
LCL	Less than Container Load
LD*	Load
LDC	Less Developed Country
LDD*	Leaded (*gasoline*)
LDT	Light Displacement Ton
LEL	Lower Explosive Limit (*of vapour mixture*)
LEO	Low Earth Orbit (*satellite*)
LF	Low Frequency (*radio*)
LGM*	Lawful General Merchandise
LIFO	Last in First Out (*inventory*)
LMAA	London Maritime Arbitrators Association
LMT	Local Mean Time
LNG	Liquefied Natural Gas
LO	Lubricating Oil
LOA	Length Overall
LoA	Letter of Authorisation
LoC	Letter of Credit
LOF	Lloyd's Standard Form (*salvage agreement*)
LoI	Letter of Indemnity
Long.	Longitude
LoP	Line of Position (*navigation*)

LOT*	Load-On-Top (*oil cargo slops*)
LOW*	Last Open Water (*pertains to ice-bound ports*)
LPG	Liquified Petroleum Gas
LR	Lloyd's Register; a ship's classification society in England
LS*	Lumpsum (*payment of freight*)
LSA	Life Saving Apparatus
LST	Local Standard Time
LT	Long Ton (*of 2,240 lbs*)
LTD	Light Displacement; weight of the empty ship
LTL	Less than Truckload
LTS*	Laytime Saved
LW	Low Water
LWL	Low Water Line (*tide*)
LWOST*	Low Water Ordinary Spring Tides
LYCN*	Laycan (*time between start of laydays and canceling date*)

M

m	Metres
M	Thousand (*Roman numeral*)
M.E.	Main Engine
M/R	Mate's Receipt
M/V	Motor Vessel
MAIB	Marine Accident Investigation Board in the UK
MARAD	Maritime Administration (*USA*)
MARISAT	Maritime Satellite system
MARPOL	Marine Pollution (*regulations for the prevention of marine pollution*)
mb	Millibar
MBT*	Motor Blocks & Turnings (*scrap*)
MC	Magnetic Course
MCR	Micro Carbon Residue (*bunkers*)
MDO	Marine Diesel Oil
ME	Middle East
MED*	Mediterranean
MEG*	Middle East Gulf
MEO	Medium Earth orbit (*satellite*)
MEPC	Marine Environment Protection Committee (*IMO Agency*)
MF	Medium Frequency (*radio*)
MG	Distance from Metacentre to Centre of Gravity
MGO	Marine Gas Oil
MHHW	Mean Higher High Water
MHLW	Mean Higher Low Water
MHW	Mean High Water
MHWS*	Mean High Water Spring
mHz	mega Herz
MISC	Member Institute of Chartered Shipbrokers
Mks	Marks
MLA	Maritime Law Association
MLHW	Mean Lower High Water

MLLW	Mean Lower Low Water
MLW	Mean Low Water
MNI	Member Nautical Institute
MOA	Memorandum Of Agreement (*sale and purchase of vessels*)
MOB	Man Overboard
MoD	Ministry of Defence (*UK*)
MODU	Mobile Offshore Drilling Unit (*USCG*)
MOLCHOPT*	More Or Less Charterer's Option
MOLOO*	More Or Less Owner's Option
MoM	Mean of Means
MOU	Memorandum of Understanding (*often refers to Port State inspections*)
MR*	Mates Receipt
MS	Motor Ship
MSC	Marine Safety Committee (*of the IMO*)
MSC	Military Sealift Command (*USA*)
MSDS	Material Safety Data Sheet
MSL	Mean Sea Level
MT	Metric Ton (=1,000 kg)
MT	Motor Tanker
MTH*	Month
MTSA	Maritime Transportation Security Act (*USA*)
mW	MegaWatt

N

N	North
NAA*	Not Always Afloat
NAABSA*	Not Always Afloat But Safely Aground
NAFTA	North American Trade Agreement
NAVTEX	Navigational and meteorological warning broadcast service
NB	Nota Bene (*notice; pay attention to*)
NB*	Northbound
NCB	National Cargo Bureau (*USA; checks grain cargoes*)
NCOB*	No Cargo On Board
NCSA*	North Coast South America
ND*	Non-Delivery
NDFCAPMQS*	No Deadfreight For Charterer's Account, providing Minimum Quantity Supplied
NDT	Non-Destructive Testing
NEOBIG*	Not East Of But Including Greece
NES	Not Elsewhere Specified
NEWCI*	Not East of West Coast Italy
NH*	No-Heat (*oil cargo*)
NHC*	No-Heat Crude (*oil*)
NI	Nautical Institute
NIS	Norwegian International Ship Registry
NK	Nippon Kaiji; a ship's classification society in Japan
NM	Nautical Mile
NOAA	National Marine and Atmospheric Administration

NoP	Notice of Protest
NOR*	Notice of Readiness (*to start laytime*)
NOS	Not Otherwise Specified
NOX	Nitrogen Oxide
NP*	Naphtha
NPA*	National Petroleum Association (*ASTM D-155 colour scale*)
NPV	Net Present Value
NRT	Net Register Ton
NS	Not Specified
NSF	National Sale Form (*for sale and purchase of vessels*)
NSF	Not Sufficient Funds
NSV	Net Standard Volume
NT	Net Tonnage
FRT	Freight
FRT	Freight
NUC	Not Under Command
NVO(C)C	Non-Vessel Owning (Common) Carrier (*solicits cargo and leases vessel space*)
NWE*	North West Europe
NWS*	New Worldscale
NYPE '93	New York Produce Exchange (*popular time c/p form for dry cargo*)

O

O/A	Open Account
O/B	On Board
O/O	Ore/Oil carrier
o/o	order of
OABE*	Owner's Agent Both Ends
OBL	Ocean Bill of Lading
OBO	Ore/Bulk/Oil combination carrier
OBQ*	On-Board Quantity; prior to loading new cargo
OCIMF	Oil Companies International Marine Forum
OCR	Optical Character Recognition
ODM	Oil Discharge Monitor
ODMS	Oil Discharge Monitor System
OECD	Organization for Economic Cooperation and Development
OEM	Original Equipment Manufacturer
OH*	Open Hatch
OMBO	One Man Bridge Operation
OOD	Officer Of the Deck
OOW	Officer Of the Watch
OPA 90	Oil Pollution Act of 1990 (*USA*)
OPEC	Organization of Petroleum Exporting Countries
OPT*	Option
OR*	Owner's Risk
ORD*	Owner's Risk of Damage
ORF*	Owner's Risk of Fire/Freezing
ORL*	Owner's Risk of Leakage

ORS*	Owner's Risk of Shifting
OS&D*	Over Short and Damage
OSV	Offshore Support Vessel
OT*	Overtime
OWS*	Owners

P

P & I	Protection and Indemnity Club (*marine insurance*)
P&C*	Private and Confidential
p.a.	per annum
P/N	Promissory Note
P/V	Pressure Vacuum valve
PA*	Position Approximate
PA*	Particular Average
Panamax	Maximum size vessel able to transit Panama Canal locks
PANDI*	P & I
PASTUS*	Past Us (*commissions payable down the line to other brokers*)
PC*	Part Cargo
PCT	Percent
PD	Paid
PD*	Per Day/Diem
PDPR*	Per Day Pro Rated
PF	Pro-Forma
PFD	Personal Floatation Device (*life jacket*)
PG*	Persian Gulf
PHPD*	Per Hatch Per Day
PL	Packing List
PL	Partial Loss
PMCC	Pensky-Martens closed-cup (*to determine flashpoint*)
PMO*	Passing Muscat Outbound
PMS	Planned Maintenance System
PO	Purchase Order
PoB	Pilot on Board
POD	Place of Delivery
POD*	Paid On Delivery
POSCO	Pohang Steelworks (*Korea*)
PP	Perpendicular
PPD	Pre-paid
PPE	Personal Protection Equipment (*hard hat, gloves, safety shoes, goggles, hearing protectors, etc.*)
PPT*	Prompt
PRC	People's Republic of China (*Mainland China*)
PROBO	Product/Bulk/Ore carrier
PROD	Product
PS	Portside
PSC	Port State Control
PSG*	Passing
PSSA	Particularly Sensitive Sea Area

PV	Pressure/Vacuum (*valve*)

Q

QA	Quality Assurance
QB	Queen's Bench (*UK*)

R

R & D	Research and Development
RACON	Radar Response Beacon
RCC	Rescue Coordination Centre
RCDS	Raster Chart Display System
RCVRS*	Receivers (*cargo*)
RD*	Running Days
RDF	Radio Direction Finder
REDEL*	Redelivery (*of vessel*)
REDWS*	Rate, Extras and Demurrage according to Worldscale
REFR*	Refrigerated
RF	Radio Frequency
RIB	Rigid Inflatable Boat
RINA	Registro Italiano Navale; a ship's classification society in Italy
RL	Rhumb Line (*course line*)
RN	Royal Navy (*British*)
RN	Release Note
RNC	Raster Navigation Chart
RNR*	Rate Not Reported
ROB	Remaining On-Board; pertains to cargo remaining in tanks after discharge
ROI	Return On Investment
ROK	Republic of Korea (*South Korea*)
Ro-Ro	Roll-on Roll-off (*type of ship*)
ROV	Remotely Operated (*diving*) Vehicle
RS*	Red Sea
RSO	Recognized Security Organization (*part of ISPS code*)
RT*	Revenue Ton
RVP*	Reid Vapour Pressure

S

S	South
S/D	Sight Draft
S/F	Statement of Facts
S/LC*	Sue and Labour Clause
S/N	Shipping Note
S/R*	Signing/Receiving (*Bill of Lading*)
S/S	Steamship
S/S*	Slow Steam
SA	South America
SA*	Safe Arrival

SA*	Subject to Approval
SALM	Single Anchor Leg Mooring
SAM	Surface to Air Missile
SAR	Search and Rescue
SART	Search and Rescue Radar Transponder
SATPM*	Saturday PM
SB	Starboard
SB*	Safe Berth
SB*	Southbound
SB*	Safe Berth
SBA*	Safe Berth Afloat
SBM	Single Buoy Mooring
SBT	Segregated Ballast Tanks (*separate ballast tanks, lines and pumps*)
SOPIC	Special Compensation P&I Clause
SD*	Single Deck
SDR	Special Drawing Rights (*value is based on a "basket" of currencies*)
SDW	Summer Deadweight
SEA*	South East Asia
SED	Shipper's Export Declaration
SF*	Stowage Factor
SG	Specific Gravity
SHEX*	Sundays and Holidays Excepted (*excluded from laytime*)
SHINC*	Sundays and Holidays Included
SHP	Shaft Horsepower (*engine output*)
SIC	Standard Industrial Classification
SING	Singapore
SIRE	Ship's Inspection Report (*by OCIMF*)
SL&C*	Shipper's Load and Count
SL&T*	Shipper's Load and Tally
SL*	Saint Lawrence
SLD*	Sailed (*departed*)
SLI	Shipper's Letter of Instruction
SMA	Society of Maritime Arbitrators (*New York*)
SMC	Safety Management Certificate (*ISM code*)
SO*	Ship's Option
SOB	Shipped on Board
SOF*	Statement of Facts
SOG	Speed Over the Ground
SOL*	Ship Owner's Liability
SOLAS	Safety Of Life At Sea (*IMO convention*)
SOP	Standard Operating Procedure
SOPEP	Shipboard Oil Pollution Emergency Plan
SOX	Sulphur Oxides
SP*	Safe Port
SP*	Skaw-Passero (*range*)
SPA*	Subject to Particular Average
SPM	Single Point Mooring (*buoy*)
SR&CC*	Strikes, Riots and Civil Commotions

SRBL*	Signing and Releasing Bill of Lading
SS	Steamship
SS*	Shipside
SSA	Ship Security Assessment (*part of ISPS code*)
SSAS	Ship Security Alert System (*part of ISPS code*)
SSHEX*	Saturdays, Sundays and Holidays Excepted (*excluded from laytime*)
SSO	Ship Security Officer
SSP	Ship Security Plan (*part of ISPS code*)
SSW*	Summer (*draft*) Salt Water
ST	Short Ton (= 2,000 lbs)
ST	Steam (*driven*) Tanker
STB	Standard Tankers (*of the*) Bahamas
STC	Said To Contain (*on a B/L*)
STCW	Standards of Training Certification and Watch keeping (*IMO convention*)
STEM*	Subject To Enough Merchandise
Sub Dets*	Subject Details
Sub Stem*	Subject Stem (*cargo availability*)
SUB*	Subject (*to*)
SUBC*	Self-Unloading Bulk Carrier
SW*	Salt Water (specific gravity = 1.025)
SW*	Shipper's Weight
SWAD*	Salt Water Arrival Draft
SWDD*	Salt Water Departure Draft
SWDT	Summer Deadweight
SWL	Safe Working Load (*of cranes and derricks*)
SWSD*	Salt Water Sailing Draft

T

T/C	Time Charter
T/L	Total Loss
T/T	Terms of Trade
TA*	Trans-Atlantic
TACA	Trans-Atlantic Conference Agreement
TARV*	Trans-Atlantic Round Voyage
TBN	To Be Named/Nominated
TBT	Tributylin (*anti-fouling compound*)
TC	True Course
TCF	Transverse Centre of Flotation
TCF*	Trillion Cubic Feet (*gas*)
TCPA	Time of Closest Point of Approach (*radar plotting*)
TCV	Total Calculated Volume
TD*	Tween-decker (ship)
TDV	Total Delivered Volume
TEU	Twenty foot Equivalent Unit (*standard cargo containers*)
TF	Tropical Fresh (*water*)
THC	Terminal Handling Charge
TIP*	Taking Inward Pilot

TK	Tank
TLO*	Total Loss Only
TM	Ton-Mile
TOFC	Trailer on Flat Car (*railcar*)
TOV	Total Observed Volume
TOVALOP	Tanker Owner's Voluntary Agreement for Liability of Oil Pollution (*no longer in existence*)
TP*	Trans-Pacific
TPC	Tons Per Centimetre (*immersion*)
TPI	Tons Per Inch (*immersion*)
TQM	Total Quality Management
TRV	Total Received Volume
TS	Territorial Sea
TSS	Traffic Separation Scheme
TT	Telegraphic Transfer
TT*	That
TTL*	Total

U

U/W	Underwriter
UCB*	Unless Caused By
UCC	Uniform Commercial Code
UCE*	Unforeseen Circumstances Excepted
UCP	Uniform Customs and Practice of Documentary Credits (*ICC*)
UEL	Upper Explosive Level (*of vapour mixtures*)
UFL	Upper Flammable Limit
UKAH*	UK-Antwerp-Hamburg (*range*)
UKBH*	UK-Bordeaux-Hamburg (*range*)
UKC*	UK (*or*) Continent
UKC	Under Keel Clearance
UKHH*	UK-Le Havre-Hamburg (*range*)
ULBC	Ultra Large Bulk Carrier
ULCC	Ultra Large Crude Carrier
UN	United Nations
UNCITRAL	United Nations Council on International Trade Law
UNCLOS	United Nations Conference Law Of the Sea
UNCTAD	United Nations Conference on Trade And Development
UNLDD*	Unleaded (*gasoline*)
UoM	Unit of Measure
UOMH*	Unobstructed Main Holds
USAC*	United States Atlantic Coast
USC*	Unless Sooner Commenced
USCG	United States Coast Guard
USG*	U.S. Gulf (*Gulf of Mexico*)
USNH*	U.S. North of (*Cape*) Hatteras
USNOPAC*	United States North Pacific
USNP*	United States North Pacific
USSH*	United States South of (*Cape*) Hatteras

USWC*	United States West Coast
UT	Universal Time
UTC	Universal Time Coordinated
UTI	Ullage Temperature Interface (*electronic hand-gauge instrument*)
UU*	Unless Used (*laytime*)
UUIUATUTC*	Unless Used If Used Actual Time Used To Count

V

V/C	Voyage Charter
VAR	Voyage Analysis Report (*oil cargo loss*)
VAR	Variation (*difference in angle between True and Magnetic North*)
VAT	Value Added Tax
VCB	Vertical Centre of Buoyancy
VCF	Volume Correction Factor
VCG	Vertical Centre of Gravity
VCV	Vapor Control Valve
VDR	Voyage Data Recorder
VDU	Visual Display Unit
VEF	Vessel Experience Factor (*for oil cargoes*)
VGO	Vacuum Gas Oil
VHF	Very High Frequency (*ship's radio*)
VLBC	Very Large Bulk Carrier
VLCC	Very Large Crude Carrier
VLGC	Very Large Gas Carrier
VLOO	Very Large Ore/Oiler
VOY*	Voyage
VP*	Vapour Pressure
VPD*	Vessel Pays Dues
VPP	Variable Pitch Porpeller
VRP	Vessel Response Plan (*for oil spills*)
VRS	Vapor Recovery System (*to return vapours from a loading tanker back to shore tank*)
VSL	Vessel
VTS	Vessel Traffic System
VTSS	Vessel Traffic Separation System

W

W	West
W&F*	Water and Feed
W&I*	Weighting and Inspection
W/B	Waybill
W/I*	Within
W/M*	Weight or Measurement (*to determine freight for heavy or for light cargo*)
W/R	Warehouse Receipt
WA*	With Average
WAF*	West Africa
WB	Water Ballast
WB	Waybill

WB*	Westbound
WBT	Water Ballast Tank
WCCON*	Whether Cleared Customs Or Not
WCSA*	West Coast South America
WENCHON*	Whether Entered Custom House Or Not
WGS	World Geodetic System
WHO	World Health Organisation
WIBON*	Whether In Berth Or Not
WIFPON*	Whether In Free Pratique Or Not
WIPON*	Whether in Port or Not
WL	Water Line
WLTOHC	Waterline To Hatch Coaming (*distance*)
WMO	World Meteorological Organisation
WOG	With Other Goods (*stowage*)
WOG*	Without Guarantee
WP*	Weather Permitting
WPA*	With Particular Average
WPSN*	Weather Permitting, Safe Navigation
WRI*	War Risk Insurance
WRIC*	Wire Rods In Coils
WRO*	War Risk Only
WS*	Worldscale
WSHTC*	Worldscale Hours, Terms, Conditions
WSNP*	Weather and Save Navigation Permitting
WSRTC*	Worldscale Rates, Terms, Conditions
WT	Water Tight
WTO	World Trade Organization
WTSBE*	Working Time Both Ends
WVNS*	Within Vessel's Natural Segregation (*cargo stowage on board a vessel*)
WW*	Weather Working (*days*)
WWD*	Weather-Working Day
WWR*	When, Where Ready
WWSHEX*	Weather Working Days, Sundays and Holidays Excepted
WWSHINC*	Weather Working Days, Sundays and Holidays Included
WWWW (4W)	WIBON, WCCON, WIFPON, WIPON

Y

Y/A	York Antwerp
YAR*	York Antwerp Rules (*to settle General Average*)

Z

ZT	Zone Time (*local time for a particular time zone*)

Appendix 0.2

VOYAGE CHARTER PARTY LAYTIME INTERPRETATION RULES 1993

Issued jointly by BIMCO, CMI, FONASBA and INTERCARGO.

Code Name: VOYLAYRULES 93

PREAMBLE

The interpretations of words and phrases used in a charter party, as set out below, and the corresponding initials if customarily used, shall apply when expressly incorporated in the charter party, wholly or partly, save only to the extent that they are inconsistent with any express provision of it.

When the word "charter party" is used, it shall be understood to extend to any form of contract of carriage or affreightment including contracts evidenced by bills of lading.

RULES

1. "PORT" shall mean an area, within which vessels load or discharge cargo whether at berths, anchorages, buoys, or the like, and shall also include the usual places where vessels wait for their turn or are ordered or obliged to wait for their turn no matter the distance from that area. If the word "PORT" is not used, but the port is (or is to be) identified by its name, this definition shall still apply.
2. "BERTH" shall mean the specific place within a port where the vessel is to load or discharge. If the word "BERTH" is not used, but the specific place is (or is to be) identified by its name, this definition shall still apply.
3. "REACHABLE ON HER ARRIVAL" or "ALWAYS ACCESSIBLE" shall mean that the charterer undertakes that an available loading or discharging berth be provided to the vessel on her arrival at the port which she can reach safely without delay in the absence of an abnormal occurrence.
4. "LAYTIME" shall mean the period of time agreed between the parties during which the owner will make and keep the vessel available for loading or discharging without payment additional to the freight.
5. "PER HATCH PER DAY" shall mean that the laytime is to be calculated by dividing (A), the quantity of cargo, by (B), the result of multiplying the agreed daily rate per hatch by the number of the vessel's hatches. Thus:

Quantity of cargo

Laytime = ---------- = Days

Daily rate X Number of Hatches

Each pair of parallel twin hatches shall count as one hatch. Nevertheless, a hatch that inescapable of being worked by two gangs simultaneously shall be counted as two hatches.

6. "PER WORKING HATCH PER DAY" (WHD) or "PER WORKABLE HATCH PER DAY" (WHD) shall mean that the laytime is to be calculated by dividing (A), the quantity of cargo in the hold with the largest quantity, by (B), the result of multiplying the agreed daily rate per working or workable hatch by the number of hatches serving that hold. Thus:

   Largest Quantity in one Hold

   Laytime = ---------- = Days

   Daily Rate per Hatch X Number of

   Hatches serving that Hold.

   Each pair of parallel twin hatches shall count as one hatch. Nevertheless, a hatch that is capable of being worked by two gangs simultaneously shall be counted as two hatches.

7. "DAY" shall mean a period of twenty-four consecutive hours running from 0000 hours to 2400 hours. Any part of a day shall be counted pro rata.

8. "CLEAR DAYS" shall mean consecutive days commencing at 0000 hours on the day following that on which a notice is given and ending at 2400 hours on the last of the number of days stipulated.

9. "HOLIDAY" shall mean a day other than the normal weekly day(s) of rest, or part thereof, when by local law or practice the relevant work during what would otherwise be ordinary working hours is not normally carried out.

10. "WORKING DAYS" (WD) shall mean days not expressly excluded from laytime.

11. "RUNNING DAYS" or "CONSECUTIVE DAYS" shall mean days which follow one immediately after the other.

12. "WEATHER WORKING DAY" (WWD) or "WEATHER WORKING DAY OF 24HOURS" or "WEATHER WORKING DAY OF 24 CONSECUTIVE HOURS" shall mean a working day of 24 consecutive hours except for any time when weather prevents the loading or discharging of the vessel or would have prevented it, had work been in progress.

13. "WEATHER PERMITTING" (WP) shall mean that any time when

weather prevents the loading or discharging of the vessel shall not count as laytime.

14. "EXCEPTED" or "EXCLUDED" shall mean that the days specified do not count as laytime even if loading or discharging is carried out on them.

15. "UNLESS SOONER COMMENCED" shall mean that if laytime has not commenced but loading or discharging is carried out, time used shall count against laytime.

16. "UNLESS USED" (UU) shall mean that if laytime has commenced but loading or discharging is carried out during periods excepted from it, such time shall count.

17. "TO AVERAGE LAYTIME" shall mean that separate calculations are to be made for loading and discharging and that any time saved in one operation is to be set off against any excess time used in the other.

18. "REVERSIBLE LAYTIME" shall mean an option given to the charterer to add together the time allowed for loading and discharging. Where the option is exercised the effect is the same as a total time being specified to cover both operations.

19. "NOTICE OF READINESS" (NOR) shall mean the notice to charterer, shipper, receiver or other person as required by the charter party that the vessel has arrived at the port or berth, as the case may be, and is ready to load or discharge.

20. "IN WRITING" shall mean any visibly expressed form of reproducing words; the medium of transmission shall include electronic communications such as radio communications and telecommunications.

21. "TIME LOST WAITING FOR BERTH TO COUNT AS LOADING OR DISCHARGING TIME" or "AS LAYTIME" shall mean that if no loading or discharging berth is available and the vessel is unable to tender notice of readiness at the waiting-place then any time lost to the vessel shall count as if laytime were running, or as time on demurrage if laytime has expired. Such time shall cease to count once the berth becomes available. When the vessel reaches a place where she is able to tender notice of readiness laytime or time on demurrage shall resume after such tender and, in respect of laytime, on expiry of any notice time provided in the charter party.

22. "WHETHER IN BERTH OR NOT" (WIBON) or "BERTH OR NO BERTH" shall mean that if no loading or discharging berth is available on her arrival the vessel, on reaching any usual waiting-

place at or off the port, shall be entitled to tender notice of readiness from it and laytime shall commence in accordance with the charter party. Laytime or time on demurrage shall cease to count once the berth becomes available and shall resume when the vessel is ready to load or discharge at the berth.

23. "VESSEL BEING IN FREE PRATIQUE" and/or "HAVING BEEN ENTERED AT THE CUSTOM HOUSE" shall mean that the completion of these formalities shall not be a condition precedent to tendering notice of readiness, but any time lost by reason of delay in the vessel's completion of either of these formalities shall not count as laytime or time on demurrage.

24. "DEMURRAGE" shall mean an agreed amount payable to the owner in respect of delay to the vessel beyond the laytime, for which the owner is not responsible. Demurrage shall not be subject to laytime exceptions.

25. "DESPATCH MONEY" or "DESPATCH" shall mean an agreed amount payable by the owner if the vessel completes loading or discharging before the laytime has expired.

26. "DESPATCH ON (ALL) WORKING TIME SAVED" (WTS) or "ON (ALL) LAYTIME SAVED" shall mean that despatch money shall be payable for the time from the completion of loading or discharging to the expiry of the laytime excluding any periods excepted from the laytime.

27. "DESPATCH ON ALL TIME SAVED" (ATS) shall mean that despatch money shall be payable for the time from the completion of loading or discharging to the expiry of the laytime including periods excepted from the laytime.

28. "STRIKE" shall mean a concerted industrial action by workmen causing a complete stoppage of their work which directly interferes with the working of the vessel. Refusal to work overtime, go-slow or working to rule and comparable actions not causing a complete stoppage shall not be considered a strike. A strike shall be understood to exclude its consequences when it has ended, such as congestion in the port or effects upon the means of transportation bringing or taking the cargo to or from the port.

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Appendix 0.3/1

BIMCO COAL-OREVOY C/P

First issued by BIMCO, Copenhagen in 1980 as OREVOY
Revised 2003

1. Shipbroker	**BIMCO** **STANDARD COAL AND ORE CHARTER PARTY** **CODE NAME: "COAL-OREVOY"** **PART I**
	2. Place and date of Charter Party
3. Owners (full style and address)	4. Charterers (full style and address)
5. Vessel's name and flag	6. Rate in tons per hour (load.) (Cl. 1.2.4)
7. Vessel's particulars (Cl. 1)	8. Present position and prior commitments, if known (Cl. 2.2)
9. First layday (Cl. 2.1)	10. Expected load readiness date (Cl. 2.2)
11. Cancelling date (also state if other period of declaration of cancelling agreed) (Cl. 3.1)	12. Substitution (state "no" if not agreed) (Cl. 5)
13. Cargo / margin / lts or mts (Cl. 6)	
14. Advance notices (load and discharging) (State number of running days' notice to be given and to whom) (Cl. 7)	
15. Loading port(s) / berth(s) (Cl. 8.1)	16. Discharging port(s) / berth(s) (Cl. 8.2)
17. Notice time in running hours (load and discharging) (only to be filled in if agreed) (Cl. 9.2.1)	
18. Laytime (if separate laytime for load and discharging is agreed, fill in a) and b); if total laytime for load and discharging, fill in c) only) (Cl. 9.2.5 & 9.2.6) a) Laytime for loading b) Laytime for discharging c) Total laytime for loading and discharging	

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continued

Appendix 0.3/2

19. Laytime exceptions (loading) (Cl. 9.3.1)	20. Laytime exceptions (discharging) (Cl. 9.3.1)
21. Demurrage rate (loading) (Cl. 9.5.2)	22. Demurrage rate (discharging) (Cl. 9.5.2)
23. Despatch money (load &/or discharging) (Optional; if agreed indicate rate of despatch money) (Cl. 9.5.3)	24. Freight tax (state whether for Owners' or Charterers' account) (Cl. 13.3)
25. Agents at loading port(s) (Cl. 14)	26. Agents at discharging port(s) (Cl. 14)
27. Freight rate per metric ton (state whether fully or partly prepaid) (Cl. 15)	28. Freight payment (currency and when/where payable; also state beneficiary and bank account) (Cl. 15)
29. General average shall be adjusted/settled at (Cl. 22)	30. Dispute Resolution (state 26.1, 26.2 or 26.3 of Cl. 26, as agreed; if 26.3 agreed state place of arbitration) (if not filled in 26.1 shall apply) (Cl. 26)
31. Brokerage commission and to whom payable (Cl. 27)	32. Numbers of additional clauses covering special provisions, if agreed

It is mutually agreed that this Charter Party shall be performed subject to the conditions contained herein consisting of PART I including additional clauses, if any agreed and stated in Box 32, and PART II. In the event of a conflict of conditions, the provisions of PART I shall prevail over those of PART II to the extent of such conflict but no further.

Signature (Owners)	Signature (Charterers)

Appendix 0.3/3

PART II
"COAL-OREVOY" Standard Coal and Ore Charter Party

1. Vessel

(a) The Owners shall exercise due diligence:

(i) before and at the beginning of the loaded voyage to make the Vessel seaworthy and in every way fit for the voyage and for the trade for which the Vessel is employed;

(ii) throughout the currency of this Charter Party to ensure that the Vessel and her Master and crew comply with all safety, health and other applicable laws and regulations of the Vessel's flag State and of the places where she trades necessary to secure the safe and unhindered loading of the cargo, performance of the voyage and discharging of the cargo.

(b) The Vessel shall be:

(i) classed as stated in Box 7 and the Owners warrant that this class shall be maintained throughout the currency of this Charter Party;

(ii) fully insured in respect of loss of or damage to the cargo by a Protection and Indemnity Club or liability underwriter and the Owners shall provide, on request, evidence of such insurance;

(iii) insured for Hull and Machinery and basic War Risks purposes;

(iv) suitable for mechanical loading of the cargo and capable of receiving the cargo at the rate (if any) specified in Box 6 and be suitable for grab discharge, failing which Clause (c) (iii) shall apply and the Owners shall reimburse the Charterers any actual extra discharge costs;

(v) equipped to meet the technical requirements if and as specified in Box 7.

2. First Layday, Present Position and Expected Load Readiness

(a) Laydays shall not commence before 00.00 hours on the date stated in Box 9. However, notice of readiness may be given before that date and notice time, if provided for in Box 17, shall run forthwith.

(b) Present position of Vessel as per Box 8. Commitments prior to commencement of this Charter are as per Box 8. Expected load readiness as per Box 10.

3. Cancelling

(a) The Charterers shall have the option of cancelling the Charter Party if the Vessel has not tendered notice of readiness to load on or before 23.59 hours on the cancelling date stated in Box 11.

(b) Should the Owners anticipate that, despite the exercise of due diligence, the Vessel will not be ready to load by the cancelling date, they shall notify the Charterers thereof without delay stating the expected date of the Vessel's readiness to load and asking whether the Charterers will exercise their option of cancelling the Charter Party, or agree to a new cancelling date. The Charterers must declare such option within 2 working days as applied at the Charterers' place of business after the receipt of the Owners' notice. If the Charterers do not exercise their option of cancelling, then this Charter Party shall be deemed to be amended such that the seventh day after the new readiness date stated in the Owners' notification to the Charterers shall be the new cancelling date. The provisions of sub-clause (b) shall operate only once, and in case of the Vessel's further delay, the Charterers shall have the option of cancelling the Charter Party if the Vessel has not tendered notice of readiness to load on or before 23.59 hours on the new cancelling date.

(c) The Charterers shall in any event declare whether they exercise any option of cancelling under this Clause no later than the time of the Vessel's readiness to load.

4. Subletting, Assigning

The Charterers shall have the liberty of subletting or assigning this Charter Party to any individual or company, but the Charterers shall always remain responsible for the due fulfilment of all the terms and conditions of this Charter Party and shall warrant that any such sublet or assignment to another party will not result in the Vessel being restricted in her future trading.

5. Substitution

The Owners shall have liberty to substitute a Vessel, provided that such substitute Vessel's main particulars and position shall be subject to the Charterers' prior approval, which is not to be unreasonably withheld, but the Owners under this Charter Party shall remain responsible to the Charterers for the due fulfilment of this Charter Party. This Clause shall not apply if "No" inserted in Box 12.

6. Cargo

(a) The Charterers warrant that unless otherwise specified in Part I, the cargo referred to in Box 13 is non-hazardous and non-dangerous for carriage according to applicable safety regulations including, but not limited to, IMO Code(s).

(b) The Charterers shall have the right to ship parcels of different qualities and/or for different receivers in separate holds within the Vessel's natural segregation and suitable for her trim provided that such parcels can be loaded, carried and discharged without effecting the Vessel's seaworthiness. Other means of separation of different parcels may be specified in Part I.

7. Advance Notices

The Owners or the Master shall give notices of expected readiness to load/discharge as specified in Box 14 to the parties named therein and shall keep those parties advised of any alteration in expected load/discharge readiness.

8. Port of Loading, Voyage, Port of Discharge

(a After completion of prior commitments as may be stated in Box 8, the Vessel shall proceed to the loading port(s)/berth(s) as stated in Box 15.

(b) The Vessel shall carry the cargo with due despatch to the port(s)/berth(s) of discharge stated in Box 16. If the Charterers have the right to order the Vessel to discharge at one or more ports out of several ports named or within a specific range, the Charterers shall declare the actual port(s) of discharge to be inserted in the Bills of Lading prior to the arrival of the Vessel at the first port of loading.

(c) Unless the loading/discharging port(s)/berth(s) are specifically mentioned herein, the Charterers warrant the safety of port(s)/ berth(s) nominated and that the Vessel will be loaded and discharged always afloat.

(d) The Vessel shall be left in seaworthy trim for shifting between berths and ports.

(e) Unless otherwise agreed, loading and/or discharging at two or more ports shall be effected in geographical rotation.

Appendix 0.3/4

PART II
"COAL-OREVOY" Standard Coal and Ore Charter Party

9. Notices of Readiness, Laytime, Demurrage/Des-patch Money

(a) Notice of Readiness

(i) At each port of loading and discharging notice of readiness shall be given to the Charterers or their Agents when the Vessel is in all respects ready to load/discharge at the loading/discharging berth. If the Vessel is a combination carrier, and has carried liquid cargo on its previous voyage, the Vessel shall possess a valid gas free certificate on tendering notice of readiness.

(ii) If a loading/discharging berth is not designated or if such designated berth is not available upon the Vessel's arrival at or off the port, notice of readiness may be given upon arrival at the waiting place at or off the port. However, if at the time the loading/ discharging berth becomes available, the Vessel is prevented from proceeding to the berth due to her inefficiency, weather, tidal conditions, strikes of tugs or pilots or mandatory regulations applicable to the Vessel, time shall not count from that time until such hindrance(s) has (have) ceased.

(iii) Notice of readiness may be given on any day at any time.

(b) Laytime

(i) The laytime shall commence when notice of readiness has been given and after expiration of notice time, if any, provided for in Box 17. Should the Vessel arrive at the (first) loading port and be ready to load before the date stated in Box 9, the Charterers shall have the right to start loading. The Charterers shall also have the right to load/ discharge before the expiration of notice time. In either event, during such periods only time actually used shall count as laytime or as time on demurrage.

(ii) The notice time, if any, shall only apply at first or sole loading and discharging port, respectively.

(iii) If total laytime for loading and discharging has been agreed in Box 18 notice time, if any, at port of discharge shall be applied unless the Vessel is already on demurrage.

*) (iv) Separate laytime.- The cargo shall be loaded within the number of hours/days of 24 consecutive hours or at the average loading rate per day of 24 consecutive hours as stated in Box 18a). The cargo shall be discharged within the number of hours/ days of 24 consecutive hours or at the average discharging rate per day of 24 consecutive hours as stated in Box 18b).

*) (v) Total laytime. -The cargo shall be loaded and discharged within the number of hours/days of 24 consecutive hours stated in Box 18c).

(vi) In the case of loading and/or discharging at more than one berth, laytime shall run continuously as if loading/discharging had been effected at one berth only but without prejudice to sub-clause (c).

(vii) Notwithstanding any other terms of this Charter Party, in any event laytime will start counting at the latest upon commencement of loading or discharging of the cargo from the Vessel.

*) *Indicate alternative agreed in Box 18.*

(c) Suspension of Laytime

(i) Unless the Vessel is on demurrage, laytime shall not count (1) during periods excepted as per Boxes 19 and 20, unless used, in which case only time actually used shall count; (2) for the duration of bad weather or sea conditions which actually prevent the Vessel's loading, discharging or the shifting between loading/discharging berths of the Vessel; (3) if so provided for in Clause 16.

(ii) Time shall not count as laytime or as time on demurrage whilst Vessel actually moving from waiting place whether at or off the port or from a lightening place off the port, until the Vessel is securely moored at the designated loading/ discharging berth.

(iii) Time lost due to inefficiency or any other cause attributable to the Vessel, her Master, her crew or the Owners shall not count as notice time or as laytime or as time on demurrage to the extent that loading or discharging or the matters covered by sub-clause (d)(i) are thereby affected.

(iv) If pursuant to Clause 10 (m) the Vessel has to vacate the loading/ discharging berth, notice time or laytime or time on demurrage shall not count from that time until she be in all respects ready to load/discharge and notification has been given to the Charterers accordingly.

(v) If due to the matters referred to in sub-clauses (c)(iii) or (c)(iv), the Vessel loses her turn, such time shall count again only as from 24 hours after notification of the Vessel's new readiness has been given to the Charterers or when loading/ discharging resumes whichever may be the sooner.

(d) Termination of Laytime

(i) Laytime/Demurrage shall stop counting on completion of: (a) loading/discharging at the relevant port, (b) cargo documentation and/or draft survey for determination of cargo weight, (c) repairs to stevedore damage under Clause 12(b), whichever may be the later.

(ii) If required, the Vessel shall leave the berth as soon as possible within her control on completion of loading/discharging, failing which the Charterers shall be entitled to proved damages. However, if the Vessel then has to wait for reasons (b) and/or (c) as per sub-clause (d)(i), there must be a place available at which she can safely wait, and any extra expenses shall be for the Charterers' account.

(e) Demurrage/Despatch Money

(i) Demurrage accrued under this Charter Party shall be considered as constituting liquidated damages for exceeding the laytime provided for herein. However, if the Vessel has been on demurrage for 15 days or more and no cargo has been loaded, the Owners shall have the option of cancelling this Charter Party. No claim which the Owners may otherwise have against the Charterers shall be prejudiced by the Owners exercising their option of cancelling.

(ii) Demurrage shall be due and payable by the Charterers day by day at the rate specified in Boxes 21 and 22 and in the manner provided for in Box 28.

(iii) Despatch money, if agreed upon in Box 23, shall be paid promptly by the Owners to the Charterers at half the demurrage rate or as otherwise agreed upon in Box 23 for laytime saved in loading and/ or discharging.

10. Loading and Discharging

(a) The Vessel shall be loaded and discharged as and where ordered by the Charterers.

PART II
"COAL-OREVOY" Standard Coal and Ore Charter Party

(b) If the Charterers have not nominated a suitable loading or discharging berth on the Vessel's arrival off the port, or if such berth should not be available, the Vessel is to wait at a suitable place at or off the port. The Charterers shall have the right to designate a safe waiting place, otherwise the Master shall choose a waiting place using due diligence to minimize extra shifting costs provided for in sub-clause (d).

(c) The Charterers shall have the right to load and/or discharge at two berths at each port or place subject to sub-clause (d).

(d) Shifting. - Costs of shifting the Vessel between berths at port(s) of loading and port(s) of discharge, including bunkers, shall be for the Charterers' account. Other costs on board the Vessel including wages and officers' and crew's overtime charges to be for the Owners' account.

(e) The Owners or the Master shall in due time prior to commencement of loading submit to the Charterers (or their nominees) at the loading port a loading plan which shall be based on a reasonable number of shiftings between hatches and also meet applicable rules and regulations, including IMO Code(s). The Charterers shall inform the Owners/Master of any special composition of cargo required in sufficient time to permit the Owners/Master to work out and submit such loading plan.

(f) Prior to loading, the Vessel's holds shall be adequately cleaned for loading the contracted cargo.

(g) The Charterers shall load and spout-trim the cargo as per the loading plan, free of any risk, liability and expense to the Vessel. Any extra trimming and/or levelling required by the Master or Owners shall be performed at the Owners' expense and any time lost thereby shall not count as laytime/demurrage. Discharging, including shovel cleaning, shall be effected by the Charterers free of any risk, liability and expense to the Vessel.

(h) Warping. - The Vessel shall warp, as reasonably required by the Charterers, solely for the purpose of making any hatch or hatches available to the loading/discharging appliances at that berth, and costs on board the Vessel including bunkers, wages and officers' and crew's overtime charges shall be for the Owners' account. However, the costs of any necessary outside services shall be for the Charterers' account. Laytime or time on demurrage shall not be interrupted thereby.

(i) The Vessel shall work day and night and during any time as may be excepted as per Box 19 and Box 20, as required by the Charterers.

(j) The Vessel shall, at her own risk and expense, open and close hatches prior to and after loading/discharging and also during loading/discharging as may be required by the Charterers to protect the cargo, provided local shore regulations permit. If same, however, is not permitted by local shore labour regulations, shore labour is to be employed by the Charterers at their risk, liability and expense. The Vessel shall furnish and give free use of sufficient light for deck and holds, as on board.

(k) The Charterers shall have the right to order the Vessel to leave without having loaded a full cargo, always provided that the Vessel be in seaworthy condition and that the Charterers pay deadfreight according to Clause 15(f).

(l) Overtime for loading and discharging to be for the account of the party ordering the same. If overtime be ordered by Port Authorities or any other Governmental Agencies, the Charterers to pay any extra expenses incurred. Officers' and crew's overtime charges always to be paid by the Owners.

(m) In the event of loading/discharging being impossible due to inefficiency or any other cause attributable to the Vessel, her Master, her crew or the Owners and such impossibility continuing for more than three consecutive hours, the Charterers shall have the right to order the Vessel to vacate the berth and shifting from and back to berth shall be at the Owners' expense and time.

11. Bulk Carrier Safety Clause

(a) The Charterers shall instruct the terminal operators or their representatives to co-operate with the Master in completing the IMO SHIP/SHORE SAFETY CHECKLIST (IMO Resolution A.862(20) – Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code) Appendix 3) and shall arrange all cargo operations strictly in accordance with the guidelines set out therein.

(b) In addition to the above and notwithstanding any provision in this Charter Party in respect of loading/discharging rates, the Charterers shall instruct the terminal operators to load/discharge the Vessel in accordance with the loading/discharging plan, which shall be approved by the Master with due regard to the Vessel's draught, trim, stability, stress or any other factor which may affect the safety of the Vessel.

(c) At any time during cargo operations the Master may, if he deems it necessary for reasons of safety of the Vessel, instruct the terminal operators or their representatives to slow down or stop the loading or discharging.

(d) Compliance with the provisions of this Clause shall not affect the counting of laytime.

12. Stevedore Damage

(a) The Charterers shall be responsible for damage (beyond ordinary wear and tear) to any part of the Vessel caused by Stevedores at both ends. Such damage, as soon as apparent, shall be notified immediately by the Master to the Charterers or their port agents and to their Stevedores. The Owners/Master shall endeavour to obtain the Stevedores' written acknowledgment of the damage caused.

(b) Stevedore damage affecting seaworthiness or the proper working of the Vessel and/or her equipment shall be repaired without delay before the Vessel sails from the port where such damage was caused and shall be paid for by the Charterers. Other repairs shall be done before the completion of the voyage where practicable, or otherwise at a place mutually agreed between the parties. All costs of such repairs shall also be for the Charterers' account and any time lost shall be for the account of and shall be paid to the Owners by the Charterers at the demurrage rate.

13. Dues, Taxes and Charges, Extra Insurance

(a) On the Vessel. - The Owners shall pay all dues, duties, taxes and other charges customarily levied on the Vessel, howsoever the amount thereof may be assessed.

(b) On the cargo. - The Charterers shall pay all dues, duties, taxes and charges levied on the cargo at the port of loading/discharging, howsoever the amount thereof may be assessed.

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(c) On the freight. - Taxes levied on the freight shall be paid by the Owners or the Charterers as agreed in Box 24.

(d) Extra Insurance. - Any extra insurance on cargo actually paid by the Charterers owing to Vessel's age, class, flag or ownership shall be for the Owners' account and may be deducted from the freight. The Charterers shall furnish evidence of payment supporting any such deduction. Unless a maximum amount has been agreed in Part I, such extra insurance shall not exceed the lowest extra premium which would be charged for the Vessel and voyage in the London insurance market.

14. Agents

At the port(s) of loading the Vessel shall be consigned to the Agents as stated in Box 25 and at the port(s) of discharge to the Agents as stipulated in Box 26, the Owners always paying the customary fees.

15. Freight

The freight at the rate stated in Box 27 shall be calculated on intaken quantity.

(a) Prepaid. - If according to Boxes 27 or 28 freight is to be paid on shipment, it shall be deemed earned and non-returnable Vessel and/or cargo lost or not lost. Bills of Lading showing "Freight prepaid" or the like shall not be released until the freight has been duly paid.

(b) After shipment. - If according to Box 28 freight shall be payable within a number of days after shipment, the freight shall be deemed earned as per sub-clause (a). In such case Bills of Lading shall not be endorsed "Freigh(f) t prepaid" or the like, unless the freight has been paid.

(c) Partly on Delivery. - If according to Boxes 27 or 28 a percentage of the freight shall be payable as per sub-clauses (a) or (b) the balance shall be paid as per sub-clause (c). However, in such case the total freight shall be deemed earned as per sub-clause (a) and the Charterers shall not have the option referred to in sub-clause (d)(i).

(d) On Delivery. - If according to Boxes 27 or 28 freight is payable at destination or on right and true delivery of the cargo, it shall not be deemed earned until the cargo is thus delivered.

(i) On Delivered Weight. - When the freight is payable on delivery of cargo the Charterers shall have the option of paying freight on delivered weight, provided such option be declared in writing before breaking bulk and the weight be ascertained by official weighing machine, otherwise by joint draught survey. The Charterers shall pay all costs incurred in connection with weighing or draught survey. The Owners shall be at liberty to appoint check clerks at their own expense.

(e) Deductions. - The freight shall be paid in cash without discount in the manner described in Box 28. The Charterers shall only be entitled to deduct from the freight undisputed despatch money and extra insurance, provided properly documented, as per Clause 13(d).

(f) Deadfreight. - If the Charterers fail to supply a cargo as specified in Box 13, deadfreight shall be payable but the Charterers shall not be bound to supply cargo in excess of any quantity stated by the Owners as the Vessel's capacity made available to the Charterers. The laytime shall be calculated on that quantity. The Owners/Master shall be entitled to clause Bills of Lading for any deadfreight due. If the Shippers/ Suppliers state in writing that no more cargo will be shipped, the Owners shall not need to have any such statement confirmed by the Charterers.

16. Strike and Other Hindrances

(a) If there is a strike or lock-out or any other cause referred to in Clause 24 (hereinafter the "hindrance") affecting or preventing the actual loading of the cargo, or any part of it, when the Vessel is ready to proceed from her last port or at any time during the voyage to the port or ports of loading or after her arrival there, the Master or the Owners may ask the Charterers to declare, that they agree to reckon the laydays as if there were no hindrance. Unless the Charterers have given such declaration in writing (by telegram, if necessary) within 24 hours, the Owners shall have the option of cancelling this Charter Party. If part cargo has already been loaded, the Owners must proceed with same, (freight payable on loaded quantity only) having liberty to complete with other cargo on the way for their own account.

(b) If there is a hindrance affecting or preventing the actual discharging of the cargo on or after the Vessel's arrival at or off port of discharge and same has not been settled within 48 hours, the Charterers shall have the option of keeping the Vessel waiting until such hindrance is at an end against paying half demurrage after expiration of the time provided for discharging until the hindrance has come to an end and thereafter full demurrage shall be payable until the completion of discharging, or of ordering the Vessel to a safe port where she can safely discharge without risk of being detained by a hindrance. Such orders to be given within 48 hours after the Master or the Owners have given notice to the Charterers of the hindrance affecting the discharge. On delivery of the cargo at such port, all conditions of this Charter Party and of the Bill of Lading shall apply and the Vessel shall receive the same freight as if she had discharged at the original port of destination, except that if the distance to the substituted port exceeds 100 nautical miles, the freight on the cargo delivered at the substituted port to be increased in proportion.

(c) Except for the obligations described above, neither the Charterers nor the Owners shall be responsible for the consequences of hindrances preventing or affecting the actual loading or discharging of the cargo.

17. General Ice Clause

The Vessel shall not be obliged to force ice but, subject to the Owners' approval and having due regard to its size, construction and class, may follow ice-breakers when reasonably required.

(a) Port of Loading

(i) If at any time after setting out on the approach voyage the Vessel's passage is impeded by ice, or if on arrival the loading port is inaccessible by reason of ice, the Master or Owners shall notify the Charterers thereof and request them to nominate a safe and accessible alternative port. If the Charterers fail within 48 running hours, Sundays and holidays included, to make such nomination or agree to reckon laytime as if the port named in the Charter Party were accessible or declare that they cancel the Charter Party, the

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Owners shall have the option of cancelling the Charter Party. In the event of cancellation by either party, the Charterers shall compensate the Owners for all proven loss of earnings under this Charter Party.

(ii) If at any loading port the Master considers that there is a danger of the Vessel being frozen in, and provided that the Master or Owners immediately notify the Charterers thereof, the Vessel may leave with cargo loaded on board and proceed to the nearest safe and ice free place and there await the Charterers' nomination of a safe and accessible alternative port within 24 running hours, Sundays and holidays excluded, of the Master's or Owners' notification. If the Charterers fail to nominate such alternative port, the Vessel may proceed to any port(s), whether or not on the customary route for the chartered voyage, to complete with cargo for the Owners' account.

(b) Port of Discharge

(i) If the voyage to the discharging port is impeded by ice, or if on arrival the discharging port is inaccessible by reason of ice, the Master or Owners shall notify the Charterers thereof. In such case, the Charterers shall have the option of keeping the Vessel waiting until the port is accessible against paying compensation in an amount equivalent to the rate of demurrage or of ordering the Vessel to a safe and accessible alternative port.

If the Charterers fail to make such declaration within 48 running hours, Sundays and holidays included, of the Master or Owners having given notice to the Charterers, the Master may proceed without further notice to the nearest safe and accessible port and there discharge the cargo.

(ii) If at any discharging port the Master considers that there is a danger of the Vessel being frozen in, and provided that the Master or Owners immediately notify the Charterers thereof, the Vessel may leave with cargo remaining on board and proceed to the nearest safe and ice free place and there await the Charterers' nomination of a safe and accessible alternative port within 24 running hours, Sundays and holidays excluded, of the Master's or Owners' notification. If the Charterers fail to nominate such alternative port, the Vessel may proceed to the nearest safe and accessible port and there discharge the remaining cargo.

(iii) On delivery of the cargo other than at the port(s) named in the Charter Party, all conditions of the Bill of Lading shall apply and the Vessel shall receive the same freight as if discharge had been at the original port(s) of destination, except that if the distance of the substituted port(s) exceeds 100 nautical miles, the freight on the cargo delivered at the substituted port(s) shall be increased proportionately.

War Risks ("Voywar 1993")

(a) For the purpose of this Clause, the words:

(i) "Owners" shall include the shipowners, bareboat charterers, disponent owners, managers or other operators who are charged with the management of the Vessel, and the Master; and

(ii) "War Risks" shall include any war (whether actual or threatened), act of war, civil war, hostilities, revolution, rebellion, civil commotion, warlike operations, the laying of mines (whether actual or reported), acts of piracy, acts of terrorists, acts of hostility or malicious damage, blockades (whether imposed against all vessels or imposed selectively against vessels of certain flags or ownership, or against certain cargoes or crews or otherwise howsoever), by any person, body, terrorist or political group, or the Government of any state whatsoever, which, in the reasonable judgement of the Master and/or the Owners, may be dangerous or are likely to be or to become dangerous to the Vessel, her cargo, crew or other persons on board the Vessel.

(b) If at any time before the Vessel commences loading, it appears that, in the reasonable judgement of the Master and/or the Owners, performance of the Charter Party, or any part of it, may expose, or is likely to expose, the Vessel, her cargo, crew or other persons on board the Vessel to War Risks, the Owners may give notice to the Charterers cancelling this Charter Party, or may refuse to perform such part of it as may expose, or may be likely to expose, the Vessel, her cargo, crew or other persons on board the Vessel to War Risks; provided always that if this Charter Party provides that loading or discharging is to take place within a range of ports, and at the port or ports nominated by the Charterers the Vessel, her cargo, crew, or other persons on board the Vessel may be exposed, or may be likely to be exposed, to War Risks, the Owners shall first require the Charterers to nominate any other safe port which lies within the range for loading or discharging, and may only cancel this Charter Party if the Charterers shall not have nominated such safe port or ports within 48 hours of receipt of notice of such requirement.

(c) The Owners shall not be required to continue to load cargo for any voyage, or to sign Bills of Lading for any port or place, or to proceed or continue on any voyage, or on any part thereof, or to proceed through any canal or waterway, or to proceed to or remain at any port or place whatsoever, where it appears, either after the loading of the cargo commences, or at any stage of the voyage thereafter before the discharge of the cargo is completed, that, in the reasonable judgement of the Master and/or the Owners, the Vessel, her cargo (or any part thereof), crew or other persons on board the Vessel (or any one or more of them) may be, or are likely to be, exposed to War Risks. If it should so appear, the Owners may by notice request the Charterers to nominate a safe port for the discharge of the cargo or any part thereof, and if within 48 hours of the receipt of such notice, the Charterers shall not have nominated such a port, the Owners may discharge the cargo at any safe port of their choice (including the port of loading) in complete fulfilment of the Charter Party. The Owners shall be entitled to recover from the Charterers the extra expenses of such discharge and, if the discharge takes place at any port other than the loading port, to receive the full freight as though the cargo had been carried to the discharging port and if the extra distance exceeds 100 miles, to additional freight which shall be the same percentage of the freight contracted for as the percentage which the extra distance represents to the distance of the normal and customary route, the Owners having a lien on the cargo for such expenses and freight.

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(d) If at any stage of the voyage after the loading of the cargo commences, it appears that, in the reasonable judgement of the Master and/or the Owners, the Vessel, her cargo, crew or other persons on board the Vessel may be, or are likely to be, exposed to War Risks on any part of the route (including any canal or waterway) which is normally and customarily used in a voyage of the nature contracted for, and there is another longer route to the discharging port, the Owners shall give notice to the Charterers that this route will be taken. In this event the Owners shall be entitled, if the total extra distance exceeds 100 miles, to additional freight which shall be the same percentage of the freight contracted for as the percentage which the extra distance represents to the distance of the normal and customary route.

(e) The Vessel shall have liberty:-

(i) to comply with all orders, directions, recommendations or advice as to departure, arrival, routes, sailing in convoy, ports of call, stoppages, destinations, discharge of cargo, delivery or in any way whatsoever which are given by the Government of the Nation under whose flag the Vessel sails, or other Government to whose laws the Owners are subject, or any other Government which so requires, or any body or group acting with the power to compel compliance with their orders or directions;

(ii) to comply with the orders, directions or recommendations of any war risks underwriters who have the authority to give the same under the terms of the war risks insurance;

(iii) to comply with the terms of any resolution of the Security Council of the United Nations, any directives of the European Community, the effective orders of any other Supranational body which has the right to issue and give the same, and with national laws aimed at enforcing the same to which the Owners are subject, and to obey the orders and directions of those who are charged with their enforcement;

(iv) to discharge at any other port any cargo or part thereof which may render the Vessel liable to confiscation as a contraband carrier;

(v) to call at any other port to change the crew or any part thereof or other persons on board the Vessel when there is reason to believe that they may be subject to internment, imprisonment or other sanctions;

(vi) where cargo has not been loaded or has been discharged by the Owners under any provisions of this Clause, to load other cargo for the Owners' own benefit and carry it to any other port or ports whatsoever, whether backwards or forwards or in a contrary direction to the ordinary or customary route.

(f) If in compliance with any of the provisions of sub-clauses (b) to (e) of this Clause anything is done or not done, such shall not be deemed to be a deviation, but shall be considered as due fulfilment of the Charter Party.

19. Lien

(a) The Owners shall have a lien on the cargo for freight, deadfreight, demurrage and general average contribution due to them under this Charter Party.

(b) The Charterers shall remain responsible for deadfreight and demurrage, incurred at port of loading and for freight and demurrage incurred at port of discharge.

20. Liberty

The Vessel shall have liberty to sail with or without pilots, to tow or go to the assistance of vessels in distress, to call at any port or place for oil fuel supplies, and to deviate for the purpose of saving life or property, or for any other reasonable purpose whatsoever.

21. Both-to-Blame Collision Clause

If the Vessel comes into collision with another vessel as a result of the negligence of the other vessel and any act, neglect or default of the Master, mariner, pilot or the servants of the Owners in the navigation or in the management of the Vessel, the owners of the cargo carried hereunder will indemnify Owners against all loss or liability to the other or non-carrying vessel or her owners in so far as such loss or liability represents loss of, or damage to, or any claim whatsoever of the owners of said cargo, paid or payable by the other or non-carrying vessel or her owners to the owners of said cargo and set-off, recouped or recovered by the other or non-carrying vessel or her owners as part of their claim against the carrying vessel or owners. The foregoing provisions shall also apply where the owners, operators or those in charge of any vessel or vessels or objects other than, or in addition to, the colliding vessels or objects are at fault in respect of a collision or contact.

22. General Average and New Jason Clause

General Average shall be adjusted and settled at the place indicated in Box 29 according to the York/Antwerp Rules, 1994, or any modification thereof, but if, notwithstanding the provisions specified in Box 29, the adjustment is made in accordance with the law and practice of the United States of America, the following clause shall apply: "In the event of accident, danger, damage or disaster before or after the commencement of the voyage, resulting from any cause whatsoever, whether due to negligence or not, for which, or for the consequence of which, Owners are not responsible, by statute, contract or otherwise, the goods, shippers, consignees or owners of the goods shall contribute with Owners in general average to the payment of any sacrifices, losses or expenses of a general average nature that may be made or incurred and shall pay salvage and special charges incurred in respect of the goods. If a salving Vessel is owned or operated by Owners, salvage shall be paid for as fully as if the said salving Vessel or vessels belonged to strangers. Such deposit as Owners, or their agents, may deem sufficient to cover the estimated contribution of the goods and any salvage and special charges thereon shall, if required, be made by the goods, shippers, consignees or owners of the goods to Owners before delivery".

23. Responsibilities

(a) The International Convention for the Unification of Certain Rules of Law relating to Bills of Lading signed at Brussels on 25 August 1924 ("the Hague Rules") as amended by the Protocol signed at Brussels on 23 February 1968 ("the Hague-Visby Rules") and as enacted in the country of shipment shall apply to this Charter Party. When the Hague-Visby Rules are not enacted in the country of shipment, the corresponding legislation of the country of destination shall apply,

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irrespective of whether such legislation may only regulate outbound shipments.

(b) When there is no enactment of the Hague-Visby Rules in either the country of shipment or in the country of destination, the Hague-Visby Rules shall apply to this Charter Party save where the Hague Rules as enacted in the country of shipment or if no such enactment is in place, the Hague Rules as enacted in the country of destination, compulsorily applicable to shipments, in which case the provisions of such Rules shall apply.

(c) The Protocol signed at Brussels on 21 December 1979 ("the SDR Protocol 1979") shall apply where the Hague-Visby Rules apply, whether mandatorily or by this Charter Party.

(d) The Owners shall in no case be responsible for loss of or damage to cargo arising prior to loading, after discharging, or while the cargo is in the charge of another carrier, or with respect to deck cargo and live animals. *)

24. Force Majeure

Save to the extent otherwise in this Charter Party expressly provided, neither party shall be responsible for any loss or damage or delay or failure in performance hereunder resulting from Act of God, war, terrorism, civil commotion, quarantine, strikes, lockouts, arrest or restraint of princes, rulers and peoples or any other event whatsoever which cannot be avoided or guarded against.

25. Bills of Lading

Bills of Lading shall be presented and signed by the Master as per the "COAL-OREVOYBILL" Bill of Lading form, always in accordance with Mate's Receipts and without prejudice to this Charter Party, or by the Agents provided written authority has been given by Owners to the Agents, a copy of which is to be furnished to the Charterers. The Charterers shall indemnify the Owners against all consequences or liabilities that may arise from the signing of bills of lading as presented to the extent that the terms or contents of such bills of lading impose or result in the imposition of more onerous liabilities upon the Owners than those assumed by the Owners under this Charter Party. *)

26. Dispute Resolution

*) (a) This Charter Party shall be governed by and construed in accordance with English law and any dispute arising out of or in connection with this Charter Party shall be referred to arbitration in London in accordance with the Arbitration Act 1996 or any statutory modification or re-enactment thereof save to the extent necessary to give effect to the provisions of this Clause. The arbitration shall be conducted in accordance with the London Maritime Arbitrators Association (LMAA) Terms current at the time when the arbitration proceedings are commenced.

The reference shall be to three arbitrators. A party wishing to refer a dispute to arbitration shall appoint its arbitrator and send notice of such appointment in writing to the other party requiring the other party to appoint its own arbitrator within 14 calendar days of that notice and stating that it will appoint its arbitrator as sole arbitrator unless the other party appoints its own arbitrator and gives notice that it has done so within the 14 days specified. If the other party does not appoint its own arbitrator and give notice that it has done so within the 14 days specified, the party referring a dispute to arbitration may, without the requirement of any further prior notice to the other party, appoint its arbitrator as sole arbitrator and shall advise the other party accordingly. The award of a sole arbitrator shall be binding on both parties as if he had been appointed by agreement.

Nothing herein shall prevent the parties agreeing in writing to vary these provisions to provide for the appointment of a sole arbitrator.

In cases where neither the claim nor any counterclaim exceeds the sum of US$50,000 (or such other sum as the parties may agree) the arbitration shall be conducted in accordance with the LMAA Small Claims Procedure current at the time when the arbitration proceedings are commenced.

(b) This Charter Party shall be governed by and construed in accordance with Title 9 of the United States Code and the Maritime Law of the United States and any dispute arising out of or in connection with this Contract shall be referred to three persons at New York, one to be appointed by each of the parties hereto, and the third by the two so chosen; their decision or that of any two of them shall be final, and for the purposes of enforcing any award, judgement may be entered on an award by any court of competent jurisdiction. The proceedings shall be conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc.

In cases where neither the claim nor any counterclaim exceeds the sum of US$50,000 (or such other sum as the parties may agree) the arbitration shall be conducted in accordance with the Shortened Arbitration Procedure of the Society of Maritime Arbitrators, Inc. current at the time when the arbitration proceedings are commenced.

(c) This Charter Party shall be governed by and construed in accordance with the laws of the place mutually agreed by the parties and any dispute arising out of or in connection with this Charter Party shall be referred to arbitration at a mutually agreed place, subject to the procedures applicable there. *)

(d) Notwithstanding (a), (b) or (c) above, the parties may agree at any time to refer to mediation any difference and/or dispute arising out of or in connection with this Charter Party.

In the case of a dispute in respect of which arbitration has been commenced under (a), (b) or (c) above, the following shall apply:-

(i) Either party may at any time and from time to time elect to refer the dispute or part of the dispute to mediation by service on the other party of a written notice (the "Mediation Notice") calling on the other party to agree to mediation.

(ii) The other party shall thereupon within 14 calendar days of receipt of the Mediation Notice confirm that they agree to mediation, in which case the parties shall thereafter agree a mediator within a further 14 calendar days, failing which on the application of either party a mediator will be appointed promptly by the Arbitration Tribunal ("the Tribunal") or such person as the Tribunal may designate for that purpose. The mediation shall be conducted in such place and in accordance with such procedure and on such terms as the parties may agree or, in the event of disagreement, as may be set by the mediator.

(iii) If the other party does not agree to mediate, that

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fact may be brought to the attention of the Tribunal and may be taken into account by the Tribunal when allocating the costs of the arbitration as between the parties.

(iv) The mediation shall not affect the right of either party to seek such relief or take such steps as it considers necessary to protect its interest.

(v) Either party may advise the Tribunal that they have agreed to mediation. The arbitration procedure shall continue during the conduct of the mediation but the Tribunal may take the mediation timetable into account when setting the timetable for steps in the arbitration.

(vi) Unless otherwise agreed or specified in the mediation terms, each party shall bear its own costs incurred in the mediation and the parties shall share equally the mediator's costs and expenses.

(vii) The mediation process shall be without prejudice and confidential and no information or documents disclosed during it shall be revealed to the Tribunal except to the extent that they are disclosable under the law and procedure governing the arbitration.

(Note: The parties should be aware that the mediation process may not necessarily interrupt time limits.)

(e) If Box 30 in PART I is not appropriately filled in, sub-clause (a) of this Clause shall apply. Sub-clause (d) shall apply in all cases.

Sub-clauses (a), (b) and (c) are alternatives; indicate alternative agreed in Box 30: *)

27. Brokerage

A brokerage commission at the rate stated in Box 31 on the freight, dead-freight and demurrage earned is due to the party mentioned in Box 31.

In case of non-execution 1/3 of the brokerage on the estimated amount of freight to be paid by the party responsible for such non-execution to the Brokers as indemnity for the latter's expenses and work. In case of more voyages the amount of indemnity to be agreed.

28. Notices

(a) All notices given by either party or their agents to the other party or their agents in accordance with the provisions of this Charter Party shall be in writing.

(b) For the purposes of this Charter Party, "in writing" shall mean any method of legible communication. A notice may be given by any effective means including, but not limited to, cable, telex, fax, e-mail, registered or recorded mail, or by personal service.

BEAUFORT WIND SCALE

Bft.	Wind	nm/hr (knots)	standard miles/hr*	m/sec	km/hr	Sea state	Waves in m**
0	calm	<1	<1	<1	<1	sea is like a mirror	0
1	light air	1-3	1.2-3.5	.5-1.5	1.9-5.6	ripples like fish scales	0.1
2	light breeze	4-6	4.6-6.9	2.1-3.1	7.4-11.1	small glassy wavelets	0.2
3	gentle breeze	7-10	8.1-11.5	3.6-5.1	13.0-18.5	wavelets start to break and foam appears	0.6-(1.0)
4	moderate breeze	11-16	12.7-18.4	5.7-8.2	20.4-29.6	fairly frequent foamy waves (white horses)	1.0-(1.5)
5	fresh breeze	17-21	19.6-24.2	8.7-10.8	31.5-38.9	many long, foamy waves	2.0-(2.5)
6	strong breeze	22-27	25.3-31.1	11.3-13.9	40.7-50.0	large foamy waves, but no streaks yet	3.0-(4.0)
7	near gale	28-33	32.2-38.0	14.4-17.0	51.9-61.1	large foamy waves with streaks	4.0-(5.5)
8	gale	34-40	39.1-46.0	17.5-20.6	63.0-74.1	foam starts to blow off wave tops	5.5-(7.5)
9	strong gale	41-47	47.2-54.1	21.1-24.2	75.9-87.0	high waves, dense streaks, spray may effect visibility	7.0-(10.0)
10	storm	48-55	55.2-63.2	24.7-28.3	88.9-101.9	very high waves with overhanging crests; sea starts to turn white	9.0-(12.5)
11	violent storm	56-63	64.5-72.5	28.8-32.4	103.7-116.7	sea covered with white foam and streaks; tops of waves are blown off	11.5-(16.0)
12	hurricane	64+	73.7+	32.9+	118.5+	air is filled with foam and spray; visibility almost nil	14.0-(20.0)

* Exact conversion from knots. Older, land-based Beaufort scales may show slightly different values.

** Probable (and maximum) wave heights expected in open sea. However, wave height depends on the effects of fetch, duration, ocean depth, swell current and heavy precipitation. Furthermore the lag between increase, or decrease of the wind on wave height needs to be borne in mind. The modern Beaufort scale is based on appearance of the sea, but the reverse is not true. Wave height should never be used to estimate wind speed.

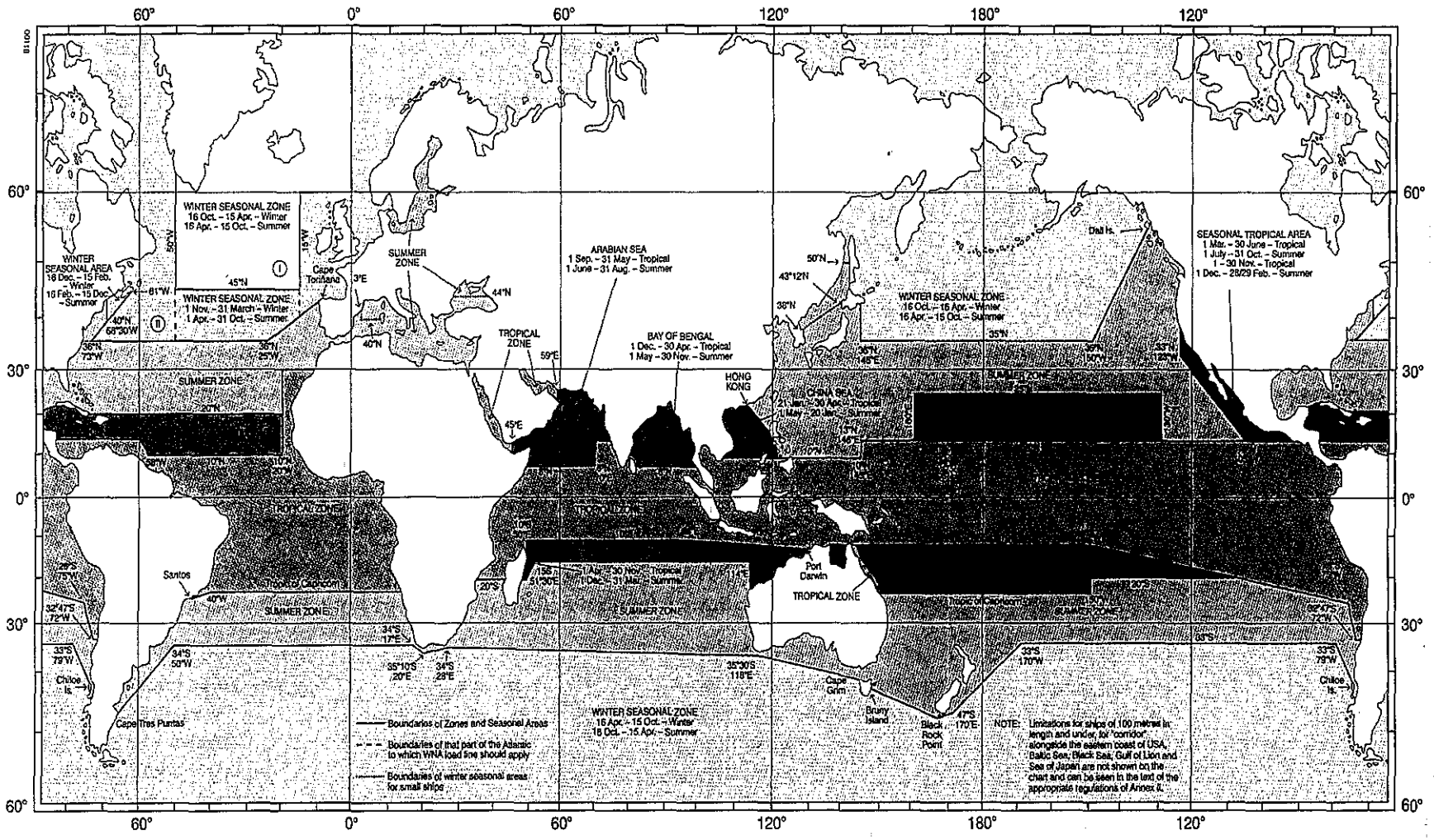

Chart of Zones and Seasonal Areas

LUBRICATING OIL CARGO

The sales department of a parcel tanker company has booked 3,500 mt 5% MOLOO lubricating oil stock with specs. as listed below.

Metric			Standard		
Cargo of lubricating oil stock	3,500	mt	Cargo of lubricating oil stock	3,500	mt
Density (in a vacuum)	0.8828		API (table 3)	28.7	
Weight factor (table 56)	1.00125		Bbl/mt (table 13)	0.14012	
Weight in a vacuum	3,504.4	mt	Weight in air	3,500	mt
Temperature in °C	45	°C	Temp. in °F (table 2)	113	°F
Available tank space at 100%	3,975.0	m^3	Available tank space at 100%	25,002.0	bbl
Available tank space at 98%	3,895.5	m^3	Available tank space at 98%	24,502.0	bbl

Q: How much tank space does the cargo occupy at standard temperature?

A: Vol. = Wt. in vac./Density	3,969.6	m^3 at 150C	A: Vol. = Wt. /Factor table 13	24,978.6	bbl at 60°F

Q: How much tank space does the cargo occupy at load temperature?

Volume at 150°C	3,969.6	m^3	Volume at 60°F	24,978.6	bbl
VCF table 54-B	0.9761		VCF table 6-B	0.9766	
A: Volume at loading temperature	4,066.8	m^3 at 45°C	A: Volume at loading temperature	25,577.1	bbl at 113°F

You notice that there is not enough room to load the cargo at the given temperature. Your operations manager contacts the vessel and asks the chief officer if there is additional suitable tank space (tank that has been cleaned and contained a previous cargo that is compatible with the lubricating oil stock. The chief mate switches some cargo around on the stowage plan and comes up with revised space for the lubricating oil stock parcel.

Revised available space at 100%	4,275.0	m^3	Revised available space at 100%	26,888.9	bbl
98% of "new" space	4,189.5	m^3	98% of "new" space	26,351.1	bbl

Q: To what level will the "new" tanks be loaded?

A: Cargo to load	4,066.8	m^3 at 45°C	A: Cargo to load	25,577.1	bbl at 113°F
Tank at 100% capacity	4,275.0	m^3	Tank at 100% capacity	26,888.9	bbl
% full	95.1%		% full	95.1%	

Q: With the extra space, how much more cargo can be loaded? (there are no "deadweight" restrictions)

A: "New" space at 98%	4,189.5	m^3	A: "New" space at 98%	26,351.1	bbl
Vol. at loading temperature	4,066.8	m^3 at 45°C	Vol. at loading temperature	25,577.1	bbl at 113°F
Additonal cargo (option)	122.7	m^3 at 45°C	Additonal cargo (option)	774.0	bbl at 113°F
In % of nominated quantity	3.0%		In % of nominated quantity	3.0%	

Appendix 3.1

FREIGHT INVOICE

Houston, 20 November 1998

VESSEL:	*FRISIAN ENTERPRISE*
CHARTERER:	ORIENTAL
C/P DATE:	3 November 1998
LOAD PORT:	**Port Hedland**
DISCHARGE PORT:	**Qingdao**
CARGO:	Newman fine iron ore in bulk
B/L QUANTITY:	**131,821** metric tonnes
HOLD QUANTITIES:	1) 29,761mt 3) 31,855 mt 5) 34,839 mt 7) 35,366 mt
B/L RELEASE DATE:	20 November 1998
FREIGHT RATE:	USD **4.55**/mt
ADDRESS COMMISSION:	3.75%

Gross freight	$ 599,785.55
less 3.75 % address commission	—$ 22,491.96
Net due owners	**$ 577,293.59**
11/27/98 Received	$ 517,315.04
Balance due Owners	**$ 59,978.55**

PAYMENT INSTRUCTIONS:

Please wire-transfer $ 59,978.55 to:

BACK-HAUL BULK CARRIERS INC.
Account no: XXX XXX XXX XXXX
Wells Fargo Bank, Chevron Tower office
Houston, Texas, USA
Routing and Transit number: 121-000-248

Thank you for your business!
BACK-HAUL BULK CARRIERS INC.

Don L. Dykstra, Managing Director.

Appendix 3.2

DEMURRAGE INVOICE

Houston, 29 May 1998

DEMURRAGE INVOICE

VESSEL: ***FRISIAN ENTERPRISE***
CHARTERER: TURKO OIL CO.
C/P DATE: 1998-04-18
LOAD PORT: **ARZEW**
DISCHARGE PORT: **ALIAGA**
B/L Quantity: 101,836.9 mt

	Date & Time			**Laytime/demurrage**		
	Date	Hour	Minute	Days	Hours	Minutes
Left anchorage Arzew	4/26	10	20			
All fast in berth Arzew	4/26	12	40			
Tendered NOR Arzew	4/21	16	00			
Hoses off Arzew	4/27	22	45			
Total gross laytime				6	6	45
Allowance as per c/p clause 6					6 -	
Laytime allowed as per c/p cl. H				3 -		
Demurrage in Arzew				3	00	45
Vessel went on demurrage.	4/24	22	00	**Once on demurrage, always on demurrage.**		
Berthed Aliaga	5/8	11	30			
Hoses disconnected	5/12	11	50			
Total laytime in Aliaga				4	00	20
Total demurrage Arzew & Aliaga				7	01	05
Total days				7.045139 days		
Demurrage rate per day				$ 17,000		
	Total due BBC Inc.			**$ 119,767.36**		

Please wire-transfer $119,767.36 to our bank as per seperate instructions.
Thank you for your business !
BACK-HAUL BULK CARRIERS INC.
Don L. Dykstra, Managing Director.
cc: Scandinavian Shipbrokers, Niels Johnson
Attachements: NOR Arzew; Statements of Fact Arzew & Aliaga

Appendix 5.1

NOTICE OF READINESS

(Example)

m/v: __***FRISIAN ENTERPRISE***____C/P dated: ____**2/2/'04**_____

To: ____**XYZ Oil company**_____*Name of Charterer or their Agent*
Terminal: ____**Storage Tanking Corp.**_____

Dear Sirs:

You are hereby advised that subject m/v under my command, arrived at the port of: __**Houston, Texas**__on__**29 February, 2004**__at __**13.30***__hrs. local time, and I hereby declare that the vessel is in all respects ready to commence cargo operations.

Laytime to count in accordance with all the terms, conditions and exceptions of subject Charter Party. Please acknowledge receipt of this Notice of Readiness by signing and returning two originals to me.

Yours truly,

_____

Signature Master

_____, Master

Printed name of Master

Attachment:
copy of radiographic NoR

cc: Owners or T/C operators

Notice of Readiness received
on: _**3 March 2004**_ at_**06.00***_hrs

Signed for receipt only:

_____

Signature Charterer/Agent

_____

Printed name of Charterer/Agent

_____

Printed or stamped name and address of Charterer/Agent

* *Hours in 24-hour format*

Appendix 5.2

GUIDELINES FOR THE MASTER TO TENDER NOTICE OF READINESS

The most important point is to **follow Charter Party instructions.** Below are some general guidelines with regard to tendering proper Notice of Readiness (NoR).

Proper NoR needs to be given to Cargo Shippers/Consignees via their Agents in accordance with the appropriate Charter Party (C/P) clause(s). Usually the NoR is to be sent to the Agent who represents Charterers. Please enter time of tendering NoR in the **deck log**.

Under ASBATANKVOY tendering NoR is a **one-sided act**. It does not require acceptance by the Cargo Shippers/Consignees; unless an amendment to the C/P specifically says so. However, it is good practice to follow-up the radiographic NoR with a printed copy and have it signed/stamped by authorised staff at the Terminal. For other C/Ps follow the prescribed procedures in the NoR clause.

Please note, under ASBATANKVOY the NoR needs to be tendered before 16.00 hours local time of the **canceling date**. Under other C/Ps you may have till 23.59 of the canceling date.

The NoR determines **beginning of laytime**. It is therefore important to tender as soon as allowed under the C/P. If the vessel arrives before commencement of the LAYCAN days, and there is no specific clause in the C/P preventing you from tendering, tender right away to start consuming the possible notice period (six hours in ASBATANKVOY, clause 6).

Please note, even if you tendered before the LAYCAN, Laytime will usually not start till 00.00 hours of the first LAYCAN day.

When cargo operations start before the beginning of LAYCAN, most C/Ps stipulate that Laytime will start to count then.

For the NoR to be valid, the vessel has to be an **arrived ship** and she has to be **ready**.

"**Arrived ship**" means that the vessel has arrived off the port, or in berth, depending on the charter. To tender properly, please follow instructions described in the C/P and see examples below.

In case the vessel needs to be **lightened** offshore, tender when the vessel arrives at the rendezvous area stipulated in the voyage instructions.

The vessel needs to be "**ready**" to load or discharge her cargo. This is a rather vague concept. Initially it is up to the master to determine if the

vessel is ready to load or discharge. Don't worry too much about advice from "shore" about tendering NoR. Some Charterers use all kind of tactics to delay laytime. In some instances cargo inspectors may require that some cleaning still needs to be done. It usually means that the time for cleaning may be deducted from laytime. Therefore tender as soon as possible to get laytime started.

On the other hand, you cannot deceive Charterers. For instance, a few years ago there was a vessel discharging in Houston and her next cargo was in the Houston area also. She tendered NoR for next cargo just before expiration of canceling date, even though she was still discharging her previous cargo. In this instance the NoR was invalid.

There is no penalty for tendering too soon. In some cases you may have to re-tender. However, tendering too late can have grave consequences.

Here are some examples of **when to tender**:

- If the Agent advises that your vessel will berth upon arrival, or orders you to drift while **waiting for berthing** instructions, time to tender NoR is at the End of Sea Passage (EoSP), or when the vessel first entered the seaside port limits, or when she entered the area where ships normally wait for that particular port; whatever is applicable. Seaside port limits are often marked on the chart, or you can find information in the Sailing Directions. Use your own best judgment. If in doubt, please contact the Agent.
- If you have been instructed to **anchor** to await a berth, the NoR should be tendered as soon as you have dropped anchor at the normal anchorage for that port.
- If the C/P states that NoR can only be tendered after obtaining "**Free Practique**", please arrange for this by radio, normally at EoSP. As soon as you have been granted free practique by radio, tender the NoR.
- If C/P states that NoR can only be tendered after obtaining "**Custom Clearance**", and no berth is available, please have the Agent arrange for Customs and Immigration (and perhaps Cargo Inspectors) to come out by boat to the anchorage. In some cases, where the anchorage is far away from the docks, the vessel should steam closer to the port for clearance procedures and then go back out to anchor.

Means of giving NoR

Under ASBATANKVOY the NoR can be tendered by telex, radio telegram, fax, e-mail, or even by telephone or VHF. When NoR is tendered

by telephone or VHF, please prepare a written transcript of the message and write the time on it, to whom the message was directed, and the telephone number/VHF channel. Also make an entry in the deck log.

To whom NoR must be tendered

Send your radiographic NoR to the Agent, and once in berth, have Terminal staff sign for receipt of the printed NoR. Staple a copy of the radiographic NoR to the printed one. Please FAX copies to the owner or T/C operator and keep a copy for your files. [For Your Information: the person who signs for receipt of the NoR does so without prejudice to the C/P. In other words, they sign **for receipt only**.]

Tender NoR during office hours

Under many C/Ps the NoR needs to be tendered during "**official office hours**" only. Please note, "official" is not always clearly defined in the C/P and it should not stop you from tendering. Seek advice from the local agent; not only about official office hours, but also about local holidays. If the initial NoR was tendered outside office hours, please tender again during office hours. There is no penalty for tendering more than once. Please keep copies of all the NoRs you have tendered.

Even though the C/P may not specifically say so, it is good practice to tender a second NoR for a **Second Load or Discharge Port**.

Please remember, as master, you are in charge and your actions should reflect the best interest of the vessel's owners and of the time-charterers. **Use your own best judgment and common sense**, because every situation is different. Do not hesitate to contact your owners for any questions you may have.

Thank you for your cooperation !

Sincerely,

Don L. Dykstra, Managing Director.

Attachment: Sample Notice of Readiness

Appendix 6.1

THE HAGUE-VISBY RULES

The Hague Rules as Amended by the Brussels Protocol 1968

Article I

In these Rules the following words are employed, with the meanings set out below:

(a) 'Carrier' includes the owner or the charterer who enters into a contract of carriage with a shipper.

(b) 'Contract of carriage' applies only to contracts of carriage covered by a bill of lading or any similar document of title, in so far as such document relates to the carriage of goods by sea, including any bill of lading or any similar document as aforesaid issued under or pursuant to a charter party from the moment at which such bill of lading or similar document of title regulates the relations between a carrier and a holder of the same.

(c) 'Goods' includes goods, wares, merchandise, and articles of every kind whatsoever except live animals and cargo which by the contract of carriage is stated as being carried on deck and is so carried.

(d) 'Ship' means any vessel used for the carriage of goods by sea.

(e) 'Carriage of goods' covers the period from the time when the goods are loaded on to the time they are discharged from the ship.

Article II

Subject to the provisions of Article VI, under every contract of carriage of goods by sea the carrier, in relation to the loading, handling, stowage, carriage, custody, care and discharge of such goods, shall be subject to the responsibilities and liabilities and entitled to the rights and immunities hereinafter set forth.

Article III

1. The carrier shall be bound before and at the beginning of the voyage to exercise due diligence to:

   (a) Make the ship seaworthy;

   (b) Properly man, equip and supply the ship;

   (c) Make the holds, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage and preservation.

2. Subject to the provisions of Article IV, the carrier shall properly and carefully load, handle, stow, carry, keep, care for, and discharge the goods carried.

3. After receiving the goods into his charge the carrier or the master or agent of the carrier shall, on demand of the shipper, issue to the shipper a bill of lading showing among other things:

   (a) The leading marks necessary for identification of the goods as the same are furnished in writing by the shipper before the loading of such goods starts, provided such marks are stamped or otherwise shown clearly upon the goods if uncovered, or on the cases or coverings in which such goods are contained, in such a manner as should ordinarily remain legible until the end of the voyage.

   (b) Either the number of packages or pieces, or the quantity, or weight, as the case may be, as furnished in writing by the shipper.

   (c) The apparent order and condition of the goods.

   Provided that no carrier, master or agent of the carrier shall be bound to state or show in the bill of lading any marks, number, quantity or weight which he has reasonable ground for suspecting not accurately to represent the goods actually received, or which he has had no reasonable means of checking.

4. Such a bill of lading shall be prima facie evidence of the receipt by the carrier of the goods as therein described in accordance with paragraph 3 (a), (b) and (c). However, proof to the contrary shall not be admissible when the bill of lading has been transferred to a third party acting in good faith.

5. The shipper shall be deemed to have guaranteed to the carrier the accuracy at the time of shipment of the marks, number, quantity and weight, as furnished by him, and the shipper shall indemnify the carrier against all loss, damages and expenses arising or resulting from inaccuracies in such particulars. The right of the carrier to such indemnity shall in no way limit his responsibility and liability under the contract of carriage to any person other than the shipper.

6. Unless notice of loss or damage and the general nature of such loss or damage be given in writing to the carrier or his agent at the port of discharge before or at the time of the removal of the goods into the custody of the person entitled to delivery thereof under the contract of carriage, or, if the loss or damage be not apparent, within three days, such removal shall be prima facie evidence of the delivery by the carrier of the goods as described in the bill of lading.

The notice in writing need not be given if the state of the goods has, at the time of their receipt, been the subject of joint survey or inspection.

Subject to paragraph 6bis the carrier and the ship shall in any event be discharged from all liability whatsoever in respect of the goods, unless suit is brought within one year of their delivery or of the date when they should have been delivered. This period, may however, be extended if the parties so agree after the cause of action has arisen.

In the case of any actual or apprehended loss or damage the carrier and the receiver shall give all reasonable facilities to each other for inspecting and tallying the goods.

6 bis. An action for indemnity against a third person may be brought even after the expiration of the year provided for in the preceding paragraph if brought within the time allowed by the law of the Court seized of the case. However, the time allowed shall be not less than three months, commencing from the day when the person bringing such action for indemnity has settled the claim or has been served with process in the action against himself.

7. After the goods are loaded the bill of lading to be issued by the carrier, master, or agent of the carrier, to the shipper shall, if the shipper so demands be a 'shipped' bill of lading, provided that if the shipper shall have previously taken up any document of title to such goods, he shall surrender the same as against the issue of the 'shipped' bill of lading, but at the option of the carrier such document of title may be noted at the port of shipment by the carrier, master, or agent with the name or names of the ship or ships upon which the goods have been shipped and the date or dates of shipment, and when so noted, if it shows the particulars mentioned in paragraph 3 of Article III, shall for the purpose of this article be deemed to constitute a 'shipped' bill of lading.

8. Any clause, covenant, or agreement in a contract of carriage relieving the carrier or the ship from liability for loss or damage to, or in connection with, goods arising from negligence, fault, or failure in the duties and obligations provided in this article or lessening such liability otherwise than as provided in these Rules, shall be null and void and of no effect. A benefit of insurance in favour of the carrier or similar clause shall be deemed to be a clause relieving the carrier from liability.

Article IV

1. Neither the carrier nor the ship shall be liable for loss or damage

arising or resulting from unseaworthiness unless caused by want of due diligence on the part of the carrier to make the ship seaworthy, and to secure that the ship is properly manned, equipped and supplied, and to make the holds, refrigerating and cool chambers and all other parts of the ship in which goods are carried fit and safe for their reception, carriage and preservation in accordance with the provisions of paragraph 1 of Article III. Whenever loss or damage has resulted from unseaworthiness the burden of proving the exercise of due diligence shall be on the carrier or other person claiming exemption under this article.

2. Neither the carrier nor the ship shall be responsible for loss or damage arising or resulting from:

(a) Act, neglect, or default of the master, mariner, pilot, or the servants of the carrier in the navigation or in the management of the ship.

(b) Fire, unless caused by the actual fault or privity of the carrier.

(c) Perils, dangers and accidents of the sea or other navigable waters.

(d) Act of God.

(e) Act of war.

(f) Act of public enemies.

(g) Arrest or restraint of princes, rulers or people, or seizure under legal process.

(h) Quarantine restrictions.

(i) Act or omission of the shipper or owner of the goods, his agent or representative.

(j) Strikes or lockouts or stoppage or restraint of labour from whatever cause, whether partial or general.

(k) Riots and civil commotions.

(l) Saving or attempting to save life or property at sea.

(m) Wastage in bulk of weight or any other loss or damage arising from inherent defect, quality or vice of the goods.

(n) Insufficiency of packing.

(o) Insufficiency or inadequacy of marks.

(p) Latent defects not discoverable by due diligence.

(q) Any other cause arising without the actual fault or privity of the carrier, or without the fault or neglect of the agents or servants of the carrier, but the burden of proof shall be on

the person claiming the benefit of this exception to show that neither the actual fault or privity of the carrier nor the fault or neglect of the agents or servants of the carrier contributed to the loss or damage.

3. The shipper shall not be responsible for loss or damage sustained by the carrier or the ship arising or resulting from any cause without the act, fault or neglect of the shipper, his agents or his servants.

4. Any deviation in saving or attempting to save life or property at sea or any reasonable deviation shall not be deemed to be an infringement or breach of these Rules or of the contract of carriage, and the carrier shall not be liable for any loss or damage resulting therefrom.

5

(a) Unless the nature and value of such goods have been declared by the shipper before shipment and inserted in the bill of lading, neither the carrier nor the ship shall in any event be or become liable for any loss or damage to or in connection with the goods in an amount exceeding the equivalent of 666.67 units of account per package or unit or units of account per kilo of gross weight of the goods lost or damaged, whichever is the higher.

(b) The total amount recoverable shall be calculated by reference to the value of such goods at the place and time at which the goods are discharged from the ship in accordance with the contract or should have been so discharged.

The value of the goods shall be fixed according to the commodity exchange price, or, if there be no such price, according to the current market price, or, if there be no commodity exchange price or current market price, by reference to the normal value of goods of the same kind and quality.

(c) Where a container, pallet or similar article of transport is used to consolidate goods, the number of packages or units enumerated in the bill of lading as packed in such article of transport shall be deemed the number of packages or units for the purpose of this paragraph as far as these packages or units are concerned. Except as aforesaid such article of transport shall be considered the package or unit.

(d) The unit of account mentioned in this Article is the special drawing right as defined by the International Monetary Fund. The amounts mentioned in h_visby/art/art04_5asub-paragraph (a) of this paragraph shall be converted into national currency on the basis of the value of that currency on a date

to be determined by the law of the Court seized of the case.

(e) Neither the carrier nor the ship shall be entitled to the benefit of the limitation of liability provided for in this paragraph if it is proved that the damage resulted from an act or omission of the carrier done with intent to cause damage, or recklessly and with knowledge that damage would probably result.

(f) The declaration mentioned in sub-paragraph (a) of this paragraph, if embodied in the bill of lading, shall be prima facie evidence, but shall not be binding or conclusive on the carrier.

(g) By agreement between the carrier, master or agent of the carrier and the shipper other maximum amounts than those mentioned in sub-paragraph (a) of this paragraph may be fixed, provided that no maximum amount so fixed shall be less than the appropriate maximum mentioned in that sub-paragraph.

(h) Neither the carrier nor the ship shall be responsible in any event for loss or damage to, or in connection with, goods if the nature or value thereof has been knowingly misstated by the shipper in the bill of lading.

6. Goods of an inflammable, explosive or dangerous nature to the shipment whereof the carrier, master or agent of the carrier has not consented with knowledge of their nature and character, may at any time before discharge be landed at any place, or destroyed or rendered innocuous by the carrier without compensation and the shipper of such goods shall be liable for all damages and expenses directly or indirectly arising out of or resulting from such shipment. If any such goods shipped with such knowledge and consent shall become a danger to the ship or cargo, they may in like manner be landed at any place, or destroyed or rendered innocuous by the carrier without liability on the part of the carrier except to general average, if any.

Article IV bis

1. The defences and limits of liability provided for in these Rules shall apply in any action against the carrier in respect of loss or damage to goods covered by a contract of carriage whether the action be founded in contract or in tort.

2. If such an action is brought against a servant or agent of the carrier (such servant or agent not being an independent contractor), such servant or agent shall be entitled to avail himself of the defences and limits of liability which the carrier is entitled to invoke under these Rules.

3. The aggregate of the amounts recoverable from the carrier, and such servants and agents, shall in no case exceed the limit provided for in these Rules.
4. Nevertheless, a servant or agent of the carrier shall not be entitled to avail himself of the provisions of this article, if it is proved that the damage resulted from an act or omission of the servant or agent done with intent to cause damage or recklessly and with knowledge that damage would probably result.

Article V

A carrier shall be at liberty to surrender in whole or in part all or any of his rights and immunities or to increase any of his responsibilities and obligations under these Rules, provided such surrender or increase shall be embodied in the bill of lading issued to the shipper. The provisions of these Rules shall not be applicable to charter parties, but if bills of lading are issued in the case of a ship under a charter party they shall comply with the terms of these Rules. Nothing in these Rules shall be held to prevent the insertion in a bill of lading of any lawful provision regarding general average.

Article VI

Notwithstanding the provisions of the preceding articles, a carrier, master or agent of the carrier and a shipper shall in regard to any particular goods be at liberty to enter into any agreement in any terms as to the responsibility and liability of the carrier for such goods, and as to the rights and immunities of the carrier in respect of such goods, or his obligation as to seaworthiness, so far as this stipulation is not contrary to public policy, or the care or diligence of his servants or agents in regard to the loading, handling, stowage, carriage, custody, care and discharge of the goods carried by sea, provided that in this case no bill of lading has been or shall be issued and that the terms agreed shall be embodied in a receipt which shall be a non-negotiable document and shall be marked as such. An agreement so entered into shall have full legal effect.

Provided that this article shall not apply to ordinary commercial shipments made in the ordinary course of trade, but only to other shipments where the character or condition of the property to be carried or the circumstances, terms and conditions under which the carriage is to be performed are such as reasonably to justify a special agreement.

Article VII

Nothing herein contained shall prevent a carrier or a shipper from

entering into any agreement, stipulation, condition, reservation or exemption as to the responsibility and liability of the carrier or the ship for the loss or damage to, or in connection with, the custody and care and handling of goods prior to the loading on, and subsequent to the discharge from, the ship on which the goods are carried by sea.

Article VIII

The provisions of these Rules shall not affect the rights and obligations of the carrier under any statute for the time being in force relating to the limitation of the liability of owners of sea-going vessels.

Article IX

These Rules shall not affect the provisions of any international Convention or national law governing liability for nuclear damage.

Article X

The provisions of these Rules shall apply to every bill of lading relating to the carriage of goods between ports in two different States if

(a) the bill of lading is issued in a contracting State, or

(b) the carriage is from a port in a contracting State, or

(c) the contract contained in or evidenced by the bill of lading provides that these Rules or legislation of any State giving effect to them are to govern the contract;

whatever may be the nationality of the ship, the carrier, the shipper, the consignee, or any other interested person.

(The last two paragraphs of this Article are not reproduced. They require contracting States to apply the Rules to bills of lading mentioned in the Article and authorise them to apply the Rules to other bills of lading).

(Article 11 to 16 of the International Convention for the unification of certain rules of law relating to bills of lading signed at Brussels on August 25, 1974 are not reproduced. They deal with the coming into force of the Convention, procedure for ratification, accession and denunciation and the right to call for a fresh conference to consider amendments to the Rules contained in the Convention).

Appendix 6.2

A SURVEY OF THE CARGO BY SEA CONVENTIONS

COUNTRY	HAGUE	HAG/VISBY	HAMBURG	LIMITS
Algeria	4-13-1964			
Angola	2-2-1952			
Antigua/Barbuda	12-2-1930			
Argentina	4-19-1961	In Part		£100 gold[1]
Aruba	Comm. Code			
Australia	7-4-1955	Rev. 7-1-1998[2]		667/2 SDR
Austria			7-29-1993 (LL)	835/2.5 SDR
Bahamas	12-2-1930			
Bahrain		In Part-1982		100 Dinar/pkg
Bangladesh	Comm. Code			£100
Barbados[3]	12-2-1930		2-2-1981	835/2.5 SDR
Belgium	6-2-1930	9-7-1978	?	667/2 SDR
Belize	12-2-1930			
Bermuda	12-2-1930 (d)	11-1-1980		667/2 SDR
Bolivia	5-28-1982 (LL)		multimodal[4]	
Bonaire	Comm. Code			
Botswana[5]			2-16-1988 (LL)	835/2.5 SDR
Brazil	Comm. Code		Signed Only	B/L controls
Bulgaria	Comm. Code			280 Lev/unit
Burkina Faso			8-14-1989 (LL)	835/2.5 SDR
Burundi			9-4-1998 (LL)	835/2.5 SDR
Cameroon[6]	12-2-1930	Signed Only	10-21-1993	835/2.5 SDR
Canada	revoked	Comm. Code	Conditional	667/2 SDR
Cape Verde	2 2-1952			
Cayman Islands[1]	12-2-1930 (d)	10-20-1983		667/2SDR
Chile	Signed Only		7-9-1982	835/2.5 SDR
China[7]		In Part	In Part	667/2 SDR[8]
China-Macao	12-20-1999			
Colombia	In Part		multimoda1[9]	
Croatia	10-8-1991	10-28-1998		667/2 SDR
Cuba	7-25-1977			$100 Cuban
Cyprus	12-2-1930		Signed Only	£100 gold
Czech Republic			6-23-1995 (LL)	835/2.5 SDR
Denmark	7-1-1938 (d)	11-20-1975[10]	Signed Only	667/2 SDR
Dominica	12-2-1930			
Dom. Republic				not allowed[11]
Ecuador	3-23-1977	3-23-1977	Signed Only[12]	10,000/30 pgf
Egypt	11-29-1943 (d)	1-31-1983[13]	4-23-1979	667/2 SDR

COUNTRY	HAGUE	HAG/VISBY	HAMBURG	LIMITS
Estonia	Comm. Code			EEK2000/unit
Fiji	12-2-1930			$236-Fiji
Finland	7-1-1939	12-1-1984[14]	Signed Only	667/2 SDR
France	1-4-1937	12-10-1977	Conditional	667/2 SDR
Gambia	12-2-1930		2-7-1996	835/2.5 SDR
Georgia		2-20-1996	3-21-1996	835/2.5 SDR
Germany[15]	7-1-1939	Internally	Signed Only	DM1250/pkg
Ghana	12-2-1930		Signed Only	£100
Gibraltar	12-2-1930 (d)	12-22-1977		667/2 SDR
Goa	2-2-1952			
Greece	3-23-1993	3-23-1993		667/2 SDR
Grenada	12-2-1930			
Guinea[16]	2-2-1952		1-23-1991	835/2.5 SDR
Guyana	12-2-1930			
HolySee/Vatican		Signed Only	Signed Only	
Hong Kong	12-2-1930 (d)	11-1-1980		667/2 SDR
Hungary[17]	6-2-1930		7-5-1984 (LL)	835/2.5 SDR
Iceland		Comm. Code		667/2 SDR
India	Revised	Comm. Code		667/2 SDR
Indonesia		Comm. Code		DflAdr 600
Iran	4-26-1966			
Iraq			Comm. Code	1250/350 Dinar
Ireland	1-30-1962	2-6-1997		Irish £100
Israel	11-5-1959	Comm. Code[18]		667/2 SDR
Italy	10-7-1938 (d)	7-22-1985	Conditional	667/2 SDR
Ivory Coast	12-15-1961			£200
Jamaica	12-2-1930			
Japan	7-1-1957 (d)	3-1-1993		667/2 SDR
Jordan			10-1-2001	667/2 SDR
Kenya[19]	12-2-1930		7-31-1989	835/2.5 SDR
Kiribati	12-2-1930			
Korea (South)	Revoked	Comm. Code		500 SDR/pkg
Kuwait	7-25-1969	Comm. Code		250Din/750fil
Latvia	4-4-2002	4-4-2002		667 SDR
Lebanon[20]	7-19-1975	4-26-1982	4-4-1983	835/2.5 SDR
Lesotho[21]			10-26-1989(LL)	835/2.5 SDR
Liberia	Revoked	Comm. Code		667/2 SDR
Lithuania				700 LT
Macao	~~2-2-1952~~	(see China-Macao)		
Madagascar	7-13-1965 (as Malagasy Rep.)		Signed Only	
Malaysia	12-2-1930			£100 gold
Malawi[22]			3-18-1991 (LL)	835/2.5 SDR
Malta	Comm. Code			

COUNTRY	HAGUE	HAG/VISBY	HAMBURG	LIMITS
Mauritania		Signed Only		
Mauritius	8-24-1970			
Mexico	Revoked	5-20-1994	Signed Only	667/2 SDR[23]
Monaco	5-15-1931			
Montserrat	12-2-1930	10-20-1983		667/2 SDR
Morocco			6-12-1981	835/2.5 SDR
Mozambique	2-2-1952			
Nauru	7-4-1955			
Netherlands	8-18-1956	4-26-1982		667/2 SDR
New Zealand	Revoked	12-20-1994		667/2 SDR
Nigeria[24]	12-2-1930		11-7-1988	200 Naira/pkg
Norway	7-1-1938 (d)	3-19-1974[25]	Signed Only	667/2 SDR
Oman		Comm. Code		667/2 SDR
Pakistan	Comm. Code		Signed Only	
Panama	Comm. Code		Signed Only	B/L controls
Papua New G.	7-4-1955			
Paraguay	11-22-1967	Signed Only		
Peru	10-29-1964		multimodal[26]	£100 gold[27]
Phillipines	USCOGSA	Signed Only	Signed Only	$500
Poland	8-4-1937	2-12-1980		667/2 SDR
Portugal	12-24-1931	In Part	Signed Only	100,000 Escud
Qatar		Comm. Code		1,000 Riyal/pkg
Romania	3-18-2002 (d)		1-7-1982	835/2.5 SDR
Russia	Comm. Code	4-29-1999[28]		667/2 SDR
Sabah	Comm. Code			MSR 850
Sao Tome	2-2-1952			
Sarawak	11-3-1931			MSR 850
Senegal	2-14-1978		3-17-1986	835/2.5 SDR
Seychelles	12-2-1930			
Sierra Leone[29]	12-2-1930		10-7-1988	835/2.5 SDR
Singapore	12-2-1930	4-25-1972	Signed Only	S 1563.65/4.69
Slovakia			5-28-1993 (LL)	?[30]
Slovenia	6-25-91			$4
Solomon lsl.	12-2-1930			
Somalia	12-2-1930			
South Africa	Revoked	Comm. Code		10,000/30 pgf
Spain	6-2-1930	1-6-1982		667/2 SDR
Sri Lanka	12-2-1930	10-21-1981		10,000/30 pgf
St Kitts-Nevis	12-2-1930			
St Lucia	12-2-1930			
St Martin N.Ant.	Comm. Code			
St Vincent &	12-2-1930		9-12-2000	835/2.5 SDR?
Grenadines.	7-22-2003			

COUNTRY	HAGUE	HAG/VISBY	HAMBURG	LIMITS
Sweden	7-1-1938 (d)	12-9-1974[31]	Signed Only	667/2 SDR
Switzerland	5-28-1954	12-11-1975(LL)		667/2 SDR
Syria	8-1-1974	8-1-1974	10-17-2003	667/2 SDR
Taiwan	US COGSA	Comm. Code[32]		667/2 SDR
Tanzania	12-3-1962		7-24-1979	835/2.5 SDR
Thailand		Comm. Code		THB 10,000/30
Timor	2-2-1952			
Tonga	12-2-1930	6-13-1978		10,000/30 pgf
Trinidad/Tobago	12-2-1930			
Tunisia			11-15-1980	835/2.5 SDR
Turks/Caicos	12-2-1930	10-20-1983		667/2 SDR
Turkey	7-4-1955			100,000 T.Lira[33]
Tuvalu	12-2-1930			
Uganda			7-6-1979 (LL)	835/2.5 SDR
Ukraine		Comm. Code	In Part	667/2 SDR
UAE		Comm. Code		Dh 10,000/30
U. Kingdom	7-2-1930 (d)	10-1-1976		667/2 SDR
UK Virgin Isl.	12-2-1930 (d)	10-20-1983		667/2 SDR
United States	7-29-1937		Signed Only	$500/pkg
Uruguay		Signed Only		None[34]
Venezuela			Signed Only	multimodal[35]
Vietnam		Comm. Code		10,000/30 pgf
Yemen		Comm. Code		30,000/100YRl
Yugoslavia	4-17-1959	Comm. Code		667/2 SDR
Zaire (Congo)	7-17-1967		Signed Only	
Zambia[36]			10-7-1991 (LL)	835/2.5 SDR
		TOTALS		
149 States*:	61 (1-LL)[37]	53 (1-LL)[38]		30 (11-LL)[39]

[*5 States — no Convention applies, nor does their Commercial Code incorporate any Convention.]

Abbreviations: (d) = Denounced; (LL) = Landlocked, no ports; SDR = Special Drawing Rights; pgf = Poincarré Gold Franc; pkg = Package; B/L - Bill of Lading Conditional = In the Commercial Code, but awaiting future events; Comm. Code = Not a party to the Convention, but in its Commercial Code; Signed Only = Signatory to the Convention, but no ratification or accession.

This table is an on-going project, so all additions, corrections, and comments are sought. Please direct your communications to:

George F. Chandler, III
Hill Rivkins & Hayden LLP, 712 Main Street, Suite 1515
Houston, Texas 77002-3209
Tel: 713-222-1515 Fax: 713-222-1359
E-mail: gchandler@hillrivkins.com

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Notes:

1. The value of gold would be based on the current values of gold (about $6,000.00) .
2. Australian COGSA has been amended as part of a compromise to forestall the imposition of the Hamburg Rules in Australia. Specific provisions took effect on July 1, 1998 (see Carriage of Goods by Sea Regulations 1998).
3. Has not renounced the Hague Rules as required by Article 31 of the Hamburg Rules, thereby creating a conflict between conventions.
4. Under the Andean Pact, multimodal shipments between member countries (Bolivia, Columbia, Ecuador, Peru and Venezuela) are subject to the UNCTAD/ICC Rules with the Hague exemptions and the Hamburg limitations.
5. Has not incorporated the Hamburg Rules into its code such that it is in doubt if its courts will apply Hamburg.
6. See note 3, also has not incorporated the Hamburg Rules into its national code such that Hamburg would not be applied by its courts.
7. China has devised its own rules, using some features of Hague Visby and Hamburg.
8. China has converted the 667SDR to 700RMB. This would apply to claims within China. Claims outside China should be converted into the local currency from SDRs (on the basis that the conversion from RMBs should yield 667 SDRs).
9. See note 4.
10. For domestic trade and trade between Denmark, Finland, Norway and Sweden, each country has added the Hamburg Rules to its code, but retained H/Ws limitation, one year time for suit, and defence of navigation or management error.

11. Actual and consequential damages will be awarded, and monetary limitations will not be enforced. Time for suit is one year from date of arrival, rather than delivery.
12. See note 4.
13. Egypt had invoked Article 31(4) of the Hamburg Rules to defer denunciation of H/V for five years until November 1, 1997, such that Hamburg would only apply to voyages between contracting states through November 1, 1998. No further action is known to have been taken.
14. See note 10.
15. Germany has incorporated H/V into its code for domestic use and for shipments to H/V countries only. Other international shipments are under the Hague Rules (at DM1250/pkg). The ratification of H/V by the former GDR expired when the GDR was absorbed into Germany.
16. See note 3.
17. Has not incorporated the Hamburg Rules into its code such that Hamburg would not be applied by its courts.
18 Carriage of Goods by Sea Ordinance, 1992.
19. See note 5.
20. Has not renounced the Hague or H/V Rules as required by Article 31 of the Hamburg Rules thereby creating a conflict between conventions.
21. See note 17.
22. See note 17.
23. Mexico has incorporated the UN Multimodal Convention into its code, such that multimodal bills of lading would be subject to the multimodal limitation of 920 SDRs per package or 2.75 SDRs per kilogram.
24. The Hamburg Rules have not been enacted into domestic law, such that the Hague Rules must be applied by the courts.
25. See note 10.
26. See note 4.
27. See note 1.
28. Russian law adopted Hague-Visby on January 15, 1999 and this took effect on May 1, 1999, when the new Russian Merchant Shipping Code came into force.
29. See note 3.
30. Slovakia succeeded to the former Czechoslovakia, which declared

that the limits were to be converted into Czechoslovak currency. It is not known how Slovakia would make the conversion, or that it is bound to the convention. The Czech Republic withdrew that declaration when it ratified the convention.

31. See note 10.
32. Effective July 14, 1999 through the new Taiwanese Maritime Law.
33. Pursuant to Article 1114 of the Turkish Commercial Code, as amended in 1982.
34. If foreign law is applicable, the current value of gold would be used. Under the Hague Rules, that would be about US$6,000. Under H/V, it would be less than US$5,000.
35. See note 4. In the absence of a Clause Paramount, Venezuela will apply its multimodal rules. Legislation has been proposed to apply these rules to all bills of lading.
36. See note 17.
37. For ratifications and accessions, see www.cmi.org. [*International convention for the unification of certain rules of law relating to Bills of Lading and protocol of signature (Hague Rules 1924)*]
38. For ratifications and accessions, see www.cmi.org. [*Protocol to amend the International Convention for the unification of certain rules of law relating to bills of lading signed at Brussells on 25 August 1924 (Hague/Visby Rules, 1968) ; and the Protocol to amend the International Convention for the unification of certain rules of law relating to bills of lading as amended by the Amending Protocol of 23` February 1968 (SDR Protocol, 1979)*]
39. For ratifications and accessions, see www.uncitral.org. [*the United Nations Convention on the Carriage of Goods by Sea, 1978 (Hamburg Rules)*]

Appendix 6.3/1

LETTERS OF PROTEST
General advice

In this day and age, when most disputes are no longer settled by a few phone calls and a hand-shake, but instead by legal procedures based on written statements, it is very important for Masters to provide their Owners, Charterers, P&I Clubs and other interested parties with an accurate recollection of the facts.

There are many Masters who — for one reason or another — delay preparation of a Letter of Protest (LoP) till just before departure of the vessel. This often results in a less than precise depiction of the facts. In other instances Masters may be discouraged by their Owners from filing Letters of Protest based on the notion: "Do not bite the hand that feeds you." The answer to this is: No matter how amicably an owner and a charterer may have socialised on the golf course, when disputes wind up in arbitration or in a court of law, cold hard facts are what counts.

Even though it is better to issue too many letters of protest than not enough, care should be taken to issue a LoP only when it makes sense. Another problem is that these days all kind of people come on board, such as cargo surveyors etc., who deem it necessary to issue LoPs to the ship. For example many liquid cargo inspectors or loss control people now issue a LoP when there is an in-transfer loss; even if it is only one barrel. Some terminal inspectors issue a LoP when the ship does not maintain 125 psi pumping pressure at the manifold, even though she pumped off her cargo within 24 hours and the c/p stated a maximum of only 100 psi anyway.

Cargo quantity reports, pumping logs, etc. should be sufficient to reflect whatever needs to be reported. There is a danger that a LoP may lose its effectiveness if somebody, who minutes before needed a lot of help from the ship's officers to figure out proper cargo quantities, all of a sudden dons the mantle of authority and issues an ill-conceived LoP to the ship.

Perhaps all these over-eager people need to take note of the words of Max Reger, the German composer who lived from 1873 to 1916. Mr. Reger was very skillful, but could be somewhat abrasive at times and was therefore not well liked by local music critics. One day, after having received a contemptuous review of one of his compositions, Mr. Reger wrote back the following note to his critic. "Dear Sir, I am sitting in the smallest room of the house with your review in front of me. Soon it will be behind me."

The following LoP format was designed primarily for tankers, but can easily be modified for the dry cargo bulk trade. Masters can utilise this form by checking the relevant box(es) in front of each section and by completing the rest of the required information, before presentation to terminal representatives.

Appendix 6.3/2

LETTER OF PROTEST FORM
Example

(Please use extra sheets if required and attach to this form)

Date: _____

Owners: _____ Port: _____

Vessel: _____ Terminal: _____

C/P Date: _____ Voyage no: _____

To: _____

example: To Terminal Manager of XYZ Oil Co. To Master of Lightering Vessel

Dear Sir,

I, Captain _____, Master of above named vessel, hereby give formal notice and lodge a protest on behalf of my vessel's Owners, Charterers, Operators, P&I Club and other interested parties. I hold your organisation responsible for any consequences arising from the events checked and described below. I also reserve the right to amend this Letter of Protest at a later date and to take action as may be deemed necessary.

** strike-out what is not appropriate, or circle what is appropriate.*

❒ 1) Delays/Incidents* during Berthing/Un-berthing*

Dates, Times, Details: _____

_____

❒ 2) Delays at Loading/Discharge* Terminal

(examples: Delays due to waiting for Customs or Immigration Clearance; waiting for Pilot(s), Tug(s); waiting for orders to start Loading/Discharging; waiting for another ship to finish; waiting for daylight; other)*

Dates, Times, Reasons for delays: _____

_____

❒ 3) Vessel overloaded/short-loaded according to C/P*

C/P quantity, including "more-or-less" allowance: _____MT/m³/MBll*

Cargo loaded according to ship's figures: _____ MT/m³/MBll*

Details: _____

_____

❒ 4) Difference between B/L and ship's quantity

B/L quantity: _____MT/m³/MBll*

Ship's figures: _____MT/m³/MBll*

Details: _____

❒ 5) Bill of Lading does not contain C/P date; named Discharge Port; cargo quantity; other*

Details: _____

❒ 6) Slow loading at the request of the Terminal/STBL*

My vessel is capable of receiving cargo at: _____m³/MBll* per hour

Vessel's number of cargo lines at manifold: ____ x ____ cm/inch* diameter

Average loading rate by Terminal/STBL*: _____m³/MBll* per hour

Dates, times, rates, reason for slow pumping, etc: _____

_____

❒ 7) Difficulty taking ullages due to rough weather/sea conditions at lightering/SBM* area

Wind: direction: _____ force:_____ Beaufort

Waves: direction: _____ height: _____metres/ft*

Swell: direction: _____ height: _____metres/ft*

Details: _____

❒ 8) Free water in ship's tanks

Total free water in ship's tanks prior to loading: _____ m³/MBll*; after loading: _____ m³/MBll*

Free water found in ship's tanks upon arrival at discharge port: _____ m³/MBll*

Details: _____

_____

❒ 9) Restrictions by discharge terminal

(examples: line displacement; high back pressure; shore tank far away and/or elevated; slow pumping rate requested to raise roof of floating tank; shore tanks full, etc.)

No. of ship's pumps: ___ rated at: ___ m^3/MBll* (water) per hour

No. of ship's connections: ___ x ___ cm/inch diameter*

No of shore connections: ___ x ___ cm/inch diameter*

Distance ship-shore tank _____ metres/feet*

Elevation of shore tank above seal level: ____ m/ft*

Max. discharge rate requested by terminal: _____ m^3/MBll* per hour from: (date and time) from _____ to: _____ for reason of: _____

_____

Max pressure at the rail requested by terminal: _____ psi/bar/kg per cm^2 * (date and time) from _____ to: _____ for reason of: _____

_____

Further details: _____

_____

❒ 10) Waiting for cargo calculations/documents* after finish loading/ discharge*

Finish loading/discharge*: _____ (date and time)

Finish cargo calculations: _____ (date & time)

Cargo documents on board: _____ (date and time)

❒ 11) Crude Oil Washing (COW) at discharge terminal

Max number of tanks allowed by terminal to COW: _____

Vessel is not responsible for non-pumpable cargo remaining in non-COW-ed tanks

❒ 12) Delays during discharge caused by excessive sludge in cargo

Name of cargo: _____ API/s.g.* ____ Temp: ___F/C*

Sludge found in following ship's tank(s) _____

Attach separate sheet with details, with soundings and with stripping pumping log

❒ 13) Delays during discharge caused by gaseous cargo (high Reid Vapour Pressure)

Name of cargo: _____ API/s.g.* ____ RVP: _____ psi Temp: ____ °F/°C*

Attach separate sheet with details, with soundings and with pumping log.

❒ 14) Cargo temperature differences

Temperature of cargo to be loaded according to C/P: ____ °F/°C*

Temp. of cargo coming on board at ship's manifold: ____ °F/°C*

❒ 15) Delays caused by non-delivery of original Bill of Lading at discharge port

Details: _____

_____

❒16) Unsafe Port

In my opinion the berth is unsafe for the following reasons: Describe weather, sea condition/swell, under-keel-clearance, availability of pilots/tugs; other*: _____

_____

❒ 17) Unsafe Berth

In my opinion the berth is unsafe and/or damage to my ship was caused because: _____

_____

Complete attached mooring diagram sheet.

❒ 18) Signature(s) un-obtainable

Document(s): _____

Details: _____

_____

❒ 19) B/L does not agree with C/P, or B/L does not contain proper clause(s)

C/P clause(s) no: _____ not incoporated in B/L

B/L clause(s) incomplete: _____

Details: _____

❒ 20) Other Protest(s)

Details: _____

_____

Please acknowledge receipt of these Letters of Protest by signing and/or stamping them, and returning two originals to me. You can keep one copy for your files.

Thank you for your cooperation !

Very truly yours,

Signature: _____

Master

Acknowledged for receipt:

Signature: _____

Representative

Printed Name and Title:

_____

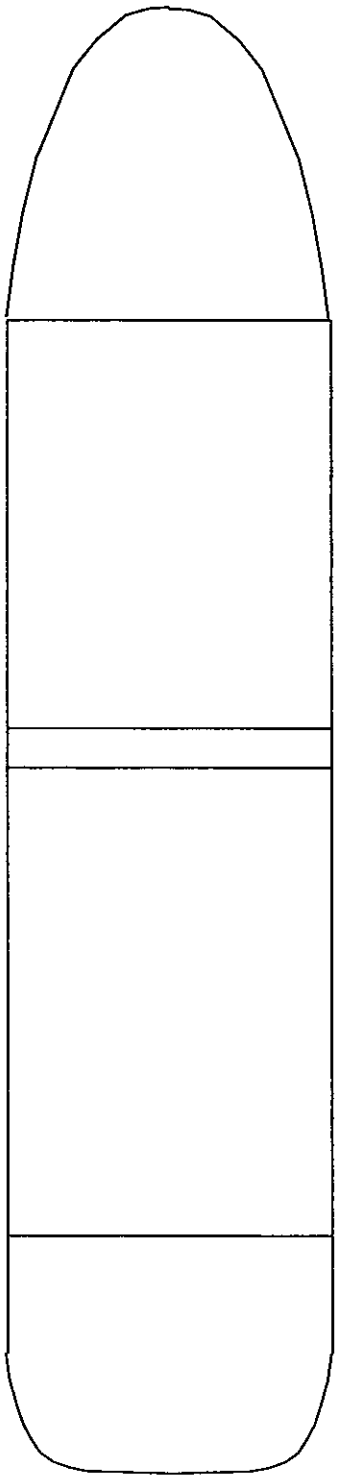
Date & Time: _____

Appendix 6.3/3

UNSAFE BERTH

(Attachment to item no. 17 of Letter of Protest)

Master to complete mooring diagram on the left; including position of mooring winches, mooring bits, SBM stoppers. Please indicate position and angles of mooring lines (L) and of wires (W) from own ship to shore or to other vessel or mooring buoy(s). Please fill out the rest as applicable.



Own vessel M/V:————————————————

Date:————— Time:————— Berth no:————

Port:————————— Terminal:————————

Draft: Fwd:————— m Aft:————— m

Berth depth:————— m Under Keel Clearance:————— m

(Please take soundings around the ship if necessary)

Controlling draft from Sea:——— m Max airdraft:——— m

Wind direction:————— force:————— Beaufort

Wave direction:————— height:————— m

Swell direction:————— height:————— m

Time of High water:————— height:————— m

Time of Low water:————— height:————— m

Tidal/Current* direction:————— est:————— knots

Ice conditions: (Describe in detail)

Brake Holding Capacity of Mooring winches:————— mt

Breaking Strength Mooring Lines:————— mt; L:——— m

Breaking Strength Mooring Wires:————— mt; L:——— m

Breaking Strength Wire Tails:————— mt; L:——— m

Berth configuration:————————————————

Max. dwt cap. allowed at berth:————— mt

Max. LOA/Beam allowed at berth:————— m / ————— m

Max. freeboard:————— m (to fit shore installation)

Max. Bow/Centre Manifold:————— m

Name of Co. providing Line-handlers:————————

Short description and condition of shore moorings:

————————————————————————

Tugboat(s) available: yes/no* at ————— hrs. notice

Name(s) and capacity of tugboat(s):————————

————————————————————————

Pilot(s) available: yes/no* at ————— hrs. notice

Broken mooring line(s) caused by a vessel passing berth:

Vessel's name:————————————————

Port of Registry:————————— Loaded/in Ballast*

Est. Course:————— Est. Speed:————— knots

Pilot on board: yes/no*

Please describe in detail on a separate sheet why the berth is unsafe, what caused damage to ship or wharf, and any other information that is important to assist in the investigation of this matter. Pictures or video — if allowed to take — will greatly support the claim. Also try to obtain a weather report and any other relevant information.

Appendix 6.4

LETTER OF AUTHORISATION FOR AGENT TO SIGN BILL OF LADING

To: XYZ SHIPPING CO. LTD.
Ocean Boulevard
Tankertown
Attn: Managing Director

Port of : RAS TANURA, _____ 2003

M/V: ___*FRISIAN ENTERPRISE*___

C/P dated:_27 April 2003_

Dear Sir:

As Master of subject vessel, I hereby authorise a **Principal** of your Agency to sign Bills of Lading on my behalf, but only in conformity with the attached Guidelines for Masters to sign B/L.

- The B/L needs to show the correct "**on-board" B/L date**; that is the date when cargo operations — pertaining to this B/L — were completed.
- The Principal needs to sign B/L as follows: **FOR AND ON BEHALF OF MASTER'S AUTHORITY**.
- Under his signature on the B/L, the name of the Signer and the name of the Agency need to be printed.

Please return one original executed copy of this Letter of Authorisation to me. For any questions you may have, please contact the office of my Principals.

Very truly yours,

_____

Master m/v ___ *FRISIAN ENTERPRISE* ___

Received by Agency: _____
(print or stamp Agency name)
Date and Time: _____
Signature of Agency person: _____
Printed name of Agency person: _____

Attachment: Guidelines for Masters to sign B/L

Appendix 6.5

GENERAL GUIDELINES FOR MASTER TO SIGN BILL OF LADING

Dear Captain:

Upon completion of loading, cargo Shippers will probably present you with their own B/L format for you to sign. A correctly worded B/L will greatly protect the Owners of your vessel and also reduce disputes between Bill of Lading holders and Time-Chartered Owners.

Before you sign, please check if the B/L contains the following phrases; or similar wording:

1. **Shipped in apparent good order and condition.**
2. **This shipment is carried under and pursuant to the terms of a Charter Party dated:** __AS PER GOVERNING C/P__ **between:** __AS PER GOVERNING C/P__ **as Owners and:** __AS PER GOVERNING C/P__ **as Charterers, and all the terms whatsoever of said C/P with the exception of the rate and payment of freight specified herein, but including law and arbitration clauses, to apply and to govern the rights of the parties concerned with this shipment.**
3. **Payment of Freight:** __AS PER GOVERNING C/P__

Item 2 is especially important. If it is not shown, ask the Shipper's Representative to type or write it on the face of the B/L before you will sign.

Furthermore the B/L needs to have the following information:

- The B/L needs to have a **named Consignee and a named Discharge Port, or at least a fairly narrow range** (for example: ARA, USG). However, terms such as Mediterranean, or Singapore-Japan range are too broad.
- B/L needs to have: **Name** of the cargo(s) and/or grade(s) or parcel(s), weight in metric tons, and additionally for tankers: **API gravity @ 60°F or density @ 15°C, GSV in bbl @ 60°F or in m³ @ 15°C.**
- (if applicable) **USA SCAC B/L identifier** as per CFR volume 19, part 4.7a
- The **number of original Bills of Lading** the Master, or his authorised representative, has signed. (Do not include the number of NON-NEGOTIABLE copies the Master has to sign). In case of more than one original B/L, there should be a notation on the Bills of Lading stating: **If one original B/L has been accomplished, the other(s) shall be void.**

- The **correct "ON BOARD" date**. This is the date on which loading for a particular parcel was completed. It is sometimes typed separately on the B/L, like; CLEAN ON BOARD __date__, or it is the date at the bottom of the B/L near the Master or Agent's signature. If Shippers insist on using an earlier or later "on-board" date, leave the B/L unsigned and give it to the Agent with a **Letter of Protest (LoP)**.
- Original B/Ls need to have **Terms and Conditions of Carriage** on the front and/or on the back. Photocopies of B/L forms with just the front copied, and a blank back, are not acceptable as original B/L; unless all the terms and conditions of the original B/L are all on the front.
- The **Terms and Conditions of the C/P** need to be incorporated into the B/L; either verbatim or by reference, and with the jurisdiction (law) and arbitration clauses mentioned separately.

Additional suggestions:

- If the B/L figures differ by a larger percentage than the allowance stated in the C/P or in the Voyage Orders, you should refuse to sign B/L and prepare a LoP with ship's figures and how they were determined. Hand the unsigned B/L and your LoP to the Agent. After sailing, we as owners or t/c operators will try to resolve the dispute, and the Agent can sign the B/L with the correct figures.
- If the received cargo is **NOT in apparent good order and condition**, stop the loading, contact your owners and their local P&I Representative and — if applicable — the t/c operators. If Shippers still order you to sign a clean B/L, refuse to do so and hand the B/L with your LoP to the Agent.
- If the cargo is sold on **Letter of Credit** basis, certain terms and the L/C number will appear on the B/L. As long as this language does not conflict with the C/P and with the actual cargo loaded, you can sign the B/L.
- Under a T/C you may be asked to sign a B/L "**as presented**." This does not mean that you should sign just any B/L the Shipper or Charterer presents to you. The guidelines listed here are still in effect. You are only required to sign a B/L that reflects the truth as determined by your findings.
- Under all circumstances maintain a **professional attitude**. Don't argue; just say you are following orders from your owners or T/C operators. Don't change a B/L unless agreed to by Shippers or by their Agent. Never deface or tear up a B/L. Please keep in mind that you are in a strong bargaining position because in most instances Shippers need to have a signed B/L to get paid for their cargo. On the other hand, you have to be reasonable in your actions, otherwise cargo interests may sue, or even have the ship arrested.

- In all cases of doubt, contact your Owners; their local P&I Representative and T/C operator.

The B/L needs to be signed by the Master himself. If this is not possible, like for **Early Departure Procedure (EDP)**, you need to leave explicit instructions for the Agent who will sign for and on your behalf (see Letter of Authority for Agent to sign B/L).

Agent to sign B/L as follows:
FOR AND ON BEHALF OF MASTER'S AUTHORITY
Signature:_____; date* _____
**needs to be the "on-board" date, not the date when the Agent signed the B/L*

You as Master, or your authorised representative, **MUST NEVER SIGN** a B/L that:

- Has a notation: **FREIGHT PREPAID**; unless approved by your owners or by the T/C operator.
- Is **clean**, but the loaded cargo is **NOT** in apparent good order and condition. **NEVER** accept a **Letter of Indemnity (LoI)** in exchange for you signing a clean B/L when the loaded cargo is NOT in apparent good order and condition.
- Has an **antedated** or **postdated** "loaded on-board" B/L date.
- Has a **different Consignee** and/or **Discharge Port/Range** than in the C/P.
- Shows a Discharge Port that is currently **closed due to Ice** or is **blockaded due to War**.
- Shows a discharge Port outside **Institute Warranty Limits** (IWL).
- Is not in **English**.
- Does not show the basic **Terms and Condition of Carriage** on front or back of the B/L.

Thanks for your cooperation, Captain! Please contact us for any questions you may have.

BACK HAUL BULK CARRIERS INC.
Owners/Time-Chartered Owners

Attached: Master's **Letter of Authority**; the authorisation for a qualified Agent to sign a Bill of Lading.

Appendix 6.6

LETTER OF INDEMNITY

Standard form of undertaking to be given to owner in return for delivering cargo without production of the original bill of lading

To:.....

The Owners of the S.S./M.V. .....

Dear Sirs,

S.S./M.V. .....

Goods: .....

Quantity: .....

Description: .....

The above goods were shipped on the above vessel by Messrs.:

..... (and consigned to us) but the relevant Bills of Lading have not yet arrived. We hereby request you to deliver such goods to: (us) ..... without production of the original Bill of Lading.

In consideration of your complying with our above request we hereby agree as follows:

1. To indemnify you and hold you harmless in respect of any liability loss or damage of whatsoever nature which you may sustain by reason of delivering the goods to: (us) .....in accordance with our request.
2. To pay you on demand the amount of any loss or damage which the Master and/or Agents of the Vessel or any other of your servants or agents may incur as a result of delivering the goods as aforesaid.
3. In the event of any proceedings being commenced against you or any of your servants or agents in connection with the delivery of the goods as aforesaid, to provide you or them from time to time on demand with sufficient funds to defend the same.
4. If the vessel or any other vessel or property belonging to you should be arrested or detained, or if the arrest or detention thereof should be threatened, to provide on demand such bail or other security as may be required to prevent such arrest or detention, or to secure the release of such vessel or property and to indemnify you in respect of any loss, damage or expenses caused by such arrest or detention whether or not the same may be justified.
5. If called upon to do so at any time while the goods are in our custody, possession or control to re-deliver the same to you.

6. To produce and deliver to you the Bills of Lading for the above goods duly endorsed, as soon as these documents shall have arrived.
7. The liability of each and every person under this indemnity shall be joint and several and shall not be conditional upon your proceeding first against any person, whether or not such person is party to or liable under this indemnity.
8. This indemnity shall be construed in accordance with English law and each and every person liable under this indemnity shall at your request submit to the jurisdiction of the High Court of Justice of England.
9. This guarantee is for an amount equal to 125% of the CIF value of the goods and is valid for a period of 15 (fifteen) months after the goods have or should have arrived.

Yours faithfully,

For and on behalf of genuine Bill of Lading holder:

.....

State full company name, address, e-mail, phone, fax no. and print name of signer.

Attach company stamp to this document.

The following bank's guarantee must be added to the LoI:

"IN CONSIDERATION OF YOUR AGREEING TO THE ABOVE LETTER OF INDEMNITY, WE THE UNDERSIGNED (name of bank)_ _____OF (full address; e-mail, phone & fax no.) _____ _____WHOSE CUSTOMER IS: (name of creator of LoI) _____ _____ _____ JOINTLY AND SEVERALLY AGREE TO BE BOUND BY THE TERMS OF THIS LETTER OF INDEMNITY".

Printed name of bank:_____ **+ Bank's stamp**

Signed: _____

Printed name and position of signer: _____

Appendix 7.1

WEDGE FORMULA EXPLAINED

The wedge formulas only works if the tank is more or less rectangular. Figure vii below shows a cargo tank tilted backwards due to trim. The actual trim in our example is only about 1.5°, but to make it easier to explain the wedge formula, angles have been grossly exaggerated. Basic geometry teaches us that angle α between line DR and OR is equal to angle α between line AC and BC, which is equal to angle α between line XS and line AS, which is equal to the vessel's Trim/LBP.

We will use an actual example, based on the following values:

R is Reference point.

RD is Depth of tank, measured from the reference point.

For small angles we can assume that RO = RD = 20.832 metres in our example.

Distance **BL** is Length of the tank = 22.40 metres.

Trim (**T**) = 3.00 metres by the stern.

LBP is Length between Perpendiculars = 235.00 metres.

W is Width of the tank = 32.00 metres.

R-BH is the distance from the sounding point to the aft bulkhead = 5.20 metres, called d for future reference.

For small angles we can assume that distance R-BH = E-Y is equal to E-A.

OS is Observed Sounding = 0.10 metres (10 cm), written So

To determine the volume of the wedge, we need to determine the area of the triangle ABC and multiply it by the width of the tank. Rather than cram everything into one formula, we will solve the problem by splitting the solution into several components.

First of all we need to calculate the corrected distance from sounding reference point to the aft bulkhead, because with trim (by the stern) the bob of the sounding line is closer to the aft bulkhead at the bottom than at the top of the tank; especially if the tank is deep and trim is substantial.

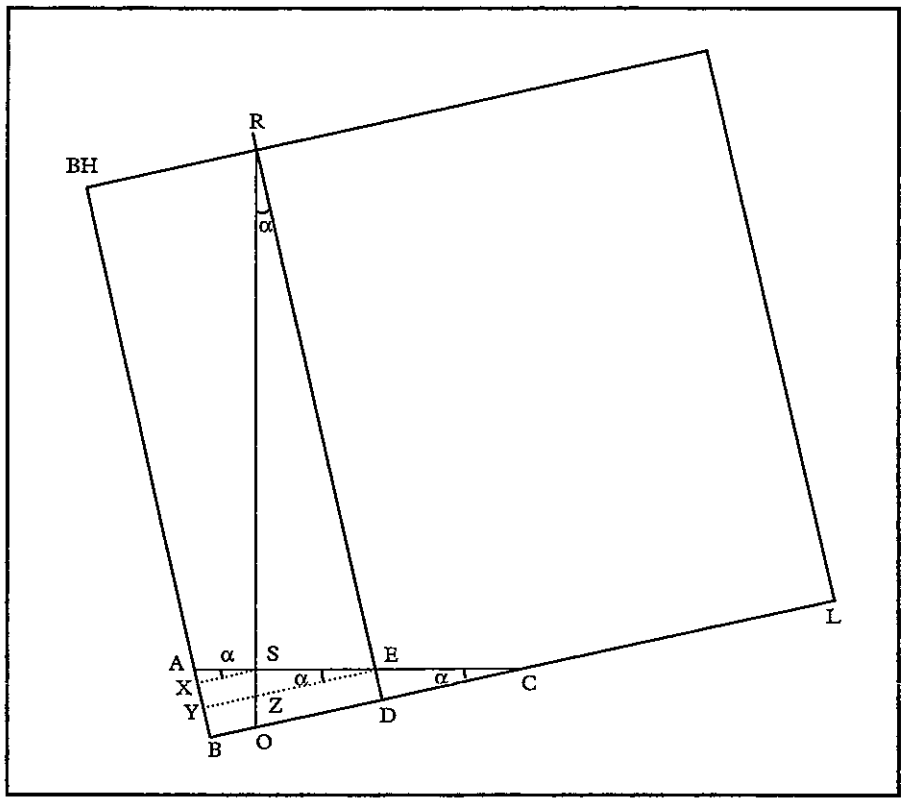


Figure vii — the Wedge Formula

In triangle EYA with small angle α, ZE is equal to SE is equal to OD.
We'll use the following equation to solve for distance OD:
OD : RD = T : LBP
OD x LBP = RD x T
OD = RD x T/LBP
OD = 20.832 x 3.00/235.00
OD = 0.266 metres
For future reference we will call this correction: $\mathbf{d_c}$

If we consider OD is equal to SE and YE is equal to AE, distance AS = 5.20 - 0.266 m = 4.934 m. Because angle α was grossly exaggerated, our figure 7.2 is not to scale.

In triangle XSA we assume XS is equal to AS.
We can find the distance AX with the following equation:
AX : T = XS : LBP
AX x LBP = T x XS
AX = XS x T/LBP
AX = 4.934 x 3.00/235.00
AX = 0.063 m
For future reference we will call this correction: $\mathbf{s_c}$

The distance BA is equal to the observed sounding of 0.1 m plus a sounding correction of 0.063 m. Total distance AB = 0.163 m. This is the height of the wedge.

Now we need to determine distance B-C. We cannot descend into the tank to measure this distance, but we can obtain it with the following equation:

BC : LBP = AB : T

BC x T = LBP x AB

BC = AB x LBP/T

BC = 0.163 x 235.00/3.00

BC = 12.768 m

For future reference we will call the distance: $\mathbf{l_w}$

> Please note, if lw is larger than BL (the length of the tank), the wedge formula can not be used. Instead one should use the regular strapping and trim correction tables.

The **area** of the wedge is:

ABC = $\frac{1}{2}$ x AB x BC

ABC = 0.163 x 12.768/2

ABC = 1.0406 m^2

The **volume** of the wedge is:

ABC = Area x W

ABC = 1.0406 x 32.00 m

ABC = 33.3 m^3

Multiplied by 6.28981 we find 209.4 bbls

We can put all of this in more generic terms as follows:

$\mathbf{d_c}$ = Tank Depth x T/LBP

$\mathbf{s_c}$ = $(d-d_c)$ x T/LBP

$\mathbf{l_w}$ = $(s_o + s_c)$ x LBP/T

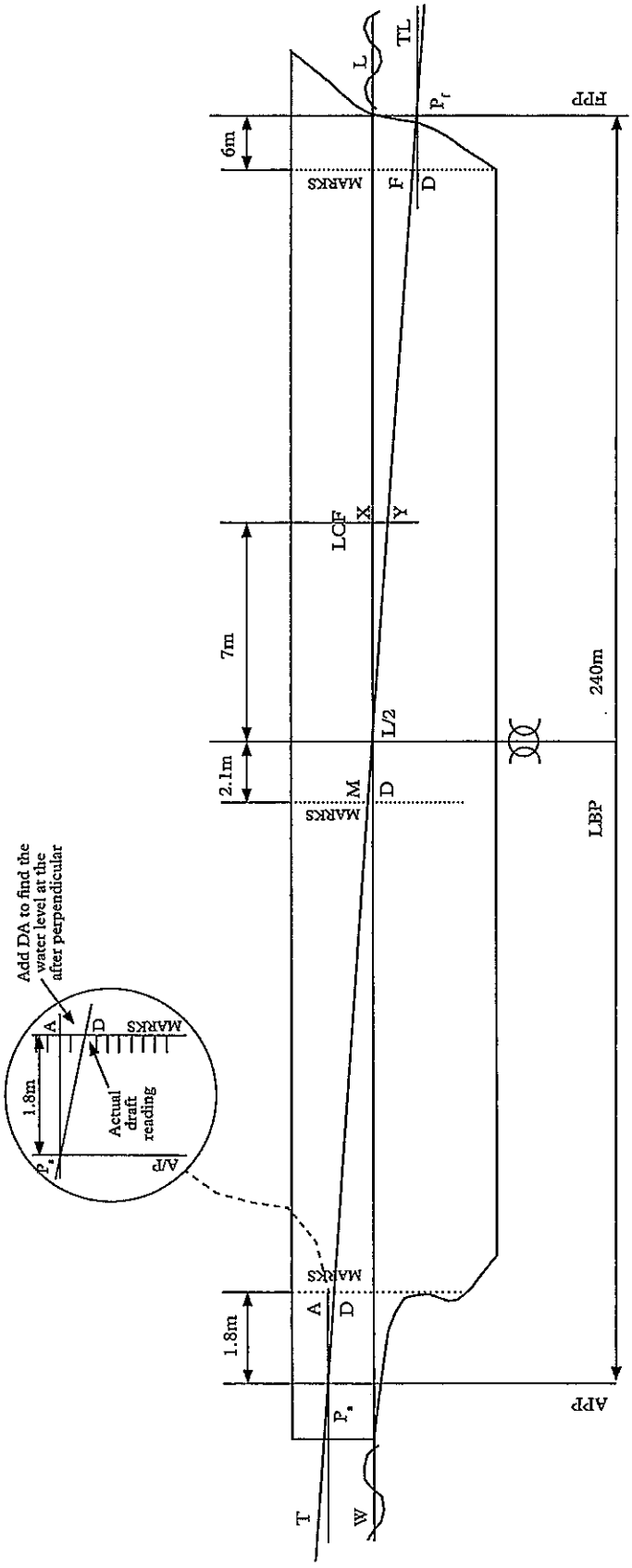
Vol m^3 = $\frac{1}{2}$ $(s_o + s_c)$ x l_w x W

Vol $_{bbls}$ = 3.1449 $(s_o + s_c)$ x l_w x W

Most ships have wedge tables with volumes already calculated for various soundings and trim conditions. Wedge volumes can usually be calculated with the ship's computer, as well as on a cargo inspector's laptop or special calculator with scientific functions.

Appendix 8.1

DRAFT SURVEY DIAGRAM



Appendix 9.1/1

BIMCO STANDARD BUNKER CONTRACT GENERAL TERMS AND CONDITIONS

"BIMCO Standard Bunker Contract" General Terms and Conditions

Preamble

These General Terms and Conditions shall apply to all deliveries contracted for unless the Sellers expressly confirm otherwise in the Confirmation Note. Each delivery shall constitute a separate contract.

1. Definitions

Throughout this Contract, except where the context otherwise requires, the following definitions shall be applied:

"*Marine Fuels*" means products, derived from crude oil, delivered or to be delivered to the Vessel.

"*Sellers*" means the party contracting to sell and deliver Marine Fuels, and

"*Buyers*" means the party contracting to purchase, take delivery and pay for the Marine Fuels.

"*Bunker Tanker*" means bunker barge or tanker or tank truck supplying Marine Fuels to the Vessel.

2. Grades/Quality

(a) The Buyers shall have the sole responsibility for the nomination of the grades of Marine Fuels fit for use by the Vessel.

(b) The Sellers warrant that the Marine Fuels shall be of a homogeneous and stable nature, shall comply with the grades nominated by the Buyers and be of satisfactory quality. Unless otherwise agreed in the Confirmation Note, the Marine Fuels shall in all respects comply with ISO Standard 8217:1996 or any subsequent amendments thereof.

3. Quantities/Measurements

(a) Subject to the provisions of sub-clause 6(c) and Clause 9 hereunder the quantities of Marine Fuels delivered shall be determined from the official gauge or meter of the Bunker Tanker effecting delivery, or in case of delivery ex wharf, of the shore-meter.

(b) The Buyers and the Sellers shall both have the right to be present or represented when such measurements are taken and shall be given sufficient information and access to the official gauge or meter of the Bunker Tanker or shore-meter and relevant documentation to verify the volume delivered.

(c) The Marine Fuels to be delivered under this Contract shall be measured and calculated in accordance with the ISO-ASTM-API-IP Petroleum Measurement Tables.

4 Sampling

(a) The Sellers shall arrange for a representative sample of each grade of Marine Fuels to be drawn throughout the entire bunkering operation and that sample shall be thoroughly mixed and carefully divided into four (4) identical samples. The sampling shall be performed in the presence of both the Sellers and the Buyers or their respective representatives. The absence of the Buyers or their representatives shall not prejudice the validity of the samples taken.

(b) The sample shall be drawn at a point, to be mutually agreed between the Sellers and the Buyers or their respective representatives, closest to the receiving Vessel's bunker manifold.

(c) The sample shall be drawn using a mutually accepted sampling device which shall be constructed, secured and sealed in such a way so as to prevent the sampling device and the sample being tampered with throughout the transfer period.

(d) The four (4) identical samples referred to in sub-clause 4(a) shall be securely sealed and provided with labels showing the Vessel's name, identity of delivery facility, product name, delivery date and place and point of sampling and seal number, authenticated with the Vessel's stamp and signed by the Sellers' representative and the Master of the Vessel or his authorised representative.

(e) Two (2) samples shall be retained by the Sellers for minimum sixty (60) days after delivery of the Marine Fuels to the Vessel or, on being requested in writing by the Buyers, for as long as the Buyers may reasonably require, and the other two (2) samples shall be retained by the Vessel.

(f) If the quantity is delivered by more than one Bunker Tanker, the sampling procedure shall be repeated as outlined in this Clause 4.

5. Delivery

(a) Delivery of the Marine Fuels shall be made day and night, Sundays and holidays included, at the port or place of delivery, subject always to the custom of that port or place.

(b) The Buyers, or their agents at the port or place of delivery, shall give the Sellers or their representatives at the port or place of delivery, 72 and 48 hours approximate and 24 hours definite notice of the Vessel's arrival and the location and time at which deliveries are required.

(c) The Sellers shall:

(i) be in possession of all permits required to comply with all relevant regulations pertaining to delivery of Marine Fuels at the port or place of delivery, and;

(ii) subject to local laws, render all necessary assistance which may be reasonably required to make connections and disconnections between the delivery hose(s) and the Vessel's bunker manifold.

(d) The Buyers shall be responsible for making all connections and disconnections between the delivery hose(s) and the Vessel's bunker manifold and to ensure that the hose(s) are properly connected to the Vessel's bunker manifold prior to the commencement of delivery.

(e) The Buyers shall ensure that the Vessel is in possession of all certificates required to comply with all relevant regulations pertaining to delivery of the Marine Fuels at the port or place of delivery and that the Master of the Vessel shall:

(i) advise the Sellers in writing, prior to delivery, of the maximum allowable pumping rate and pressure and agree on communication and emergency shut-down procedures;

(ii) notify the Sellers in writing prior to delivery, of any special conditions, difficulties, peculiarities, deficiencies or defects in respect of and particular to the Vessel which might adversely affect the delivery of the Marine Fuels, and;

(iii) provide a free side to receive the Marine Fuels and render all necessary assistance which may reasonably be required to moor or unmoor the Bunker Tanker, as applicable.

6. Documentation

(a) Before commencement of delivery the Sellers shall present for written acknowledgement by the Master of the Vessel or his authorised representative, a bunker requisition form or similar document, duly signed by the Sellers or their representative, which shall contain the quantities to be delivered and all information required in accordance with ISO/TR 13739:1998 or any subsequent amendments thereof, including, in particular, the values for:

- viscosity
- density

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Approved by The International Bunker Industry Association

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- sulphur content
- flash point
- delivery temperature

In addition, and if available, similar information shall be provided for vanadium, ash content, water content and pour point.

(b) Once the delivery is completed and quantities measured, a receipt shall be signed and stamped by the Master of the Vessel or his authorised representative, and returned to the Sellers, or their representative, as acknowledgement of the actual volume and the actual delivery temperature only and a duplicate copy shall be retained by the Master of the Vessel. This receipt shall contain the following minimum information which is warranted by the Sellers:

- delivered quantity in volume units
- density in kg/m³ at 15° C as per ISO 3675
- delivery temperature
- flash point
- sulphur content in % m/m as per ISO 8754
- viscosity

(c) In the event the Master of the Vessel is not satisfied with the sampling, quality, quantity or any other matter concerning the Marine Fuels or their delivery, he shall make appropriate remarks in the receipt either detailing the complaints or referring to a separate letter of protest to be issued and delivered immediately. Verification of the information provided under sub-clause 6(b) may be obtained by analysis of the Vessel's retained sample.

7. Price

(a) The price of the Marine Fuels shall be in the amount expressed per unit and in the currency stated in the Confirmation Note for each grade of Marine Fuels delivered into the Vessel's tanks free delivered/ex wharf as applicable and stated in the Confirmation Note.

In the event the price is quoted in volume units, conversion to standard volume shall be at 60 degrees Fahrenheit or at fifteen (15) degrees Celsius.

(b) Any and all additional charges, if applicable, shall be specified in the Sellers' quotation and in the Confirmation Note and shall include but not be limited to:

(i) Wharfage charges, barging charges or other similar charges;

(ii) Mooring charges or port dues incurred by the Sellers which are for Buyers' account, and;

(iii) Duties, taxes, charges or other costs in the country where delivery takes place, for which the Sellers are accountable but which are for the Buyers' account.

8. Payment

(a) Payment for the Marine Fuels shall be made by the Buyers within thirty (30) days or, if otherwise agreed, within the number of days stated in the Confirmation Note after the completion of delivery.

In the event payment has been made in advance of delivery, same shall be adjusted on the basis of the actual quantities of Marine Fuels delivered and additional payment and/or refund shall be made within thirty (30) days after the completion of delivery.

(b) Payment shall be made in full, without set-off, counterclaim, deduction and/or discount, free of bank charges.

(c) Payment shall be deemed to have been made on the date the payment is credited to the counter of the bank designated by the Sellers. If payment falls on a non-business day, then payment shall be made on or before the business day nearest to the due date. If the preceding and succeeding business day are equally near to the due date, then payment shall be made on or before the preceding business day.

(d) Any delay in payment and/or refund shall entitle either party to interest at the rate of two (2) per cent. per month or any part thereof.

(e) In the event of non-payment, the Sellers reserve the right to pursue such legal remedies as may be available to them to recover the amount owed.

9. Claims

(a)(i) Any dispute as to the quantity delivered must be noted at the time of delivery in the receipt or in the letter of protest referred to in sub-clause 6(c). Any claim as to short delivery shall be presented by the Buyers in writing within fifteen (15) days from the date of delivery, failing which any such claim shall be deemed to be waived and barred.

(ii) The Buyers shall be charged for all proven additional expenses incurred by the Sellers in connection with the Buyers' failure to take delivery of the full quantity of the Marine Fuels ordered by the Buyers.

(b)(i) Any claim as to the quality or description of the Marine Fuels must be notified in writing, as per sub-clause 6(c) or promptly after the circumstances giving rise to such claim have been discovered. If the Buyers do not notify the Sellers of any such claim within thirty (30) days of the date of delivery, such claim shall be deemed to be waived and barred.

(ii) In the event a claim is raised pursuant to sub-clause 9(b)(i), the parties hereto shall have the quality of the Marine Fuels analysed by a mutually agreed, qualified and independent laboratory. The Sellers shall provide the laboratory with one of the samples retained by them as per sub-clause 4(e). If ISO grades have been specified the analysis shall be established by tests in accordance with ISO Standard 8217:1996 and ISO 4259 or any subsequent amendments thereof. If non-ISO grades have been agreed, tests will be made in accordance with standards corresponding to the aforementioned ISO standards. Unless otherwise agreed the expenses of the analysis shall be for the account of the party whose claim is found wrong by the analysis.

(c) In the event of any delay resulting from:

(i) the Buyers' failure to give proper notices and/or to comply with the notices given pursuant to sub-clause 5(b) and/or the Buyers' Vessel failing to receive Marine Fuels at the pumping rate referred to in sub-clause 5(e)(i), or;

(ii) the Sellers' failure to commence delivery of the Marine Fuels promptly in accordance with the Buyers' required delivery time as notified pursuant to sub-clause 5(b) and/or the Sellers' failure to deliver the Marine Fuels in accordance with the minimum hourly pumping rate referred to in the Confirmation Note,

then the party suffering such delay shall be entitled to compensation from the other party for that delay, at the agreed rates per day, or pro rata, stated in the Confirmation Note.

(d) Neither party hereto shall be liable for indirect or consequential loss and/or damage arising from this Contract.

10. Risk/Title

Risk in the Marine Fuels shall pass to the Buyers once the Marine Fuels have passed the Sellers' flange connecting the Vessel's bunker manifold with the delivery facilities provided by the Sellers. Title to the Marine Fuels shall pass to the Buyers upon payment for the value of the Marine Fuels delivered, pursuant to the terms of Clause 8 hereof. Until such time as payment is made, on behalf of themselves and the Vessel, the Buyers agree that they are in possession of the Marine Fuels

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solely as Bailee for the Sellers. If, prior to payment, the Sellers' Marine Fuels are commingled with other marine fuels on board the Vessel, title to the Marine Fuels shall remain with the Sellers corresponding to the quantity of the Marine Fuels delivered. The above is without prejudice to such other rights as the Sellers may have under the laws of the governing jurisdiction against the Buyers or the Vessel in the event of non-payment.

11. Termination

Without prejudice to accrued rights hereunder, either party hereto shall be entitled to terminate this Contract in the event of:

(a) any application being made or any proceedings being commenced, or any order or judgement being given by any court, for

(i) the liquidation, winding up, bankruptcy, insolvency, dissolution, administration or re-organisation or similar, or

(ii) the appointment of a receiver, liquidator, trustee, administrator, administrative receiver or similar functionary

of the other party of all or a substantial part of its assets (otherwise than for the purpose of a reconstruction or amalgamation);

(b) the other party suspending payment, ceasing to carry on business or compounding or making any special arrangement with its creditors, or;

(c) any act being done or event occurring which, under the applicable law thereof, has a substantially similar effect to any of the said acts or events described above.

12. Indemnity

(a) Without prejudice to any other claims arising hereunder or in connection herewith and notwithstanding the provisions of sub-clause 9(d), if loss is suffered or a liability is incurred by either party hereto as a direct result of compliance with directions given by the other party, during or for the purposes of the parties' obligations hereunder, then the injured party is to be indemnified by the other in respect of such loss or liability.

(b) Where claims arise under sub-clause 9(c) and sub-clause 12(a), compensation payable in accordance with sub-clause 9(c) shall be taken into account in assessing sums payable under sub-clause 12(a).

13. Force Majeure

Neither party hereto shall be responsible for any loss, damage, delay or failure in performance under this Contract resulting from an act of God, or the port of delivery being affected by war, civil commotion, riot, quarantine, strike, stoppage, lock-out, arrest, restraint of princes, rulers and people, or any other event whatsoever which cannot be avoided or guarded against by the exercise of due diligence.

14. Safety and the Environment

(a) In the event of any spillage (which for the purpose of this Clause shall mean any leakage, escape, spillage or overflow of the Marine Fuels) causing or likely to cause pollution occurring at any stage of the bunkering operation, the Buyers and the Sellers shall jointly, and regardless as to whether the Buyers or the Sellers are responsible, immediately take such actions as are reasonably necessary to effect clean up and which shall always be conducted in accordance with such local laws and regulations which may compulsorily apply.

(b) Where it is a compulsory requirement of the law of the port or place of delivery of the Marine Fuels that the Sellers shall have in place their own oil spill contingency plans, the Sellers shall ensure that valid oil spill contingency plans approved by the relevant authorities are in effect to the extent that is so required.

(c) The Sellers hereby guarantee payment of and/or agree to indemnify and hold the Buyers harmless for any claims, losses, damages, expenses, penalties or other liabilities incurred by the Buyers under the United States Oil Pollution Act of 1990, or other state, national or international oil pollution legislation, as a result of any spillage occurring whilst the Marine Fuels are being transported directly or indirectly to or from the Vessel's bunker manifold except to the extent that such spillage is caused by any fault on the part of the Buyers. The Buyers shall similarly indemnify the Sellers where any such spillage occurs once risk in the Marine Fuels has passed to the Buyers except to the extent that such spillage is caused by any fault on the part of the Sellers.

(d) The Sellers shall use their best endeavours to ensure that the bunker supplying company is fully insured for oil spill liabilities as required by statutory rules or regulations. If such coverage or insurance is not obtained by the bunker supplying company it shall be the sole responsibility of the Sellers to establish such coverage for their account. Proof and conditions of such coverage, whether established by the bunker supplying company or by the Sellers shall be made available to the Buyers at their request, as soon as practically possible.

(e) The Buyers hereby advise the Sellers that they enforce a company drug and alcohol policy on board their vessels, whereby the Sellers' personnel must not be intoxicated at any time on board. It is understood and agreed that the selling, possession, distribution, use or being under the influence of any controlled substance or dangerous drugs other than those medically prescribed is prohibited.

(f) The Sellers hereby advise the Buyers that they enforce a company drug and alcohol policy in their facilities and on board their vessels, which the Buyers' personnel must comply with while in such facilities or on board such vessels. It is understood and agreed that the selling, possession, distribution, use or being under the influence of alcohol or any controlled substance or dangerous drugs other than those medically prescribed is prohibited.

15. Dispute Resolution

*) (a) This Contract shall be governed by and construed in accordance with English law and any dispute arising out of or in connection with this Contract shall be referred to arbitration in London in accordance with the Arbitration Act 1996 or any statutory modification or re-enactment thereof save to the extent necessary to give effect to the provisions of this Clause.

The arbitration shall be conducted in accordance with the London Maritime Arbitrators Association (LMAA) Terms current at the time when the arbitration proceedings are commenced.

The reference shall be to three arbitrators. A party wishing to refer a dispute to arbitration shall appoint its arbitrator and send notice of such appointment in writing to the other party requiring the other party to appoint its own arbitrator within 14 calendar days of that notice and stating that it will appoint its arbitrator as sole arbitrator unless the other party appoints its own arbitrator and gives notice that it has done so within the 14 days specified. If the other party does not appoint its own arbitrator and give notice that it has done so within the 14 days specified, the party referring a dispute to arbitration may, without the requirement of any further prior notice to the other party, appoint its arbitrator as

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sole arbitrator and shall advise the other party accordingly. The award of a sole arbitrator shall be binding on both parties as if he had been appointed by agreement.

Nothing herein shall prevent the parties agreeing in writing to vary these provisions to provide for the appointment of a sole arbitrator.

In cases where neither the claim nor any counterclaim exceeds the sum of US$50,000 (or such other sum as the parties may agree) the arbitration shall be conducted in accordance with the LMAA Small Claims Procedure current at the time when the arbitration proceedings are commenced.

*) (b) This Contract shall be governed by and construed in accordance with Title 9 of the United States Code and the Maritime Law of the United States and any dispute arising out of or in connection with this Contract shall be referred to three persons at New York, one to be appointed by each of the parties hereto, and the third by the two so chosen; their decision or that of any two of them shall be final, and for the purposes of enforcing any award, judgement may be entered on an award by any court of competent jurisdiction. The proceedings shall be conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc.

In cases where neither the claim nor any counterclaim exceeds the sum of US$50,000 (or such other sum as the parties may agree) the arbitration shall be conducted in accordance with the Shortened Arbitration Procedure of the Society of Maritime Arbitrators, Inc. current at the time when the arbitration proceedings are commenced.

*) (c) This Contract shall be governed by and construed in accordance with the laws of the place mutually agreed by the parties and any dispute arising out of or in connection with this Contract shall be referred to arbitration at a mutually agreed place, subject to the procedures applicable there.

(d) Notwithstanding (a), (b) or (c) above, the parties may agree at any time to refer to mediation any difference and/or dispute arising out of or in connection with this Contract.

In the case of a dispute in respect of which arbitration has been commenced under (a), (b) or (c) above, the following shall apply:-

(i) Either party may at any time and from time to time elect to refer the dispute or part of the dispute to mediation by service on the other party of a written notice (the "Mediation Notice") calling on the other party to agree to mediation.

(ii) The other party shall thereupon within fourteen (14) calendar days of receipt of the Mediation Notice confirm that they agree to mediation, in which case the parties shall thereafter agree a mediator within a further fourteen (14) calendar days, failing which on the application of either party a mediator will be appointed promptly by the Arbitration Tribunal ("the Tribunal") or such person as the Tribunal may designate for that purpose. The mediation shall be conducted in such place and in accordance with such procedure and on such terms as the parties may agree or, in the event of disagreement, as may be set by the mediator.

(iii) If the other party does not agree to mediate, that fact may be brought to the attention of the Tribunal and may be taken into account by the Tribunal when allocating the costs of the arbitration as between the parties.

(iv) The mediation shall not affect the right of either party to seek such relief or take such steps as it considers necessary to protect its interest.

(v) Either party may advise the Tribunal that they have agreed to mediation. The arbitration procedure shall continue during the conduct of the mediation but the Tribunal may take the mediation timetable into account when setting the timetable for steps in the arbitration.

(vi) Unless otherwise agreed or specified in the mediation terms, each party shall bear its own costs incurred in the mediation and the parties shall share equally the mediator's costs and expenses.

(vii) The mediation process shall be without prejudice and confidential and no information or documents disclosed during it shall be revealed to the Tribunal except to the extent that they are disclosable under the law and procedure governing the arbitration.

(Note: The parties should be aware that the mediation process may not necessarily interrupt time limits.)

*) *Sub-clauses (a), (b) and (c) are alternatives; if this Clause has been incorporated into the Contract without an express choice of law and arbitration forum chosen from sub-clauses (a), (b) and (c), then sub-clause (a) of this Clause shall apply. Sub-clause (d) shall apply in all cases.*

Appendix 9.2

BIMCO BUNKER CONTRACT CONFIRMATION NOTE

Seller and Buyer hereby confirm the bunker nomination based on BIMCO Standard Bunker Contract of November 2001 and subject to amendments as in box 15.

1. Place of Nomination:	**2. Date of Nomination:**

3. Sellers (Cl. 1)	**4. Buyers (Cl. 1)**
Company:	Company:
Street:	Street:
City:	City:
Country:	Country:
Contact Person:	Contact Person:
Telephone:	Telephone:
Fax:	Fax:
e-mail:	e-mail:

5. Vessel	**6. Port or Place of Delivery (Cl. 5)**
Name of Buyer's vessel:_____	Name/no. and location of bunker berth:
Dwt: _____ mt; Freeboard*: _____m	_____
Vessel ETA: _____at: _____	Name and location of bunker anchorage:
Manifold connection: ____ inch	_____
Vessel's Agents:	_____ lat. N/S** _____ long E/W**
City:	
Country:	Name bunker vessel: _____
Contact person:	Bunker vessel's ETA @ bunker location:
_____	_____
Telephone:	Size delivery hose: _____inch
Fax:	Reducers available: _____ _____ _____
e-Mail:	
* *Freeboard at time of bunkering*	**delete what does not apply*

7. Product(s)/Specifications (Cl. 2)	
As per latest ISO 8217 fuel quality standards for marine IFO and for marine distillate fuels.	At their expense, Buyers will arrange for an independent oil inspection company to determine proper quality and quantity.

8. Quantity/Standard (Cl. 2 and Cl. 3)			9. Currency/Cost/Total (Cl. 7)		
MT	Grade	Standard	US$ per MT	Total US$	Price Basis ***
1)	IFO 180 cSt	RMF 25	_____	_____	_____
2)	IFO 380 cSt	RMF 25	_____	_____	_____
3)	MDO	DMA	_____	_____	_____
4)	MGO	DMA	_____	_____	_____

Exceptions to above specifications:

_____

_____

_____

_____

Price is: in bond and exclusive of BS&W

*** *Examples of price basis:*

Ex-wharf

FOB bunker vessel

CIF Buyer's vessel

10. Additional Charges to be paid by Buyer (Cl. 7)	Additional Charges listed below to be paid by Seller:

Delivery cost/barging, if applicable: US$_____/mt

Taxes & Duties, if applicable: ___% of base cost

Wharfage, if applicable: US$ _____/GRT

Cancellation fee, if applicable: US$ ____

11. Payment (Cl. 8)	Seller's banking details:

Payment due in _30_ days, guaranteed by Standby L/C, with Seller as Beneficiary. If paid Cash-in-Advance, there is a 2% discount from price stated under 9.

12. Min. hourly pumping rate (Cl. 9 c ii)	Max. pumping rate to be determined -and mutually agreed upon- by Buyer's and Seller's Persons in Charge.
_____m^3 /bbl** per hour	

13. Compensation rates for delay (Cl. 9 c)	For Buyer's vessel: US $ _____ per hour For Seller's barge: US $ _____ per hour

14. Dispute resolution (Cl. 15) As per clause 15a (UK/London)

15. Additional clauses

This confirmation note is based on — and includes all Terms and Conditions of — the BIMCO STANDARD BUNKER CONTRACT issued in November 2001, except for the following deletions and amendments:

Clause 2, line 25 after quality; amend: **Supplier warrants that the fuel shall not contain recycled waste lubricating oil.**

Clause 2, line 28; amend: **No in-line blending allowed during delivery.**

Clause 3, line 40; amend: **Bunker vessel to have latest certified calibration tables**

on board, which are to be made available to Buyer's Representative to determine volumes.

Clause 5 a, line 83-84: Delete: ~~subject always to the custom of that port or place~~ and substitute by: **except if the operation is unsafe. If bunkers are delivered by barge at open roadstead, delivery and transfer operation to be suspended when wind is consistently at Beaufort 6 or higher, or if waves or swell are higher than 1 metre.**

Clause 6 a, line 136; delete: ...~~and if available~~...

Clause 9 b i , line 226: Change notification time for quantity claims from 30 days to 60 days.

Clause 10, line 263; delete: ..~~Sellers~~... and substitute by: ...**Buyers'**...

Clause 13, delete line 321 after "People" and delete lines 322 and 323 in its entirety.

Clauses 15 b and 15 c: delete in its entirety.

Before this contract takes effect, Seller is to fax to Buyer following documents prior to bunker delivery:

— Meter Calibration Certificate (in case a meter is used) as per cl. 3 b

— Certificate of Oil Pollution Insurance as per cl. 14 d

This contract is subject to Vessel's Head-Owner's approval; to be declared within 24 hours after sending this Confirmation Note to Sellers.

Signed

Back Haul Bulk Carriers inc.

Don L. Dykstra, Managing Director

Appendix 11.1a

AMERICAN TRADE CO.
PRO-FORMA INVOICE

AMERICAN TRADE CO.
1314 TEXAS AVE., SUITE 1419
HOUSTON, TEXAS 77002-3515
U.S.A.

PHONE: 713-229-8602
FAX: 713-227-0313
MOBIL: 713-816-6144

Quote to:
COTAC TRADING CO.
SEOUL
KOREA

Attn: Mr. H.S. Park

PRO-FORMA INVOICE
****

Houston, 16 February 1995

subj: ULTRALON IV

ref: yr. 15 Feb. FAX

Quant.	Description	Unit $	Total $
10 RLS	ULTRALON IV; WHITE 5 X 32 METER SHIPPING TUBES	$ 1,962/RL included	$ 19,620 -0-
		Ex-Factory	$ 19,620

Inland Freight from Factory to Hamburg:.....	$ 130
Freight Forwarder, Documentation, Courier charges:.	$ 150
Banking Charges:.....	$ 350
Export Marking + Delivery to Cargo Terminal:.....	$ 50
FOB HAMBURG PORT	$ 20,300

Est. DELIVERY from Factory:__4_ weeks after receipt of order and LETTER OF CREDIT WITH LATEST SHIPPING DATE _ 60 _ DAYS AFTER L/C OPENING DATE.

Offer FIRM for: _30__ days; thereafter subject to renegotiation.

(continued on page 2)

Member of SPAI

Appendix 11.1b

AMERICAN TRADE CO.
TERMS AND CONDITIONS

Pro-Forma Invoice page 2

TERMS & CONDITIONS

- Prices are based on total order size as quoted on first page.
- Orders are contingent upon Manufacturer's/Supplier's acceptance of our Purchase Order and their ability to deliver the materials.
- American Trade Co. is not liable for errors and delays caused by Export Packers, Freight Forwarders and by Transportation Companies and/or their Agents.
- Clerical errors are subject to correction.
- Charge for goods subject to pre-shipment inspection, such as performed by SGS or similar companies: $ 150

PAYMENT TERMS (A or B or C)

A) LETTERS OF CREDIT (L/C)

☑ L/C is subject to ICC publication no. 500 (Rules for Documentary Credits) or latest version
☑ Drafts to be payable **"AT SIGHT"** by a major bank in USA.
☑ L/C to be Transferable: yes/no
☑ L/C to be Confirmed: yes/no
☑ Latest Shipdate: 60 days after opening of L/C
☑ **All L/C and Banking charges outside USA are for account of Buyer.**
☑ **L/C needs to state:** ***All L/C reimbursing charges in or outside USA for Buyer's account.***

Please advise the L/C through the American branch of the opening Bank in your country. Location of this branch Bank can be anywhere in USA; not necessarily Houston. This is easiest and cheapest for you.

L/C terms in case of delivery to an address in USA:

-Terms of Trade: DELIVERED TO ....(F.F.)... WAREHOUSE IN ....CITY...
-Shipping Document: INLAND BILL OF LADING (not Ocean B/L or Air Waybill)

B) CASH-AGAINST-DOCUMENTS (CAD) or PAYMENT AGAINST-DOCUMENTS (D/P)
Under certain conditions -and to certain Buyers in certain Countries- we can offer CAD or D/P.
Collection fee is $ 100 per order.

C) CASH WITH ORDER. (Bank Wire Transfer or Check/Draft drawn on major Bank in USA)
If payment in full is received **at time of order**, you can deduct the Banking charges on the first page and **deduct 2% from ex-factory value.**
Please wire-transfer:

To:	**WELLS FARGO BANK TEXAS, N.A.**
	(Chevron Tower Office; Houston, TX, USA)
Routing no:	**111-900-659**
For Credit of:	**AMERICAN TRADE CO.**
Account no:	

Thank you for the opportunity to quote !

AMERICAN TRADE CO.

Don L. Dykstra

Don L. Dykstra, Mgn. Dir.

C:\WORD FILES\SPA\PG2PFINV.DOC

Appendix 11.2

CASH AGAINST DOCUMENTS (CAD)

This is more in the financial arena than in shipping. However, CAD is an easy alternative to Documentary Letters of Credit, which need a great deal of precision to negotiate. Under a CAD arrangement the seller or exporter consigns the B/L to a reputable bank in the buyer's country, instead of directly to the buyer. That way the bank holds title to the goods; preventing the buyer from running off without paying. In case the buyer defaults, the buyer's bank notifies the seller. The seller then has a choice of either shipping the goods back home, or trying to sell them in the buyer's country to somebody else. The important point is that the seller does not lose control and title of the goods. This is the big advantage of selling under CAD over selling on credit (open account).

The first order of business is for seller and buyer to agree on a reputable bank that will act as intermediary with the B/L consigned to that bank. The best choice is usually the buyer's bank, since that bank hopefully has a good relationship with the buyer. However, before agreeing on a bank, the seller should make sure that the proposed bank is not some fly-by-night operation; run by the buyer's brother-in-law. It is fairly easy to check on international banks on the Internet. For example, Google lists several banking directories on the Internet, with links to most of the banks listed. As an alternative, major libraries have directories with information on international banks all over the world. Of course you can also ask your own bank — at least if it has an international department — to check out the proposed CAD bank.

After agreeing on a bank, the seller has to ask the bank for their consent to act as intermediary and describe what documents will be presented for payment.

Once this has been accomplished, the exporter can prepare the goods for shipment and arrange for the cargo documents to be sent to the bank. The exporter can either do his own collection by sending the documents with draft and wiring instructions directly to the bank in buyer's country, or have his own bank take care of the collection process. If the seller's bank does the collection, it usually takes longer and cost more in fees.

Below is a synopsis of what is involved in CAD:

1. **The seller consigns the Ocean B/L or Air Waybill to an intermediary; like the buyer's bank.**
2. **After the seller has shipped the goods, he sends the B/L with Invoice and other supporting documents as requested by buyer, together with a SIGHT-DRAFT to buyer's bank.**

3. **Buyer's bank notifies the buyer that the goods have been shipped and presents the buyer with the sight draft.**
4. **As soon as the buyer pays for the sight draft, the bank endorses the B/L over to the buyer.**
5. **The buyer takes the B/L to the carrier to claim the goods.**
6. **The buyer's bank wire-transfers the funds to seller's bank account.**

Under an "order" B/L, the bank usually signs a Letter of Guarantee to the shipping company to have the goods released to buyers. However, if the goods have been shipped on an Air or Sea **Waybill,** taking possession of the goods is very easy. All the CAD bank has to do is identify itself to the carrier and have the goods picked up by buyers. It is important that sellers insist on a **sight draft,** as opposed to a **time-draft**. Under a **time-draft** the bank will ask buyers to sign a **promissory note**. After the buyer has signed a promissory note, the bank executes a release form to the carrier. This allows the buyer to claim the goods before having paid for them. If the buyer fails to pay the bank and since the bank claims that they are just middlemen, it may then be hard for the buyer to collect the money.

Under a **sight draft** the bank is obligated to collect funds first; before they can take steps to have the cargo released to buyers. That is why sellers should always insist on a **sight draft** under a CAD arrangement.

Appendix 11.3

UNION TRANSPORT BILL OF LADING

BILL OF LADING FOR COMBINED TRANSPORT SHIPMENT OR PORT TO PORT SHIPMENT

SHIPPER
AMERICAN TRADE CO. , 1314 TEXAS AVE
SUITE 1419 HOUSTON,TEXAS77002-351
5 U.S.A.

B/L NO.
880-06-5614
SHIPPERS REF.

CONSIGNEE
TO THE ORDER OF
THE COMMERCIAL BANK OF KOREA LTD.

UNION-TRANSPORT

NOTIFY PARTY
KOCHIAM INTERNATIONAL INC
SEOUL KOREA

UNION OCEAN TRANSPORT GMBI
HAMBURG/GERMANY

Container Number	Place of receipt	Agent:
XTRU 493991-0		UNION TRANSPORT(KOREA)CO LTD. ROOM 503,SAM JOONG BUILDING CHUNG ANG-DONG,CHUNG-KU PUSAN SOUTH KOREA
Vessel: PENINSULAR BAY	Port of Loading: HAMBURG PORT	
Port of Discharge: BUSAN PORT	Place of Delivery	

MARKS AND Nos. CONTAINER Nos.	NUMBER AND KIND OF PACKAGES. DESCRIPTION OF GOODS	GROSS WEIGHT KGS/VOLUME CBM
KOCHIAM SEOUL KOREA	10 PACKAGE ORDER NO:AC-5009 ULTRALON IV:WHITE 10 ROLLS ATUSD2,030/RL USD20,300.00 5 X32 METER SHIPPING TUBES 10EA INCLUDED USD0.00 TOTAL AMOUNT : USD20,300.00 ORIGIN GERMANY FOB HAMBURG	1300.0 kg 7.290 cb

IRREVOCABLE DOC.CREDIT NUMBER:
M1708503NS01757

*** SHIPPED ON BOARD/
FREIGHT COLLECT ***

ABOVE PARTICULARS AS DECLARED BY SHIPPER

Place	Movements:	CBM
FOB HAMBURG	LCL/LCL	7.290

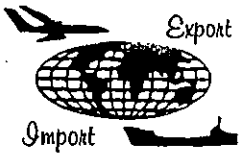
Shipped on board above named vessel

Shipped in apparent good order and conditions (unless otherwise stated herein) the goods above mentioned from the place of receipt or the port of loading to the port of discharge or the place of delivery, wichever applicable in accordance with the above entries. The goods to be delivered at the above mentioned port of discharge or place of delivery, whichever, applicable, on payment of outstanding freight and charges. All the foregoing shall always be subject to the exeptions, limitations, conditions and liberties set out on this page and overleaf, to which the merchant agrees by accepting this B/L. in witness whereof the number of Original Bills of Lading stated below all of this tenor and date has been signed, one of which being accomplished the others to stand void.

FREIGHT PAYABLE AT	PLACE AND DATE OF ISSUE
DESTINATION	HAMBURG,30 MAY 1995
NUMBER OF ORIGINAL BILLS OF LADING: 3/3	AS CARRIER: UNION OCEAN TRANSPORT GMBH

Appendix 11.4

AMERICAN TRADE CO.
COMMERCIAL INVOICE



AMERICAN TRADE CO.
1314 TEXAS AVE., SUITE 1419
HOUSTON, TEXAS 77002-3515
U.S.A.

PHONE: 713-229-8602
FAX: 713-227-0313
MOBIL: 713-816-6144

Sold to:
KOCHIAM INTERNATIONAL INC
SEOUL KOREA

INVOICE
****

Houston, 29 May 1995

Subject: ULTRALON IV

Our Ref: 9510 (SEA)

Yr. Ref: AC-5009

L/C no: M1708503NS01757

Adv. Bank ref: E403539

Quant.	Description	Unit $	Total $
ORDER NO :AC-5009			
ULTRALON IV:WHITE 5 X 32 METER	10ROLLS	ATUSD2,030/RL	USD20,300.00
SHIPPING TUBES	10EA	INCLUDED	USD0.00
TOTAL AMOUNT :	USD20,300.00		
ORIGIN GERMANY	FOB HAMBURG		

SHIPMENT FROM: HAMBURG PORT; GERMANY

SHIPMENT TO: BUSAN PORT; KOREA

CERTIFIED TRUE AND CORRECT
AMERICAN TRADE CO.

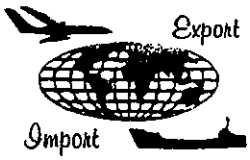
Don L. Dykstra
Don L. Dykstra
Mgn. Dir.

MARKS
*****
KOCHIAM
SEOUL
KOREA

Member of SPAI

Appendix 11.5

AMERICAN TRADE CO.
PACKING LIST



AMERICAN TRADE CO.
1314 TEXAS AVE., SUITE 1419
HOUSTON, TEXAS 77002-3515
U.S.A.

PHONE: 713-229-8602
FAX: 713-227-0313
MOBIL: 713-816-6144

Sold to:
KOCHIAM INTERNATIONAL INC
SEOUL KOREA

PACKING LIST
****

Houston, 29 May 1995

Subject: ULTRALON IV

Our Ref: 9510 (SEA)

Yr. Ref: AC-5009

L/C no: M1708503NS01757

Adv. Bank ref: E403539

Quant.	Description	Unit $	Total $
ORDER NO :AC-5009			
ULTRALON IV:WHITE 5 X 32 METER	10ROLLS	ATUSD2,030/RL	USD20,300.00
SHIPPING TUBES	10EA	INCLUDED20	USD0.00
TOTAL AMOUNT :	USD20,300.00		
ORIGIN GERMANY	FOB HAMBURG		

10 PACKAGES
1300.0 KG
7.290 CBM

SHIPMENT FROM: HAMBURG PORT; GERMANY

SHIPMENT TO: BUSAN PORT; KOREA

MARKS
*****
KOCHIAM
SEOUL
KOREA

Member of SPAI

Appendix 11.6

EUROPEAN COMMUNITY CERTIFICATE OF ORIGIN

DURCHSCHRIFT
COPY - COPIE - COPIA

EUROPÄISCHE GEMEINSCHAFT
EUROPEAN COMMUNITY - COMMUNAUTE EUROPEENNE - COMUNIDAD EUROPEA

URSPRUNGSZEUGNIS
CERTIFICATE OF ORIGIN - CERTIFICAT D'ORIGINE - CERTIFICADO DE ORIGEN

1 Absender - *Consignor - Expéditeur-Expedidor*

Versuidag Indutex GmbH
Postach 4000
D147730 Krefeld

2 Empfänger - *Consignee - Destinataire - Destinatario*

Kochiam International INC

Seoul / KOREA
tel. no: (02) 358117692
fax. no: 1358117635

3 Ursprungsland - *Country of origin - Pays d'origine - Pais de origen*

Bundesrepublik Deutschland
(Europäische Gemeinschaften)

4 Angaben über die Beförderung - *means of transport - expédition - expedición*

5 Bemerkungen - *remarks - observations - observaciones*

6 Laufende Nummer; Zeichen, Nummern, Anzahl und Art der Packstucke; Warenbezeichnung	7 Menge
1 VS 22760/1=10, 10 rolls========== ULTRALON IV: WHITE 10 Rolls========== 5 X 32 Meter, ORDER NO: AC 5009========== Shipping Tubes 10AE, ORIGIN GERMANY======== Our Ref: 9510 (SEA), Yr. Ref: AC 5009======= L/C no: M1708503NS01757========== Adv. Bank ref: E403539==========	Brutto 1,300,0 kg

8 DIE UNTERZEICHNENDE STELLE BESCHEINIGT, DASS DIE OBEN BEZEICHNETEN WAREN IHREN URSPRUNG IN DEM IN FELD 3 GENANNTEN LAND HABEN

The undersigned authority certifies that the goods described above originate in the country shown in box 3

L'autorité soussignée certifie que les marchandises désignées ci-dessus sont originaires du pays figurant dans la case No 3

La autoridad infrascrita certifica que las mercancías abajo mencionadas son originarias del país que figura en la casilla no. 3

Krefeld, den

29 MAI 195

Industrie- und Handelskammer
Mittlerer Niederrhein
Krefeld-Mönchengladbach-Neuss

i.A.

Ort und Datum der Ausstellung; Bezeichnung, Unterschrift und Stempel der zuständigen Stelle

Genehmigt durch Erlaß des Bundesministers der Finanzen vom 22. 5. 1969 — III B/6 — Z 1351 — 11/69 Fassung: 1981

FORMULARVERLAG CW NIEMEYER 31789 Hameln, Werkstraße 7, Tel. (05151) 64998 und 64980, Fax 67706
44793 Wattenscheid, Cranger Straße 28, Tel. (02327) 502031, Fax 501992
63075 Offenbach a. M., Rohmühlstr. 5, Tel. (069) 862682, Fax 869600
71263 Weil der Stadt, Glemsweg 17, Telefon (07033) 34940, Fax 34942
39167 Hohendodeleben, Mathissonstr 26, Tel (039204) 5447, Fax 80119
Auslieferungslager

Best.-Nr. 1015/2

Appendix 11.7

CUSTOMER DRAFT

CUSTOMER DRAFT

"AT SIGHT" **DRAFT NO:** 9510 Houston, 29 May 1995

Drawn under L/C no: M1708503ES01757

Pay to the
Order of: ---------AMERICAN TRADE CO.----------$20,300.00 **U.S. DOLLARS**

TWENTY THOUSAND THREE HUNDRED and no/100 **DOLLARS**
value received and charged to account of **with exchange**

TO: **AMERICAN TRADE CO.**
COMMERCIAL BANK OF KOREA, LTD.,
NEW YORK AGENCY
NEW YORK, NY

_____
signature
Don L. Dykstra, Mgn. Dir.

form: F-270-00080-iv-94(10)

Appendix 11.8

STANDBY LETTER OF CREDIT BENEFICIARY STATEMENT

To: *name of standby L/C issuing bank*

Date: _____

We, __*name of beneficiary*__ hereby certify that ___*name of applicant*__ has as of now failed to pay freight according to charter party dated: __ *c/p date*__.

Pursuant to Irrevocable Standby Letter of Credit (L/C) number: __*L/C no.* __, issued on: _____*date*_____, demand is hereby made that US $ ___ *amount*___ be deposited in immediately available funds into our account at:

Bank: _____

SWIFT bank i.d. code no: _____

For account of: _____*name of beneficiary as per Standby L/C*_____

Account number: _____

CERTIFIED TRUE AND CORRECT,

_____*name of beneficiary as stated in Standby L/C*_____

by: ___*print name and title of beneficiary's authorised person*____

Signature: _____*beneficiary's authorised person*_____

Appendix 11.9

LETTER OF CREDIT DISCREPANCY CHECKLIST

GENERAL

- ❑ L/C has expired (documents reached the bank after L/C expiration date).
- ❑ Late shipment; B/L date later than latest shipment date and L/C expiration date.
- ❑ Stale documents (submitted more than 21 days after shipment date).
- ❑ Short or over shipment (quantities in documents not the same as in L/C).
- ❑ Name and address of buyer misspelled (copy as per L/C).
- ❑ Name and address of seller misspelled (change letterhead).
- ❑ Description of goods in documents not the same as in L/C.
- ❑ Documents are inconsistent with each other.
- ❑ Not all documents — as called for in L/C — submitted to bank.
- ❑ Documents not dated, signed, legalised, authenticated as called for in L/C.
- ❑ Some advising banks require that their reference no. is stated on documents..

DRAFT

- ❑ Draft should be: AT SIGHT, or time draft (insert proper time period).
- ❑ Needs to have "To order" phrase.
- ❑ Draft needs to have L/C no.
- ❑ Proper L/C clause is missing (Drawn under ....).
- ❑ Draft shows improper amount.
- ❑ Sum of drafts for partial shipments should equal total L/C amount.
- ❑ Draft drawn on wrong party (draw on issuing or reimbursing bank).
- ❑ Draft not signed and/or endorsed on the back.

INVOICE

- ❑ Invoice to be made out by beneficiary to applicant as listed in L/C.
- ❑ No L/C number on Invoice.

- ❑ Description of goods different from L/C description.
- ❑ Mathematical errors in unit prices, extensions and total amount.
- ❑ Sum of quantities and amounts of partial shipments to be same as L/C totals.
- ❑ Quantities, weights, volumes, etc. consistent with B/L, P/L, Weight Certificate, Ullage Report etc.
- ❑ If L/C spells out freight & handling charges, same should be on invoice.
- ❑ Terms of Trade (FOB, C&F, CIF) should be same as in L/C and B/L.
- ❑ Port of shipment/destination to be same as in L/C and B/L.
- ❑ Invoice needs to be stamped: INVOICE, and stamped ORIGINAL.
- ❑ Invoice needs to be signed.

PACKING LIST (P/L)

- ❑ Same as invoice +:
- ❑ Description different from L/C and other documents.
- ❑ Marks, numbers, weights etc. different from B/L.
- ❑ The word PACKING LIST should appear on P/L.

BILL OF LADING (B/L)

- ❑ B/L to be consigned to party as stated in L/C.
- ❑ "Notify Party" to be same as stated in LC.
- ❑ "To Order" B/L not dated, signed, (or endorsed if required).
- ❑ B/L needs to show number of originals signed by master.
- ❑ If "Straight Consignment" there should not be "to order" phrase.
- ❑ B/L needs to have name of Carrier and name of agent plus signature.
- ❑ If signed by master/owner, "master" or "owner" to be near signature.
- ❑ If signed on behalf of master, B/L to show name of agent and of master.
- ❑ Port of loading/destination to be same as in L/C.
- ❑ Terms of Trade to be same on B/L as in L/C.
- ❑ B/L needs to have conditions of carriage, or refer to them (short form B/L).
- ❑ No full set submitted as per L/C.

- ❑ B/L does not have L/C no. on it.
- ❑ Description of goods, marks, weights etc. inconsistent with other documents.
- ❑ B/L "unclean" (contains notations by carrier regarding damage/ shortage).
- ❑ B/L lacks notation: FREIGHT PREPAID/COLLECT (if required by L/C).
- ❑ B/L lacks ON BOARD DATE stamp and signature (if required by L/C).
- ❑ If Transshipment is prohibited by L/C, B/L not to show intermediate ports.
- ❑ If required in L/C, National Flag to be stated on B/L.
- ❑ In case of "House" B/L by a F.F., they must sign: AS CARRIER.
- ❑ B/L needs to be presented within 21 days of shipment date.
- ❑ Unless allowed in L/C, no C/P and no sailing vessel B/L.

INSURANCE DOCUMENTS

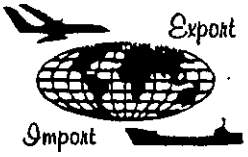
- ❑ Risk covered to be same as per L/C (same terms of trade).
- ❑ Proper name and address of insured party.
- ❑ Insurance certificate to be marked ORIGINAL.
- ❑ Proper description of the goods as per L/C.
- ❑ Proper load and discharge ports.
- ❑ If L/C allows, insurance with a deductible may be acceptable.
- ❑ Date of coverage to be before or on date of shipment.
- ❑ L/C no. and insurance coverage reference number to be on insurance documents.
- ❑ Generally speaking coverage is 110% of the L/C amount.
- ❑ Unless stated differently, currency same as in L/C.
- ❑ Cover notes issued by brokers not acceptable unless authorised in the L/C.
- ❑ Submit full set of original certificates and copies.
- ❑ Insurance documents need to be signed.

CERTIFICATIONS

- ❑ Same as invoice +:
- ❑ Name of the certification -as required by L/C- to be printed at the top of document.

Appendix 11.10

AMERICAN TRADE CO. DOCUMENTATION LIST — BANK DOCUMENT TRANSMITTAL LETTER



AMERICAN TRADE CO.
1314 TEXAS AVE., SUITE 1419
HOUSTON, TEXAS 77002-3515
U.S.A.

PHONE: 713-229-8602
FAX: 713-227-0313
MOBIL: 713-816-6144

FIRST INTERSTATE BANK OF TEXAS N.A.
808 Travis 4th Floor
Houston, TX 77002

Attn: L/C Dept.
Ph: 250-1996

Houston, 12 June 1995

Subj: L/C Documents

Our ref: 9510

Yr. ref: E403539

Enclosed are the following documents for your negotiation:

_2 Draft no: 9510 for $ 20,300.00

__ L/C: original kept by you

1+1 signed L/C amendment consent

3+1 Ocean Bill of Lading

5+1 Commercial Invoices

5+1 Packing Lists

1+1 Certificate of Origin

Payment Instructions:

PLEASE DEPOSIT FUNDS:

In: **FIRST INTERSTATE BANK OF TEXAS**
(Chevron Tower, office no. 12, Houston)
ABA no: 113-001-064
For Credit to: **AMERICAN TRADE CO.**
Account no:

For any questions you may have, please call our office.

Thank you for handling this matter !

Sincerely,

Don L. Dykstra
Don L. Dykstra
Mgn. Dir.

HAND CARRIED

Member of SPAI

Appendix 12.1

SMA PARTIAL FINAL AWARD

In the Matter of the Arbitration between

BACK-HAUL BULK CARRIERS, INC.,
as Charterers **Partial Final Award**

and

FALCON OFFSHORE INC.,
as Owners of the *PEREGRINE X*

INTRODUCTION

On September 29, 1998, Falcon Offshore Inc. (hereinafter "Falcon" or "Owners"), owners of the OBO *PEREGRINE X*, entered into a bareboat charter with Back-Haul Bulk Carriers, Inc. (hereinafter "BBC" or "Charterers") for a period of six months with additional extension options.

Certain disputes arose under the charter, which were submitted to the panel for adjudication. Clause 37 provides that the arbitration be conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc.

CLAIMS

BBC submitted claims for the following:

- reimbursement for spare parts, repairs, labor, newly bought stores, equipment, excess hire paid, excess diesel oil consumption, slow speed claim, lubes and greases, totaling $366,243.28;
- loss of earnings in the amount of $2,133,425;
- punitive damages;
- interest at 7.5% p.a. from December 28, 1998 to the date of the award;
- a reasonable allowance towards attorneys' fees, travel and out-of-pocket expenses, including the cost of this arbitration.

Falcon reject Charterers' claims and in turn assert a counterclaim for $938,178.12, representing unpaid hire, crew wages paid by Owners, expenses incurred in releasing the vessel from arrest, repairs, together with interest, an allowance towards attorneys' fees and costs and the cost of this arbitration.

BACKGROUND

BBC had previously time-chartered this vessel (then known as the *ANTARES*) for a three-month period, ending on July 17, 1998, after which Owners laid up the vessel at Singapore. When BBC expressed renewed interest in time chartering the vessel, Owners did not wish to do so, but rather held out for a bareboat charter. BBC agreed, and following reactivation and repairs, the vessel was delivered on bareboat charter to them on October 29, 1998.

The *PEREGRINE X* was described as a 135,160 DWT OBO. Under Clause 35 (Description and Performance), it was stated:

Owner warrants that at the date of delivery under this charter, the vessel shall be of the description

set out in OCIMF Questionnaire, 1st. edition 1997: Vessel Particulars for Bulk Oil/Chenical Carriers and Gas Carriers ... attached hereto and integral part of this C/P.

Charterers fixed the vessel to load a cargo of iron ore at Port Hedland (Australia) for discharge at Qingdao (China). The vessel sailed from Singapore on November 7, 1998, and the vessel soon began experiencing technical problems. Charterers had contracted with Wallem Ship Management Ltd. ("Wallem") to be their technical and operational ship manager. On November 10, Wallem informed Charterers and Owners that they were experiencing problems with the main engine, boiler and gyrocompass. At this point, Charterers and Owners had lengthy arguments as to latent defects versus normal maintenance and repair, and also who should be responsible for the repairs and who had promised what. In its deliberation, the panel determined that it would serve no useful purpose to reiterate these various exchanges.

Upon completion of discharge at Qingdao, Charterers put the vessel into the Qingdao Beihai Shipyard for repairs. Thereafter, Charterers had the vessel proceed to Singapore, where they handed the ship back to Falcon. As Owners had no crew available to take over the ship, Wallem directed the vessel into the port of Singapore, where the *PEREGRINE X* was subsequently arrested for outstanding crew wages.

Thereafter, the parties engaged in exchanges regarding the status of the bareboat charter and whether it was terminated, repudiated or in a suspension by declaration of off-hire.

DISCUSSION AND DECISION

When reviewing the matter, the panel was puzzled by the fact that a party would commit to taking on a vessel for possibly only a six-month bareboat charter. On the other hand, it is not for us to speculate as to the reason or take into account this unusually short period. Under the terms of the bareboat charter, the parties agreed to certain specific terms, and it is those conditions under which the panel reaches its decision.

At the outset, it would also be appropriate to comment briefly on Charterers' relationship with their managers, Wallem. Based upon the evidence and testimony, it appears that:

- Wallem did not approve the vessel for oil trading, as it had many technical deficiencies;
- Wallem threatened to remove the crew if BBC would consider oil trading;
- disagreement arose between Wallem and Falcon at the time of the initial inspection at Singapore;
- upon return of the vessel to Singapore in December 1998, Wallem cancelled the management contract with BBC on January 18, 1999;
- the Master (supplied by Wallem) took the vessel into Singapore to have the vessel arrested because of back wages;
- BBC have contended that they advanced to Wallem sufficient funds to cover all crew wages.

It would appear that because of the crew/management disagreements between BBC and Wallem, certain actions were taken and others were ignored. Although BBC claims to be the innocent party in the middle, the fact remains that Falcon does not have any involvement with crew activities. Pursuant to Clause 5 of the charter, BBC was to supply the crew. To this extent, BBC is responsible for the actions of the crew as well as being liable for all crew expenses in the first instance. Any disagreements involving the actions or wages of the crew would, in our opinion, be subject to the terms of the management agreement with Wallem.

From the evidence submitted, it is apparent that this is not an "either or" case. In other words, the conduct of both parties either contributed to or caused the positions in which the parties found themselves.

The vessel was described as an OBO and, as such, BBC was entitled to expect performance

of a vessel for dry and wet cargoes. We do not accept Owners' argument that operating the vessel as a dry bulker was not commercially impracticable. Also, the contention is not persuasive that "at worst it may have been less profitable [as a dry bulker] than operating the vessel as a tanker, but the chance of suffering from lowered profits or even a loss due depressed dry cargo markets was a market risk Charterers assumed." The vessel's failure to be able to trade both in dry and wet cargoes was a fundamental breach of the warranties, enabling Charterers to redeliver the vessel.

In view of this finding, BBC was entitled to redeliver the vessel upon completion of discharge at Qingdao. BBC is also entitled to the expenses incurred to bring the vessel to Singapore. The panel calculates that the vessel was on hire from November 7, 1998, 15.40 hours until December 20, 1998, 21.30 hours, or 43.243055 days. At the daily rate of $4,000, Owners are entitled to receive $172,972.22. Charterers have stated that they paid a total of $217,388.89 in hire, which has not been contested by Owners. Therefore, BBC are entitled to a refund of $44,416.67.

BBC have calculated that Falcon are due $10,493.83, as bunkers remaining on board at Qingdao, which we award to Owners.

With respect to the cost of bringing the vessel from Qingdao to Singapore, the panel has calculated same to be $60,219.50, for which BBC will be reimbursed[1].

The panel denies BBC's general claim for stores, spares and lubes placed on board the *PEREGRINE X*. For reasons of their own, BBC took no affirmative action when requested to remove the items from the vessel. Their lack of action is akin to the abandonment of those supplies. Having failed to do so, BBC cannot now claim that Owners should be responsible for the value of those stores/spares, although they are the ultimate beneficiaries. On the other hand, the record shows that BBC was required to incur certain expenses for repairs and stores, which, under a bareboat charter, should have been arranged for by the Owners. The panel has reviewed BBC's submission, and concludes that they are entitled to $113,053.38 together with interest.

After careful review, the panel denies BBC's claims for excess diesel consumption ($22,766.75)[2] and speed deficiency ($16,527.92)[3].

Whereas these claims may have warranted consideration and an award under a time charter dispute, the terms of the bareboat charter place this risk with BBC. The bareboat charter does not provide for any performance representations that would permit us to make an award on these issues. The underlying document used by BBC is a message from the master to Owners on June 13, 1997 setting forth the vessel's performance criteria. Whereas these data may be reflective of the vessel's performance capabilities, they nevertheless were not part of the bareboat charter and as such should not now be used to judge the vessel's performance.

BBC concede that H&M insurance of $2,402.58 is due Owners, and we include this amount in our award.

The panel denies in full BBC's claim for loss of profits. Although BBC may have had reasonable expectations regarding the earning potential of the vessel under the bareboat charter, the facts of this case do not bear it out. As stated before, this is not an "either or" case. The record demonstrates that the surveys upon delivery were not reflective of the vessel's actual conditions. Charterers wanted the vessel and Owners certainly were interested in chartering her out, however, in the attempts to conclude this fixture, neither party apparently paid much attention to their respective rights and obligations. BBC accepted a vessel which was not suitable for the intended trade. Therefore, the fact that the PEREGRINE X was not able to perform all functions of an OBO is as much BBC's problem as it is for Falcon.

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[1] The award is based upon the Qingdao prices of $107.75 per M/T for FO and $172.50 per M/T for DO

[2] BBC's statement 82.

[3] BBC's statement 84.

[4] Falcon Exhibit 32.

The vessel was brought into Singapore and arrested on January 7, 1999. From the record, it appears that the *PEREGRINE X* was released from arrest on January 21, 1999[4]. Because we have determined that BBC are liable in the first instance for the crew-related matters, we award to Owners the sum of $52,000 for the arrest period[5] at Singapore.

Owners have stated their claim to be for $938,178.12 for unpaid hire, crew wages and repair expenses, and the costs incurred to release the vessel from the Singapore arrest[6]. In the conclusion to their memo, Owners ask for an interim award, denying all of Charterers' claims and awarding to Falcon an allowance towards Owners' attorneys' fees and the costs of this arbitration.

Owners have stated that once BBC's claims have been addressed and decided, they would pursue their counterclaims for $938,178.12 consisting of unpaid hire, crew wages paid by Owners, expenses related to the release of the vessel from arrest and repairs.

It would be appropriate at this time to express the panel's views on the permissible extent of Owners' claims. We will consider crew wages paid by Owners, expenses related to the release of the vessel from arrest as well as the expenses incurred while the vessel was under arrest (such as bunkers, port charges, etc.). In our partial final award, we have already addressed the hire issue and we do not consider repairs as an appropriate claim against BBC.

After applying the amounts due against the receivables, we find that BBC is entitled to an award of $152,793.14 together with interest.

INTEREST

Interest is compensatory in nature, and is intended to make a party whole for the loss of use of funds. The panel finds that the proper level of interest is 8.57% p.a., representing the weighted average prime rate as offered by Chase Manhattan Bank NA., which we apply to the balances due and for the respective periods. The panel calculates the interest at $23,641.62.

COSTS AND EXPENSES

The panel does not make an allowance for attorneys' fees and costs at this time and reserves same for the final award.

Arbitrators' fees to date total $16,400, and are assessed equally against the parties. Owners and Charterers are to remit to each arbitrator the following sums:

AWARD

BBC is entitled to any award of $176,434.76[7]. Payment of this amount is to be made by Owners into an interest-bearing Carter Ledyard & Milburn trust account no later than November 6, 2000.

The panel stands ready to receive Owners' submission with respect to their claim.

Signed:

_____

_____

_____

New York, New York October 20, 2000

[5] The release documentation is dated January 21, 1999.

[6] P. 2 of Owners' memorandum.

[7] Principal of $152,793.14 together with interest of $23,641.62.

Appendix 12.2

SMA FINAL AWARD

In the Matter of the Arbitration between

BACK-HAUL BULK CARRIERS, INC.,
as Charterers

Final Award

and

FALCON OFFSHORE INC.,
as Owners of the *PEREGRINE X*

INTRODUCTION

On October 20, 2000, the panel issued a partial final award, awarding $176,434.76 to Charterers. The funds were to be placed into an interest-bearing trust account; a copy of the award (SMA 3654) is attached as Appendix A.

The award also provided for Owners to submit their respective claims; this final award will, therefore, address Owners' claims within the context of the panel's prior ruling.

It would be appropriate at this time to express the panel's views on the permissible extent of Owners' claims. We will consider crew wages paid by Owners, expenses related to the release of the vessel from arrest, as well as the expenses incurred while the vessel was under arrest (such as bunkers, port charges, etc.). In our partial final award, we have already addressed the hire issue, and we do not consider repairs as an appropriate claim against BBC[1].

In response to the panel's partial final award, Mr. Dykstra retained the law firm of Verner Lippert Bernhard McPherson and Hand, which advised that they were preparing "to file a full and complete response." Their efforts were directed towards a review of the panel's partial final award and a possible modification.

On March 18, 2001, the arbitrators advised counsel as follows:

> *The panel rendered its decision based upon the presentation made, its understanding of the facts and the underlying contract terms. We are not persuaded by the arguments that the panel has the power to revisit its Partial Final Award for corrections and/or amendments. The panel considers itself functus officio with respect to the rulings made in the October 20, 2000 award which were final and dispositive of the issues.*

The panel was advised by Mr. Dykstra that the lawyer who had assisted him in this matter had left his firm and would no longer participate in this arbitration.

CLAIMS

At the commencement of the arbitration, Falcon had stated counterclaims of $938,178.12 together with interest, an allowance towards attorneys' fees and the cost of the arbitration[2].

Owners subsequently amended the quantum of their claim to $339,346.25 in conformity with the panel's ruling covering the following items:

[1] SMA Award 3654 at p. 7.

[2] See p. 2 of the partial final award.

a. Crew wages	$ 190,399.43
b. Expenses related to release from arrest	$ 72,109.32
c. Expenses incurred while the vessel was under arrest	$ 11,212.50
d. Hull cleaning	$ 5,625.00
e. Attorneys' fees	$ 60,000.00

DISCUSSION AND DECISION

Unorthodox as was the transaction itself, the same can be said for the conduct of this arbitration leading to the initial partial final award and now this final award.

The burden to present a case rests with the disputants. It does not, as suggested or implied by Charterers' counsel, rest with the panel. Whereas arbitrators may ask questions or request clarification on the furtherance of the proceedings, it is not the duty of the arbitrators to lead the parties and direct them how they should present or prove their respective cases. Therefore, the panel will address and decide the issues solely on the basis of the evidence and arguments submitted and not on what could have been done or should have been considered.

a. Crew wages — Charterers admit that they owe for certain expenses related to the repatriation of the Wallem 's crew in the amount of $14,378[3], however, they reject the balance of Owners' claims.

Owners have established that they paid $190,399.43 in crew wages, which is not disputed by Charterers. It is, however, Charterers' position that they had fully paid the crew up to the point of the intended handover (December 31, 1999), and the reason that these expenses were incurred was a direct result of Owners' failure to provide a fully certified crew for the takeover of the vessel. Charterers further claim that in the partial final award, Owners were awarded $52,000 toward crew wages, and this amount should be deducted from the total Owners claim. In their reply memorandum of February 8, 2001, Owners agreed with Charterers on this point and have, therefore, reduced this aspect of their claim to $138,399.43.

We have carefully considered Mr. Dykstra's arguments and statements, however, do not find that they are supported by the documentary evidence. We, therefore, award to Owners the amount of $138,399.43 together with interest.

b. Arrest release expenses — Owners have presented a claim for $72,109.32 with the appropriate documentation supporting expenses they paid to have the vessel released from arrest.

Charterers' position in response is twofold. They believe that the legal bills incurred were overstated. Secondly, Charterers argue that they had an agreed maximum of $14,378 in severance costs in their contract with Wallem.

Owners do not refute the second position, but point out that Charterers are overlooking the fact that, in addition to any severance payment to the crew, there is the actual cost of repatriation (in-transit hotel and plane fares, etc.). As to the increased legal expenses incurred, Owners counter that the total lack of cooperation by Charterers is why their legal expenses are substantially higher than Wallem's cost of arresting the vessel. Owners submitted numerous documents demonstrating Charterers' continual delay in providing funds to settle this matter.

The panel agrees with Owners' position, however, adjusts the award to reflect an overstatement in the Wallem Agency account. We find that Owners are entitled to an award of $68,986.15 plus interest.

c. Expenses incurred while the vessel was under arrest — Owners' claim is for $11,212.50 for in-port diesel oil consumption while the vessel was under arrest. Charterers, in their response, do not address this expense. Given that the vessel was under arrest due to Charterers' failure to pay the crew wages, this, in the normal course, would be an expense chargeable to Charterers. The amount claimed is an estimate by Owners, as the logbooks were removed by Wallem. Considering the substantial amounts paid by Owners to Wallem in settlement, Owners certainly had the leverage to demand the documentation to effectively support

[3] P. 4 of Charterers' memorandum.

their in-port diesel consumption.

Owners have failed to provide evidence in support of this claim and, therefore, the in-port diesel claim is denied.

d. Hull cleaning/ October 1998 — Owners claim $5,625 as Charterers' share of the hull cleaning expenses, which was arranged at Singapore. Charterers argue that as a result of a collision prior to their taking delivery of the vessel, an underwater survey of the hull, propeller and rudder was required, including the hull cleaning and propeller polishing. Owners acknowledge that the *PEREGRINE X* was struck by another vessel before delivery to Charterers, and that the vessel needed to be surveyed. The exhibit provided by Owners does not support that there was indeed an agreement to share the expenses, and we, therefore, reject Owners' claim.

INTEREST

As stated before, interest is compensatory in nature and is intended to make a party whole for the loss of use of funds. Owners are entitled to interest at the rate of 8.57% p.a., which is based on the weighted, averaged prime rate as offered by Chase Manhattan Bank N.A., for the period from January 1, 1999 to the date of the partial final award; i.e., October 20, 2000. These are the same terms as applied to BBC's pre-award interest.

With respect to the post-award interest due BBC, the panel had directed Owners' counsel to deposit the amount due BBC in an interest-bearing account[4]. By letter of October 30, 2001, Owners' counsel advised that the interest income up to October 29, 2001 was $3,524.65. This equates to an weighted averaged interest rate of approximately 2.04% p.a., which we will apply towards the amounts due Owners.

COSTS AND EXPENSES

As was clearly stated in the partial final award of October 20, 2000, this was a flawed contract from the beginning. With both parties bearing responsibility for the many issues raised in this arbitration, the panel denies Owners' claim for attorney fees. Each party bears its own legal fees and costs as well as the expenses of this proceeding.

The arbitrators' fees total $10,300 and are assessed equally against the parties, however, payable in the first instance by Owners. Owners are to remit the following sums to each arbitrator: After having made such payments, Owners are entitled to recover 50% from Charterers. The panel's fees are a joint and several obligation of both parties.

As soon as the arbitrators' fees have been paid in full, the funds in the SMA escrow account (including accrued interest) will be released to the appropriate parties.

AWARD

Charterers are directed to pay Owners the sum of $63,680.46, which we arrived at as follows:

a. Crew wages	$ 138,399.43
b. Expenses related to release from arrest	$ 68,986.15
c. Interest thereon	$ 36,412.76
d. Award due Charterers	($ 176,434.76)
e. Post award interest due Charterers up to the date of this award	($ 3,682.43)[5]
DUE OWNERS	$ 63,680.46

If payment of the above amount has not been made within 30 days from the date of this award, interest at the rate of 5% p.a. will resume and continue to accrue on the principal amount until the award is paid in full or has been reduced to judgment, whichever first occurs.

[4] See p. 8 of the partial final award.

[5] Total of $3,524.65 and interest from October 29, 2001 to the date of this award.

325 Clause 37 (Law and Litigation) provides that the award may be made a rule of the court.

326 Signed:

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331 New York, New York November 14, 2001

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Appendix 12.3

ASSESSMENT OF THE ARBITRATION

The case used to illustrate the complexities which can arise when defending a claim through arbitration involved the author's company. It is therefore based upon first hand experience which adds to the intensity of the unfolding sequences. To provide an independent assessment, The Nautical Institute asked Captain E. H. Beetham FRSA FNI, independent marine consultant and expert witness, to examine the facts and give his expert opinion. Below are his summary and conclusions.

Assessment by Captain E. H. Beetham FRSA FNI

1. The Charterers claims for $ 2,133,000 loss of earnings and punitive damages failed.

   This is not really surprising in view of the vessel being accepted for oil or dry trading when she was clearly not in compliance with the charter party requirements. Charterers should not have accepted the vessel in that state.

2. The Charterers claim for some $ 220,000 for spare parts, repairs, labour, newly bought stores, equipment, lubes and greases succeeded in part with $ 113,000 being awarded.

   This amount was probably less than claimed due, in part, to a lack of clear and complete documentation. Inadequate detail provided for more comment.

3. The minor and sundry claims by Charterers and Owners were awarded in what appears to have been a considered manner on each item.

   These include hire, return passage, diesel consumption and speed, bunkers remaining, arrest release, crew repatriation, expenses under arrest, hull cleaning, insurance. There is insufficient detail to comment further on the fairness of the decisions but they were broadly within the charter party terms.

4. The Owners claim for $ 190,000 (being awarded as $ 52,000 in the first and $ 138,000 in the second) being successful can only be described as bizarre on the information provided. Arbitrators said, in the partial final award:

   "... the fact remains that Falcon does not have any involvement with crew activities. Pursuant to the charter, BBC was to supply the crew..... Any disagreements involving the actions or wages of the crew would, in our opinion, be subject to the terms of the management agreement with Wallem."

5. In considering and arriving at the final award, arbitrators said they will consider crew wages paid by Owners. They said (astonishingly):

   "Owners have established that they paid $ 190,000 in crew wages, which is not disputed by Charterers. It is, however, Charterers position that they had fully paid the crew up to the point of the intended handover (31 December)."

6. As the arbitrators acknowledged, Owners (Falcon) did not have any involvement with crew activities. There was a charter party between Falcon and BBC under the terms of which this hearing took place.

   There was no contract between Falcon and Wallem and there is no mention of any disputes between BBC (as Charterers or Disponent Owners) and Wallem (as Managers).

   There is no valid reason for Falcon, as Owners, to have made any claim for crew wages.

   If, as is stated, BBC had paid Wallem for crew wages until 31 December 1998, there is no valid reason why they should have been required to pay a second time for crew wages.

In conclusion, BBC (as Charterers and claimants) have every reason to be dissatisfied with the Arbitrators awards on crew wages in this matter. There would appear to have been gross misinterpretation if not misrepresentation.

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THE AUTHOR

During high school summer vacations, Don Dykstra sailed as a deckhand on small coasters; calling on ports in N.W. Europe. In the winter of 1961 he signed on as a bosun's mate/dishwasher on a passenger liner from Rotterdam to New York and back. In 1964 he graduated from Nautical College in Amsterdam with a BSc in Marine Transportation and sailed mainly on bulk carriers for Nedlloyd; from cadet to chief officer. He holds a Dutch Master's license.

In 1971 he emigrated to the USA to further his education at the University of California. In 1974 he graduated magna cum laude with a degree in Financial Management, and in 1976 obtained a Masters degree in International Economics. He also earned a California Real Estate Broker's license. From 1974 to 1980 Mr. Dykstra was employed by Shell Oil Co. in their Marine Operations and Chartering departments; first in Los Angeles and since 1976 in Houston. One of his assignments was to calculate voyage costs and to direct a 60,000 dwt US tanker to load grain from the US West Coast for India and return with crude oil from the Arabian Gulf area. He also handled marine claims stemming from damage to Shell's dock facilities, from oil spills and from cargo contamination and/or losses.

In 1980 Mr. Dykstra left Shell and started an export trading company; selling US made products all over the world. Most shipments were made under Letter of Credit, or alternative bank guarantee basis. In 1992 he founded Back-Haul Bulk Carriers, Inc. to offer brokering and lightering consulting services to Houston oil companies. Mr. Dykstra also offered his services to Exxon/Mobil as a Safety, Lightering and Pollution Advisor and had the privilege of boarding hundreds of tankers, which gave him very valuable insight into modern shipping technology and practices. Since 1998 BBC Inc. has been a member in good standing of BIMCO.

Mr. Dykstra has published several articles in 'Trade Winds', 'Bimco Weekly News', 'Ocean Navigator' and in the Nautical Institute publication 'Seaways'. He served as Hon. Secretary and as Hon. Treasurer of the NI US Gulf branch.

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