

Newbuilding contract "diana II"

Enclosure 2.3.1.5

ORIGINAL

CONTRACT

*Pursuant to form adopted by the Swedish Shipbuilders' Association on the 30th January 1947
with amendments adopted on the 28th January 1964*

This Contract is made between Partredexeriet S. 592, Stockholm, Managing Owner
Rederiaktiebolaget SLITE, Stockholm/ Schweden, Sturegatan 6

as Purchaser, on the one part and Shipyard Jos. L. Meyer, 2990 Papenburg-(Ems)/
Germany, Hauptkanal rechts 2

as Builders, on the other part.
Whereby it is agreed as follows:

§ 1.

Subject to the conditions set out below the Builders will build for the Purchaser and will *The vessel*
deliver at the Builders' yard at Papenburg-(Ems)-Germany and will deliver *ordered*

a two compartment car- and passenger ferry at Emden/ Germany

(hereinafter called "the Vessel") having the Yard No. S. 592, substantially in accordance with the specifications and drawings numbered

5686/78 dated 1st June, 1978

relating to this Contract, and intended to be taken as part hereof.

The Yard number shall be considered solely as the means of identifying the Vessel and the parts intended for her and does not imply any priority in regard to other vessels accepted for earlier delivery by the Builders.

In the event of any discrepancy between this Agreement and the said specifications of drawings the provisions of this Agreement shall prevail and be adopted. In the event of any discrepancy between the specifications and the drawings the specifications shall prevail.

§ 2.

The dimensions of the Vessel shall be the following:

	<i>Length dimensions and particulars</i>
Length overall:	approx. 137,00 m
Length between perpendiculars	119,00
Breadth, moulded	in A-Deck (car deck) 24,20. at 'waterline' 23,60
Depth, moulded, to upper deck	13,00
Depth, moulded, to second deck	7,65
Number of passengers	1700
Number of crew	150
The deadweight capacity of the Vessel including fuel, stores, provisions, fresh water, passengers (if any), crew and spare parts beyond the requirements of the Classification Society, etc.,	10000 whereof min. 1600t for cargo (lorries on car deck)
shall be about2400.... tons (of 1000 kilos) on the international summer freeboard, ↵	corresponding to a mean draft in salt water (specific gravity 1.025) of about 5,45 m

The propelling machinery of the Vessel shall consist of four main engines MAN,
type 8 L 40/45, each 4400 KW (6000 HP) at 600 rpm.

developing approx. I.H.P./B.H.P. (metric) at approx. rpm.

The mean speed of the Vessel on trials with clean bottom, when loaded to the said mean draft [with a draft corresponding to 1500 tons deadweight] and with her propelling machinery developing the said power is estimated to be 21

knots in calm weather and smooth sea on opposite runs over a measured mile.
The warranties of deadweight and speed shall be deemed to have been complied with if the Purchaser shall dispense with the trials or shall not for the purpose of the trials provide and ship on board the deadweight required to submerge the Vessel down to the said mean draft.

The fuel consumption of the propelling machinery, including all auxiliaries required for the propulsion of the Vessel, when developing approx. 24,000 HP I.H.P./B.H.P.

(metric) and when running on 1800 sec. Redw.I, 100° F

with an effective thermal value of at least 10,000 kcal per kilo, is estimated not to exceed 154 + 3% grams per I.H.P./B.H.P.(metric) per hour.

The Vessel with her accomodation, equipment and machinery shall be built in accordance with the rules and requirements for class

BUREAU VERITAS

I 3/3 + Deep Sea Finnish Ice Class 1 A

and rules/regulation corresponding to specification

The Builders shall supply at their cost Builders' certificate, certificate of the Classification society, and certificates of tonnage for international measurement and for

Unless otherwise agreed between the parties Svensk Varvstandard (Swedish Shipbuilding Standard) shall apply to all equipment, materials etc., for which such standard is published.

If, during the period of building, alterations or additions are made to any rules, regulations or

enactments in force before 15th of May, 1978
and applicable to the Vessel the Builders shall inform the Purchaser thereof as soon as possible.
The Purchaser must then decide whether and to what extent the alterations or additions which are not mandatory shall be incorporated in the Vessel. The amount of the additional expense or saving in cost arising from any alterations or additions shall be borne by or credited to the Purchaser, as the case may be.

§ 3.

If the estimated deadweight capacity mentioned in Clause 2 be not attained and if the deficiency exceeds $\frac{1}{3}$ % of the said deadweight capacity, the liability of the Builders shall be limited to the payment to the Purchaser, as liquidated damages, of 20.000 Skr

for every 1 tons of deficiency beyond the said margin of $\frac{1}{3}$ %.

On the other hand, the Purchaser shall pay the same amount to the Builders for every

1 tons, by which the actual deadweight exceeds the said estimated deadweight increased by 2 %.

Should the speed estimated in Clause 2 not be attained, the liability of the Builders shall be limited to the payment to the Purchaser, as liquidated damages, of the following percentages of the contract price stated in Clause 10:

For the first two tenth ($\frac{2}{10}$) of a knot deficiency Nil.

For each successive complete tenth ($\frac{1}{10}$) of a knot deficiency up to one half ($\frac{1}{2}$) of a knot 0,2 %

For each complete tenth ($\frac{1}{10}$) of a knot deficiency exceeding one half ($\frac{1}{2}$) of a knot 0,4 %

Should the fuel consumption exceed the consumption estimated in Clause 2 by more than 5%, the liability of the Builders shall be limited to the payment to the Purchaser, as liquidated damages, for each full five (5) grams per I.H.P./B.H.P. (metric) per hour by which the fuel consumption is increased beyond the said margin of 5 %.
The Builders guarantee the speed of the Vessel to be not less than 20 knots as determined under Clause 2. If the deadweight capacity of the Vessel determined in Clause 2 will be less than 2200 tons or the cargo capacity

*Deficiency
in dead-
weight and
speed,
exclusive
fuel
consumption*

§ 13.

including war risk and sabotage as from launching until delivery of the Vessel	8
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Until delivery has been effected, the Builders shall keep the Vessel and all parts intended for *Insurance* use in her construction insured against the usual builder's risks, for an amount not less than the instalments paid on account by the Purchaser. If considered necessary by the Builders or purchaser the Vessel shall also be insured against war risks, and the cost of such insurance shall be borne by the Purchaser.

Should the Vessel in the opinion of the Builders be damaged by fire or other accident, to a considerable extent, the Builders shall be entitled to cancel this Contract and shall thereupon refund to the Purchaser the instalments paid on account of the contract price,
plus interest.

§ 14.

This Contract shall be construed and the relations between the parties determined in accordance with Swedish law. Disputes shall be settled by arbitration at the venue of the place of building according to the Swedish law relating to arbitrations.

If the Builders so require the Purchaser shall lodge such security as is approved by the arbitrator(s) for costs and damages likely to arise from the arbitration proceedings. If the Purchaser does not meet this requirement, he shall be debarred from any further step in the proceeding.

§ 15.

This Contract cannot be assigned without the written consent of the Builders.

*Assignment
of
Contract*

This Contract with attached specifications, drawing and appendices has been drawn up and signed by or on behalf of the parties hereto in duplicate, one copy being retained by each party.

This contract is valid subject the approval of Sveriges Riksbank and subject Purchaser finalizing the negotiations with Bank regarding the financing of the Vessel on terms acceptable to Owner.

Stockholm, June 24, 1978
 Signed in duplicate:

1 PURCHASER:

*Particulär för S. 592
Polar, 17/13 SLITE
M/S Elgyd*

BUILDERS: *1*

Jos. L. Meyer
J. L. M.

Memo concerning discussion at BV hamburg

Jos. L. Meyer, Papenburg-Ems
Schiffswerft, Maschinenfabrik, Dockbetrieb

S. 592

Besprechung Bureau Veritas Hamburg am 23. Juni 1978

Herr Schwenker Bureau Veritas
 Herr Dr.-Ing. D'Jurasz Bureau Veritas
 Herr Forman Bureau Veritas

Herr Wahnes Jos. L. Meyer
 Herr Köhnenkamp Jos. L. Meyer

upto C-jebo n/a

1. Das Kollisionsbrett muß durch eine wasserdichte Rampe bis zum A-Deck weitergeführt werden. Die Lage der Rampe zum VL kann in der Schrägen gemittelt werden, Absprache mit BV und der schwedischen Sicherheitsbehörde.
2. Die Schmierölumlaufanks können ohne Motorradämme zum Boden gebaut werden, wenn die Tanks durch Atspannorgane voneinander getrennt werden können.
3. Der Eisgürtel in der Außenhaut muß geändert werden von C,3 auf 0,6 m über LWL.
4. Bei Abnahme und Prüfung der Hängedecke durch die Klasse kann das Klassenzichen den Zusatz PFA erhalten.
BV 1--43.5 C. J30.
5. Der Winkel von 73° zwischen den Wellerbockarmen ist i. C., die Klasse hat hier keine speziellen Vorschriften.
6. Die PKW-Rampe muß nur für die Wagenbelastung ausgelegt werden, Gurtungdeck-Zuschläge sind nicht erforderlich.
7. Nach Aufgabe den Hubschraubergräben kann die Belastung des Decks nach 6 - 24 h festgelegt werden.
8. Das dickwandige Kabelrohr zum Bugstrahlruderraum kann bis zu 40 % des Querschnittes mit Kabeln beladen werden. Wegen der Leckstabilität muß auf den 1/5-Bereich der Abgeschottung geachtet werden.
9. Gegen eine Überlappte Verbindung der Längsdeckbalken nach vorgelegter Skizze bestehen keine Bedenken.
10. Nach SOLAS Regel 26 II müssen die Fenster im Bereich der Back in B 15 - Ausführung sein.
(Pieternama Hardgiles BV, Postbus 30, Zoetermeer, Holland)
11. Durchführung von Kunststoffrohren durch horizontale Schotte:
Nach Rapport från Byggforskeningen, Stockholm, bis zu einem gewissen Durchmesser keine Stahlmanschetten erforderlich (Kopie des Berichtes liegt im TBS vor.).
12. BV übergab der Werft die Vorschriften für den Einbau von Liftanlagen.

TBS-MÖ-ZW

23. Juni 1978

Note by H wahnes on 23.10.78

13/06 '95	16:43	FAX +49 4001 61203	MAYER WERFT TS	Enclosure 2.3.1.7
2.3.10.78	Marine Logistik Wirtschaft, Bremen, Stk			
1.1.88	Kontakt mit dem Agenten aus Japan			
	Guthausglocke			
2) K.S.S. "Kontaktbereich"				
3) Reaktionen				
	To know:			26.10.78
	Ran for scaffolding to - scaffolding etc -			
	Werkstatt Rosenthal, bspw zu d. Tischlerei, f. -			
	Deck oben, Montage am Geländer an. Tische			
	unter den, glas Flaschen und Löffel			
	Unterstiel zum Fr. und G. festzustellen.			
	D.T. 5.200,-			
	1. Satz Untergestell - Anhänger zu Transportieren und zu bewegen			
	D.T. 2.450,-			
	mit einer Brücke			
	Glocke - Fertig D.T. 5.000,-			

Memo by H wahnes dated 20.11.78

15/08 '95 16:43 FAX +49 4961 81298

b. c. b. Meyerden

Frau Meyerden

b. Kne

b. Tidberg

b. S. Strandmon.

Ug.

20.11.98

Tagebock (1)

$$\begin{array}{r}
 \text{1.) Rettungsboot: } 4 \times 85 = 340 \\
 \quad \quad \quad 1 \times 60 = 60 \\
 \quad \quad \quad 1 \times 15 = 15 \\
 \hline
 \quad \quad \quad = 415 = 30\%
 \end{array}$$

100% ~ 1400; bis auf 1400 aufzuteilen
base Rettungsbooten

= Vordelag mit Rettungsbooten:

$$\begin{array}{r}
 \quad \quad \quad 720 \text{ Falljahr} \\
 \quad \quad \quad 100 \text{ Booten} \\
 \hline
 \quad \quad \quad 820 \\
 \quad \quad \quad 410 \text{ Boot} \\
 \hline
 \quad \quad \quad 410 \quad 84 = 16/17
 \end{array}$$

Rettungsboote ~ 4 Kabinen, da 4 Modelle
pro Kabinen

2.) Bei Bestellung von Rechnungen
darauf gelten, daß a.) fallbar
b.) handschriftlich oben!

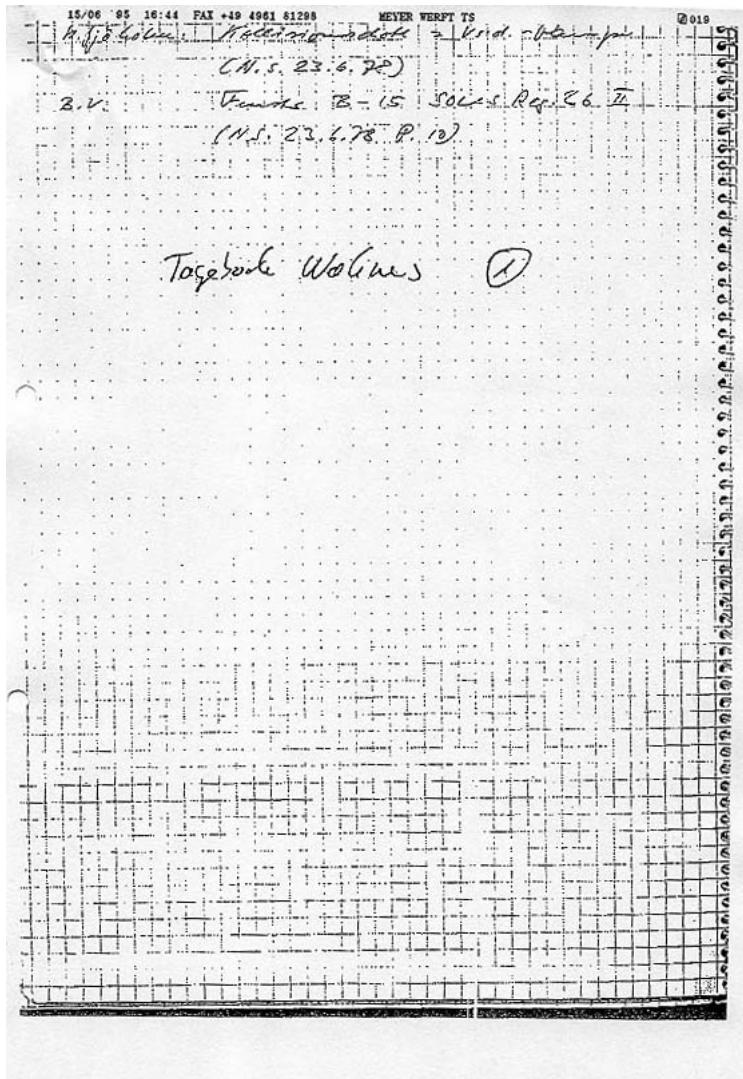
3.) Tjörnstrand/Röderham: anfragt
"alte Sachen abgerissen werden sollen."

4.) Port of v. Gjøpalsfjord bestellt am
Dinghy & f. i. Kataloge? für 16000000
Antihoren C. Hartmannsbyggfelle, dann ein
Lager (oder Nichts).

5.) Urdalbane: Deltaplano, VITTING - LONE
Ankündigung von "Deltaplano"

6.) 140 - Stück Nach Anfrage von S. Kjellgaard
nach Brandenbuch im Stockland durchsucht

4/8/2021



Pssc diana II issued 10.06.94



PASSENGER SHIP SAFETY CERTIFICATE

BILAGA 9
1(8)This certificate shall be supplemented by a Record of
Equipment (Form P).

Enclosure 2.3.1.9

For an international voyage
 a short (less as appropriate)

SWEDEN

Issued under the provisions of the INTERNATIONAL CONVENTION FOR THE
SAFETY OF LIFE AT SEA 1974, in accordance with Assembly resolution A.718(17)
relating to the early implementation of the harmonized system of survey and
certification under the authority of the Government of Sweden
by the National Maritime Administration.

Particulars of ship

Name of ship : DIANA II

Call sign : S I A J

Port of registry: Slite

IMO Number : 7816874

Gross tonnage : 11537

Sea areas in which ship
is certified to operate
(reg. IV/2) : -

Date on which keel was laid or ship was at a similar stage of
construction or, where applicable, date on which work for a
conversion or an alteration or modification of a major character
was commenced: 1978

THIS IS TO CERTIFY:

- 1 That the ship has been surveyed in accordance with the requirements of regulation 1/7 of the Convention.
- 2 That the survey showed that:
 - 2.1 the ship complied with the requirements of the Convention as regards:
 - .1 the structure, main and auxiliary machinery, boilers and other pressure vessels;
 - .2 the watertight subdivision arrangements and details;
 - .3 the following subdivision load lines:

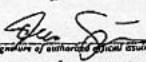
Subdivision load lines assigned and marked on the ship's side amidships (regulation II-1/13)	Freeboard	To apply when the spaces in which passengers are carried include the following alternative spaces
C.1	2012	
C.2		
C.3		

BILAGA 9
2(8)

- 2.2 the ship complied with the requirements of the Convention as regards structural fire protection, fire safety systems and appliances; and fire control plans;
 - 2.3 the life-saving appliances and the equipment of lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;
 - 2.4 the ship was provided with a line-throwing appliance and radio installations used in life-saving appliances in accordance with the requirements of the Convention;
 - 2.5 the ship complied with the requirements of the Convention as regards radio installations;
 - 2.6 the functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention;
 - 2.7 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;
 - 2.8 the ship was provided with lights, shapes, means of making sound signals and distress signals in accordance with the requirements of the Convention and the International Regulations for Preventing Collisions at Sea in force;
 - 2.9 in all other respects the ship complied with the relevant requirements of the Convention.
3. That an Exemption Certificate has been issued. (Select as appropriate.)
 has not

This certificate is valid until : 1 February 1995

Issued Malmö at 10 June 1994
(Date of issue) (Place of issue of certificate)


(Signature of authorized official issuing the certificate)
 Åke Sjöblom



Article from hansa no. 19/1980

Enclosure 2.4.10

SCHIFFBAU**SCHIFFSMASCHINENBAU
SCHIFFFAHRTSTECHNIK**

Die »Hansa« ist das Organ:
 Germanischer Lloyd
 Verband der Deutschen Schiffbauindustrie e.V.
 Normenausschuß Schiffbau (HNA) im DIN

**Auto- und Passagierfähre
„King Sally“**

Erbaut von Jos. L. Meyer,
 Papenburg, für die Reederei
 AB Sally, Mariehamn



Am 29. Juni 1980 wurde von der Schiffswerft Jos. L. Meyer in Papenburg die Auto- und Passagierfähre „Viking Sally“, Bau-Nr. 500, an die Reederei AB Sally, Mariehamn, übergeben. Die Reederei hat dieses Schiff im Rahmen der Viking-Line im Verkehr zwischen Finnland und Schweden eingesetzt, wobei auch die Åland-Inseln bedient werden. Die finnische Reederei AB Sally betreibt zusammen mit der schwedischen Reederei AB Silte und der finnischen Reederei SF-Line die Viking-Line.

Werft Jos. L. Meyer lieferte von 1970 bis 1974 bereits sechs Auto-/Passagierschiffe an die Viking-Line ab, von denen vier für die Reederei AB Sally bestimmt waren und zwei für die Reederei AB Silte. Für diese Reederei wurde im Juni 1979 auch die „Diana II“ abgeliefert.

Das durch die gute Zusammenarbeit entstandene Vertrauen war ausschlaggebend dafür, daß die Reederei am 11. September 1979 den Vertrag für das hochmoderne und technisch komplizierte Schiff unterzeichnete. Trotz scharfer und teilweise staatlich unterstützter Konkurrenz konnte die Werft wegen der kurzen Lieferzeit, wegen des von der Werft ausgearbeiteten interessanten Entwurfs und der hohen Flexibilität der Werft gegenüber den Wünschen der Reederei diesen Auftrag buchen.

Ein Dank ist auch an dieser Stelle an das Land Niedersachsen zu richten. Durch eine gewährte Landesbürgschaft konnte die Finanzierung dieses Projektes erst abgesichert werden.

Die Konstruktions- und Bauzeit von nur ca. neun Monaten war ein entscheidender Moment für die Reederei, dieses Schiff in Papenburg zu bestellen. Die Lieferfreue war durch die sieben Vorbooten bewiesen worden, die auch bei ähnlich kurzen Lieferzeiten vertragsgemäß pünktlich abgeliefert wurden.

Welcher Arbeitsaufwand in einer solchen Großfähre steckt, beweisen folgende Fakten:

- Es wurden ca. 280 km Kabel eingebaut, d. h. 1,6 km Kabel pro Meter Schiff.
- Es wurden ca. 30 000 m² Flächen isoliert, soviel wie sechs Fußballfelder oder ein kleiner Bauernhof.
- Das Schiff faßt 460 Pkw, was einer 2,1 km langen Autoschlange entspricht.
- Es wurden 1300 Bolten und über 1500 Türen eingebaut.
- Das Schiff ist 44,5 m hoch, mit seinen 11 Decks höher als manches Hochhaus oder mancher Kirchturm.
- Neben der Hauptmaschinenleistung von 17 000 kW wurden 4410 kW Generatorleistung eingebaut. Damit ist eine Stadt von rund 8000 Einwohnern leicht zu versorgen.

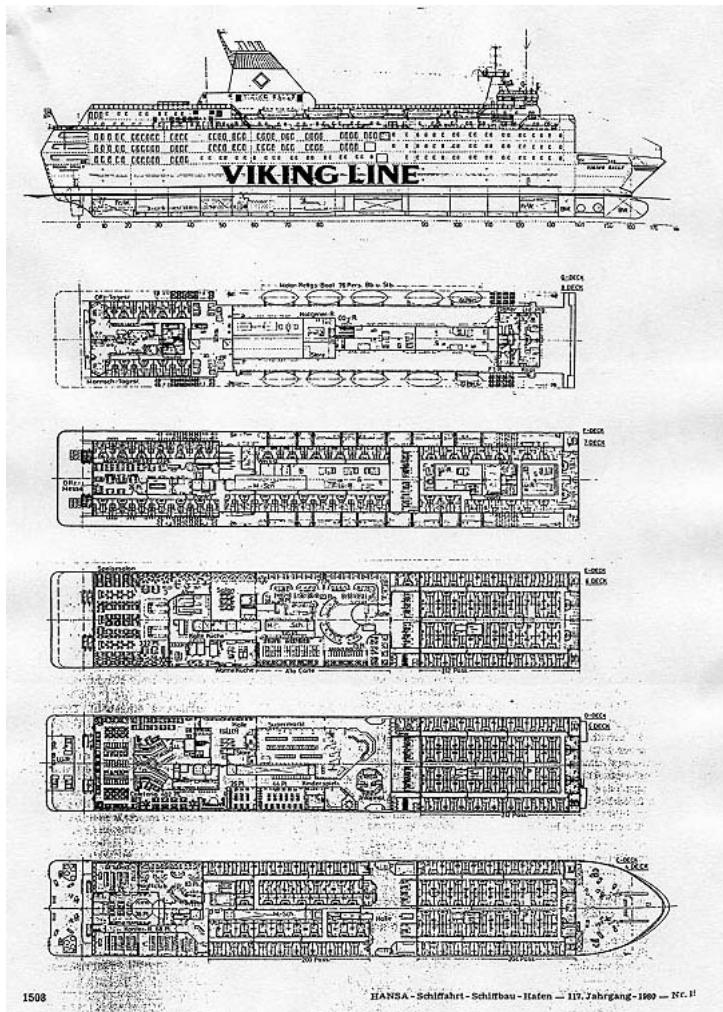
Zusammenfassend kann gesagt werden, dieses Schiff ist Hotel, Tiefgarage, Kraftwerk, Fortbewegungsmittel, Kaufladen, Kaufhaus und Vergnügungszentrum in einem.

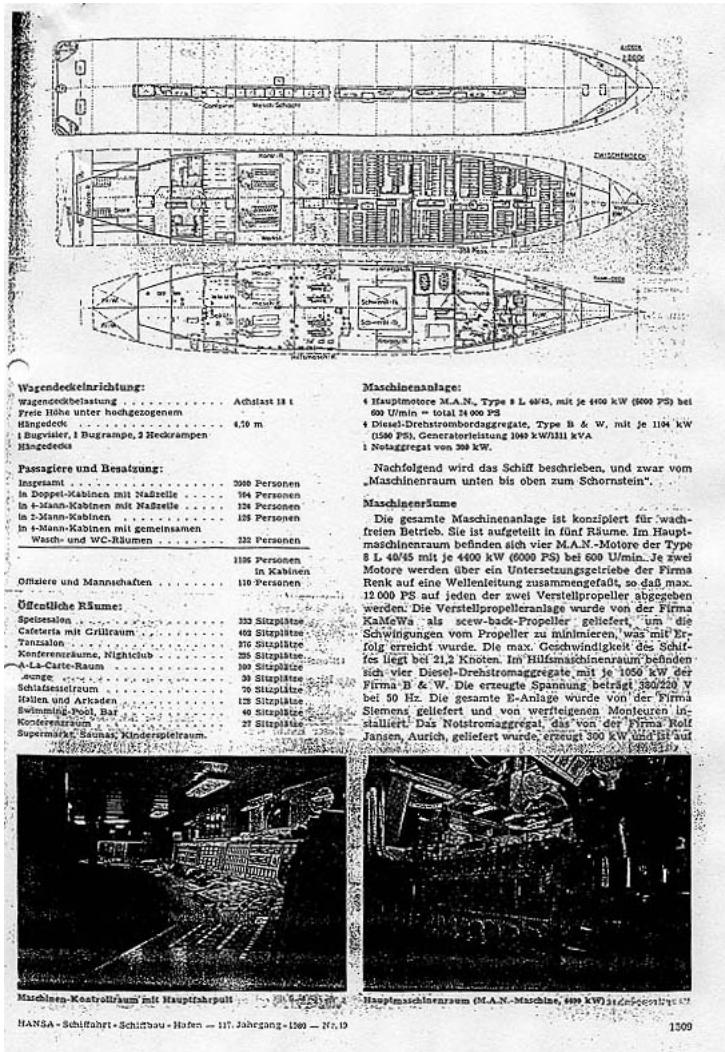
Hauptabmessungen:

Länge über alles	155,40 m
Länge zwischen den Loten	137,40 m
Heute in Wagendeck	20,10 m
Breite in der Wasserlinie	22,50 m
Höhe bis Wagendeck	7,62 m
Tiefgang	5,55 m
Tragfähigkeit	2 800 t
Vermessung	15 397 NRT 8 394 GRT
Geschwindigkeit	21,20 kn
Maschinenleistung (4x400 PS)	474 400 kW
Ladefähigkeit	52 Lkw à 18 m, oder 460 Pkw einstellt, nur Haupteckes

1507

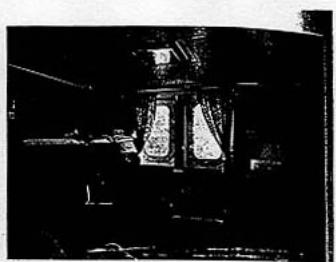
4/8/2021







Steuerbordseite Wagendeck, im Vordergrund Containerstapel zu den Storeräumen



Luxus-4-Bett-Kabine

dem G-Deck angeordnet. Im Separaterraum werden das Schweröl, Dieselöl und Schmiedööl in acht Separatoren der Firma Alfa-Laval aufbereitet. Die Hauptmotoren und die Hilfsdiesel sind für Schweröl von max. 1F 180 konzipiert. Die Wärmeversorgung des Schiffes und die Beheizung der Schweröltanks erfolgen über eine Thermalöl-anlage. Das Thermalöl wird durch die Abgase der Hauptmotoren in vier Abgaskesseln und in vier Abgaskesseln durch die Abgase der Hilfsdiesel und in zwei automatischen, olgefeuerten Kesseln der Firma Sancex erhitzt. Die drei Hochdruckkompressoren für die Sternluft wurden von der Firma Voith L. Meyers selbst hergestellt. Die gesamte Versickerung des Schiffs wird in zwei biologisch arbeitenden Abwasseranlagen der Firma Format-Chemie aufbereitet. Die Vakuumumleitungen lieferte die Firma Evak. Die hohe Manövrierefähigkeit des Schiffes wird garantiert durch die zwei Halbschweberuder achtern und zwei Bugtrahrruder der Firma KaMeWa mit 1×10 und 1×12 t Schub im Vorschiff. Die Rudermaschinen wurden von der Firma Tenfjord geliefert.

Versorgung

Zur Belieferung der Proviantsstoräume im Zwischen-deck wurde am hinteren Ende des Mittelchaches auf dem Wagendeck ein großer Lift angeordnet, um Proviantscontainer zum Zwischendeck zu befördern. Zwei Versorgungs-lifte verbinden die Storeräume auf dem Zwischendeck mit der Küche und dem E-Deck mit dem Supermarkt auf dem D-Deck. Je ein Pauschalraum befindet sich im Mittelbereich (Hallen) sowie vorne im Kabinebereich. Zu den Storeräumen auf dem Zwischendeck gehören auch große Proviantsräume, damit ausreichend Getränke und Nah-rungsmittel gelagert werden können.

Wagendeck

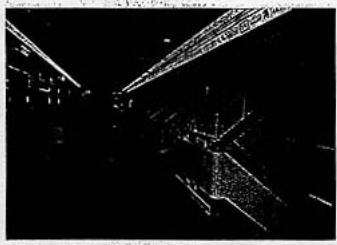
Das Hauptdeck kann 52 Lkw zu je 18 m Länge fassen. Stat. Lkw können auch in zwei Lagen Pkw auf dem Wagendeck geladen werden, so daß die Gesamt-Pkw-Kapazität bei 460 Pkw liegt. Zwei Spuren sind aber ausreichend für die Beladung von zwei LKW. Die Beladungseinrichtung besteht aus einer wasserdrückten Bugklappe, einer Bugrampe und zwei wasserdrückten Heckrampen mit hydraulischer Betätigung. Die gesamte Hydraulik der Hän-decks und der Roll-on/Roll-off-Einrichtung wurde von der Firma von Tell geliefert. Die Stahlarbeiten wurden von der Werft ausgeführt. Alle Wagendecks sind durch eine Wassersprühflutung zur Feuerbekämpfung ausgerüstet.

Kabinen

In 352 Kabinen mit Naßzelle für zwei Personen und 31 Kabinen mit Naßzelle für vier Personen sowie 63 Kabinen für zwei Personen und 58 Kabinen für vier Personen mit gemeinsamen Wasch- und WC-Räumen können insgesamt 1180 Personen untergebracht werden. Alle Kabinen ohne eigene Naßzelle befinden sich im Zwischendeck. Die Kabinen mit Naßzelle werden an den C-, D- und E-Deck verteilt. Der Bereich des Schiffes am Heck. Für die Besatzung und für das Bedienungspersonal sind Außen-kabinen, alle mit Naßzelle, für 110 Personen vorgesehen.

Öffentliche Räume

Die öffentlichen Räume wurden im hinteren Bereich des Schiffes, verteilt auf drei Decks, angeordnet. Auf dem C-Deck befindet sich ein Mehrzweckraum für insgesamt 235 Personen. Durch den Einbau von Schiebewänden wurde dieser Raum sehr variabel gestaltet und kann aufgeteilt



Haupttreppenhaus



5. Deck, Selbstbedienungsstraße der Cafeteria



A-La-Carte-Salon, E. Deck

Werden in Nightclub, Kino mit Vorführraum und mehrere Kabinen mit großer Konferenzräume. Die Cafeteria mit Selbstbedienungsanrichtung sowie Grillraum für insgesamt 402 Passagiere wurde auf dem D-Deck eingerichtet. Im Speiseraum auf dem E-Deck mit Sitzplätzen für 332 Passagiere wird ein skandinavisches Buffet serviert. Wer nach einer individuellen Speisekarte essen möchte, kann dieses in dem A-La-Carte-Restaurant tun, wo 100 Personen Platz finden. Die Küche auf dem E-Deck ist aufgeteilt in kalte und warme Küche und Spülküche. Ausreichend Provianträume befinden sich im Bereich des Kellers. Auf dem E-Deck kann der Passagier sich in den Barsalon mit Tanzfläche und 276 Sitzplätzen amüsieren. Natürlich befinden sich an Bord ein Mutter-und-Kind-Raum und ein Spielzimmer. Neben der Empfangshalle auf dem D-Deck befindet sich ein großer Supermarkt. Auf der Tankdecke wurde ein Swimming-Pool mit Bar (40 Sitzplätze), drei Saunas sowie ein Konferenzraum mit 27 Sitzplätzen vorgesehen.

Klimaanlage

Auf dem D-, F- und G-Deck befinden sich die Räume für die Klima- und Lüftungsanlage der Firma Hi-Press. Mit dieser Anlage werden alle Räume des Schiffes voll klimatisiert. In jeder Kabine kann die Anlage entsprechend den Wünschen des Passagiers individuell über einen Thermostat reguliert werden.

Brücke

Auf dem H-Deck befinden sich die sehr großzügig angelegte Brücke mit ausgebauten und überdachten Nokken. An nautischer Ausrüstung wurde vorgeschenkt:

1 Magnetkompass	1 Geschwindigkeitslog
1 Tiefgangsanlage	1 Tiefgangsanlage vorne und hinten
1 Schleusenvoranlage	Punktpeile
1 Radargeräte TM	1 PT-Anlage
1 Echool	

Vorschriften

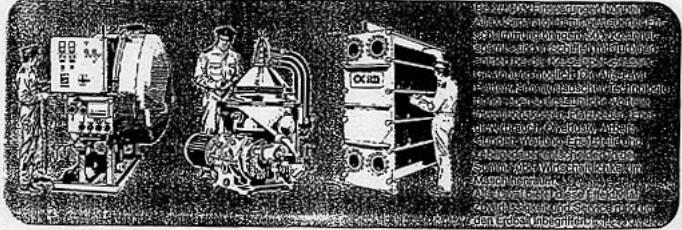
Das Schiff und die Maschinenanlage wurden gebaut nach den Vorschriften und unter Aufsicht von Bureau Veritas für das Klassenzeichen I 3/3 E + Deep Sea Ice Class IA Car/Pasenger Ferry.

Ferner wurden folgende Vorschriften erfüllt:

1. SOLAS 1974 (für kurze internationale Fahrt D-Abteilungs-Status).
2. Internationale Vorschriften zur Vermeidung von Kollisionen auf See — 1972.
3. Internationale Freibordkonvention von 1966.
4. Internationale Vermessungsvorschriften.
5. Internationale Konvention zur Vermeidung von Umweltverschmutzung durch Schiffe 1973 (Annex I, IV und VI).
6. Internationale Konvention zur Vermeidung von Umweltverschmutzung der See durch Öl 1954, einschließlich Änderungen von 1959 und 1971.

ALFA-LAVAL

Kostensenken im Maschinenraum



ALFA-LAVAL

HANSA - Schifffahrt - Schiffbau - Häfen — 115. Jahrgang - 1988 — Nr. 19

Alfa-Laval Industrietechnik GmbH

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Spec viking sally 11.09.79

13.9.79 (b)

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for a	A-8
abt. 15.000 BRT	A-12
CAR-PASSENGER FERRY	2-5
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(in connection with general arrangement plan
5675/79 dated 5.9.1979)

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Jos. L. Meyer, Papenburg-Ems Schiffswerft, Maschinenfabrik, Dockbetriebe		
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<p>1. GENERAL</p> <p>General Regulations</p> <p>The vessel shall be built in accordance with this specification and the General Arrangement drawings, equipped to comply with the specific regulations.</p> <p>Inventories shall be delivered according to the included lists. Should any object be mentioned in more than one place, however it is only to be delivered once. When two or more materials or methods of manufacture are mentioned, the Builders have the right to choose between these.</p> <p>The design of subcontractors' equipment and recommendations for installation of the same equipment refer to their standard on the date of this specification.</p> <p>If, as a result of increased experience or general technical development, other designs, materials or methods of manufacture than those stated in this specification are found equivalent but more practical, the Builders reserve the right to adopt these new designs etc. Such alterations, however, are always to be submitted to the Owners' surveyor for approval before being carried out.</p> <p>The shipyard alone is responsible for the construction and quality of work on the ship. The fact that drawings or other documents, test results etc. have been approved by the Owners or been accepted by the Owners as authority or that modifications have been carried out according to Owners' requirements does not relieve the shipyard from the above mentioned responsibility.</p> <p>If drawings are submitted and any discrepancy should exist between this specification and the drawings, the specification shall prevail.</p> <p>Details and equipment necessary for a ship of this type but not stated in this specification to be done according to yard's praxis approved by the Owners'.</p> <p>General Description</p> <p>The ship to be built in every respect as a modern car/pasenger ferry, designed for short international voyage.</p>		

23/02 '95	08:21	PAI +10 4961 61298	MAYER VERFT TS
		Jos. L. Meyer, Papenburg-Ems	
Schiffswerft, Maschinenfabrik, Dockbetrieb			
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Schiffswerft, Maschinenfabrik, Dockbetrieb

1-8

14. CLASSIFICATION, REGULATIONS, NOISE PREVENTING

The vessel with her accommodation, equipment and machinery shall be built under special survey to
Det Norske Veritas class, I 3/3 E + Car and Passenger ferry
Deep sea Finnish Ice class I A
+(AUT) = EO

The vessel with equipment shall comply with the following rules and regulations:

- The Finnish Board of Shipping,-
- International Conference on Safety of Life at Sea 1974
- International Load Line Convention 1966 and amendments 1971 + 1975
- Convention for Tonnage Measurement of Ships, Oslo 1947
- Pollution Prevention 1973
- International Regulations for Preventing Collision at Sea 1972
- Finnish Authorities' recommendations for Safety Ship Labour 77 : 33
- US Regulations regarding sanitation (fresh water tank arrangement excluded) (as reasonable applicable)
- Convention on the Protection of the Marine Environment of the Baltic Sea Area 1974/232
- IMCO resolution A 325 (IX) 1975 concerning regulations for machinery and electric installations in passenger vessel and cargo ships
- USCG requirements for passenger vessels' safety to be followed as reasonable applicable
- // - The Finnish Board of Shipping and Navigation Rules and Recommendations of Noise Level Criterium

Jos. L. Meyer, Papenburg-Ems Schiffswerft Maschinenfabrik, Dockbetrieb	
---------------------------------------------------------------------------	--

1-12

13. CERTIFICATES, DELIVERY DRAWINGS, MODELS

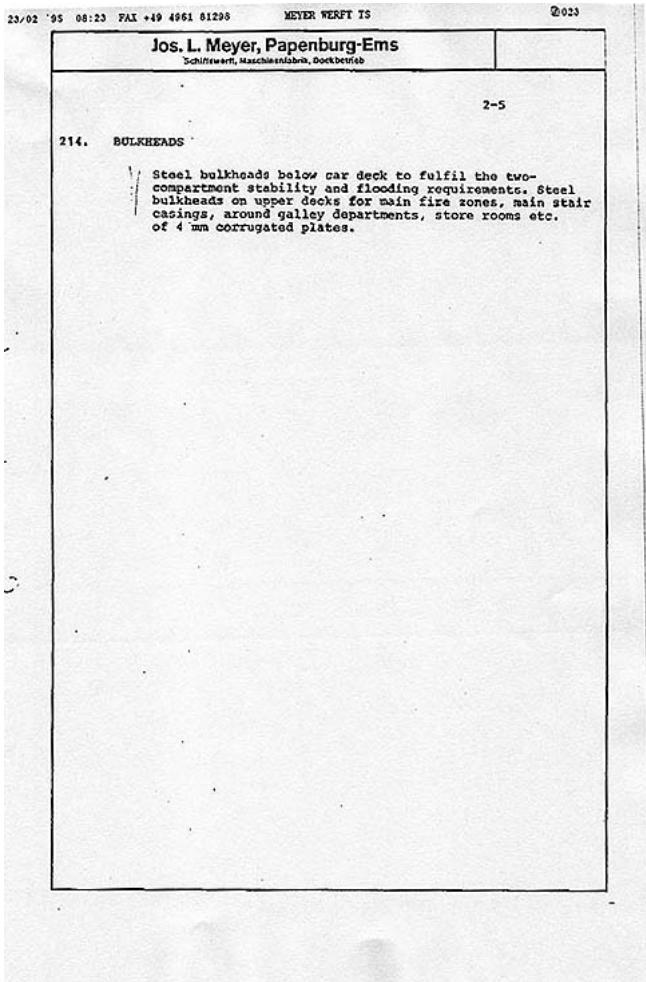
133. CERTIFICATES

All necessary certificates to be delivered with the ship including:

- Certificate from the Classification Society for Hull and Machinery
- Tonnage Certificates
- Load Line Certificate
- Safety Construction Certificate
- Safety Equipment Certificate
- Safety Radiotelegraphy Certificate
- Register of Lifting Gear (attestation by the classification society)
- Builder's Certificate
- Deratting Certificate

Certificates for anchors, chain cables, davits, navigation lights, compasses etc. will be delivered.

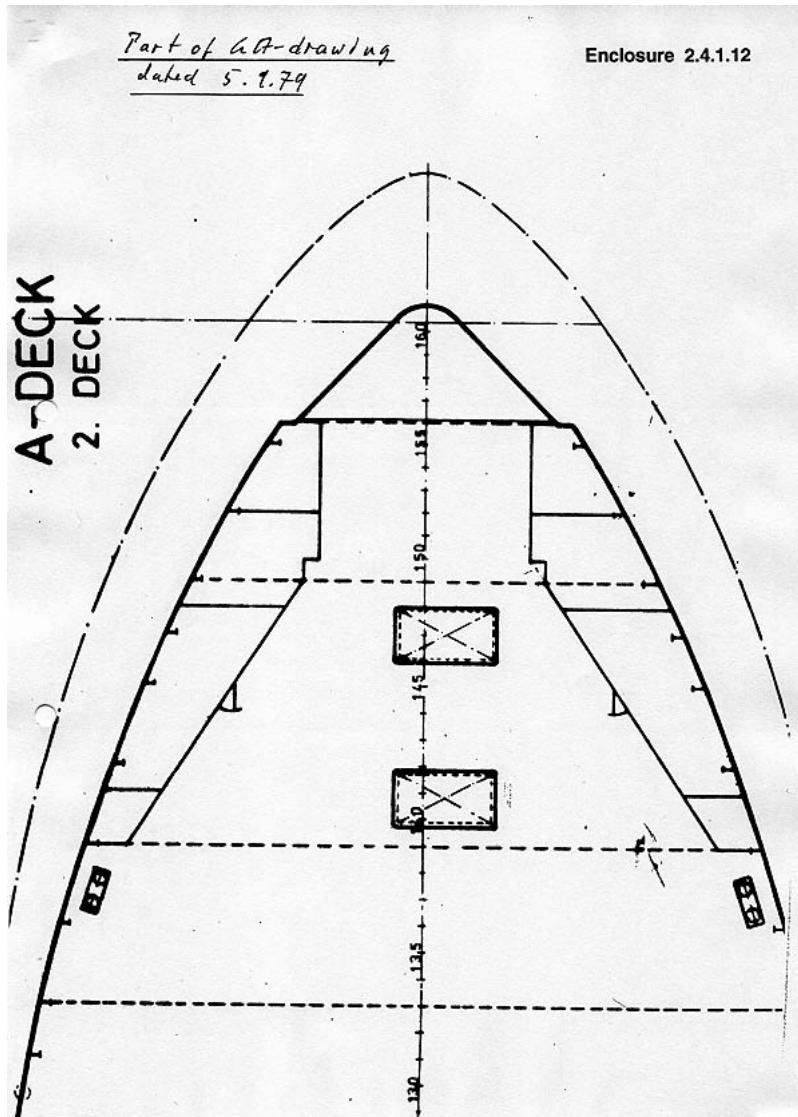
Certificates and costs for approval of plans by the Authorities concerned shall be paid for by the Builders.



Part of GA plan dated 05.09.79

Part of A/D-drawing
dated 5.1.79

Enclosure 2.4.1.12



Newbuilding contract viking sally 11.09.79

CONTRACT

*Pursuant to forms adopted by the Swedish Shipbuilders' Association on the 30th January 1947
with amendments adopted on the 28th January 1964*

This Contract is made between Rederiaktiebolaget Sally, Strandgatan 7,
22100 Mariehamn, Finland

as Purchaser, on the one part and Shipyard Jos. L. Meyer, W-Germany,
2990 Papenburg (EMS), Hauptkanal Rechts 2

as Builders, on the other part.
Whereby it is agreed as follows:

§ I.

Subject to the conditions set out below the Builders will build for the Purchaser ~~and will~~ *The vessel*
~~deliver at the Builders' yard at~~ *ordered* Papenburg (EMS)-Germany and will deliver ~~the vessel~~
a two compartment car- and passenger ferry at Emden/Germany
~~(hereinafter called "the Vessel") having the Yard No. 5 : "590,"~~ substantially in accordance
~~with the specifications and drawings numbered~~

5675/79 dated 5th September, 1979

relating to this Contract, and intended to be taken as part hereof.

The Yard number shall be considered solely as the means of identifying the Vessel and the parts intended for her and does not imply any priority in regard to other vessels accepted for earlier delivery by the Builders.

In the event of any discrepancy between this Agreement and the said specifications of drawings the provisions of this Agreement shall prevail and be adopted. In the event of any discrepancy between the specifications and the drawings the specifications shall prevail.

HJL

§ 2.

The dimensions of the Vessel shall be the following:

Length overall:	approx.	155,40 m	<i>Lading dimensions and particulars</i>
-----------------	---------	----------	------------------------------------------------------

Length between perpendiculars	137,40 m
-------------------------------------	----------

max	24,60 m
-----	---------

Breadth, moulded	23,60 m
------------------------	---------

moulded, in waterline	13,40 m
-----------------------------	---------

Depth, moulded, to upper deck	7,65 m
-------------------------------------	--------

Number of passengers	2.000
----------------------------	-------

Number of crew	188
----------------------	-----

The deadweight capacity of the Vessel including fuel, stores, provisions, fresh water, passengers (if any), crew and spare parts beyond the requirements of the Classification Society, etc.,

shall be about 2.800 tons (of 1.000 kilos) on the international summer freeboard, corresponding to a mean draft in salt water (specific gravity 1.025) of about 5.55 m

The propelling machinery of the Vessel shall consist of four main engines of

M.A.N., type 8L 40/45, each 4400 kw (5.984 HP) at 600 rpm

developing approx. 1.M.P./B.H.P. (metric) at approx.

s.p.m.

The mean speed of the Vessel on trials with clean bottom when loaded to the said mean draft with a draft corresponding to 1.460 tons deadweight and with her propelling machinery developing 1.500 B.H.P. estimated to be 21,2

/80% of the MCR at 188,5 rpm/

knows in calm weather and smooth sea on opposite runs over a measured mile.

The warranties of deadweight and speed shall be deemed to have been complied with if the Purchaser shall dispense with the trials as shall act for the purpose of the trials provide and ship on board the deadweight required to submerge the Vessel down to the said mean draft.

The fuel consumption of the propelling machinery, including all auxiliaries required for the

propulsion of the Vessel, when developing approx. 17.600 kw 1.H.P./B.H.P.

(metric) and when running on 1.500 sec redwood L, 100°F

with an effective thermal value of at least 10.000 kcal per kilo, is estimated not

to exceed 209,3 % kw grams per 1.H.P./B.H.P. (metric) per hour.

The Vessel with her accommodation, equipment and machinery shall be built in accordance with the rules and requirements for class

Bureau Veritas Finnish/

I 3/3 E + car- and passenger ferry deep sea, Ice Class iA

+ (Aut) and rules/regulations corresponding to specification

The Builders shall supply at their cost Builders' certificate, certificate of the Classification society, and certificates of tonnage for international measurement and for other certificates provided for in the specification

Scandinavian standard for car/passenger ferries

Unless otherwise agreed between the parties Svensk Varvstandard (Swedish Shipbuilding Standard) shall apply to all equipment, materials etc., for which such standard is published.

If, during the period of building, alterations or additions are made to any rules, regulations or enactments in force before 11th September 1979 as far as the classification society is concerned and after 1st April 1979 in all other respects, and applicable to the Vessel the Builders shall inform the Purchaser thereof as soon as possible. The Purchaser must then decide whether and to what extent the alterations or additions which are not mandatory shall be incorporated in the Vessel. The amount of the additional expense or saving in cost arising from any alterations or additions shall be borne by or credited to the Purchaser, as the case may be.

§ 3.

If the estimated deadweight capacity mentioned in Clause 2 be not attained and if the deficiency exceeds 2,35% of the said deadweight capacity, the liability of the Builders shall be limited to the payment to the Purchaser, as liquidated damages, of DEM 15,000,-

for every 2,35% tons of deficiency beyond the said margin of 2,35%.

Deficiency
in dead-
weight and
speeds
excessive
fuel
consumption

On the other hand, the Purchaser shall pay the same amount to the Builders for every ton, by which the actual deadweight exceeds the said estimated deadweight increased by 2,35%.

Should the speed estimated in Clause 2 not be attained, the liability of the Builders shall be limited to the payment to the Purchaser, as liquidated damages, of the following percentages of the contract price stated in Clause 10:

For the first two tenths (2/10) of a knot deficiency	Nil
For each successive complete tenth (1/10) of a knot deficiency up to one half (½) of a knot	0,2 %
For each complete tenth (1/10) of a knot deficiency exceeding one half (½) of a knot	0,4 %

Should the fuel consumption exceed the consumption estimated in Clause 3 by more than 5%, the liability of the Builders shall be limited to the payment to the Purchaser, as liquidated

damages, for each full five (5) grams per I.H.P./B.H.P. (net/hp) per hour by which the fuel consumption is increased beyond the said margin of 5%.

The Builders guarantee that the deadweight capacity of the vessel determined in Clause 2 shall not be less than 2500 tons, whereof no less than 1500 t. for cargo (lorries) on car deck and that the speed determined as stated in clause 2 shall not be less than 20,1 knots.

23/02 '95 08:14 FAI +49 4961 81298 MEYER WERFT TS 0005
Builders cannot fulfill one or both of these two guarantees the Purchaser
the right and option to refuse to take delivery of the vessel and to cancel
contract with an obligation for the Builders to refund immediately to the Purchaser 4
instalments paid on account of the contract price plus interest.

When the Builders have notified the Purchaser that the Vessel is ready for delivery, a trial *Trial trip*

trip shall take place off EMDEN, to ascertain whether the Vessel conforms with the terms of the contract. The trial trip, which shall be undertaken in the presence of representatives of the Purchaser, shall be completed within ~~the time limit of the clause~~ days and the cost of the trial trip, including wages of crew, shall be expended by the Builders, who shall receive the same at the normal working speed. The Builders at their discretion may extend the trial trip or hold further trial trips. If, during the trial trip, the Purchaser makes no substantial complaint to the effect that the Vessel does not comply with the terms of the Contract, the Vessel shall be accepted by the Purchaser, who, if so required by the Builders, shall declare such acceptance in writing.

If, however, faults or defects arise during the trial trip, the Builders shall be entitled to re-

If, in order to ascertain whether the Vessel complies with the terms of the contract, the Purchaser requires the Vessel to be loaded, the loading and discharge of the cargo shall be carried out by the Purchaser at his own risk and expense and the Builders shall not be held in any way responsible for delay or damage arising as a result of the loading and discharge.

65-

The Purchaser shall be entitled, subject to the approval of the Classification Society and to government regulation, to require alterations or additions to be made to the Vessel, provided such alterations or additions do not materially affect the general intention of the parties as embodied in the specifications and drawings relating to this Agreement and are notified in writing to the Builders at an appropriate time and a fair price adjustment shall have been agreed before the work thereon be put in hand.

If such alterations or additions cause delay, the time of delivery of the Vessel shall be extended by the period of delay.

x) and the Builders notify the Purchaser that such delay will occur

Should any alterations or additions mentioned in Clause 2 or 5 cause an increase in the weight of the Vessel ~~and~~^{and} the deadweight capacity of the Vessel mentioned in Clause 2 shall be reduced by the actual increase in the weight.

53

The Purchaser or his representatives shall be entitled to supervise the construction of the Vessel ~~and~~^{and} to inspect the same during working hours at the shipyards and works of the Builders, and to receive the results of the trials and tests of the Vessel when completed. The Purchaser or his representatives shall have the right to inspect the Vessel at any time during the period of guarantee, and the Builders shall have due regard to any proper complaint or observations made by the Purchaser or his representatives concerning materials and workmanship. If the Builders so desire, the Purchaser or his representatives shall make such complaints or observations in writing. The Builders will in reasonable time notify the Purchaser or his representatives of dock trials and other such trials and tests.

The delivery date for this Vessel shall be

Completion

30th Nov 1980

Should delivery be delayed beyond the above mentioned date, the Builders shall only be liable to pay to the Purchaser, as liquidated damages, a compensation at the rate of DEM 20,000,- per day as from 1st July 1980. On the other hand, the Purchaser shall pay the Builders a compensation of DEM 5,000,- for every day the vessel is delivered earlier than 30th June 1980.

23/02 '05 08:15 FAX +49 4061 81298

MEYER WERFT TS

Q.006

Should the Vessel not be delivered before 1st November 1980 the Purchaser has the option of cancelling this contract against being paid back the instalments paid on account of the contract price plus interest and also compensation due for payment as mentioned above.

The instalments already paid by the Purchaser in cash or by bills, at the highest rate charged from time to time by the Swedish private commercial banks on loans secured by mortgages on ships.

The Builders shall not be liable for damages or otherwise whatsoever if the delay is due to force majeure such as war or warlike operations, strike, lockout or other labour conflicts, whether approved or supported by trade unions or not, shorter working hours imposed on the Builders, shortage of manpower or materials, late delivery of materials or goods, defects in machinery for reasons of design, materials or goods supplied by sub-contractors, fire, accident, act of God, international strikes, whether or any other circumstances outside the control of the Builders and whether affecting the Vessel or any other commitment of the Builders. And the time for delivery shall be extended by the number of working days lost to the Builders by reason of any of the above mentioned occurrences, even if the cause of the delay arises after the date of delivery stated in this Contract.

If, during the period of building, the Vessel sustains damage which has been repaired to the satisfaction of the Classification Society and/or the government authorities concerned, the Purchaser is not thereby entitled to refuse delivery of the Vessel or to claim compensation.

If the Vessel is put into service by the Purchaser before it is entirely ready for delivery, the Purchaser's right to claim compensation for any delay in the delivery shall cease from the day the Vessel is put into such service.

If the Vessel is ready for delivery before the date mentioned in the first paragraph of this Clause and the Builders give to the Purchaser at least two weeks notice thereof the Purchaser gladly shall take delivery as soon as it has been ascertained that the Vessel has been built in accordance with the terms of the Contract. If such events occur, which in the Builders' judgement, may cause a delay, the Builders shall within two weeks notify the Purchaser of such events and, if possible, the estimated duration of the delay. If such written notice is not given within the stipulated two weeks, force majeure cannot be claimed for the period preceding.

(b) When the Vessel has been delivered to the Purchaser, at his request, Liability taken over the Vessel, the liability of the Builders shall cease, except that the Builders shall remedy at their own yard, free of charge and as speedily as possible any defect detailed in writing by the Purchaser to the Builders which may have developed in the propelling or auxiliary and hull machinery during the six months from the date the Vessel was delivered to or taken over by the Purchaser, provided such defect is due to inferior workmanship or latent defects in material or workmanship and is not due to overloading, incorrect fuel or lubrication, wear and tear, neglect, careless handling, external causes, accident or the like, or is due to putting the Vessel into service before it was entirely ready for delivery.

Contracted If the defect cannot be conveniently remedied at the Builders' yard, and if no other agreement can be arrived at between the parties, the Builders shall only be bound to pay in full and final settlement of their liability under this Clause to the Purchaser, such a sum as it would have cost the Builders had they done the work at their yard.

During the guarantee period ~~sixty months~~ the Builders shall have the right to appoint a marine engineer, or mechanic fully conversant with the construction and running of the machinery as guarantee engineer, and the person so appointed shall receive from the Purchaser the customary salary and other remuneration due to a chief engineer on board a Swedish vessel of the same size, together, if so required, a free passage and maintenance home and return at salary for the journey home. THE BUILDERS MAY ACCEPT THE PURCHASER'S ENGINEER AS GUARANTEE ENGINEER.

The Builders' responsibility for the propelling and auxiliary machinery during the guarantee period shall cease if the guarantee engineer is dismissed without the Builders' approval. The Builders shall not be liable for any faults or omissions on the part of the guarantee engineer or on the part of any other member of the engineers staff during the guarantee period.

(b) The Builders shall not in any circumstance be liable for loss of earnings or profits or for any other loss, or damage, whether direct or indirect, or for accidents or the consequences thereof which may arise after the delivery of the Vessel nor shall their liability extend further or otherwise than in the first paragraph of this Clause provided.

(c) The Builders shall upon request supply the Purchaser with copies of the relevant guarantee clauses regarding important goods installed in the Vessel.

The same shall apply to late delivery caused by late delivery of substantial parts or services by sub-contractors providing the reason for late delivery would constitute force majeure for the Builders.

A

§ 10.

The Purchaser undertakes to pay to the Builders as follows:

	In Cash	By bills of exchange	<i>Payable</i>
On signing of this Contract	10 %	-	
the 15th October 1979	-	15 %	
On receipt of the bulk of rolled steel material	-	15 %	
the 15th December 1979	-	15 %	
On laying of the keel or when construction	10 %	-	
The 2nd January 1980	-	-	
on the berth commenced	-	-	
On launching	10 %	10 %	
(March 1980)	-	-	
On delivery	30 %	40 %	
On delivery to be covered by way of the loan	30 %	40 %	
Total	60 %	40 %	

The Builders shall inform the Purchaser at least fourteen days in advance of the date on which each of the foregoing instalments is due for payment.

The Purchaser undertakes to hand over to the Builders at the signing of the contract the following securities in addition to the first instalment:

The total fixed price for the Vessel amounts to eightytwo million seven hundred and fifty thousand (DEM 82,750,000,-) German marks. The Bills of exchange and additional instalment of 30 %, equalling total of 70 % of the contract price will be covered by a loan.

The Purchaser shall pay to the Builders in advance, interest on the amount of outstanding bills together with any charges at the rate charged from time to time by the Swedish private com-

mercial banks for bills of the kind delivered (the rate at present being %).

The cost of additional work done as well as allowances made, in accordance with Clauses 2, 3 and 5 hereof, shall be settled in cash on the delivery of the Vessel.

If for any reason the Purchaser cannot take delivery of the Vessel on the date the Builders have notified that the Vessel will be ready for delivery, the Purchaser shall nevertheless be liable to make full and final payment on that date.

~~The bills shall mature at six monthly intervals and shall be redeemed by half yearly instalments of~~

beginning six months after the date of delivery. The Purchaser shall, however, have the right to redeem the amount of the bills wholly or in part at any time prior to their maturity dates.

As security for the bills the Purchaser shall on the delivery of the Vessel hand over to the Builders a first priority mortgage in a form to be approved by the Builders registered on the Vessel for the full amount of the bills and interest thereon.

If the Builders so desire, the Purchaser shall apply to a credit institution approved by the Builders for the largest sum obtainable by way of loan on the security of a mortgage on the Vessel and in her charterparty (if any). The amount of such loan shall be paid to the Builders as soon as received and the Builders shall then hand to the Purchaser bills of the same amount as the loan as well as the mortgage required for the loan. If and when such loan is redeemed the mortgage thereby released shall be transferred to the Builders in exchange for any mortgage of lesser priority which the Purchaser may have created on the Vessel in favour of the Builders.

As long as any part of the bills remains unpaid the Purchaser shall keep the Vessel after delivery fully insured with such underwriters, insurance companies or institutions and on such terms as approved by the Builders for all marine and other risks and protection and indemnity risks and war risks, with (if possible) mortgagee's protection insurance in addition. The policies shall provide (unless otherwise agreed) that all losses and claims shall be paid direct to the Builders who shall be entitled, out of the proceeds of the insurances, to retain an amount sufficient to meet what is owing by the Purchaser to the Builders.

If, at the time of delivery, there exists an abnormal international situation affecting currency and/or insurance conditions which may, in the Builders' opinion, prejudice the ready transfer of money to the Builders, the Purchaser shall at the request of the Builders redeem on delivery of the Vessel all outstanding bills or make available a guarantee acceptable to the Builders.

In addition to the foregoing the "General Loan conditions" annexed to this Contract shall apply.

§ 11.

If payments in accordance with Clause 10 hereof are not made on due dates, the Builders shall be entitled to interest on the amount due, until payment made, at the highest rate charged by the ~~German~~ ^{Swedish} private commercial banks for short term loans on securities other than bonds or real estate mortgages, with a minimum of 6%.

If, during the period of building, any payment is more than thirty days in arrear, the Builders shall have the right to cancel this Contract and to claim damages according to law. If any delay in payment occurs after the delivery of the Vessel, the Builders shall be entitled to call for the immediate payment of all sums due from the Purchaser for the Vessel, with interest thereon.

§ 12.

If, by reason of circumstances of an exceptional nature, such as, for example, war, or the risk of war, or occurrences or incidents which have a like effect or consequence as war or the risk of war, the rate of wages, and/or costs and/or prices for materials increase to such an extent that it would be unreasonable for the Builders to bear the increase occasioned as aforesaid, then the Builders shall be entitled to request an additional payment from the Purchaser of an amount which the parties hereto may agree on a basis reasonable to them both. If the parties are unable to reach an agreement, the amount of the payment shall be decided by arbitration in the manner laid down in Clause 14 hereof.

Such payment shall be made in cash on the delivery of the Vessel.

1

§ 13

Until delivery has been effected, the Builders shall keep the Vessel and Insurance all parts intended for use in her construction insured against the usual builder's risks, including war risk and sabotage as from the launching until the delivery of the vessel for an amount not less than the instalments paid on account by the Purchaser. If considered necessary by the Purchaser the Vessel shall also be insured for an amount equaling the difference between the contract price and the present repurchase price and the additional cost of such insurance shall be borne by the Purchaser.

Should the Vessel be a total loss the parties may agree to cancel this contract and the Builders shall thereupon refund to the Purchaser the instalments paid on account of the contract price, plus interest and, in the event an additional insurance has been taken for the repurchase price, the difference between the contract price and the repurchase price.

§ 14

This contract shall be construed and the relations between the parties determined in accordance with German law. Disputes shall be settled by arbitration at the venue of the place of building according to the German law relating to arbitrations.

If the Builders so require the Purchaser shall lodge such security as is approved by the arbitrator(s) for costs and damages likely to arise from the arbitration proceedings. If the Purchaser does not meet this requirement, he shall be debarred from any further step in the proceeding.

§ 15

This contract cannot be assigned without the written consent of the Builders, which the Builders shall not unreasonably withhold.

Assignment
of contract

§ 16

The scope of supply for S. 592 is included in the specification for the Vessel.

Scope of
supply

§ 17

Defects in major forgings or castings can only be considered to constitute force majeure for the Builders provided the Builders have ordered the respective goods with utmost dispatch, have had the respective goods tested by X-ray or other available, effective method either at the sub-contractors works or at the yard at the earliest possible date, and have taken every reasonable step to avoid delay and provided such defects and the resulting delay in the construction affects the delivery date of the Vessel.

§ 18

This contract is subject to the approval of Finlands Bank.

Subject

This contract with attached specifications and drawings has been drawn up and signed by or on behalf of the parties hereto in duplicate, one copy being retained by each party.

Mariehamn, 11th September, 1979.

REDERIAKTIEBOLAGET SALLY
Sven-Erik Johansson

JOS. L. MEYER
Joseph F. Meyer

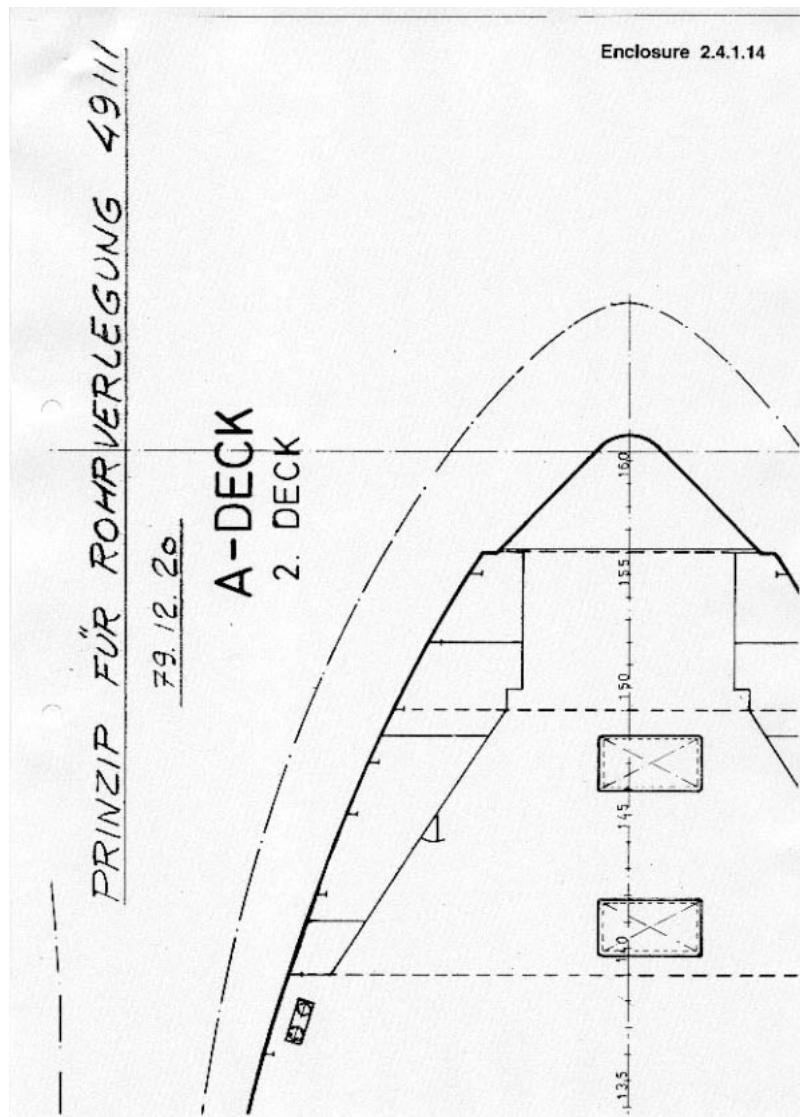
Witnesses:

S. Johansson

MF/Mean Ho

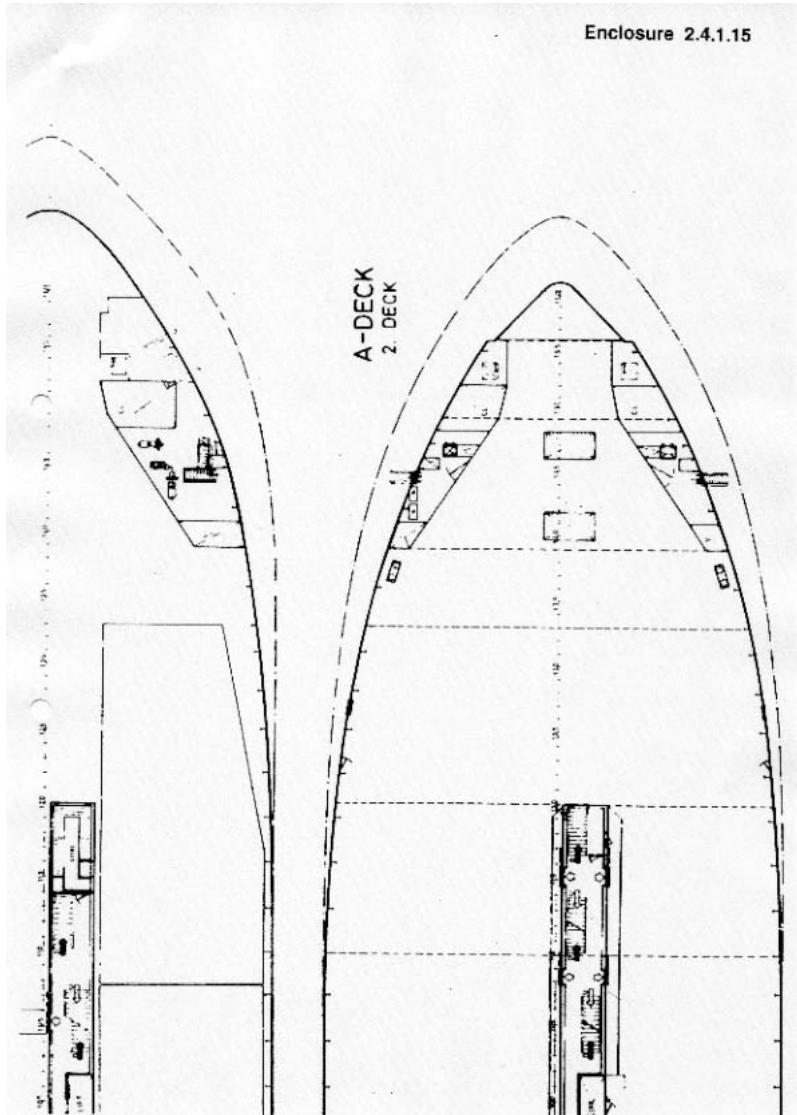
1

Part of drawing dated 20.12.79



Part of ga plan as built

Enclosure 2.4.1.15



Telex P motikat to A johansson dated 30.08.79

Enclosure 2.4.1.16

IMMACULE TELEX SCHNEWEISS TELEX SNOW WHITE TELEX SNEEUWWHITE TELEX

Memo concerning conversion, viking sally/ earl granville

Enclosure 2.4.1.17

Jos. L. Meyer, Papenburg-Ems

Schiffbau- Maschinenfabrik, Parkstraße

- 2 -

Umbau "VIKING 4"

Die Werft erhielt für englische Rechnung den Auftrag, die "VIKING 4" umzubauen. Dieses Schiff wurde 1973 unter der Baunummer S. 570 von der Werft an die Reederei SALLY abgeliefert und wurde erfolgreich von der VIKING-LINE in Verkehr zwischen Schweden und Finnland eingesetzt, bis sie jetzt durch die neue Fährengeneration, zu der auch Neubau S. 590 "VIKING 1880" gehört, ersetzt wird. Nach der Sommersaison 1980 kommt das Schiff nach Papenburg, und die Werft wird folgende umfangreiche Arbeiten durchführen:

- Einbau einer neuen Hauptmotorenanlage
 - Einbau einer Flossenstabilisierungsanlage
 - Westellung des Schiffes auf englische Flagge (Erfüllung der DOT-Vorschriften)
 - Änderungen in der Einrichtung für den neuen Liniedienst
 - Wartungsarbeiten.

Nach Rücklieferung des umgebauten Schiffes Anfang 1981 wird das Schiff von der Reederei SEALINK U.K. LIMITED gechartert und im Verkehr zu den Kanalinseln eingesetzt werden.

Papenburg, 25. Juni 1980

卷之三

SCHLESINGER

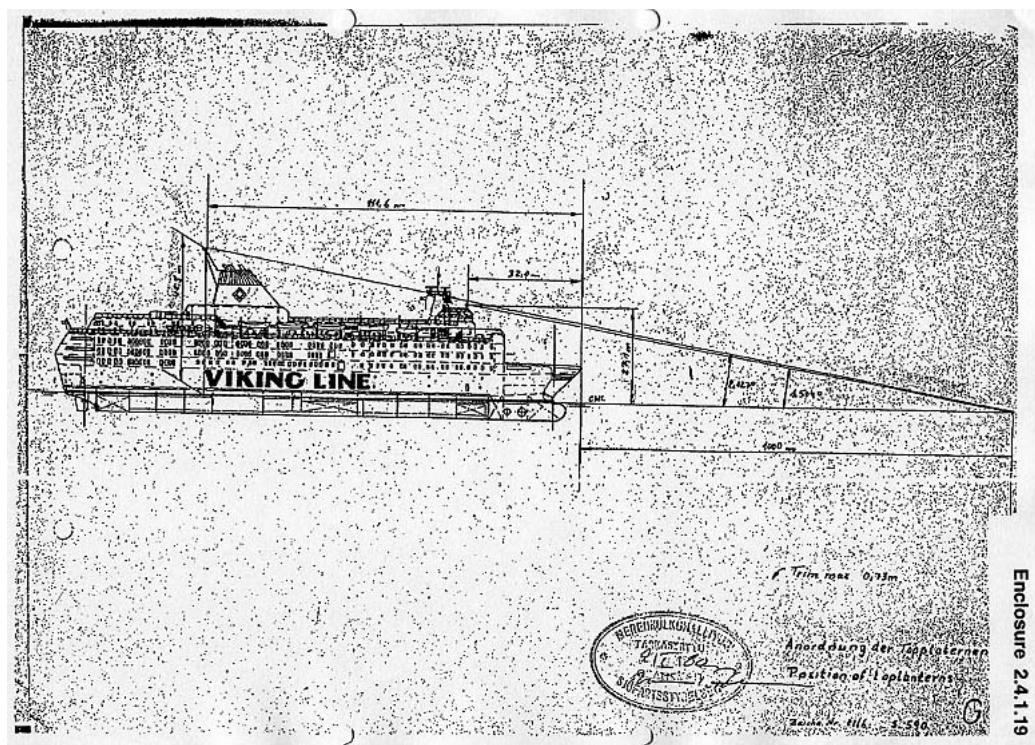
Note by h wahnes- more /less list

1st	<u>Die Ordner</u>	24.6.22
	<u>Nicht überbrückt</u>	
BR	1) Verdeckungsmögl. Kabinen	Enclosure 2.4.1.18
4-18	a) Park 452 fällt in allein Park 225.	
	Stelle wird erwartet für Skatloje.	
	b) Heute ca. 500 Stück und Preis-	
	Angabe 150.- Reich 12 f. Handelsp.	
	c) Kupferblech dünne Kupfer 1000 m	
	Preis 800 m m. ca. 100 Stück 100.-?	
	d) Gold 10 - 15 g. lange Zeit Güte -	
	e) Eisen. Kettinen 100 m Länge 800 m	
	100.- ?	
	f) 4-19 a) Metall Stahl Stahlkette f. Boot	
	1000 m m. Preis 1000 m (453) 11.7.5. 9. 4.22	
	4-190 1) Rastkabinen 1000 Stück ohne Handel	
	1000 m m. Preis 1000 m f. Boot 350.- m	
	Kupfer 200.- (Kupferspangen dichten)	
	4-190 p) Blechdose von Gasvagon Stockadeck ca. 1	
	fällt aus 2.4. 200.- (453)	
✓	68 3) Suppenabteil (453) nicht so ausg.	
	frisch aus 1000 m 2.4. ca. 15.-	
✓	5-4 b) Öfen 10.000 K's 1) Im Feuergrillraum f.	
	für Kesselspeise fällt. (5-4) (EVAK-Anlage	
	5-4 c) Handtrockenspende im Feuer. (K's	
	fehlen. (et. Händetrockner)	
	d) Dachaus?	
3-21	6) Tropfsteinwände werden aus Blei	
	(ca. 4.000 30.000.- ? 1.223)	
2-8	7) Rohrleitungen aus Eisen 50.000.	
	ca. 10.000 (2-8)	

- 2 -

8. a) 3-3 Kollisionen, die ic. fäll.
 ca. 3.000 ... 45.000.
 - 9. b) 4d. Tag ... Gleisung bei Gerol.
 mit 1000 2.800 21.000.
 10. b) 2-10 Fäuste leeren aus am
 seien Material 100.000.
 - 11. 444 Fußboden unter Fahrg. B.Y.,
 also unter Raum der Türe leeren.
 12. c) Entfall an Türen im Schiff
 das 6. Rückwand ca. 12.000
 13. d) Mindestabstand für Umschlag?
 e) Schiffliste:
 Pos. 1 über vom Deck zu Schiff vom
 4.9.73 Janus ... 1000
 14.9.73,
 Pos. 2. Für LKW-Rampen gilt jenseits der
 Pos. 1; Ladeverrichtungen und
 Landeplatz ändern.
 Pos. 3 o.v.
 Pos. 4 o.v. 8x200m
 Pos. 5 o.v. ~ ~ ~
 Pos. 6 ~ ~ ~
 Pos. 7 ~ ~ ~
 Pos. 8 ~ ~ ~
 Pos. 9 ~ ~ ~
 Pos. 10 ~ ~ ~ Landeplatz? 9.240.
 — 3 —

Part of drawing 1116 arrangement of the lanterns



Purchase order no.3344/74 von tell

15/06 05 10:09 FAX +49 4961 81298

MEYER WERFT TS

Enclosure 2.4.2.20

JOS. L. MEYER PAPENBURG-EMS

SCHIFFSWERFT

MASCHINENFABRIK

DOCKBETRIEB

von Dell GmbH
Sophienallee 24
2000 Hamburg 19

Faxton Sammelnummer (0499) 011
Fax 0211/8 meyerg
Telegramm: Meyerwerft Papenburg
Postfach: Hannover (BLZ 250) 10500 H 2770 2033
Bank: Oldenburgische Landesbank (GLF), Papenburg
Deutsche Bank AG, Zweigstelle Papenburg
(BLZ 250 20000) Kontonr. 0592716
Westdeutsche AG, Zweigstelle Papenburg
(BLZ 255 41576) Kontonr. 450000
Geschäftsschluß 7.30 Uhr bis 16.00 Uhr

IHR ZEICHEN IHR SCHREIDEN VOM MEIN ZEICHEN 2000 PAPENBURG 1
YOUR REF YOUR LETTER OF MY REF DURCHWAHL HAUPTKANAL RECHTS 2
EK-RG-C1 DIRECT EXTENSION POSTFACH 1120
(0 40 31 81) /211 27- 8474-1979

Auftrag-Nr. 3221/79 - S. 500 - In allen Briefen, Rechnungen, Versandpapieren, Frachtbriefen unbedingt anzugeben! Versandanzeigen und Rechnungen zwei fach erbeten!

Hiermit erteile ich Ihnen nachstehenden Auftrag zu meinen weiteren Einkaufsstellungungen. Auftragsbestätigung sofort erwarten.

Frachtaufmerkt:

lieferans: siehe Seite 12 num. 13

Menge	Artikel-Nr.	Preis
Pos. 1	1	Hydraulische Bettigung für eine Bugklappe

Bla. Bugklappe wird von einem, wie von mir angegeben, mit einem Gewicht von 74 t angespannt. Sie wird von zwei direkt angedrehten hydraulischen Zylindern bewegt. Die Zylinder erhalten Gleiskräger, um evtl. Fluchtfehler auszugleichen. Die direkt hinter den Zylindern vorgesehnen Drossel-Rückstellagerventile regulieren die Schaltgeschwindigkeit. 2. Weitreich-Zylinder unterstützen am Anfang den Umlaufsvorgang und dämpfen den Schließvorgang.

Die Verriegelung der geschlossenen Bugklappe erfolgt hydraulisch. Sie wird so ausgebildet, daß sie auch bei abgeschalteter Hydraulik die Verriegelung

- 2 -

Menge	Artikel	Preis
	sicherstellt. An der Verriegelung werden Kontaktkontakte vorgesehen, die bei geschlossener Verriegelung in der Handplatte und auf der Irdose befindlichen Lampen einschalten. Es wird eine zusätzliche Verriegelung für die Atlantiksicherung vorgesehen. Das Bugzitter wird mit einer hydraulisch betätigten Feststellvorrichtung, welche nach Beendigung des Öffnungsvorganges bewegt wird, verschen. Die Bugrampe wird gegen die Bugklappe hydraulisch verbleckt.	
	Ihr Lieferumfang für diese Anlage umfaßt:	
2	Hochdruck-Hydraulikzylinder, Drosselrückschlagventile, Achsen mit Schmierzutaten und Schmierröhrchen Serie die erforderlichen Hochdruck-Hydraulikschläuche.	
1	Hochdruck-Hydraulikzylinder für die Verriegelung, die Verriegelung selbst, einschl. Achsen mit Schmierzutaten und Nippeln, Hochdruckschläuche und Kontaktthalter für die optische Anzeige.	
2	Hochdruck-Hydraulikzylinder für die Atlantikverriegelung mit Vorsichtsbolzen, Achsen mit Schmierzutaten und Schmierröhrchen sowie Hochdruck-Hydraulikschläuche.	
	Hochdruckzylinder mit Vorsichtsbolzen für die Sicherung der Bugklappe in geöffneter Stellung, einschl. der Achsen mit Schmierzutaten und Nippeln und dem Hochdruck-Hydraulikschläuchen. Die Zylinder werden hydraulisch so geschaltet, daß die Bugklappe während eines Verriegelungsversuchs geöffnet ist. Dagegen soll die Verriegelung beim Abschließen der Bugklappe getrennt erfolgen.	
	- 1 -	

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MEYER WERFT TS

004

Joh L. Meyer, Papenburg (Ems)

Blatt 3 zum Auftrag Nr. 3344/79 - S. 390 -

vom 27. Sept. 1979

von Ulf Schubert

Menge	Beschreibung	Bestell-Nr.
1	<p>Manöverplatte mit den hintergebauten hydraulischen Steuerungseinheiten für die vorstehend beschriebenen Bewegungsverläufe, einschl. Lampenanzeige für geschlossene Verriegelung, Atlantikverriegelung und Verriegelung in geöffneter Stellung, ferner Pumpenstart und -Stop mit optischer Anzeige. Die hydraulischen Steuerungseinheiten werden vorrätig und die elektrischen Teile, soweit erforderlich, verkabelt.</p>	
2	<p>Beschläge für die manuelle Sicherung der Bugklappe</p> <p>Sie liefern ferner das hydraulische und, soweit erforderlich, auch das elektrische Schaltschema für die vorstehend beschriebene Bewegungen der Bugklappe, einschl. der Leichnungsunterlagen mit der Ausordnung der Hydraulikzylinder und Verriegelung mit Angaben der Kräfte, die in die Schiffskonstruktion eingesetzt werden müssen. An nicht oder schwer zugängigen Schnürrstellen werden automatische Schnürröppel angebracht.</p>	
Pos. 2	<p>hydraulisch betätigtes Bugrampen</p> <p>Die Bugrampe mit einer Länge von 7,625 m für eine Kraft zwischen den Pfosten von 5,5 m kann von 110'w' mit einer Achslast von 18,0 t bei 1,3 m Achsabstand und einem Radstand von 2,0 m befahren werden.</p> <p>Die wasserdichte Rampe hat ab der Vorkante bewegliche Verläufe von 1,5 m Länge, die automatisch über Seilbetätigung ausgeklappt werden können. Die Auflager verlaufen in mit leren Teilen als Gleisklager ausgebildet. Die Rampe wird durch 2 direkt am Rahmen befindliche Zylinder, die Gleisklager halten, betätigt. Die Zylinder erhalten eine Raumstellung, so daß die Rampe den Schiffsbewegungen folgen kann. Die Verriegelung der geschlossenen Rampe erfolgt ebenfalls hydraulisch. Sie wird so ausgebildet, daß sie auch bei</p>	

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NEVER WERFT TS

005

Joh. L. Meyer, Poppenburg (Ems)

Stun. 4 zum Auftrag Nr.

3344/79 - H. 790 -

27. Sept. 1979

on von Teil Gabek

Masse	Zeichnung	Praktisch
1	abgeschalteter Hydraulik die Verriegelung sicherstellt. An der Verriegelung werden Kontaktenschalter vorgesehen, die bei geschlossener Verriegelung in der Handverplatte und auf der Brücke befindliche Lampen einschalten. Die Bugklappe wird gegen die Bugrampe hydraulisch verblockt. Die Hauptzylinder erhalten je 1 Rohrbuchse Sicherung und Abschlußventile.	
	<u>Ihre Lieferung umfaßt:</u>	
1	Bugrampe, kompl. mit Vorläufen in den vorgenannten Abmessungen und Belastungen. Die gesamte Fahrbahnbreite wird als Rutschsicherung mit Quadratstahl in Fischgrätenform geliefert. Es werden feststehende Geländer vorgesehen, Achsen mit Schmiermuttern und Nippeln für die Befestigung am Schiffskörper. Die Stahlkonstruktion wird gestrahlt nach ST 2,5 und mit epoxymer ce, 30. ny konserniert. An nicht oder schwer zugängigen Schraubstellen werden automatische Schmierdüsen angebracht.	
2	Hydraulikzylinder, Grosspolzlöschklappendventile, Achsen mit Schmiermuttern und Schmierdüsen sowie Hochdruck-Hydraulikschläuche.	
1	Die erforderlichen Hydraulikzylinder für die wasserdichte Verriegelung, die Verriegelung mit Achsen mit Schmiedemuttern und Schmierdüsen, Zündruckschlüsse, Steuerschieber und Kontaktenschalter für optische Anzeige, ferner die erforderlichen Dichtungsstoffe.	
	Handverplatte für die hydraulische Bettierung und Verriegelung lautet wie unter Pos. 1 beschrieben.	
	Erforderliche Zeichnungen wie unter Pos. 1 beschrieben.	
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Menge		Preis	
Pos. 3	2	<p><u>hydraulisch betätigtes Heckrampe</u></p> <p>Die Heckrampe, Längen 6,5 m und Spurbreiten 5,5 m (zwischen den Schraubenböden) bilden den masserdichten Abschluss des Wagendecks am Heck; die Belastbarkeit wird wie bei der Bugrampe vorgenommen. Die Vorläufe von 1,5 m Länge erhalten einen Anhänger, so daß sie sich beim Aufladen der Rampen auf den Kai von selbst richtig aufliegen. Die Außenlager werden im mittleren Teil als Gelenkkästen ausgeführt.</p> <p>Die Verriegelung und Bettigung erfolgt wie unter Pos. 2 für die Bugrampe beschrieben. Die Bugrampe wird gegen die Heckrampe hydraulisch verbliekt.</p> <p>Jede der Heckrampen erhält einen Rehning für eine Leiter oder Treppe, um die Rampe im Notfall auch öffnen und befahren zu können, ohne daß sie am Kai aufliegt. Die andere Heckrampe erhält Beleuchtung für Treppenstufen.</p> <p><u>Ihre Lieferung umfaßt:</u></p> <p>2 Heckrampen, komplett mit Vorläufen in den vorgenannten Abmessungen. Die Ausführung der Rampen: mit Lieferzulasse Teile und Zusatzausrüstung wie für die Bugrampe beschrieben. Al nicht- oder schwer zugängigen Schaltstellen werden automatische Schaltzüppen angebracht.</p> <p>je Rampe 2 direkt angelenkte Hydraulikkylinder, Drosselheckschlagventile, Achsen mit Schieberadern und Schmierzippeln sowie Zuladetdruck-Hydraulikschlüsse.</p> <p>für jede Rampe die erforderlichen Hydraulikzüppen für die masserdichte Verriegelung, die Verriegelung selbst mit Achsen mit Schieberadern und Schmierzippeln, Röhren, Hochdruck-Hydraulikschlüsse, Stegversel, aber sowie Korrektorschalter für die optische Anzeige.</p>	
		- 6 -	

Menge	Artikelbeschreibung	Preis
2	2x Rampe 2 Riebrach-Zylinder Für jede Rampe die erforderlichen Gummilösungen. Handverplatten für die hydraulische Befestigung der Rampe und die hydrau- lischen Verriegelung, sonst wie unter Pos. 1 beschrieben. Die erforderlichen Zeichnungen wie unter Pos. 1 beschreiben.	
1	<u>hydraulisch betätigtes Passagier-</u> <u>Seitentor auf dem C- und D-Deck</u> Die Seitentore, lichte Breite 2,5 m und lichte Höhe 2,0 m, sind einflügelig je auf einem Schwenkarm gelagert und öffnen parallel ge- führt nach außen. Die Tore werden komplett mit den erforderlichen Gegen- Rahmen angeliefert, so daß die fertigen Tore so in die Außenwand eingesetzt und verschweißt werden können. Die Gummibdichtung wird lose angeliefert. Ihre Lieferung je Tor mit Maß, d.h. vom Stückmaß gekennzeichnet, = kr.	
1	Türblatt mit Versteifungen und Lager, Entrostung und Konzervierung; wie unter Pos. 2 beschrieben.	
1	Schwenkarm mit Lager	
1	Parallellenker mit Lager und Höchst- druck-Hydraulikzylinder	
1	Die erforderlichen Verriegelungs- zylinder für die wasserdichte Ver- riegelung, die Arzten mit Schnell- nuten und Schnellrippeln, Höchst- druck-Hydraulikzylinder, Sicher- schieber und Kontaktkontakte; für die optische Anzeige.	
1	Handverplatten für die Befestigung und Verriegelung, sonst wie unter Pos. 1 beschrieben.	

Joh. L. Meyer, Papenburg (Emil)

Blatt 7 zum Antrag Nr. 3344/79 ~ S. 350 ~

-- von Zell GmbH

-- 27. Sept. 1979

Menge	Pos.	Preis
		Die erforderlichen Zeichnungen wie unter Pos. 1 beschrieben.
Pos. 5	2	hydraulisch betätigtes Lüttinen-Pforten auf dem A-Deck
		Die Geitengpforten, lichte Breite 1,2 m und lichte Höhe 2,0 m, sind einflügelig und werden nach innen um 90° hydraulisch geschwenkt. Die sonstige Ausführung wie unter Pos. 4 aufgeführt. Lieferumfang je Pforte: Unter Berücksichtigung der anderen Befestigungsart wie unter Pos. 4 aufgeführt.
Pos. 6	1	hydraulisch betätigtes wasserdichte Luke für Maschinenraum auf dem A-Deck Der Klappdeckel verschließt eine lichte Öffnung von 2,1 m breit und 1,2 m lang und wird über die linke Seite hydraulisch betätigt und verriegelt. Der Lukendeckel wird für die gleichen Belastungen wie bei der Bugrampe angegeben ausgelegt. Ihre Lieferung umfasst: Lukendeckel mit Versteifungen und Lügern, einschl. Gummiaufdichtung, konserviert wie unter Pos. 1 aufgeführt. Den erforderlichen Hydraulikzylinder für das Öffnen und Schließen des Lukes, die erforderlichen Hydraulikzylinder für die wasserdichte Verriegelung des Lukes, einschl. der Verriegelungskaliber, Absehen mit Schiebern und Schnellverschluss, Hochdruckhydraulikschlauch, Steuerschieber mit Kontaktenschalter für die optische Anzeige. Kunststoffplatte für die Bedäckung der Luke und Verriegelung, sonst wie unter Pos. 1 aufgeführt.
		- 8 -

15/06 '05 16:12 FAX +91 4961 81298	MEYER VERPT TS	7009
Ist L. Meyer Papenburg (Em)		
Nr. 8 - vom Urtag N. 3544/79 - S. 590		von 27. Sept. 1979
an: von Tell Gmbh		
Menge		Preis
Fos. 7	<p>2 Hydraulisch mechanisch betätigte Hänge decks mit Auffahrtrampen</p> <p>An B-Sseite des Schiffes sind 3 Hänge- deckstrukturen und 2 Auffahrtrampen von ca. 20 m Länge und ca. 5,5 m Breite. An A-Sseite ebenfalls 1 Hängedeck- strukturen und 2 Auffahrtrampen von je ca. 20 m Länge und ca. 5,5 m Länge und ca. 5,5 m Breite vorgesehen. Auf den Hängedecks und Rammen können Pkw's mit einem Raddruck von 400 kg effektiv dicht gestellt werden. Die vollbeladenen Rammen können aus der Rammentstellung in die Horizontale gehoben werden.</p> <p>In Staustellung liegen die Hängedecks und Auffahrtrampen hydraulisch hochge- zogen und verriegelt unter dem C-Deck.</p> <p>Jede Hängedeckstruktur wird durch einen hydraulischen Flanschmontage, der in die Hängedeckstrukturen eingesetzt ist, so- wie mit Stahlseilen auf dem Rahmenrollen befestigt. Die Flanschmontagen sind für das Hochziehen der leeren Hängedeck- strukturen vorgesehen. An diese ist liegen die Hängedeckstrukturen auf festen Kan- solen. Jede Montage erhält einen eigenen Steuerstand.</p> <p>Die Rammen werden ebenfalls mit hydrau- lischem Flanschmontage beworfen, die je- doch an der Außenwand angebracht und über Distanzungen mit Stahlseilen verbunden mit den Rammen verbunden sind. Die Rammen können mit Pkw's voll gestellt aus der Rammentstellung in die Horizontale gehoben werden.</p> <p>Sie funktionieren, Nehmen der 2 Rammen in die Horizontale. Absetzen der Rammen- inge und Nehmen der leeren Rampe in Staustellung unter dem C-Deck werden je Rampe von einem 2 anheben durchgeführt.</p> <p>Die Sicherung der Rammen in Staustel- lung unter dem C-Deck erfolgt hydrau- atisch, im horizontalen Achse Stau- stellung mechanisch durch Anschlagstan-</p>	

Menge	Artikel-Nr.	Beschreibung
1		Die Rohrleitungen für die Ligendeck-Sprinkleranlage werden noch zwischen Angaben von Ihnen mit im Deck und Rampen vor- gestellt.
		<u>Ihre Lieferung verfügt:</u>
5		Mittendecksktionen mit Umlenkrollen, Fundamente für die Hydraulikflaschen, Straßenfertigung und Konservierung wie Foss. 2.
4		Mittendeck-Auffahrrampen, Druckblech so- mit einem Wunsch aus Traubblech.
		Die erforderlichen Stahlrundstahl- leinketten, die nicht in den Decks oder Rampen eingebaut werden, mit Stahlblechen, jedoch ohne die Kiffig-, Steuerschieler, Höchstfrequenz-Hydrau- likschläuche sowie Kontakt-Gameter für optische Anzeige.
		Die erforderlichen Klappständer mit Ge- länder.
		Die erforderlichen Hydraulikflaschen zum Fahren der Decks und Rampen, einschl. der erforderlichen Hydraulik- zylinder, sowie erforderlich, mit Zaken und weiterem Zubehör für die hydraulische Verriegelung der Decks und Rampen in Blaustellung unter dem C-Deck.
12		Hansverbinden für Decks und Rampen, neuzeit wie Foss. 1.
		Die erforderlichen Leichstangen etc., wie Foss. 1 sowie zusätzlich die Bele- bungen für die Mannschaftsküche, die nicht in den Decks oder Rampen einge- baut werden.
Foss. 8	2	Hydraulische Betätigungs- u. 2 Passu- rier-Plattformen
		Zwischen dem Mittschiffraum auf den Magendeck und dem Magdebad auf HK- Seite mit der Zwischenrampe durch Passagier-Überläge übersteckt werden. Die Überläge selbst werden verft- seitig gefertigt. Sie liegen zu die Hydraulik und Steuerwerk.

15/06 95 16-28 FAX +49 4861 81298	MEYERWERFT TS	Z'011
an: Joe L. Meyer, Papenburg (Ems)		
Blatt 10 zum Auftrag Nr. 2344/TB - K. 590 -	von 21. Sept. 1979	
an von TELL GMBH		
Pos. 1	<u>Hydraulikpumpe</u> Die erforderlichen Hydraulikzylinder mit Distanzstangen, die Schubräder und Schiebehilfespulen, Kochdrucktankschen und Stauschneidebretter.	
2	Manoverplatten für die Bedienung der Überhänge und die hydraulische Verriegelung, sonst wie Pos. 1.	
Pos. 3	Die erforderlichen Reichtümer wie Pos. 1. <u>Elektro-Hydraulik-Kontrolle</u> : und zwar: 2 mit jeweils 3 Pumpen als Komplettseinheiten zusammengebaut, die Bug- und Heckhydraulik und Klappdecke mit Auftaktrampen versorgen. 1 mit 2 Pumpen als Komplettheit zusammengebaut für die 4 Passagierporten und die 2 Passagier-Übergänge. 4 mit 2 Pumpen als Komplettheit zusammengebaut für die Maschinenraumluken und Letzara-Fiorren. Sicherheit vorgesehen, daß von den großen Aggregaten je eines im Vorschiff und eines im Rückschiff zur Aufstellung kommt. Es wird vorgesehen, daß die getrennten Rohrleitungssysteme dieser beiden Anlagen so verhakt werden können, daß es das einen Aggregat auf das Rohrleitungs- system des anderen Aggregates und umgekehrt geführt werden kann. Die Förderleistung von 2 P. kann der Seri-Aggregate wird bei dimensionierten und sich folgende reale Betriebs- und Lastverteilung dabei darstellen ergeben: Dachklappe ca. 60 sec. Bug- oder Heckrampe ca. 40 sec. Auftaktrampen ca. 30 sec. Klappdecke ca. 15 sec.	
	- 1 -	

	15/06 '95 16:31 FAX +49 4961 81298 REVER WERFT TS Jos. L. Meyer Papenburg (Ems) Blatt 11 - Ablauf Nr. 3544/70 - S. 590 - an vom Tell GmbH	27. Sept. 1975
	<p>Die 1. Pumpe je Aggregat wird als Reservepumpe vorgesehen.</p> <p>Die weiteren Doppelpumpenaggregate für die Pforten, Passagier-Treppenhaus und Ladeabteilung, je 2 Pumpen gleicher Förderleistung, von denen 1 je eine in der Lager ist, eine Pforte zu ca. 15 sec. zu öffnen bzw. zu schließen auch wiederum als reine Betriebszeit, ohne die Versiegelung. Die 1. Pumpe wird auch hier als Reserve vorgesehen.</p> <p>Ihre Lieferung je Komplettheit umfaßt:</p> <p>Öltaak mit dem erforderlichen Höchstdruck-Hydraulikpumpen (2 x 1 Stück, 2 x 2 Stück), einschl. der 1-Motoren für 380 V, 50 Hz, Überdruckventile, Niveauschalter, Distanzschaltiger, Manometer, By-Pass-Ventile, Absperrschieber, Rückschlagventile und die Ventile für die Kran-Schaltung.</p> <p>Ihre Lieferung umfaßt elektrisch-sichernde an den Klemmkästen der 2-Motoren.</p> <p>Sie liefern die erforderlichen Zeichnungen wie Hydraulikschaltungscha, Rohrleitungspläne etc.</p>	
xx-10 X	<p>Reserveaggregate nach den Vorschriften der Klassifizierungsgesellschaft bzw. Ihren Standard. Die genaue Spezifikation folgt.</p> <p>Da keine Verlustverstellungen nicht realisierbar waren, fertige ich nach Ihren Zeichnungen</p> <p>Pos. 2 : 1 Bugpumpe Pos. 3 : 2 Heckpumpen Pos. 7 : 5 Hingedekks und 4 Auftriebsvaasen</p> <p>Auch der Anbau der von Ihnen bestellenden Teile und Beschläge sowie der Einbau der Deckenmontage und Hydraulikteile erfolgt nach</p>	

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15/03 25 18 53 TAT -49 4801 81293 HEINR. WERTH 78 5012
 Jox L. Meyer, Posenburg (mtl.)
 Bon. 12 3188/79 - S. 390 - 27. Sept. 1979
 on von Teill GmbH

Menge		Preis
	GESAMT-FAHRSPIEL	DM 650.000,-
	-----	-----
	-----	frat. Markt
	-----	MW-Standort
	Über die folgenden Mehr- und Minde	
	reisungen und nach einer Ablösung mit	
	dem Hebeleinsatz herbeigeführt werden,	
	und zwar:	
	Lieferung und Einbau von 135 Sessoren	
	Mehrpreis: DM 3.250,-	
	Falls die Luke für den Maschinenraum	
	einschl. Aggregate (Faz. 6) entfällt.	
	Mindepreis: DM 10.400,-	
	Falls die Saitenrollen mit 8 Auspumpen	
	ausgerüstet werden müssen.	
	Mehrpreis: DM 4.000,-	
	Falls dafür 1 Motorenwage erfüllt,	
	Mindepreis: DM 3.000,-	
	Falls die Bugklappe mit automatischer	
	Vorriegelung versehen wird (1.000,-)	
	Mehrpreis: DM 3.500,-	
	Lieferung von Frischwagen mit Planken	
	Freigabe der vorliegenden Zeichnungen	
	für die Montage bis zur Fertigstellung bis	
	Ende des 30. XII. 1979.	
	Zeichnungen der neuen Leuchten für	
	die neue Rangierfunktion bis Ende	
	nächster Woche.	
	Lieferung der Zeichnungen für Aufnah-	
	ramps bis zur 42. IV. 1979.	
	Lieferung der Zeichnungen für Heckrampe	
	bis zur 42. IV. 1979.	
	Lieferung der Zeichnungen für Zugramps	
	bis zur 42. XII. 1979.	
	Vorlage sämtlicher X-Pläne bis zum	
	31. XII. 1979. Die X-Werte liegen Sie mir	
	bis zur 42. XII. 1979 vor.	
	Klarheiten der Hydraulik-Schaltzeiten bis	
	aus 31. XII. 1979	

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15.00 85 10.10 PAY 49401 61798	MEISTER MEYER TS	Z 611
Joe L. Meyer, Papenburg (Ems)		
Bestell-Nr.: 13	Stückz. 79 - 5.390 -	27. Sept. 1979
an von Neill GmbH		
Menge:	Zeitliche Verbindlichkeit:	Preis:
	<p>Überlieferungen:</p> <p>6 Seitenfeste Konsole und Beschläge für Klapptüren, Heck- und Buggruppen und Deckelklappe bis zum 31.12.1979 auf der Werft.</p> <p>Hydraulikmaterial für die Klapptüren und Gangway bis zum 31.01.1980 auf der Werft.</p> <p>Hydraulikzylinder bis zum 20.02.1980 auf der Werft.</p> <p>Pumpenaggregate bis zum 15.03.1980 auf der Werft.</p> <p>KONVENTIONALSTRafe:</p> <p>Bei Überschreiten der vorgenannten Liefertermine zahlen Sie pro 1 Ablauf einer Karantänezeit von 14 Tagen eine Konventionalstrafe in Höhe von 0,5 % je Woche, max. 2 % vom Auftragswert.</p> <p>ZAHLUNGSBEDINGUNGEN:</p> <p>10 % - nach Erhalt der Auftragsbestätigung 30 % - nach Erhalt der 1. Materiallieferung 31.12.1979. 55 % - bei Lieferung des Restmaterials 05.02.1980. 5 % - bei Ablieferung des Schiffes an die Reederei (Ende Juli 1980).</p> <p>In dem obigen Preis ist ein Montageaufwand von 3 Tagen für den Stahlbau, bei normaler Arbeitszeit, und ein maliger Ar- und Fertigraum enthalten.</p> <p>Former sind kostenlose Montageanlagen für einen Montageinspektor im Zeitraum der Lieferung des Anlasses.</p> <p>ABNAHME - Frist:</p> <p>Die vorgenannten Anlagen sind nach Vorschrift und mit Abschluss und Test des neuen Vertrags auf und der Fertigstellung des Schiffes "Pisa" nach Navigation zu liefern.</p>	

15.06.95 16:39 FAX -19 4961 81258	WEYER VERFPT TS	015																																										
An: L. Mayer-Poppenburg (Em)																																												
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Statement G tod sen

Enclosure 2.4.2.21

Günther Todsen, geb. 31. Juli 1932
wohnhaft Möhnweg 4, 24109 Kiel
Telefon: 0431 / 527591

Ich habe Kfz-Mechaniker in Eckernförde gelernt und diese Lehre 1951 beendet. Anschließend bin ich Lkw gefahren und habe dann 1955 bei HDW-Kiel als Stahlbauschlosser angefangen. Im Jahre 1959 begann HDW im Auftrage der Firma von Tell/Göteborg Lukendeckel zu bauen. Bestandteil des entsprechenden Vertrages zwischen HDW und von Tell war die Gestaltung eines Monteurs bei der Montage der Lukendeckel an Bord sowie bei eventuellen Reparaturen. Dies wurde meine Aufgabe. Ich habe also in den folgenden Jahren überwiegend den Einbau sowie die Reparaturen von Lukendeckeln auf Neubauten deutscher und ausländischer Werften überwacht. Mein erster Kontakt mit der Meyer Werft in Papenburg war der Auftrag durch Herrn Rottmann sen. der Firma von Tell, an einer Vorbesprechung über den Einbau von Bugvisier, Bug- und Heckrampe sowie Hängedeckel und Außentüren in dem Neubau "DIANA II" teilzunehmen. Dies war im Februar 1979. Ich erinnere das deshalb so genau, weil wir durch den seinerzeitigen zweiten Teil der "Schneekatastrophe" Probleme hatten, mit dem Auto nach Hause zu kommen.

Zirka Anfang April 1979 nahm ich meine Arbeit in Papenburg auf. Kurz vor Himmelfahrt hatte ich einen Arbeitsunfall an Bord der "DIANA II", bei dem ich mir einen Trümmerbruch des großen Zahns des rechten Fußes zuzog. Dadurch fiel ich für mehrere Wochen aus und konnte daher die "DIANA II" nicht fertigstellen. Nach meiner Genesung habe ich Lukendeckel auf verschiedenen Neubauten eingebaut, bis ich im April 1980 den Auftrag bekam, auf dem Neubau "VIKING SALLY" der Meyer Werft in Papenburg den Einbau von Bugvisier, Bug- und Heckrampe, Hängedecks und Außentüren - wie bereits zuvor bei der nahezu baugleichen "DIANA II" - zu überwachen.

Meine Aufgabe bestand im einzelnen darin, die Werft beim Einbau der durch von Tell gelieferten Bauteile bzw. der durch die Werft nach von Tell-Konstruktionszeichnungen gebauten Teile zu unterstützen und die Arbeiten der Werft in dieser Hinsicht zu kontrollieren. Ich hatte eine große Anzahl von Detailzeichnungen dieser Bauteile zu meiner Verfügung, aus denen sich z.B. die Dimensionierung dieser Teile, aber auch die Schweißnahtstärke ergaben. Ich hatte Kopien dieser Zeichnungen in meinem Keller bis vor etwa zwei Jahren aufbewahrt, sie dann aber beim Aufräumen weggeworfen, da für mich nicht erkennbar war, daß ich sie jemals wieder gebrauchen würde.

Als ich meine Tätigkeit auf der "VIKING SALLY" aufnahm, befand sich das Visier in geschlossener Lage starr durch verschiedene angeschweißte Flach- und Profileisen mit dem Schiffskörper verbunden. In dieser Situation überwachte ich folgende, im Werftbereich durchgeführte Arbeiten:

a) Einbau der Scharniere

Die Bohrungen für die Buchsen waren in der Halle mittels eines Bohrwerks ausgeführt worden. Ich habe die Bohrungen persönlich in Augenschein genommen und befüllt, bevor die Buchsen eingebaut wurden und kann bestätigen, daß es sich keinesfalls um gebrannte Löcher gehandelt hat. Ich hätte eine derartige Pfuscharbeit, wie sie auf den mir vorgelegten Fotos der Restschamierbleche der "ESTONIA" zu sehen ist, niemals abgenommen. Für den Fall, daß die Werft meine Einwände nicht zur Kenntnis genommen hätte, wäre ich von Bord gegangen und hätte meine Auftraggeber informiert.

So ist es z.B. auf einem Schiff in Dünkirchen geschehen. Ich hatte den Auftrag, die Reparaturen von Lukendeckeln auszuführen. Als die Besatzung sich weigerte, mir die nach meiner Auffassung und Erfahrung erforderlichen Ersatzteile, ohne die die ordnungsgemäße Reparatur nicht möglich gewesen wäre, zur Verfügung zu stellen (obwohl diese an Bord waren), habe ich mich geweigert, die Arbeit fortzuführen und bin zurück nach Kiel gefahren.

An Bord wurden unter meiner Aufsicht die Stahlbuchsen in die Visierarme eingeschweißt und anschließend soweit ausgebohrt, daß die Bronzebuchsen paßten. Diese Bohrungen wurden sehr genau ausgeführt, so daß Backbord und Steuerbord genau in der Flucht waren, um Bruchbelastungen beim Öffnen bzw. Schließen des Visiers zu vermeiden. Anschließend wurden die Bolzen eingeführt, wobei gleichzeitig die Distanzringe (2 mm Stärke) eingesetzt wurden. Ich erinnere diese Arbeit insbesondere deshalb sehr genau, weil es sich um eine ziemliche "Fummelai" handelte. Diese Bolzen waren aus NIROSTA-Stahl und mit einer Fettmut mit Schmiernippel versehen. Mittels dieser Schmiernippel waren die Scharniere mindestens einmal pro Woche per Fettpresse zu schmieren.

Mir sind die Unterwasservideoaufnahmen der "ESTONIA" sowie mehrere Standfotos gezeigt worden. Darauf habe ich u.a. die Scharniere des Visiers mit Bolzen und teilweise Buchsen auf dem Backdeck des Schiffes identifizieren können.

Im einzelnen habe ich folgendes festgestellt:

Backbord-Scharnier:

- Bolzen mit davorhängender äußerer Buchse aus der mittleren, fest eingeschweißten Buchse gerutscht und auf dem angrenzenden Geländer stehend;
- der Distanzring ist nicht erkennbar;
- die Fettnuten am Bolzen sind nicht sichtbar;
- an der Unterseite der mittleren Buchse befindet sich ein rundes, ca. 50 mm breites Loch, von dem Rost- und Fettstreifen auf das direkt darunter liegende grüne Deck gelaufen sind. Eine derartige Öffnung ist beim Neubau nicht vorhanden gewesen;
- an beiden Scharnierblechen sind an den Vorkanten oben Kontakt- bzw. Aufschlagspuren sichtbar;
- der Bolzen glänzt auffällig; dies wäre nicht möglich bei einem Fettfilm.

Steuerbord-Scharnier

- Bolzen ohne äußere Buchse aus der mittleren, fest eingeschweißten Buchse gerutscht und auf dem angrenzenden Geländer stehend;
- der Distanzring ist nicht erkennbar;
- an beiden Scharnierblechen sind an den Vorkanten oben Kontakt- bzw. Aufschlagspuren sichtbar.

Darüber hinaus sind mir auch Fotos einer vom Wrack geborgenen Scharnierbuchse gezeigt worden. Auf den Fotos sind v.a. Teile der Schweißnähte zwischen dieser Buchse und dem Visierarm zu sehen. Ich kann ausschließen, daß es sich dabei um die Schweißnähte handelt, die seinerzeit beim Bau der "VIKING SALLY" durch Schweißer der Meyer Werft gelegt wurden.

b) Seitenverriegelungen

Soweit ich erinnere, waren die Augen für die hydraulischen Verriegelungen sowie die Haken für die manuellen Verriegelungen bereits auf die Achterkantschotte des Visiers geschweißt. Auf jeden Fall wurden die Gegenstücke auf der Schiffsseite dazu passend angegeschweißt.

c) Atlantik-Sicherung

Die drei auf das A-Deck geschweißten Augen sowie das an der Achterkante des Visierbodens angebrachte Auge sind Werkfllieferungen. Die drei erstgenannten Augen wurden mit Übermaß angefertigt. Es ist aus der entsprechenden Zeichnung ersichtlich, daß die beiden Buchsen der Bolzen sowie Zylinder mit Zylinderstange und die Endlageschalter (Sensoren) von Tell-Lieferungen waren. Das Auge des Visiers wurde angeschweißt und als Festpunkt bei der Ausrichtung der anderen drei Augen der Atlantik-Sicherung benutzt.

Beide Buchsen wurden in der Werkstatt so in die Augen eingeschweißt, daß die große Buchse zwischen Mittel- und Backbordauge und die kleine in das Steuerbordauge mit dem Stützblech paßte. Wie bereits oben erwähnt, lagen mir für alle Einzelteile Detailzeichnungen vor, aus denen u.a. auch die Stärke der Schweißnähte hervorging.

Mir sind Fotos von zwei der drei Restaugen der Atlantiksicherung vorgelegt worden, auf denen auch die Schweißnähte sehr gut zu sehen sind, mit denen die Buchsen mit den jeweiligen Augen verbunden waren. Ich schließe aus, daß es sich bei diesen, höchstens 3 mm dicken Schweißnähten um die Originalschweißungen handelt. Diese sind nach meiner Erinnerung mindestens dreimal so dick gewesen. Ich habe die Schweißungen der Buchsen vor dem endgültigen Einbau kontrolliert und hätte derartige Schweißnähte, wie sie auf den mir vorgelegten Fotos zu sehen sind, niemals akzeptiert.

Der Einbau der Atlantik-Sicherung vollzog sich bei geschlossenen, wie oben beschriebenen Visier, wie folgt:

- Der Festpunkt war das Visierauge;
- danach wurden Hydraulikzylinder und die drei Augen mit bereits zuvor angeschweißten Buchsen ausgerichtet, passend gebrannt und angeschweißt.

Dabei habe ich insbesondere darauf geachtet, daß die drei Augen gleichmäßig, d.h. innen und außen gleich, auf das A-Deck geschweißt wurden und weiterhin dafür gesorgt, daß unterhalb jedes Auges in der Leerzelle unter dem A-Deck eine Verstärkung angebracht wurde.

d) Bugrampe

Die Bugrampe wurde ebenfalls unter meiner Kontrolle eingebaut und ausgerichtet. Die Sicherungsbolzen wurden angepaßt. Beim Verriegeln der Rampe klappte zunächst je ein Haken an jeder Seite über die entsprechenden Teile der Rampe und zog die Rampe nach innen, bis ein bestimmter Toppunkt erreicht und überschritten war. Jetzt lag die Rampe an. Anschließend fuhren auf jeder Seite zwei Bolzen aus dem Schiff nacheinander in entsprechende Taschen an der Rampe.

Diese Bolzen rasteten hörbar in ihren Endstellungen ein. Da von dem Bedienpult auf dem Autodeck weder Visier- noch Rampenverriegelungen einsehbar waren, mußte sich der Bediener auf die Kontrolllampen und auf sein Gehör verlassen. Man konnte deutlich hören, wie die Bolzen mit knackenden Geräuschen in den Taschen einrasteten. Erst bei vollständigem Einrasten der Bolzen wurden die Sensoren betätigt, was - wenn alle Bolzen und auch die Haken entsprechenden Kontakt mit den Sensoren hatten - dazu führte, daß am Bedienpult und auf der Brücke "grün" aufleuchtete, d.h. Rampe geschlossen und verriegelt.

e) Gummidichtungen

Der Einbau der 50 mm dicken Gummidichtungen wurde mittels eines Innenstasters alle 300-400 mm der Abstand zwischen den gegenüberliegenden Teilen Visier/Schiff gemessen und - wo Abweichungen festgestellt wurden - wurden diese mit Flacheisen ausgeglichen. Dadurch war gewährleistet, daß die danach eingebauten Gummidichtungen bei geschlossenem Visier einen absolut gleichmäßigen Anpreßdruck hatten, da sich das Visier ca. 8-10 mm in die Gummidichtungen eindrückte und dadurch einen wasserdichten (wetterdichten) Abschluß des Innenraumes des Visiers bildete.

f) Erprobungen im Zusammenhang mit der Abnahme

Während der Werftprobefahrt nach Helgoland wurde u.a. auch das Visier auf seine Dichtigkeit geprüft. Es befand sich in vollständig verriegeltem Zustand, d.h. auch die manuellen

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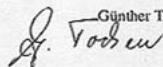
Verriegelungen waren eingelegt. Ich habe bei voller Fahrt, d.h. ca. 2,5 m hoher Bugwelle und leicht stampfendem Schiff, mit dem B.V.-Besichtiger Lohmann und einem Vertreter der Reederei, dessen Namen ich nicht erinnere, im Innenraum des Visiers gestanden und festgestellt, daß das Visier nicht völlig wasserdicht war, sondern an einigen Stellen etwas leckte. Nach Rückkehr wurden in Emden die Gummidichtungen mit Schlemmkreide eingeschmiert, das Visier geschlossen und anschließend wieder geöffnet. Aufgrund der verbleibenden Abdrücke wurden die lecken Stellen ermittelt und entsprechend wurden die Gummidichtungen in diesen Bereichen angehoben. Bei einer anschließenden erneuten Dichtigkeitsprobe wurde das Visier für dicht befunden und durch Reederei, Klasse und finnische Schiffs-sicherheitsbehörde endgültig abgenommen.

Die offizielle Abnahme war - nach erfolgreicher Funktionsprobe am 19. Juni 1980 - bereits am 20. Juni 1980 erfolgt. Anschließend wurde die in der Anlage beigefügte Abnahmeebescheinigung ausgefüllt und von Vertretern der Reederei, des B.V., der Werft und meinem Kollegen Brandt unterschrieben.

Ich habe die "VIKING SALLY" zuletzt bei ihrer Kiel-Kanal-Passage in die Ostsee geschen und danach mit dem Schiff keinen Kontakt mehr gehabt.

Hamburg, den 26. Juli 1995

Günther Todsen



Enclosure A.2.2.15.Office Translation

Günther Todsen, born July 31, 1932
address: Möhnweg 4, 24109 Kiel
telephone: 0431 - 527591

states:

I became an auto mechanic in Eckernförde and terminated my apprenticeship in 1951. Afterwards I drove a truck and then in 1955 started work at HDW-Kiel as a steel construction mechanic. In 1959 HDW began to build hatch covers for von Tell/Göteborg. Part of the corresponding contract between HDW and von Tell was the supply of a mechanic to supervise the mounting of hatch covers onboard as well as possible repairs. This was my work. In the following years I thus supervised the installation as well as the repairs of hatch covers on newbuildings for German and foreign yards. My first contact with Meyer Werft in Papenburg was the participation in a meeting upon instruction of Mr. Rottmann, sen. when the installation of bow visor, bow and stern ramps as well as hanging decks and outer doors were preliminarily discussed. This was in February 1979. The reason for my recalling this so well is that we had tremendous difficulties getting home by car due to the 2nd part of the so-called "snow catastrophe".

Circa at the beginning of April 1979 I took up my work in Papenburg. Shortly before Ascension Day (national holiday in Germany) I had an accident at work onboard "DIANA II" shattering the big toe of my right foot. I was on sick leave for several weeks and therefore could not complete my work on "DIANA II". After my recovery I installed hatch covers on several newbuildings until in April 1980 I received the order to supervise - as previously for the practically identical construction on "DIANA II" - the installation of the bow visor, bow and stern ramps, hanging decks and outer doors on the newbuilding "VIKING SALLY" for Meyer Werft in Papenburg.

My work in detail consisted of assistance to the yard for installation of the components delivered by von Tell resp. the components made by the yard according to the von Tell construction drawings, and of supervising the yard's work in this respect. I had a large number of detail drawings of these construction parts at my disposal, which showed the dimensions of these parts and also of the welding seams. I had saved copies of these drawings in my basement until about two years ago, but then threw them away while cleaning out the basement because I didn't think I would ever need them again.

When I started work on "VIKING SALLY" the bow visor was in closed position, fixed to the ship's hull by means of various flat bars and structural bars. In this position I supervised the following work performed at the yard:

a.) Installation of Hinges

The bore holes for the bushings were made by means of a boring mill in the fabrication hall. I personally took a close look at the bore holes and touched them with my fingers before the bushings were installed and can confirm that by no means were they burned holes. I would never have accepted such dubbed work as can be seen on the photographs shown to me of the remnants of "ESTONIA's" hinge plate. In case the yard would have taken notice of my objections I would have left the ship and would have informed my principals accordingly.

This was the case on a ship in Dunkerque. I had the order to execute the repair of the hatch covers. When the crew refused to put the necessary spare parts at my disposal, without which, in my opinion and experience, it was not possible to perform the repairs properly (although these parts were onboard), I refused to continue the work and returned to Kiel.

Under my supervision onboard the steel bushings were welded into the visor's arms and subsequently bored out to the extent that the bronze bushings did fit. These bores were carried out with extreme precision in

order that port side and starboard side were in alignment in order to avoid breaking tension when opening resp. closing of the visor. Subsequently the bolts were guided in whilst simultaneously the distance rings (2 mm thickness) were fitted. I recall this work especially because it was rather fumblly work. The bolts were made of NIROSTA steel and had a grease groove with grease nipple. By means of these grease nipples the hinges had to be greased at least once a week by grease gun.

Underwater videos of the "ESTONIA" as well as several pictures have been shown to me. On these I have been able to identify a.o. the hinges of the visor on the forecastle deck of the vessel together with bolts and partly with bushings.

In detail I have found the following:

Port Hinge:

- Bolts with outer bushings hanging in front, having slid out of the middle firmly welded bushing and standing on the adjacent railing;
- the distance ring is not recognizable;
- the grease groove at the bolt is not visible;
- at the under side of the middle bushing there is a round ca. 50 mm wide hole, from which rust and grease have run onto the green deck directly below. Such an opening has not been there at newbuilding;
- at the upper front edges of both hinge plates contact resp. impact marks are visible.
- the bolt is noticeably shiny; this would not be possible if covered by a grease film.

Starboard Hinge

- Bolt without outer bushing having slid out of the middle, firmly welded bushing and standing on the adjacent railing;
- the distance ring is not recognizable;

- at the upper front edge of both hinge plates contact resp. impact marks are visible.

In addition to this, also pictures of a hinge bushing brought up from the wreck were shown to me. The photos showed among other things parts of the welding seams between this bushing and the visor arm. I can exclude that these welding seams are the welding seams made by welders of Meyer Werft during the newbuilding of "VIKING SALLY".

b) Side locks

As far as I remember, the lugs of the hydraulic locking as well as the hooks of the manual locking were already welded to the aft bulkhead of the visor. In any case the mating parts had been welded to the ship's side respectively.

c) Atlantic lock

The three lugs, welded to the A-deck, as well as the lug at the aft part of the visor's bottom are yard-supply. The 3 first mentioned lugs had been constructed with overmeasure. It can be seen from the respective drawing that both bushings of the bolt, the cylinder including piston rod and the limit switches (sensors) had been delivered by von Tell. The lug of the visor was welded and used as fixing point for the alignment of the other three lugs of the Atlantic lock.

At the workshop both bushings had been welded into the lugs in such a way that the large bushing fitted between the middle and the port lug and the small bushing into the starboard lug with the support bracket. As already mentioned above, I have had detail drawings for all components from which among others also the thickness of the welding seams were revealed.

Photographs were submitted to me, showing 2 of the 3 lug remnants of the Atlantic lock, on which welding seams can be seen very clearly, which had connected bushings with the respective lugs. I exclude that these welding seams, having a maximum thickness of 3 mm, are the original welds. According to my memory these welding seams had been at least 3 times as thick. I have checked the weldings of the bushings prior to final installation and would never have accepted such welding seams as recognisable on the photographs submitted to me.

The installation of the Atlantic lock was carried out as follows by closed visor:

- The fixing point was the lug of the visor
- accordingly hydraulic cylinder and the 3 lugs with already previously welded bushings were aligned, burned to fit and welded.

Thereby I paid special attention to the even welding of the 3 lugs to the A-deck, i.e. inner and outer side the same. Furthermore, I took care that below each lug, in the void space under A-deck, a reinforcement was fitted.

d) Bow ramp

The bow ramp as well had been installed and arranged under my supervision. The securing bolts were made to fit. During locking the ramp at first each one hook on each side of the corresponding parts at the ramp lowered and pulled the ramp inwards, up to a special point had been reached and passed. Now the ramp was tight in position. Then two bolts on each side were moving out of the ship into corresponding pockets of the ramp.

The bolts snapped audibly into their end positions. As from the control console on the car deck neither visor nor ramp-locking devices could be seen, the operator had to rely on the control lamps and his sense of hearing. It was clearly audible by snapping noises when the bolts engaged the pockets. Only after the bolts had fully engaged did the sensors become activated, which - if all bolts and also the hooks were in contact with the sensors - led to the "green light" at the control console as well as on the bridge, i.e. the ramp was closed and locked.

e) Rubber packings

Prior to installing the 50 mm thick rubber gaskets every 300 - 400 mm the distance between the opposite parts visor/ship were measured by means of an inside callipers and ascertained deviations were compensated by flat iron. This way guaranteed that the afterwards installed rubber gaskets had absolutely the same contact pressure, as the visor was pressed into the rubber gaskets up to 8 - 10 mm, which made the inside of the visor watertight (weathertight).

f) Testing in connection with acceptance

During the trial trip to Helgoland a.o. also the visor was checked in respect of its tightness. The visor was totally locked, i.e. also the manual locking devices were closed.

During full speed - i.e. about 2,5 m high bow wave and slightly pitching vessel - myself, Mr. Lohmann, surveyor of Bureau Veritas, and a representative of the owners, whose name I do not remember, were inside the visor and noted that the visor was not totally watertight, but at some places water was slightly leaking through. After returning to Emden the rubber packings were marked with chalk, the visor was closed and opened again. Due to the remaining imprints the leakings were found out and the rubber packings were raised in these particular areas. During a subsequent

tightness test the visor was found to be tight and finally accepted by the owners, the classification society and the Finnish board of navigation.

The official delivery took place already on 20th June 1980 - after successful function test on 19th June 1980. Afterwards the attached Delivery Certificate was filled in and signed by representatives of the owners, the B.V., the shipyard and my colleague Brandt.

I have seen the "VIKING SALLY" the last time when passing the Kiel Canal to the Baltic sea. Since that time I have never been in contact with this vessel again.

Hamburg, the 26th July 1995

signed by Günther Todsen

Receipt /transfer certificate of visor

Enclosure 2.4.2.22

ANKOM 7 JUL 980

VON TELL

MOTTAGNINGS- EL. ÖVERLÄNNINGSHVIS^{x)}
 Abnämn- oder Ubergabebescheinigung^{x)}
 Receipt or Transfer Certificat^{x)}

4911.1/90.152.1

von Tell-nr.: TELLING 5011

M.S.

VARV } VARV }	Joe. L. Morter	NYBYGGE/ÖBYGGE ^{x)}	500
Bauwerkf		Newbuild/	
Shipyard)		Rebuilding	

REDERI }	.Sality.....	KLASS }	Zurück Veritaz
Reedereri		Klasse}	
Shipping Co.)		Class	

MONTÖR	G. Tidman	DATUM)	20. 6. 90
Service-Mann	H. Brundt	Datum)	
Mounter		Date	

VATTENPROVNING/LUCKMANÖVRING/ÖVERLÄNNING^{x)}
 Wasserprobe/Deckelmanöver/Ubergabe^{x)}
 Waterproto/Hatch Operatin/Transfer^{x)}

LUCKOM } 1 Engdörrage, 1 Bugnäpple, 1 Hecknäpple, 4 Passangier-
 Luken } portarom, 2 Lottunnadörrar, 3 Hängedörrar mit Aufzäh-
 Hatches) nings, 1 Växelgårdshängedörr

ANMÄRKNING
 Bemerkung Notes

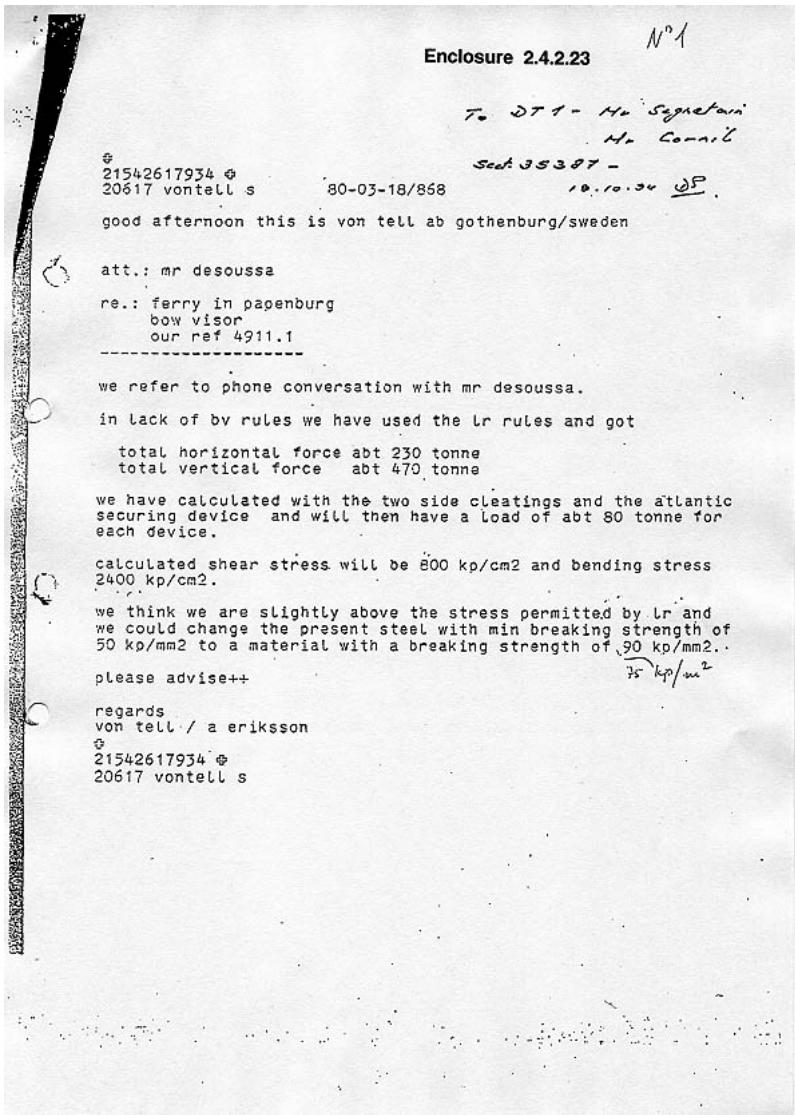
MEBVERKANDE:
 Teilnehmer:
 Co-Operator:

REDERI }	<i>Eriksson</i>
Reedereri	
Shipping Co.)	
KLASS }	<i>JY</i>
Klasse}	
Class }	
VARV }	<i>Mortet</i>
Werft)	
Yard }	
von TELL	<i>Herbert Brundt</i>
UTFÄRDANDEN }	<i>G. Tidman</i>
Ausfertigungen	
Issues	

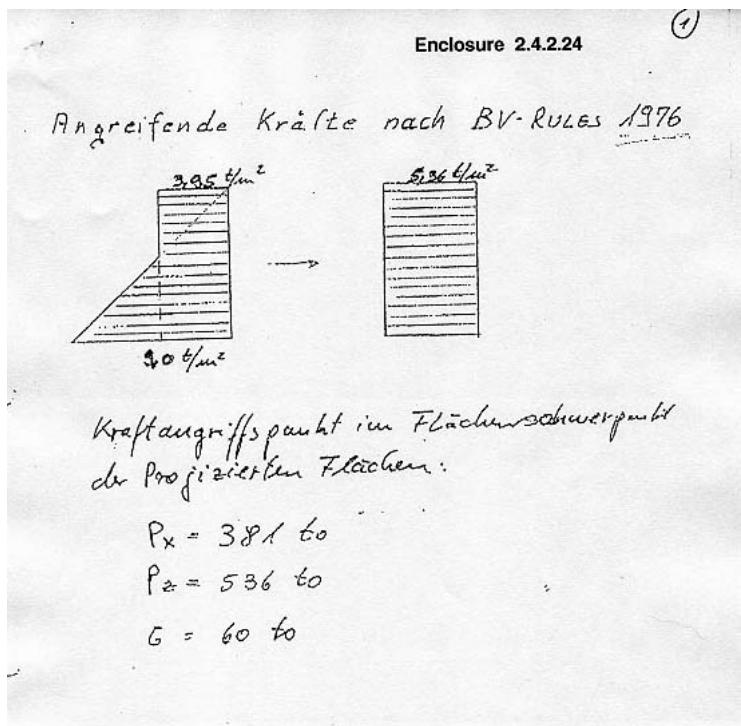
Not applicable cross over



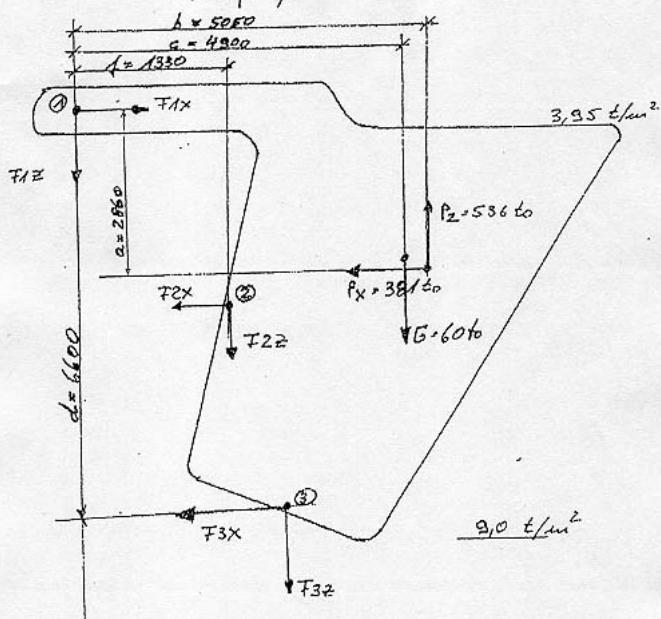
Telex von tell AB gothenburg to BV hamburg



Meyer werft calculations of visor loads



(2)

Bugklappe 530Kräfte system

(3)

Gesamt horizontal kraft:

$$R_x = \frac{P_a(b - \frac{t}{2}) - G(c - \frac{t}{2}) - P_x \cdot a}{d} = 152,5 \text{ t}_0$$

Gesamt vertikallkraft:

$$R_z = P_2 - G = 476 \text{ t}_0$$

Insgesamt 5 Aufhängepunkte

$$F_{ix} = R_x / 5 = 30,5 \text{ t}_0$$

$$F_{iz} = R_z / 5 = 95,2 \text{ t}_0$$

$$F_R = \sqrt{F_{ix}^2 + F_{iz}^2} = 100 \text{ t}_0$$

→ 100 t₀ Belastung / Aufhängepunkt

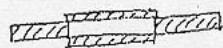
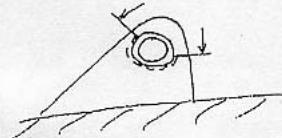
(7)

Mindes + gesuchte für Augen:

Material: St 52-2

$$R_{CH} = 355 \text{ N/mm}^2 \Rightarrow k = 0,75$$

$$\sigma_{zul} = 123/k \Rightarrow 164 \text{ N/mm}^2$$



$$\sigma = \frac{F}{A} \quad A_{min} = \frac{F}{164}$$

$$A_{min} = \frac{100 \text{ t}}{164 \text{ N/mm}^2} = 6,100 \text{ mm}^2$$

Memo concerning checking of old von tell files

Enclosure 2.4.2.25

**The German Group of Experts
investigating the sinking of M/V "ESTONIA"**

c/o AHLERS & VOGEL · Schaar tor 1 D-20459 Hamburg · Telephone 49-40-37 85 88-0

Memo

Betr.: Besuch bei Kvaerner Ships Equipment AB, Göteborg und Durchsicht der
alten von Tell AB Akten bezüglich "Diana II" und "Viking Sally"

Am 8. und 9.1. d.J. wurde die

Kvaerner Ships Equipment AB

Kämpegatan 3

S-41104 Göteborg

Tel. + 46 - 31 - 725 7900

Fax + 46 - 31 - 705 40 4062

besucht und mit tatkräftiger Unterstützung des Managing Directors Göran K. Johansson, des Sales Managers Dan Magnusson sowie des Consultants Per Fagerlund insgesamt 42 Ordner und Schnellhefter mit Konstruktionsunterlagen und Korrespondenz der Firma von Tell & Trading AB, Göteborg bezüglich "Diana II" und "Viking Sally" durchgesehen.

Zur Vorgeschichte wurde folgendes mitgeteilt:

- Kvaerner hat Ende der 80er Jahre den Aktenbestand mit Kundenkartei aus der Konkursmasse der von Tell & Trading AB gekauft, ohne die Firma selbst zu übernehmen, die als Name nach wie vor besteht und mit der Nummer von Kvaerner im Telefonbuch von Göteborg steht. Die Akten waren in 20-25 Kartons verpackt, die gesichtet wurden und der interessante Teil wurde in das Kvaerner Archiv direkt im Bürogebäude übernommen (ca. 20 lfd. Meter Aktenordner) während der Rest in Kartons in einem Schuppen eingelagert blieb, wo er sich nach wie vor befinden soll.

- Als die "Estonia" Katastrophe bekannt wurde, war Peter Rösholm MD in Göteborg (jetzt Kvaerner, Rostock) und veranlaßte
 - (a) Schreiben an das Kommunikationsministerium vom 13.10.94 gemäß Anlage 1, welches mit Schreiben vom 9.2.95 beantwortet wurde (Anlage 2);
 - (b) Durchsicht der "Diana II" und "Viking Sally" Akten und Information über deren Vorhandensein an der schwedischen Teil der Internationalen Kommission offenbar telefonisch;
 - (c) Kalkulation der Verriegelungen des Visiers mit dem Ergebnis, daß die LCC - nach heutigem Standard – im unteren Bereich lag.
- Im 2. Halbjahr 1995 meldete sich Jan-Ove Carlsson – MD von MacGregor, Göteborg, und verlangte Akteinsicht. Dieses wurde von Göran Johansson, der inzwischen Peter Rösholm als MD abgelöst hatte, zunächst abgelehnt und um Vorlage einer entsprechenden Vollmacht durch die Internationalen Kommission ersucht. Diese wurde kurz darauf durch Börje Stenström erteilt und J.O. Carlsson beschäftigte sich daraufhin 2 Tage mit den Akten und kopierte diverse, im einzelnen nicht bekannte Teile der Akten. Dafür waren Teile der Akten für mehrere Wochen außer Haus.
- Als nächstes meldete sich im Dezember 1996 Tuomo Karppinen, der anschließend in Begleitung von Klaus Rahka sowie eines weiteren Mitarbeiters der VTT, Helsinki, erschien und einen Tag mit den Akten verbrachte. Anschließend besuchten sie noch die

GRIMMEREDES VERKSTADS AB

in Göteborg, wo alle Komponenten der Verriegelungssysteme beider Schiffe, mit Ausnahme der von der Werft hergestellten Augen, angefertigt worden waren. Angeblich sollen sie da von einem langjährigen Mitarbeiter abgefertigt worden sein, nachdem sie ihre Theorie vorgetragen hatten, und mit hängenden Köpfen wieder abgezogen sein.

- Danach war wieder Ruhe bis sich im Vorfeld der Veröffentlichung des Berichtes der Internationalen Kommission mehrere Medienvertreter meldeten, denen jedoch Einsicht in die Akten verwehrt wurde.

Das Ergebnis der Aktdurdurchsicht durch den Unterzeichneten lässt sich folgendermaßen zusammenfassen (nur bezogen auf die Verriegelungen von Visier und Bugrampe):

1. "Diana II" – S 592 - 48611

- 1.1. Es sind alle Zeichnungen einschl. Detailzeichnungen vom Entwurf bis zur BV genehmigten Endfassung mit handschriftlichen Vermerken in rot (Original) vorhanden. Es wurden jedoch keine durch das Sjöfartsverket Rotterdam genehmigten Kopien gefunden. Dieses ist wahrscheinlich mit der bis zur "Estonia" Katastrophe durch Sjöfartsverket, wie auch F.B.N., verfolgten Philosophie zu erklären, nämlich daß alle strukturellen Komponenten Sache der Klasse seien. Dieses bezog sich jedoch offensichtlich nicht auf die Belastung der Hängedecks, über die noch weit nach Indienststellung der "Diana II" mit dem Sjöfartsverket korrespondiert wurde.
- 1.2. Es gibt einen Ordner mit handschriftlichen Berechnungen plus Tipstreifen für die Bereiche:
 - Bug- und Heckkampenverriegelungen – keilförmige Bolzen (7 Seiten)
 - Belastung Autodecks und Rampen (10 Seiten)
 - Verschlußanordnung Maschinenraumluke (3 Seiten)
 - Autodeck und Auffahrrampen (42 Seiten)
 - Heckkampen
 - Bugvisier – ohne Inhalt

1.3. In den insgesamt 3 Korrespondenzordnern, die vollständig zu sein scheinen, wurden u.a. folgende Bemerkungen gefunden:

- Besprechung 26.7.78: Visier soll mit 2 hydraulischen Bolzen verriegelt werden, Atlantiksicherung wird von der Werft gemacht.
- Besprechung 14.9.78: Bugrampe nach 11-44.21 als Kollisionsschott unter Berücksichtigung der rollenden Last.
Bugvisier wie benachbarte Außenhaut gemäß 11.-44.22, also 1,75 ts.
- 19.10.78 mit BV-de Souza:
Bugrampe muß spritzwasserdicht sein.
Bugrampe = Kollisionsschott.
Bugklappe: - Gummidichtungen müssen durch Schraubverbindungen befestigt werden;
 - Hydraulische Verriegelung plus Handverriegelung
- 20.10.78: Es waren für das Visier ursprünglich 4 manuelle Sicherungen vorgesehen, dieses wurde am 3.10.78 auf Vorschlag von Tell auf 2 reduziert und von der Werft akzeptiert.
- 15.12.78: Einsatz von Todsen abgestimmt.
- 22.12.78: BV hat uns darauf aufmerksam gemacht, daß die Löcher in der Schottwand (Frontschotten) für Verschlußanordnung abgedichtet werden müssen.
- 5.1.79: Kommentar zur Änderung des Visierscharniere.
- 9.1.79: Nach Rücksprache mit der Werft wollen Sie sich wegen der Farben für die Lampen der Verriegelungsanzeige nach den Vorschriften der schwedischen Behörden richten.
Todsen weist darauf hin, daß im Falle einer Beschädigung der Gummipackungen des Visiers, die Endlagenschalter der Atlantiksicherung unter Wasser stehen und fragt: Sind sie wassergeschützt?
- 24.1.79: Die Reederei (Kure) besteht darauf, die Verriegelung des Visiers und die Atlantiksicherung zu trennen, d.h. 2 Steuerschieber.
- 29.1.79: Es sind nur noch die Beschläge Atlantiksicherung auf dem Zeichentisch und sollen alsbald bestellt werden.

- 5.2.79: Atlantiksicherung liegt noch auf dem Zeichentisch.
- 12.2.79: Endgütige Zeichnungen Atlantiksicherung 372 + 373 + Details abgeschickt.

2. "Viking Sally" – S 590 - 49111

2.1. Es sind Zeichnungen vorhanden, auch Detailzeichnungen mit Schweißnahtstärkenangaben, z.B. für Ramphaken 5 mm, jedoch keine Originale mit den handschriftlichen BV-Eintragungen.

2.2. Aus den Bestell- bzw. Rechnungsordnern geht hervor, daß die Beschläge für Bugrampe und Visier gemäß Zeichnungen

49111 – 304 / 305

49111 – 360 / 361

49111 – 371 / 372 / 373

am 5.11.79 bei Grimmered bestellt und am 21.12.79 (Rechnungsdatum) geliefert wurden.

Anmerkung: Das bedeutet, daß die Komponente der Atlantik- und Seitenverriegelungen bereits fertig vor Ort waren, als sich die Diskussionen zwischen de Souza und von Tell AB über die Dimensionierung im März/April 1980 abspielten.

2.3. Der Korrespondenzordner, wie auch jedwede Kalkulationsordner, fehlen. Auch eine Durchsicht des Kvaerner Archivs führte zu keinem anderen Ergebnis. Kvaerner wird jedoch die Kartons im Schuppen gelegentlich durchsehen und sich melden, falls die Ordner auftauchen sollten.

3. von Tell & Trading AB Angestellte

Es ergibt sich aus den Unterlagen, daß es sich im Wesentlichen um folgende Personen gehandelt hat:

- Bo Bengtsson – Manager Design Office
- Bo Jonasson
- Alv Eriksson
- Herbert Brandt
- Tage Karlsson (TK)
- Sven Samuelsson
- Ernst Magnusson

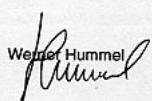
Davon wurden vor Abreise des Unterzeichneten in Göteborg

Bo Jonasson (Gothenburg Port Authority)

Alv Eriksson (retired)

lokalisiert und werden in der kommenden Woche angesprochen. Der langjährige Mitarbeiter von Grimmered wurde ebenfalls lokalisiert, ist jedoch aufgrund einer Krebserkrankung nicht mehr ansprechbar. Die Fa. Grimmered bemüht sich jedoch herauszufinden, ob eine 2. Atlantik-sicherung für "Viking Sally" geliefert wurde.

Hamburg, 11.1.98


Werner Hummel

Kvaerner Ships Equipment ABAnlagen

KOMMUNIKATIONSDEPARTEMENTET
103 33 STOCKHOLM

ATT: KOMMUNIKATIONSMINISTERN

Ett ref. Lämnat Datum
Referat. Datum Date

PR/CAX 1994-10-13

SÄKERHET PÅ RO-RO FARTYG/FÄRJOR

Vi kontakter Er med anledning av den tragiska olyckan med M/S Estonia och den information som cirkulerar om tillsättande av en arbetsgrupp för att studera RoRo-fartygs säkerhet.

Kvaerner Ships Equipment AB konstruerar, säljer och utför service av fartygsutrustning såsom lastluckor, ramper, portar (bl.a. bogportar och bogvisir), hissbara bildäck, lastelevatorer etc.

Bolaget tillhör norska Kværner koncernen med aktiviteter inom skeppsbyggeri, rederiverksamhet, offshore, skogs- och mekanisk industri. Kværner är idag en av världens ledande fartygsbyggare - och störst i Europa.

Vi vill med detta brev visa vårt intresse för att delta som experter i arbetet med att skapa säkrare fartyg och fartygsdrift i framtiden.

Vårt bolags kunskaper inom området är unika och vi har samtidigt tillgång till kunskaper och erfarenheter från koncernens aktiviteter inom områdena skeppsbyggeri, fartygsdrift och offshore.

Vår utrustning sitter i flera färjor som opererar i Nordsjön, Engelska Kanalen och i Irlandska Sjön där väderförhållanden kan vara hårdare än de vi upplever i Östersjön.

Hoppas Ni finner denna information intressant och vi ser fram emot att höra från Er.

Med vänliga hälsningar

Peter Rösholm
KVAERNER SHIPS EQUIPMENT AB

Peter Rösholm
Verkställande Direktör

KVÆRNER

Nederland Te. +31 31 73 10 Fax. +31 31 73 10
Duitsland Telex. +44 31 187 340
Sverige Telex 22509 Kværn B
C:\MSOFFICE\WINWORD\PR\12-10KOM.B



Peter Rösholm
 Kvaerner Ships Equipment AB
 Kilsgatan 4
 411 04 GÖTEBORG

Tack för Ditt brev kring säkerhet på Ro-Ro fartyg och färjor. M/S Estonias förlisning har förorsakat mänskliga tragedier. Det återstår mycket arbete för att klarilägga katastrofens orsaker.

Vi måste också medverka till att sjösäkerheten förbättras i framtiden. Regeringen har därför tillsatt en kommitté för att analysera möjligheterna att ytterligare utveckla sjösäkerheten inom sjöfarten. Kommittén skall lämna förslag om hur det nationella och internationella sjösäkerhetsarbetet bör inriktas och bedrivas för att förbättra sjösäkerheten främst i den sjöfart som berör Sverige. Kommittén skall utarbeta ett handlingsprogram för ökad sjösäkerhet med speciell inriktning på passagerartransporter med färjor och redovisa en samlad strategi för det svenska agerandet i Europeiska unionen, IMO och i det övriga internationella samarbetet.

Kommittén skall redovisa sitt arbete senast den 1 november 1995.

Med vänlig hälsning

Ines Uusmann
 Ines Uusmann

Time shedule of final building phase viking sally

Enclosure 2.4.2.26

Jos. L. Meyer
Schnellwert - Maschinenfabrik
2990 Papenburg 1
Peetsfisch 1120

Terminplan

Blatt ...
woche 24.

Termin Date	Verantwortlich Responsible	Abnahme Acceptance		Auszuführende Arbeiten work to be carried out
		Klasse Class	Bauaufs. Build. superv.	
Freitag, 13.6.	Bless RL, MB, EL, Sanea,		X ..	Ölgefeuerte Hilfskessel in Betrieb nehmen. Heizungsanlage in Betrieb. Wärmeabgabe für Maschinenanlage sicherstellen. Bugklappe betriebsbereit. Maschinenraumreinigung Kontrolle aller Rettungsmittel (Schwimmwesten, Insassen, Rettungsringe Flöße)
"	Wecke, SD, Schl. EL Bless			
	Buhl, Schl.	FSS	X	

STOP

LICHEN WÄHR 35

0000 1997 01-03 11:01 SG. 10/90

Jos. L. Meyer

Schiffswerft - Maschinenfabrik
2990 Papenburg 1
Postfach 1120

Terminplan

Blatt ...?
Woche ...
25.

Termin Date	Verantwortlich Responsible	Annahme Acceptance		Auszuführende Arbeiten work to be carried out
		Klasse *Class.	Bauaufz. Build. superv.	
Hittwoch, 18.6.1980	Bless MS RL EL Alfa-Laval	BV	X "	Brennstoffseparatoren in Betrieb spülbetrieb Brennstoff fgr die Hauptmotore
	Buhl, EL,Ti Buhl, RL,EL,Schl.		X	Weckanlage betriebsbereit Scheibenwischer, Feuerschein, Scheibenwaschanlage betriebsbereit
	Bless/Stal-Astra Buhl,Kissling EL			Klimakompressoren in Betrieb, zentralantennenanlage in Betrieb
	Buhl, Elma, EL			Hochseilsprechsanlage in Betr.
	Buhl, Teleste ST			Musikanlage in Betrieb
	Bless, RL, EL,Hipress			Einregulieren Klimaanlage
Donnerstag 19.6.1980	Bless HD RL			Auffüllen des Kühlwassersystems Hauptmotor
	Bless,HD, RL,EL,MS	X		Inbetriebnahme Anlaßluftkomp
	Bless,Kissling HD, EL Wecke, v.Teil),Schl. FSS	X		Inbetriebnahme Ruderanlagen
		X		Funktionsprobe aller Rangendecks, Seitenpforten, Bug- und Heckrampen, Bugklappe

1702

LINESA SEVEN MS

00119 TSG 07-07 26.10.90

Jos. L. Meyer Schiffswerft - Maschinenfabrik 2990 Papenburg 1				Blatt ... woche ...
Termin Date	Verantwortlich Responsible	Abnahme Acceptance		Auszuführende Arbeiten work to be carried out
		Klasse Class.	Bauaufs. Build. superv.	
Montag, 23.6.80	Bless, MAN, RL, MB, EL			Kalte Funktionsproben Hauptmotoren
"	Abrams			Fahrerlaubnisechein SeeBG nach Programm Herr Abrams
Dienstag, 24.6.	Bless/Abrams MB, MA, EL, RL	BV	x	Standprobe Hauptmotor
	Rosema, Bless Buhl			Schiffsreinigung Stellagen & Werkzeuge von Bord
Mittwoch 25.6.80	Abrams, Bless/Buhl	BV FSS	x	Schiffüberführung nach Enden mit anschließender Probefahrt

STADT
LUDWIGSHAFEN
SCHIFFSREINIGUNG
1980-10-25
10:00

Correspondence von tell AB FBN

Enclosure 2.4.2.27

Translation summary of correspondence between von Tell AB and the Finnish Board of Navigation regarding the ramp and visor installation in MV Viking Sally

Letter dated 1979-12-14 from von Tell AB to Sjöfartsstyrelsen, Helsingfors (the Finnish Board of Navigation)

Attn: The Ship Section

Subject: Approval of drawings, our ref no 4911.1

The Sally shipping company, Mariehamn, is building at Jos. L Meyer, Papenburg, a passenger and car ferry for traffic between Sweden and Finland. This ferry is to be built to Bureau Veritas and your approval.

We have got from the yard in Germany the contract to deliver elevating car decks, ramps for stern and bow, visor and side doors. Identical equipment was delivered to the sister vessel DIANA II that was build in 1979 by Meyer with approval by BV and the Swedish National Maritime Administration.

We would like to be informed about the details for which we should submit drawings for your approval.

We look forward with interest to your early reply.

With kind regards,

Letter dated 27.12.1979 from the Finnish Board of Navigation to von Tell AB, Gothenburg

Subject: Newbuilding at Jos. L Meyer

Regarding the bow and stern ramps, the side doors and the visor we assume that the drawings are examined by Bureau Veritas. Only in case the class is uncertain about how any detail in the Load line and SOLAS conventions is interpreted by the Finnish Administration should drawings be sent to this office.

In such case the problem should be clearly defined in order to facilitate dealing with it. The Board is lacking resources for routine examination of all the drawings required in a modern newbuilding.

Also regarding the elevating car decks do we accept the approval by class unless special questions arise. If it is intended that it should be possible to lift and lower the decks in loaded condition, i.e. with cars, are the devices to be regarded as loading devices and must be approved by the Finnish Board of Labour Safety.

With kind regards,

Handwritten remark by F.B.N. Ref. Co. 5:
"Supposedly it's regarding drawings concerning
LL Load line questions
As long as we stay within LL questions, matter
can be dealt with by BV
When it comes to interpretations and/or
exemptions, the approving authority is F.B.N."

Mölndal-Sweden	1979-12-14	von Tell AB
Vår datum Our date 1979-12-14	Vår referens/Our reference CB/IA	
Ert datum Your date	Ert referens/Your reference	

Sjöfartsstyrelsen
Bergmansgatan 1
HELSINGFORS
Finland

M.

Att.: Fartygssektionen

Betr.: Godkännande av ritningar
vår ref. nr 4911.1

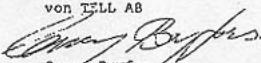
Rederi AB Sally, Mariehamn bygger vid Jos. L Meyer, Papenburg en passagerar- och bilfärja för trafik mellan Sverige och Finland. Denna färja skall byggas till Bureau Veritas och Ert godkännande.

Vi har av varvet i Tyskland erhållit i uppdrag att leverera höj- och sänkbara bildäck, ramper i för och akter, visir och sidoportar. Samma utrustning levererades vi till systerfartyget DIANA II, som byggts 1979 hos Meyer med godkännande av B.V. och Svenska Sjöfartsverket.

Vi önskar veta på vilka detaljer vi skall översända ritningar för Ert godkännande.

Vi avväntar med intresse Er snabba behandling och svar.

Med vänliga hälsningar

von TELL AB

Conny Bryfors

*1. Schenck
2. Wiberg
(3. Hankeinen)?
1979-12-20
OS.*

*Kryssat till hoi on LL-
byggmästaren i flyt-
räder, båt.
Vän hanen den just nu sel-
ges till LL - prisbelöni osien båten B
Kan ni nu din båt till j/fra
prisbelöni, men kyringgi MHT.*

Postal address:	Office address:	Phone:	Telex:	Telex:	Bank:	Bank Giro No.
P.O. Box 472 S-410 27 Göteborg 1 Sweden	Göteborgsvägen 97 S-412 31 Mölndal Sweden	031-47 00 00	20 617 0000	Tellende	Scandinaviska Kreditkåren Banken, Göteborg	500-1835 Post Giro No. 2409 45-4

SJÖFARTSSTYRELSEN

Helsingfors 27.12.1979
Nr KD 3965/79/301
L-1296

von Tell AB
PB 472
S-40127 Göteborg 1
Sverige

ARKIVISERAD

Handstilning CB/IA

Ärende Nybygge f/or Jos.L.Meyer

Beträffande för- och akterramperna, sidoportarna och visiret
förutsätter vi att ritningarna i första hand granskas av
Bureau Veritas. Endast i det fall att klassen är osäker om
hur någon punkt i lastlinje- eller SOLAS-konventionen tolkas
av den finländska administrationen, skall ritningar sändas till
sjöfartsstyrelsen.

För snabb behandling bör i så fall problemet vara klart be-
skrivet. Sjöfartsstyrelsen saknar kapacitet för rutinmässig
genomgång av allt det ritningsmaterial ett modärnt fartyg
förutsätter.

Även beträffande de höj- och sänkbara bildäcken näjer vi oss
med att de godkänns av klassen om icke speciella problem
uppstår. Om det dock är meningen att bildäcken skall kunna
lyftas och sänkas i lastat tillstånd d.v.s. med bilar på,
betraktas de som lastningsanordningar och skall godkännas
av arbetskyddsstyrelsen.

Med vänlig hälsning

Byråingenjör Gunnar Edelmann

GE/MS

Lam. 1.44

ADRESS: Borgmästargatan 1

HELSINGFORS 14

POSTADDRESS: PB 158

00141 Helsingfors 14

Finland

TELEFON: 90-650 411

TELEFON: 121471 mähif

POSTGIROKONTO: 3801-4

Sketch list on drawing 49111-372

MATERIALLISTE				Enclosure 2.4.2.28
NR.	BENENNUNG	ANZ	SKIZZE	MATERIAL, TYP
1.	VERSCHLUSSBOLZEN	1	49111-372/1	SIEHE DET.
2.	STEUERGEHÄUSE FÜR VERSCHLUSSBOLZ	1	372/2	ROHR SIS 2172 (ST 52)
3.	VERSCHLÜSSROHR	1	372/3	" "
4.	STEUERGEHÄUSE FÜR SICHERUNGSSTIFT	1	372/4	SIS 1412 (ST 42)
5.	SICHERUNGSSTIFT	1	372/5	SIS 2172 (ST 52)
6.	VERSCHRAUBUNG	1	372/6	SIS 1412 (ST 42)
7.	AUGENBOLZEN	1	372/7	SIS 2172 (ST 52)
8.	ACHSE	2	371/4	SIS 2172 (ST 52)
9.	ACHSE	1	372/8	" " 2321 W.NR. 14057
10.	SCHEIBE	1		#110/50x20 f.z.v.
11.	" "	2		#80/51x5 f.z.v.
12.	" "	8		#52/31x5 f.z.v.
13.	TELLERFEDER	10		40x20,4x1 DIN 2093
14.	STEUERSCHRAUBE	2		T6 SS M10x35 f.z.v.
15.	MUTTER	2		M6 M. M10 f.z.v.
16.	"	1		M6 M. M48x5 f.z.v.
17.	SEEGER RING	4		A 30 x 1,5 DIN 471 f.z.v.
18.	SPLINT	2		SP 10x80 f.z.v.
19.	SCHMIERNIPPEL	4		DIN 3404 AM 10x1 f.z.v.
20.				

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20 NOV. 1979

SHIPYARD: JOS. L. MEYER PAPENBURG	AUTOMATISCHE UND MANUELLE VERSCHLUSSANORDNUNGEN FÜR BUGKLAPPE		
OWNER:			
SHIP: S 590	DRAWN BY: T.K.	DATE: 79.10.03	
CLASS: B.V.	SCALE: 1:10.15	won-Tell 49111-372	
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Sketch list on drawing 49111-373

MATERIALLISTE

Enclosure 2.4.2.29

POS	BENENNUNG	ANZ	SKIZZE	MATERIAL / TYP
1	VERSCHLUSSBOLZEN	1	49111-373/1	SIEHE DET.
2	STEUERGERÄUSE FÜR VERSCHL. BOLT	1	-372/2	ROHR SIS 2172 (ST.5)
3	VERSCHLUSSROHR	1	-373/2	
4	STEUERGERÄUSE FÜR SICHERUNGSSTIFT	1	-372/4	SIS 1412 (ST.42)
5	SICHERUNGSSTIFT	1	-372/5	SIS 2172 (ST.52)
6	VERSCHRAUBUNG	1	-372/6	SIS 1412 (ST.42)
7	ACHSE	2	-371/4	SIS 2321 W.NR.140
8	SCHEIBE	8		Ø 52/31.5 F.Z.V.
9	TELLERFEDER	10		40x20.4x1 DIN 22
10	STEUERSCHRAUBE	2		T6SS M10x35 F.Z.
11	MUTTER	2		M6M M10 F.Z.
12	SEEGER RING	4		A 30x1.5 DIN 471
13	SCHMIERNIPPEL	4		DIN 3404 AM 10x1 F.

60151-1

20 NOV. 1979

'Viking Sally'

SHIPYARD: JOS. L. MEYER PAPENBURG

OWNER:

SHIP: 590 DRAWN BY: DATE: 7-K-79.10.03

CLASS: TS V. SCALE: 1:10, 1:5

ATLANTIKSICHERUNG
(UND EINWEISER)**von Tell**

49111-373

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Letter BV hamburg to von tell GmbH

Bureau Veritas

Enclosure 2.4.2.30

INTERNATIONALE GESELLSCHAFT FÜR DIE KLASSEIFIKATION
VON SCHIFFEN UND LUFTFAHRZEUGEN SOWIE ABNAHME VON WERKSTOFFEN
UND INDUSTRIEERZEUGNISSEN

BUREAU VERITAS-DZB Hafenmarkt 33 D 2000 Hamburg 11

von Telk GmbH.

Sophienallee 24

2000 Hamburg 19

NR. TB 1002

Betr.: Neubau 530 der Werft
Von: L. Meyer, Papenburg.DEUTSCHES ZENTRALBÜRO
HOFENMARKT 33
D 2000 HAMBURG 11TELEFON 344937-59
TELEGRAMME: BUVER HAMBURG
TELEX: 2 15 426 BUV D

SECTION No. 35387.

Im Antwortzettel bitte zu wiederholen

Hamburg, den 2 July, 1980.

COPIE

Ihr Schreiben von 10 April 1980.

Sehr geehrte Herren,

Sie erhalten in der Anlage die nachstehend aufgeführten
Unterlagen mit unserem Sicht - bzw. Genehmigungsvermerk
versehen zurück.

Mit freundlichen Grüßen!

Bureau Veritas
R. Borchard

Anlage:

49111-373 Atlantik Sicherung
49111-372 Aut. u. man. Verschluss
für Bugklappe.

Anzahl: je 2 "

Zu beachtende Bemerkungen: 1- rot

cc mit Anlagen: BV Oldenburg

BANK: DEUTSCHE BANK A.G. HAMBURG, ZWEIGST. MATTERNWIEDE, KTO. 37/09664 (BLZ 20070000)

Von tel manual

Enclosure 2.4.2.31

M/S "VIKING-SALLY"
OPERATION INSTRUCTIONS
SPARE PARTS SPECIFICATION
HYDRAULIC CYLINDERS

von Tell

VON TELL	M/S "VIKING-SALLY"	
	von Tell No 4911.1	
		1:19

Operation instructions for hydraulic and mechanical installations
on board passenger ferry, yard No 590, built at Jos. L. Meyer,
Papenburg, 1980.

The hydraulic and mechanical arrangements are constructed by
VON TELL under manufacturing No 4911.1.

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I. STERN RAMP page 4:19 - 6:19

- 1) Construction
- 2) Maintenance
- 3) Load capacity
- 4) Locking device
- 5) Operation
- 6) Control

II. BOW VISOR page 6:19 - 8:19

- 1) Construction
- 2) Maintenance
- 3) Locking device
- 4) Operation
- 5) Control

III. BOW RAMP page 8:19 - 9:19

- 1) Construction
- 2) Maintenance
- 3) Load capacity
- 4) Locking device
- 5) Operation
- 6) Control

IV. HANGING DECK page 9:19 - 11:19

- 1) Construction
- 2) Maintenance
- 3) Load capacity
- 4) Locking device
- 5) Operation
- 6) Control

~~Von Roll~~

2:19

V. DRIVE-ON RAMPS page 11:19 - 14:19

- 1) Construction
- 2) Maintenance
- 3) Load capacity
- 4) Locking device
- 5) Operation
- 6) Control

For I - V in the operation instructions the position Nos in brackets (.) correspond to the hydraulic scheme 49111-801.

VI. PASSENGER BRIDGE page 14:19 - 15:19

- 1) Construction
- 2) Maintenance
- 3) Locking device
- 4) Operation
- 5) Control

VII. PASSENGER- AND PILOT DOORS page 15:19 - 16:19

- 1) Construction
- 2) Maintenance
- 3) Locking device
- 4) Operation
- 5) Control

For VI and VII in the operation instructions the position Nos in brackets (.) correspond to the hydraulic scheme 49111-802.

3:19

DRAWINGS

STERN RAMP, BOW VISOR AND BOW RAMP

49111-230, -260, -304, -330, -360, -361, -371, -372, -373

HANGING DECK, DRIVE-ON RAMPS

49111-101, -161, -162, -163, -164

PASSENGER BRIDGE, PASSENGER- AND PILOT DOORS

49111-761, -423, -426, -427, -428

HYDRAULIC

49111- 287, -387, -401, -785, -801, -802, -804, -805, -806,
-821, -822, -823, -824, -825, -826, -827, -828, -830, -831,
-871

+ all the hydraulic cylinders

+ 49111-502 Spare parts spec.

won Tell		
		4:19
<p>I. <u>STERN RAMP (SB and PS)</u></p> <p>1) <u>Construction</u></p> <p>Dimensions: L = 6500 mm B = 5500 mm between the tracks</p> <p>Weight: abt 11,5 tons</p> <p>The fore-end part of the ramp is provided with 9 sloping flaps of 1,5 m length. Any sloping flap can be moved independent from the others in order to level the incline of the ramp to the quay in case of heeling of the ship (2 degrees max.). The ramp is pivoted to the ship with 4 hinges. The two outer hinges are pivoted with spherical bearings and the inner ones with bronze bushes. The axles are of stainless material.</p> <p>The ramps are provided with fastenings for preventer stays.</p> <p>2) <u>Maintenance</u></p> <p>All bearings without zerk fittings and sloping flaps must be lubricated with engine oil <u>in space of about two weeks</u>.</p> <p>The cylinder bearing bolts are provided with zerk fitting type DIN 3404 AM 10 x 1. The lubricating point should be lubricated with seawater consistent grease under use of the grease gun in space of <u>every four weeks</u>.</p> <p>The axles of the ramp bearings are equipped with "automatic" grease filler. The lifetime for these is 5-6 months. Control at regular intervals that the grease fillers are intact and have lubricant.</p> <p>All piston-rods and cylinders should be covered during painting. Dry paint spirits upon the surface of the piston-rod would spoil the cylinder packings within short time, what means undesirable leakages.</p> <p>Check all hoses, hose connections and pipe connections to prevent leakages. Damaged components should be replaced if necessary in order to avoid interruption.</p> <p>The hose connections should be painted, but not the hydraulic hoses.</p> <p>The rubber packings should be treated with Tellin or similar mixture containing graphite and tallow in order to reduce the wear of the rubber. When a defect rubber packing is going to be replaced the packing channel has to be sufficiently cleaned before the new packing is fitted with glue. von Tell UK 2 glue or glue of the same quality has to be used.</p>		

	5:19
3) Load capacity	
<p>The ramp is constructed to carry an axle load of 18 tons at the distance between the axle of 1,3 m and the distance between the wheels of 2,0 m.</p>	
<p>The star board ramp is provided with lugs for emergency operations, designed for normal load (axle load of 18 t).</p>	
4) Locking device	
<p>In closed position the ramp is locked by 3 wedges on each side and 2 hooks on the upper side. The wedges are operated by one hydraulic cylinder (11) on each side and each hook by one hydraulic cylinder (10).</p>	
<p>The hooks on the upper side are first pressing the ramp into the rubber sealing frame and then the ramp is locked by the wedges.</p>	
<p>The rubber packing is fixed with bolts.</p>	
<p>The pressure reducing valves (32) (33) are reducing the pressure on the cleats, and the valves (28) and (29) are controlling the operating sequence of hooks and wedges.</p>	
5) Operation	
<p>For operation of the ramp, a hand-operated electric valve (17) is used which guides an operating valve (21) and a relief and by-pass valve (16). The operation itself of the ramp is carried out by two hydraulic cylinders (5) with spherical bearings. Two ice-breaking cylinders (8) assist the opening process. When the locking device of the ramp has been released the ice-breaking cylinders (8) are put under pressure to push the ramp outwardly. The ramp continues lowering by sole weight until it rests upon the quay. The control lever remains in lowering position all through the loading process in order to adjust the ramp inclining according to the actual depth of the quay. The lowering speed is adjustable by throttle non-return valves (40) at the cylinders (5). The throttles are to tune on parallel lowering of both sides. For closing the cylinder (5) is put under pressure and the ramp will close. Speed is adjusted by throttle valve (41). When the ramp is fully closed it is locked with hooks and wedges.</p>	
<p>For the operation of the hydraulic cylinders for the hooks and the wedges a manual operating valve (24) is used. The speed is adjusted by the throttle valve (41).</p>	

6:19

The relief and by-pass valve (16) is reducing the pressure if the ramp is not correctly operated and one forgets to set the operating valve on "floating position", when the ramp rests upon the quay.

6) Control

Opening of the ramp

- 1) Start one of the pumps.
- 2) Close the ramp. The control lever will be in UPP position. (The pressure on the wedges is reduced.)
- 3) Open up the cleats. The control lever will be in position ÖPPNA until red lamp indicates ÖPPEN.
- 4) Lower the ramp. The control lever will be in position NER until the ramp is resting on the quay. The lever should remain on NER ("floating position") until the ramp will be closed.
- 5) Switch off the pump.

Closing of the ramp

- 1) Start one of the pumps.
- 2) Check that red lamp indicates ÖPPEN for the cleats. If not; open up the cleats.
- 3) Close the ramp. The control lever in position UPP until green lamp indicates UPPE.
- 4) Close the cleats. The control lever will be in position LASA until green lamp indicates LAST.
- 5) Switch off the pump.

II. BOW VISOR

1) Construction

The visor has a weight of abt 54,5 tons and forms the W.T. front closure of the ship. The bow visor is pivoted at the upper deck. It opens in upward direction.

2) Maintenance

Under circumstances when temperature reaches 0° C or below check that the limit switches and other equipment on weather deck are not getting covered with ice. See also item I pos. 2).

7:19

3) Locking device (25)

In closed position the visor is locked by two locking pins which are operated by one hydraulic cylinder (12) each. As a reserve the visor can also be locked by two manually operated locking devices. There is also one hydraulic operated "atlantic locking device" (12).

In open position the bow visor is locked by 2 locking pins which are hydraulic operated with one hydraulic cylinder (12) each.

In closed position the rubber packing is compressed by the sole weight of the bow visor. The rubber packing is fixed with bolts.

4) Operation

For the operation of the bow visor a hand-operated electrical valve (pos 17) is used which is guiding an operating valve (19). An electrical blocking is built in to prevent faulty operation between bow visor and bow ramp.

The very operation of the visor is performed by two hydraulic cylinder (2) with spherical bearings. Two ice-breaking cylinders (8) assist the opening process when the visor starts opening. When the locking devices of the bow visor are released the ice-breaking- and operating cylinders are put under pressure and the visor will open. When the visor is fully opened it will be locked.

When lowering the bow visor the top of the cylinder will be put under pressure. In the bottom of the cylinder a valve (15) is fitted which is controlling the lowering. When pressure arises in the cylinder which is higher than the adjusting pressure of the valve. The lowering speed is adjustable by throttle non-return valves (39) and they should also be so adjusted that the cylinders get the same timing.

5) ControlOpening of the bow visor

- 1) Start both of the pumps.
- 2) Open the atlantic locking device and the cleats. Put the control levers (one by one) in position OPEN until red lamp indicates OPEN.

If the manual locking device has been used this has to be opened.

8:19

- 3) Check that the lamp for the locking devices indicates UPPEN. If not, open up the locking devices which are locked.
 - 4) Open the bow visor. The control lever will be in position UPP until green lamp indicates UPPE.
 - 5) Close the locking device. The control lever will be in position LASA until green lamp indicates LAST.
 - 6) Lower the bow visor and let it rest on the locking device in order to release the hydraulic pressure in the operating cylinder.
 - 7) Switch off the pumps.
- Closing of the bow visor
- (Check that the bow ramp is closed and locked.)
- 1) Start the pumps.
 - 2) Check that red lamp indicates UPPEN for cleats and the atlantic locking device. If not, open up the cleats and the atlantic locking device.
 - 3) Open up the bow visor. (The load on the locking device is released.)
 - 4) Open up the locking device. Put the control lever on UPPNA until red lamp indicates UPPEN.
 - 5) Close the bow visor. The control lever will be in position NER until green lamp indicates NERE.
 - 6) Lock the cleats. The control lever will be in position LASA until green lamp indicates LAST.
 - 7) If the atlantic locking device is going to be used this should also be locked.
 - 8) Switch off the pumps.

III. BOW RAMP

1) Construction

Dimensions: L = 8225 mm
 B = 5500 mm between the tracks
 Weight: abt 12,1 tons

The fore-end part of the ramp is provided with 8 sloping flaps, which automatically extend when the ramp is opening. Each sloping flap is working independently

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from the others in order to compensate for the heeling of the ship (2 degrees max.).

The ramp is pivoted to the ship with 4 hinges. The two outer hinges are provided with spherical bearings and the two inner with bronze bushes. The axles are of stainless steel.

The ramp is equipped with fastenings for preventer stays.

2) Maintenance

See item I. pos. 2).

3) Load capacity

See item I. pos. 4).

4) Locking device

The side cleats consists of 2 hydraulic operated locking pins on each side of the ramp in contrast to the stern ramp which has hydraulic operated wedges. See also the stern ramp (item I).

5) Operation

On the bow ramp an electrical blocking is built in which is preventing faulty operation between bow visor and bow ramp. The bow ramp has no ice-breaking cylinders similar to the stern ramp. In other respects see the stern ramp (item I).

Note: The bow ramp must not be operated until the bow visor is fully opened and in locked position.

6) Control

See item I pos. 6).

IV.

HANGING DECK

1) Construction

The hanging decks are constructed for the transport of passenger cars. They are laid out as installation of raisable car decks. The area of decks consists of all together 8 sections, L = 6 x 20 m + 2 x 18,4 m. The sections at port are B = 5,5 m - those at star board B = 8,5 m. At star board side the lowered decks rest

10:19

upon consols fixed to the ship. At the port side there are fixed supports to the ship side and towards the centre line of the ship hanging standers (folding standers) which can be folded. Lateral guide rollers prevent the decks to be bent out of line when manœuvring to stowed position under C-deck.

On port side hanging deck there are hand rails mounted between the folding standers. These are automatically folded together with the hanging standers when the deck is lifted up to stowed position.

2) See item I. pos. 2).

3) Load capacity

The decks can be loaded with vehicles with the max. load from each wheel of 400 kg, and be stowed close by close. The axle load of the single axle amount to maximum 800 kg. The star board side has the capacity of 4 lines of vehicles and the port side 2 lines.

4) Locking device (25)

In stowed position the hanging decks rest underneath the C-deck where they are locked by means of hooks which are hydraulic operated by hydraulic cylinders (14).

5) Operation (22)

Each section is suspended to four steel wire-ropes which are fixed to the C-deck. They are led over guide rollers to a hydraulic tackle-block in the hanging deck.

Each deck is furnished with a separate control stand with control valves. Over a control valve the deck can be lifted or lowered. The lifting speed and the opening- and closing speed for the locking hooks are adjustable by the installed throttle (41) at the control stand, while the lowering speed is to be adjusted by the throttle (40) at the cylinder (4) on star board and (7) on port side.

6) Control

Lifting of the hanging deck

- 1) Start one of the pumps (two pumps on P.S.).
- 2) Check that the red lamp indicates OPEN for the locking device. If not, open up the locking device.
- 3) Lift the hanging deck to the stop. The control lever in position UPP.

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- 4) Lock the locking device. The control lever will be in position LASA, until a green lamp indicates LAST.
- 5) Lower the hanging deck to the locking arrangement in order to release the wires.
- 6) Switch off the pump:

Lowering of the hanging deck

- 1) Start one of the pumps.
- 2) Lift the hanging deck to the stop. The control lever in position UPP.
- 3) Open up the locking device. The control lever will be in position ÖPPNA until the red lamp indicates OPEN.
- 4) Lower the hanging deck down to the consols. The control lever in position NER.
- 5) Switch off the pump.

V. DRIVE-ON RAMPS

1) Construction

The end parts of the hanging decks are equipped with drive-on ramps of length 19,8 m each. In horizontal position the decks are supported by folding supports and folding standers which are automatically folded when the ramps are stowed underneath the C-deck. The supports are manually operated. When the ramp shall be brought into drive-on position from horizontal position the folding standers have to be unshackled. Folding supports for the horizontal position of the ramp are folded away and supports for the lowered position are folded out.

The folding stander for the drive-on position of the port side ramps will always be connected. It is placed on about half the length of the ramp towards the centre line of the ship and is folding in the longitudinal direction.

2) Maintenance

See item I. pos. 2).

3) Load capacity

The decks can be loaded with vehicles with the max. load from each wheel of 400 kg, and be stowed close by close. The axle load of the single axle amount to max. 800 kg. The star board side has the capacity of 4 lines,

Vonnen	
	12:19
<p>and the port side 2 lines of vehicles.</p> <p>The fully loaded ramps can be hydraulic lifted from drive-on position to horizontal position, where it is locked by folding standers and folding supports.</p> <p>4) <u>Locking device</u> See item IV. pos. 4).</p> <p>5) <u>Operation</u> For the lifting of the ramp from drive-on position to the horizontal position four points of suspensions are used. The points are connected 2 + 2 with wires, which are guided over a "sledge". The sledge is connected with wires to a hydraulic tackle-block which is placed at the side shell of the ship. When the ramp is lifted from the horizontal to the stowed position underneath the C-deck the four lifting points mentioned above are used plus 2 more stations at the pivoting end of the ramp. The control station consists of 3 operation valves: 1 for lifting the loaded ramp from drive-on position to the horizontal position, valve I (22), 1 for lifting the ramp from horizontal position to the stowed position, underneath the C-deck, valve II (22), 1 for the locking of the deck in stowed position (25). A hydraulic limit switch stops the hydraulic oil to the operation cylinder, when the ramp reaches the horizontal position. The lifting speed is adjusted by the valve (42) on S.B. (for P.S. it is full pump flow) and the opening- and closing speed of the locking arrangement by valve (41) at the control station. The lowering speed of the ramp is adjusted by a valve (40), which is placed at the bottom of the cylinder (1) S.B. and G) P.S. A relief valve (30) is built in, in order to reduce the pressure, when the ramp is lifted up against the C-deck.</p> <p>6) <u>Control</u> <u>The lifting of the drive-on ramp from the drive-on position to the horizontal position (star board ramp).</u></p>	

Von-Tell			13:19
1) Start one of the pumps (two pumps on P.S.).			
2) Check that the folding supports for the horizontal position are free.			
3) Lift the ramp to the horizontal position. The control lever I in position UPP.			
4) Connect the folding standers and extend the supports.			
5) Lower the ramp so that it rests upon the folding standers and the supports. This will release the wires.			
6) Switch off the pump.			
<u>Lowering.</u>			
1) Start one of the pumps.			
2) Extend the supports for the inclined position of the ramp.			
3) Lift the ramp so that the folding standers and the supports will be free. The control lever I in position UP.			
4) Release the folding standers and the supports.			
5) Lower the ramp. The control lever I will be in position NER.			
6) Switch off the pump.			
<u>Lifting of the ramp from the horizontal position to the stowed position.</u>			
1) Start one of the pumps (two pumps on P.S.).			
2) Fall the hand rails all way round the ramp.			
3) Check that the folding standers are connected.			
4) Check that the lamp for the locking arrangement indicates <u>OPPEN</u> . If not, open up the locking device.			
5) Lift the ramp towards the stops. The control lever II in position UPP.			
6) Lock the locking arrangement. Put the control lever in position LASA until the green lamp indicates <u>LAST</u> .			

<p>Von Ten</p>	<p>14:19.</p>
<p>7) Lower the ramp on the locking arrangement. This will release the wires. The control lever II will be in position NER.</p>	
<p>8) Switch off the pump.</p>	
<p><u>Lowering</u></p>	
<p>1) Start one of the pumps.</p>	
<p>2) Extend the supports for the horizontal position of the ramp.</p>	
<p>3) Lift the ramp. The control lever II in position UPP.</p>	
<p>4) Open up the locking arrangement. Put the control lever in position UPPNA, until red lamp indicates <u>ÖPPEN</u>.</p>	
<p>5) Lower the ramp so that it is resting on the supports and folding standers. The control lever II in position NED.</p>	
<p>6) Rise the hand rails all round the ramp.</p>	
<p>7) Switch off the pump.</p>	
<p><u>For the port side ramp the same operation will take part but this ramp has no folding supports in the inclined position.</u></p>	
<p><u>I. PASSENGER BRIDGE</u></p>	
<p>1) <u>Construction</u></p>	
<p>For passenger traffic between the trunk in centre line and the port side hanging deck there are 2 passenger bridges. The bridges are designed by the yard and have the dimensions L X B = abt 6,2 x 1,2 m.</p>	
<p>2) <u>Maintenance</u></p>	
<p>See item I. pos. 2).</p>	
<p>3) <u>Locking device (7)</u></p>	
<p>The locking of the passenger bridge in lifted position toward the C-deck is arranged by locking devices at both ends. These are hydraulic operated (3).</p>	

15:19

4) Operation (11)

The lifting operation is arranged by wires, which are connected to a hydraulic tackle-block underneath the C-deck.

The lifting speed is controlled by the valve (9) and the opening- and closing speed of the locking arrangement by the valve (8). For the lowering speed there is a valve (9) which is situated at the bottom of the cylinder (5).

The pressure is reduced for the lifting cylinder by the valve (12).

5) Control**Lifting and lowering (one pump only)**

See hanging deck IV, pos. 6)

I. PASSENGER- AND PILOT DOORS**1) Construction**

The doors are installed on port side and star board side according to the following numbers and dimensions:

Passenger doors 4 pcs 2,5 x 2,0 m
Pilot doors 2 " 1,2 x 2,0 m

The passenger doors are opened in the aft directions and parallel to the ship side. The pilot doors are opened 90 degrees towards the centre line of the ship.

2) Maintenance

See item I, pos. 2).

3) Locking device (6)

The doors are locked to the ship by wedges, which are compressing the rubber packing in order to give a suitable sealing. The wedges are hydraulic operated (4).

4) Operation (6)

The passenger doors are operated by a hydraulic cylinder(1) and a link system, so that the doors will open parallel to the ship side.

The pilot doors are operated by a hydraulic cylinder (2), which gives the opening direction 90 degrees towards the centre line of the ship.

Von Bell	
	16:19

5) Control

Opening of the doors

- 1) Start the pump.
- 2) Release the security for the locking device.
- 3) Open the locking device. The control lever in position ÖPPNA, until red lamp is indicating ÖPPEN.
- 4) Open the doors. The control lever in position ÖPPNA.
- 5) Secure the door.

Closing of the doors

- 1) Start the pump.
- 2) Check that the red lamp for the locking device indicates ÖPPEN. If not, open the locking device.
- 3) Release the security for the door.
- 4) Close the door. The control lever in position STÅNGA.
- 5) Lock the locking device. The control lever will be on LASA until green lamp is indicating LAST.
- 6) Secure the locking device.
- 7) Switch off the pump.

PUMPSTATIONS

There are 3 pumpstations, 2 big ones and 1 small one. The working pressure for the big ones is about 250 bar and for the small one about 150 bar.

1 big pumpstation is placed in the stern part on star board side and is serving the port side stern ramp, the port side drive-on ramps, the port side hanging decks. Drawing No 49111-804,

1 big pump station in the fore part on port side is serving the bow visor, the bow ramp, the star board stern ramp, the drive-on ramps on star board and the star board hanging decks.
Drawing No 49111-805.

von Bell	
	17:19

1 small pumpstation placed in the midship trunk is serving 2 pilot doors, 4 passenger doors and 2 passenger bridges on port side. Drawing No 49111-806.

The big pumpstations consist of 1 oil tank each containing 900 ltrs. The tanks should be filled up to the maximum level only, to be able to receive oil from the other system by emergency operation.

In the pumpstation there are 3 pumps. Normally when the system is operating only two pumps, sometimes only one, should be in service. If the system is served by two pumps instead of one, this will make no difference in capacity as volume limiting valves will protect the hydraulic components. The only disadvantage is that the oil will be warm quicker.

All the pumps should be regularly changed so that all pumps will be frequently used in service. The third pump should be used as a reserve if one of the other pumps is out of order.

The hydraulic system is connected parallelly and the pumps are pressure compensated axial piston pumps which deliver only that quantity of oil requiring on every occasion. Required quantity at every user is adjusted with throttle valves. The max. working pressure of the pumpstation is adjusted on the valve (17); this valve is adjusted at delivery and must afterwards not be altered. The valve (18) is a safety valve which is normally not in function but only comes into effect when the pressure exceeds the valid max. working pressure.

The pumpstation is equipped with a level control unit which protects the pumps from breaking down, if the oil reaches a level which is too low.

At the aft pumpstation there is a hydraulic lift connected.

For position No. in brackets () see drawings Nos 49111-804, -805.

The small pumpstation consists of 2 pumps and an oil tank containing 150 ltrs. Normally when the system is operating one pump is working and the other is used as a reserve.

The hydraulic system is connected parallelly. In order to reduce the pressure in the system, when no item is to be served, a hydraulic relief valve (11) will make the oil circulate to the tank. To stop the valve from opening and closing too frequently an accumulator (17) is connected. To reduce the pressure completely, for instance when repairing, a shut-off valve (17) will be opened.

For position No. in brackets () see drwg No 49111-806.

For the service and maintenance of the accumulators see the recommendations from the manufacturer.

18:19

Hydraulic oil

Check the oil level of the tank in regular intervals.

Check also the oil cleaner in regular intervals to protect from interruption of the service. Dismantle the filter to check that the filter is intact.

Check the oil in regular intervals and change it according to the recommendations from the oil supplier.

Use NYNNAS TD-17 HVX (Visga 22).

Oil from different manufacturers may not be mixed.

When the filter has to be changed, it is of great importance to be careful when refilling or repairing the system in order to prevent dirt in the hydraulic system.

Emergency "cross-over", for the big pump stations only

If a pumpstation is put out of operation the other pumpstation can be connected. The two shut-off valves (Avstängningsventiler for "Cross-over köring", orange coloured) of the pumpstation which do not work will then be switched off. Then the "cross-over" between the two hydraulic systems will be opened by the two shut-off valves (Huvudventiler för "Cross-over köring", orange coloured) which are situated in the aft pumpstation, drwg No. 49111-804. The operating time will be slightly longer, if the pumpstation aft is used to serve the forward system. This is valid for the bow visor and drive-on ramps on S.B.

Check the oil level in the tank carefully. Before the pumpstation which broke down, is going to be used again, the items which were reserved before the breaking down, should be in the same positions again in order to put the oil levels of the tanks back to normal. Before going back to normal service don't forget to reset all the shut-off valves for the "cross-over".

von Tell		
		19:19
SPARE PARTS		
When ordering spare parts the following data must be specified:		
1) The name of the ship: M/S "VIKING-SALLY" 2) Yard and newbuilding No.: Jos. L. Meyer, Papenburg, No. 590 3) Number, symbol and drawing No. 4) Delivery address. 5) Delivery time.		
von Tell GmbH Sophienallee 24 >2000 HAMBURG 19 West Germany		
Tel.: 040/493755 Telex: 02 14277 erokg d Telegram: Erottmann Hmb		
<u>Scandinavia</u>		
von Tell AB Box 472 S-401 27 GÖTEBORG Sweden		
Tel.: 031/870500 Telex: 20617 vontell s Telegram: Telltrade		
<u>Great Britain</u>		
von Tell (U.K.) Co Ltd Aldwych House Aldwych LONDON WC2B 4EL England		
Tel.: 01-404-0755 Telex: 8952161 ajcoul g Telegram: Agenticum London		
<u>Benelux</u>		
von Tell B.V. Postbus 30061 3001 DA ROTTERDAM Holland		
Tel.: 010/126267 Telex: 21565 tbg nl Telegram: Grenhuis		



Request for classification

Bureau Veritas
Marine Departments

Enclosure 2.4.3.32

**REQUEST FOR CLASSIFICATION**

C.C. - 2 OE - 2

Register no: 359389

The undersigned, builder Inc. L. Meyer, (1) requests BUREAU VERITAS to proceed with the operations required by their Rules for the purpose of obtaining the classification (2) under special

survey foot 1-12-200 BM - 1998
of the hull and of the propelling machinery of the ship (3) newbuilding S 590

Class cooperated (4) NAM WY 0044 st. 25101 J 8 x 1

Classification symbol: I 3/3 E

Construction survey mark 2002 DEERS 000.11

and Service notation(s): passenger ferry

Navigation notation(s): deep sea

ICY 0010E, W + E WAT011 st. 25101 J 8 x 1

Additional mark(s): -

Type and service Passenger- and car ferry

Flag Finland

District where built: Hamburg - sub-district Oldenburg

In making this request the undersigned agrees to comply with the requirements of the Rules of BUREAU VERITAS

and in particular of the General Conditions given herewith 1 - 10 - 1998 - 1 - 10 - 1999

Also see [http://www.bv.com](#) September 27, 1999 Jos M. Meyer

GENERAL CONDITIONS OF BUREAU VERITAS

Article I. - Bureau Veritas is a Society established for the purpose of performing the Classification of ships and other categories, the inspection of hulls and equipment as well as supervision and survey reports of construction of Bulding and General Civil Engineering.

Bureau Veritas is a Contracting Party to the Convention and Classification Regulations of Classification Associations, Pacts or similar Documents which are mentioned in the introduction.

Article II. - Requests for intervention shall, as a rule, be submitted in writing. They shall, for the intervening party, be addressed to the Agent of Bureau Veritas, as well as to the Bureau Veritas whom they will, unless otherwise agreed, be represented by the Agent of Bureau Veritas, or by agreements covering specific cases, and the acceptance without reservation of the present General Conditions, and of any special conditions which may be attached thereto.

Bureau Veritas alone is entitled to apply and to interpret its own Rules.

Any reference to these Regulations connected with their application is hereby forbidden if it does not involve the intervention of Bureau Veritas which is necessary and obligatory.

Article III. - Bureau Veritas does not act as Underwriter, Consulting Engineer, Technical Advisor, nor as "Builder's" Contractor, and cannot assume the responsibilities inherent to such functions, even though the intervention of Bureau Veritas is requested by the "Builder" or his Contractor.

Article IV. - Bureau Veritas does not act as Sub-contractor, nor as "Builder's" Sub-contractor, and cannot assume the responsibilities inherent to such functions, even though the intervention of Bureau Veritas is requested by the "Builder" or his Contractor.

Article V. - Bureau Veritas does not act as Underwriter, Consulting Engineer, Technical Advisor, nor as "Builder's" Contractor, and cannot assume the responsibilities inherent to such functions, even though the intervention of Bureau Veritas is requested by the "Builder" or his Contractor.

Article VI. - Any intervention by representatives of Bureau Veritas whatever may be its nature, shall be compensated in accordance for all expenses, including the travel of the Agent and his expenses, the importance of the services rendered, and the reimbursement of expenses incurred.

The intervention or maintenance of Classification marks, the entry in the Registers, the issuance of Certificates, Attestations and similar documents, entail the same compensation as the intervention of Bureau Veritas.

Article VII. - Given a so-called Disagreement area between the requesting party and the Representative of Bureau Veritas the Agent and his party may, at the request of the interested party, designate another Agent.

Article VIII. - All disputes shall be referred to the exclusive jurisdiction of the Paris Courts, including those arising under a guarantee or of tort claim, and in the case of a choice of arbitrators.

(1) Builder or owner.

(2) Under special survey, under ordinary survey or after construction.

(3) Name of ship or yard number.

(4) See Chapter 1 or Rules. Selected Marks and notations from current Rules edition.

- 9 -

DESCRIPTION OF THE SHIP

Hull No. or Ship's Name	S 590	Flag	SP		
Owner's Name	A. & S. MÄKILÄHTÖ OY, MARIEHAMN, FINLAND.				
Shipyard's Name	JOS. L. MEYER, BREMEN, GERMANY				
Schedule (1) Keel laying	Launching	3 - 80	Delivery	6 - 80	
HULL					
Length (BP)	137,4 m	Breadth (M)	24,20 m	Depth (M)	7,65 m
Gross tonnage (approx.)	10000 t	Deadweight (MT or LT)	5,55 m		
Type of Ship	Passenger and car ferry	Material hull	steel		
PROPELLUTION MACHINERY	022 Z Schiffsmotoren				
No. Type, Model and Licence	4 x 8 L 40/45, ie 4400 kW	built by	MAN, Augsburg		
No. Type, Model and Licence		built by			
Total power	17,600 KW (23936 BHP) at 600/188,5 rpm				
Number of tailshafts	2	Number of propellers	2		
AUXILIARY MACHINERIES					
No. Type, Model and Licence	4 x 6 S 28 LH, ie 1104 kW	built by	B + W, Holeby/DK		
No. Type, Model and Licence		built by			
No. Type, Model and Licence		built by			
Total power	4416 KW (6000 BHP) at 750 (TVA)	Steam Production (t/h)	1000		
ELÉCTRICAL INSTALLATION					
No. and Type of Generator	KW or KVA Total	Steam Production (t/h)	1000		
BOILER					
Main, No.	Type	Steam Surface (m ²)	Steam Production (t/h)		
Pressure (bar)		Heating Surface (m ²)	Steam Production (t/h)		
Auxiliary, No.	Type Thermalöl-Kesselanlage 2 x 8lgef. je 2.800 Mcal/h				
Auxiliary, No.	Type 4 x Abgasdampferzeuger 1:100 Mcal/h				
Pressure (bar)		Heating Surface (m ²)	Steam Production (t/h)		
RNC:					
AUT:	(AUT)				
Certificates to be issued by the Society (on behalf of National Authorities):					
Loadline:	<input checked="" type="checkbox"/>	Other:			
Statutory	<input checked="" type="checkbox"/> Safety Construction	<input checked="" type="checkbox"/> Safety Equipment	<input checked="" type="checkbox"/> Safety Radio	Others:	
Tonnage	<input checked="" type="checkbox"/> National	<input checked="" type="checkbox"/> Suvar canal	<input checked="" type="checkbox"/> Panama canal		
Cargo Gear documents	<input checked="" type="checkbox"/>	X	L	<input checked="" type="checkbox"/>	
please fill in the "minimum information required" for data processing					
10					

Application for an international freeboard certificate

BUREAU VERITÉ Enclosure 2.4.3.33

INTERNATIONAL REGISTER FOR THE CLASSIFICATION OF SHIPPING
AND AIRCRAFTAPPLICATION FOR AN INTERNATIONAL FREEBOARD CERTIFICATE
OR FOR AN INTERNATIONAL LOAD LINE EXEMPTION CERTIFICATE
WITHIN THE SCOPE OF THE INTERNATIONAL CONVENTION
ON LOAD LINES, 1966

The undersigned, owner, (1) of the vessel described below, hereby applies to the Administration of BUREAU VERITAS for an international load line exemption certificate with (1) the special marks for the stowage of timber deck cargo:

Name of ship (1) : Hull No (1) : S. 590 "VIXING SALLY"
owned by (1) : Rederi A.B. Sally, Mariehamn, Finland

Port of Registry : Marienhamn, Finland

Classification { class symbols: I-3/3+
Marks and notations: Ferry-Sail Ica-A

Length (L) measured in compliance with Article 2 (8) : 112.13 m

Type of ship (1) : type A, type B, type B with reduced freeboard, type B with increased freeboard.

The Certificate is to be set up in compliance with Attachment 1 or with Article 6 of the International Convention on Load Lines, 1966.

The documents listed overleaf are appended to the present application.

The undersigned undertakes to comply with the General Conditions of BUREAU VERITAS, as quoted below.

Place, date and signature :

Papenburg, 21st April 1980

*Jos. C. Meyer
J. C. Meyer*

Section No. : 35387

GENERAL CONDITIONS OF BUREAU VERITAS.

Article I. — Bureau Veritas is a Society established for the purpose of undertaking the Classification of Ships as Agents of all categories, the inspection of Materials and equipment as well as supervision and survey reports of construction of Ships and other Craft.

Bureau Veritas publishes Construction Regulations and Classification Registers and issue Certificates, Attestations, Reports or similar Documents which result from its intervention.

Article II. — Requests for interventions shall, as a rule, be submitted in writing. They cannot, for the respective party, oblige the Society to comply with the Regulations established by Bureau Veritas, as such regulations may state, except for agreements covering specific cases, and the acceptance without reservation of the terms of the General Conditions and of any special conditions which may be attached thereto.

Bureau Veritas alone is qualified to apply and to interpret its own Regulations.

Any reference to these Regulations connected with their application is strictly forbidden if it does not imply the intervention of Bureau Veritas, which is necessary and obligatory.

Article III. — Bureau Veritas does not act as Underwriter, Consulting Engineer, Architect or Naval Architect, nor as Builder or Contractor, and cannot assume any responsibility for the safety of the ship, except in so far as its experience of the Society enables it to answer inquiries concerning matters not covered by its own Regulations, or in so far as the Society has given its advice or opinion or by its own Engineers or Contractors, who retain their full responsibility, whatever the nature may be, notwithstanding the intervention of Bureau Veritas, nor can the Society make reference by name or not, to Bureau Veritas.

(1) delete where not applicable.

Mod Ad E 242 a - 5000-3-74

The interventions of Bureau Veritas, carried out either in accordance with its own Regulations or according to instructions of the Society, or similar documents explicitly or implicitly accepted by the parties of the Society as expressed by the symbols or marks of Classification, Certificates, Attestations, Reports or similar documents, shall not in any case, be liable for any liability.

Article IV. — When it is taken in the drafting of Bureau Veritas publications, particularly in respect to the Register, the Society declines any responsibility for errors or omissions, and also declines any responsibility for the documents drawn up by its Services or by its Surveyors, and which may be made the subject of observations by the parties concerned. Furthermore, Bureau Veritas shall not be liable for any damage resulting from the use of Bureau Veritas publications, or from the documents drawn up by its Services or by its Surveyors, or by its Agents, in the preparation of contracts and in the performance of the interventions and services, unless the responsible member of staff be involved.

Article V. — Any intervention by representatives of Bureau Veritas, whatever it may be its nature, and whether it is completed or incomplete for any cause whatsoever, shall entail the payment of fees in accordance with the importance of the service, and in accordance with the scale of fees levied by Bureau Veritas, for the attribution or modification of Classification marks, the entry in the Registers, the issuance of Certificates, Attestations and Reports or similar documents, entail the acceptance of the corresponding interventions.

Article VI. — Bureau Veritas shall not be liable for any damage resulting from the intervention of Bureau Veritas, its Administration may, at the request of the interested party, designate another of its Experts.

Article VII. — All disputes shall come under the exclusive jurisdiction of the Parte Courts, deciding the case of an appeal under a Guarantee, or of forces intervention also in the case of a plurality of defendants.

APPENDED DOCUMENTS (2)

H 2/2

1-fold Freeboard=Report

6-fold Draw. 02/2.

6-fold Draw. 02/3.

6-fold Draw. 02/6.

6-fold Draw. 02/19

6-fold Draw. 61/1

6-fold Draw. 61/3

(2) For a newbuilding, a drawing is to be appended to the present application showing the principal dimensions of the ship as well as the basic data needed for the calculation of the preliminary freeboard. Additional information may be obtained through BUREAU VERITAS Surveyors regarding this drawing.

For a type A ship or for a type B ship with reduced freeboard, a special questionnaire entitled «Data required for the study of subdivision and stability after damage» is to be appended to the present application. The questionnaire may be obtained through BUREAU VERITAS Surveyors.

Where a ship is to carry special marks for timber deck cargo, a drawing showing the stowage arrangements for the timber deck cargo is to be further appended to the present application.

Extract of BV rules 1977 in force 1980

BV-Rules 1977
in force 1980

Enclosure 2.4.3.34

1-44

16 - It is recommended to protect side doors against shocks which can result of cargo mistowage (for instance by use of a net or cables). To be efficient, protection devices are to be at so me distance of the door.

2 - Bow and stern doors

21 - When the ship is equipped with a bow door, to allow access to garage, the collision bulkhead must have a removable part. This design is acceptable only above freeboard deck and only if the removable part has a watertightness and a strength equivalent to those of fixed rule bulkhead.

A movable access ramp may be used for this purpose.

22 - Scanlings of plating and stiffeners of a bow door are to be equivalent to those of adjacent shell structure.

23 - Thickness of a stern door plating is not to be less than:

$$e = 4.75E\sqrt{h}$$

Section modulus of stiffeners is not to be less than:

$$w = 7.7hE^2$$

where value of h is calculated in 11-42.25.

24 - If stern door is used as access ramp for vehicles, it has also to be checked that scantlings of plating and stiffeners comply with rules of 11-43.

3 - Securing of doors

31 - Doors and screen-doors have to be firmly secured by use of cleats conveniently spaced or other similar devices.

Particularly, it has to be provided one of these devices at each corner of opening.

Structure reinforcements have to be realised on door and adjacent shell plating to attached points of cleats, hinges, jacks, etc.

32 - If door opens to inside of ship, securing devices have to be scantled in way to resist at a load height, in metres, equal to value calculated in 11-42.2.

- 13 -

BV list of drawings concerning viking sally

35P387 DRAWINGS LIST

DRWG N°	HULL N°	DRWG DATE	TITLE	REVIEW	DATE	LOCATION
49111201	590	24.03.1970	GENERAL ARRANGEMENT	APPROVE	05.11.1979	HAMBURG
49111201	590	24.03.1970	HECKRAMPE ST.B	APPROVE	05.11.1979	HAMBURG
49111202	590	01.10.1979	HECKRAMPE ST.A (MIT NOTBETATIGUNGSSAUGE)	APPROVE	01.10.1979	HAMBURG
49111203	590	28.09.1979	DETAILS FÜR HECKRAMPE ST.B.U.B	APPROVE	05.11.1979	HAMBURG
49111204	590	04.10.1979	DETAILS FÜR HECKRAMPE I VON TELL UFERUNG WO NICHTS ANDERS GESAGT	APPROVE	04.10.1979	HAMBURG
49111220	590	05.10.1979	HECKRAMPE ZUSAMMENSTELLUNG	IU	05.11.1979	HAMBURG
49111260	590	27.09.1979	HYDRAULISCHE VERSCHLUSSANORDNUNG HECKRAMPE ST	IU	05.11.1979	HAMBURG
49111413	590	09.10.1979	SHELL PORT FOR PILOT	APPROVE	06.11.1979	HAMBURG
49111428	590	30.11.1979	ERECTION OF PILOT PORT WITH HYD JACK	IU	05.11.1979	HAMBURG
49111427	590	23.11.1979	HYDR SECURING CLEAT ARR FOR PILOT SHELL PORT	IU	06.11.1979	HAMBURG
49111412	590	28.09.1979	SHELL PORT FOR PASSENGER	APPROVE	05.11.1979	HAMBURG
49111420	590	30.09.1979	JACK OF HYDRAULIC SECURING CLEAT FOR PASSENGER SHELL PORT	IU	05.11.1979	HAMBURG
49111411	590	28.09.1979	HAKEN	IU	05.11.1979	HAMBURG
3221	590	11.09.1979	DOPPELBOGEN SPT.23-23	APPROVE	06.11.1979	HAMBURG
3222	590	11.09.1979	DOPPELBOGEN SPT.23-43	APPROVE	07.11.1979	HAMBURG
3223	590	11.09.1979	DOPPELBOGEN SPT.43-53	APPROVE	06.11.1979	HAMBURG
3351	590	11.09.1979	DOPPELBOGEN SPT.54-64	APPROVE	06.11.1979	HAMBURG
3222	590	11.09.1979	DOPPELBOGEN SPT.65-75	APPROVE	06.11.1979	HAMBURG
3223	590	11.09.1979	DOPPELBOGEN SPT.76-86F	APPROVE	06.11.1979	HAMBURG
3350	590	26.09.1979	DOPPELBOGEN SPT.86-90S	APPROVE	06.11.1979	HAMBURG
3355	590	28.09.1979	DOPPELBOGEN SPT.91-95	APPROVE	06.11.1979	HAMBURG
3341	590	16.09.1979	DOPPELBOGEN SPT.97-97	APPROVE	06.11.1979	HAMBURG
3420	590	16.09.1979	DOPPELBOGEN SPT.98-108	APPROVE	06.11.1979	HAMBURG
3424	590	16.09.1979	DOPPELBOGEN SPT.109-119	APPROVE	06.11.1979	HAMBURG
3351	590	17.09.1979	DOPPELBOGEN SPT.120-135	APPROVE	06.11.1979	HAMBURG
1852	590	11.09.1979	HILFSMASCH UND ALIMENTE	APPROVE	06.11.1979	HAMBURG
1851	590	11.09.1979	FUNDAMENT HAUPTMOTOR	APPROVE	06.11.1979	HAMBURG
1852	590	15.10.1979	QUERSCHOTT BPT.39	APPROVE	09.11.1979	HAMBURG
1822	590	15.10.1979	QUERSCHOTT BPT.43	APPROVE	09.11.1979	HAMBURG
1823	590	15.09.1979	QUERSCHOTT BPT.45	APPROVE	09.11.1979	HAMBURG
1831	590	15.09.1979	QUERSCHOTT BPT.73	APPROVE	09.11.1979	HAMBURG
1832	590	05.10.1979	QUERSCHOTT BPT.73	APPROVE	09.11.1979	HAMBURG
1832	590	05.10.1979	QUERSCHOTT BPT.80 UND LANGSCHOTT 6900A.H.SPT.80E-ANH	APPROVE	09.11.1979	HAMBURG
1833	590	05.10.1979	QUERSCHOTT 85R	APPROVE	09.11.1979	HAMBURG
1854	590	05.10.1979	QUERSCHOTT SPT.45	APPROVE	09.11.1979	HAMBURG
1841	590	24.09.1979	QUERSCHOTT SPT.53	APPROVE	09.11.1979	HAMBURG
1842	590	05.10.1979	QUERSCHOTT SPT.110	APPROVE	09.11.1979	HAMBURG
1840	590	02.10.1979	QUERSCHOTT SPT.120	APPROVE	09.11.1979	HAMBURG
1839	590	15.09.1979	QUERSCHOTT SPT.43	APPROVE	09.11.1979	HAMBURG
1834	590	15.09.1979	KABINEN V. SPT.44	APPROVE	14.12.1979	HAMBURG
1835	590	17.09.1979	A-DECK VON SPT.65/75	APPROVE	14.12.1979	HAMBURG
1431	590	12.09.1979	AUßenmaut V. SPT.54-64 V. DOPPELBÖDEN A.-DECK	APPROVE	14.12.1979	HAMBURG
1432	590	12.09.1979	AUßenmaut V. VON SPT.65-75 VON DOPPELBÖDEN BIB A-DECK	APPROVE	14.12.1979	HAMBURG
1523	590	23.10.1979	ZWISCHENDECK SPT.42-54	APPROVE	14.12.1979	HAMBURG
1531	590	14.09.1979	ZWISCHENDECK SPT.54-64	APPROVE	14.12.1979	HAMBURG
1522	590	14.09.1979	ZWISCHENDECK SPT.65-75	APPROVE	14.12.1979	HAMBURG
1212	590	13.09.1979	HINTERSCHIFF SPT.10-23	APPROVE	14.12.1979	HAMBURG
1524	590	20.10.1979	A-DECK VON SPT.24-32	APPROVE	14.01.1980	HAMBURG
1525	590	17.09.1979	A-DECK VON SPT.33-42	APPROVE	21.12.1979	HAMBURG
1526	590	15.09.1979	A-DECK VON SPT.76-86F	APPROVE	21.12.1979	HAMBURG

Enclosure 2.4.3.35

DRWG N°	HULL N°	DRWG DATE	TITLE	REVIEW	DATE	LOCATION
1535	590	02.10.1979	A-DECK VON SPT.50-58	APPROUVE	19.11.1979	HAMBURG MEYER
1544	590	10.10.1979	A-DECK VON SPT.87-97	APPROUVE	19.11.1979	HAMBURG MEYER
1545	590	12.10.1979	A-DECK SPT.98-105	APPROUVE	19.11.1979	HAMBURG MEYER
1548	590	20.10.1979	A-DECK VON SPT.103-119	APPROUVE	19.11.1979	HAMBURG MEYER
1552	590	07.11.1979	A-DECK SPT.120-135	APPROUVE	14.01.1980	HAMBURG MEYER
1521	590	05.10.1979	ZWISCHENDECK SPT.243-2	APPROUVE	14.01.1980	HAMBURG MEYER
1522	590	05.10.1979	ZWISCHENDECK SPT.244-2	APPROUVE	21.12.1979	HAMBURG MEYER
1533	590	14.03.1979	ZWISCHENDECK V. SPT.76-40F	APPROUVE	19.11.1979	HAMBURG MEYER
1537	590	27.08.1979	ZWISCHENDECK SPT.100-69	APPROUVE	19.11.1979	HAMBURG MEYER
1541	590	04.10.1979	ZWISCHENDECK SPT.87-97	APPROUVE	19.11.1979	HAMBURG MEYER
1543	590	09.10.1979	ZWISCHENDECK SPT.109-119	APPROUVE	19.11.1979	HAMBURG MEYER
1551	590	03.11.1979	ZWISCHENDECK V. SPT.120-138 KOFFERDAMM DECK V. SPT.120-133	APPROUVE	14.01.1980	HAMBURG MEYER
5590 557 1	590	02.11.1979	5. DECK (C-DECK)	APPROUVE	10.01.1980	HAMBURG AG "WESER"
5590 557 2	590	09.10.1979	6. DECK (E-DECK)	APPROUVE	10.01.1980	HAMBURG AG "WESER"
5590 557 3	590	28.11.1979	7. DECK (F-DECK)	APPROUVE	10.01.1980	HAMBURG AG "WESER"
5590 557 4	590	28.11.1979	8. DECK (H-DECK)	APPROUVE	10.01.1980	HAMBURG AG "WESER"
5590 557 5	590	18.11.1979	9. DECK (I-DECK)	APPROUVE	21.12.1979	HAMBURG MEYER
5590 557 1A	590	20.11.1979	AUENHAUT 4-7 DECK SPT.8-75 1/2	APPROUVE	10.01.1980	HAMBURG AG "WESER"
5590 557 2A	590	19.11.1979	AUENHAUT 4-7 DECK SPT.75 1/2 0-139	APPROUVE	10.01.1980	HAMBURG AG "WESER"
1421	590	12.09.1979	AUENHAUT SPT.23-32	APPROUVE	14.01.1980	HAMBURG MEYER
1422	590	22.10.1979	AUENHAUT V. SPT.33-43 V. DOPPELBODEN BIS A-DECK	APPROUVE	21.12.1979	HAMBURG MEYER
1423	590	13.09.1979	AUENHAUT V. SPT.43-53 VON TANKDECK BIS A-DECK	APPROUVE	21.12.1979	HAMBURG MEYER
1424	590	13.09.1979	AUENHAUT V. SPT.54-65 VON TANKDECK BIS A-DECK	APPROUVE	21.12.1979	HAMBURG MEYER
1441	590	15.09.1979	AUENHAUT V. SPT.66-77 VON DOPPELBODEN BIS A-DECK	APPROUVE	21.12.1979	HAMBURG MEYER
1442	590	15.09.1979	AUENHAUT V. SPT.78-89 VON TANKDECK BIS A-DECK	APPROUVE	21.12.1979	HAMBURG MEYER
1443	590	15.09.1979	AUENHAUT SPT.119	APPROUVE	14.01.1980	HAMBURG MEYER
1451	590	19.09.1979	AUENHAUT SPT.120-138 V. TANKDECK BIS A-DECK	APPROUVE	14.01.1980	HAMBURG MEYER
1102	590	05.10.1979	VOR&CHIFF PFT.139-142	APPROUVE	04.12.1979	HAMBURG MEYER
558 289	590	24.10.1979	KA ME WA - STEUERPROPELLER 2000AS-CPT736KV - 1650IAS-CP590KV INSTALLATION	VU	09.04.1980	K.M.W.
900 200/1-2	590	05.05.1979	KA ME WA - STEERING PROPELLER 1650IAS - CP590KV SAMMLANSTALLUNG ASSEMBLY	VU	09.04.1980	K.M.W.
900 200/2	590	05.05.1979	KA ME WA - STEERING PROPELLER 1650IAS / CP590KV SAMMLANSTALLUNG ASSEMBLY	VU	09.04.1980	K.M.W.
900 247	590	05.05.1979	INVERTER OF PROPELLER UNIT	APPROUVE	09.04.1980	HAMBURG K.M.W.
557 445-1/2	590	11.11.1979	INVERTER OF PROPELLER UNIT	VU	09.04.1980	HAMBURG K.M.W.
557 490-2/2	590	03.12.1979	STEERING PROPELLER	VU	09.04.1980	HAMBURG K.M.W.
551 398	590	09.02.1979	WELDING OF PROPELLER UNIT	VU	09.04.1980	HAMBURG K.M.W.
3590 551-3B	590	17.10.1979	FRONTWAND SPT.158	APPROUVE	09.04.1980	HAMBURG K.M.W.
1651	590	14.11.1979	OBERSCHEITT SPT.132-133 TANKLANGSWAND V. SPT.120-132	APPROUVE	15.12.1980	HAMBURG K.M.W.
1341	590	11.10.1979	EINBAUWANDE A, D, TANK/DECK	APPROUVE	15.02.1980	HAMBURG MEYER
1322	590	03.01.1980	EINBAUWANDE AUF DEM DTM ZWISCHENDECK SPT.23-133	APPROUVE	15.02.1980	HAMBURG MEYER
1412	590	14.11.1979	AUENHAUT A-C-DECK SPT.2 BIS 66	APPROUVE	15.02.1980	HAMBURG MEYER
1414	590	20.11.1979	AUENHAUT SPT.67-139 A-BIS C-DECK	APPROUVE	15.02.1980	HAMBURG MEYER
5590 581 1C	590	18.11.1979	INNERSCHIFF F HINTEN SPT.9	APPROUVE	18.04.1980	HAMBURG MEYER
1053	590	17.04.1980	VERSTÄNDUNG UNIT 1. DECK	APPROUVE	05.05.1980	HAMBURG AG "WESER"
1323	590	03.11.1979	SCHAACHWANDE AUF DEM A-DECK VON SPT.23-64	APPROUVE	05.05.1980	HAMBURG MEYER
1343	590	05.11.1979	SCHAACHWANDE AUF DEM A-DECK VON SPT.45 BIS 56	APPROUVE	05.05.1980	HAMBURG MEYER
1353	590	12.11.1979	SCHAACHWANDE AUF DEM A-DECK VON SPT.27-120	APPROUVE	05.05.1980	HAMBURG MEYER
1411	590	11.12.1979	HINTERSCHIFF SPT.2 BIS HINTEN VON A-DECK BIS C-DECK	APPROUVE	05.05.1980	HAMBURG MEYER

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1528	590	24.09.1979	STUZENPLAN	VU	02.07.1980	HAMBURG MEYER
1503	590	17.10.1979	STUZENPLAN BIS BYRKLUND	APPROUVE	25.08.1980	HAMBURG MEYER
1022	590	18.06.1980	STAHL/PLATE/FEUER-4-DECK	APPROUVE	23.09.1980	HAMBURG MEYER
1023	590	16.06.1980	STAHLPLAN TO_A+B+C-DECK	APPROUVE	23.05.1980	HAMBURG MEYER
4110	590	15.08.1979	FINGER	APPROUVE	15.04.1980	HAMBURG MEYER
4118	590	30.10.1979	RUDERSCHAFT FINGERLING UND ZUBEHOER	APPROUVE	15.04.1980	HAMBURG MEYER
4120	590	15.09.1979	RUDERSCHAFTS UND FINGERLINGSDICHTUNG	APPROUVE	17.04.1980	HAMBURG MEYER
11119445	590	25.06.1980	STRUCTURAL ARRANGEMENT (VM200)	APPROUVE	06.12.1983	COPEN-HAGUE BROWN BROTHERS
1451	590	13.09.1979	AUENHAUT SPT.120-138 V. TANKDECK BIS A-DECK	APPROUVE	14.01.1980	HAMBURG MEYER
1452	590	15.09.1979	AUENHAUT SPT.94-108 VON TANKDECK BIS A-DECK	APPROUVE	29.11.1979	HAMBURG MEYER
1441	590	15.09.1979	AUENHAUT BIS 66 VON SPT.37-97 VON DOPPELBODEN BIS A-DECK	APPROUVE	29.11.1979	HAMBURG MEYER
1443	590	15.09.1979	AUENHAUT BIS 66 V. DOPPELBODEN BIS A-DECK	APPROUVE	28.11.1979	HAMBURG MEYER
1433	590	13.09.1979	AUENHAUT V. SPT.107 V. DOPPELBODEN BIS A-DECK	APPROUVE	28.11.1979	HAMBURG MEYER
1432	590	13.09.1979	AUENHAUT VON SPT.55-73 VON DOPPELBODEN BIS A-DECK	APPROUVE	14.12.1979	HAMBURG MEYER
1431	590	13.09.1979	AUENHAUT V. SPT.54-64 V. DOPPELBODEN A-C-DECK	APPROUVE	14.12.1979	HAMBURG MEYER
1423	590	11.09.1979	AUENHAUT SPT.45-53 VON TANKDECK BIS A-DECK	APPROUVE	21.12.1979	HAMBURG MEYER
1422	590	26.01.1979	AUENHAUT V. SPT.33-45 V. DOPPELBODEN BIS A-DECK	APPROUVE	21.12.1979	HAMBURG MEYER
1421	590	12.09.1979	AUENHAUT SPT.23-32	APPROUVE	14.01.1980	HAMBURG MEYER
1432	590	21.09.1979	STEUERFACH FUNDAMENT	APPROUVE	05.11.1979	HAMBURG MEYER
1351	590	11.09.1979	STUZENPLAN BIS BYRKLUND	APPROUVE	05.11.1979	HAMBURG MEYER
1355	590	17.05.1979	DOPPELBOEDER SPT.130-133	APPROUVE	06.11.1979	HAMBURG MEYER
1343	590	18.05.1979	DOPPELBOEDER SPT.109-119	APPROUVE	06.11.1979	HAMBURG MEYER
1342	590	18.06.1979	DOPPELBOEDER SPT.38-108	APPROUVE	06.11.1979	HAMBURG MEYER
1341	590	18.06.1979	DOPPELBOEDER SPT.27-57	APPROUVE	06.11.1979	HAMBURG MEYER
1335	590	21.09.1979	DOPPELBOEDER SPT.607-65	APPROUVE	06.11.1979	HAMBURG MEYER
1324	590	24.04.1979	DOPPELBOEDER SPT.505-508	APPROUVE	06.11.1979	HAMBURG MEYER
1333	590	11.06.1979	DOPPELBOEDER SPT.65-75	APPROUVE	06.11.1979	HAMBURG MEYER
1331	590	11.06.1979	DOPPELBOEDER SPT.67-74	APPROUVE	06.11.1979	HAMBURG MEYER
1323	590	11.06.1979	DOPPELBOEDER SPT.42-53	APPROUVE	06.11.1979	HAMBURG MEYER
1322	590	11.06.1979	DOPPELBOEDER SPT.53-63	APPROUVE	06.11.1979	HAMBURG MEYER
1321	590	11.06.1979	DOPPELBOEDER SPT.23-32	APPROUVE	06.11.1979	HAMBURG MEYER
11119445	590	25.06.1980	STRUCTURAL ARRANGEMENT (VM200)	APPROUVE	10.03.1983	HAMBURG BROWN BROTHERS
13119592-1/0	590	27.07.1979	FIN & CRUXBOX FAB & M/C (PORT)	APPROUVE	15.03.1983	HAMBURG BROWN BROTHERS
13119592-2/0	590	27.07.1979	FIN & CRUXBOX FAB & M/C (MID)	APPROUVE	15.03.1983	HAMBURG BROWN BROTHERS
13119592-3/0	590	20.07.1979	FIN & CRUXBOX FAB & M/C (PORT)	APPROUVE	15.03.1983	HAMBURG BROWN BROTHERS
1301	590	18.06.1980	HÖFT/STUZENPLAN	APPROUVE	02.07.1980	HAMBURG MEYER
1303	590	30.01.1980	UNIFORMS/ABSTÜCKUNG	APPROUVE	23.04.1980	HAMBURG MEYER
1022	590	11.06.1979	STUZENPLAN	APPROUVE	02.07.1980	HAMBURG MEYER
1028	590	24.03.1979	STUZENPLAN	VU	02.07.1980	HAMBURG MEYER
1023	590	16.06.1980	STAHLPLAN TO_A/B/C-DECK	APPROUVE	25.06.1980	HAMBURG MEYER
1022	590	16.06.1980	STAHLPLAN DAE-H-J-B-DECK	APPROUVE	25.06.1980	HAMBURG MEYER
23 1	590	15.12.1979	BOOTAUFSTELLUNG	FOR INFO	17.12.1979	HAMBURG MEYER
MA_500	590	15.19.1979	ARRANGEMENT ENGINE ROOM	VU	17.12.1979	PARIS MEYER
MA_885_0	590	19.10.1979	DIAGRAM OF THERMAL OIL SYSTEM	VU	27.11.1979	PARIS MEYER
MA_510	590	29.10.1979	DIAGRAM OF LUBRICATING OIL SYSTEM	APPROUVE	27.11.1979	PARIS MEYER
MA_510	590	19.10.1979	DIAGRAM OF FUEL OIL SYSTEM	APPROUVE	27.11.1979	PARIS MEYER
MA_514_0	590	17.12.1979	BILGE AND BALLAST PIPING	APPROUVE	17.12.1979	PARIS MEYER

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MA 515 5	590	25.10.1978	DIAGRAM OF COOLING WATER SYSTEM	APPROUVE	27.11.1978	PARIS MEYER
MA 512 3	590	23.10.1978	DIAGRAM OF SEPARATOR PLANT	APPROUVE	27.11.1978	PARIS MEYER
B11 70110 0536		05.01.1979	HALBFABRIKAT PRE-PRODUCT SCHWINGRAD FLYWHEEL	VU	15.11.1978	HAMBURG M.A.N.
B11 70110 C044		17.10.1978	SCHWINGRAD FLYWHEEL	VU	15.11.1978	HAMBURG M.A.N.
B11 844 35 0016		18.10.1978	SCHWINGRADANORDNUNG ARRANGEMENT OF FLYWHEEL	APPROUVE	15.11.1978	HAMBURG M.A.N.
MA 551	590	11.09.1978	LINES SHAPING	APPROUVE	17.11.1978	HAMBURG MEYER
22065 D	590	20.03.1978	SHAPING	APPROUVE	06.11.1978	HAMBURG K.M.W.
4120	590	15.10.1978	RUDERSCHAFTS UND FINGERLINGS ABBILDUNG	VU	29.10.1978	PARIS A.VAH KAICK
4150	590	15.09.1978	RUDER	APPROUVE	17.04.1980	HAMBURG MEYER
4118	590	20.10.1978	RUDERSCHAFT FINGERLING UND ZUBEHOR	APPROUVE	18.04.1980	HAMBURG MEYER
1211	590	17.08.1978	HINTERSCHIFF KONTEN APT. 9	APPROUVE	18.4.1980	HAMBURG MEYER
531 398		08.02.1972	KAMEWA STEERINGPROPELLER 400/2000AS-CP	APPROUVE	09.04.1980	HAMBURG K.M.W.
547480 1/2		11.11.1974	KAMEWA STEERINGPROPELLER 800/2000AS-CP	VU	09.04.1980	HAMBURG K.M.W.
537481		03.12.1978	KAMEWA STEERINGPROPELLER 800/2000AS-CP	VU	09.04.1980	HAMBURG K.M.W.
500 200-1/2		05.08.1978	STEERING PROPELLER 1650/AS - CP550KW SAMMANSTILLNING ASSEMBLY	APPROUVE	09.04.1980	HAMBURG K.M.W.
500 200-2/2		05.08.1978	STEERING PROPELLER 1650/AS - CP550KW SAMMANSTILLNING ASSEMBLY	VU	09.04.1980	HAMBURG K.M.W.
523 293		19.08.1978	KA ME VIA - STEERING PROPELLER 1650/AS-CP/550KW INSTALLATION	VU	09.04.1980	HAMBURG K.M.W.
33-23 509 1/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
33-43 500 2/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
33-43 500 3/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
33-43 500 4/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
33-43 500 5/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
33-43 500 6/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
33-43 500 7/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
33-43 500 8/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
33-43 500 9/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
33-43 500 10/10	590	26.11.1978	ELECTRIC SCHEME W.T. DOOR SYSTEM	APPROUVE	04.02.1980	SCHÖENROCK-HYDRAULIK
B1006-8286	590	25.08.1980	GENERAL ARR. TANK-DECK DECK 1	APPROUVE	27.01.1980	PARIS MEYER
B1006-8293	590	04.08.1980	GENERAL ARR. DECK 2, 3, 4	APPROUVE	28.07.1980	PARIS MEYER
B1006-8292	590	03.08.1980	GENERAL ARR. DECK 5, 6, 7	APPROUVE	28.07.1980	PARIS MEYER
B1006-8291	590	07.05.1980	GENERAL ARR. DECK 8, 9, 10	APPROUVE	28.07.1980	PARIS MEYER
514-0723	590	24.07.1978	DIESELSTART AND CONNECTION BOX	APPROUVE	27.12.1978	PARIS ROLF JANSEN GMBH
60168-L355	590	04.07.1978	DISCHARGE LADDER	VU	28.07.1980	PARIS SIEMENS AG
F18132-003		24.01.1980	ELECTRIC DIAGRAM FOR POSITION INDICATOR	APPROUVE	19.03.1980	PARIS CAVO
F18132-004		28.01.1980	ELECTRIC DIAGRAM FOR VALVE CONTROL	APPROUVE	19.03.1980	PARIS CAVO
MA 688 5		15.04.1979	EXHAUST GAS HEATER, GENERAL ARR.	APPROUVE	05.05.1980	PARIS SANEA
513169		12.03.1975	PROPELLER PANEL FOR INSTRUMENTS 2 ENGINES LOAD CONTROL II	APPROUVE	05.05.1980	PARIS K.M.W.
529259		20.10.1978	PROPELLER LOAD SHARING UNIT	APPROUVE	05.04.1980	PARIS K.M.W.
18037		04.10.1979	PROPELLER COMBINATORIUM DIAGRAM	APPROUVE	05.04.1980	PARIS K.M.W.
529274 1/2		14.11.1978	PROPELLER SPARE PARTS ELECTRIC REMOTE CONTROL SYSTEM	APPROUVE	03.10.1980	PARIS K.M.W.
10X 688 6	590	25.02.1980	ISOLIERUNG THERMAL OL RÖHRE	APPROUVE	05.03.1980	PARIS MEYER
514523		04.10.1979	PROPELLER ELECTRIC REMOTE CONTROL SYSTEME ERIC 1	APPROUVE	08.04.1980	PARIS K.M.W.
514523		04.10.1979	PROPELLER EL. REMOTE CONTROL, CABLE DIAGRAM	APPROUVE	08.04.1980	PARIS K.M.W.
514523 2/3		04.10.1979	PROPELLER EL. REMOTE CONTROL CABLE DIAGRAM	APPROUVE	08.04.1980	PARIS K.M.W.
514522-20		31.10.1978	PROPELLER CONNECTION CABLE DIAGRAM	APPROUVE	08.04.1980	PARIS K.M.W.
514523		04.10.1979	PROPELLER CONNECTION DIAGRAM O.D-BOX	APPROUVE	08.04.1980	PARIS K.M.W.
514523 1/2		01.11.1979	PROPELLER EL. REMOTE CONTROL SYSTEM CONTROL PANEL BRIDGE	APPROUVE	08.04.1980	PARIS K.M.W.

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59453 2/2		01.11.1978	PROPELLER EL. REMOTE CONTROL SYSTEM CONTROL PANEL BRIDGE	APPROUVE	03.04.1980	PARIS K.M.W.
902975 1/2		17.08.1978	PROPELLER EL. REMOTE CONTROL SYSTEM CONTROL PANEL CONTROL ROOM	APPROUVE	05.04.1980	PARIS RUD. OTTO MEYER
902975 2/2		17.08.1978	PROPELLER EL. REMOTE CONTROL SYSTEM CONTROL PANEL FOR CONTROL ROOM	APPROUVE	05.04.1980	PARIS K.M.W.
902974 1/2		17.08.1978	PROPELLER EL. REMOTE CONTROL SYSTEM CONTROL PANEL ANNEX	APPROUVE	05.04.1980	PARIS K.M.W.
529254 2/2		17.08.1978	PROPELLER EL. REMOTE CONTROL SYSTEM CONTROL PANEL ANNEX	APPROUVE	05.04.1980	PARIS K.M.W.
53	590	18.11.1978	ANTRIEB DER SPEZIAL GRADUADE TKS AUFBERTEIL ANLAG. AUSTRITTE IN DER AUSSENKANT	APPROUVE	25.06.1980	PARIS MEYER
632	590	12.10.1978	DRIESCHER SCHAFFTE WAGENDECKE SPEZIALE	APPROUVE	05.01.1980	PARIS MEYER
E41	590	01.02.1980	VENTILATION PLAN BLATT 1	APPROUVE	17.01.1980	PARIS MEYER
E41	590	14.02.1980	VENTILATION PLAN BLATT 2	APPROUVE	17.01.1980	PARIS MEYER
MA 516 0	590	09.11.1978	DIAGRAM OF FIRE EXTINGUISHING SYSTEM	APPROUVE	25.01.1980	PARIS MEYER
MA 523 0	590	05.11.1978	DIAGRAM OF PNEUMATIC SYSTEM	APPROUVE	25.01.1980	PARIS MEYER
22017 79 01	590	05.11.1978	DIAGRAM OF WATER SUPPLY	VU	25.01.1980	PARIS MEYER
22017 79 01	590	15.11.1979	DRRIESHER SYSTEM WASSER SPRUH SCHEMA	VU	22.01.1980	PARIS RUD. OTTO MEYER
22017 79 02	590	16.11.1979	DRRIESHER SYSTEM OPERATING SCHEMA	VU	22.01.1980	PARIS RUD. OTTO MEYER
22015 79 09	590	07.11.1979	GENERAL ARR. AIR CONDITIONMENT	VU	07.01.1980	PARIS RUD. OTTO MEYER
22015 79 07	590	12.12.1979	GENERAL ARR. AIR CONDITIONMENT	VU	07.01.1980	PARIS RUD. OTTO MEYER
22015 79 05	590	10.12.1979	FÜRSCHUEBE CO2/FIRE EXTINGUISHING SYSTEM	VU	07.01.1980	PARIS RUD. OTTO MEYER
22015 79 04	590	30.11.1979	CO2 CYLINDER ROOM	APPROUVE	07.01.1980	PARIS RUD. OTTO MEYER
22015 79 02	590	11.01.1979	CO2 FIRE EXTINGUISHING SYSTEM	APPROUVE	07.01.1980	PARIS RUD. OTTO MEYER
22015 79 01	590	30.11.1979	CALCULATION OF THE CO2 QUANTITY	VU	07.01.1980	PARIS RUD. OTTO MEYER
22015 79 02	590	01.12.1979	CO2 FIRE EXTINGUISHING SYSTEM	VU	07.01.1980	PARIS RUD. OTTO MEYER
529253	590	27.11.1978	PIPE DIMENSIONS CO2 FIRE EXTINGUISHING SYSTEM	VU	07.01.1980	PARIS RUD. OTTO MEYER
529253	590	27.11.1978	PIPE DIMENSIONS CO2 FIRE EXTINGUISHING SYSTEM	VU	07.01.1980	PARIS RUD. OTTO MEYER
49 111 372	590	03.10.1979	AUTOMATSCHICHE UND MANUELLE VERSCLUSSANORDNUNGEN FÜR BUGKLAPPE	VU	07.01.1980	PARIS VON TELL
49 111 330	590	02.10.1979	BUGKLAPPE UND BUGRÄMPE ZUSAMMENSTELLUNG	VU	07.01.1980	PARIS VON TELL
49 111 373	590	03.10.1979	ATLANTIKSICHERUNG LIN EINAEISER	VU	07.01.1980	PARIS VON TELL
49 111 361	590	03.10.1979	VERTRIEGELUNG FÜR BUGRÄMPE	VU	07.01.1980	PARIS VON TELL
49 111 301 A	590	01.10.1979	BUGRÄMPE	APPROUVE	25.11.1979	PARIS VON TELL
32 84 1		29.03.1973	HAKEN	VU	05.11.1979	PARIS VON TELL
111 350	590	02.10.1979	HYDRAULISCHE VERSCLUSSANORDNUNG BUGRÄMPE 5 T	VU	05.11.1979	PARIS VON TELL
49 111 303	590	04.10.1979	DETAILS FÜR BUGRÄMPE VON TELL LIEFERUNG WO NICHT ANDERS GESETZ	APPROUVE	05.11.1979	PARIS VON TELL
49 111 322	590	04.10.1979	DETAILS FÜR BUGRÄMPE	APPROUVE	05.11.1979	PARIS VON TELL
49 111 230	590	03.10.1979	HECKRÄMPE VERSCLUSSANORDNUNG	APPROUVE	05.11.1979	PARIS VON TELL
49 111 260	590	27.05.1979	HYDRAULISCHE VERSCLUSSANORDNUNG HECKRÄMPE 5 T	VU	05.11.1979	PARIS VON TELL
49 111 203	590	28.03.1979	DETAILS FÜR HECKRÄMPE STB 0/85	VU	05.11.1979	PARIS VON TELL
49 111 204	590	04.10.1979	DETAILS FÜR HECKRÄMPE VON TELL LIEFERUNG WO NICHTS ANDERS GESETZ	APPROUVE	05.11.1979	PARIS VON TELL
49 111 202	590	01.10.1979	HECKRÄMPE 5 T MIT NOTBETÄTIGUNGSSAUGE	APPROUVE	05.11.1979	PARIS VON TELL
49 111 201	590	20.09.1979	HECKRÄMPE BB	APPROUVE	05.11.1979	PARIS VON TELL
49 111 427	590	23.11.1979	HYDR. SECURING CLEAT ARR. FOR PILOT SHELL PORT	VU	05.11.1979	PARIS VON TELL
49 111 428	590	20.11.1979	ERCTION OF PILOT PORT WITH HYDR JACK	VU	05.11.1979	PARIS VON TELL
49 111 426	590	20.03.1979	ARRANGEMENT OF HYDRUAL SECURING CLEAT FOR PASSENGER SHELL PORT	VU	05.11.1979	PARIS VON TELL
49 111 412	590	26.03.1979	SHREW PORT FOR PASSENGER	APPROUVE	05.11.1979	PARIS VON TELL
49 111 433	590	01.10.1979	WALL SUPPORT FOR PILOT	APPROUVE	05.11.1979	PARIS VON TELL
	590	23.04.1980	RAPORT DE FRANC-BORD			
22 19	590	21.03.1980	FREEBOARD PLAN			
	590	GENERAL ARRANGEMENT 1				
	590	GENERAL ARRANGEMENT 2				
	590	GENERAL ARRANGEMENT 5				
61 3	590	24.10.1979	LUFTRÖHRKOPF AUSFÜHRUNG C'			

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611	599	19.10.1979	ANORDNUNG DER LUFT-UND PEILRÖHRE	APPROUVE	19.02.1980	HAMBURG MEYER
01008-025	599	14.12.1978	MAIN SWITCHBOARD PANEL 1.5.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-015	599	11.21.1978	MAIN SWITCHBOARD PANEL 5.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S106	599	17.12.1978	EMERG. SWITCHBOARD	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-A151C	599	13.11.1978	EMERG. SWITCHBOARD	VU	19.02.1980	PARIS SIEMENS AG
01006-016	599	19.12.1978	SINGLE LINE DIAGRAM	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-017	599	27.12.1978	EMERG. SWITCHBOARD PANEL 2.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S181	599	27.12.1978	EMERG. SWITCHBOARD PANEL 1.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S163	599	17.12.1978	EMERG. SWITCHBOARD PANEL 2.4	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S184	599	17.12.1978	EMERG. SWITCHBOARD PANEL 2.	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S165	599		EMERG. SWITCHBOARD PANEL 4.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-L165A	599	12.12.1978	EMERG. SWITCHBOARD	VU	19.02.1980	PARIS SIEMENS AG
01006-A101	599	11.21.1978	220V/MAIN SWITCHBOARD FRONT VIEW	VU	19.02.1980	PARIS SIEMENS AG
01006-A202	599	11.21.1978	220V/MAIN SWITCHBOARD FRONT VIEW	VU	19.02.1980	PARIS SIEMENS AG
01006-S110	599	10.01.1980	220V/SWITCHBOARD	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-019	599	17.12.1978	ZUG-SWITCHBOARD PANEL 2.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-L17A	599		ZUG-SWITCHBOARD	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-0111A	599	16.12.1978	ZUG-SWITCHBOARD PANEL 1.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-A002	599	11.21.1978	MAIN/MAIN SWITCHBOARD FRONT VIEW	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S10	599	18.12.1978	MAIN SWITCHBOARD PANEL 1.2	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S11	599	11.21.1978	MAIN SWITCHBOARD PANEL 1.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S12	599	11.21.1978	MAIN SWITCHBOARD PANEL 2.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S13A	599	11.21.1978	MAIN SWITCHBOARD PANEL 3.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S14	599	12.12.1978	MAIN SWITCHBOARD PANEL 4.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S15	599	12.12.1978	MAIN SWITCHBOARD PANEL 7.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S16	599	12.12.1978	MAIN SWITCHBOARD PANEL 6.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S19	599	12.12.1978	MAIN SWITCHBOARD PANEL 4.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-A020	599	13.12.1978	MAIN SWITCHBOARD PANEL 1.1 ALTERNATOR 1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S21	599	13.12.1978	MAIN SWITCHBOARD PANEL 11 ALTERNATOR 2	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S22	599	11.12.1978	MAIN SWITCHBOARD PANEL 1.2 BOW THRUSTER 1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S23A	599	14.12.1978	MAIN SWITCHBOARD PANEL 13 ALTERNATOR 3	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S24A	599	17.12.1978	MAIN SWITCHBOARD PANEL 14 ALTERNATOR 4	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S28	599	12.12.1978	MAIN SWITCHBOARD PANEL 16.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S27	599	12.12.1978	MAIN SWITCHBOARD PANEL 17.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S26	599	12.12.1978	MAIN SWITCHBOARD PANEL 18.15.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S28	599	12.12.1978	MAIN SWITCHBOARD PANEL 18.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S30	599	12.12.1978	MAIN SWITCHBOARD PANEL 20.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01006-S31	599	13.12.1978	MAIN SWITCHBOARD PANEL 21.1	APPROUVE	19.02.1980	PARIS SIEMENS AG
01008-1057B	599	07.12.1978	MAIN SWITCHBOARD	APPROUVE	19.02.1980	PARIS SIEMENS AG
			KURZSCHLUSSBERECHNUNG NACH DIN 59013	APPROUVE	20.04.1980	PARIS SIEMENS AG 17
31-0229	599	11.11.1979	ROHR U. HYDRAULIK SCHEMA	APPROUVE	19.12.1979	HAMBURG SCHÖDENROCK HYRAULIK
31-4206	599	28.11.1979	SCHOTTSCEDEUST SPT 270022600	APPROUVE	07.01.1980	HAMBURG SCHÖDENROCK HYRAULIK
1501	599	03.10.1979	QUERSCHOTT SPT. 132/133 TANKHALFWAND/V. SPT. 120/132	APPROUVE	15.02.1980	HAMBURG SCHÖDENROCK HYRAULIK
1341	599	01.10.1979	EINBAUANLAGE A. D. TANKDÖCKE	APPROUVE	15.02.1980	HAMBURG SCHÖDENROCK HYRAULIK
02-0224	599	25.11.1979	SCHEMA SCHAFT NR.12 27002500MM	APPROUVE	07.01.1980	HAMBURG SCHÖDENROCK HYRAULIK
599	25.11.1979	GEISTERSCHEIBENLAGER 1	VU	19.12.1979	HAMBURG MEYER	
32-02 550/SD	599	02.01.1978	HYDRAULIC CONTROL SYSTEM FOR W.T. BULKHEAD DOORS RIGHT CLOSING	APPROUVE	19.12.1979	HAMBURG SCHÖDENROCK HYRAULIK
32-02 554/GID	599	02.01.1978	HYDRAULIC CONTROL SYSTEM FOR W.T. BULKHEAD DOORS RIGHT CLOSING	APPROUVE	19.12.1979	HAMBURG SCHÖDENROCK HYRAULIK
31-1400	599	12.10.1968	ZUAMMENSTELLUNG	APPROUVE	19.12.1979	HAMBURG SCHÖDENROCK HYRAULIK

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1643	599	14.11.1979	QUERSCHOTT SPT. 599.120	APPROUVE	09.10.1979	HAMBURG MEYER
1642	599	03.10.1979	QUERSCHOTT SPT. 110	APPROUVE	09.10.1979	HAMBURG MEYER
1641	599	25.05.1979	QUERSCHOTT SPT. 81	APPROUVE	09.10.1979	HAMBURG MEYER
1634	599	08.10.1979	QUERSCHOTT SPT. 85	APPROUVE	09.10.1979	HAMBURG MEYER
1633	599	05.10.1979	QUERSCHOTT SPT. 30R	APPROUVE	09.10.1979	HAMBURG MEYER
1632	599	08.10.1979	QUERSCHOTT SPT. 50E/50H UND LANGSSCHOTT 69300A.M. SPT. 60E/60H	APPROUVE	09.10.1979	HAMBURG MEYER
1631	599	13.09.1979	QUERSCHOTT SPT. 71	APPROUVE	09.10.1979	HAMBURG MEYER
1622	599	13.09.1979	QUERSCHOTT SPT. 43	APPROUVE	09.10.1979	HAMBURG MEYER
1623	599	13.09.1979	QUERSCHOTT SPT. 55	APPROUVE	09.10.1979	HAMBURG MEYER
1624	599	13.09.1979	QUERSCHOTT SPT. 57	APPROUVE	09.10.1979	HAMBURG MEYER
42-02115	599	08.12.1978	ARRANGEMENT LIFT PWT. SPT. 22/28	INFO	09.10.1979	HAMBURG SCHÖDENROCK HYRAULIK
1412	599	14.11.1978	AUENHAUT A-0 DECK SPT. 26/B 85	APPROUVE	15.02.1980	HAMBURG SCHÖDENROCK HYRAULIK
15-02315	599	30.11.1978	TUR VOR DEM LIFT	INFO	15.02.1980	HAMBURG SCHÖDENROCK HYRAULIK
1464	599	20.11.1978	AUENHAUT SPT. 87-138 A BIS C + DECK	APPROUVE	15.02.1980	HAMBURG MEYER
1523	599	03.11.1978	SCHAFTWANDE AUF DEM A-DECK SPT.23/24	APPROUVE	05.25.1980	HAMBURG MEYER
1463	599	08.11.1978	SCHAFTWANDE AUF DEM A-DECK VON SPT.85 BIS 86	APPROUVE	05.25.1980	HAMBURG MEYER
1553	599	12.11.1978	SCHAFTWANDE AUF DEM A-DECK VON SPT.57/120	APPROUVE	05.25.1980	HAMBURG MEYER
1411	599	11.12.1978	HINTERSCHEI SPT. 286 HINTEN VON A-DECK BIS C-DECK	APPROUVE	05.05.1980	HAMBURG MEYER
599			VERTEILUNG UNDER 4-DECK	APPROUVE	05.24.1980	HAMBURG MEYER
1500-551-0	599	10.10.1979	VERTEILUNG UNDER 4-DECK	APPROUVE	05.05.1980	HAMBURG AG WEISER
1500-551-1	599	22.11.1979	B. DECK B-0 DECK	APPROUVE	05.05.1980	HAMBURG AG WEISER
1500-552-7	599	09.10.1979	B. DECK E-DECK	APPROUVE	05.21.1980	HAMBURG AG WEISER
1500-552-3	599	28.11.1979	B. DECK F-DECK	APPROUVE	05.21.1980	HAMBURG AG WEISER
1500-554-7	599	24.11.1979	B. DECK G-DECK	APPROUVE	05.21.1980	HAMBURG AG WEISER
1500-551-1	599	20.11.1979	AUENHAUT 4-7. DECK SPT. 4/75.1/2	APPROUVE	15.01.1980	HAMBURG AG WEISER
1500-551-2	599	1979	AUENHAUT 4-7. DECK SPT.75.1/2 - 139	APPROUVE	15.01.1980	HAMBURG AG WEISER
1500-554-7	599	18.11.1979	B. DECK H-DECK	APPROUVE	15.01.1980	HAMBURG AG WEISER
1500-513-0	599	10.10.1979	VERTEILUNG SPT. 4-7	APPROUVE	05.07.1980	HAMBURG AG WEISER
	599	27.03.1980	LIST OF DRAWINGS SUPPLY FOR CONTROL ENGINE, REMOTE CONTROL, SAFETY SYSTEM AND MONITORING	APPROUVE	15.02.1980	HAMBURG M.A.N.
1040015M/910		02.04.1980	LIST OF MESS + CONTROL DEVICE	APPROUVE	05.07.1980	HAMBURG M.A.N.
A11.12500-2445			STEUERUNGSSCHEMA FÜR ZWEI NICHT UMSTEUERBARE MOTOREN ÜBER SAMMELUNTERSTÜTZUNGSGELEHRTE UND VERSTELLROTELLEN	WITHOUT AP		M.A.N.
			TELE AUFZUGSCHEMATA FÜR ZWEI NICHT UMSTEUERBARE MOTOREN ÜBER SAMMELUNTERSTÜTZUNGSGELEHRTE UND VERSTELLROTELLEN	WITHOUT AP		M.A.N.
			CONTROL SYSTEM TWO ENGINE PLANT NOT REVERSIBLE 40/45	WITHOUT AP		M.A.N.
A11.12500-3572		01.10.1979	OPERATING EQUIPMENT VP-DOUBLE ENGINES ENGINE	WITHOUT AP		M.A.N.
A11.12500-3574		10.10.1979	OPERATING EQUIPMENT VP-DOUBLE ENGINES ENGINE	WITHOUT AP		M.A.N.
A11.12500-2511		14.05.1979	KLEMMENPLAN FÜR BEDECKUNGSTAND AM MOTOR FÜR ZWEI NICHT UMSTEUERBARE MOTOREN MIT SAMMELUNTERSTÜTZUNGSGELEHRTE UND VERSTELLROTELLEN	WITHOUT AP		M.A.N.
A11.12500-3511		14.05.1979	KLEMMENPLAN FÜR BEDECKUNGSTAND AM MOTOR FÜR ZWEI NICHT UMSTEUERBARE MOTOREN MIT SAMMELUNTERSTÜTZUNGSGELEHRTE UND VERSTELLROTELLEN	WITHOUT AP		M.A.N.
C11.12500-3574		09.01.1980	TELE AUFZUGSCHEMATE	WITHOUT AP		M.A.N.
B11.12500-3443		03.10.1978	DREHAUPTSTÜRTZER FÜR ZWEI NICHT UMSTEUERBARE MOTOREN ÜBER SAMMELUNTERSTÜTZUNGSGELEHRTE UND VERSTELLROTELLEN	WITHOUT AP		M.A.N.
F11.12500-3448		05.09.1977	SPANNED SETTING FROM ENGINE CONTROL ROOM	WITHOUT AP		M.A.N.
B11.49900-1203		14.03.1980	CABLING OF ELECTRICAL MONITORING UNIT ON ENGINE	WITHOUT AP		M.A.N.
C11.49900-1203		26.09.1978	CABLING OF ELECTRICAL MONITORING UNIT ON ENGINE	WITHOUT AP		M.A.N.
A11.12500-3468		14.03.1980	CONNECTION DIAGRAM FOR REMOTE CONTROL CLUTCH AND ENGINE MONITORING	WITHOUT AP		M.A.N.
A11.12500-3466		14.03.1980	CONNECTION DIAGRAM FOR REMOTE CONTROL CLUTCH AND ENGINE MONITORING	WITHOUT AP		M.A.N.
A11.12500-3466		20.03.1980	CONNECTION DIAGRAM FOR REMOTE CONTROL CLUTCH AND ENGINE MONITORING	WITHOUT AP		M.A.N.
A11.12500-4366		14.03.1980	CONNECTION DIAGRAM FOR REMOTE CONTROL CLUTCH AND ENGINE MONITORING	WITHOUT AP		M.A.N.

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A11.12500-436		14.03.1970	CONNECTION DIAGRAM FOR REMOTE CONTROL CLUTCH AND ENGINE MONITORING	WITHOUT AP		M.A.N.
A11.12500-436		14.03.1970	CONNECTION DIAGRAM FOR REMOTE CONTROL CLUTCH AND ENGINE MONITORING	WITHOUT AP		M.A.N.
S131000-00001		14.03.1970	PROPELLER POSITION INDICATING DEVICES 2 ENGINES	APPROVE	08.04.1970	HAMBURG KMW
S22539		28.10.1974	PROPELLER LOAD SENSING UNIT	APPROVE	08.04.1970	HAMBURG KMW
S4928		04.10.1974	PROPELLER CONNECTION DIAGRAM Q.D. BOX	APPROVE	08.04.1970	HAMBURG KMW
S4827-3/0		31.10.1974	PROPELLER (L) REMOTE CONTROL CABLE DIAGRAM	APPROVE	08.04.1970	HAMBURG KMW
S4827-3/0		04.10.1974	PROPELLER (L) REMOTE CONTROL CABLE DIAGRAM	APPROVE	08.04.1970	HAMBURG KMW
S4928		04.10.1974	PROPELLER (L) REMOTE CONTROL SYSTEM ER1	APPROVE	08.04.1970	HAMBURG KMW
J02875-1/2		17.03.1974	PROPELLER (L) REMOTE CONTROL SYSTEM CONTROL PANEL CONTROL ROOM	APPROVE	08.04.1970	HAMBURG KMW
J02875-2/2		17.03.1974	PROPELLER (L) REMOTE CONTROL SYSTEM CONTROL PANEL CONTROL ROOM	APPROVE	08.04.1970	HAMBURG KMW
J02874-1/2		17.03.1974	PROPELLER (L) REMOTE CONTROL SYSTEM CONTROL PANEL ANEX	APPROVE	08.04.1970	HAMBURG KMW
J02874-2/2		17.03.1974	PROPELLER (L) REMOTE CONTROL SYSTEM CONTROL PANEL ANEX	APPROVE	08.04.1970	HAMBURG KMW
S49552-1/2		01.11.1974	PROPELLER (L) REMOTE CONTROL SYSTEM CONTROL PANEL BRIDGE	APPROVE	08.04.1970	HAMBURG KMW
S49552-2/2		01.11.1974	PROPELLER (L) REMOTE CONTROL SYSTEM CONTROL PANEL BRIDGE	APPROVE	08.04.1970	HAMBURG KMW
I1037	590		PROPELLER COMBINATOR DIAGRAM	APPROVE	08.04.1970	HAMBURG KMW
65114.586.01		05.03.1980	ÜBERWACHUNGSCIRCUIT (US) 24V	APPROVE	08.04.1980	HAMBURG STRYVER
1212	590	14.03.1979	HEITERSCHEIFF SPFT.15/03	APPROVE	14.12.1979	HAMBURG MEYER
1221	590	30.03.1979	ZWISCHENDECK SPFT. 24/2	APPROVE	14.01.1980	HAMBURG MEYER
1222	590	29.03.1979	ZWISCHENDECK SPFT. 39 + 42	APPROVE	21.12.1979	HAMBURG MEYER
1223	590	29.03.1979	ZWISCHENDECK SPFT. 43 + 54	APPROVE	14.12.1979	HAMBURG MEYER
1224	590	29.03.1979	ZWISCHENDECK SPFT. 55 + 52	APPROVE	14.01.1980	HAMBURG MEYER
1225	590	17.03.1979	A-DECK VON SPFT. 33 + 42	APPROVE	21.12.1979	HAMBURG MEYER
1226	590	18.03.1979	A-DECK VON SPFT. 43 - 53	APPROVE	14.12.1979	HAMBURG MEYER
1227	590	14.03.1979	ZWISCHENDECK V. SPFT. 54 + 64	APPROVE	14.12.1979	HAMBURG MEYER
1228	590	14.03.1979	ZWISCHENDECK V. SPFT. 65 - 75	APPROVE	14.12.1979	HAMBURG MEYER
1229	590	14.03.1979	ZWISCHENDECK V. SPFT. 76 + 80F	APPROVE	21.12.1979	HAMBURG MEYER
1230	590	15.03.1979	A-DECK V. SPFT. 54 + 64	APPROVE	14.12.1979	HAMBURG MEYER
1231	590	17.03.1979	A-DECK V. SPFT. 65 - 75	APPROVE	14.12.1979	HAMBURG MEYER
1232	590	17.03.1979	A-DECK V. SPFT. 76 + 80F	APPROVE	18.11.1979	HAMBURG MEYER
1233	590	01.10.1979	PROPELLER POSITION INDICATING DEVICE	APPROVE	21.12.1979	HAMBURG MEYER
1234	590	01.10.1979	A-DECK V. SPFT. 80 - 86	APPROVE	14.01.1980	HAMBURG MEYER
1235	590	27.03.1979	ZWISCHENDECK SPFT. 120 + 135	APPROVE	18.11.1979	HAMBURG MEYER
1236	590	02.10.1979	ZWISCHENDECK SPFT. 120 + 135	APPROVE	18.11.1979	HAMBURG MEYER
1237	590	01.10.1979	ENDAUFNAHME SYSTEM ZWISCHENDECK SPFT. 23 + 133	APPROVE	15.02.1980	HAMBURG MEYER
B11.12500-436		14.03.1970	CONNECTION DIAGRAM FOR REMOTE CONTROL CLUTCH AND ENGINE MONITORING	WITHOUT AP		HAMBURG M.A.N.
D10153-C/E		15.05.1975	ENGINE POWER RANGES OF WITH CONTROL SYSTEM	WITHOUT AP		HAMBURG M.A.N.
F11.12500-4038	590	24.04.1979	DATA SHEET FOR WOODWARD REGULATOR BESTELLUNG MIT EINSTELLWERKEN	WITHOUT AP		HAMBURG M.A.N.
B11.12500-3563		25.07.1977	STEIGERATEURSCHRANK Z	WITHOUT AP		HAMBURG M.A.N.
F11.12500-3505		25.08.1977	TERMINAL DIAGRAM FOR CONTROL UNIT CABINET Z* WITHOUT PTO	WITHOUT AP		HAMBURG M.A.N.
C11.12500-1829		EINS TESTUNG UND ANSCHLÜSSE AM WOOD WARDREGULATOR TYP P.M.A	WITHOUT AP		HAMBURG M.A.N.	
		TECHNICAL NOTE MA 44/70 PAGES 1 + 10	WITHOUT AP		HAMBURG M.A.N.	
B11.12500-1059		PIPE SPECIFICATION AND INSTRUCTIONS FOR INSTALLING PNEUMATIC DEVICES	WITHOUT AP		HAMBURG M.A.N.	

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X100000-00001		01.01.1970	CONNECTION FOR ADUSSION DEPENDENT LUB. OIL PREHEATING FOR TURBO CHARGER	WITHOUT AP		HAMBURG M.A.N.
A11.12500-3445		12.07.1977	MAIN CONTROL TWO CYLINDERS, ENG. WITH MULTIPLE GEARBOX AND CONTROLLABLE PITCH PROPELLE	WITHOUT AP		HAMBURG M.A.N.
C11.12500-3465		18.03.1975	SWITCHING PROCEDURE FOR STARTING OF STAND-BY PUMP FOR THE LUB. OIL SUPPLY OF EACH ENGINE	WITHOUT AP		HAMBURG M.A.N.
C11.12500-3464		25.11.1977	MAIN STARTING VALVE NAV 80	WITHOUT AP		HAMBURG M.A.N.
C11.19900-2-079		08.05.1978	3/WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
C11.19900-2-047		28.11.1978	3/WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
F11.9003-0147		26.11.1978	3/WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
E11.9001-0042		15.04.1978	FINE REGULATING VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9001-0049		22.11.1974	SHAFTVENTIL	WITHOUT AP		HAMBURG M.A.N.
D11.9001-0050		02.05.1974	SHAFTENDIO VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9002-0182		04.05.1977	3/WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9002-0022		08.11.1975	THREE WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9003-0064		18.05.1978	3/WAY MAGNET VALVE	WITHOUT AP		HAMBURG M.A.N.
B11.9003-0002		18.03.1978	3/WAY SOLENOID VALVE OPEN CIRCUIT	WITHOUT AP		HAMBURG M.A.N.
D11.9003-0091		03/17/75	DRUCKVUNDEL VENTIL	WITHOUT AP		HAMBURG M.A.N.
F11.9004-0056		17.12.1978	DOUBLE NON-RETURN VALVE	WITHOUT AP		HAMBURG M.A.N.
E11.9004-0055		09.10.1955	WATER SEPARATOR	WITHOUT AP		HAMBURG M.A.N.
D11.9004-0079		31.05.1978	DRUCKREGELVENTIL	WITHOUT AP		HAMBURG M.A.N.
D11.9005-0059		05.11.1975	3/WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9005-0020		08.11.1975	TIME DELAY VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9005-0062		13.03.1973	TIME DELAY VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9005-0093		06.11.1975	PRESSURE SWITCH	WITHOUT AP		HAMBURG M.A.N.
D11.9005-0039		11.11.1975	PRESSURE SWITCH	WITHOUT AP		HAMBURG M.A.N.
E11.9005-0077		06.09.1972	DRUCKMINDERVENTIL	WITHOUT AP		HAMBURG M.A.N.
E11.9005-0077		27.02.1972	DRUCKMINDERVENTIL	WITHOUT AP		HAMBURG M.A.N.
D11.9005-0066		28.10.1975	WEECHSELVENTIL	WITHOUT AP		HAMBURG M.A.N.
D11.9005-0071		23.07.1972	DRUCKMINDERVENTIL	WITHOUT AP		HAMBURG M.A.N.
E11.9003-0112		25.07.1972	3/WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
E11.9003-0152		25.07.1972	3/WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9005-0066		04.11.1975	3/WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9005-0068		11.11.1972	3/WAY VALVE	WITHOUT AP		HAMBURG M.A.N.
D11.9006-0002		15.09.1972	PRESSURE REDUCING STATION	WITHOUT AP		HAMBURG M.A.N.
C11.9006-0002		15.09.1972	PRESSURE REDUCING STATION	WITHOUT AP		HAMBURG M.A.N.
A11.911			PUSH TYPE ILLUMINATED ON/OFF PUSHBUTTON SWITCH TYP KISSL	WITHOUT AP		HAMBURG M.A.N.
E11.9007-0742		01.04.1977	LIMIT SWITCH	WITHOUT AP		HAMBURG M.A.N.
E11.9007-0742		21.01.1977	ILLUMINATED KEY	WITHOUT AP		HAMBURG M.A.N.
E11.9007-0544		21.01.1977	ILLUMINATED SWITCH	WITHOUT AP		HAMBURG M.A.N.
D11.9002-0053		21.01.1977	DC EXPEDITE TRANSMITTER	WITHOUT AP		HAMBURG M.A.N.
E11.9013-0369		12.01.1977	EL. SPEED INDICATING INSTRUMENT	WITHOUT AP		HAMBURG M.A.N.
E11.9001-0371		14.01.1977	ELEKTROCHARGER DREHAHLANZE-GER	WITHOUT AP		HAMBURG M.A.N.
F11.5622-0045		02.08.1972	SPEED TRANSMITTER READY FOR INSTALLATION	WITHOUT AP		HAMBURG M.A.N.
E11.9001-0374		18.02.1972	EL. SPEED INDICATOR (TURBOLADER)	WITHOUT AP		HAMBURG M.A.N.
E11.9007-0771		09.01.1977	MULTIPLE LIMIT SWITCH	WITHOUT AP		HAMBURG M.A.N.
E11.9001-2-0103		22.04.1977	PRESSURE SWITCH	WITHOUT AP		HAMBURG M.A.N.
E11.9001-2-0267		21.01.1977	TEMPERATURFÜHLER FÜR KURBELWELLEMÄGER	WITHOUT AP		HAMBURG M.A.N.
E11.4991-0022		18.04.1981	PRESSURE DIFFERENTIAL SWITCH	WITHOUT AP		HAMBURG M.A.N.
21431-002		12.03.1981	UNIVERSAL MONITORING SYSTEM 213. MAIN BEARING SUPERVISION DIAGRAM	WITHOUT AP		HAMBURG SCRENT, LYNGSO
E11.8991-0149		19.02.1973	TEMPERATURE SENSOR	WITHOUT AP		HAMBURG M.A.N.

DRAWING N°	HULL N°	DRAWING DATE	TITLE	REVIEW	DATE	LOCATION
E11.99011-0118		26.02.1978	MODULAR SWITCHGEAR	WITHOUT AP		HAMBURG U.A.N.
E11.99011-0346		26.02.1978	MODULAR SWITCHGEAR	WITHOUT AP		HAMBURG M.A.N.
E11.99011-0115		22.03.1978	RESISTANCE THERMOMETER	WITHOUT AP		HAMBURG M.A.N.
E11.99011-0105		13.05.1971	SWITCHGEAR FOR MONITORING FUEL TEMPERATURE	WITHOUT AP		HAMBURG M.A.N.
E11.99011-0108		19.07.1971	SWITCHING DEVICE FOR CONTROL OF FUEL TEMPERATURE	WITHOUT AP		HAMBURG M.A.N.
F11.99011-0072		11.01.1972	F.O. LEAKAGE COLLECTING TANK WITH BAR-TYPE PROBE	WITHOUT AP		HAMBURG M.A.N.
F11.99011-0073		22.01.1972	LEAKAGE COLLECTING TANK WITH BAR-TYPE PROBE	WITHOUT AP		HAMBURG M.A.N.
E11.99016-0025		30.04.1974	BAR TYPE PROBE WITH ELECTRONIC INSERT	WITHOUT AP		HAMBURG M.A.N.
E11.99027-0255		30.04.1974	HIVOTESTER	WITHOUT AP		HAMBURG M.A.N.
E11.99011-0218		17.09.1975	DOUBLE TUBE AND COUPLE WITH PROTECTING WELL	WITHOUT AP		HAMBURG M.A.N.
A11.12300-3164		09.11.1978	ARRANGEMENT OF PRESSURE SWITCHES	WITHOUT AP		HAMBURG M.A.N.
C11.12500-3946		09.11.1978	TERMINAL DIAGRAM OF MOUNTING OF PRESSURE SWITCHES	WITHOUT AP		HAMBURG M.A.N.
C11.12500-3920		15.03.1978	MOUNTING OF PRESSURE SWITCHES	WITHOUT AP		HAMBURG M.A.N.
C11.12500-3454		23.04.1977	MOUNTING OF PRESSURE SWITCHES	WITHOUT AP		HAMBURG M.A.N.
E11.12500-3922		15.02.1971	ATTACH TESTING DEVICE FOR PRESSURE SWITCH	WITHOUT AP		HAMBURG M.A.N.
F11.12500-3913		09.10.1978	SCHILD 220x150mm (BESTELLECHNUNG)	WITHOUT AP		HAMBURG M.A.N.
F11.12501-1018		09.10.1978	SCHILD 220x150mm (BESTELLECHNUNG)	WITHOUT AP		HAMBURG M.A.N.
F11.12501-1020		09.10.1978	SCHILD 220x150mm (BESTELLECHNUNG)	WITHOUT AP		HAMBURG M.A.N.
D11.99018-0019		14.03.1971	OIL/MIST DETECTOR	WITHOUT AP		HAMBURG M.A.N.
E11.99016-0020		09.11.1971	TERMINAL BOX AND TERMINAL DIAGRAM TO OIL MIST DETECTOR MK4	WITHOUT AP		HAMBURG M.A.N.

List of drawings sent by BV to the JAIC

Enclosure 2.4.3.36

DRAWING N°	TITLE	DATE OF APPROVAL
<u>Bow visor</u>		
590/1103 rev.6	Bugklappe	20.06.80
590/1106 rev.G	BUGklappeverriegelung	20.06.80
49111-373	Atlantik sicherung	02.07.80
590/1101 a	Vorschiff spt 149 - vorne	04.12.79
49111-372	Automatische und manuelle verschlussanordnungen für bugklappe	02.07.80
49111-330	Bugklappe und bugrampe zusammenstellung	05.11.79
<u>Bow ramp</u>		
49111-301 a	Bugrampe	05.11.79
49111-303	Details für bugrampe (von Teil lieferung)	05.11.79
49111-360	Hydraulische verschlussanordnungen bugrampe	05.11.79
49111-302	Details für bugrampe	05.11.79
49111-361	Verriegelung für bugrampe	05.11.79

Letter to the JAIC

Section : 35 387

Enclosure 2.4.3.37

BUREAU VERITAS
Marine Division
T.N. DT1/N° 95/00136/SEG

Paris La Défense, 10 January 1995

M/V ESTONIA Summary of class and statutory interventions

Contents

A Classification

A1 Review of drawings

A11 Bureau Veritas rules

- A111 Requirements for bow doors in the 1977 rules
- A112 Rules evolution since 1977
- A113 Implementing Solas requirements in Bureau Veritas rules

A12 Examination of locking devices

A121 Remarks put on the reviewed drawings

A2 Appraisal of the selection of materials

A3 Survey during construction of the ship

A31 Survey of bow visor welds

B Issuance of statutory certificates

B1 Certificates issued by Bureau Veritas in 1980

B2 Certificates issued by the National Authorities in 1980

C Implementing Retrofit requirements according to IMO

C1 Stability

C2 Monitoring of bow locking

D Change of flag in February 1993

D1 Bureau Veritas authorizations for Estonian flag vessels

D2 Surveys carried out by Bureau Veritas

E Renewal of certificates as from 1983.

A Classification**A1 Review of drawings****A11 Bureau Veritas Rules**

M/V Estonia has been classed by Bureau Veritas since newbuilding under special survey.

The request for classification (Annex 1) was signed 27 September 1979.

The class rules in force at that time were the 1977 issue.

A complete set of these rules is annexed to this summary.

A111 Requirements for bow doors in the 1977 rules

These requirements are given in para. 11-44, indentation 2 & 3:

- the scantlings of door plating and stiffeners are those of the adjacent shell structure;
- local reinforcements are required in way of cleats, hinges, and jacks attachments;
- the removable extension of the collision bulkhead above the bulkhead deck is to be made weatherlight, however its position is not specified (see also 6-62.14 of the Bureau Veritas rules)

A112 Rules evolution since 1977

The 1980 set of rules is identical to the 1977, for bow doors requirements.

The June 1981 amendments contained a rule calculation method for bow visor securing devices, similar to the S8 unified requirement of IACS, except for the pressure criteria. The distance from the inner door to the fore perpendicular is required to be within the limits specified in Solas 1974, as amended 1981.

No change made in the 1982 issue.

In the 1985 issue, slight modifications were made to the rule calculation of forces on bow visor to be considered for securing devices.

In the November 1987 issue, the requirements were consolidated in full compliance with the IACS S8 unified requirement.

In January 1991, the minimum thickness of bow door plating was increased. The strength of large flared bow doors was to be specially considered.

A113 Implementing Solas requirements in Bureau Veritas rules

The 1960 Solas convention was in force at the time the Estonia was built. Chapter II, reg. 9 requests a weatherlight extension of the collision bulkhead to be located aft of the forward perpendicular by 5 percent of the ship's length, at least.

This requirement was maintained in the Solas 1974.

The 1981 amendments to the convention mentioned for the first time bow ramps and specifically allowed the part higher than 2.3 meter above the bulkhead deck to be outside the limit for the location of the extension of the collision bulkhead. (relevant excerpts are enclosed as annex 3).

After the entry into force of the 1981 amendments, in September 1984, most internal sloped bow ramps could be located within the limit. Operational constraints made it difficult to comply with the previous requirement which was not aimed at this arrangement.

Bureau Veritas implemented this new requirement in its rules as from adoption at IMO, in June 1981, thus anticipating the September 1984 entry into force. No requirement was implemented to this end in the Bureau Veritas rules prior to this date.

A12 Examination of locking devices

The bow door drawings of the M/V Estonia were reviewed by the Hamburg local office of Bureau Veritas which was in charge of the review. List of reviewed drawings is given as annex 4.

The drawings were checked against the Bureau Veritas 1977 rules which did not contain formula for the rule strength of securing devices of shell doors opening outwards.

Information was received from the bow door designer, Messrs Von Tell, which stated in their telex dated 18 march 1980 (annex 5) to the local Bureau Veritas office in Hamburg that they had designed according to the Lloyd's Register rules.

A121 Remarks put on the reviewed drawings**Bow visor drawing (590/1103)**

The remarks conform strictly to the rule requirements:

Rule requirements	Remarks on the drawing
15- The closing of doors is to be watertight. The thickness of plating is not to be less than for adjacent side shell.	1) Arrangements of locking devices subject to the approval of the national Authorities. 2) Watertightness of the ramp and local reinforcements of the ship's structures in way of locking devices, cylinders and hinges to Surveyor's satisfaction.
31- Doors and screen-doors have to be firmly secured by use of cleats conveniently spaced or other similar devices. Particularly, it has to be provided one of these devices at each corner of opening. Structure reinforcements have to be realised on door and adjacent shell plating to attached points of cleats, hinges, jacks, etc.	3) Jack lifting eye on arms, atlantic lock eye, side lock eyes, requested in steel grade St 52-3. 4) Local reinforcements requested and indicated under the side blocks active in y-direction (transverse).

General arrangement drawing of bow visor and ramp (49111-330)

Similar remarks were made:

Remarks on the drawing
1) Arrangement of locking devices and protection against shifting cargoes subject to the approval of the National Authorities.
2) Watertightness of the ramp and bow visor to Surveyor's satisfaction.
3) Local reinforcement of the ship's structure in way of - locking devices - cylinders - hinges to Surveyor's satisfaction.
4) High pressure flexible pipes must be approved by BV .

By the remark concerning the National Authorities it was made clear that locking devices were considered as an item subject to the examination and approval of the Finnish Authorities issuing the Passenger Ship Safety Certificate of the vessel.

A2 Appraisal of the selection of materials

The Bureau Veritas rule requirements are set out in chapters 3 and 25 of the 1977 issue.
For grade A steel, a ladle analysis and a tensile test is required for each 50 tons batch (para. 25-32 of the 1977 rules).

Grade A steel is acceptable for all plates under 20 mm thickness.

A3 Survey during construction

The survey of the construction of the bow visor and ramp was done by the Oldenburg field office of Bureau Veritas.

Due consideration was given to the classification remarks put on the drawings.

A translated extract of the field Surveyor remarks appearing in his note book is given in annex 6.

Concerning the reinforcements under locks, two flat bars 230x22 mm were fitted under the side locks (visor side).

A31 Survey of bow visor welds

The control of welds is carried out according to the requirements of section 3-3 of the 1977 issue of the rules.

It includes a visual inspection of the line of welding to check aspect and uniformity.

The Surveyor carries out random close up surveys and requests non destructive testing where specified on the drawing or by the rules, and in case of doubt.

B Issuance of statutory certificates

B1 Certificates issued by Bureau Veritas in 1980

The certificates issued by Bureau Veritas to the newbuilding are listed in the request of classification (annex 1, second page).

Bureau Veritas issued the International Load Line certificate to the vessel, in accordance with the request of classification and on behalf of the Finnish Authorities.

In relation with the issuance of this certificate, the field Surveyor checked the watertightness of the bow visor (rubber packing) during construction and at sea trials. (remarks dated 23 April, 11 and 26 June 1980 of the Surveyor notebook, in annex 6)

B2 Certificates issued by the National Authorities in 1980

The Finnish Authorities issued the Passenger Ship Safety Certificate pursuant to Solas 1960 Convention.

The stability file was approved by the Finnish Authorities in 1981.

C Implementing Retrofit requirements according to IMO

C1 Stability

In 1991, a file modified further to the new IMO requirements was re-examined and approved by the Finnish Authorities.

C2 Monitoring of bow locking

Also in 1991-1992, the bow door and bow ramp control and monitoring devices were checked by the Finnish Authorities against the new IMO requirements.

The bow door cleating and monitoring consisted of:

- 2 side cleats hydraulically operated with limit switches on bolts (open & closed positions);
- 1 central lower cleat ("Atlantic") with separate hydraulic control with limit switches on bolts (open & closed positions);
- 2 manually operated fasteners for heavy weather with limit switches on bolts (open & closed positions).

The ramp cleating consisted of:

- 2 jack operated hooks;
- 4 horizontal cleats;
- all hydraulically controlled and provided with limit switches for open and closed positions.

The overall cleating was surveyable from a mimic panel (red and green lamps for each cleating group) both at the local control station and on the navigating bridge; video monitoring of the car deck included a view of the ramp closure.

D- Change of flag in February 1993

D1 Bureau Veritas authorizations for Estonian flag vessels

Bureau Veritas received as of 18 August 1992 authorisation from the Government of Estonia to issue certificates pursuant to the following conventions:

Load Line 1966
SOLAS 1974
MARPOL 1973
Tonnage 1969

The following documents were issued to the vessel:

International Load Line Certificate
Passenger Ship Safety Certificate
International Oil Pollution Prevention Certificate
International Tonnage Certificate 1989

Attestation pursuant to the Helsinki convention 1974
(prevention of pollution by sewage).

D2 Surveys carried out by Bureau Veritas

The vessel had valid International Certificates and kept the Bureau Veritas class when applying to fly the Estonian flag.

A periodical survey pursuant to SOLAS 1974, consolidated edition 1992, Chapter I, Part B, Regulation 7 (b) (ii) was carried out by Bureau Veritas on behalf of the Estonian Government according to the transfer of flag clauses of the Agreement signed 18 August 1992 between the Estonian Maritime Administration and Bureau Veritas.

The Exemption Certificate granted by the Finnish Authorities for radiotelegraphy (hours of listening by operator) was not re-issued under Estonian flag.

In the course of the periodical survey carried out by Bureau Veritas, a few anomalies were detected and notified to the Finnish Authorities.

E Renewal of certificates as from 1993.

The ship was surveyed and certificates renewed during the period 1993-1994.

The Passenger Ship Safety Certificate was kept Interim pending completion of the vessel new loading cases.



J.-F. SEGRETAIN


List of annexes

Annex 1

Request for classification
dated 27 September 1979

Annex 2

Extracts of Bureau Veritas Rules

June 1980
June 1981
June 1982
August 1985
November 1987

Annex 3

Solas 1960, Reg. 9, Chapter II-1

Solas 1974, as amended 1981, Reg. 10, Chapter II-1

Annex 4

List of reviewed drawings.

Annex 5

Copy of telex dated 18 March 1980
received from Messrs Von Tell,
designers of the bow visor and ramp.

Annex 6

Translated extract of the field Surveyor Notebook

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Extract of notebook of BV surveyor G lohmann

Enclosure 2.4.3.38

EXTRACT of inspection acc. to
Surveyor's Notebook

carried out on the
NC. 590 (BV-Reg.-No. 35 P 387) of the shipyard
Merris. J.W. Lohmann at Papenburg
during building:-

28 - 03 - 80 GLO
Bugklappenanschluß an Hinterkante

Inspection of HULL-Construction acc. to the
remarks made on drawings of Messrs. TELL
during approval.

23 - 04 - 80 JD
Allgemeine Besichtigung Freibord

Checking of closing arrangements for the
FREEBOARD REPORT on Form No. 195

11. 06 - 80
Kontrolle des Seitenhäuses vorne und achtern,
sowie des achteren Mittelhäuses auf oben.
Hauptdeck - Geringe Restarbeiten.

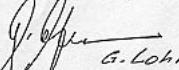
Checking in way of the CARDECK forward
including bowramp and bowvisor - resting
and connection.

Remark: Condition and fitting of packings
in closed position checked by
means of chalk. -

26 - 06 - 80
Fortsetzung der Programme vom 25. Juni 1980
in See u.a. Kontrolle des Bugvisors.

During trials at sea under normal running
conditions the space between bow visor and
bowramp has been inspected for tightness.

NOTE: For inspections, tests and trials yard-
protocols are made from the yard and
signed by the parties concerned. -


G. Lohmann
Made out at Oldenburg on Nov. 23 - 1994

- 17 -

Freeboard survey report on form 195

BUREAU VERITAS

REGISTRE INTERNATIONAL DE CLASSIFICATION DES NAVIRES ET D'AERONEFS
INTERNATIONAL REGISTER FOR THE CLASSIFICATION OF SHIPPING AND AIRCRAFTRAPPORT DE FRANC-BORD
SURVEY FOR FREEBOARDÉtabli en ... en vue de l'attribution d'un certificat de franc-bord international
In view of delivery of an International freeboard certificate

- Nom du navire (Name of ship) : "VIKING - SALLY"
 — Port d'immatriculation (Port of registry) : Mariehamn, Finland
 — Nationalité (Nationality) : Finnish
 — Numéro ou lettres distinctifs (Distinctive number or letters) : Jos. L. Meyer, Papenburg/Ges
 — Constructeur du navire (Ship builders) : Jos. L. Meyer, Papenburg/Ges
 — Numéro du chantier (Yard number) : 8. 590
 — Date de la construction/conversion (Date of build/conversion) : 1980
 — Franc-bord assigné au titre d'un navire du type (Freeboard assigned as a ship of type) : I 3/3 B INEN 52M, Ice Class I A
 — Classification (Classification) : (AET) Passenger Ferry
 — Date et lieu de la visite initiale (Date and place of initial survey) : Papenburg/Ges April 1980
 — Numéro de registre (Register number) : 35 P 387
 — Catégorie (Kind of ship) : new
 — Armateur (Owner) : Rederi Aktiebolaget Sally, Finland
 — Lieu de construction (Place of build) : Papenburg, W. Germany
 — Visite effectuée par (Survey made by) : J. Drasenovic

Le constructeur doit établir un plan plié au format 210 x 297 mm sur lequel doivent être indiquées les dimensions principales en tenant compte des règles de la Convention de 1966 sur les lignes de charge, ainsi que la description du type des ouvertures dans le bordé extérieur, dans les parois latérales et les cloisons d'extrémités des superstructures.

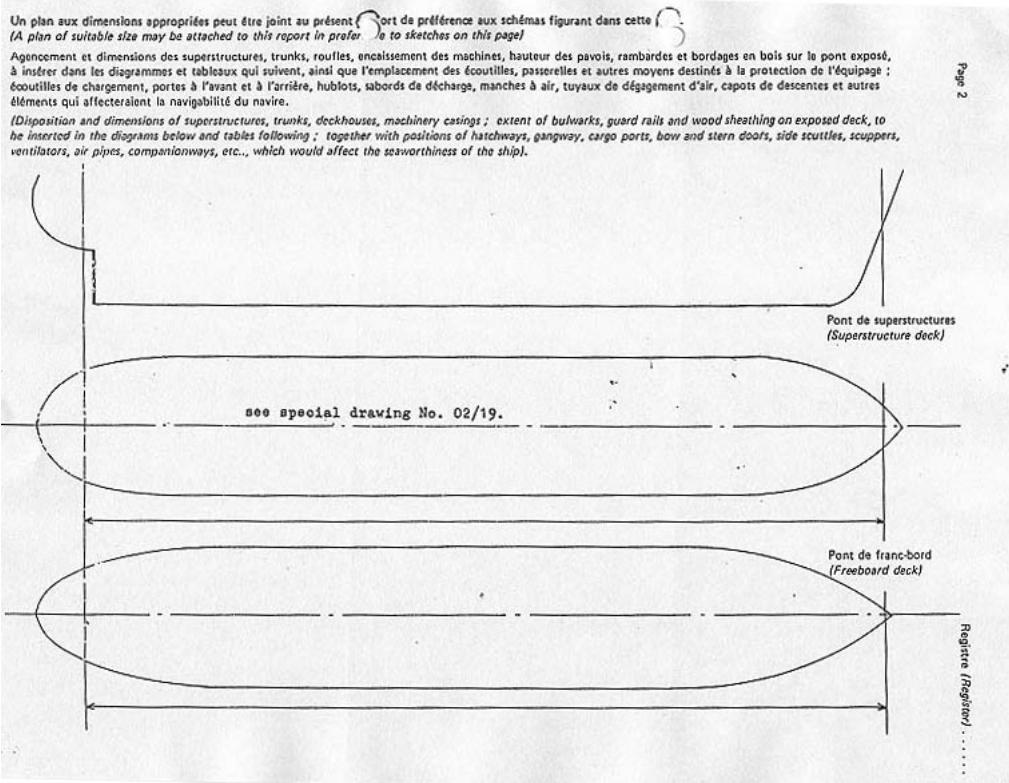
Le constructeur doit également fournir un dossier séparé pour permettre d'étudier la possibilité d'attribuer à un navire un franc-bord "A" ou "B réduit".

(The builder should draw a plan folded in the dimensions 210 x 297 mm on which should be indicated the principal dimensions taking into account the regulations of the 1966 load line Convention as well as the description of the type of the openings in the sides of the ship, in the side plating and in the end of bulkheads of the superstructures.

The builder should equally submit a separated file in order to allow considering the possibility of assigning a freeboard to "type A" ships or a reduced freeboard to "type B" ships.

Mod. Ad. ME 195

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PORDES DES SUPERSTRUCTURES, ENCAISSEMENTS EXPOSÉS DES MACHINES ET RÔLES PROTÉGANTS
LES OUVERTURES SITUÉES SUR LES PONTS DE FRANC-BORD ET DE SUPERSTRUCTURE (RÈGLES 12, 17 ET 18)
DOORWAYS IN SUPERSTRUCTURES, EXPOSED MACHINERY CASINGS AND DECKHOUSES PROTECTING
OPENINGS IN FREEBOARD AND SUPERSTRUCTURE DECKS (REGULATIONS 12, 17 and 18)

Emplacement (Location)	N° de référence sur le schéma ou le plan (Ref. No on sketch or plan)	Nombre et dimensions des ouvertures (Number and size of openings)	Hauteur des seuils (Height of sills)	Dispositifs de fermeture (Closing appliances)	
				Type et matériau (Type and material)	Nombre de tourniquets de serrage (Number of clips)
Dans la cloison du gaillard (In forecastle bulkhead)					
Dans la cloison de château avant (In bridge forward bulkhead)	"D1" on 4th deck p. & n.	2 x (1370 x 620)	600	steel	4
Dans la cloison de château arrière (In bridge after bulkhead)					
Dans la cloison de pont surélevé (In raised quarter deck bulkhead)					
Dans la cloison de dunette (In poop bulkhead)					
Dans les encaissemens exposés des machines situés sur les ponts de franc-bord ou de demi-dunette. (In exposed machinery casings on freeboard or raised quarter decks).					

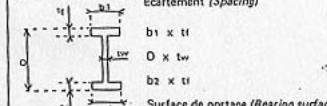
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PORDES DES SUPERSTRUCTURES, ENCAISSEMENTS EXPOSÉS DES MACHINES ET RÔLES PROTÉGANTS
LES OUVERTURES SITUÉES SUR LES PONTS DE FRANC-BORD ET DE SUPERSTRUCTURES (Suite)
DOORWAYS IN SUPERSTRUCTURES, EXPOSED MACHINERY CASINGS AND DECKHOUSES PROTECTING
OPENINGS IN FREEBOARD AND SUPERSTRUCTURE DECKS (Continued)

Emplacement (Location)	N° de référence sur le schéma ou le plan (Ref. No on sketch or plan)	Nombre et dimensions des ouvertures (Number and size of openings)	Hauteur des seuils (Height of sills)	Dispositifs de Fermeture (Closing appliances)	
				Type et matériau (Type and material)	Nombre de tourniquets de serrage (Number of clips)
Sur les encaissemens exposés des machines situés sur les ponts de superstructures (In exposed machinery casings on superstructure decks)					
Sur les encaissemens des machines situés à l'intérieur des superstructures ou rouflés sur le pont de franc-bord. (In machinery casings within superstructures or deckhouses on freeboard deck).	D 7 on 2nd deck	1 x (1670 x 1600)	200	steel	2
Sur les rouffles situés dans un emplacement de la catégorie 1 entourant des ouvertures donnant accès sous le pont de Franc-bord. (In deckhouses in position 1 enclosing openings leading below freeboard deck).	D 2 D 6 D 8 D 9 D 10 D 11	2 x (1370 x 680) (4th deck) 2 x (1450 x 670) (2nd deck) 12 x (1630 x 800) (2nd deck) 4000 x 2600 (2nd deck) 3 x (1700 x 2150) (2nd deck) 2 x (1250 x 2150) (2nd deck)	600 600 230 - - -	steel steel pneumat. doors hydr. door lift doors lift doors	4 2 - - - -
Sur les rouffles situés dans un emplacement de la catégorie 2 entourant des ouvertures donnant accès sous le pont de franc-bord ou à l'intérieur de superstructures fermées. (In deckhouses in position 2 enclosing openings leading within enclosed superstructures or below freeboard deck).	D 3 D 4 D 5	2 x (1970 x 1350) (2nd deck) 1370 x 620 (2nd deck) 1970 x 850 (2nd deck)	- 600 -	wire steel wire	- 2 -
Sur les encaissemens exposés de la chambre des pompes. (In exposed pump room casings).					

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**ÉCOUTILLES SITUÉES DANS DES EMPLACEMENTS
PANNEAUX MOBILES ET RENDUES ÉTANCHES AUX INTEMPIERIES PAR DES PRÉLARTS ET DES DISPOSITIFS À TENDRE**
**HATCHWAYS AT POSITIONS 1 AND 2 CLOSED BY PORTABLE COVERS AND SECURED
WEATHERTIGHT BY TARPAULINS AND BATTENING DEVICES (Regulation 15)**

Emplacement et N° de référence sur le schéma ou le plan (Position and reference No. on sketch or plan)						
Dimensions du clair de l'ouverture au sommet du surbaud (Dimensions of clear opening at top of coaming)						
Hauteur des surbaux au-dessus du pont (Height of coamings above deck)						
BARROTS MOBILES Nombre (Number) (PORTABLE BEAMS) Ecartement (Spacing)						
	b1 x t1 D x t2 b2 x t2					
Moyens d'assujettissement de chaque barrot (Means of securing each beam)						
PANNEAUX MOBILES Matériau (Material) (HATCH COVERS) Épaisseur (Thickness) Sens dans lequel ils sont installés (Direction fitted) Surface de portage (Bearing surface)						
Ecartement des taquets (Spacing of cleats)						
PRÉLARTS Nombre d'épaisseurs (No. of layers) (TARPAULINS) Matériau (Material)						

Moyens d'assujettissement de chaque élément transversal de panneau :
(Means of securing each section of cover) :

Les panneaux en bois sont-ils munis à leurs extrémités de bandes en acier galvanisé ?
(Are wood covers fitted with galvanized end bands?)

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ÉCOUTILLES SITUÉES DANS LES EMPLACEMENTS DES CATÉGORIES 1 ET 2 FERMÉES PAR DES PANNEAUX ÉTANCHES AUX INTEMPIERIES, EN ACIER (OU AUTRE MATERIAU EQUIVALENT), DOTEES DE GARNITURES ET DE DISPOSITIFS DE SERRAGE (Règle 16)
HATCHWAYS AT POSITION 1 AND 2 CLOSED BY WEATHERTIGHT COVERS OF STEEL (OR OTHER EQUIVALENT MATERIAL) FITTED WITH GASKETS AND CLAMPING DEVICES (Regulation 16)

Emplacement et N° de référence sur le schéma ou le plan (Position and reference No. on sketch or plan)	4th deck fr. 167 A 1	2nd deck fr. 146 2x A 2	2nd deck fr. 6 2 x A3			
Dimensions du clair de l'ouverture au sommet du surbaud (Dimensions of clear opening at top of coaming)	820 x 820	1000 x 690	800 x 800			
Hauteur des surbaux au-dessus du pont (Height of coamings above deck)	800	800	600			
Type du panneau ou marque de fabrique (Type of cover or patent name)	6 bow nuts	2 clips	2 clips			
Matériau (Material)	steel	steel	steel			

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Emplacement et N° de référence sur le schéma ou le plan (Position and reference No. on sketch or plan)						
Dimensions du clair de l'ouverture au sommet du surbaud (Dimensions of clear opening at top of coaming)						
Hauteur des surbaux au-dessus du pont (Height of coamings above deck)						
Type du panneau ou marque de fabrique (Type of cover or patent name)						
Matériau (Material)						

OUVERTURES SITUÉES DANS LA TRANCHE DES MACHINES ET OUVRÉES DIVERSES DANS LES PONTS DE FRANC BORD ET DE SUPERSTRUCTURES (Règles 17 et 18)
MACHINERY SPACE OPENINGS AND MISCELLANEOUS OPENINGS IN FREEBOARD AND SUPERSTRUCTURE DECKS (Regulations 17 and 18)

Emplacement et N° de référence sur le schéma ou le plan (Position and reference No on sketch or plan)	2nd deck fr. 147 CL F 1	2nd deck fr. 141 CL F 2	2nd deck fr. 66 P.S. F 3	2nd deck fr. 0 P.S. F 4	2nd deck fr. 0 St.b. F 5	
Dimensions (Dimensions)	1580x2280	1580x2280	2280x2280	3500x2300	3500x2300	
Hauteur du surbau (Height of coaming)	flush deck	flush deck	flush deck	flush deck	flush deck	
PANNEAU (COVER) { Matériau (Material) Moyen d'attache (How attached)	steel	steel	steel	steel	steel	
Nombre et écartement des cabillots (Number and spacing of toggles)	28 screws spacing=300	28 screws spacing=300	28 screws spacing=300	38 screws spacing=300	38 screws spacing=300	

Emplacement et N° de référence sur le schéma ou le plan (Position and reference No on sketch or plan)						
Dimensions (Dimensions)						
Hauteur du surbau (Height of coaming)						
PANNEAU (COVER) { Matériau (Material) Moyen d'attache (How attached)						
Nombre et écartement des cabillots (Number and spacing of toggles)						

MANCHES A AIR SITUÉES SUR LES PONTS DE FRANC BORD ET DE SUPERSTRUCTURES
 (EMPLACEMENTS DES CATÉGORIES 1 ET 2) (Règle 19)
 VENTILATORS ON FREEBOARD AND SUPERSTRUCTURE DECKS (POSITION 1 AND 2) (Regulation 19)

Pont sur lequel elles sont installées (Deck on which fitted)	Nombre de manches à air installées (Number fitted)	Surbau (Coaming)		Type (Préciser la marque de fabrique s'il y en a une) (Type) (state patent name if any)	Moyens de fermeture (Closing appliances)
		Dimensions (Dimensions)	Hauteur (Height)		
4th deck V 1	6	400x200	900	Gooseneck	steel cover with one bow nut
4th deck V 2	2	Ø 810	1700	EHA-VB-SLD	Fixoflap
)	6	1200x1300	700	Jalousies	Jalousies with closing laminae
4th deck V 3)	2	1200x800	1120	"	" " " "
)	2	1000x1100	840	"	" " " "
4th deck V 4	12	1000x1400	700	"	" " " "
4th deck V 5	2	500x600	700	"	" " " "
2nd deck V 6	24	600x500	4950	"	Fixoflap

TUYAUX DE DÉGAGEMENT D'AIR SUR LES PONTS DE FRANC BORD ET DE SUPERSTRUCTURES (Règle 20)
 AIR PIPES ON FREEBOARD AND SUPERSTRUCTURE DECKS (Regulation 20)

Pont sur lequel ils sont installés (Deck on which fitted)	Nombre de tuyaux installés (Number fitted)	Surbaie (Coaming)		Type (Préciser la marque de fabrique s'il y en a une) (Type) (state patent name if any)	Moyens de fermeture (Closing appliances)
		Dimensions (Dimensions)	Hauteur (Height)		
2nd deck	1	ø 200x5,9	915	Air pipes	39 with opening in shell without closing appliance. acc. to draw. 61/1.
2nd deck	16	150x4,5	915	" "	
2nd deck	8	100x4,5	915	" "	
2nd deck	16	90x4,5	915	" "	31 with manual closing acc. to drawing No. 61/2
2nd deck	25	65x4,5	915	" "	
2nd deck	5	50x4,0	915	" "	
2nd deck	11	40x4,5	300	Scouring pipes	screw closing
2nd deck	7	40x4,5	fl. deck	" "	screw closing
2nd deck	15	ø 50-ø 150 x ø 4,5	800-950	filling- and hand cover pipes	flange closing

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SABORD DE CHARBON ET AUTRES OUVERTURES ANALOGUES (Règle 21)
 CARGO PORT AND OTHER SIMILAR OPENINGS (Regulation 21)

Emplacement du sabord (position of port)	Dimensions de l'ouverture (Dimensions of opening)	Distance du can inférieur au pont de franc-bord (Distance of lower edge from freeboard deck)	Dispositifs d'assujettissement (Securing devices)	Observations (Remarks)
Bow part	1 x (5500 x 5150)	-	hydr. closing	by von Tell
Stern parts	2 x (7000x5100)	-	" "	" " "
Fr. 123 D 12	2 x (600x1700)	200 above 2nd deck	6 toggle-bolts	-
Fr. 80 D 13	2 x (2000x1200)	300 above 2nd deck	hydr. closing	by von Tell
Fr. 1 D 14	2 x (600x1700)	200 above 2nd deck	6 toggle-bolts	-
Fr. 60a D 15	2 x (2800x2200)	100 above 4th deck	hydr. closing	by von Tell
All parts with rubber-packing and according to approved drawings.				

Page 10

SCUPPER INLETS AND DISCHARGES (Regulation 22)

Préciser s'il s'agit de dalot ou de décharge (State if scupper or discharge)	Nombre (Number)	Tuyau (Pipe)			Provenant de (From)	Distance verticale au-dessus de la quille (Vertical distance above top of keel)			Nombre, type et matériau des clapets de décharge (Number, type and material of discharge valve(s))	Emplacement des commandes (Position of controls)
		Diamètre (Diameter)	Épaisseur (Thickness)	Matériau (Material)		Décharge (Discharge)	Sortie dans la coque (outlet in hull)	Extémité du tuyau de décharge à l'intérieur du navire (Inboard end)	Clapet situé à l'emplacement le plus élevé (Uppermost valve)	
D	1	Ø 50	7,5	MS	Bilge-pump	4650	4650	4650		
D	2	Ø300	17,5	MS	Main-engine	4300	4300	7000		
D	1	Ø200	17,5	MS	Bilge-pump	4300	4300	4300		
D	1	Ø200	17,5	MS	Aux.-engine	4590	4590	4590		
D	1	Ø200	17,5	MS	Ballast-pp.	4580	4580	4580		
D	1	Ø200	17,5	MS	Ballast-system	4550	4550	4550		
D	1	Ø150	17,5	MS	Bilge-pump	3200	3200	3200		
D	1	Ø200	17,5	MS	Sm.bilge-p.	3200	3200	3200		
D	1	Ø200	17,5	MS	Bilge-pump	2500	2500	2500		
D	1	Ø250	17,5	MS	Coolv.aggr.	4500	4500	4500		
D	4	Ø150	17,5	MS	KaMeWa-plant	3000	3000	3000		
D	2	Ø100	17,5	MS	Sewage-plant	5700	2200	5700		
D	2	Ø100	17,5	MS	DW-tanke	5700	5700	5700		
D	1	Ø150	17,5	MS	Prov.cool-p.	4500	4500	4500	at outlet	
S	24	Ø150	12,5	MS	2nd deck	5700	2nd deck	5700	spring loaded	
S	8	Ø100	11,0	MS	4th deck	5700	4th deck	5700	" " no valve	2nd deck
										-

S - Dalot (Scupper)

D - Décharge (Discharge)

MS - Acier doux (Mild steel)

CS - Acier moulé (Cast steel)

GM - Bronze industriel (Gun metal)

Indiquer tout autre matériau approuvé, le cas échéant

(Any other approved material to be designated)

SD - Souape à clapet attelé (Screw down)

ANR - Clapet automatique de non retour (Automatic non-return)

SD ANR - Clapet automatique de non retour avec moyen de fermeture direct (Screw down automatic non-return)

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HUBLOTS (Règle 23)

SIDE SCUTTLES (Regulation 23)

Emplacement (Position)	Nombre de hublots installés (Number fitted)	Dimensions de la surface nette du verre (Clear glass size)	Fixe ou ouvrable (Fixed or opening)	Matériau (Material)		Type et épaisseur du verre (Type of glass and thickness)	Normes utilisées et type N° (Standards used) and type No)
				Cadre (Frame)	Contre-hublot (Dead-light)		
2nd deck	6	Ø 300	fixed	steel	steel	15 mm	150 Type B
2nd deck	12	Ø 300	opening	steel	steel	15 mm	150 Type B
3rd deck	14	Ø 300	fixed	steel	steel	15 mm	150 Type B
3rd deck	2	Ø' 300	opening	steel	steel	15 mm	150 Type B
4th deck	30	600x1500	fixed	steel	no dead-light	10 mm	150
4th deck	75	400x800	fixed	steel	no dead-light	10 mm	150
4th deck	4	400x800	opening	steel	no dead-light	10 mm	150
4th deck	4	400x800	fixed	steel	steel	10 mm	150
4th deck	4	400x800	opening	steel	steel	10 mm	150

Indiquer la distance verticale entre le pont de franc-bord et le can inférieur du hublot situé à la plus grande distance verticale au-dessous du pont de franc-bord.

(Indicate the vertical distance between the freeboard deck and the lower sill of the side scuttle positioned at the greatest vertical distance below the freeboard deck).

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SABORDS DE DÉCHARGE (Règle 24)
FREEING PORTS (Regulation 24)

	Longueur du pavois (Length of bulwark)	Hauteur du pavois (Height of bulwark)	Nombre et dimensions des sabords de décharge de chaque bord (Number and size of freeing ports each side)	Section totale de chaque bord (Total area each side)	Section requise de chaque bord (Required area each side)
Puits arrière sur le pont de franc-bord (Freeboard deck after well)					
Puits avant (Forward well)	26,4 m	1,75-2,05m	1 x (5,65 m x 0,10 m) 1 x (3,70 m x 0,10 m)	0,935 m ²	0,924 m ²
Pont de superstructures (Superstructure deck)					

Préciser l'emplacement arrière et avant de chaque sabord de décharge par rapport aux cloisons d'extrémités de superstructures

(State fore and aft position of each freeing port in relation to superstructure end bulkheads)

Détails sur les volets battants, barres ou tringles dont sont munis les sabords de décharge

(Particulars of shutters, bars or rails fitted to freeing ports)

Hauteur du seuil inférieur du sabord de décharge au-dessus du pont

(Height of lower edge of freeing port above deck)

Puits arrière (After well) —
Puits avant (Forward well) —

none

100 mm

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PROTECTION DE L'EQUIPAGE (Règles 25 et 26)
PROTECTION OF THE CREW (Regulations 25 and 26)

Donner des détails sur les pavois ou rambardes installés sur les ponts de franc-bord ou de superstructures :

(State particulars of bulwarks or guardrails on freeboard and superstructure decks :)

As per drawing No. 02/19

Page 14

Donner des détails sur les filières, passages, passerelles ou passages sous pont, lorsqu'ils sont prescrits :

(State details of lifelines, walkways, gangways or underdeck passageways where required to be fitted :)

DISPOSITIF D'ARRIMAGE DES CHARGEMENTS DE BOIS EN PONTÉE (Règle 44)
TIMBER DECK CARGO FITTINGS (Regulation 44)

Donner des détails sur les montants, sabots, saïnes, rambardes et filières :

(State particulars of uprights, sockets, lashings, guardrails and lifelines :)

AUTRES CARACTÉRISTIQUES PARTICULIÈRES
OTHER SPECIAL FEATURES

Les conditions d'assiguation figurant dans le présent recueil correspondent aux aménagements et installations prévus à bord du navire et sont conformes aux dispositions des règles pertinentes de la Convention Internationale de 1966 sur les lignes de charge.

(The conditions of assignment shown on this form are a record of the arrangements and fittings provided on the ship and are in accordance with the requirements of the relevant regulations of the International Convention on Loadlines, 1966).

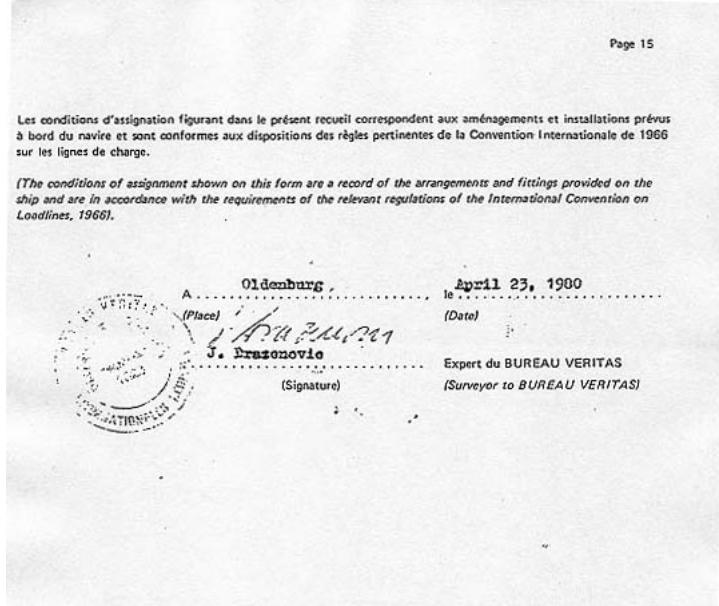
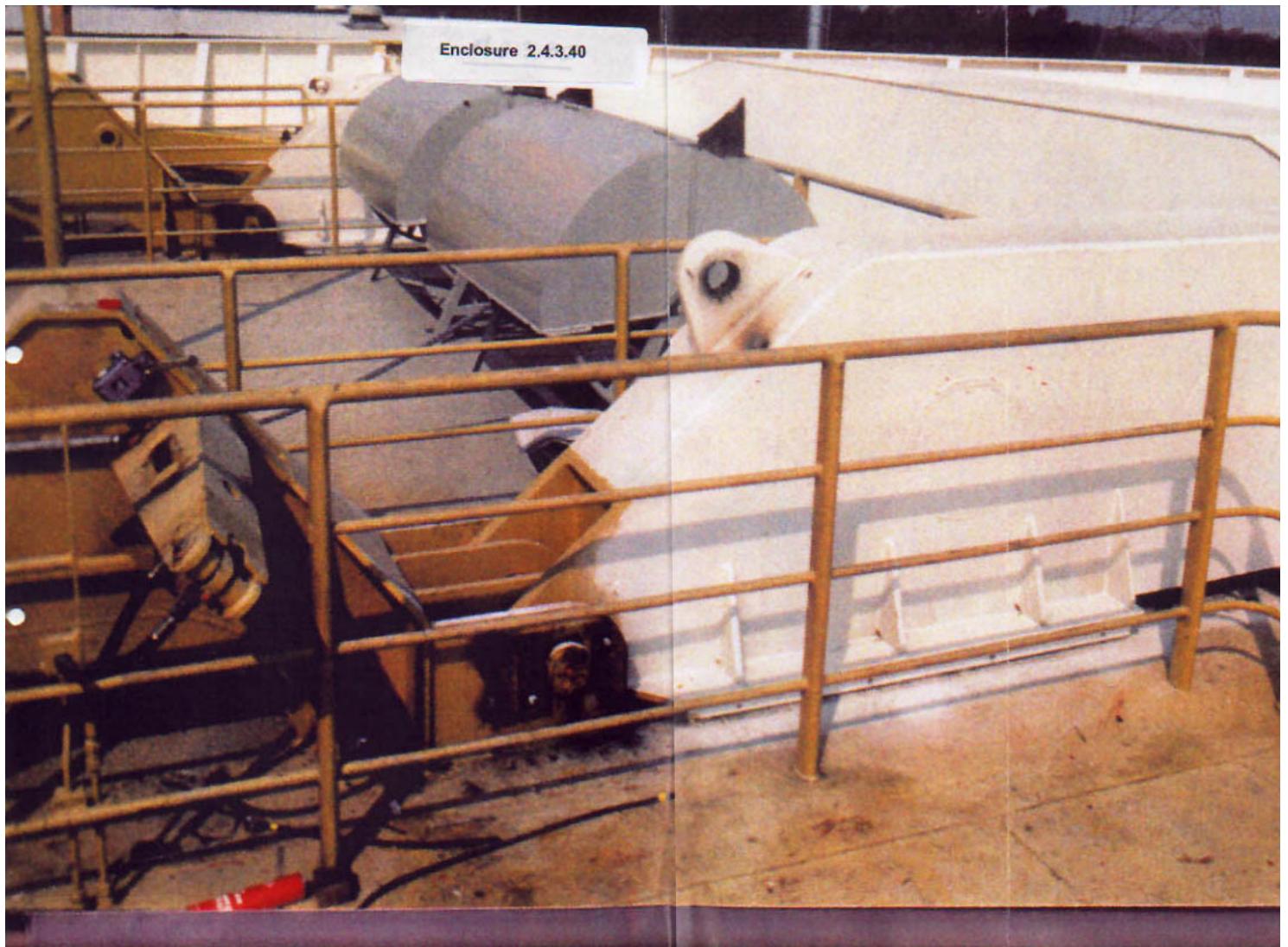
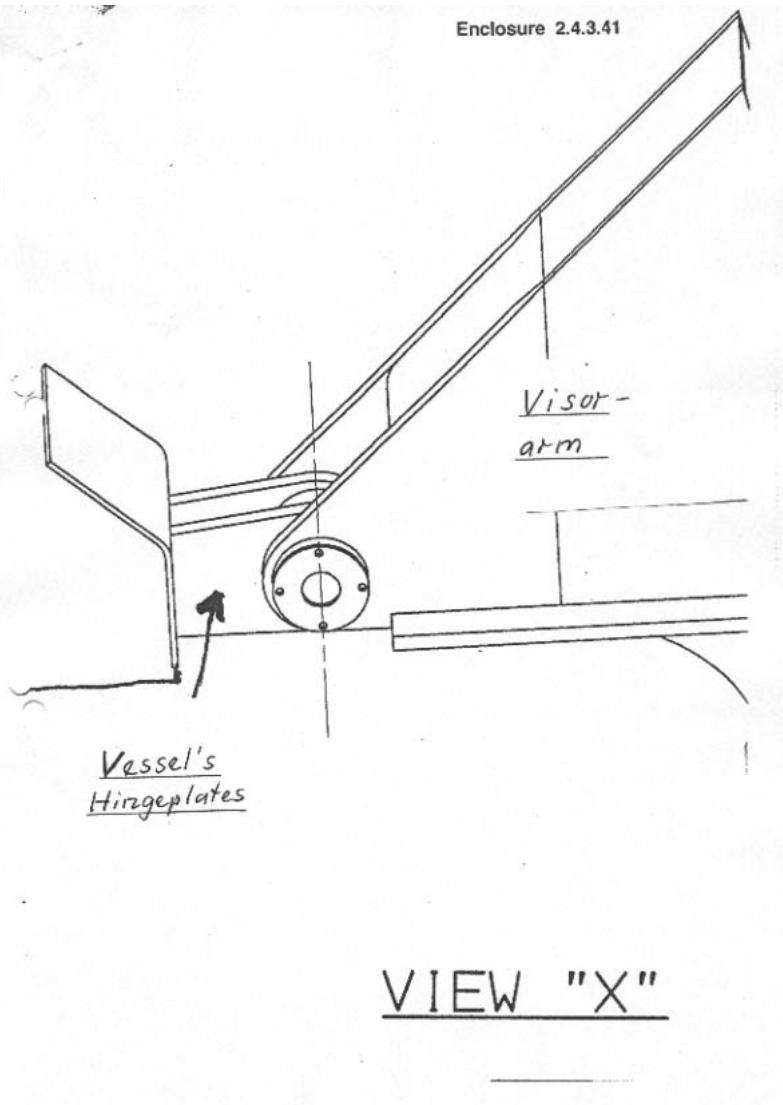


Photo showing visor hinge arrangements on viking sally

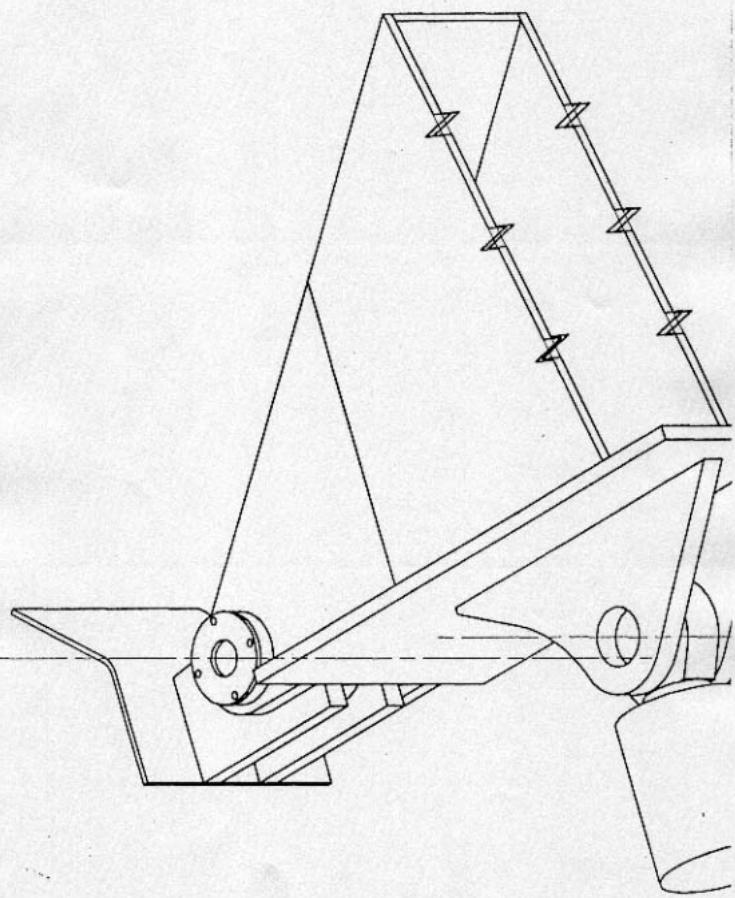


Drawings showing visor hinge arrangement

Enclosure 2.4.3.41



VIEW "X"



Change of drawing 1106 as to scharnierbleche/ hinge plates

Enclosure 2.4.3.42

(1)

54-33 922
54-33 922

Nr.	Art der Änderung	Datum	Name
3			
2	Sabotierbleche geändert	21.8.0	Se
1	geöffnet: von TELL	22.4.77	Se

Maßstab:
1:10

Jos. L. Meyer Papenburg (Ems)
Schiffswerft, Maschinenfabrik, Dockbetrieb

Datum:
31.10.79

Bugklapperriegelung

Zeichn. Nr.
590

Gewerk.
Se

Sektions Nr.
1106

Archiv Nr.

Letter meyer werft von tell gmbh

Enclosure 2.4.3.43

Von Tell GmbH
Sophienallee 24
2000 Hamburg 19

T35/BS/SK -257 09.01.1980

Ihre Komm. Nr. 4911.1/80.151.1
nein Nachbau S. 590

Sehr geehrte Herren,

Anliegend erhalten Sie 2 Pausen der Zeichnung

1106 Zugklappenverriegelung.

In dieser Zeichnung ist das Zugklappenscharnier in der geänderten Form (gegenüber S. 590) dargestellt.

Bitte prüfen Sie die Zeichnung und senden Sie mir eine Pausa,
mit Ihrem Genehmigungsvermerk versehen, zurück.

Mit freundlichem Gruß

J O S. L. M E Y E R

Anlage



Letter meyer werft /BV

Enclosure 2.4.3.44

Bureau Veritas
Hopfenmarkt 33
2000 Hamburg 11

TBS/De/Sk -257 9.01.1980

Nein Neubau S. 590

Sehr geehrte Herren,
anliegend erhalten Sie 4 Pausen der Zeichnung
1106 Bugklappenverriegelung.
In dieser Zeichnung ist das Bugklappenscharnier in der
geänderten Form (gegenüber S 592) dargestellt.
Bitte prüfen Sie die Zeichnung und senden Sie mir eine
Pause, mit Ihrem Genehmigungsvermerk versehen, zurück.
Mit freundlichem Gruß
J O S. L. M E Y E R

Anlage

Summary of BV inspections during newbuilding phase

SURVEYS BY BUREAU VERITAS DURING CONSTRUCTION OF M/S ESTONIA

Survey dates	Locations, subjects & items surveyed
1979 09 25	Informal meeting with Mr Zerrahn.
1979 10 04	Inspection of double bottom sections iwo gear foundations.
1979 10 09	Meeting with yard and owner in drawing office.
1979 10 10	Meeting with Mr Brück of Seebekwerft at Bremerhaven, supplier of deck house sections.
1979 10 12	Inspections on building berth and in shops.
1979 10 24	Meeting and inspection.
1979 11 05	Inspections on building berth and in shops.
1979 11 08	Meeting with yard managers, X ray program made.
1979 11 13	Meetings and discussions at the yard.
1979 11 14	Meeting at Bremerhaven Seebekwerft.
1979 11 16	Inspections of sections at Messrs Rickmerswerft & Tileman.
1979 11 23	Inspection of double bottom tanks at the yard.
1979 11 28	Pressure test and inspection of tanks. Meeting with owners rep. & yard
1979 12 04	Inspection of sections at Bremerhaven - Rickmerswerft.
1979 12 05	Pressure test and inspections of tanks.
1979 12 06	Inspection of tweendeck spaces before painting and insulation.
1979 12 11	Seebekwerft, Bremerhaven, inspections.
1979 12 13	Air test of void spaces. Inspections of db tanks and engine rooms.
1979 12 14	Inspection of tanks, cofferdams as well as pressure tests.
1979 12 17	Seebekwerft Bremerhaven, inspections and meeting.
1979 12 18	Seebekwerft Bremerhaven, inspection of superstructures.
1979 12 19	Meeting and inspections.
1979 12 20	Pressure test of tanks.
1980 01 06	Rickmerswerft, Bremerhaven, inspection of bulbous bow sections.
1980 01 08	Pressure test of heeling tanks (tk 14). Discussion in yard offices.
	Pressure test and inspections of tanks.
	Seebekwerft Bremerhaven, inspection of superstructures.

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Enclosure 2.4.3.44.1

SURVEYS BY BUREAU VERITAS DURING CONSTRUCTION OF M/S ESTONIA

Survey dates	Locations, subjects & items surveyed
1980 01 14	Air test of both heeling tanks. Inspection of tween deck spaces. All 4 aux. units in the aux. eng. room. First sections from Bremen have arrived in Papenburg.
1980 01 16	Pressure tests witnessed by owners representatives.
1980 01 18	Seebekwerft & Rickmerswerft, bremerhaven; insp. of sections.
1980 01 29	Pressure test of small tanks at old facilities.
1980 01 30	Inspection and pressure tests.
1980 02 01	Tests of small tanks - at old facilities-
1980 02 04	Inspection of tanks, spaces and tweendeck spaces.
1980 02 05	Seebekwerft, Bremerhaven, inspection of superstructure sections.
1980 02 07	AUT meeting with MM Trousse & Lavaine.
1980 02 08	Pressure tests and inspections according to programme.
1980 02 12	Inspections and discussions with owners rep. and yard.
1980 02 15	Inspection of tanks and tweendeck spaces.
1980 02 19	Start of freeboard report survey.
1980 02 21	Inspection and pressure tests of tanks and cofferdams.
1980 02 26	Continuation of insp. and pressure tests.
1980 02 29	Inspection of both rudders and identification of materials in the workshops - at old facilities-
1980 03 04	Pressure test of tanks and inspection of several spaces.
1980 03 05	Inspection and pressure tests of tanks and void spaces.
1980 03 05	Inspection of staircases. Viewing of X ray films.
1980 03 06	Inspection and pressure tests of tanks.
1980 03 11	Seebekwerft, Bremerhaven, inspections and supervisions with owner and yard.
	Inspections of tanks, cofferdams and staircases
	Inspection of cofferdam iwo: swimming pool; prov. stores and steering gear compartment. Check of fire protection insulation.

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SURVEYS BY BUREAU VERITAS DURING CONSTRUCTION OF M/S ESTONIA

Survey dates	Locations, subjects & items surveyed
1980 03 14	Pressure tests of tanks. Inspection of shell plating. Pressure tests of starting air lines and hydraulic lines.
1980 03 18	Pressure tests of cofferdams and inspection of bulkhead on frame 133. check of shaft struts.
1980 03 28	Internal inspection of fresh water tanks. Check of bow ramp connections. Check of armatures for the Sanea pump units. Inspection of section butts of the upper superstructures.
1980 03 31	Check of fwd draught marks. Discussion about Superfos hydraulic control room and inspection of Sanea pump units.
1980 04 01	Completion of recording for inspection on 25 March 1980. Checks of rudder main pieces and pintles with nuts and bearings. Freeboard record with drawings examined.
1980 04 02	Inspection of trim tank N° 2 WB and starboard side "C" deck. Recommendations made.
1980 04 09	Fitting of pintle bushes in both skegs verified. Checking of PS rudder main piece. Pressure test of freshwater tanks N° 56 & 57. Checking of bow thruster motor foundation forward. Checking of X ray films.
1980 04 11	Pressure tests of sea chests and void spaces. Inspection of fresh water tanks N° 56 & 57
1980 04 15	Fitting of shaft bushes checked. Draught marks aft examined.
1980 04 17	Fitting of propeller shaft stbd witnessed. Surveys for freeboard report.
1980 04 18	Fitting of shaft bushes.
1980 04 21	Fitting of propellershaft ps witnessed. Meetings with Messrs Zerrahn & Watermann.
1980 04 22	Check of fitting of starboard side rudder. Inspection of insulation. Bottom inspection.

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SURVEYS BY BUREAU VERITAS DURING CONSTRUCTION OF M/S ESTONIA

Survey dates	Locations, subjects & items surveyed
1980 04 23	Surveys for freeboard report.
1980 04 24	Check of fitting of port side rudder. General hull survey. Discussion with Mr Zerrahn about Sanea plant inspections. Air test of fore peak.
1980 05 05	Surveys in the car deck area "C" deck.
1980 05 09	Informal visit with Mr Arpe. Visit of Sanea plant parts.
1980 05 12	Air test of stern tank. Pressure tests of piping systems. Check of car deck insulation. Pressure test of Sanea boiler.
1980 05 14	General survey. Pressure test sprinkler system. Inspection of Sanea thermal oil boiler plants.
1980 05 16	Pressure test of two Sanea collectors. Informal visit with Mr Kranz.
1980 05 21	Check of alignment of both shaft lines up to gears. Inspections in engine room.
1980 05 22	Surveys and meetings in different offices.
1980 05 27	Continuation of meetings 22 May 1980.
1980 05 28	Load test of car deck sections. Surveys and meetings. Discussion about insulation of thermal oil piping systems with Mr Bless.
1980 05 29	Load tests of car deck sections, insulation as before discussed.
1980 05 30	Load tests of car deck sections.
1980 06 02	Alignment of both main engines checked. Pressure test of thermal oil boilers (th. oil side).
1980 06 03	Different surveys. Meeting with Mr Breitschneider Siemens about load tests.
1980 06 04	Different surveys. Meeting with Mr Zerrahn. Pressure tests of thermal oil lines.
1980 06 05	Check of insulation below "C" deck. Further check of alignment of MEs. Check of water tight doors. Electrical load tests.
1980 06 06	Inspection of double bottom tanks for check of bottom plating after launching. Pressure test of steam lines in forward air cond. rooms. Air test of thermal oil lines. Load tests with all four auxiliary engine

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SURVEYS BY BUREAU VERITAS DURING CONSTRUCTION OF M/S ESTONIA

Survey dates	Locations, subjects & items surveyed
1980 06 09	Discussion about freeboard marks.
1980 06 10	Pressure test of CO2 lines. Check of free board marks.
1980 06 11	Inspection of side and centre houses on cardeck. Load tests of boats and davits. Test of quick closing valves. Tel. conv. with Mr Lavaine about trials.
1980 06 12	Pressure test of CO2 lines. Boat and davit tests. Test of bilge lines and pumps.
1980 06 13	Test of bilge systems. Boat and davit tests. Load test of port side forward crane. Load test of starboard side forward car ramp.
1980 06 16	Load test of portside forward car ramp.
1980 06 18	Load test of car deck sections. Boat and davit tests. Load test of port side aft crane. Pressure test of different pipings.
1980 06 19	Load tests of boats and davits. Load tests of crane rails in ER. Load test of starboard side aft car ramp.
1980 06 20	Load test of crane rails. Test of emergency Diesel unit. Boat tests. Hose test of port side stern door.
1980 06 21	Inclining experiment with Mr Engelmann of FSS. Pressure test of starting air lines. Load tests of container lifts.
1980 06 23	Hose and function tests of passenger shell doors on C and D decks, port and starboard sides.
1980 06 25	Trip from Papenburg to Leer. Tests of watertight doors. Start of tests.
1980 06 26	Continuation of sea trials with tightness tests. Check of bow visor. Check of alarms.
1980 06 27	Start manoeuvres of main engines. Function tests of watertight doors from bridge console. Test of quick closing systems from car deck.
1980 06 28	Sea trials.

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SURVEYS BY BUREAU VERITAS DURING CONSTRUCTION OF M/S ESTONIA

Survey dates	Locations, subjects & items surveyed
1980 06 29	Sea trials and arrival at Emden.
1980 06 30	Checks of main engines before departure from Emden for Mariehamm through Kiel canal. Tests according to trial programme.
1980 07 01	until Tests according to trial programme.
1980 07 07	ditto
1980 07 30	Several AUT checks and tests during voyages until between Finland and Sweden.
1980 08 02	AUT trials not completed.
1980 11-12	Several AUT trials after completion of remaining work on voyages between Stockholm and Turku. AUT Certificate handed over.

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**Confidential memo concerning meeting with LO Alander**

Enclosure 2.4.3.44.2

**The German Group of Experts
investigating the sinking of M/V "ESTONIA"**
c/o AHLERS & VOGEL · Schaar tor 1 D-20459 Hamburg · Telephone 49-40-371075

Confidential Memo

cc : Dr. Holtappels
T. Wilkendorf

Meeting with principal surveyor of B.V. Stockholm office,
Lars Olof Ålander on 19th June 1995

1. **BV Organisation in Sweden/Finland up to 1990**

Head office for Sweden was and is Gothenburg.

Manager: Hans Olsson

Stockholm and Trelleborg/Malmö report to Gothenburg,

Gothenburg reports to Paris.

B.V.'s office for Finland was and is in Helsinki (plays no part

in the "ESTONIA" matter),

as of 1990 - Head office for the northern countries established in

Copenhagen

as of 1995 – B.V. office in Tallinn.

2. **Reporting procedure**

- Hull

- Machinery

- Automatic systems (AUT)

The system consists of surveys totalling 1500 items over a period

of 5 years, i.e. 300 items every year.

3. Load Line Survey (annually)

Was executed for F.B.N. resp. Sjöfartsverket and consisted of survey resp. determining condition of car deck doors, staircases, scuppers, valves, etc. visor/bow ramp and stem ramps as well as the locking devices and rubber seals of same.

(The locking devices are not part of the Load Line Survey, although they should be).

The B.V. Report Form did not include the visor at that time because it was considered to be more of a breakwater.

It was clear to everyone that the bow ramp on all older ferries would not fulfil the SOLAS Regulation 10 requirement as upper extension of the collision bulkhead. However, it was not and is not the field surveyor's business to criticise this construction characteristic - evidently approved by the head office. The rubber sealings - also of the visor - are part of the L.L. Surveys. As the final item of an L.L. Inspection, the closed and locked visor should be hose tested.

4. Role of the F.B.N. and Sjöfartsverket Ship Safety Inspectors

- Examine all certificates
- Inspect social rooms / cabins / passenger accommodations
- Inspect life-saving and fire-fighting equipment
- Inspect navigation instruments
- Issue (PC) Passenger Ship Safety Certificate (annually), and thereby confirming that the vessel meets SOLAS requirements, although this is not the case.

5. The upper extension of the collision bulkhead above freeboard deck

- After the "ESTONIA" catastrophe the seasafety director of Sjöfartsverket, Bengt-Erik Stenmark, ordered an investigation within Sjöfartsverket to find out how many ferries on the Baltic did not meet the SOLAS Regulation 10 requirement for the upper extension of the collision bulkhead. There were a

total of 40 vessels. The list with the names of these vessels is kept confidential within Sjöfartsverket, however, reportedly a copy was sent by fax to the Finnish Commission in Helsinki.

- Upon searching for an explanation for the above-mentioned it was discovered that apparently the bow ramp had been approved for the first time by a National Maritime Administration as the upper extension of the collision bulkhead for the ferries "PRINS BERTIL" and "PRINSESSAN CHRISTINA", built in Aarhus in 1960/61 - although the position of the upper extension of the collision bulkhead above bulkhead deck was already determined by SOLAS 1948 (probably with the restriction of no further than 20 sm away from the nearest land).
- In the course of the following years the National Maritime Administration of the countries surrounding the Baltic developed a practice by which this deviation from SOLAS Regulation 10 was accepted even on larger ferries, i.e. the far too short distance between the bow ramp as upper extension of the collision bulkhead and the forward perpendicular, of course mainly in compliance with owners' request.

6. "VIKING SALLY" - "WASA KING"

- Chief engineer Lars Karlsson was onboard from time of commissioning until the sale of the vessel and is the person best acquainted with this ship (now onboard "BIRKA PRINCESS").
- On repeated occasions the visor was closed with locking devices already in closed position. This led to damages of the lugs and bolts (also on "DIANA II").
Visor and ramp always belong to the Chief Mate's duties on Swedish/Finnish ferries (on "ESTONIA" it was the boatswain's duty).
- He supervised the "VIKING SALLY" in Stockholm and took care of the normal survey items. She sometimes called at the yard Finnboda, Stockholm and sometimes at the Naantali or Turku yards. In latter case he left the surveys up to the BV Helsinki office.

He was not part of the building supervision (that belonged to Lohmann and Axe).

- When the ship came to Stockholm for the first time the Passenger Ship Safety Certificate (Interim) was issued by the F.B.N.
- He was onboard the "WASA KING" for the last time in 1992 to do a boiler survey. At this time a Nordström & Thulin captain was already onboard as a trainee because N&T did not have personnel with ferry experience.
- He knows that the sensors of the Atlantic lock had been changed several times. Also Anders Wirstam knows this. However, B.V. Paris had instructed them not to talk about it.

If the class symbol would have contained the unrestricted AUT the sensors would be a class item. "VIKING SALLY" however only had a restricted (AUT), therefore it is not clear. Under no circumstances are the sensors a matter for the F.B.N.

The class should have inspected the sensors, however this was never done in practice.

- All electrical systems were subjected to annual megger testing, therefore also the sensors of the bow visor locking devices.
- In his opinion the correct functioning of the sensors / control lamps are a pre-condition for the seaworthiness of the vessel.
- In his opinion the manual locking devices of the bow visor are "heavy weather securings", which have to be engaged in case heavy weather should be forecasted. Locking devices are a class item and not the responsibility of the F.B.N.
- The officers were not allowed to do any manoeuvres without the approval of the master on the "ESTONIA", especially no engine manoeuvres. Up to now, i.e. including the "MARE BALTICUM", they had not learned how to handle 2 x 12000 hp.
- From talks with Anders Wirstam he knows as well that from the time of taking over no further maintenance of the vessel had been carried out. They only painted for "the eye".

- At the time of the casualty the vessel did not have a valid stability manual (was completed only in April 1995).
- Due to the "Continuous Survey of Hull and Machinery" procedure - 58 tanks were to be inspected among others - Anders Wirstam was on board on the following days in addition to the taking over: 31.01.94; 17.03.94; 06.04.94; 11.05.94; 30.08.94; 21.09.94.
- One day before the disaster occurred Anders Wirstam went on his honeymoon. The first he heard upon arrival was about the sinking. He returned immediately and was afterwards 3 months in psychiatric treatment.
- During a meeting at Bureau Veritas head office in Paris Anders Wirstam and Hans Olsson expressed their opinion that the vessel had been too large and too complicated for the inexperienced crew.
- He has collected 20.000 negatives in the course of his job-life which he will now check for photographs of "VIKING SALLY".
- He was asked by the claims manager Sverker Jonasson of Trygg Hansa - the leading hull underwriter of "ESTONIA" - if there would be reasons to justify that the insurance amount of USD 60 million should not or not yet be paid, because he was pressed by Bergmann from N&T for payment already since shortly after the sinking. His reply was NO because the ship had clean certificates. Based on his knowledge of today, however, his reply would have been to the contrary.
- In his view "ESTONIA" departed from Tallinn on her last voyage with "suspended class" because she had problems to close the visor correctly. (When Lars Olof Ålander stated this, he still did not know our points).
He has based his above conclusion on the statement of pilot Gerhard Stenhammar, who had observed - a few weeks before the catastrophe occurred - that only after about 15 minutes of opening and closing the visor - combined with hard shocks of visor and the entire foreship - the crew was able to close the visor. According to his view and the interpretation of the pilot this indicates that the visor must have been completely "out of geometry".

- After we had submitted the results of our investigation he was shocked in his capacity as representative of the class. He stressed that the following points - each separately – did affect respectively have affected the class:

- condition of the stempost
- condition of the rubber packings
- cracks in the visor hinges
- poor repairs of the foundation of the port actuator of the visor
- severe old damage at forward part and port side of the visor's shell plating
- missing sensors at the Atlantic lock
- missing/weak weldings at the lugs/bushings of the Atlantic lock
- a not properly operated securing bolt of the bow ramp and consequently missing indicator lights on the bridge
- changes of the visor lug of the Atlantic lock

All these points should have been presented to the class. The repairs of the cracked lugs at the port cylinder on B-deck should have been carried out by a skilled shore company under the supervision of the class.

7. "ESTONIA"

- Upon instructions of Hans Olsson - chief executive Gothenburg office - Anders Wirstam exclusively looked after the "ESTONIA" in respect of her class and the safety matters for the Estonian Board of Navigation. This was also the case when the vessel had been in the shipyard at Turku. Wirstam reported directly to Hans Olsson, i.e. without using the official channel, viz. Lars Olof Ålander.
- He knew about the contract between Bureau Veritas/Estonian Board of Navigation, but the contents are strictly confidential.
- During taking over the "ESTONIA" in January 1993 Hans Olsson, Anders Wirstam and one borrowed Sjöfartsverket inspector were present. The ship was checked and found to be in order. However, he was excluded from all activities concerning the taking over of the "ESTONIA". The reason could

have been his aversion against Ulf Hobro, the technical Inspector of Nordström & Thullin in charge of the "ESTONIA".

- Already from the beginning it was known that the Estonian crew was very inexperienced and that Nordström & Thullin had to use a lot of Swedish advisers on board. Hans Olsson and Anders Wirstam as well as the surveyor for the hull and P&I underwriters accepted the crew more or less, at least no one raised any objections.
- He knows from talks with Anders Wirstam that he and Hans Olsson had spent a lot of thoughts on the total incompetence of the crew, especially of the navigators (2nd and 4th Officer were playing pinball machine on the bridge, 1st Officer was so immovable that he was not able to put on/take off a T-shirt without help).

8. Other Information

- The surviving passenger Pierre Thiger reported that he has been at the bar with his colleagues, when - at 23.47 hours (Swedish time) i.e. 00.47 hours Estonian and board time - the vessel was shaking seriously and "a sharp metallic bang" was heard. About 60 seconds later the same occurred again. After the 2nd shock the vessel fell into a wave trough and came up again, then heavy rolling started which finally ended with a starboard list.
The passenger could not decide to go over board with the others and stayed on the port boat deck (more forward than amidships) as long as possible. He was probably one of the last to leave the ship. At this time the vessel was totally on her starboard side and seriously trimmed by the stern which, he believes, was already aground whilst the foreship was still afloat. This is possible due to the length of the ship and the water depth.

- On 05.06.95 in the morning broadcast of Radio 1 (presenter: Helena Groll; reporters: Erik Ridderstolpe and Lars Greipe) it was reported that the chairman of the Masters and Ship Officers Association, Christer Lindvall, had stated that the indications that the "ESTONIA" had left Tallinn in unseaworthy condition were becoming stronger. Cracks in the collision bulkhead below car deck and bow thruster room were mentioned.
- The key persons knowing everything about the condition of the "ESTONIA" are Anders Wirstam, the surveyor of Bureau Veritas and Åke Sjöblom, chief inspector of Sjöfartsverket's Malmö office, who had been temporarily lent to the Estonian Board of Navigation and trained apprentices. The training took place on board the "ESTONIA" until shortly before her last departure. Since the casualty occurred Sjöblom has been pressed by his superiors and the public to make a report. Up to now he has refused this with the argument that he worked for the Estonians. He is becoming more and more a drinker and also during the day shall not sober up anymore.

20.06.95 - Werner Hummel

BV class certificate hull

Enclosure 2.4.3.45

Bureau VeritasINTERNATIONAL REGISTER FOR CLASSIFICATION OF SHIPS - ESTABLISHED 1828
REGISTRO INTERNACIONAL PARA LA CLASIFICACION DE BUQUES - FUNDADO EN 1828CERTIFICATE OF
CERTIFICADO DECLASSIFICATION
CLASIFICACIONCertificate No. 037015
CertificadoNo. 35 P 387
in Register Book
en el Registro"VASSA KING"
HULL / CASCO

This is to certify that the above named
El abajo firmante certifica que el buque
surveyed for renewal of steel motor ship has been
certificado para renovación de motor de vapor ha sido
by Surveyors to the Society, in accordance with the requirements of the Rules.
por el personal técnico de la Sociedad, de acuerdo con las prescripciones del Reglamento.

Owners/Armador : Vasa Line Oy Ab
Flag/Bandera : Finnish Port of Registry/Puerto de matrícula : Matkahuolto (Vasa) Vaasa

Registered tonnage, Gross/Arqueo bruto : 15 566,89 RT Net/Neto : 8 372,46 RT

Built at/Construido en : Papenburg by/por : JOS. L. Meyer

Completed in/Acabado en : July 1980

The ship has been entered in the Register Book with the classification symbols :
El buque ha sido inscrito en el Registro con los símbolos de clasificación :

I 3/3 E

and the marks and notations : PASSENGER FERRY
y los marcas y menciones : DEEP SEA
 I 3/3 E 1989/7/1 ICE CLASS I A
 (AUT)

This certificate, issued within the scope of the Bureau Veritas Marine Branch General Conditions, is valid
Este certificado, expedido con arreglo a las Condiciones Generales de la Rama Naval del Bureau Veritas, es válido
until JULY 15, 1995
hasta

The hull of the ship is surveyed under the Continuous survey system
El casco del buque está sometido a la reclassification

Date of the two last periodical bottom surveys/Fecha de las dos ultimas visitas periódicas de la carena :
in drydock/en digue seco : May 1990 in water/submarina : May 1989

The validity of this certificate is conditioned upon due compliance with the requirements of Chapter 2 of the Rules
regarding maintenance of ships.
La validez de este certificado depende de la aplicación de las prescripciones del Capítulo 2 del Reglamento relativas
al mantenimiento de los buques.



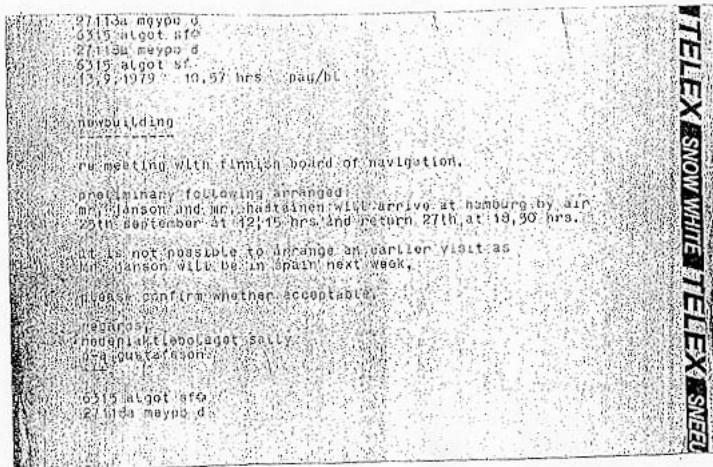
* Approved in Stockholm on July 16, 1990
For/Bureau Veritas,
See VISA No. 2 By order of the Secretary
(Signature and stamp)
Firma/ sella
Helsinki 4.2.1991
Tony Patterson
T. Patterson
Hans Olsson

BV Mod. Ad. MEH 407 b

Telex AB sally to meyer werft

20.22

SE M/SER WERFT

00-07 35 11-19
00-07 35 11-19 1991 31300

Enclosure 2.4.4.46

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Page of 27.09.79 from logbook no.3 of h.wahnes

15/06 '95	16:10	FAX +19 4961 81298	MEYER WERFT TS	② 021
27.09.79				
to: R. Pachauer B. Helmers G. Fuchs H. Bruns F. E.				
Enclosure 2.4.4.47				
1) Planung für Reisegruppe Vorstellung 5.82 Part 35 in d. soz. 2) b. Janson gäbe ja gewiss abholen ab 17.00 - Empfehlungen zur Erfüllung von soz. 24 (Kapitel III) erfüllt werden müssen 3) Sicherung d. Stelle im Bereich der Staaten 4) Gute Vorbereitung für Besuch im Bereich der Boote? Kommt Mann 5) Werden Dokumente 18.00 für 3 Tage Kommt Mann 6) Empfehlungen zum Gehen auf Land: Kommt Mann 7) Welche Abstimmungen während der Reise soll von B.o.N. gefordert werden und auf Ergebnis 8) Welche Richtungen vorgeschlagen werden müssen Kommt Mann [] 9) C. Delt. 4.82: 150 Rd. u. im pos + 20% c. D. Deck 358 1.01				
10) Früherer Rappungswagen ausgeladen sein für 26.28 Personen per 18.00 Uhr Eine Treppe führen 2 Stufen hinunter				

Info bulletin 10/78 by FBN



MERENKULKUHALLITUKSEN

TIEDOTUSLEHTI

Enclosure 2.4.4.48

23.10.1978

Helsinki

No 10/78

APPLICATIONS FOR APPROVAL FOR INDIVIDUAL VESSELS

This information bulletin lists the data that shall be included when submitting to the Board of Navigation applications for approval concerning individual vessels.

<u>q</u> 1. Data to be included in the application	1
2. Accommodation of crew	2
3. Bridge	2
4. Magnetic compasses	3
5. Navigating lights	3
6. Life-saving equipment	3
7. Fire protection	4
8. Stability	5
9. Carriage of grain	6
10. Load line certificates	6
11. Tonnage certificates	

1. DATA TO BE INCLUDED IN THE APPLICATION

The applications for approval shall be addressed to the Board of Navigation - not to a named person - and shall include the following data:

- a) Name and address of applicant, and addressee of the resolution (if not the applicant himself).
- b) Name of reference person for possible consultation.
- c) The character of the application (i.e. what the approval would concern) shall be expressed in the heading.
- d) In the text part the character of the application shall be specified.
- e) If the application is in any way special or exceptional, this has to be mentioned.
- f) All appendices and the number of them have to be mentioned, and, if necessary for clarity, also in what way they pertain to the application.
- g) The application shall include the names of appliances for which the approval of the Board of Navigation is required and if the said appliance has not earlier been approved of by the Board of Navigation, test certificates and other documents on the basis of which approval can be granted

- 2 -

- shall be attached.
- h) Applications shall not be made for equipment not expressly mentioned in this information bulletin.
 - i) If a ship has been in correspondence with the Board of Navigation it has been given a code, which should be mentioned in the application.
 - j) Other data to be included in the application will be specified in the following.

The applications shall be sent under the address:

Board of Navigation
P.O. Box 158
00141 HELSINKI 14

2. ACCOMMODATION OF CREW

The following drawings of crew accommodation spaces shall be provided:

- General arrangement, showing also the deepest loadline
- Detailed drawing of accommodation spaces (on the scale 1:50, 1:25 or 1:20)
- Ventilation
- Heating
- Lighting

The general arrangement of the vessel shall be provided in one copy, other drawings in triplicate.

Several arrangements may be shown in the same drawing if this can be done without causing confusion.

The drawings and data provided shall provide information of the location of accommodation and other spaces, of the free height, the total and free floor space, breadth and area of free rectangular floor space, dimensions of berths and wardrobes and number and volume of drawers for each person. The furnishing of accommodation, eating and other living spaces shall also appear from the drawings. The scale used shall be indicated in the drawings.

The manning plan shall be attached to the drawings.

The Decree No. 518/76 (given on June 16, 1976) provides for the accommodation standards for crews. In the cases mentioned in Article 39 ("old vessels") of this Decree the old Accommodation Decree (Decree on the Accommodation of Seamen in Ships, No. 794/48, given on November 20, 1948) may be applied.

3. BRIDGE

A general arrangement of the bridge shall be provided in duplicate and it shall show the location of the manoeuvring and navigation equipment and other devices.

4. MAGNETIC COMPASSES

The positioning drawings of the magnetic compasses shall be provided in duplicate along with a specification of building materials and electrical appliances and cables located near to the compasses.

5. NAVIGATING LIGHTS

Positioning drawings of the navigating lights showing that the navigating lights and other lights (towing lights, manoeuvring lights a.s.o.) are placed so as to comply with the International Convention on the International Regulations for Preventing Collisions at Sea, 1972, shall be provided in duplicate.

6. LIFE-SAVING EQUIPMENT

The following drawings shall be provided in duplicate:

6.1 Passenger ships

- general arrangement
- lifeboats and liferafts (name, number, volume, location)
- other life-saving equipment, location
- drawings showing the assembling spaces needed for use of the life-saving appliances
- spaces intended for the passengers (scale 1:50, 1:25, 1:20) for determining the number of passengers
- drawing showing exits and their marking
- general arrangement of alarm system
- other elucidating drawings and explanations

6.2 Cargo vessels falling under the Safety Convention

- general arrangement
- lifeboats and liferafts (name, number, volume, location)
- other life-saving appliances, location
- exits and their marking
- general arrangement of alarm system
- body plan of ships, in which one or several lifeboats are not situated in the midship section
- other elucidating drawings and explanations

6.3 Vessels not falling under the Safety Convention

- general arrangement
- lifeboats and liferafts (name, number, volume, location)
- exits and their marking
- general arrangement of alarm system
- other life-saving appliances, location
- other elucidating drawings and explanations

7. FIRE PROTECTION

The following information on the fire-fighting system on board shall be provided:

- general arrangement showing the main dimensions of the ship (LOA, B, T, D, H, PB), the volumes of the biggest spaces (engine room, cargo holds, car deck), and the names of the spaces
- method of protection
- main vertical and horizontal zones
- presentation of construction and fire classes of divisions which are

- fire-classified (decks, bulkheads, doors)
- construction of openings in fire-classified divisions
- means of escape (exits, emergency exits)
- ventilation arrangements (ducts, fans, closing arrangements, stopping arrangements, through-runs)
- fire detection systems, fire alarm systems and explosive gas detection systems (names, location, functional description, main and emergency sources of power)
- presentation of remote control of closing devices of ventilation fans and ducts, fire-doors, fuel valves and other similar devices
- fire piping diagram showing fire hydrants, pipe bores and materials, closing devices, and location, pressure, and capacity of pumps, as well as fire hoses (name, length) and nozzles (name)
- fixed extinguishing systems: arrangement drawing, functional description, alarm devices, operating instructions, maintenance instructions
- portable and transportable fire extinguishers: name, size, fire class, location, also spare charges
- fireman's outfit (names, locations)
- fire control plan (text in Finnish, Swedish and English)

In the fire control plan, markings according to the standard TES 8091 shall be used.

Drawings and descriptions shall be provided in duplicate except for the fire control plan, which shall be provided in triplicate.

8. STABILITY

The following information shall be submitted in duplicate.

8.1 Ship, at least 24 Metres in Length

- a) lines plan
- b) general arrangement
- c) capacity plan, or information on the weight and coordinates, of centre of gravity for light ship and volumes and centres of gravity for holds and tanks
- d) hydrostatic curves or tables
- e) cross curves or M_S curves or corresponding tables
- f) flooding angle as function of the draught
- g) moment of ice as a function of the draught
- h) corrections to GM for the effect of free liquid surfaces in tanks
- i) GM as function of draught, and of trim if the figures essentially change with the trim, as diagrams or tables
- j) inclining test report
- k) GZ curves and calculations for the in § 5 of stability provisions for ships, 1972, mentioned loading conditions
- l) minimum GM curves or tables as function of draught, and of trim if the figures essentially change with the trim, with and without taking into account the possibility of icing.

8.2 Ship, at least 24 but not more than 70 Metres in Length

In addition to the in 8.1 above mentioned information, the following:

- a) maximum rolling period curves or tables as function of draught, with

9.2 Regulation 12 of Chapter VI of SOLAS-60

When applying for a grain certificate with observance of regulation 12 of Chapter VI of SOLAS-60 Convention the following information shall be submitted to the Board of Navigation:

- a) The information according to paragraph 9.1 as applicable
- b) Information in accordance with the IMCO Resolution A.49 (III).

9.3 IMCO Grain Rules or SOLAS-74 Chapter VI

When applying for a grain certificate with observance of the IMCO Grain Rules, the following information shall be submitted to the Board of Navigation (SOLAS-74 Chapter VI Regulation 11):

- 1) curves or tables of grain heeling moments for every compartment, filled or partly filled, or combination thereof, including the effect of temporary fittings
- 2) tables of maximum permissible heeling moments or other information sufficient to allow the master to demonstrate compliance with the requirements of Regulation 4 (c)
- 3) details of the scantlings of any temporary fittings and where applicable the provisions necessary to meet the requirements of Section (E) of Part C
- 4) typical loaded service departure and arrival conditions and where necessary, intermediate worst service condition
- 5) a worked example for the guidance of the master
- 6) loading instructions in the form of notes summarizing the requirements of this Chapter
- 7) ship's particulars
- 8) lightship displacement and the vertical distance from the intersection of the moulded base line and midship section to the centre of gravity (KG)
- 9) table of free surface corrections
- 10) capacities and centres of gravity

10. LOAD LINE CERTIFICATES

- a) Documents: "International Load Line Certificate (1966)", "International

b) Load Line Exemption Certificate (1966)"

The load line certificates are issued by the Board of Navigation on receipt of a provisional certificate from the classification society, together with the calculations on which the data of the certificate are based.

- c) For a ship not classified the data listed under item 10.1 c) shall, as far as possible, be sent to the Board of Navigation, in addition to those normally sent by the hull surveyor to be inspected at the Board.

11. TONNAGE CERTIFICATES**11.1 The Convention of 1947 for a Uniform System of Tonnage Measurement of Ships**

- a) Documents: Tonnage certificates 1, 1 A, 1 B, and the "Special Tonnage Certificate".
- b) The tonnage certificate is issued when the ship has been measured and the measurement forms filled in by a ship admeasurer, and these

- forms have been approved at the Board of Navigation.
- c) The following data^{*} shall be appended to the measurement forms which are sent to the Board of Navigation:
- 1) capacity plan
 - 2) general arrangement
 - 3) midship section
 - 4) description of frames
 - 5) steel structure drawing, profile and plan, drawings presenting the forepeak and afterpeak, the floor plates in the engine room, and that part of the ship which is fitted with a double bottom
 - 6) body plan (possibly lines drawing)
 - 7) laying-out tables, deck, tank top, waterlines, verticals and possible diagonals
 - 8) accommodation plan
 - 9) engine room arrangement
 - 10) plans showing details of the conditions upon which the deduction of water ballast spaces is claimed:
 - a. piping arrangement: bilge, ballast, fresh water, and fuel oil
 - b. pumping installations
 - c. manholes to water-ballast spaces outside the double bottom.
 - 11) plans showing details of the conditions upon which the exemption of certain spaces is claimed, for instance drawings of the second deck (openings and closing arrangements).

11.2 The Constantinople Tonnage Measurement Regulation of 1873

- a) Documents: The tonnage certificate "Suez Canal Special Tonnage Certificate"
- b) The certificate is issued when the ship has been measured and a measurement form filled in by the tonnage surveyor, and approved by the Board of Navigation.
- c) The data listed under item 11.1 c) shall be appended to the measurement documents which are sent to the Board of Navigation, if such data have not been delivered in connection with earlier measurements.

11.3 The Tonnage Measurement Regulations of the Panama Canal Authorities

- a) Documents: The tonnage certificate "Panama Canal Tonnage Certificate"
- b) As under item 11.2 b)
- c) As under item 11.2 c)

11.4 The Decree No. 306/1955 on the Tonnage Measurement of Ships

- a) Documents: The tonnage certificate "Tonnage Document of a Foreign Ship". The certificate is issued after necessary measurements by a ship admeasurer to certain foreign ships calling at Finnish ports. Further information concerning the issue of this certificate is to be

* In view of the transition to the new tonnage measurement system (TM 69) it is advisable at this stage to determine the moulded volume in cubic metres below the uppermost complete deck of the ship.

- 8 -

found in the Board of Navigation information bulletin No. 5/78 (dated June 20, 1978).

This information bulletin shall supersede bulletin No. 3/69 (dated March 13, 1969), "Drawings to be submitted to the Board of Navigation".

Head of Maritime Division
Counsellor of Navigation Oso Siivonen

Mechanical Engineer Pertti Haatainen

KD 3841/78/301



Fire protection plan 1

Enclosure 2.4.4.50

<u>FIRE PROTECTION</u>																									
APPROVED WITH REMARKS NOTED																									
BUREAU OF SHIPS, 25.7.1980 Port: Hamburg																									
See 442 Board of Navigation 14425/380-14425 L 346 FD 5365/79/301, 1980																									
11.10.1979																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Nr.</th> <th style="width: 40%;">Art der Änderung</th> <th style="width: 10%;">Datum</th> <th style="width: 40%;">Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Jos. L. Meyer-Pa. enburg (Ems) Schiffswerft, Maschinenfabrik, Dockbetrieb</td> <td>11.10.78</td> <td></td> </tr> <tr> <td>2</td> <td colspan="3">FIRE PROTECTION PLAN 1 13961-72-13</td> </tr> <tr> <td>3</td> <td>Gewerk.</td> <td>Schiffs Nr.</td> <td>Sektions Nr.</td> <td>Zeichn. Nr.</td> <td>Archiv Nr.</td> </tr> <tr> <td></td> <td>590</td> <td></td> <td></td> <td>021.8</td> <td>G.1</td> </tr> </tbody> </table>		Nr.	Art der Änderung	Datum	Name	1	Jos. L. Meyer-Pa. enburg (Ems) Schiffswerft, Maschinenfabrik, Dockbetrieb	11.10.78		2	FIRE PROTECTION PLAN 1 13961-72-13			3	Gewerk.	Schiffs Nr.	Sektions Nr.	Zeichn. Nr.	Archiv Nr.		590			021.8	G.1
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