Mermaid Operator - Year Report

Round 2 - Group 18

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1 Introduction

1.1 Company Idea

The company will primarily provide maritime trasportation in Europe. The business intends to bid on journey charters on short routes throughout Europe, where it will be able to provide shipping for any sort of goods. The firm will also take on profitable contracts to and from other continents, although there are no plans to operate on intercontinental routes where Europe is neither the starting or ending point.

1.2 Company Mission

In order to move all kinds of cargo in every port in Europe, the company will buy ships with a very high floor strength and possibly according with Ice Class that is a requirement in some ports in Europe. A ship of the size 'Handymax', more specifically Yo-1, will be required for this mission, stationed in Middle East or near Europe, with a floor strength of 20 ton/m2. In fact, this sort of ship will be capable of transporting a wide range of goods, including steel, iron ore, and minor ores. With a design draught of 12.92 metres, the ship will be able to visit practically any European port, as no available contract will provide for a maximum load, being able to decrease the immersion by a few metres. This presents the rare circumstance of an all-around accessible ship that can execute nearly any contract throughout Europe, with the sole limitation being the vessel's cargo volume limits. When the firm first entered this industry, the goal was to get as many contracts as possible in order to ensure a healthy profit margin.

1.3 Followed Strategy

Our strategy planned in the business plan received some setbacks and changes at the beginning of the operating year. Despite the fact that the initial planning was not possible, our company reset the strategy according to the market availability of contracts and ships for sale, assisting the best solution in order to secure the planned profits and revenue of the business plan. After an accurate selection of the best ship available in the market sale, the analysis made an expected competition that didn't allow us to complete our initial plan. At the beginning of the first year a competitor bought our first choice, bringing us to a short time decision in order to provide the guarantees expected. A ship's criteria include location, floor strength, carrying capacity, and cost. Mermaid Operator's approach makes operations very dependent on the behaviour of other rivals; as a result, the market is constantly analysed for competition and the strategy is altered appropriately. The available contracts are reviewed based on their profitability and ability to be delivered by the fleet's ships. This is determined by considerations such as the likelihood of completing the contract on time, the required floor strength and volume, and the additional costs necessary to reach the start port. The destination of a contract is also taken into account, because some ports almost never have successful contracts departing from them, generating an extra risk of income loss. Furthermore, the strategy entails gradually expanding the fleet to sail in a market that is still devoid of competition, which led us to the decision to purchase a new vessel with nearly identical characteristics, but with the primary goal of responding to the first ship while she is undergoing maintenance.

2 Board of Directors Report

2.1 Development over time

2.1.1 First Year

As previously mentioned in the introduction section, at the very beginning we encountered some difficulties while buying the ship. Our focus was specifically at two Handymax ship: Yo-1 and Bao Zhong 218. However, other competitors were interested in the same ships as well, thus we were not able to buy none of them. Looking for new ship without requesting any loan, because of no other possibilities, we decided to buy a 28 years old Handymax (Gdynia) located in Newcastle, Australia and with 622 days before docking. Furthermore, this ship had a high value of maximum floor strength of 20 $[\frac{t}{m^3}]$ and no ICE-class certification. Compared to our initial plan, the characteristics of this ship did comply to our plans, for this reason we decided to not change the size of the ship. According to the Mermaid Operators strategy, the ship was moved from Oceania to Europe, where many contracts were available. To do this, the company tried to avoid long distance in ballast, signing different contracts without a big profit margin but with the purpose to cover the voyage expenses for Europe. Indeed, in Europe a lot of short/medium term contracts with high rate were available compared to Asian market. The ship had to sail for 4 weeks in ballast condition before reaching Melbourne where the first contract was signed: during this period, the ship did not produce relevant revenue.

Subsequently, the strategy was to obtain contracts that were as profitable as possible but still allowed us to reach the European market as soon as possible in order to meet our initial forecast. In week 4, a major profitable contract was won which took us to the Asian market where connections via North American and European port contracts were more profitable and

sensible than in Oceania. Subsequently, the contract that made the difference in the first weeks of the year came in week 13, departure Pasir Guadang bound for New York opened up big margins and positive scenarios for the ship's first year of operation. The profit was $345,000 for the transport of manufactures and subsequently combined with another important contract with destination Marseille and loading, thanks to the prerogative of acquiring a ship with such floor strength, good quantities of iron ore that settled the balance in the positive for the first quarter. Arriving in Europe, for approximately 10 weeks the tactic was to win and obtain short-term and long-distance contracts between European ports, denoting how the competition in the European market had the blazon in its complexity and variability over time. This was the reason why the company's choices subsequently shifted to a more geographically extensive analysis of available contracts, leading to the realisation of numerous contracts that lasted longer in weeks but were more onerous in earnings, confirming the initial set-up of wanting to operate in the North America-Europe basin, closing our first year in the black and with a ship present in the most important European ports.

age	**length**	**width**	**Design draft**	**Design speed**	**Desing consumption**	**Bunker cap.**
[year]	**[m]**	**[m]**	**[m]**	**[kn]**	**[t/day]**	**[t]**
31	225	32,2	12,93	15	38,9	1417

Ice class	**dwt**	**gt**	**Engine output**	**Cargo volume**	**Floor Strength**	**Time to dock**
	[t]	**[t]**	**[kW]**	**[m3]**	**[t/m^2]**	**[days]**
NO	65738	35748	10591	26410	20	622

Table 1: Gdynia's main characteristics

Sale price	**Operational expenses**			
	Maintenance	**Crewing**	**Insurance**	**Administration**
[$]	**[$/year]**	**[$/year]**	**[$/year]**	**[$/year]**
$ 2.049.171,00	$ 554.121	$ 712.747	$ 850.209	$ 272.909
	$ 2.227.436			

Table 2: Gdynia's price and expenses

2.1.2 Second Year

At the start of the company's second year of operation, after careful analysis and evaluation of the desired and possible increasing profit margins, a 10-week contract was won, leaving the port of Rotterdam in week 53 and arriving in Shanghai in week 63. The choice mainly came about because of the trend of contracts in those weeks tending to shift to the Asian market, and then the perception that long voyages, with possible material to be transported according to the capacity and characteristics of our ship, calibrated to a perfect speed of execution of the contract, brought huge profits into the company's coffers. In fact, this contract brought in revenue of $747,452, bringing optimism and considerable confirmation of the company's change of strategy. Once the contract was terminated, from week 63 the ship Gdynia became available to operate in the Asian market, dealing with medium-distance and low-margin contracts. The performance of the initial Asian market led the company to indulge in error, as in the following weeks, few contracts were made valid and useful for margin purposes, resulting in the ship having to ballast in port many times, with only operating costs and no profit. Even once ports had been reached thanks to the winning of contracts, no cargo or voyage charter made a positive note in the company's coffers, on the contrary showing huge losses given the high operating and voyage costs of the ship. The turning point came in week 69, where an important 8-week contract departing Karachi and heading for Rotterdam was signed and assigned to Gdynia, allowing us to recover profit, given the $489,700 profit from the transport of Iron Ore, and to be available again in the European market. Once the port of Rotterdam was reached, the main strategy assigned to Gdynia was to again cover as many European ports as possible, concentrating on different types of goods, but mainly operating as many contracts as possible and at the most suitable speed in order to make a good profit margin. This was done until week 87, when the last contract with departure Antwerp and destination Izmir was carried out, and the ship was directed to its maintenance period in Alexandria dock, where it remained idle for three weeks. This last important event was not underestimated by the company, in fact retracing the initial choices, the second year began with an optimism that led to the decision to expand the fleet in the acquisition of a second ship with the same characteristics and dimensions as Gdynia, but unfortunately at the time of the acquisition, a competitor was

faster in the procedures, leading to the acquisition of a ship identical to the previous one, but with a lower floor strength. Once Andhika Sharmila was acquired at week 64 in the port of San Vincente, the strategy of attack was to bring her up to the North American ports of Corpus Cristi and New York, in order to secure competition in the North American-European market through trans-Atlantic voyages analysed and understood in their profitable power. Once back in ballast, in week 70 a major NewYork-Rotterdam contract was won and awarded to Andhika Sharmila, allowing us to achieve a profit of $378,200 and to be operational on the desired routes, especially in conjunction with the impending work stoppage in the Gdynia dock. Once we reached Rotterdam, the complexity of the contracts resulting from the competition of the market and the poor retention of certain types of goods, forced us to stay much longer in Europe than planned, leading us to accept contracts with poor profitability and above all, wrong type evaluations, forcing us to cancel contracts we had won and thus being fined in multiple cases. Summing up the last few weeks of the second year, the second half of the second year brought huge losses to our company, mainly due to the incorrect evaluation of the contracts, complexity in finding the ship correctly in the indicated ports, dock costs for Gdynia, poor capacity of the Andhika Sharmila in carrying most of the goods assigned in the contracts, and last but not least, the high operating and voyage costs attributed to these types of ships in relation to the profitability of the contracts. The second year ended with a negative balance sheet, but with two ships in constant operability.

age	**length**	**width**	**Design draft**	**Design speed**	**Design consumption**	**Bunker cap.**
[year]	**[m]**	**[m]**	**[m]**	**[kn]**	**[t/day]**	**[t]**
32	225	32,2	12,93	14,5	28,9	1053

Ice class	**dwt**	**gt**	**Engine output**	**Cargo volume**	**Floor Strength**	**Time to dock**
	[t]	**[t]**	**[kW]**	**[m3]**	**[t/m^2]**	**[days]**
NO	64975	35609	7870	75026	10	897

Table 3: Andhika Sharmila's main characteristics

Sale price	**Operational expenses**			
	Maintenance	**Crewing**	**Insurance**	**Administration**
[$]	**[$/year]**	**[$/year]**	**[$/year]**	**[$/year]**
$ 2.027.758,00	$ 654.121	$ 712.747	$ 890.209	$ 372.909
	$ 2.425.502			

Table 4: Andhika Sharmila's price and expenses

2.1.3 Third Year

The third year opened with countless difficulties from the past year. Gdynia appears to be present and operating in the Asian market, having won a contract from Marseille in week 105 with the direction Pasir Guadang, lasting 6 weeks and a profit of $245,653 for the transport of manufactures, where the occurrence of profitable contracts varies from week to week, but not being able through its capabilities to express large profit margins, finding itself many times having to travel by ballast to reach main destinations. This trend continued until week 116, through the acquisition of unprofitable contracts and countless problems with operational and travel costs, complicating the company's financial situation. In the face of this situation, the company then tried to cover as much damage as possible with Gdynia, trying to evaluate as many onerous contracts as possible, and moving around the globe for the next few weeks. Mainly Asian contracts were awarded, but also transpacific, transatlantic, Mediterranean, North European, and South African ones. This strategy, however, brought back a small recovery from earlier losses, leading to a total profit of $524,345 over the next 20 weeks, which was boosted by the winning and awarding of a 35-week affreightment contract on the Dalian-Chiba route, allowing large profit margins of around $452,000 per trip, bringing a boost of enthusiasm to the running of the business. Unfortunately, however, the contract failed to show its full potential, as most of the weeks of travel, and subsequent profit, proceeded beyond the end of the third year of operation, not falling within the merits of our side. This resulted in an important decision given the large and significant operational costs and travel expenses for the last few weeks, to put the ship Gdynia up for sale 8 weeks from the end of the year, trying to limit future inherent losses at the expense of the final budget. The sale of the ship took place correctly and the correct valuation inherent in the non-depreciation of the ship allowed the initial equity to be balanced. In contrast for Andhika Sharmila, the third year of opera-

tion brought more difficulties and losses than benefits, leading us to re-evaluate our operating choices. Mainly resuming the characteristic limitations of the ship already explained in the past, the ship was forced to maintain an operability in the European market due to its poor cargo capacity in tackling and being awarded transatlantic contracts between Northern Europe and America. This progression of European contracts has maintained a good margin to cover expenses and voyage costs, but never led to significant profits. This can be explained as a consequence of the competitive European market that smaller and cheaper ships in operation have an easier time finding profitable contracts, denoting the shortcomings in ship types such as Andhika Sharmila. After repeated contracts around Europe, with short terms and distances, the main mistake in our company's third year was in acquiring a time charter contract. Having carefully evaluated a 25-week time charter contract in Rotterdam on week 101, the bid necessary to win the contract was accidentally misjudged by us, providing such a low bid that for 25 weeks our ship was only capable of generating a weekly profit of $350, leading us to have to maintain six operating costs at our own expense and creating large losses in our balance sheet. These losses mainly scuttled our originally detailed corporate planning and reality planned according to the current market. That is why we were forced, in order to avoid interest speculation by banks, to take out a loan of USD 2 million, bringing us into the positive in the statement and allowing us not to increase interest over time. At the end of this long contract, the ship was able to recover a little of the losses incurred, acquiring two major contracts towards the end of the third year, Gdansk-Rotterdam agribulk at 130 to 133 and Gdansk-Antwerp at 147 to 149 on alumina, with an average of $250,000 profit. Concluding the development of our exercise during the third year, we can summarise that several difficulties and obstacles were encountered along the way, leading us to close our business in the negative.

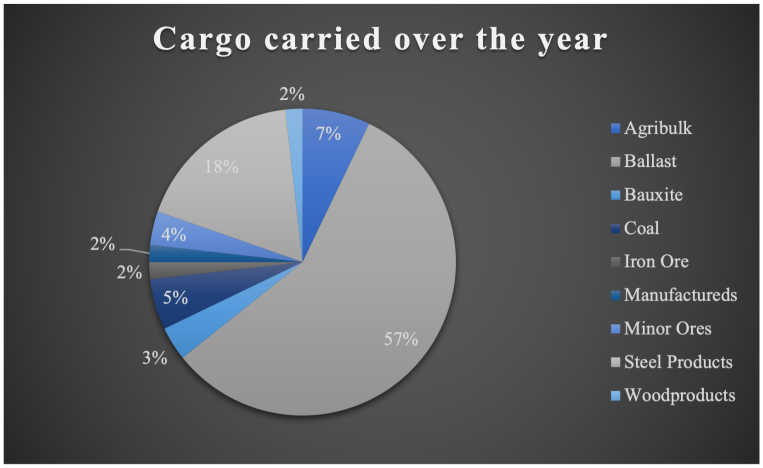
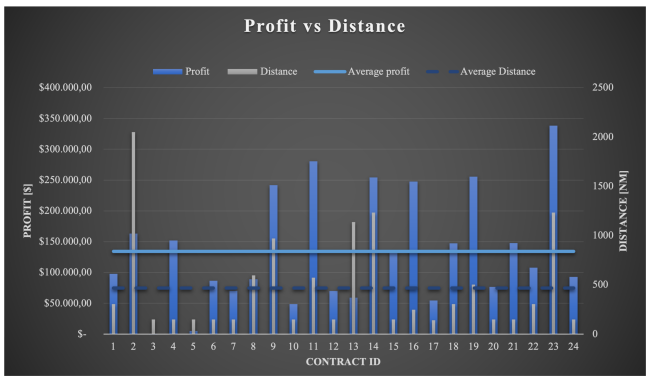
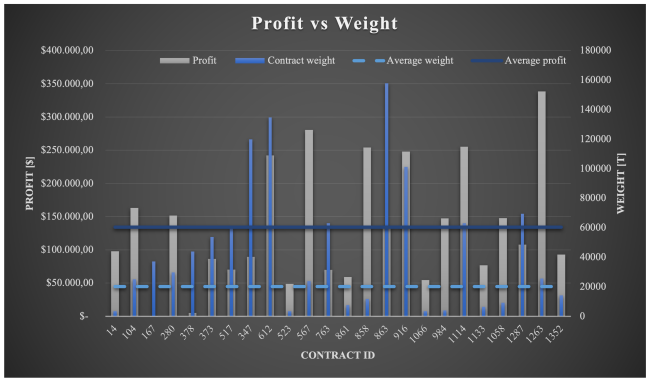


Figure 1: Type of cargo weight carried over the years



(a) Profit related to distance sailed



(b) Profit related to weight carried

Figure 2: Profit for the different contracts

2.2 Internal factors

Throughout the year, the corporation made a number of critical decisions, some of which worked quite well and others that did not. The company's initial move was to acquire a vessel that was not one of those requested. We had to purchase another vessel since the vessels on which the corporation had focused its attention had been purchased by other companies. The corporation chose a vessel that would allow us to pursue the same strategy. As a result, the firm considered a vessel with a high floor strength, accessible in Europe for less than $ 5.000.000,00, and with a dry-dock time of more than a year. Furthermore, our company attempted to obtain a vessel with an Ice Class requirement that was not too large, as market research revealed that contracts available in Europe are frequently not as large as transoceanic contracts. The only vessel that met all of these standards was Gdynia, the company's initial purchase.
Important internal problems related to choices and unforeseen events occurred during the three years. The first few weeks with the purchase of a ship that was not initially the first choice meant a difficult move from Newcastle to Europe. Needing to avoid huge travel and operational expenses, the ship was sent by stages to Asia until it was eventually awarded a lucrative contract for Europe, Shanghai-. Rotterdam. This choice could be contested as focusing only on the idea of operating in Europe, other possibilities were discarded in those areas that could still increase profit. Subsequently, the decision to move the ship back to week 38 in Asia, as the awarding of a major contract, brought countless difficulties given the scarcity of contracts in the Asian market in those weeks, leading us to almost totally dissipate the profit gained just by moving the ship in ballast from secondary ports to main ports in order to meet the contract timings. In addition, the error in evaluating certain contracts that were not totally suitable for our ship type led to their cancellation at a later date, resulting in huge losses and fines. An internal strength, on the other hand, has always been the ability to reach the contract start and end destination on time, so the scheduling has always been done according to the best assessments. Subsequently, with the difficulty of acquiring the second selected ship as well, we encountered further problems in making profit in the distance between Sao Vincente and North America, leading us to start with a negative balance for the second ship, but then fortunately recovered with the important NewYork-Rotterdam contract that took place later. Probably the biggest internal difficulty we encountered was with the error in the valuation of the time charter contracts, the error in the acquisition bid led us to huge losses in the following months, never allowing us a real economic recovery.

2.3 External factors

The presence of many other businesses in the same market and at the same time was the most significant external factor that influenced the company. The presence of numerous other companies caused a first significant obstacle at the start of our company's activities. We were unable to purchase any of the vessels chosen since, at the same time, multiple other organisations entered the market with the same approach focused on the same type of vessel. Furthermore, all of these enterprises followed the same strategy: operate in Northern Europe and the Mediterranean with tiny vessels capable of carrying any type of cargo. This created intense rivalry, and we were frequently unable to secure contracts, particularly in the first several weeks, because many competitors bid cheaper than us. This difficulty was remedied after the first several months, owing to foresight that allowed us to take contracts far in the future, contracts on which the other firms did not compete. Because of this foresight, our organisation was able to offer a greater bid than in the previous months, resulting in better earnings. In the second half of the year, an unexpected change in contract type occurred, forcing Gdynia to remain in the Asian/Far East region for longer than intended. Additionally, certain long-term contracts with ideal sizes for Andyka Sharmila were available from Europe to Africa and the United States. As a result, it was decided to shift the approach from short-term to long-term contracts and from the European Union to all Atlantic Ocean locations.

2.4 Emission Calculations

This paragraph is dedicated to a very important topic that will become even more important in the future, that is, sustainability in shipping. It is of course also of great concern to our company that we act as sustainably as possible. In order to achieve the sustainability goals of the numerous agreements, our company is working hard to make our fleet more sustainable. To verify sustainability, we have looked at the energy efficiency existing ship index (EEXI), energy efficiency operational indicator (EEOI), carbon intensity index (CII). The company focused its attention on the attained and required EEXI, on the attained and required CII and on the EEOI. The attained EEXI have been calculated as follow:

$$Att.EEXI = \frac{C_f \cdot (Cons_{V_{ref}} + Cons_{AE})}{DWT \cdot V_{ref}} \quad (1)$$

where $C_f = 3,17$ while the $Cons_{AE}$ are the consumption of the auxiliary systems, the $Cons_{V_{ref}}$ are the consumption at a reference velocity and this reference velocity is the speed of the vessels at 75% of the Power at MCR.
On the other hand the required EEXI has been calculated as:

$$Req.EEXI = (1 - X) \cdot 961,79 \cdot DWT^{-0,477} \quad (2)$$

where $X = 0,2$ as both vessels have a dead weight tonnage between 20000 DWT and 200000 DWT.
The attained CII have been calculated as follow:

$$Att.CII = \frac{C_f(\sum Cons_j - (0,75 - 0,03y_i)Cons_{AE})}{f_{ICE} DWT \sum d_j} \tag{3}$$

some parameters has already been discussed while it is important to remember that $Cons_j$ is the consumption per trip, y_i is a coefficient equal to 0 and $\sum d_j$ is the sum of all the distances in nautical miles sailed during the different trips.
The required CII has been calculated with the following formula:

$$Req.CII = (1 - Z) \cdot 4745 \cdot DWT^{-0,622} \tag{4}$$

where Z is a coefficient that in our case is almost 0.
In the end, the calculation for the attained EEOI has been processed with the following formula:

$$Att.EEOI = \frac{C_f \sum Cons_j}{\sum m_j d_j} \tag{5}$$

all the parameters are already known except for the m_j that is the amount of cargo carried in the different trips.

The results from this calculations, in $[g/ton * NM]$ are shown in following tables:

	Gdynia	Andhika Sharmila
Total time [h]	25200	15792
Consumption design [g/h]	980280	456388.8
Consumption vref [g/h]	735210	342291.6
Consumption hotel [g/h]	48636	21319.2
DWT [t]	35748	64975
Vref [kn]	13.63	13.17
speed design [kn]	15	14.5
Cf [g/g]	3.17	3.17
X	0.2	0.2
Attained EEXI	5.10	1.35
Req EEXI	5.18	3.89

Figure 3: Calculations of EEXI

In the EEXI, the fleet is considered without the trips. Of course, an old fleet is at a disadvantage here, as it is not yet trimmed for energy efficiency and does not correspond to the state of the art. Since our vessels are very old, we unfortunately cannot achieve these factors at the moment. Therefore, the ships have to be replaced or the power of the engines has to be reduced. Reducing the power could significantly reduce the emissions. Therefore, the vessels will be examined by an expert, who will decide whether a modification of the engines makes sense.

	Gdynia	Andhika Sharmila
Total trip distance [mile]	79433	19729
yi	0	0
f	1	1
Z	0.05	0.05
Attained CII	5.04	2.15
Req CII	6.63	4.58
CII rating	0.76	0.47
Rating	A	A

Figure 4: Calculations of CII

The CII shows how efficiently the fuel was used in relation to the trips made and the cargo which was transported. All trips are included here, including empty trips. Fortunately, we can fulfill this indicator very well because we are under 0.86 of the required CII and therefore we do not need to change anything in the next few years except for speed reduction if possible.

	Andhika Sharmila	Gdynia
Summe mj* dj	254284489	1542522813
EEOI	17,23	12,57

Figure 5: Calculations of EEOI

The EEOI, just like the CII, is more focused on the operational business. Since the regulations in this case have not yet been finalized, it is not yet mandatory and there are no limits. However, our values here are in the upper top range compared to other companies. These factors can be further reduced in the coming years through further efficiency improvements in the operating business. In summary, this paragraph shows that the company is already performing relatively well in terms of sustainability. However, since the fleet is relatively old, the fleet targets cannot be achieved this year. This can be solved by the actions described above. The increasing requirements can then be met with a newer fleet in the future. Since the vessels are already a few years old, replacement should not be a problem.For the future some actions has to be taken. Our company recommend tackling inefficiencies to help improve our CII, for example, by monitoring ship technical performance or with weather routing.The safest and most efficient way to operate between two ports is by using the dynamic data available to us, not relying on personal experience alone. And with up-to-date vessel performance models, weather information, and nautical charts. On the operational side, there are several concrete actions that we can take that have a relatively high likelihood of reducing emissions. These actions can be taken immediately with existing solutions already available and at low cost. Operational improvements are, for example, considering weather routing, avoiding the rush-to-wait phenomenon, timely ship maintenance, hull cleaning and monitoring ship's performance and consumption trends.

3 Financial Overview

In the present paragraph, the three most important financial statement will be presented:

- Cash flow statement
- Profit and Loss statement
- Balance sheet

These three statements provide an in-depth look at our company's financial performance.

3.1 Cash Flow

	Year 0	Year 1	Year 2	Year 3
Voyage Funds				
Voyage charter fees	$ -	$ 4.942.085,00	$ 4.794.818,00	$ 6.256.030,00
Bunker	$ -117,00	$ -623.689,00	$ -460.947,00	$ -788.745,00
Port + Canal fees	$ -	$ -1.332.752,00	$ -1.495.098,00	$ -1.803.374,00
Penalties	$ -	$ -420.870,00	$ -257.820,00	$ -555.442,00
Operational expenses				
Maintenance	$ -	$ -483.443,00	$ -858.994,00	$ -875.625,00
Insurance	$ -	$ -767.676,00	$ -1.324.638,00	$ -1.369.291,00
Crew	$ -	$ -769.496,00	$ -1.132.580,00	$ -1.143.198,00
Administration	$ -	$ -254.175,00	$ -435.756,00	$ -429.275,00
Repairs	$ -	$ -52.414,00	$ -457.623,00	$ -80.279,00
Financial Funds				
Received Investment	$ 5.000.000,00	$ -	$ -	$ -
Vessel Purchase	$ -2.016.302,00	$ -	$ -2.033.490,00	$ -
Vessel Sale	$ -	$ -	$ -	$ 2.105.873,00
Broker	$ -32.869,00	$ -	$ -32.488,00	$ -51.160,00
Interest	$ -	$ -	$ -17.804,00	$ -190.634,00
Tax	$ -	$ -2.832,00	$ -5.428,00	$ -
Bank Loan	$ -	$ -	$ 1.300.000,00	$ 700.000,00
Total	$ 2.950.712,00	$ 237.570,00	$ -2.379.932,00	$ 1.774.880,00

Figure 6: Cash Flow

Referring to the above table, the cash flow statement is a financial statement that provides aggregate data regarding all cash inflows that the company receives from the ongoing operations and external investment sources. It also includes all cash outflows paid for business activities and investments during the game's period that we played. Both years the cash flow table presents deviations from the expected results of the business plan since we bought a different vessel from the vessel analysed in the business plan so the revenues and expenses are different. Despite these alterations from the expected results, we can state that applying the strategy followed in the first year and in the second half of the third year we will able to generate high profits and it will lead the company to a financially healthy during the years.

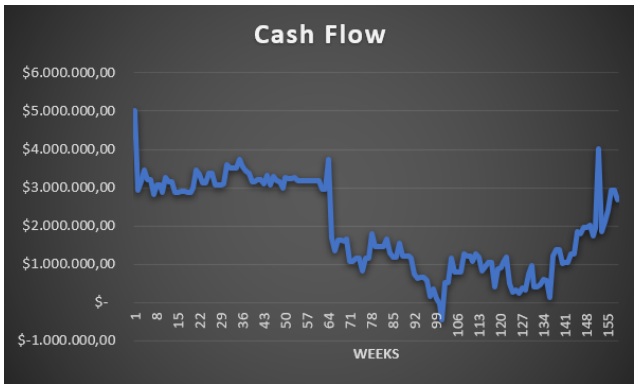


Figure 7: Cash Flow

Figure 7 shows the cash flow's trend over the weeks. As we can see, the cash flow has not followed a steadily trend over the entire period. A noteworthy point is represented by the decrease over the second year of our management due to the time charter contract that we had to fulfill since that the expenses were higher than the revenues. On the other hand the cash flow had steadily raised over the last semester due to the increase of profits thanks to the good planning of the contracts and selling of the Gdynia vessel.

3.2 Profit and Loss statement

The purpose of the P&L statement is to show the company's revenues and expenditures over the analyzed 3 years. Our company has decided to provide P&L statements from different accounting periods. The reason behind this is that any changes in revenues and expenses are meaningful than the numbers themselves, revenues and expenses have grown with different rates over these periods. This document follows a general form as it can be seen in the table 8. It begins with three entries for revenues, known as the top line, and subtracts the costs of doing business, including voyage expenses (bunker costs, port and canal fees fees), operating expenses (maintenance, insurance, administration, crew), broker, financial expenses (penalty due to late start of the contract or late delivery of the cargo, repairs of the vessel) and tax expenses. The difference, known as the bottom line, is the net income, also referred to as earnings after tax. Furthermore EBITDA and EBIT are respectively Earning Before Interest, Tax, Depreciation and Amortisation; Earning Before Interest and Tax.

Years Results		year 0 (M$)	6 month (M$)	12 month (M$)	18 month (M$)	24 month (M$)	30 month (M$)	36 month (M$)
Revenues								
	Voyage income	0,00	2,18	4,94	2,97	4,79	3,05	6,2
	Time Charter Income	0,00	0,00	0,00	0,00	0,51	0,59	1,78
	Sales	0,00	0,00	0,00	0,00	0,00	0,00	2,11
Expense								
	Voyage Expenses	0,00	-0,71	-2,13	-0,79	-1,96	-1,85	-2,59
	OPEX	0,00	-1,06	-2,27	-1,5	-3,75	-1,64	-3,82
	Broker	-0,03	0,00	0,00	-0,03	0,00		-0,05
	EBITDA	-0,03	0,41	0,54	0,65	-0,41	0,15	3,63
	Financial Expenses	-0,01	-0,10	-0,52	-0,15	-0,73	-0,42	-0,83
	EBT	-0,04	0,31	0,02	0,50	-1,14	-0,27	2,80
	Tax	0,00	0,00	0,00	-0,01	-0,01	0	-0,01
	Sales	0,00	0,00	0,00	0,00	0,00	0,00	-2,02
TOTAL		-0,04	0,31	0,02	0,49	-1,15	-0,27	0,77

Figure 8: Profit and Loss

3.3 Balance sheet

The balance sheet is a snapshot, showing what our company owns and owes at each single moment , on the other hand the P&L statement and the cash flow statement, show changes in accounts over the years. Through the balance sheet has been possible to report our assets, liabilities and equity at a specific moment in time. However, it cannot give a sense of the trends playing out over a longer period on its own so it is provided a balance sheet every 6 months. Investors will be able to understand easier the financial strength of our company, comparing the amount and quality of our assets against our liabilities, in tables 9a and 9b. The balance sheet adheres to the following accounting equation, with assets on one side, including fixed assets which are tangible (physical) items or property that a company purchases and uses for the production of its goods and services, in our case the vessels,and current asset is an asset that will be used or sold within one year. Current assets can be converted to cash easily to pay current liabilities. Current Assets are composed by:

- Bank Account that is simply how much money we have in the bank
- Debtors which includes the charge receiving of Time charter
- Prepaid Expenses which include anything we have paid for but expect to benefit from over time
- Inventory which includes fuel supply,spare parts and sundry costs due to the purchase of the vessel

Together, current assets and current liabilities give investors an idea of a company's short-term liquidity. We have liabilities plus equity on the other, balance out: Assets = Liabilities + Equity
This relation is intuitive because as a company we pay for all the things we owns (assets) by either borrowing money (taking on liabilities) or taking it from our investors (issuing equity). To provide a complete overview of the company's management we have derived some useful indicators from the balance sheets.

ASSETS		year 0 (M$)	6 month (M$)	12 month (M$)	18 month (M$)	24 month (M$)	30 month (M$)	36 month (M$)
Fixed Assets								
	Bookvalue	1,64	1,64	1,64	3,27	3,27	3,27	1,64
Current Assets								
	Bank Account	2,95	3,39	3,18	1,52	0,79	0,73	2,69
	Debtors	0,00	0,00	0,00	0,00	0,10	0,29	0,15
	Prepaid Expenses	0,04	0,04	0,00	0,13	0,02	0,04	0,14
	Inventory	0,37	0,37	0,37	0,78	0,78	0,78	0,41
TOTAL		**5,00**	**5,44**	**5,20**	**5,70**	**4,96**	**5,11**	**5,03**

(a) Assets

LIABILITIES		year 0 (M$)	6 month (M$)	12 month (M$)	18 month (M$)	24 month (M$)	30 month (M$)	36 month (M$)
Equity								
	Running Year	-0,04	0,31	0,02	0,49	-1,15	-0,27	0,77
	Accumulated Profits	0,00	-0,04	-0,04	-0,02	-0,02	-1,17	-1,17
	Owner's Equity	5,00	5,00	5,00	5,00	5,00	5,00	5,00
Liability								
	Short Term Debt	0,00	0,00	0,00	0,00	1,00	1,50	0,00
	Prepaid Income	0,00	0,04	0,18	0,15	0,06	-0,20	0,20
	Creditors	0,04	0,13	0,04	0,08	0,07	0,25	0,23
TOTAL		**5,00**	**5,44**	**5,20**	**5,70**	**4,96**	**5,11**	**5,03**

(b) Equity and Liability

Figure 9: Balance sheet

		year 0	6 month	12 month	18 month	24 month	30 month	36 month
Working Capital		3,32	3,63	3,33	2,20	0,56	0,29	2,96
Liquidity								
Current Ratio		84	22,3529412	16,1363636	10,56521739	1,495575221	1,187096774	7,88372093
Quick Ratio		73,75	19,9411765	14,4545455	6,608695652	0,699115044	0,470967742	6,255813953
Solvency(100%)		124	31	22,6363636	23,7826087	3,389380531	2,296774194	10,69767442
Roe 2,0			0,0625	0,00403226	0,098393574	-0,230923695	-0,070496084	0,201044386
RoCe			0,062	0,004	0,094230769	-0,221153846	-0,054435484	0,155241935

Figure 10: Indicators

3.3.1 Working Capital

Working capital is the difference between current assets and current liabilities. As we can see in the table for each period our current assets are higher than the current liabilities this means we had more than enough resources to cover our debts and it is an indicator of short term financial health of our company, we had the potential to invest in expansion and grow of the company. Working capital value has steeply decreased after the 18th month and it reached the lowest value at the 30th month.

3.3.2 Liquidity

Liquidity is the ability to convert assets into cash quickly and cheaply. Liquidity indicators are:

- Current Ratio and Quick Ratio

Current Ratio measures our ability to pay off our current liabilities with our total current assets.

$$CurrentRatio = \frac{CurrentAssets}{CurrentLiabilities} \tag{6}$$

Quick Ratio measures how much our company is capable of meeting immediately imposable obligations.

$$QuickRatio = \frac{C.Assets - Inventory - PrepaidEx.}{C.Liabilities} \tag{7}$$

Current Ratio and Quick Ratio values have decreased over the years except for the last semester. Except at the twenty fourth and thirtieth month we can see that the current ratio and quick ratio are greater than 2, which means that the liquidity is too high and we could invested more money to get more debt.

3.3.3 Solvency

Solvency relates the company's overall ability to pay debt obligations and continue business operations.It measure our ability to meet our total financial obligations and long-term debts. Solvency indicator has been obtained by the following formula:

$$Solvency = \frac{Equity}{Debt} \cdot 100\% \tag{8}$$

The solvency ratio is too high in each period expect at the end of the second year and at the thirtieth month , generally when it is high it means that the company's business is in a strong financial position, the company is less dependent on external lenders because its investments are mainly covered by its business activities but in our case the value of the solvency ratios mean that it is time to invest more money to get more debt.

3.3.4 Rentability

Profitability ratios indicate how efficiently the company has generated profit and value for shareholders. Rentability ratios are:

- Return on capital employed
- Return on equity

RoE measures the company's ability to earn a return on the equity investments. RoE is calculated as net profit divided by equity. Return on capital employed is a financial ratio that measures a company's profitability in terms of all of its capital. RoCE has been obtained as net profit plus interest divided by total capital. Both ratios are negative in all the periods since that our net profits are negative. If RoE is bigger RoCE it is an indication of a well management by company. In our case this condition is satisfied except at the twenty forth and thirtieth month where it is the opposite due to the fact that our net profits are negative in each period despite their magnitudes have raise over the year.

4 Future Outlook

From round 1 we learnt that if we want to avoid getting into possible contingencies such as: not being able to buy any of the ships selected or to get any contract due to the huge number of companies which operate in the same zone; it is important to scheme secondary strategies and select more than one ship that matches the requirements of our strategies. In fact, the strategy adopted by our company during Round 2 brought some results not expected at the beginning, but considering mistakes and inconvenient encountered in the years of administration (bought a different vessel from which in the business plan and got a not profitable time charter contract for Andhika Sharmila obtained), it is possible to summarize a final company asset that can bring valuable results and and guarantees in the future and provides to the shares a satisfied view of our company in terms of reliability. Mistakes and inconveniences such as the ones we have encountered during our management would lead other companies to declare bankruptcy but we were able to overcome them in a very short period of time. Our motto is never give up even when the end seems near.

The contract selection and planning tools we use can be improved to increase the efficiency of these processes. Better tools will enable us to make decisions quicker, giving us an edge over the competition. The contract selection tool could be altered such that it also proposes an optimum bid rate, depending on the break even, competitor activity in the area and the kind of cargo. The planning tool can be expanded so that it suggests optimal plannings, using graph-based methods. In addition, automated bunkering optimization could be applied to shave off another 10% costs on average.
The time saved in the operational domain with the aforementioned measures, can be used to perform quarterly market analyses. This would allow us to quickly adapt our strategy, making us flexible in a dynamic market. We would have timely input on liquidating assets or expanding our fleet in certain areas.
What our company is keen to emphasise and make strong, is the ability to perform under pressure and to handle unexpected events that this business entails. Our future strengths that we believe are worth investing in are our experience in the world market, knowing which are the focal points to push and which are the common mistakes. We promise better future management capabilities, focusing on vessels with large capacity and maximum deck strength, capable of operating on the most profitable routes in existence, focusing on the perfect bid and maximum profit. We also envisage a fleet with different capabilities and programmed to cover the key points of the market, alternating in medium/large ships to small ships for contracts on more limited regions, trying to push hard on the affreightment contracts available in the market and setting perfectly the different capabilities and affinities.

With regard to the present we are able to represent resilience and tenacity, which especially distinguished us in the last months of the third year, leading to an overall improvement in our situation With our low risk business model, Mermaid Operator has the opportunity test out innovative and novel methods to improve our financial success and deepen our client relationships. After a good game round, Mermaid Operator and its staff are looking forward to becoming the frontrunner in the market when it comes to flexibility, creativity and reliability!