Daria Utkina

Benefits for a Large Grain Company of Investing in Purchase of Own Vessels

Bachelor’s Thesis

2014
ABSTRACT

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Daria Utkina Benefits for a Large Grain Company of Investing in Purchase of Own Vessels
Bachelor’s Thesis 35 pages + 9 pages of appendices
Supervisor Suvi Johansson, MBA
Commissioned by December 2014
Keywords vessel, transportation, investment, freight market

The purpose of this thesis was to determine whether the world’s largest grain export company should have its own fleet. Nowadays optimizing transportation costs is becoming more urgent with each passing day. This problem has arisen due to the fact that the shipping company’s current fleet is aging and grain is a specific cargo which has various restrictions and requirements for transportation. In this thesis two alternatives were considered namely chartering and using an own vessel. The advantages and disadvantages of the two options for the development of the company were reviewed.
As a result it is more profitable for the company to purchase its own vessels.
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LIST OF ABBREVIATIONS

OECD - Organization for Economic Co-operation and Development
(more information about http://www.oecd.org/about/membersandpartners/list-oecd-member-countries.htm)
TCE – Time Charter Equivalent
T/C – Time Charter
ROI – Return of Investments
DPB – Discounted Pay Back
IMO – International Maritime Organization
1 INTRODUCTION

Russia is one of the largest grain exporters to Egypt, Iran, Israel, Saudi Arabia, South Korea and Turkey. The market is growing and there is lack of new vessels and consequently a need to think about the benefits of acquiring own vessels. Therefore, the main question is whether it makes sense to invest capital in purchasing own vessels.

The purpose of this thesis was to consider the benefits of acquisition of own ships and the structure of the freight market; how to calculate freight rates and what is time charter equivalent. It is necessary to understand the difference between chartering and maintenance of own fleet.

To answer the main question of the thesis considering an investment and distribution, the benefits of investment are not only the increased the speed and quality of transportation, but development of growth strategies and an independence strategy of the company.

Various options for the company have been examined for answering the question. One option was the continued use of the freight market. The other option was an investment in own vessels. The question was to determine the need and the benefits of buying own vessels.

2 INVESTING.

“For the ordinary investor, the tramp company remains a form of investment to be avoided. It is a very special business and at its best financed and managed by those who are versed in its difficulties” (A.W.Kirkaldie British Shipping 1913)

Definition of 'investment'

An asset or item that is purchased with the hope that it will generate income or appreciate in the future. In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth. In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or appreciate and be sold at a higher price. (1)
A profit plays the most important role in the fund of investment. It acts as the main form of net income of the enterprise which expresses the value of the surplus product. Having paid taxes and other obligatory payments to the net profit, part of this can be sent on investment. As a rule, part of the profit is target for investment purposes and stored in the accumulation fund or other funds of similar purpose created by the company.(2)

The state or situation in the company as a rule is described by investment climate which is usually within a territory. Investment climate is a comprehensive assessment with indicators such as political stability, economy, administrative regulation for private property.

Factors affecting the investment climate:

- Regulatory and legal standards, directly or indirectly regulating relations in the sphere of investment.
- The legal situation, which is characterized by the implementation of laws in the first place.
- Attitude of the authorities and them influence to the business.
- Taxes and fees, their types, rates, availability of benefits and privileges to investors.
- Guarantees for the protection of private property.
- Financial environment, which is determined by the availability and quality of banking services, the activities of insurance companies and others.
- The labour market depends on qualified workforce, the value of its services and the possibility of training. (2)

For increasing capital of company the best way is investment. There are different types of payback period of investment: short term and long-term.

**Short term.**

Under short term investment payback period less than one year. (3)
The long-term.

Payback of this investments term is more than one year and it is not target for sold. A common form of this type of investing occurs when company A invests largely in company B and gains significant influence over company B without having a majority of the voting shares. In this case, the purchase price would be shown as a long-term investment. (1)

2.1 Development strategy

A comprehensive management plan is the company's strategy and position in the market which coordinating efforts, involvement and customer satisfaction, successful competition and global goals. The process of developing a strategy based on a thorough study of all the possible directions of development and activities and selects general direction, develops markets, services the needs, methods of competition, involved resources and business models. In other words the strategy of choice the path of development depend on markets, competition and methods of doing business. (4)

Different theories of development of the company and the existing development strategy were considered. Strategic planning is required for building a successful company. Effective business development strategy is capable of providing long-term development of the company.

Three basic strategies are:

- Incremental: Slow but steady approach (without attempting a leap) in which an already conceived end result is aimed for.
- Evolutionary: Slow but steady approach (without attempting a leap) in which there is no pre-conceived end result but each successive design or product is a refinement of the previous one.
- Grand design: Total transformation through a right-the-first-time approach. (5)
2.2 Independence strategy

Firstly it must be considered, why independent strategy is discussed in this thesis and how company can depend on another company. Outsourcing is the act of one company using another company for implementation of the particular activity, to focus more effectively on its own competence. Another definition is “The decision and subsequent transfer process by which activities that constitute a function, that earlier have been carried out within the company, are instead purchased from an external supplier”. (6)

Characteristics of outsourcing are:

- Activities that initially were performed in-house are transferred to an external party
- Assets, knowledge and, in some cases, people go over to that external party
- There will be an extended relationship between the parties involved over a long period of time
- In transferring the activity to the external party the buyer is exposed to both a cost and risk profile, both of which are new to the companies involved (6)

As for outsourcing the dependence on other companies which have their own requirements and standards should be considered. The question is how outsourcing affects the investment policy.

The data is based on the author’s working experience as ship operator in the broker’s company.

The interest of this thesis is not only to prove a profit of purchasing of the company’s vessels but to show the further development of the company. The analysis of the above issue allows to feel assurance at the market.

The strategy of independence in this thesis implies a certain independence of the company from others. Company itself sets the standards and requirements. After having its own ships company can not only receive monetary benefits, but the company is being more stable and independent company from others. For example, CO Glencore subsidiary, which is LLC "International Grain Company" (ООО «Международная зерновая компания»). The company bought its own terminal in Rostov, which is making no profit. But its benefit is that first and foremost the company maintains its own goods. Company which already has a huge capital, is
not only interested in greater profits, but interested in independence from other companies, there is a monopolization of the market. It makes the company more competitive.

2.3 Return of Investment

For reaching the break-even point and profit it is necessary to calculate a payback period. While calculating it is necessary to consider the following factors: a payback period, the time value for money, the cost price, the amount of investment, a discount payback period. (7)

Indicator of profitability of investment is used for determining the profit center by dividing net income by the amount of investment. Norma ROI is calculated by discounting rate i.e. coefficient for the allocation of future income in the present value. This figure should ideally exceed the risk-free rate of return of investment, which is calculated before tax. In assessing the profitability of investments, it is necessary to take in to account that investments are the main driving forces of the business which should provide a continuous activity of the company, production and services, as well as to ensure the development of the company in the future. (8)

2.3.1 Payback Period

“Payback period is the time in which the initial cash outflow of an investment is expected to be recovered from the cash inflows generated by the investment. It is one of the simplest investment appraisal techniques.”(9)

This is the formula which calculates payback period:

\[
\text{Payback Period} = \frac{\text{Initial Investment}}{\text{Cash Inflow per Period}}.
\]

For example, a $1000 investment which returned $500 per year would have a two-year payback period. (9)
2.3.2 Discounted Payback Period

The time value of money can be ignored. Discounted Payback Period is procedure accounts for time value of money.

Formula.
Discounted payback period have to be calculated the present value of each cash inflow taking the start of the first period as zero point. For this purpose the management has to set a suitable discount rate. The discounted cash inflow for each period is to be calculated using the formula:

\[
\text{Discounted Cash Inflow} = \frac{\text{Actual Cash Inflow}}{(1 + i)^n}, \text{ where}
\]

i - the discount rate;

n - the period to which the cash inflow relates.

3 SEA TRANSPORT AND THE ORGANIZATION OF THE SHIPPING MARKET

The improvement of the transport process is aimed at improving the efficiency and quality of products. The efficiency is the reduction of social labor expenses for transportation of the cargo unit, and qualitative indicators of transport are the rhythm and regularity of traffic safety and reduce the time of cargo delivery. In terms of maritime transport these primary goals are closely related to the safety of navigation and environmental protection.

Transportation of cargoes by sea is the most simple and cheap form of transportation. Shipping plays a key role in the life of the world economy, occupying a central place in the emerging unified global transportation. A characteristic feature of the modern development of international maritime transport is the fact that the share of developing countries is increasing at the moment exceeding 15% of the world’s complete tonnage. The mechanism of the effects of shipping on the global economic environment has been studied in some detail: factors such as the level of
freight rates, technical-economic indicators and the nature of the services navigation directly affect economic growth and the stability of the global economy in general and can have a serious impact on the conditions of development of individual countries and entire regions. In addition, the level of development of shipping directly linked to economic growth in many countries and for some countries it is an important source of national income.

Benefits of sea shipping:

- Maritime transport has no alternative in transcontinental transportation. Ships provide 98% of foreign transportation of Japan and the UK, more than 90% of U.S.
- Modern sea transport can carry almost any type of cargoes - liquid, solid, granular, brittle, and others Created a special vessel for the carriage of certain types of goods - tankers, lighters, reefers, RO-RO, LO-RO, OBO, VLCC, ULCC, and many others.
- Lower cost compared to other modes of transport. The construction of large vessels, the use of the latest technological advances, including the loading and unloading operations in ports, in recent years has reduced the share of transport in final price of goods from 11% to 2%.
- Uniform standards. Modern ships are built according to uniform standards, which significantly speed up the processes of loading and unloading.
- Using the containers for carriage. It not only just protects the cargo from malicious attacks and accidental damage, but also from the adverse effects of nature. (10)

Currently, there are three forms of navigation: tramp, commercial shipping and liner shipping.

Before considering transportation by sea it is necessary to understand which organization is responsible for it.

**International Maritime Organization – IMO**

IMO is a specialised agency of the United Nations with 171 member states and three associate members.
Special function:

- Acts as a specialized Agency of the United Nations;
- A consultative and Advisory organization;
- Responsible for the organization of security at sea and protection of the environment, as well as dealing with legal issues related to international shipping;
- Facilitates interaction between governments on technical matters to meet the highest standards for safety at sea and pollution prevention;
- Adopts and improves binding and non-binding international conventions, codes, resolutions, minutes, circulars and guidelines.

The organization has made more than 40 conventions and agreements, thousand codes and recommendations that are being implemented on a global scale. (11)(12)

3.1 Modern legal regulation

The basis of the modern international legal regulation of maritime transportation of goods consists of three conventions:

1. International Convention for the Unification of Certain Rules relating to bills of lading, adopted in Brussels on 25 August 1924 (the Hague Rules)
3. United Nations Convention on the carriage of goods, adopted in Hamburg March 30, 1978 (Hamburg Rules) Thus, carriers today have to deal with three groups of cargo carrying out maritime transport on the basis of a legal regime. (13)

For example consider The Hague Rules:

The Hague rules were developed by the International bar Association International chamber of Commerce proposed in September 1921 at the conference in the Hague. With the development of merchant shipping it has been necessary to reduce the size of the exceptions to the liability of the carrier, to increase their liability. These ideas were embodied in a series of amendments and modifications of the Hague rules, issued by the Brussels Protocol 1968. Revised at the conference in Brussels rules known as the rules of the Hague-Visby. (14)
The following are critical provisions and law changes found in the Rotterdam Rules.

- It extends the period of time that carriers are responsible for goods to cover the time between the points where the goods are received to the point where the goods are delivered. (Note: This applies only if there is a sea leg involved in the transport. Thus, the Rotterdam Rules are not completely multimodal since all multimodal carriage excluding a sea leg is outside of the scope of application.)
- It allows for more e-commerce and approves more forms of electronic documentation.
- It obligates carriers to have ships that are seaworthy and properly crewed throughout the voyage. The level of care is set to due diligence, which is the same as in the Hague Rules.
- It increases the limit liability of carriers to 875 units of account per shipping unit or three units of account per kilogram of gross weight.
- It eliminates the "nautical fault defense" which had prevented carriers and crewmen from being held liable for negligent ship management and navigation.
- It extends the time that legal claims can be filed to two years following the day the goods were delivered or should have been delivered.
- It allows parties to certain "volume" contracts to opt-out of some liability rules set in the convention. (14) (15)
3.2 Sea transport

3.2.1 Different types of vessels

Dry cargo vessels are designed to carry general cargo as well as oversized cargoes. They are equipped with cranes and booms for loading and unloading. Goods can be packaged in many different ways i.e. in boxes, in bales, in barrels. Dry cargo vessels have two decks and bulk cargo holds, which occupy the main body portion. As the loading equipment used cranes of up to 200 tons. As a rule, modern ships of this type have a refrigerated hold, intended for the carriage of goods with a certain temperature.

Specialized cargo ships transporting goods are called according to the type of cargo i.e. timber, container, reefer, ro-ro vessels or bulkers.

**Bulk carrier** is the type of vessel for the carriage bulk cargoes in bulk, used for the transport of coal, building materials, grain, sand, gravel and ore. Bulk carriers are single-decked ships i.e. ships with no tweendecks in their holds but fitted out with various types of special cargo handling equipment. The cargo is often short straight into the hold and discharged by grabs, pneumatic suction plants and other bulk handling methods. The mordent ocean-going bulk carrier dates from the mid-fifties. There are bulk carries of over 150 000dwt today, but the largest of those in normal use are between 60 000 and 70 000 dwt, known as Panamax size. Some bulk carriers equipped with conveyor belts, which are unloaded from the cargo hold, the so-called self-unloading vessels.

**Timbercarrier** vessels are used for shipping timber and lumber as a rule they are single deck. Marine timber reinforced ice reinforcements that allow entering the ports of the Arctic basin.

**Container ship** have a single deck vessel with large holds, the dimensions of which are selected multiples of the dimensions of the containers. There are several generations of ocean container ships with a capacity of 1200 containers up to 13,000 containers. Container capacity holds increases due to the freeboard.
Operation expensive ocean container is economically feasible only between the base ports Intercontinental lines with great traffic. Shipping containers in small batches between the ports of a given region provide feeder container ships. The operation of the feeder container ships with a capacity of up to 600 containers - greater frequency of visits to ports, as well as the servicing of small ports, without the use of specialized handling equipment.

A variety of containers are lighter carrier are ships to transport the floating barges. These barges carrying capacity of 370-2000 tons, with a lighter carrier is discharged into the water, and then towed to the required berth. Lighter carrier is used in places where the big ships do not go for any reason.

**The tanker** is the most common form of transport vessels used to transport oil and other liquid cargoes. Tanker, this single-deck vessel, its carrying capacity is up to 400 thousand tons. The upper deck of the vessel is equipped with a plurality of tubes through which the loading and unloading of cargo. Truck part of such vessels is divided by transverse and longitudinal bulkheads on cargo tanks (compartments) that are filled with liquid cargo. The tanker has a pump-room, through which the filler is unloaded cargo. Such vessels are equipped with double bottom and double sides - to prevent the cargo in the environment. Some ships of this type can simultaneously carry up to 5 types of bulk cargoes. Unloading tankers occurs near the speakers far berths on which are pipelines to shore. Mammoth tankers of 70,000 to 150,000 dwt, with very large crude carriers of 150,000 to 300,000 dwt, and ultra large crude carriers of 300,000 to 800,000 dwt. Even mega tankers of 1,000,000 dwt and larger. VLCCs and ULCCs require 65 to 90 ft channel depth and sufficient space in which to turn. They are 300-400 meters long. The deepest ports have depths of 45 to 60 ft in dredged channels.

**LNG** carry different gases (propane, methane, ammonia), which are transported in liquefied form. Offshore LNG independent tanks are cylindrical, rectangular and spherical shape. For example, gas for delivery to methane, which is transported at a temperature of -160 ° C to have a rectangular shape of the tank. Marine gas carriers equipped with pumps, piping systems, compressors - to perform unloading.
3.2.2 Difference between liner and tramp ships

Liner ships make regular voyages, following pre-established schedules and determined ports of call (may include only two or more ports commonly). Tramp ships operate wherever the market dictates.

Tramp shipping is occasional transport of goods for payment, with no fixed schedule. Tramp vessels as a rule are chartered by the Charter Party. Freight is calculated by multiplying the freight rates established in the charter, on the quantity of goods (sent or delivered).(22)

3.2.3 Tramp Shipping

In tramp shipping vessels are operated on an irregular basis. They are fixed to certain areas, and move freely from one section of the freight market to another depending on demand for tonnage and supply of goods. Freight cost and other commercial terms are installed on each flight or several flights on the basis of the contract of carriage by sea, which has the form of a charter. In most cases, the contract is with the broker or freight broker. The charter contains a number of mandatory conditions relating to the vessel, cargo, freight, payment procedure stevedoring operations, dispatch and demurrage. (17)

3.2.4 Liner Shipping

Liner shipping is a specific form of sea transport services, in which the carrier arranges between established ports of the regular delivery of cargoes on a pre-announced schedule. All senders use the standard contract - the bill of lading and stable prices. The bill of lading is a document issued by the shipowner to the shipper. (22)

3.3 Different type of charter contract

Voyage charter is the hiring of a vessel and crew for a voyage between a load port and a discharge port. The ship owner is paid on per ton or lumpsum basis by the charterer. The port costs, fuel costs and crew costs are paid by the owner. Freight is the payment for the rent of the vessel.
Under the contract of a voyage, the charters’ dates for loading and discharging are strictly agreed and known as laytime. In case of infringement, charterers pay demurrage or the ship owner can consule the voyage.

**Contract of Affreightment** (COA) is the same voyage charter, but for period of time on a specified route. Agreed frequency of cargoes may require more than one ship. That means charterers make the agreement with ship owners for carrying definite on amount of cargo.

**Time charter** is the hiring of a vessel for a specific period of time. The vessels are in full possession of the owner but the charterers choose the ports and direct. All fuel the vessel consumes, port charges, commissions and a daily hire to the owner of the vessel are paid by the charterers. It is used for a specified route only.

**Bare boat charter** is an arrangement for the hiring of a vessel without crew. The charterer obtains possession and full control of the vessel along with the legal and financial responsibility for it. All costs for vessels the same with time charter but it is charterers’ responsibility. Bare boat charter includes all operating expenses, crew, P&I and H&M insurance. If the fact during this contract the ship owners are owners just on the paper and they receive freight from charterers.

(18)(19)

### 3.4 Freight rates

Freight rate is a price at which a certain cargo is delivered from one point to another. Charterer pays a ship owner for the use of a ship in a voyage charter. The cost which a ship owner or charterers is pay for the transportation of cargoes is established by a number of factors.

The main factors in determining the freight rate are:

- Mode of transportation
- Weight
- Size
- Distance
- Points of pickup
- Delivery and the actual goods being shipped

All of these factors play their own independent role in establishing the rate or price for the freight will be transported. (17)(20)

There are several websites which can help calculate the freight rate, for example: http://www.uship.com/freight/ and http://worldfreightrates.com/freight. Also, charters can use the freight report and ask freight brokers about freight rates.

3.5 Time Charter Equivalent

"A shipping industry standard used to calculate the average daily revenue performance of a vessel. Time charter equivalent is calculated by taking voyage revenues, subtracting voyage expense and then dividing the entire total by the round-trip voyage duration in days. It gives shipping companies a tool to measure period-to-period changes". (1)

During the calculation of TCE, voyages costs are used i.e. fuel, ports charges, canal dues, cleaning cost, fumigation, customs fees and as a result receive data in the cost in USD per one day. It is profit of vessel for one day.

TCE does not include payment for capital costs and operating costs i.e. supplying crew and vessel parts and equipment. (21)

3.6 Chartering of vessels

Chartering of vessels is hiring the ship under the specified contract payment of which is freight rate. (chapter 3.3)

A charterer can be a party without a cargo. The vessel is taken on charter for agreed period from the owner for hire rate and makes a profit in a rising market by rendering the vessel to other charterers.
Standard contract depends on the type of vessel and the type of charter and description terms and details of agreement in a charter party. (22)

3.6.1 The Baltic and International Maritime Council.

The Baltic and International Maritime Council - BIMCO.

International shipping associations control 65 per cent of the world’s tonnage, shipowners, operators, managers, brokers and agents are members of this organization. The aim of this association is to protect global friendship, to provide information, advice and education of commercial shipping business practices.

This organization has about 2 300 members in around 130 countries. (23)(24)

3.6.2 Charter Party

The main contract of carriage in tramp shipping is a charter. Charter detailing the parties has agreed the shipping condition, and the conditions provided for obligations of the parties prior to the carriage of:

- Characteristics of the vessel
- The time
- Place of delivery of the vessel

Charter terms become binding upon its signing and not from the date of actual delivery of the vessel for loading vessel. Charterer, shipowner is provided by charter responsibility for failure of the vessel or tardiness.

There are pro forma charter for the transport of coal, coke, grain, oil, oil, fruit, and fertilizers. Some goods are designed by several charters depending on the direction of freight flows. Transportation of goods, for which there are no special formalities are usually carried out on the basis of the charter "GENCON."

Advantage preforms charter is that they take into account the interests of shipowners and charterers. Most of these charters are a compromise worked out after lengthy negotiations.
The Parties shall agree with charter standard preform and your changes. Your changes charter takes precedence. Often all the changes and additions are reduced in the attached pro forma charter called addendum (from the English. Addendum - the application, appendix).

Basic pro forma charter: Gencon; Synacomex; Vegoil etc. (22)(25)(26)
For grain cargo the most popular pro form is “Gencon” (appendices 1)

4 INVESTING IN OWN VESSELS

4.1 Grain cargo

Grain has been transported by ship for more than one thousand years. This issue has attracted attention and it is one of the important maritime markets in view. During carriage of grain in its natural form, by bulk, the ship and ship crew have a potential danger to be poured in the cargo area when the vessel is experiencing rocking. Therefore, the problems arising in connection with such kind of transportation are often the subject of national regulations and international agreements.

Biological properties such as grain breathing, ripening, germination and self-warming should be taken into consideration. The carrier is obliged to take into account all the characteristics of the cargo and, firstly, to ensure rational loading and safe navigation and, secondly, safety of cargo.

All grain goods are divided into three groups: cereals, legumes and oilseeds. Physical properties include fluidity, shrinkage, thermal conductivity and sorption properties. In general, wheat is used for human consumption, while coarse grains are used as feed for livestock. Oil seeds are used to manufacture vegetable oil for human consumption or for industrial use, while their protein-rich residue is used as a raw material in animal feed.
Canada and Australia are in the first place for total grain production. Second place is taken by Argentina and United States followed by Latin America, Africa The Middle East, Asia and Pacific region, excluding Japan.

The principal vessel classes used in the grain trade are Panamax and Handymax. But in this paper Russian export which widely uses sea-river fleet is being considered. The most profitable to be used is a general purpose vessel.(32)

Grain export from Russia for 2013:

Table 1. grain export from Russia for 2013. (27)

<table>
<thead>
<tr>
<th>Grain Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARLEY</td>
<td>11.21 %</td>
</tr>
<tr>
<td>CHICK PEAS</td>
<td>0.55 %</td>
</tr>
<tr>
<td>CORN</td>
<td>10.66 %</td>
</tr>
<tr>
<td>FEED STAFF</td>
<td>3.97 %</td>
</tr>
<tr>
<td>FLAX SEEDS</td>
<td>0.21 %</td>
</tr>
<tr>
<td>LENTIL</td>
<td>0.00 %</td>
</tr>
<tr>
<td>MILLET SEEDS</td>
<td>0.13 %</td>
</tr>
<tr>
<td>OIL SEEDS</td>
<td>0.39 %</td>
</tr>
<tr>
<td>PEAS</td>
<td>0.59 %</td>
</tr>
<tr>
<td>RAPE SEEDS</td>
<td>0.17 %</td>
</tr>
<tr>
<td>RICE</td>
<td>0.20 %</td>
</tr>
<tr>
<td>RYE</td>
<td>0.09 %</td>
</tr>
<tr>
<td>SORGHUM</td>
<td>0.19 %</td>
</tr>
<tr>
<td>WHEAT FEED</td>
<td>1.62 %</td>
</tr>
<tr>
<td>WHEAT MILLING</td>
<td>70.02 %</td>
</tr>
</tbody>
</table>

4.1.1 Rules of Transportation.

There are rules for maritime transport of grain in International Code for the Safe Carriage of Grain in Bulk.
Before leaving the port of loading, the vessel must obtain a document which affirms compliance with all the rules of carriage under this Convention. It must be known as proof that the vessel is able to meet the requirements of these rules.

Such document and stability data when loading grain and related plans can be drawn up in the official language or languages of the country where the document is issued. A copy of this document to the stability of grain loading and related plans should be on the board of the vessel, so that if it is necessary the captain could present them to check the contracting government of the country in the port of loading.

All the timber used in dunnage for grain transportation must be of good quality and of such types and varieties that are well established for this purpose. Actual final dimensions of the timber must comply with the dimensions shown below. Plywood type used for outdoor sized with waterproof glue and installed so that the direction of the fibers in the outer layers perpendicular supporting posts or links, may be used provided that its strength is equivalent to the strength of solid wood of appropriate dimensions.

In addition to all the documents physical and biological properties of the grain must be taken into account. The biological properties include respiration, ripening, germination, self-heating, and contamination of storage pests. The density of the grains ranges from 0.3-0.45 ton / m$^3$ for sunflower seed to 0.85 – 0.9 m / m$^3$ for rice.

Humidity is one of the main physical and mechanical properties of grain cargoes. The determining safety will by dry state of grain. Increased humidity leads to a certain amount of free water, which can take an active part in the proceeding in the grain physical and chemical processes. Standards provide four states grain humidity in per cent: dry - 13-14 medium dryness – 14.1 – 15.5 wet – 15.6 - 17 and raw - over 17. Grain moisture depends on the ambient humidity, as grain cargoes have increased hygroscopicity. If the humidity is greater than 18%, then begin germination and accompanied by an increase in temperature of the grain mass. At a temperature of 50-55 °C appears mustiness and putrid and smell and grain decomposes rapidly. High humidity causes the active development of microorganisms and pests of grain.
Humidity grain mass has great influence on such properties as that is adhesion grains sticking to the walls of the transport containers, which complicates and increases the discharge losses and on autohesion (interaction homogeneous particles grains with each other), thereby, a rapid rash of bins. If autohesion dominates the adhesion, the unloading of the goods takes place completely.

Fluidity of the particles of grain cargo at rest and motion is characterized by the angle of repose in which the movement is smaller than the rest.

Low thermal conductivity of grain leads to the accumulation of heat in the mass of the load and promotes a progressive self-heating. When heated to a temperature of 50-55 °C grain appears putrid, malty flavor, mustiness, and its mass decreases drastically. Changes in chemical composition and subsequent damage to grains also occur under the influence of light.

When taken to the carriage grain must be monitored and comply with established standards of humidity 16%, inclusions, pest infestation. (33)

Depends freight rates of stowage factor:

<table>
<thead>
<tr>
<th>Grain Cargo</th>
<th>Stowage Factor (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>Max 45 Min 44</td>
</tr>
<tr>
<td>Rye</td>
<td>Max 50 Min 48</td>
</tr>
<tr>
<td>Barley</td>
<td>Max 55 Min 52</td>
</tr>
<tr>
<td>Soybeans</td>
<td>Max 55 Min 51</td>
</tr>
<tr>
<td>Corn</td>
<td>Max 55 Min 51</td>
</tr>
<tr>
<td>Rape seeds</td>
<td>Max 55 Min 50</td>
</tr>
</tbody>
</table>

![Stowage Factor for grain cargoes in bulk](chart)
4.2 General purpose vessels

This thesis will consider only this type of vessel, because the topic is investments in own vessels. In the grain export and import company which implements carriage in Black Sea area.

This reduces the turnaround time of vehicles and increases their productivity. This is a reason to decide the type of vessel between:

- **Omskiy**
  single-deck twin-screw dry cargo ship carrying capacity 3000 tons, with forecastle, with double sides and double bottom, with four covered holds amidships, with the engine room and accommodation superstructure aft.

- **Sormovskiy**
  big dry cargo “river – sea”, with four covered holds, with forecastle and poop, with double sides and double bottom, with the engine room and superstructure aft. Vessels are designed for bulk cargo, general cargo and timber. Cargo capacity – 3353tonns

- **Volgo-Balt**
  river-deck twin-screw dry cargo ship with one open cargo hold and four open cargo holds, with double sides, double bottom, forecastle, aft engine room and accommodation superstructure.
  Cargo capacity of 5000-5300 tons.

Transportation in the courts of mixed navigation started relatively recently in the 1960's, but due to the high economic efficiency, quickly developed. Geography of transportation and include rivers and canals European part of Russia, as well as the ports of the Amur River basin, the sea: White, Baltic, North, Dzovskoe, Black, Caspian and Japan. In recent years the river shipping activities are being increasingly developed international cargo vessels able.

Three international regular shipping lines are organized: Caspian Volgo-Baltic Line, Mediterranean Volga-Don line that runs year-round, and Forestry Freight Line Cherepovets – Rostov to) – Ports of Bulgaria Varna and Burgas.
The experience of these three lines showed high economic efficiency of the linear-navigation vessels “river – sea” compared with the typical river shipping tramp sous-pudding. Linear navigation improves performance and increases the monetary and financial performance of shipping companies. Message “river – sea” is a promising form of organization of transport, especially foreign trade goods. This finding confirms the dynamics of traffic courts nth “river – sea”. (30)(31)

4.3 Freight traffic

Annually, more than 17 million tons of grain from Russia are exported. Therefore it is important to understand, in what direction it is exported, and which countries are the largest beneficiaries of this type of cargo. For proof it to be considered grain report which provided by Nitro Shipping LTD. The company provides brokerage shipping and works with such goods as bulk, grain, bulk, general, and oversized containers.

The largest producers of wheat are the United States, India, Canada, France. Also, Italy, Australia, Turkey and other countries cultivate it on a large scale.

The main consumers of grain:

North Africa and the Middle East:

- Egypt (the largest importer of heat - 7.3 to 8.2 million, the share of maize imports - an average of 4.1 to 5.3 million tonnes).
- Tunisia (wheat imports is 1.1 to 1.4 million tonnes, barley - 0.5 0.9 million tons);
- Saudi Arabia (the largest importer of barley in the world - about 7.3 million tons),

Countries in Asia and the Pacific:

- China (imported up to 6.7 million tonnes of wheat);
- Japan (annual import volume of cereals is about 25 million tons, including corn accounts for 66% wheat 21% barley, 6%, rice (brown), 3%, 1% rye, oats, 0.5%), and others.
Recently there has been an increase in imports of Black Sea grain countries such as Egypt, Iran, Pakistan. This thesis will consider this sector of market.

4.4 Example of company

An example of the company was taken company Glencore International AG. Global Energy Commodities and Resources.

Glencore is the largest trader in the world and has a number of production facilities all around the world. Supplied metals, minerals, crude oil, oil products, coal, natural gas and agricultural products to international customers in the automotive, power generation, steel production and food processing industries.
The company have subsidiary in Russia. It is International Grain Company.

International Grain Company (GCI) was established by the Swiss trader Glencore International AG in April 2004 and is Russia's largest grain exporter. In July 2006-March 2007, the MKS has exported 1.78 million tons of grain, which was 16.1% of total Russian exports. The company delivers grain to Greece, Algeria, Iran, Egypt, Saudi Arabia, Japan, India and other countries. GCI has nine elevators in
Kabardino-Balkaria, Krasnodar and Stavropol, Rostov, Volgograd and Kursk regions. The total storage capacity of cargo for carriage is 700 thousand tonnes of grain. Revenues in 2006 it is 11.99 billion rubles and net profit is 42,310,000 rubles.(34)(35)

4.4.1 Consider areas freight rates

This thesis covers the areas on which the company works: Turkish Black Sea (TBS) and Georgia, Marmara Sea, Nemrut Bay (Izmir), Mersin and Iskenderun, Egypt in Mediterranean Sea, Albania and Adriatic Italy (northern part).

In the most profitable months the company carried approximately 40-50 thousand tons a month to the TBS and about 15 thousand tons in other directions. The biggest profitable months are June, July, August. In other months the company has less than 50% capacity of cargo. Anyway, the company has approximately 30% of market place. That means that the company has always cargo to carry.

For example freights for 3-3,500 mts export Azov / Rostov to 1sp Egypt in Mediterranean in 2008-2014.

![Freight analyse from Azov / Rostov to Mediterranean (3)](image)

Figure 2. Freight analyse from Azov / Rostov to Mediterranean (3)
4.5 Accounting

The calculations are very important for future investment.

This part addresses issues such as the calculation of return of investment, the payback period, cost of the ship and consider full voyage with all costs.

Calculation of freight rates is necessary to compare and identify the best ways of cargo transportation. Benefit from the acquisition of own vessel also depends on the freight market and the rates.

To answer the main question, it was necessary to calculate a brief description, examples and the results are shown below.

4.5.1 Cost for freight

To calculate the freight cost of the vessel was considered voyage from Rostov to Egypt in the Mediterranean Sea.

Below is map of voyage where could find more detailed information. The program NETPAS is special program for shipowers which given all details for planning and current voyage.

Figure 3 Voyage from Rostov to Port Said. NETPAS.
Take the average market for June-July-August 2014 (29)

Table 2. Nitro Shipping Freight report for grains

<table>
<thead>
<tr>
<th>Freight rates in Billion (for 3000 mts of grain)</th>
<th>2013-07-01</th>
<th>2014-05-01</th>
<th>2014-08-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omskiy Omsk</td>
<td>3000 mts</td>
<td>170 000</td>
<td>180 000</td>
</tr>
<tr>
<td>Omskiy Omsk</td>
<td>3000 mts</td>
<td>170 000</td>
<td>180 000</td>
</tr>
<tr>
<td>Volzhskiy Ufa</td>
<td>5000 mts</td>
<td>170 000</td>
<td>180 000</td>
</tr>
<tr>
<td>Volzhskiy Ufa</td>
<td>5000 mts</td>
<td>170 000</td>
<td>180 000</td>
</tr>
</tbody>
</table>

Freight rate - 49 for 3000mgs (data were taken for 31.07.2014)

The cargo capacity 3000mgs, the price for chartering will be 147,000$

If traffic volumes 40 000t per month – it means that the cost is about 1,960,000$ per month and if multiply it for 3 season month, it will be 5,880,000$. (28)

4.5.2 Cost of vessel

Average price for this type of vessels depends on year of issue.

Table 3 Different type and price for vessels

<table>
<thead>
<tr>
<th>Type of vessel</th>
<th>Cargo Capacity</th>
<th>Year of construction</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omskiy</td>
<td>3 000 mts</td>
<td>abt 1985</td>
<td>1 700 000 – 1 800000 $</td>
</tr>
<tr>
<td>Omskiy</td>
<td>3 000 mts</td>
<td>abt 1990-1992</td>
<td>abt 2 000 000$</td>
</tr>
<tr>
<td>Volzhskiy</td>
<td>5 000 mts</td>
<td>adt 1995</td>
<td>abt 5 500 000$</td>
</tr>
</tbody>
</table>
The Omskiy type of vessel which has DWCC abt 3000 mts / 153,000 cbft.

Figure 4 Type of ship “Omskiy”

Vessel with single-deck twin-screw dry cargo ship carrying and cargo capacity 3000 tons, with forecastle, with double sides and double bottom, with four covered holds amidships, with the engine room and accommodation superstructure aft. Purpose of vessel is carrying the cargo like timber, grain, general and container. Container capacity is 100 TEU (36 on deck and 64 on hold). (28)(31)

**TCE for this voyage**

All calculations are performed on the basis of data provided by ООО «Черноморо-Балтийская Судоходная Компания».

Further the decides the Omskiy type which take 3000 mts. In calculations take 3000 mts for cargo.

To start the calculations should have been taken average freight rate for one year. It is approximately 45 USD/mts.

The full voyage is taken 25 days, it is include 18 days for carry and 8 days for loading/ discharging and acrossing the Bosphorus canal.

Next costs is disbursements in Egypt, Rostov and channel.
In Egypt it is 6000 USD, Rostov – about 9000 USD and Channel in both side – 1500 USD.

For calculating fuel cost needed consumptions during idle and during voyage. During idle it is 0,3t per day and during the voyage 3t per day. The price for fuel is about 800 USD pet ton. The full cost for fuel on this voyage is about 44 880 USD.

Table 4 Summary table for price.

<table>
<thead>
<tr>
<th>Cost for voyage</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days</td>
<td>25 days</td>
</tr>
<tr>
<td>Disbursement</td>
<td>16 500 USD</td>
</tr>
<tr>
<td>Fuel</td>
<td>44 880 USD</td>
</tr>
<tr>
<td>Freight rate</td>
<td>45 USD/mts</td>
</tr>
<tr>
<td>Cargo capacity</td>
<td>3 000 mts</td>
</tr>
</tbody>
</table>

\[
TCE = \frac{(135 000 - (44 880 + 16 500))}{25} = 2\ 831,5 \text{ USD/days}
\]

TCE does not include other cost for vessel such us operating costs, which include supplying crew and vessel parts and equipment and capital costs. Operating cost for this vessel is approximately 1800 per day. This is the vessel profit for one day. In the result is the net profit vessel for one day, which can receive by using this formula.

Net profit vessel for one day = TCE – Operating cost. During the accounting it is 2 831.5 – 1800 = 1031.5 USD

Short explanation of accounting:
NET PROFIT: 2 831.5 – 1800 = 1031,5 USD
365 days *net profit = 376 497.5 USD per year.

To continue the calculation of the cost of vessel a payback period must be considered according to the formula:
Payback Period = Initial Investment / Cash Inflow per Period.
In the result 2 000 000 / 376 495,5 = 5,3 year. It is without very important discounter coefficient. With it the payback period will be 7 years. More details in table with full accounting which can checked in Appendix 4.

**Final comparison between chartering and cost own vessel.**

The comparison is very important to answer the main question of this work. Summarize the results of our calculations. Given the calculations were based on voyage between Rostov-on-Don, Russia and The Port Said, Egypt.

First for freight vessel:
The cost for full voyage for company is 135,000USD, if taken the average freight rate is 45 USD per ton and cargo capacity is 3000mts
The cost for own vessel for one voyage 131 055USD, calculation include the TCE.
The more detailed information about calculation in appendix 4.
More profitable for company to purchase own vessels and the company start have some assets.
5 CONCLUSION

After considering the freight market and comparing the cost of servicing an own vessel for voyage and the calculations of return on investment, it is clear that for a large company it would be a good prospect to buy its own fleet. This is due to the fact that Glencor CO is interested in not only large profits but a stable place in the market and more competitive opportunities.

During the study a reply was received to the main question of thesis. It was whether it makes sense to invest capital of the company in purchasing its own vessels. When company is buying it own vessels it has these advantages:

- Definition of independence from other shipping companies.
- Full control of cargo to the recipient.
- The company acquired assets. And, therefore, if not a stable market and if the company shall cease to benefit from vessels, it will be able to sell it.
- Monitoring the market.

This all allows the company to grow and gain more customers and capture a larger part of the market.
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27. Summary report / grain export 2013-2014. TBI LLS, Novorossiysk


### APPENDIX

#### Appendix 1

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shipyards</td>
<td><strong>RECOMMENDED</strong></td>
</tr>
<tr>
<td></td>
<td><strong>THE BALTIK AND INTERNATIONAL MARITIME COUNCIL</strong></td>
</tr>
<tr>
<td></td>
<td><strong>UNIFORM GENERAL CHARTER (AS REVISED 1962, 1979 AND 1984)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>MARINE CODES WHICH ARE SPECIFICALLY APPLIED TO CHARTER</strong></td>
</tr>
<tr>
<td></td>
<td><strong>CODE NAME: “GENCON”</strong></td>
</tr>
<tr>
<td></td>
<td><strong>PART I</strong></td>
</tr>
<tr>
<td>2. Place and date</td>
<td></td>
</tr>
<tr>
<td>3. Owners/Place of business (Cl. 1)</td>
<td>4. Charter/Place of business (Cl. 1)</td>
</tr>
<tr>
<td>5. Vessels name (Cl. 1)</td>
<td>6. GT/NT (Cl. 1)</td>
</tr>
<tr>
<td>7. DWT/tonnage or summer load line in metric tons (DWT) (Cl. 1)</td>
<td>8. Present position (Cl. 1)</td>
</tr>
<tr>
<td>9. Expected ready to load (DWT) (Cl. 1)</td>
<td></td>
</tr>
<tr>
<td>10. Loading port or place (Cl. 1)</td>
<td>11. Discharging port or place (Cl. 1)</td>
</tr>
<tr>
<td>12. Cargo also: state quantity and margin in Owners option, if agreed; if full and complete cargo not agreed state &quot;port carry&quot;) (Cl. 1)</td>
<td></td>
</tr>
<tr>
<td>13. Freight rate also state whether freight prepaid or payable on delivery (Cl. 4)</td>
<td>14. Freight payment (state currency and method of payment; also beneficiary and bank account) (Cl. 4)</td>
</tr>
<tr>
<td>15. State if vessels cargo handling gear shall not be used (Cl. 5)</td>
<td>16. Laytime (state laytime for load and discharge, if agreed. If no laytime is agreed in either, only laytime for load and discharge, if in (c) only) (Cl. 6)</td>
</tr>
<tr>
<td>17. Shippers/Place of business (Cl. 6)</td>
<td></td>
</tr>
<tr>
<td>18. Agents (loading) (Cl. 6)</td>
<td></td>
</tr>
<tr>
<td>19. Agents (discharging) (Cl. 6)</td>
<td></td>
</tr>
<tr>
<td>20. Damage rate and manner payable (loading and discharging) (Cl. 7)</td>
<td>21. Cancellation date (Cl. 8)</td>
</tr>
<tr>
<td>22. General Average to be adjusted at (Cl. 12)</td>
<td></td>
</tr>
<tr>
<td>23. Freight rate (state if for the Owners’ account) (Cl. 13) (c)</td>
<td>24. Brokers’ commissions and to whom payable (Cl. 18)</td>
</tr>
<tr>
<td>25. Law and Arbitration (state if for (a) 19, (b) 19 or 109) if Cl. 19 (c) agreed also state Place of Arbitration) (Cl. 18)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(q) State maximum amount for small damage/lamentation arbitration (Cl. 19)</td>
</tr>
<tr>
<td></td>
<td>26. Additional clauses covering special provisions, if agreed</td>
</tr>
</tbody>
</table>

It is mutually agreed that this Charter shall be performed subject to the conditions contained in this Charter Party which shall include Part I as well as Part II. In the event of conflict with conditions, the provisions of Part I shall prevail over those of Part II to the extent of such conflict.

| Signature (Owners) | Signature (Charterers) |
PART II


1. It is agreed between the parties mentioned in Box 3 as the Owners of the Vessel named in Box 5 of the G.M.T. included in Box 6 and carrying about the number of metric tons of deadweight capacity at date on summer loading stated in Box 7, now in position as stated in Box 8 and expected ready to load under this Charter Party about the date indicated in Box 9, and the party mentioned as the Charterers in Box 4 that:

(a) The Charterers shall, as soon as her priority commitments have been completed, proceed to the loading port(s) or place(s) stated in Box 10 or so near thereto as she may safely get in and be always afloat, and there load a full and complete cargo of ship's cargo agreed to be at the Charterers' risk and responsibility as stated in Box 12, which the Charterers bind themselves to ship, and being so loaded the Vessel shall proceed to the discharging port(s) or place(s) stated in Box 11 as ordered on signing Bills of Lading, or so near thereto as she may safely get in and be always afloat, and there deliver the cargo.

2. Owners' Responsibility Clause

The Owners are to be responsible for loss of or damage to the goods or for delay in delivery of the goods only in case the loss, damage or delay has been caused by personal want of due diligence on the part of the Owners or their authorized agents and by the Vessel in respect of seaworthiness and to secure that she is properly manned, equipped and supplied, or by the personal act or default of the Owners or their Manager.

And the Owners are not responsible for loss, damage or delay arising from any other cause whatsoever, even from the neglect or default of the Master or crew or some person employed by the Owners on board or ashore for whose acts they hold, but for this Clause, be responsible, or from unseaworthiness of the Vessel on loading or commencement of the voyage or at any time thereafter.

3. Deviation Clause

The Vessel has liberty to call at any port or ports in any order, for any purpose, to sail without pilots, to tow and/or assist Vessels in all situations, and also to deviate for the purpose of salvaging life and property.

4. Payment of Freight

(a) The rate stated in Box 13 shall be paid in cash calculated on the intact quantity of cargo.

(b) The freight is payable at the rate of 15% free on an allotment, it shall be deemed earned and non-assignable, Vessel and/or cargo and last not lost.

Neither the Owners nor their agents shall be required to sign endorse bills of lading or freight prepaid unless the freight has actually been paid.

(c) If in default, it is to be paid to Box 13, freight or part thereof, payable at discretion it shall not be deemed earned until the cargo is thus delivered.

Notwithstanding the provisions under (a), if freight or part thereof is payable on delivery of the cargo the Charterers shall have the option of paying the freight or delivered weight/quantity provided such option is declared before breaking bulk and the weight/quantity can be ascertained by official weighing machine.

(d) Any draft survey or tally.

(e) Vessel's ordinary disbursements shall be advanced by the Charterers, if required, at highest current rate of exchange, subject to two (2) per cent to cover insurance and other expenses.

5. Landing/Discharging

(a) Costs/Reck

The cargo shall be brought into the holds, loaded, stowed and/or trimmed, lashed and/or secured and taken from the holds and discharged by the Charterers, free of any risk, liability and expense whatsoever to the Owners.

The Charterers shall provide and lay down all material and equipment as required for the proper stowage and protection of the cargo on board, the Owners allowing the use of all dunnage available on board. The Charterers shall be responsible for and pay the cost of all material and cargo discharge of the cargo under this Charter Party and time to count until damage has been removed.

(b) Cargo Handling Gear

Unless the Vessel is geared or unless it has been agreed by the parties that the Vessel's gear shall not be used and stated as such in Box 15, the Owners shall throughout the duration of loading/discharge give free use of the Vessel's cargo handling gear and of sufficient motive power to operate all such cargo handling gear. All such equipment to be in good working order.

Unless otherwise agreed and stated in the Charter Party, the Vessel's cargo handling gear or motive power - pro rata the total number of man embryo's required at that time for handling any cargo on board - is to be handled under this Charter Party - shall not count as laytime or time on demurrage.

On request the Owners shall provide free of charge cargo damage/insurance from 70 to 80% of the Vessel's cargo handling gear or motive power. No exceptions are to be made without the written consent of the Charterers.

6. Laytime

(a) Separate laytime for loading and discharging

The cargo shall be loaded within the number of days/hours as indicated in Box 16, weather permitting, Sundays and holidays excepted, unless used, in which even time used shall count.

The cargo shall be discharged within the number of days/hours as indicated in Box 16, weather permitting, Sundays and holidays excepted, unless used, in which even time used shall count.

(b) Total laytime for loading and discharging

The cargo shall be loaded and discharged within the number of total working hours as indicated in Box 16, weather permitting, Sundays and holidays excepted, unless used, in which even time used shall count.

(c) Commencement of laytime (loading and discharging)

Laytime for loading and discharging shall commence at 13.00 hours, if notice of readiness is given up to and including 12.00 hours and at 09.00 hours rest working day if notice given during office hours after 12.00 hours. Notice of readiness at loading port is to be given to the Shippers named in Box 17 or if not named, to the Charterers or their agents named in Box 18. Notice of readiness at the discharging port is to be given to the Receivers or, if not known, to the Charterers or their agents named in Box 19.

7. Demurrage

Demurrage at the loading and discharging port is payable by the Charterers at the rate stated in Box 20 in the manner stated in Box 20 to pay pro rata for 124 any part of a day. Demurrage shall fall due day by day and shall be payable 125 upon receipt of the Owner's receipt.

In the event the demurrage is not paid in accordance with the above, the Charterers shall pay the Owners 96 hours warning notice to notify the 128 failure. If the demurrage is not paid at the latest of this time limit and if the Vessel is in or at the loading put, the Owners are entitled at any time to 130 terminate the Charter Party and claim damages for any losses suffered therefrom.

8. Line Clause

The Owners shall have lien on the cargo and on all sub-freights payable in respect of the cargo, for freight, deadweight, demurrage, claims for damages 138 and for all other amounts due under this Charter Party including costs of recovering same.

9. Cancellation Clause

(a) Should the Vessel not be ready to load (whether in berth or not) on the 133 cancellation date indicated in Box 21 the Charterers shall have the option of 135 cancelling this Charter Party.

(b) Should the Owners anticipate that, despite the exercise of due diligence, the Vessel will not be ready to load by the cancellation date, they shall notify the Charterers thereof without delay stating the expected date of the Vessel's readiness to load and asking whether the Charterers will exercise their option 144 of cancelling the Charter Party.

Such option must be declared by the Charterers within 48 running hours after the receipt of the Owners' notice, if the Charterers do not exercise their option 147 of cancelling, then this Charter Party shall be deemed to be amended such that 148
PART II

“Gencor” Charter (As Revised 1922, 1976 and 1994)

the seventh day after the new readiness date stated in the Owners’ notification to the Charterers shall be the new canceling date. The provisions of sub-clause (b) of this Clause shall operate only once, and in case of the Vessel’s further delay, the Charterers shall have the option of cancelling the Charter Party as per sub-clause (a) of this Clause.

15. Bills of Lading

16. Both-to-Blame Clause

17. War Risks (“VoyJoy 1993”)

18. Taxes and Duties Clause

19. Agency

20. Brokerage

21. General Strike Clause

15. Bills of Lading shall be presented and signed by the Master as per the “Congo Bill” of Bill of Lading form, Edition 1949, without prejudice to this Chapter 15 Party, or by the Owners’ agents provided written authority has been given by Owners to the agents, a copy of which is to be furnished to the Charterers. The Charterers shall indemnify the Owners against all consequences or liabilities that may arise from the signing of bills of lading presented to the extent that the terms or contents of such bills of lading impose or result in the imposition of any reasonable liabilities upon the Owners than those assumed by the Owners under this Charter Party.

If the Vessel comes into collision with another vessel as a result of the negligence of the other vessel and any act, neglect or default of the Master, Pilothouse or the servants of the Owners in the navigation or in the management of the Vessel, the owners of the cargo carried hereunder will indemnify the Owners against all loss or liability to the other or non-carrying vessel or her owners in so far as such loss or liability results from or is due to, or in any claim whatever of the owners of said cargo, paid or unpaid, payable by the other or non-carrying vessel or her owners to the owners of said cargo and set-off, recovered or recovered by the other or non-carrying vessel or her owners as part of their claim against the carrying Vessel or the Owners. The foregoing provisions shall also apply where the owners, operators or those in charge of any vessel or vessels or objects other than, or in addition to, the colliding vessels or objects are at fault in respect of a collision or contact.

General Average shall be adjusted in London unless otherwise agreed in Box 22 according to York-Antwerp Rules 1944 and any subsequent modification thereof. Proprietors of cargo to pay the cargo’s share in the general average even if same have been necessitated through neglect or default of the Owners’ servants (see Clause 2).

If General Average is to be adjusted in accordance with the law and practice of the United States of America, the following Clause shall apply: “In the event of any accidental damage or disaster before or after the commencement of voyage, resulting from any cause whatsoever, whether due to negligence or not, for which, or for the consequence of which, the Owners are not responsible, by statute, contract or otherwise, the cargo sufferers, consignees or owners of the cargo shall contribute with the Owners in General Average to the payment of any sacrifices, losses or expenses of a General Average nature that may be made or incurred and shall pay salvage and special charges incurred in respect of the cargo. If a sailing vessel is operated or owned by the Owners, salvage shall be paid for as fully as if the said sailing vessel or vessels belonged to strangers. Such deposit as the Owners, or their agents, may deem sufficient, over the estimated cost of the goods and any salvage and special charges thereon shall be required, if made by the cargo, shipowners, consignees or owners of the goods to the Owners before delivery.”

(a) On Freight, “The Owners shall pay all dues, charges, and taxes customarily levied on the Vessel, however the amount thereof may be assessed.

(b) On Freight, “The Charterers shall pay all dues, charges, duties and taxes customarily levied on the Vessel, however the amount thereof may be assessed.

(c) On Freight, “Unless otherwise agreed in Box 23, taxes levied on the freight shall be paid by the Charterers.”

In every case the Owners shall appoint their own Agent both at the port of loading and the port of discharge.

A brokerage commission at the rate stated in Box 24 on the freight, dead freight and co-insurance premiums is due to the party mentioned in Box 24.

In case of non-execution or 3/5 of the brokerage on the estimated amount of 213 freight to be paid by the party responsible for such non-execution to the 214 Bickers as indemnity for the latter’s expenses and work. In case of more 215 voyages the amount of indemnity to be agreed.

(a) If there is a strike or lock-out affecting or preventing the actual loading of the 218 cargo, or any part of it, when the Vessel is ready to proceed from her last port or any time during the voyage to the port or ports of loading or after her arrival 220 there, the Master or the Owners may ask the Charterers to declare, that they agree to reckon the laydays as if there were no strike or lock-out. Unless the 222 Charterers have given such declaration in writing by telegram, if necessary, within 24 hours, the Charterers shall have the option of 223 canceling the Charter Party as per sub-clause (a) of this Clause.

(b) If there is a strike or lock-out affecting or preventing the actual discharging 225 of the cargo or after the Vessel’s arrival at or off port of discharge, and if 226 has not been settled within 48 hours, the Charterers shall have the option of 230 keeping the Vessel waiting until such strike or lock-out is at an end against 231 paying half dammages after expiration of the time provided for discharging 232 until the strike or lock-out terminates and thereafter full demurrage shall be 233 payable until the completion of discharging, or of ordering the Vessel to a safe 234 port where she can safely discharge without risk of being detained by strike or 235 lock-out. Such orders to be given within 48 hours after the Master or the 236 Charterers have given notice to the Charterers of the strike or lock-out affecting 237 the discharge. On delivery of the cargo at such port, all conditions of this 238 Charter Party and of the Bill of Lading shall apply and the Vessel shall receive 239 the same freight as if she had discharged at the original port of destination, 240 except that if the distance to the substituted port exceeds 100 nautical miles, 241 the freight on the cargo delivered at the substituted port to be increased in 242 proportion.

(c) Except for the obligations described above, neither the Charterers nor the 243 Owners shall be responsible for the consequences of any strikes or lock-outs 245 preventing or affecting the actual loading or discharging of the cargo.

(1) For the purpose of this Clause, the word “Owners” shall include the shipowners, bareboat charters, 246 displaced owners, managers or other operators who are charged with the 247 management of the Vessel, and the Master and its “War Risks” shall include any war (whether actual or threatened), act of 248 war, civil war, hostilities, revolution, rebellion, civil commotion, warlike 249 operations, the laying of mines as such, or in connection with them, the laying 250 of torpedoes, acts of terrorism, acts of hostility or malicious damage, blockades, 251 whether imposed against all Vessels or imposed selectively against all 252 Vessels of certain flags or ownership, or against certain cargoes or cargo ships 253 or otherwise themselves, by any person, body, territory or political group, 254 or the Government of nations of which, in the judgement of the Master and/or the Owners, may be dangerous or are likely to become dangerous to the Vessel, her cargo, crew or other persons on board the Vessel.

(2) If at any time before the Vessel commences loading it appears that, in the 256 reasonable judgement of the Master and/or the Owners, performance of 257 Contract of Charter, or any part of it, may expose, or is likely to expose, 258 the Vessel, her cargo, crew or other persons on board the Vessel to War Risks, the Owners may give notice to the Charterers cancelling this 259 Contract of Charter, or may refuse to perform such part of it as may expose, or is likely to expose, the Vessel, her cargo, crew or other persons on board the Vessel to War Risks; provided always that if the 260 Contract of Charter provides that loading or discharging is to take place 261 within a range of ports, and at the port or ports nominated by the Charterers 262 the Vessel, her cargo, crew, or other persons on board the Vessel may be 263 exposed, or may be likely to be exposed, to War Risks, the Owners shall 264 first require the Charterers to nominate any other safe port which lies 265 within the range for loading or discharging, and may only cancel this 266 Contract of Charter if the Charterers have not nominated such a safe 267 port or ports within 48 hours of receipt of such notice, or by agreement.

(3) The Owners shall not be required to continue to load cargo for any voyage, 279 or to sign Bills of Lading for any port or place, or to proceed or continue on 280 any voyage, or on any port thereof, or to proceed through any channel or 281 waterway, or to proceed to or remain at any port or place whatsoever, 282 where it appears, either after the loading of the cargo commences, or at 283 any stage of the voyage thereafter before the discharge of the cargo 284 completed, that, in the reasonable judgement of the Master and/or the 285 Owners, the Vessel, her cargo (or any part thereof), crew or other persons 286 on board the Vessel (or any one or more of them) may be, or are likely to be, 287 exposed to War Risks. If it should so appear to the Owners that it is necessary to request the Charterers to nominate a safe port for the discharge of the 288 cargo or any part thereof, and if within 48 hours of the receipt of such 289 notice, the Charterers shall not have nominated such a port, the Owners 290 may discharge the cargo at any safe port of their choice (including the 291 port of loading) in complete fulfillment of the Contract of Charter. The Owners 292 shall be entitled to recover from the Charterers the extra expenses of such 294 discharge and, if the discharge takes place at any port other than the 295 loading port, to receive the full freight as though the cargo had been 296
PART II
"Gencor" Charter (As Revised 1922, 1976 and 1994)

carried to the discharging port and if the extra distance exceeds 100 miles, 397 to additional freight which shall be the same percentage of the freight 398 contracted for as the percentage which the extra distance represents to 399 the distance of the normal and customary route, the Owners having its less 369 on the cargo for such excessive and freight. 361

(4) If at any stage of the voyage after the loading of the cargo commences, it appears that, in the reasonable judgement of the Master and/or the 360 Owners, the Vessel, her cargo, crew or other persons on board the Vessel 364 may be, or are likely to be, exposed to War Risks on any part of the route 365 (including any canal or waterway) which is normal and customary 366 used in a voyage of the nature contracted for, and there is another longer route 367 to the discharging port, the Owners shall give notice to the Charterers that 368 this route will be taken. In this event the Owners shall be entitled, if the total 369 extra distance exceeds 100 miles, to additional freight which shall be the 370 same percentage of the freight contracted for as the percentage which the 371 extra distance represents to the distance of the normal and customary 372 route. 373

(5) The Vessel shall have liberty:- 374
(a) to comply with all orders, directions, recommendations or advice as to 375 departure, arrival, routes, saling in convoy, ports of call, stoppages, 376 destinations, discharge of cargo, delivery or in any way whatsoever which 377 are given by the Government of the Nation under whose flag the Vessel 378 sails, or other Government to whom the Owners are subject, or any 379 other Government which so requires, or any body or group acting with 380 the approval of such Government or any of its departments or directors or 381 persons employed or acting on behalf of such Government or any of its 382 departments or directors or persons employed or acting on behalf of 383 them, shall be final. On the receipt by one party of the nomination in writing of 384 any other party's arbitrator, that party shall appoint its arbitrator within 385 fourteen days, failing which the decision of the single arbitrator appointed shall 386 be final. 387

For disputes where the total amount claimed by either party does not exceed 394 the amount stated in Box 25, the arbitration shall be conducted in accordance with the Small Claims Procedure of the London Maritime Arbitration Association. 397

(6) (a) This Charter Party shall be governed by and construed in accordance with 398 English law and any dispute arising out of this Charter Party shall be referred to 399 arbitration in London in accordance with the Arbitration Acts 1996 and 400 any statutory modification or re-enactment thereof for the time being in force. 401

Unless the parties agree upon a sole arbitrator, one arbitrator shall be 402 appointed by each party and the arbitrators so appointed shall appoint a third 403 arbitrator; the decision of the three-man tribunal thus constituted or any two of 404 them, shall be final. On the receipt by one party of the nomination in writing of 405 any other party's arbitrator, that party shall appoint its arbitrator within 406 fourteen days, failing which the decision of the single arbitrator appointed shall 407 be final. 408

For disputes where the total amount claimed by either party does not exceed 416 the amount stated in Box 25, the arbitration shall be conducted in accordance with the Small Claims Procedure of the London Maritime Arbitration Association. 420

(b) This Charter Party shall be governed by and construed in accordance with 420 the laws of the United States of America and the Maritime Law of the United States and shall 421 be subject to any dispute arising out of this Charter Party, in matter in dispute shall be on New York, one to be appointed by each of the 422 parties or their designated representatives. 423

and the third by the two so chosen, their decision or that of any 424 arbitrator, shall be final. 425

For disputes where the total amount claimed by either party does not exceed 436 the amount stated in Box 25, the arbitration shall be conducted in accordance with the Arbitration Act 1996, the Arbitration Act 1996 and 437 the Small Claims Procedure of the London Maritime Arbitration Association. 440

(7) Any dispute arising out of this Charter Party shall be referred to arbitration at 441 the place indicated in Box 24, subject to the procedures applicable there. The 442 place of Arbitration shall be London. 443

(c) If Box 25 in Part A is not filled in, sub-clause (c) of this Clause shall apply. 444

(8) The provisions of this Charter shall be subject to the procedures applicable there. 445

Where no figure is supplied in Box 25 in Part 1, this provision shall only be valid if 446 the other provisions of this Charter shall have full force and remain in effect. 447

16. General Clause

Port of loading 345

(a) In the event of the loading port being inaccessible by reason of ice when 347 the Vessel is ready to proceed from her last port or at any time during the voyage or 348 the Vessel's arrival in case frost sets in after the Vessel's arrival, the Charterer for fear of being frozen in at liberty to leave without cargo, and this 350 Charter Party shall be null and void. 351

(b) If during loading or due to fear of the Vessel being frozen in, office it is advisable to leave, he has liberty to do so with what cargo he has on board and 353 shall proceed to any other port or ports with option of completing cargo for the 354 Owners benefit for any port or ports including port of discharge. Any port 355 extra distance to be added if this Charter Party is to be in accordance with the 356 Vessel's expense for payment of freight, provided that no extra 357 expenses be thereby caused to the Charterer. freight being paid on quantity 358 delivered in proportion if lumpsum, all other conditions as per this Charter Party. 360

(c) In case of more than one loading port, if one or more of the ports are 361 closed by ice, the Master or the Owners to be at liberty either to load the part 362 cargo at the open port and fill up elsewhere for their own account as under 363 section (b) or to declare the Charterer null and void unless the Charterers agree to 364 load full cargo at the open port. 365

Port of discharge 366

(a) Should the Vessel arrive at the port of discharge the 367 Charterers shall have the option of keeping the Vessel waiting until the 368 opening of navigation and paying demurrage or of ordering the Vessel to a safe 369 and immediately accessible port where she can safely discharge without risk of 370 detention by ice. Such orders to be given within 48 hours after the Master or the 371 Owners have given notice to the Charterers of the impossibility of reaching port 372 of destination. 372

(b) If during discharging the Master for fear of the Vessel being frozen in, office 373 it advisable to leave, he has liberty to do so with what cargo he has on board and 375 to proceed to the nearest accessible port where she can safely discharge. 376
(c) On delivery of the cargo at such port, all conditions of the Bill of Lading shall 377 apply and the Vessel shall receive the same freight as if she had discharged at 378 the original port of destination, except that if the distance of the substituted port 379 exceeds 100 nautical miles, the freight on the cargo delivered at the substituted 380 port to be increased in proportion. 381
<table>
<thead>
<tr>
<th>CARGO</th>
<th>2013</th>
<th>2014</th>
<th>TOTAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JULY</td>
<td>AUGUST</td>
<td>SEPTEMBER</td>
<td>OCTOBER</td>
</tr>
<tr>
<td>1 BARLEY</td>
<td>443,874,000</td>
<td>402,783,000</td>
<td>362,232,000</td>
<td>382,778,000</td>
</tr>
<tr>
<td>2 CHICK PEAS</td>
<td>15,912,000</td>
<td>28,139,000</td>
<td>28,885,000</td>
<td>20,157,991</td>
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<tr>
<td>3 CORN</td>
<td>33,595,000</td>
<td>14,864,000</td>
<td>97,449,000</td>
<td>218,435,000</td>
</tr>
<tr>
<td>4 FEED STAFF</td>
<td>37,952,000</td>
<td>120,239,000</td>
<td>117,684,000</td>
<td>143,411,000</td>
</tr>
<tr>
<td>5 FLAX SEEDS</td>
<td>5,641,000</td>
<td>18,675,000</td>
<td>3,267,000</td>
<td>5,987,000</td>
</tr>
<tr>
<td>6 LENTIL</td>
<td>380,000</td>
<td>213,000</td>
<td>43,500</td>
<td>0,000</td>
</tr>
<tr>
<td>7 MILLET SEEDS</td>
<td>712,000</td>
<td>1,120,000</td>
<td>4,675,000</td>
<td>1,572,000</td>
</tr>
<tr>
<td>8 OIL SEEDS</td>
<td>10,110,000</td>
<td>14,544,000</td>
<td>11,297,000</td>
<td>23,245,000</td>
</tr>
<tr>
<td>9 PEAS</td>
<td>7,542,000</td>
<td>19,581,000</td>
<td>30,176,000</td>
<td>12,431,000</td>
</tr>
<tr>
<td>10 RAPE SEEDS</td>
<td>5,176,000</td>
<td>14,155,000</td>
<td>9,153,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>11 RICE</td>
<td>500,000</td>
<td>225,000</td>
<td>300,000</td>
<td>9,214,000</td>
</tr>
<tr>
<td>12 RYE</td>
<td>2,720,000</td>
<td>3,033,000</td>
<td>6,321,000</td>
<td>3,006,000</td>
</tr>
<tr>
<td>13 SORGHUM</td>
<td>38,550,000</td>
<td>29,060,000</td>
<td>74,288,000</td>
<td>34,146,000</td>
</tr>
<tr>
<td>14 WHEAT FEED</td>
<td>5,550,000</td>
<td>29,378,000</td>
<td>1,708,894,000</td>
<td>1,585,426,000</td>
</tr>
<tr>
<td>15 WHEAT MILLING</td>
<td>1,888,779,000</td>
<td>2,953,178,000</td>
<td>2,066,427,000</td>
<td>1,708,894,000</td>
</tr>
</tbody>
</table>

TOTAL: 2,475,510,000, 3,578,423,000, 2,818,291,000, 2,534,773,000, 2,609,887,000, 2,512,969,626, 954,807,215, 0,000, 17,484,660,841, 100.00%
### NITRO SHIPPING FREIGHT REPORT FOR GRAINS
#### 29 OCTOBER 2014

**MARKET INFORMATION**
There is bad weather in Azov Sea, which has led to low water in Yeisk, Azov, Rostov-on-Don and in other parts. A lot of grain orders are long open from these ports in spot/term. Some owners are asking about USD and some FOB for 5% grain products (45-50%) ex Yeisk to Marmara Sea in the beg of November. Lack of 5% grain orders from Volga River to Marmara Sea in November has dropped freight rates to mid/high 60s up to 75s. Lack of tonnage to Iran in October still keeps freight rates on mid/upper USD up to 70s 5% wheat ex Samara and about USD 50 FOB Aral and about USD 50 FOB ex Astrakhan. River locks will be closing on 22 November – 1 December, subject to weather in mid of November. Freight rates on 35/50% grain products (45-50%) ex Baltic Sea to Med destinations.

**WE WILL BE GLAD TO SEE YOU ON GLOBAL GRAIN GENEVA 2016 DURING 11-13 NOVEMBER!**

<table>
<thead>
<tr>
<th><strong>GRAIN PRICES &amp; TRENDS</strong></th>
<th><strong>FUEL PRICES &amp; TRENDS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Milling Wheat (1.5% bss FOB Azov)</strong></td>
<td><strong>IFO 150 at Rotterdam</strong></td>
</tr>
<tr>
<td>$205</td>
<td>$450/lmt Up</td>
</tr>
<tr>
<td><strong>Milling Wheat (1.5% bss FOB Azov)</strong></td>
<td><strong>MGO at Rotterdam</strong></td>
</tr>
<tr>
<td>$290</td>
<td>$750/lmt Up</td>
</tr>
<tr>
<td><strong>Milling Wheat (1.5% bss FOB Azov)</strong></td>
<td><strong>IFO 150 at Istanbul</strong></td>
</tr>
<tr>
<td>$220</td>
<td>$525/lmt Flat</td>
</tr>
<tr>
<td><strong>Milling Wheat (1.5% bss FOB Azov)</strong></td>
<td><strong>MGO at Istanbul</strong></td>
</tr>
<tr>
<td>$230</td>
<td>$787/lmt Flat</td>
</tr>
<tr>
<td><strong>Fresh Barley bss FOB Azov/Astrakhan/Port-Afik Iran</strong></td>
<td><strong>MGO at Astana (E.2)</strong></td>
</tr>
<tr>
<td>$1700/1020/245, 260/270</td>
<td>$715/lmt Flat</td>
</tr>
<tr>
<td><strong>Yellow Pea bss FOB Azov (BSS)</strong></td>
<td><strong>MGO at Singapore</strong></td>
</tr>
<tr>
<td>$275/290</td>
<td>$700/lmt Flat</td>
</tr>
<tr>
<td><strong>SFS Oil bss FOB Ukraine bss SPOT/Jar-March</strong></td>
<td><strong>MGO at Singapore</strong></td>
</tr>
<tr>
<td>$610/630/800-850</td>
<td>$733/lmt Up</td>
</tr>
</tbody>
</table>

**FREIGHT RATES IN USD/lmt FOB/STG FOR 2000 mT OF GRAIN PRODUCTS WITH 5% BSS opts. 50 c/mt:**

<table>
<thead>
<tr>
<th>FROM 1-PUZAR RIVER AB BRISE FOR DUMPS <em>1</em> - SUB-ACTUAL ICE SITUATION TO 1-PUZAR DEERTICAL AS (SUB-OTHER TERMS):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>SIB Kech - Free d/d basis</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Tis and Georgie</strong></td>
</tr>
<tr>
<td><strong>Marmara Sea</strong></td>
</tr>
<tr>
<td><strong>Nisnay Bay (BSS)</strong></td>
</tr>
<tr>
<td><strong>EC Greece</strong></td>
</tr>
<tr>
<td><strong>Crimea</strong></td>
</tr>
<tr>
<td><strong>WC Greece (incl. Corfu)</strong></td>
</tr>
<tr>
<td><strong>Antalya, Greek part of Corfu</strong></td>
</tr>
<tr>
<td><strong>Moesia and Ilirideum</strong></td>
</tr>
<tr>
<td><strong>Izmir in Mediterranean Sea</strong></td>
</tr>
<tr>
<td><strong>Sidra</strong></td>
</tr>
<tr>
<td><strong>Egypt in Mediterranean Sea</strong></td>
</tr>
<tr>
<td><strong>Albania</strong></td>
</tr>
<tr>
<td><strong>Athletic Italy eastern ports</strong></td>
</tr>
<tr>
<td><strong>WC Italy</strong></td>
</tr>
<tr>
<td><strong>WC Spain</strong></td>
</tr>
<tr>
<td><strong>WC Italy</strong></td>
</tr>
<tr>
<td><strong>East part of Libya</strong></td>
</tr>
<tr>
<td><strong>West part of Libya</strong></td>
</tr>
<tr>
<td><strong>Morocco in Mediterranean</strong></td>
</tr>
<tr>
<td><strong>Mediterranean</strong></td>
</tr>
</tbody>
</table>
THIS REPORT IS GIVEN AS A GUIDE ONLY. WE HOPE IT IS WIDELY CIRCULATED.
Appendix 4

Accounting for Omskiy type

<table>
<thead>
<tr>
<th>Calibration cash flow</th>
<th>1</th>
<th>1</th>
<th>1.03</th>
<th>1.03</th>
<th>1.03</th>
<th>1.06</th>
<th>1.06</th>
<th>1.06</th>
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</thead>
<tbody>
<tr>
<td>Vessel-days under repair</td>
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<td>305</td>
<td>365</td>
<td>365</td>
<td>366</td>
<td>366</td>
<td>366</td>
<td>366</td>
</tr>
<tr>
<td>Vessel-days under repair</td>
<td>0</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>30</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Operating vessel-days</td>
<td>1</td>
<td>295</td>
<td>350</td>
<td>345</td>
<td>338</td>
<td>335</td>
<td>350</td>
<td>345</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Operating activities</th>
<th>2,900</th>
<th>855,500</th>
<th>1,015,000</th>
<th>1,030,515</th>
<th>1,003,632</th>
<th>1,060,385</th>
<th>1,075,900</th>
<th>1,060,530</th>
<th>1,032,864</th>
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<th>0</th>
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</thead>
<tbody>
<tr>
<td>Freight, time-charter rate, USD per day</td>
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<td>855,500</td>
<td>1,015,000</td>
<td>1,030,515</td>
<td>1,003,632</td>
<td>1,060,385</td>
<td>1,075,900</td>
<td>1,060,530</td>
<td>1,032,864</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Demurrage</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Other operating income</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Running expenses</th>
<th>1,900</th>
<th>579,500</th>
<th>693,500</th>
<th>714,305</th>
<th>716,262</th>
<th>714,305</th>
<th>735,110</th>
<th>735,110</th>
<th>737,124</th>
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<tbody>
<tr>
<td>Crewing</td>
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<td>213,500</td>
<td>255,500</td>
<td>263,165</td>
<td>263,869</td>
<td>263,165</td>
<td>270,830</td>
<td>270,830</td>
<td>271,572</td>
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<td>0</td>
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<tr>
<td>Provisions</td>
<td>100</td>
<td>30,500</td>
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<td>37,595</td>
<td>37,688</td>
<td>37,595</td>
<td>38,690</td>
<td>38,690</td>
<td>38,796</td>
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<td>Equipment/Lubri/Repairs &amp; spares</td>
<td>300</td>
<td>91,500</td>
<td>109,500</td>
<td>112,765</td>
<td>113,094</td>
<td>112,765</td>
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<td>116,070</td>
<td>116,388</td>
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<td>Dry docking (deposit)</td>
<td>400</td>
<td>122,000</td>
<td>146,000</td>
<td>150,380</td>
<td>150,792</td>
<td>150,380</td>
<td>154,760</td>
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<td>61,000</td>
<td>73,000</td>
<td>75,190</td>
<td>75,389</td>
<td>75,190</td>
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<td>Miscellaneous</td>
<td>100</td>
<td>30,500</td>
<td>36,500</td>
<td>37,595</td>
<td>37,688</td>
<td>37,595</td>
<td>38,690</td>
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<td>38,796</td>
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<tr>
<td>Management fee</td>
<td>100</td>
<td>30,500</td>
<td>36,500</td>
<td>37,595</td>
<td>37,688</td>
<td>37,595</td>
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<td>38,690</td>
<td>38,796</td>
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</table>

| Net cash used in operating activities | 1,000 | 276,000 | 321,500 | 316,210 | 287,370 | 346,080 | 340,790 | 325,420 | 295,740 | 0 | 0 |
### Investing activities

<table>
<thead>
<tr>
<th></th>
<th>Inflow</th>
<th>Outflow</th>
<th>Purchase of vessels</th>
<th>Net cash used in investing activities</th>
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<tr>
<td></td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>500 000</td>
</tr>
<tr>
<td></td>
<td>-2 000 000</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td></td>
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<td>500 000</td>
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</table>

**Free cash flow**

|                          | -1 724 000 | 321 600 | 316 210 | 287 370 | 346 080 | 340 790 | 326 420 | 795 740 | 0       | 0       |

### Financing activities

<table>
<thead>
<tr>
<th></th>
<th>Inflow</th>
<th>Outflow</th>
<th>Credit</th>
<th>Own financing</th>
<th>Repayments of borrowings</th>
<th>Interest paid</th>
<th>Net cash provided by financing activities</th>
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</tr>
</tbody>
</table>

**Net cash flow**

|                          | 276 000 | 597 500 | 913 710 | 1 201 080 | 1 547 180 | 1 887 950 | 2 213 370 | 3 009 110 | 0       | 0       |

**Cumulative cash flow**

|                          | 276 000 | 597 500 | 913 710 | 1 201 080 | 1 547 180 | 1 887 950 | 2 213 370 | 3 009 110 | 0       | 0       |

### Calculation of efficiency on equity financing

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<th>Period</th>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<tbody>
<tr>
<td>Cash on equity financing</td>
<td>-1 724 000</td>
<td>321 500</td>
<td>316 210</td>
<td>287 370</td>
<td>346 080</td>
<td>340 790</td>
<td>326 420</td>
<td>795 740</td>
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<tr>
<td>Cumulative cash flow</td>
<td>-1 724 000</td>
<td>-1 402 500</td>
<td>-1 086 290</td>
<td>-798 920</td>
<td>-452 840</td>
<td>-112 050</td>
<td>213 370</td>
<td>509 110</td>
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<td>0.928</td>
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<td>0.794</td>
<td>0.735</td>
<td>0.681</td>
<td>0.630</td>
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<td>-1 724 000</td>
<td>-1 426 315</td>
<td>-1 165 216</td>
<td>-927 092</td>
<td>-672 713</td>
<td>-440 777</td>
<td>-235 707</td>
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<tr>
<td>NPV</td>
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<td>-1 426 315</td>
<td>-1 165 216</td>
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<td>-672 713</td>
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<td>FALSE</td>
<td>-47 %</td>
<td>-26 %</td>
<td>-11 %</td>
<td>-2 %</td>
<td>3 %</td>
<td>7 %</td>
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<tr>
<td>Discount payback period</td>
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<td>-</td>
<td>9,00</td>
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