IMPACT ON AFFREIGHTMENT

IMPACT OF THE MONALISA PROJECT PROPOSALS ON SELECTED ASPECTS OF CHARTER PARTIES AND CONTRACTS OF CARRIAGE BY SEA.
Impact of measures proposed by MonaLisa project on selected aspects of charter parties and contracts of carriage by sea.

Introduction

Majority of commodities traded worldwide is transported by seaborne means of transportation. Shipping has no significant competitor in scope of transportation of raw materials, processed goods in bulk and containers and is to be considered as a most energy efficient and environmental-sound way of transport.

It can be said with simplification, that vessels, involved in transportation of goods by sea, are usually employed in a service between one port or range of ports and another port or range of ports. Such a service can be performed with certain regularity and frequency, conforming to previously set and announced schedule, in so called liner trades. In this kind of carriages, vessel is obliged to follow particular schedule and arrive at the particular port at agreed time. Time for cargo operations i.e. discharging and/or loading, is determined by the schedule.

Previously common type of carriage of passengers and goods, evolved gradually to separate services for carriage of cargo e.g. containers, ro-ro and passengers. Today's carriage of passengers is in its majority confined to ferry services and cruising.

Other kind of service is a tramp service which is characterized by lack of schedule and may be provided among variety of ports. Tramping, with marginal service to passengers merely, is dominated by and focused on carriage of cargo.

While liner trade is defined and determined by the schedule, tramping is governed by the market and its demand on transportation of certain good at given time. The latter can be considered as carriages scheduled for longer or shorter leaps of time voyages, based on Contracts of Affraighments (COA) or voyages performed on particular, separately agreed terms, called charters or charter parties.

Types of charters

“A charter party is an agreement between two parties regarding lease of a cargo or a vessel. One party offers to lease its vessel or cargo to another party at stipulated rate or under decided conditions. It is a legal contract, made under the laws governing the shipping world between a cargo vessel owner and a charterer.”(1)

The terms “charter” and “Charter party” relay either to agreement of hire of the vessel, e.g. time charter, bare boat charter, or to agreement of carriage of goods by sea. To avoid confusion, this fact should be taken into consideration once discussing issues and clearly distinguished for avoiding confusions. It is clear, that proposed changes in shipping practice and regulations will influence time aspects in both meanings of the term “charter” as making impact on vessels physical presence in agreed place or at certain position or range, subject of agreement in particular charter party. These issues will be discussed later in this report in both meanings of the charter term.

Following (1) the charter parties are:
“Bareboat charter party

This is a typical agreement where there is no maintenance liability or any kind of claim on the vessel by the owner for the period of lease of the vessel. The owner agrees to lease the vessel without any administration, financial or technical responsibility for it. The charterer acts as the sole owner of the ship and is responsible for all the maintenance and functioning costs of the vessel including fuel, crew maintenance, repair, custom duties, port expenses etc. for that time. It is the most suitable for tankers and bulk carriers.” (1)

Voyage charter party

“Under a voyage charter party, the shipowner agrees to charter the vessel to the charterer for one or more specified voyages. The vessel remains under the control of the shipowner who is responsible for equipping and manning the vessel. The crew and master are employees of the shipowner, and he is responsible for their wages. The shipowner in the voyage charter party undertakes to transport the goods to the port(s) specified in the charter party. The charterer undertakes to provide the specified cargo and pay for the services either as a lump sum for the voyage, or in terms of the amount and type of the cargo carried.” (2, p.162)

“However, there is a specific time limit under this kind of contract. The time mentioned in the lease contract includes the time needed for loading and unloading of the cargo, exceeding which may need the charterer to remunerate the owner in terms of compensation charges. Also, the charterer remains responsible for any incidental charges. Being a voyage bound trip with availability of crew, voyage charter party becomes one of the most famous charter parties.” (1)

Time charter party

“Under a time charter party, the charterer hires the vessel for a specified period of time. As in a voyage charter, the shipowner retains control of the ship and the employees on board the ship. However, the charterer is responsible for its deployment, the number of voyages it undertakes, and the destination of the voyages. The shipowner in a time charter party does not undertake to transport the goods to a specified port(s) as in a voyage charter party.” (2, p.162)

“Often confused with the previous charter party, this charter party refers to lease of a vessel by the owner to a charterer for a specified period of time. The owner only offers his vessel at a predetermined rate. The charterer agrees to bear all the expenses incurred on running of the vessel in return of availability of vessel for that time.” (1)

Contract of Affreightment

“This type of charter party particularly suits to bulk cargos that often need more than one voyage for complete shipment. Under this contract, the owner offers to carry the mentioned cargo at a price decided at rate of per tonnage or per voyage. This type of contract is especially found in industrial cargos like that of coal, stones, building material, metallurgical materials etc.” (1)

Following can be also given as an explanation:

“Contract of Affreightment - a Charter Party covering more than one voyage.” (3)
Commonly used standards (forms) of charter contracts

This report refers to and considers the standards and documents proposed and accepted by BIMCO, which is “is a shipping association providing a wide range of services to its global membership of stakeholders who have vested interests in the shipping industry, including shipowners, operators, managers, brokers and agents.” (4)

Bareboat (demise) charter parties

Bareboat charter agreement forms developed and published by BIMCO i.e. BARECON 2001 and BARGEHIRE 2008 are not a subject of this report as assumption has been made that such agreements will not be affected by the project and its outgoing proposals. Assumptions has been made that any restrictions and concerns related to proposed changes in regard to physical presence of vessel in specified location at certain time, which arise from provisions of relevant charter party are similar to these identified for other types of agreements. Moreover, from operational point of view and daily routines, are such agreements less important.

BIMCO bareboat charter parties are available from BIMCO website www.bimco.org.

Time charter parties

In this type of charter vessels can be chartered:

1. For performing single voyage
2. For performing round trip
3. For defined period (of time)

This type of CP is closely connected to the term of “delivery” and “redelivery”, which means respectively period of time the owner, lets the charterers to take the vessel into their dispose, while “re-delivery” means the contrary process. Time of delivery/re-delivery and its place/ range is appropriately defined by corresponding clauses.

Carr (2010)states that “due to the nature of time charter parties, their terms concentrate on employment of vessel, speed of vessel, maintenance of vessel, hire period, return of vessel, payment of hire, etc.”(2,p.163)

An example of commonly used BIMCO forms of time charter parties are: BALTIME 1939 (revised 2001), LINERTIME (Deep Sea Time Charter), BOXTIME 2004 (Standard Time Charter Party for Container Vessels), GENTIME or NYPE 93(New York Produce Exchange Time Charter).

This type of charter party is considered to be influenced by the project proposals to limited extent only and some expected implications are subject to further explanation in this report.

The list and forms of time charter parties approved by BIMCO is available from BIMCO website www.bimco.org.
Voyage charter parties

Voyage charter parties (CP agreements) include various standard contracts and most of them are related to particular type of cargo. Thus seaborne transports of cement could be agreed on e.g. Cementvoy CP, whilst coal on e.g. Polcoalvoy or Nipponcoal basis. Fertilizers for example can be agreed in accordance with e.g. Fertivoy 88, grain with Grainvoy whilst ore on e.g. Orevoy basis and wood on Nubaltwood or Russwood.

Commonly in use is Gencon 94 CP which, with legally allowed modifications, “is the most popular and widely used general purpose voyage charter party in the industry and is for all kinds of trades and for numerous types of cargoes.”(4)

Transports of such a cargo as a gas can be agreed under provisions of charter parties. “GASVOY 2005 is a purpose-designed voyage charter party developed with BIMCO by a team of gas trade specialists. The charter has been designed for use in the LPG, ammonia and liquefied petrochemical gas trades offering a modern and trade-specific alternative to other charter party forms such as the commonly used ASBATANKVOY form.”(4)

Full list as well as forms of BIMCO voyage charter parties is available from BIMCO website www.bimco.org.

Contract of Affreightment

“Given the long term nature of the contract, a COA is almost always tailor made to meet the specific needs of the parties concerned. These parties are the shipper or buyer of the cargo who is often motivated by requiring certainty for the costs of transportation, and the ship-owner who is concerned with providing assured long term employment and flexibility for his owned or chartered in tonnage. COAs enable the ship-owners to be flexible and allow the vessels to be fitted into a pattern of trade that maximises laden as against ballast distances and allows such arrangement to be concluded at very competitive rates of freight.”(5)

In the meaning and for the purpose of this report Contract of Affreightment (COA) is considered as a “little more complicated”(6,p.183) specific case of voyage charter party and will be explained as such one only. Stopford states that “companies who specialize in COAs sometimes describe their business as “industrial shipping” because their aim is to provide a service. Since a long-term contract is involved, COAs involve a greater commitment to servicing the shipper and providing an efficient service”. (6,p.184)

Cargo carriage by type of agreement

Carriage of goods by sea is governed by provisions of appropriate agreements between charterer or shipper (i.e. owner of the cargo or party representing it) and carriers (owner or commercial operator of performing vessel). Governing agreement, Charter Party (CP), sets a variety of requirements and conditions to be fulfilled by respective party of contract. Among others the time related requirements are obligatory to follow by vessel under particular CP. Despite peculiarity of agreement, such requirements, however might have been formulated in some different ways, have a lot in common. An explanation of such terms follows under section “Definitions”.

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For purpose of this report and its explicative function, the BIMCO documents will be considered and further explanation given, based mainly on “clean” “GENCON 1994” terms and there used terms such as: Laydays date, Cancelling Date, Estimated Time of Arrival (ETA), Notice of Readiness, Time Counting, Laytime, Demurrage, Despatch, Exceptions, Statement of Facts. Some modifications or extensions of “clean” clauses are allowed if agreed and included in specific CP. Such additional clauses must be agreed and accepted by both parties and included in relevant Charter Party. These, as being agreed and accepted conditions, are crucial for operating vessels and to their performance thus significantly influencing operational decisions making with regard but not limited to vessels’ speed, time to enter port, planned schedule or further employment plan, crewing, bunker (fuel)consumption and of course environmental and financial implications associated with. A term “ships operations” is in common use in regard to mentioned activities within shipping.

Definitions and clauses
Definitions (as per VOYLAyrules 93 if marked (4):

Laydays: “...to be used to refer to the earliest time when the charterer expects the vessel to be ready for loading and/or discharging.”(7) or “Laydays refers to a period of specified days (e.g. “Jan 7/16”) during which owners must present the vessel for loading.”(8)

Cancelling Date: “... the latest date mutually agreed upon between shipowners and charterers, on which the vessel must be ready to load at the first port or be delivered to the time charterer. The arrival of the vessel on time may be essential to the charterer for various reasons. Should the vessel be late, charterers are entitled to cancel the charterparty.”(7)

Laycan: “... laydays/cancelling or, as it is often called, the “laycan” is the period within which the vessel must be presented at the agreed port or place. If the vessel arrives before the first day of the period, the charterers do not have to accept her until commencement of the agreed laydays. If she arrives after the final layday, the charterers are entitled to reject the vessel and cancel the charter.”(8)

ETA: Estimated Time of Arrival, The predicted time of reaching a destination or way point.(9)

Notice of Readiness(NoR): “shall mean the notice to charterer, shipper, receiver or other person as required by the charter party that the vessel has arrived at the port or berth, as the case may be, and is ready to load or discharge.”(4)
“NOR may be given by the ship’s agent on behalf of the master. It is even practiced, that the ships It may be (and is often) given by the ship’s agent on the master’s behalf. (In many cases the Notice of Readiness is sent by the ship’s agent to an agent of the charterer.)”(10)

Time Counting: Laytime clause in Charter party specifies when the time shall start to count as laytime, e.x. “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 06.00 hours next working day if notice given during office hours after 12.00 hours.”(GENCON 04) or as stated in appropriate clause with relevant applicable modifications and changes, e.g. in many cases of the GENCON 94 charter parties the commencement of laytime, thus time counting, is adjusted respectively to 1400 and 0800 hours.
Laytime: “shall mean the period of time agreed between the parties during which the owner will make and keep the vessel available for loading or discharging without payment additional to the freight.” (4)

Laytime: “... means the agreed period of time (in days or in hours) during which the shipowner makes the vessel available to the charterer for loading and/or discharging the cargo.” (7)

Demurrage: “shall mean an agreed amount payable to the owner in respect of delay to the vessel beyond the laytime, for which the owner is not responsible. Demurrage shall not be subject to laytime exceptions.” (4)

Despatch: “shall mean an agreed amount payable by the owner if the vessel completes loading or discharging before the laytime has expired.” (4)

Exceptions of D/D: "EXCEPTED" or "EXCLUDED" shall mean that the days specified do not count as laytime even if loading or discharging is carried out on them." (4)

Statement of Facts (SoF):”... is the document attached to a record of calculation of laytime used (the "Timesheet") and is a record of the events that can affect the counting of laytime. In some calculation forms, the Statement of Facts could be part of the Timesheet, preceding the columns in which the periods for loading, discharging, shifting, inclement weather, other excepted periods and tendering of Notice of Readiness etc., are noted." (7)

**Notice of readiness**

Notice of Readiness, NOR, is crucial for calculation of the laytime as such must be tendered (given), unless other stated, within the “laycan” (time between layday and cancellation date) period or even before.

Schofield (2011) explains:

“Normally three conditions must be satisfied before the charterer can be required to start loading or discharging, as the case may be, and therefore before the laytime allowed starts to run. These are that –

1. The ship must have arrived at the destination specified in the charter.
2. The ship must be ready and in a fit condition to receive or discharge her cargo.
3. Where required, notice of her readiness must have been given to the charterer. (…)

When these conditions have been met, the vessel is an Arrived ship and, subject to the expiry of any period prescribed in the charter, laytime begins to run.” (11,p.71)

In addition, Schofield states that

“To these three conditions there should perhaps be added a fourth, namely that any date specified for the commencement of laytime has arrived and the charterers have not exercised any right they might have to cancel the charter for a failure to present a notice of readiness before a specific cancelling date.” (11,p.71,add.1)
The latter is very important statement and can be considered as one of determinant (together with other external factors such as e.g. weather condition) factor to operational behaviour of master (vessel) and operator (owner or commercial operator of the vessel) in regards to the aspects of MonaLisa project and its impact on shipping environment. More attention will be given to mentioned factors in this report.

**Laytime calculation**

“Laytime is the time during which a ship is lying, for the purpose of loading or discharging, as distinct from moving with the object of carrying her cargo from one place to another” (12, p.1).

The following statements as by Summerskill (1973) are still in force and give a good insight into importance of laytime calculation:

“It is the duty of the shipowner to make his ship available to the charterer at the agreed place; it is the duty of the charterer to make the cargo available and to bring it to the ship. The charterer’s duty may be expressed in terms of time, in that the charterparty states how long shall be allotted for this purpose or provides a method by which the time may be calculated; alternatively the charterer must bring or take the cargo within a reasonable time. Where that time, which is called the “laytime,” is exceeded, the charterer may be called upon under the charterparty to pay liquidated damages known as demurrage. In the absence of any provision for demurrage he becomes liable to pay damages for detention. Where the work is completed within the laytime the shipowner may be called upon under the charterparty to pay dispatch money” (12, p.1)

And:

“The total time allowed for the lay days is the result of an assessment by the parties of the characteristics of the cargo, the ship and the loading and discharging facilities of the ports. The rate allowed for demurrage usually bears some relation to the amount which the ship can earn. On one view, both freight and demurrage can be regarded as payments for the detention of the ship. The detention for the anticipated period of the voyage is recompensed by the freight”. (12, p.2)

In the case *Inverkip S.S. Co. Ltd. versus Bunge & Co.* Scrutton L.J said:

“The sum agreed for freight in a charter covers the use of the ship for an agreed time for loading and discharging, known as the lay days, and for the voyage.” (12, p.2)

Thus “The detention for extra delay is recompensed by demurrage”, as discussed by Devlin J. in the case *Compania de Navigacion Zita S.A. v. Louis Dreyfus & Cie.*:

“The shipowners’ desire is to achieve a quick turn-round; time is money for him. The object of fixing lay days and providing for demurrage and dispatch money is to penalize dilatoriness in loading and to reward promptitude” (12, p.2)

According to Summerskill (12, p.2), the rate allowed for dispatch is usually one-half of the rate agreed for demurrage.

“The laytime provision as contained in a charterparty, or, in some cases, in a bill of lading, is usually in the form of an undertaking by the charterer for the benefit of the shipowner. It limits the time
allowed to the charterer for the performance of his share of the loading or discharging by providing a fixed period or a method of calculating the time, or alternatively by allowing a reasonable time. For any time beyond that period the charterer is liable in demurrage, and this ability is absolute unless the delay arises through the fault of the shipowner or is covered by an exception in the charterparty (…)" (12,p.2)

Based on the statement of facts, prepared jointly by port agent and vessel, subject to approval by master, the laytime calculation shall be agreed by parties involved and often is the subject to further dispute, negotiation and finally, in most cases, acknowledgement. For further calculations it is very important that the statement of fact (SoF) is approved by carrier and charterer (or consignee, i.e. receiver of cargo) or their representatives.

Commonly approved specialized software for calculating laytime is available from various providers.

**Bunker consumption**

Bunker (marine fuel) consumption plays crucial role in daily activity of shipowners. Due to extremely high bunker prices and particularly hard economic circumstances, owners or commercial operators involved in shipping are highly concerned about bunker consumption. For one particular ship the consumption of bunker depends in very high level on her speed, thus reducing speed of vessels is commonly practised now. So called optimisation of operating speed is a part of operational efforts, making both office staff and crews on board highly involved in decisions about most appropriate speed thus lowest bunker consumption and costs.

For illustrating the scale of savings operators and crews strive for, the following Stopfords statement can be considered:

“by slowing down from 14 knots* to 11 knots, the amount of fuel used in a year is more than halved, from 33.9 tons per day to 16,5 tons per day, bringing saving in bunker costs that depends on the level of fuel prices”. (6, pp.243-4)

Above mentioned consumption is subject to individual consideration for each vessel and depends on many other factors, such as for example vessel’s type, draft, load condition (loaded with cargo or empty, with ballast only), age and technical condition (elder ships are generally less fuel-efficient but more maintenance demanding), shape of hull, type and efficiency of main engine or vessel’s trim among others.

“When a vessel is earning unit freight revenue, the mean operating speed of the ship is important because it determines the amount of cargo delivered during a fixed period and hence the revenue earned”(6,p.243). Stopford points out, that during prosperity periods, with high freight rates, market pays for vessels proceeding with full speed, “whereas at low freight rates a reduced speed may be more economic because the fuel cost saving may be greater than the loss of revenue”.(6,p.243)
This is currently the case in modern container shipping, which is operationally characterised by, so called “slow steaming”. Figure 1 shows bunker consumption diagram for container vessels, grouped into six groups of various TEU**capacity (size). Vessels’ sizes are defined and grouped by cargo capacity to the right of the diagram.

![Image of fuel consumption diagram](image)

**Figure 1: Fuel Consumption by Containership Size and Speed**


*1knot: 1NM/hr. (NM-nautical mile= 1,852 km) is speed unit used in shipping

** TEU- twenty-feet equivalent unit, describing capacity of container vessel, based on number of standard 20-feet containers the vessel is capable to load on board
Slow steaming issue has been summarized by Rodrigue et al. (13):

“Fuel consumption by a container ship is mostly a function of ship size and cruising speed, which follows an exponential function above 14 knots. For instance, while a containership of around 8,000 TEU would consume about 225 tons of bunker fuel per day at 24 knots, at 21 knots this consumption drops to about 150 tons per day. While containership operators would prefer consuming the least amount of fuel by adopting lower speeds, this advantage must be mitigated with longer shipping times as well as assigning more ships on a pendulum service to maintain the same port call frequency. The main ship speed classes are:

- Normal (20-25 knots; 37.0 - 46.3 km/hr). Represents the optimal cruising speed a containership and its engine have been designed to travel at. It also reflects the hydrodynamic limits of the hull to perform within acceptable fuel consumption levels.
- Slow steaming (18-20 knots; 33.3 - 37.0 km/hr). Running ship engines below capacity to save fuel consumption, but at the expense an additional travel time, particularly over long distances. This is likely to become the dominant operational speed as more than 50% of the global container shipping capacity was operating under such conditions as of 2011.
- Super slow steaming (15-18 knots; 27.8 - 33.3 km/hr). Also known as economical speed. A substantial decline in speed for the purpose of achieving a minimal level of fuel consumption while still maintaining a commercial service.
- Minimal cost (12-15 knots; 22.2 - 27.8 km/hr). The lowest speed technically possible, since lower speeds do not lead to any significant additional fuel economy. The level of service is however commercially unacceptable, so it is unlikely that maritime shipping companies would adopt such speeds.

The practice of slow steaming emerged during the financial crisis of 2008-2009 as international trade and the demand for containerized shipping plummeted at the same time as new capacity ordered during boom years was coming online. As a response, maritime shipping companies adopted slow steaming and even extra slow steaming services on several of their pendulum routes. It enabled them to accommodate additional capacity with a similar frequency of port calls. It was expected that as growth resumed and traffic picked up maritime shipping companies would return to normal cruising speeds, but this appears not to be the case. In an environment of higher fossil fuel prices, maritime shipping companies are opting for slow steaming for cost cutting purposes, but using the environmental agenda to further justify them. Slow steaming practices have become the new normal to which users must adapt to. Slow steaming also implies adapting engines that were designed for a specific optimal speed of around 22-25 knots, implying that for that speed they run at around 80% of full power capacity. Adopting slow steaming requires the "de-rating" of the main engine to the new speed and new power level (around 70%), which involves the timing of fuel injection, adjusting exhaust valves, and exchanging other mechanical components in the engine.” (13)
Many producers of modern marine main engines offer necessary upgrades and changes aiming to make possible operating contemporary vessels in accordance with slow steaming requirements without negative consequences to engine.

It is worth noting and pointing out that slow steaming generated positive environmental effects reducing air pollutions from shipping.

However according to information from Lloyd’s List (14), “shippers are potential supply chain losers with added inventory costs when container lines slow steam at less than 20 knots, new research suggests.” These suggestions are confirmed neither by shippers nor carriers. Both are generally in opinion that further research needs to be carried widely out for obtaining reliable data and drawing conclusions.

In addition, the BIMCO is working for adoption of the Slow Steaming Clauses for Time and Voyage Charter Parties.

**Implications on contract of carriage by sea and legal responsibility of carrier caused by proposed changes**

According to Berlingieri (2009) “normally a contract is defined on the basis of the obligations of the parties.”(15) In most cases the carriage of goods by sea is governed by the appropriate rules, describing duties, liabilities and scope of responsibility of the parties involved. In seaborne transportation of goods such rules are (with some particular exceptions) Hague/ Hague-Visby Rules or Hamburg Rules.

The Rotterdam Rules or formally, the United Nations “Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea”, is an attempt to modernize (16)” the existing international rules relating to contract of maritime carriage of goods.

“The aim is that the Convention will replace The Hague rules, The Hague-Visby rules and the Hamburg rules and that it will achieve uniformity of law in the field of maritime carriage.”(16) “The Rules will enter into force on the first day of the month following the expiration of one year after the date of deposit of the twentieth instrument of ratification or accession.” (17)

The Rotterdam Rules were signed 2009 by 24 countries, but as by December 2012 have been ratified by Spain and Togo only.

(Full text of the Convention is available here: [http://www.rotterdamrules.com/convention](http://www.rotterdamrules.com/convention))

Following is stated in the Hague-Visby (earlier Hague) rules:

“Contract of carriage’ applies only to contracts of carriage covered by a bill of lading or any similar document of title, in so far as such document relates to the carriage of goods by sea, including any bill of lading or any similar document as aforesaid issued under or pursuant to a charterparty from the moment at which such bill of lading or similar document of title regulates the relations between a carrier and a holder of the same.”(18), while the Hamburg rules provide following definition:
“Contract of carriage by sea” means any contract whereby the carrier undertakes against payment of freight to carry goods by sea from one port to another; however, a contract which involves carriage by sea and also carriage by some other means is deemed to be a contract of carriage by sea for the purposes of this Convention only in so far as it relates to the carriage by sea. “(19)

The Rotterdam Rules defines the contract as follows:

“Contract of carriage” means a contract in which a carrier, against the payment of freight, undertakes to carry goods from one place to another. The contract shall provide for carriage by sea and may provide for carriage by other modes of transport in addition to the sea carriage.”(16)

For purpose and meaning of the project only and with obvious simplification of the topic, it is possible to make the statement that among other obligations of the carrier (vessel), like seaworthiness, responsibility for deck cargo or animals etc. but not limited to, the responsibility to delays in delivery of transported goods could be affected by the MonaLisa project thus taken into consideration.

No liability for economic loss due to delay of delivery of the cargo at the port of discharge within the time agreed in the appropriate contract of carriage has been imposed on vessel in accordance with Hague/Hague-Visby Rules. On the contrary, both the Hamburg (Article 5) and the Rotterdam rules (Article 17) impose such liability on the carrier.

Therefore it is important to incorporate relevant articles into respective documents and regulations which commonly accept proposed changes as suggested by the project. These changes as well as legal consequences should be widely discussed within shipping prior to adoption and scheduled to implementation in case of common acceptance and understanding from all parties involved in carriage of cargo by sea is achieved.

However unlikely to occur, under no circumstances the carrier (vessel) should be obliged to slow down or take any other measures which, in consequence, could lead to delays in delivery of the cargo in accordance to previously agreed terms of contract. Thus an exception from liability should be made for purpose of participating in Dynamic Route Planning or carriers should have possibility to participate in such system on non-obligatory basis.

**Implications caused by proposed changes on various charter parties inclusive contracts of carriage**

Physical presence of vessel in determined location e.g. port, range of ports, area or position defined by coordinates results from provisions of appropriate agreement and relevant clauses. Even if not proceeding to port of destination (in meaning of port of loading or discharging), vessel is obliged to comply with clauses of charter party, aiming commencement (delivery) or completion (re-delivery) of charter. It is very important, that proposed changes give vessel operational freedom to act unhampered, to satisfy own and other parties interest, following best practice and comply with appropriate regulations.

In case of liner service, Stopford (2009) says that: “The liner service (...) transports small parcels of general cargo, which includes manufactured and semi-manufactured goods and many small
quantities of bulk commodities-malting barley, steel products, non-ferrous metal ores and even waste paper may be transported by liner.” (6,p.63)

Because of amount of parcels to handle during transportation as well as number of transactions accomplished annually, this “is a very organisation-intensive business”.

“In addition, the transport leg often forms part of an integrated production operation, so speed, reliability and high service levels are important. (...) cargo liners are involved in the through-transport of containers. This is a business where transaction costs are very high and the customers are just as interested in service levels as price”. (6,p.63)

As mentioned above, liner service (and container service in particular) has implemented slow steaming practice, which became new reality. This agenda has attracted attention of shipping and its customers and thus some formal steps have been initiated and followed by BIMCO:

“Following the adoption of the Slow Steaming Clauses for Time and Voyage Charter Parties, the Working Group continues work on a virtual arrival clause. It was originally the intention to address the concept of ‘Virtual Arrival’ in the voyage charter party version of the Slow Steaming Clause, but in order to keep the clauses simple, the Working Group has decided to create a separate free-standing Virtual Arrival Clause. It is expected that a final clause will be ready for adoption in Spring 2013.” (4)

How does it work in practice? Let’s have a look at currently “fixed” vessel i.e. contracted for carriage of cargo on e.g. voyage charter basis.

Vessel has been fixed for one voyage from port A to port B with X tons of cargo of Y. Currently, after discharging at port C and completion of previous voyage, our vessel awaits orders at sheltered anchorage.

Voyage instructions have been given to master by responsible operational personnel. Such instructions include significant information, vital for best performance of vessel and optimisation of voyage, such as e.g. loading and discharging ports, type and quantity of cargo, lay- and cancellation days, information about place the vessel will lay at (cargo terminals, berths, loading from barges or other loading/discharging terms), kind of cargo gear to be used, rate (speed at) the cargo operation is expected to be performed, name of the agents at respective port (in some cases port agent needs to be nominated for particular voyage, whilst in other the owner can have longer period agreement still valid), nautical and other kind of remarks and information vessel can be concerned in. Good seamanship as well as operational practice requires consultation between master and shore based ships operator, where at least following issues should be discussed:

- Bunker inventory on board and any need of taking bunker. If not, where to plan it?
- Distance to loading port A
- Lay- and cancellation days and loading terms as per charter party
- Expected situation in loading port (is loading berth available?) and what are the loading prospects?
- Weather forecast on route to and for port A (if loading sensitive cargo).
- Any nautical (current, adverse weather, tide) or other hinders (e.g. holidays, strikes, etc.) can be expected underway to and once in the port A?
- Any special requirements or duties imposed on vessel? What are local habits at the port?
- Planned route to port B, considering bunker consumption, weather forecast, distance, preliminary prospects at discharging port B.
- What would be next employment for the vessel? What steps need to be taken to make vessel available/fit for next employment?

Some kind of intelligence is needed to get an insight into situation in the port. Depending on berthing prospects and commencement of cargo operations decision should be made regarding speed. This decision affects bunker consumption thus having direct impact on financial result. However, taking this decision some other information and options should be taken into consideration. More information concerning cargo operations, such as time allowed for cargo operations, (can be stated by days, hours or loading/discharging rate etc.), how NoR to be tendered, when “time starts to count” number of berths, possible shifting (change of berthing place) as well as additional information about how cargo operations will be performed is included in agreed charter party. This document provides parties of agreement with indications when time does not count in the calculation of demurrage and despatch, such as for example (explanation according to VOYLAYRULES 1993 code):

- SSHEX- Saturdays, Sundays, Holidays Excluded
- SSHINC- Saturdays, Sundays, Holidays Included
- UU-unless used-means that if laytime had commenced but loading/discharging is carried out during periods excepted from it, such time shall count
- WP-weather permitting- shall mean that any time when weather prevents the loading or discharging of the vessel shall not count as laytime
- WIBON-whether in berth or not- shall mean that if no loading or discharging berth is available on her arrival the vessel, on reaching any usual waiting-place at or off the port, shall be entitled to tender notice of readiness from it and laytime shall commence in accordance with the charter party. Laytime or time on demurrage shall cease to count once the berth becomes available and shall resume when the vessel is ready to load or discharge at the berth.
- WWD-whether working day-means a working day of 24 consecutive

to mention a few.

Even information about local holidays and customary working hours should be obtained and considered as important.

In practice optimisation of performed voyage means continuous collecting, updating and analysing of data received from various sources like weather forecasts, port agents, vessels or shipping market in general in purpose to take best decision. Situation in port can be subject to dynamic change and thus continuing contact between master and responsible operator to be maintained. What would be more profitable for our vessel, proceeding to port A for loading as previously mentioned if:

- ETA (estimated time of arrival) at pilot station with normal speed is on Friday at 11.00 hours
- within laydays,
- loading terms are 48 hours SSHINC
- Laytime for loading shall commence at 14.00 hours if notice of readiness is given up to and including 12.00 hours, and at 08.00 hours next working day if notice given during office hours after 12.00 hours (as per modified GENCON 94).
- If loading berth is not available on the vessel’s arrival at or off the port loading, vessel shall be entitled to give NoR within ordinary office hours on arrival there.
- Office hours on Friday 08.00-15.00 hours.
- Berth is occupied by other vessel and will be available on next Monday a.m. or p.m. all goes well (agw).
- Expected time for loading about 36 hours.

Proceeding at economic speed (slow steaming), vessel’s ETA is Friday 17.00 hours.

What does it mean from operational decision making process?

First scenario (normal speed):

- Vessel arrived on the roads on Friday at 11.00 hours.
- Anchored at 12.00 hours, NoR given and accepted at the same time.
- Time starts to count on Friday at 14.00 hours.
- Vessel on demurrage on Sunday at 14.00 hours.
- Arrived berth on Monday 14.00 hours.
- Completed loading on Wednesday at 02.00 hours.
- Departed at 04.00 hours and underway to port of discharge.

Second scenario (economic speed):

- Vessel arrived on the roads on Friday at 15.00 hours.
- Anchored at 16.00 hours (after office hours).
- NoR given and accepted on Monday at 08.00 hours.
- Time starts to count on Monday at 14.00 hours.
- Arrived berth on Monday at 14.00 hours and commenced loading.
- Completed loading on Wednesday at 02.00 hours.
- Departed at 04.00 hours and underway to port of discharge.

What is the difference? In the first scenario vessel is entitled to demurrage as from Sunday 14.00 hours until completion of loading on Wednesday morning, whilst in the second one it is not a case.

The cost for being entitled to demurrage compensation is higher, but normal for given speed, bunker consumption for an earlier by 4 hours arrival, calculated as follows:

Additional bunker consumption: \((33,9t - 16,5t) \times 4\text{hrs}/24\text{hrs} = 2,9 \text{t}\)

This cost should be compared to expected demurrage compensation for 2,5 days (60 hours), subject to bunker price and rate of demurrage.

Such calculations are normal day-to-day operational issues, complemented with other predictable or unpredictable factors.

In some cases of well-established cooperation between involved parties (shippers and carriers, consignees), as for instance carriage under Contracts of Affreighments other factors can play.
important role in daily routines subsequent to unwritten agreements, partnership or “entrepreneurial spirit”.

What will happen if project proposals are in force?

After receiving voyage order and instructions to proceed to loading port, the route from anchorage to port A is worked out by responsible navigational officer and route/voyage plan reported to Sea Traffic Management and accepted. After information about berth availability and preliminary prospects from port have been received, appropriate Sea Traffic Coordination Center advises reduction of speed to adjust arrival time. After advice has been accepted, vessel sends updated reports with amended, Estimated Time of Arrival, reduces speed to adjust arrival time. Port authority and terminal operator confirm ETA. A recognised Weather Analysis Provider (WAP) advises weather forecast, monitors vessels reported position and provides with all necessary calculations and documentation for all future calculations in Statement of Facts in accordance with approved algorithms and procedures. Finally, the vessel arrives at the port A as advised and performs cargo operations as planned. All documents for SoF and laytime calculation secured.

Participation in virtual arrival makes an obvious impact on bunker consumption. Saving bunker leads to a “win-win” situation, gaining financial profits as well as allowing emission reductions. Thus, besides economic meaning, is even of great importance for protecting the environment.

Taking above mentioned into consideration conclusion should be made that owners or commercial operators, can neither be deprived their right for optimising vessels voyages nor to lose any operational tools to play this “game”. Therefore new procedures and praxis should be proposed and, after being commonly accepted and implemented, allowing substituting outdated ones. New operational tools should be available as well as legal steps worked out to ensure rights of carriers and other parties involved in seaborne transports even under changed circumstances, as proposed by this project.

Such a tool, available for ensuring rights, duties, formalities and contractual commitments of parties involved in charters, is “virtual arrival”.

According to BIMCO, “the Working Group continues work on a virtual arrival clause. It was originally the intention to address the concept of ‘Virtual Arrival’ in the voyage charter party version of the Slow Steaming Clause, but in order to keep the clauses simple, the Working Group has decided to create a separate free-standing Virtual Arrival Clause. It is expected that a final clause will be ready for adoption in Spring 2013.”(4)

A short explanation of “virtual arrival” framework, based on OCIMF and INTERTANKO proposal, follows below. However intended for voyage to port of discharge can be adopted for Dynamic Route Planning purpose even on vessel’s route to loading port. This possibility should be ensured by adopting appropriate clauses of charter parties and articles of conventions or other regulations, governing carriage of goods by sea as described above.

Needless to say, that Dynamic and proactive route planning concept provides shipping with possibilities to apply other measures as these proposed by Virtual Arrival, such as for instance dynamic reaction to current navigational conditions through deviating previously approved route, surveillance, by advising or rendering assistance.
**Virtual Arrival concept**

The following short explanation of proposed practical solution concerning laytime calculations and Notice of Readiness is based on “Virtual Arrival. Optimising Voyage Management and Reducing Vessel Emissions- an Emissions Management Framework” paper (20), worked out and presented by the Oil Companies International Marine Forum, OCIMF, and the International Association of Independent Tanker Owners, INTERTANKO.

The idea of Virtual arrival is clearly explained by BP, one of INTERTANKO associated members, on company’s website:

“Historically, the shipping industry has always taken a ‘hurry up and wait’ approach, meaning merchant vessels would steam to meet a pre-agreed schedule, regardless of fuel was burned with ‘full ahead’ steaming, leaving vessels often sitting idle at port awaiting berthing slots.

Virtual Arrival, on the other hand, uses weather analysis and algorithms to calculate and agree a notional vessel arrival time, so that the ship will arrive ‘just in time’. This radically reduces bunker fuel consumption and emissions, while easing congestion and enhancing safety. Importantly, the authority of the vessel’s master remains unchanged. Furthermore, waiting time compensation, or what is known as ‘demurrage’, is calculated as if the vessel had arrived at the originally stipulated time, hence the name ‘Virtual Arrival’. Post-voyage, any savings in bunker costs or carbon credits are calculated and split between the counterparties. Aside from the financial incentive, Virtual Arrival could also offer a significant prize in the reduction of many millions of tonnes of greenhouse gas emissions if it was adopted widely.”(21)

Underlying basic principles of the virtual arrival are:

- safety of the vessel remains paramount
- master’s role and authority remains unchanged and
- basic terms of carriage remain the same

Unlike “slow steaming” which purpose is rather an attempt to “match current market conditions”, virtual arrival is “all about identifying delays at discharging ports, then managing the vessel’s arrival time at that port through well managed passage speed, resulting in reduced emissions but not reducing capacity.”(20)

“The pre-conditions for Virtual Arrival are:

- a known delay at the discharge port
- a mutual agreement between the ship owner/operator and charterer. Other parties may be involved in the decision making process, such as terminals, cargo receivers and commercial interests.
- an agreed Charter Party clause that establishes the terms for implementing Virtual Arrival
- an agreement on how to calculate and report the performance of the vessel
- an agreement on how to assign benefits between the involved parties.”(20)

The other key elements of virtual arrival are:
• involvement of approved Weather Analysis Provider (WAP) should be considered
• clear and transparent standards for verification of WAPs
• WAP must be provided by an independent and approved third party organisation

“To reduce post-fixture disputes, it is important that there is a clear understanding of, and agreement to, the method of calculation of the vessel’s voyage performance, the speed and other data to be used, the reports to be issued and the timing of these reports before the Virtual Arrival portion of the voyage commences. Weather Analysis Service Provider (WASP) may be employed. Their role would be to ensure the accuracy and independence of the calculation of a vessel’s voyage performance. A Weather Analysis Service Provider is an entity that specialises in weather and or vessel performance analysis which is entrusted by both parties to provide analytical services for the voyage undertaken regarding the voyage analysis and physical conditions encountered.” (20)

“The paper” (20) provides with a short “Overview of the Virtual Arrival Process”:

The following summarises the steps that are typically involved when implementing the Virtual Arrival process:

1. Before a vessel’s departure from the load port, or while en route to the discharge port, a delay is identified at the discharge port, for example, due to congestion at the berth or lack of receiving space
2. in view of the known delay, the vessel owner/operator and the vessel charterer may agree to consider entering into a Virtual Arrival agreement for the voyage
3. the ship owner/operator is requested to provide ship performance information to enable an initial assessment of the voyage to be made based on the service speed of the ship
4. Charterer and owner/operator agree a Required Time of Arrival at the destination port and agree the methodology for calculating voyage data and the associated reporting requirements, or alternatively agree on a WASP to be used for calculating voyage data and to provide supporting reports.
5. agreement to undertake Virtual Arrival is implemented using an agreed Charter Party Clause
6. the initial report should include:
   • methodology to be used to determine speed and consumption calculation
   • calculated ETA, based on normal service speed
   • calculated ETA, based on normal service speed and anticipated weather, the ‘Virtual Arrival’ ETA
   • Required Time of Arrival (RTA)
   • speed or RPM to achieve RTA
   • bunkers on board at the Virtual Arrival decision point
7. the vessel reduces speed in order to make the Required Time of Arrival
8. on completion of the voyage if agreed, a WASP or an entity that specialises in weather and or vessel performance analysis, produces a final report providing post-voyage analysis and data to support confirmation of the vessel’s Virtual Arrival time and calculations of fuel saved and emission reductions
9. in finalising the Virtual Arrival time, an assessment will be made of the impact of the weather sea and current conditions on the voyage by comparing the actual weather encountered with that anticipated when establishing the provisional Virtual Arrival ETA
10. the agreed time of Virtual Arrival, the ‘Deemed Arrival’ time, is used as the time when considering demurrage exposure.”

Figure 2 presents an “Overview of the Virtual Arrival Process”.

![Diagram of Virtual Arrival Process]

**Figure 2: Overview of the Virtual Arrival Process**  
Source: INTERTANKO, OCIMF (20)
As it has been stated in "the paper" (20) that “Virtual Arrival is intended to be a dynamic and flexible process and, if conditions change on voyage, the orders can be revised to enable the ship to achieve, for example, a new arrival time” thus is fully applicable in Dynamic and proactive route planning together with other measures as proposed by this project.

“Virtual Arrival” concept is illustrated below.

Figure 3: Visual demonstration of Virtual Arrival Process

Source: INTERTANKO, OCIMF (20)

Conclusions

“It is inherently wasteful for a vessel to steam at full speed to a port where known delays to cargo handling have already been identified. By mutually agreeing to reduce speed to make an agreed arrival time, the vessel can avoid spending time at anchor awaiting a berth, tank space or cargo availability. Emissions can thus be reduced, congestion avoided and safety improved in port areas.” (20)

Dynamic and proactive route planning, as proposed by this project, enables re-routing and speed advising for Masters of vessels, based on, amongst others, identified information regarding availability of berth at port or other place of destination. Time aspects of sea voyage are of great impact on how the vessel complies with its contractual commitments. As proved in this report, all kinds of charter agreements in use on the freight market, i.e. derivative, voyage and time charters are linked to time in various grades. Therefore it is very important to work out a set of changes and agreements in legal contracts or other governing documents, allowing implementing of optimising procedures. This possibility should be ensured by adopting appropriate clauses into charter parties and articles of conventions or other regulations, governing carriage of goods by sea as described above.

It is of high importance that all parties, involved in contracts of carriage by sea, including land logistic and operation services, which formally are not parties of carriage agreement, are actively engaged and participate in changes as proposed by this project.

With reference to above stated, the following should be taken into consideration:

- confirmation that adoption of project proposals has no impact on Master’s role in commanding the vessel and vessel’s safety both at sea and port
- any entitlements of owners or other parties involved should not be withheld
- additional clauses of charter parties should be accepted and adapted
- new clauses should be mutually accepted in order to reduce post-fixture disputes,
- efficient method of calculation of the vessel’s voyage performance inclusive port operations, NoR and SoF should be identified, understood and agreed by all parties involved
- reporting system, its procedures and requirements should be worked out and mutually agreed
- transparent standards for verification and approval of WASP to avoid increased risk of contract disputes
- instruction giving procedures should be worked out as well as entities authorised to give instructions identified
- apportion and ways of distribution of cost benefits should be determined and agreed by parties
- implications on vessel’s next employment should be consider in advance
- vessel data sharing and its scope should be agreed

Dynamic and proactive route planning concept provides shipping with possibilities to apply new measures, such as for instance dynamic reaction to current navigational and weather conditions, surveillance, by advising or rendering assistance in purpose to optimise vessels’ performance.
“Its effective implementation requires good cooperation and dialogue between the vessel owner/operator and the charterer and this will serve to remove many of the commercial obstacles to reducing emissions that have hampered some past initiatives. Such obstacles have been associated, for example, with third party and contractual implications, the fact that the party paying for the fuel may not be the technical operator of the ship and a lack of clarity as to which party is liable for paying for waiting time in port.” (20)

Sources and references:


