

Commercial Aspects of Shipping – Voyage Estimation



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This month let us look at voyage estimation. I feel the best way to understand this subject is through an example. Some of you may find it little difficult in the beginning but as you work

through the example given, you would be able to figure out the steps and understand the mechanics. The example deals with a voyage estimate for iron ore business from Port Hedland in Australia to Lianyungang in China. Full forms of most of the abbreviations were given in earlier articles. However, in order to make it easier and for quick reference, you will find the full forms given at the end of the article.

The purpose of this exercise is not to make you an expert chartering executive in an operator's or ship owner's office but to give a decent idea of the mechanics involved and an understanding of how bunker consumption and speed affect the business in addition to the total number of days and thus the necessity of ensuring nil off hire. For those readers who are interested in working the example out themselves, they can send an e-mail at shiplearn@yahoo.com for a copy of the excel file.

Example:

A ship owner has received the following indication from charterer directly:

Acct: FCC

52,000MT IRON ORE IN BULK 10PCT MOLOO
1SBP PORT HEDLAND, AUSTRALIA / 1SBP
LIANYUNGANG

LAYCAN : 15 -22 SEP'01

FRT (Freight in US \$/tonne) INVITE OWNERS BEST BSS (Basis)
FIOST, 1/1 (1 Port for loading and 1 port for discharging)

LOADING RATE: 40,000MT PWWD SHINC

DISCHARGING RATE: CQD (Take as 4 days)

NO ADDCOMM (No address commission for Charterers)/NO
BROKERAGE

END

Some relevant information:

- Vessel free Hong Kong (it means that the vessel will need to ballast from Hong Kong to the load port, assuming no cargo available).
- Vessel can load 54,000 mt iron ore maximum
- Vessel ETA loadport 17 SEP' 01
- Speed : 13 knots
- Bunker consumption: F.O. 35mt per day
- D.O. at sea 2mt per day
- D.O. in port 4mt per day
- Price of F.O. \$ 110.-
- Price of D.O. \$ 155.-
- Port Disbursements

- At Port Hedland \$30,000.-
- At Lianyungang \$30,000.-
(Port Disbursement means: Expenses at port for various heads such as port charges, tugs, pilotage etc.).
- Other expense assume \$ 3,000.-
- Charterer "in" Vessel daily hire \$ 6,000.-
- Discharging take about 4 days
- Distance: HongKong/Port Hedland 2,710 nautical mile
- Port Hedland/Lianyungang 3,257 nautical mile

- a) Prepare a voyage estimate and give the break-even freight rate.
- b) Draft a firm offer in short form to reply the above indication from Charterer.

Your reply should include all the followings:

- the normal main terms
- assume a vessel name and some particulars (need not put figures except DWT, Yr built, Flag, Class, Cubics, GRT/NRT)
- freight rate and payment
- Loading and discharging rate
- Taxes and charter party form, etc.

ANSWER a):

SAILING DAYS REQUIRED:

A) HONG KONG/PORT HEDLAND = 2710/312 (13
KNOTS*24 HRS) = 8.69 DAYS

BALLAST PASSAGE

B) PORT HEDLAND/LIANYUNGANG = 3257/312 (13
KNOTS*24 HRS)= 10.44 DAYS

LADEN PASSAGE

(For simplicity: (1) Same speed/fuel consumption taken for loaded and ballast legs, in practice, it is better to describe them separately e.g. Ballast 13.5 Kn at 34 mt and Loaded 12.5 at 34 mt. (2) No weather factor taken. Generally may add about 3 days or 5% to the total number of sailing days, as reasonable to do so depending upon the length of the business and expected weather at the time of year).

PORT STAY:

C) LOADPORT I.E. PORT HEDLAND 54,000 MTS CARGO/
40,000 MTS LOAD RATE = 1.35 DAYS

D) DISPORT (Discharge Port) I.E. LIANYUNGANG = 4
DAYS (GIVEN IN QUESTION)

TOTAL DURATION (A+B+C+D) = 24.48 DAYS, say 24.5 days.

BUNKER/FUEL COST:

WHILE SAILING:

E) FUEL OIL = 19.13 DAYS (A+B) * 35 MTS/DAY
CONSUMPTION * USD 110/PMT = USD 73,650

F) DIESEL OIL = 19.13 DAYS * 2 MTS/DAY * USD 155/

(The views expressed here are solely those of the author, and do not necessarily reflect the views of the organization he represents.)

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PMT = USD 5,930

IN PORT CONSUMPTION:

G) DIESEL OIL = 5.35 DAYS (C+D) * 4 MTS/DAY * USD 155/PMT = USD 3,317

TOTAL BUNKER COST (E+F+G) = USD 82,877

TOTAL VOYAGE COST:

BUNKER COST = USD 82,877

PORT DISB = USD 60,000

CHARTERED IN VESSEL COST = USD 146,850

OTHER EXPS = USD 3,000

TOTAL = USD 292,727

BREAK EVEN FREIGHT RATE REQUIRED TO PERFORM THIS VOYAGE:

USD 292,727/54,000 MTS CARGO = USD 5.42 PMT
ROUNDED OFF TO USD 5.40 PMT

Points to ponder:

1. Suppose the vessel had an engine breakdown and the repairs took 4 days at sea. (Hint: No main engine consumption for these 4 days but generators will be running).
2. Suppose vessel faced bad weather and took 3 days extra. Assume same Main Engine consumption for these 3 days but the speed had dropped due to adverse current/swell and wind.

How will the breakeven rate be affected in each of above cases?

ANSWER b):

OWNERS ARE PLEASED TO OFFER FIRM AS FOLLOWS
SUBJECT REPLY WITHIN 30 MINUTES TODAY, 3
SEPTEMBER 2001:

MV COMMERCIAL ASPECTS

BUILT FEB 1987

HONG KONG FLAG/CLASSED LLOYDS

7 HO/7 HA

GRAIN CUBICS: 70,000 CBM

GT/NT 32222/23333

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ALL DETAILS ABOUT
FOR

ACCOUNT: FCC

CARGO/QTY: 50,000 MTS IRON ORE IN BULK 10 PCT
MOLOO

1SBP PORT HEDLAND, AUSTRALIA / 1SP
LIANYUNGANG, CHINA

LAYCAN 0001 HRS 15SEPT/2400 HRS 22SEPT, 2001
(LOCAL TIME). VLSL ETA PORT HEDLAND 12 SEPT
AGW UCAE WP.

LOADRATE/DISRATE: 40,000 MTS PWWD SHINC /
DISCHARGE CQD (see associated risks at the end of the article)
FREIGHT RATE: USD 8 PMT FIOST BASIS 1/1

DEMMURAGE/DESPATCH: USD 10,000 DHD

PAYMENT: 95 PCT FREIGHT PAYABLE WITHIN 3
BANKING DAYS AFTER SIGNING RELEASING B/L (Bills
of Lading) MARKED FREIGHT PAYABLE AS PER CP.
BALANCE 5 PCT TOGETHER WITH DEMMURAGE/
DESPATCH, IF ANY, TO BE SETTLED WITHIN 30 DAYS
OF COMPLETION OF DISCHARGE.

TAX CLAUSE: TAXES/DUES LEVIED ON THE CARGO
SHALL BE PAID BY CHARTERERS AND TAXES/DUES
LEVIED ON THE VESSEL SHALL BE PAID BY OWNERS.

NO ADDRESS COMMISSION TO CHARTERERS/
BROKERAGE.

SUBJECT DETAILS BASED ON CHARTERERS FULLY
EXECUTED GENCON CP TO BE MUTUALLY REVIEWED/
AGREED.

ALL CHARTS SUBJECTS TO BE LIFTED WITHIN 24
HOURS AFTER FIXING MAIN TERMS.

END OFFER++

NOTES:

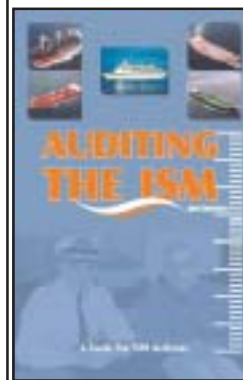
- IN A VOYAGE OFFER THERE IS NO NEED TO GIVE
THE VESSELS

SPEED/CONSUMPTION

- FCC: First Class Charterer; MOLOO: More or Less in
Owners' Option; SBP: Safe Berth, Port; FIOST: (Free In/Out
and Trimmed. Charterer pays for cost of loading/discharging

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by Ajoy Chatterjee



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cargo, including stowage and trimming); AGW UCAE WP: All Going Well, Unforeseen Circumstances Always Excepted, Weather Permitting; PWW: Per Weather Working Day; SHINC; Sundays and Holidays Included; CQD: Customary Quick Despatch (Here the owner or disponent owner must find out from agents as to what is customary in that port for similar size vessels to discharge and what is the line up situation, holidays etc – to make the question easier, use 4 days in this case it is important to note that here the risk lies with the Owner/disponent owner because if the ship gets delayed, the loss will be on their account); DHD: Despatch Half Demurrage. ADDCOMM: Address Commission.

A Twist

Important: Note the difference between the breakeven rate and the rate offered.

Estimated Revenue from the Business = 54,000 x 8 =US\$ 432,000. Total Expenses = US\$ 292,727. Net estimated profit

=US\$ 139,273 i.e. 5,689/day. Please note the example given above takes into account the prevailing rate in a very poor market of end 2001. Today, the same Panamax, as considered above, earns close to 3 times i.e. the hire of the Chartered “in” vessel is US\$18,000/day and the Cost of bunkers is F.O. = US\$ 300/ton; D.O. = US\$ 490/ton. How about reworking the figures to get an idea of the cost of transporting one ton of iron ore and comparing with that obtained above?

(ii) What if the hire of Chartered “in” vessel is US\$ 40,000/day and the Cost of bunkers is F.O. = US \$ 250/mt; D.O. = US\$ 385/mt? Compare this with 2001 and the example in (i) above. A scenario close to above did occur during the last two years.

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