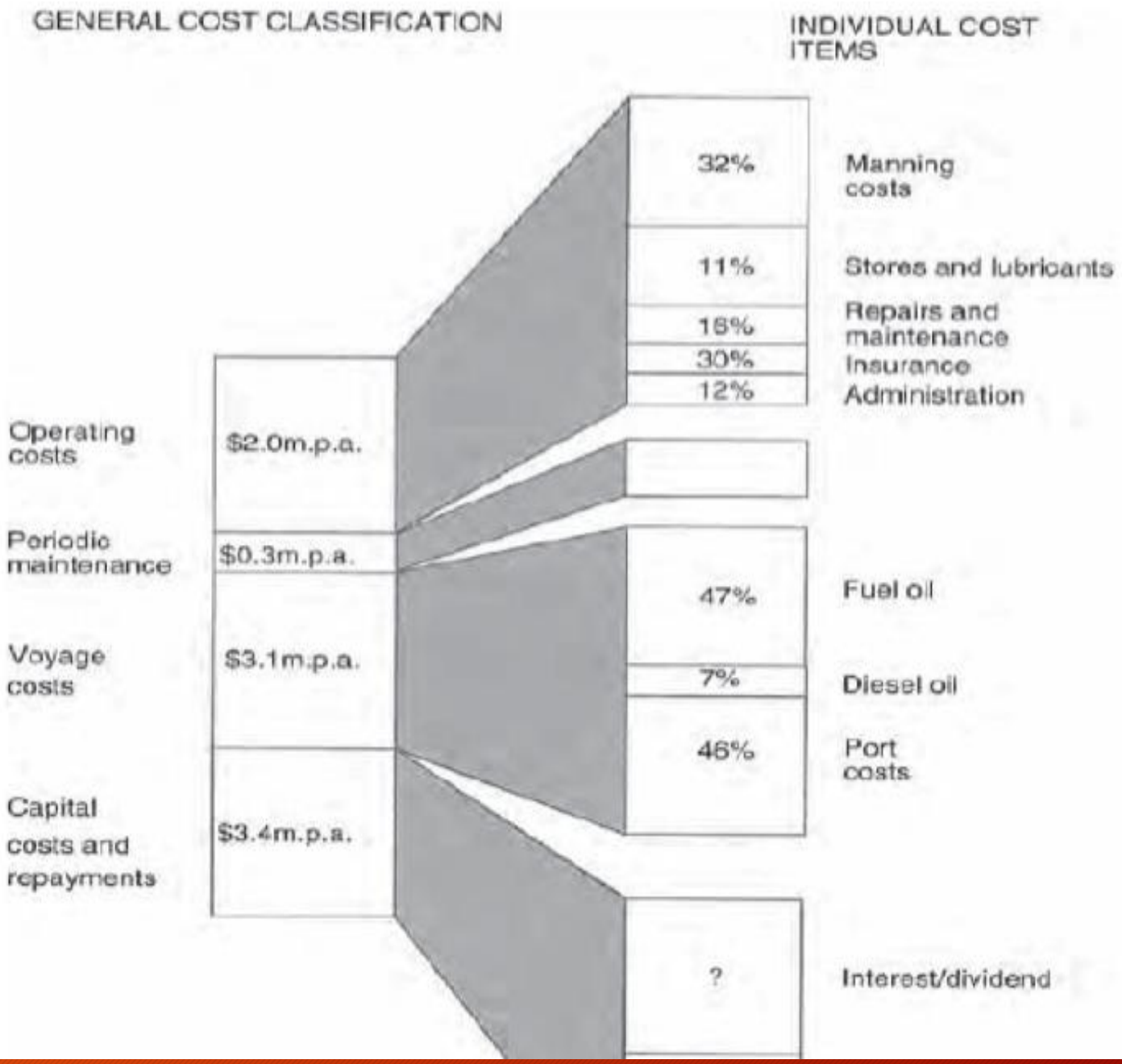
Voyage

Estimation


GENERAL COST CLASSIFICATION
INDIVIDUAL COST ITEMS
Operating costs
$2.0m.p.a.
Periodic maintenance
$0.3m.p.a.
Voyage costs
$3.1m.p.a.
Capital costs and repayments
$3.4m.p.a.
32%
Manning costs
11%
Stores and lubricants
16%
Repairs and maintenance
30%
Insurance
12%
Administration
47%
Fuel oil
7%
Diesel oil
46%
Port costs
?
Interest/dividend

VOYAGE COST

Voyage Cost distribution
PORT COSTS
Time at Port
Load/discharge costs
Port dues
Taxes on ship
Taxes on cargo
SAILING COSTS
Bunkers
Lubricants
Canal Dues
RUNNING COSTS
Crew Costs
Overtime
Insurance on ship
Insurance on cargo

- Who is responsible?

VOYAGE COST

Voyage Cost distribution	Voyage Charter	Time Charter
PORT COSTS		
Time at Port	Owner	Charterer
Load/discharge costs	Depends on agreement	
Port dues	Owner	Charterer
Taxes on ship	Owner	Owner
Taxes on cargo	Charterer	Charterer
SAILING COSTS		
Bunkers	Owner	Charterer
Lubricants	Owner	Owner
Canal Dues	Owner	Charterer
RUNNING COSTS		
Crew Costs	Owner	Owner
Overtime	Owner	Depends on agreement
Insurance on ship	Owner	Owner
Insurance on cargo	Charterer	Charterer

Our Lady

MV ACHILEAS---- OPENING NINGBO SPOT
BUILT1999, PANAMA-FLAG.CLASS- ABS
DWT 71037 MT AT 13.652 MTRS,
LOA / BEAM 225.33 M /32.20 M,
GT/NT 38302 /24109,
HO/HA 7/7,
GRAIN/ BALE 85005.20 CBM / 82562.80 CBM CARGO
13 KTS IN BALLAST & LADEN ON 28.5 MT/DAY IFO 380 + MDO 0.30 MT/DAY.
PORT CONS IDLE: IFO 380 - 3.00 MT/DAY + MDO - 0.30 MT/DAY
WORKING: IFO 380 - 5.00 MT/DAY + MDO- 0.30 MT/DAY.
ALL WOG
ANY DIRECTION. SINGLE VOY/TCT/ PERIOD ACCEPTABLE.
Note: Running expenses 9000usd per day. (Not given to Positions)

ORDERS

ACC: Flame
FCC Coal UPTO 75000T
HAY POINT TO ARA RGE,
NOV 15/30
FIO; 30000T/25000T
COMM 2.5TTL

CETRAGPA
60000/10 COAL
TARAHAN TERMINAL TO DALIAN,
NOV 5/15
FIO 35000SC/25000SC

STEP 1: DAYS AT SEA

NINGBO – HAY POINT	3874NM
HAY POINT – ARA RANGE	11626NM
TOTAL SEA DISTANCES	**15500NM**

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TOTAL SEA DISTANCE / SPEED / 24H =
15500 / 13KN / 24 = 49,67 DAYS

We always round up the result as there are unforeseen events
eg. Bad weather or adverse sea currents.
THUS
SEA DAYS ARE TAKEN TO BE 52 DAYS

NOTE: The proposed job also entails passing SUEZ CANAL. Thus we add 2 more days.

SO TOTAL SEA DAYS ARE 54 DAYS

NOTES ON THE SUEZ CANAL

On a typical day, three convoys transit the canal, two southbound and one northbound.

The first southbound convoy enters the canal in the early morning hours and proceeds to the Great Bitter Lake, where the ships anchor out of the fairway, awaiting passage of the northbound convoy.

The northbound convoy passes the second southbound convoy, which moors in Ballah-Bypass .

The passage takes between 11 and 16 hours at a speed of around 8 knots.

The low speed helps prevent erosion of the canal banks by ships' wakes.

STEP 2: CONSUMPTION AT SEA

According to our ship's particulars our consumption is:

28.5 MT/DAY IFO 380 + MDO 0.30 MT/DAY

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54 days at sea X 28,5t IFO and 54 days X 0,30t MDO =
1.539t IFO and 16.2t MDO

STEP 3: DAYS AT PORT

Days at port depend on the quantity of cargo carried and the rate at which loading/discharging takes place.

The order proposes Full & Complete Cargo (FCC) up to 75000TNS
Coal has a stowage factor between 44 and 48.
Note that our grain capacity is given in CBM. However stowage is given in CBFT.
We must convert given that

1 Cubic Meter equals 35.3 cubic feet

Thus

85005.20 CBM = 3.001.930cft

Grain Capacity / Stowage Factor = 3.001.930cft / 46 = 65.259T

STEP 3: DAYS AT PORT

According to our calculations our ship can accommodate 65.259T of coal.

First we check that this tonnage does not exceeds our DWT. Under **no** circumstances we can exceed our DWT.

Our DWT is 71.037t so it seems that there is no problem here!

Second we must check that our cargo plus constant weights i.e. bunkers, water etc does not exceed our DWT.

We have 65.259t of cargo + 1555,2t of bunkers + 500t of constant weights < DWT

So it seems that there is no problem here either!

Third we must check whether a different load zone is utilized. Ships carry less cargo in winter zones than in summer zones. This information will be given by our Operations/Technical Dept. Lets assume there is no problem here either.

NOTES ON MAXIMIZING CARGO

As was noted we can never exceed our DWT.

In this particular case cargo plus other weights (bunkers and constants) did not exceed our DWT. However we did not take under consideration the change in load line zones. We did that because we start at a Summer Zone (Australia November) and finish at a Winter Zone. Thus by the time we reach ARA range due to bunker consumption our draft will reduce. (In any case a check must be made).

However things could have been the opposite way. We could have started at winter zone and end the voyage at summer zone. This means that we might have been forced to load less cargo in order to travel safely through the winter loadline zone.

An experienced broker, in order to maximize cargo carried and thus freight, would probably decide to reduce fuels when starting the voyage and refuel along the way in order to increase cargo carried. The final decision would have taken under consideration possible refueling facilities and fuel cost along the way.

STEP 3: DAYS AT PORT

Based on our calculations the cargo to be loaded is 65.259T

According to the Order the loading/discharging operations will be Free In Out, ie without cost to the Owners.

The cargo will be loaded at a rate of 30000T per day and discharged at a rate of 25000T per day.

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So days at load port will be:
65259t / 30000t per day = 2,17 days.

Days at discharge port will be:
65259t / 25000t per day = 2,61 days.

However we have not yet agreed whether days at port will be SHINC or SHEX thus taking worst case scenario we add 2 more days hoping for only one weekend.
So total Port Days will be approximately 7 days.

ACCT FLAME

STEP 4: CONSUMPTION AT PORT

According to our vessel's description consumption at port is as follows:
PORT CONS IDLE: IFO 380 - 3.00 MT/DAY + MDO - 0.30 MT/DAY
WORKING: IFO 380 - 5.00 MT/DAY + MDO- 0.30 MT/DAY

STEP 4: CONSUMPTION AT PORT

According to our vessel's description consumption at port is as follows:
PORT CONS IDLE: IFO 380 - 3.00 MT/DAY + MDO - 0.30 MT/DAY
WORKING: IFO 380 - 5.00 MT/DAY + MDO- 0.30 MT/DAY

THUS :

IFO consumption
5 days working at port X 5mt IFO = 25mt IFO
2 days idle at port X 3mt IFO = 6mt IFO
Total consumption **IFO at port 32mt.**

MDO consumption
7 days at port idle or working X 0,30mt MDO= 2,1mt MDO
Total consumption **MDO at port 2,1mt.**

STEP 5: CALCULATING COSTS

The **Voyage Costs** are:

1.Port Expenses
2.Bunker costs
3.Running Expenses
4.Other Costs

Port Expenses are usually based on ship's GRT and NRT and days at port. In order to get an estimate of the costs we ask for a pro forma invoice from our agents at the ports.
For our needs we assume that port expenses at load port are 20000usd for 3 days and 25000usd for 3 days at discharge port. **A total cost of 45.000usd**.

STEP 5: CALCULATING COSTS

Bunker Costs are based on ship's consumption and cost of fuel already on board as well as the cost of purchasing bunkers at various bunker ports. The cost of bunkers already on board is the price paid in the previous refueling. As to what regards bunker prices for additional fuel at various ports we rely on our **bunker broker.**

Current prices for IFO 380CST stands at 450usd per ton and for MDO at 750usd per ton.

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Current prices for IFO 380CST stands at 450usd per ton and for MDO at 750usd per ton.

Base on our needs as calculated at steps 2 and 4 our bunker costs are

IFO costs: (1.539mt at sea + 32mt at port) X 450usd = **706.950usd**
MDO cost: (16,2mt at sea + 2,1mt at port) X 750usd = **13.725usd**

Total bunker costs: 720.675usd

STEP 5: CALCULATING COSTS

Running Expenses include all costs inherent in managing a ship and that are paid by the Owners per day irrespective of whether the vessel is under charter or not.

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Running expenses for our ship stands at 9000usd per day for every day. Thus since the total voyage lasts for (steps 1 and 3) 54+7 = 61 days our running costs are:

61 days X 9000usd = **549.000usd**

Other costs in this particular case include Suez canal tolls. Suez canal costs are charged by the Suez Canal Authority and are based on various parameters such as vessel type, vessel length and GRT.

For our vessel Suez Canal tolls are taken to be 187.829usd.

STEP 5: CALCULATING COSTS

So according to our calculations the costs for the proposed voyage are:

Port Costs + Bunker Costs + Running Expenses + other costs =
45.000usd + 720.675usd + 549.000usd + 187.829usd= **1.502.504usd.**

TOTAL COSTS: **1.502.504usd.**

Note that our cost calculation includes the costs of the ballast voyage from where our ship is currently to the port of loading. This is not usual in dry bulk vessels and the charterer is willing to pay this ballast trip only in times of short supply.

STEP 6: CALCULATING FREIGHT

Our vessel's grain capacity (see slide 4) is 85005.20 CBM.

The stowage factor is given in CBFt so we need to make a conversion from mt to ft.

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1CMB = = 35.3146 CBFt thus

85.005.20cbm = 3.001.924,636 cbft

The stowage factor for COAL is approximately is **46** and therefore our cargo will be:

3.001.924,636 / 46 = 65.259,23tones

STEP 6: CALCULATING FREIGHT

According to the order the proposed cargo volume is FCC up to 75000t. Therefore the calculated 65.259t for our vessel is within cargo volume specifications!

Our intaken quantity based on stowage factor and grain capacity will be

65.259,23tones

Therefore the minimum required freight per ton in order to cover our voyage expenses will be:

1.502.504usd. / 65.259.23t = 23.02USD per ton

NOTES ON FREIGHT CALCULATION

In our example we calculated the minimum acceptable freight in order to undertake the voyage and break even our costs!

It must be obvious that we will aim during negotiations to achieve a higher freight in order to make a profit.

In order to see before starting negotiations whether a profit can be made we look into market reports and especially fixture reports where similar fixtures in terms of voyage and cargo volume and freight achieved are reported.

Sometimes we need to compare a proposed voyage charter with a proposed time charter. In order to do that we always transform voyage charters into Time Charter Equivalent - TCE. We will see this calculation later on!

In fact we always perform a TCE calculation in order to compare proposed jobs!!!

PROCESS REVIEW