

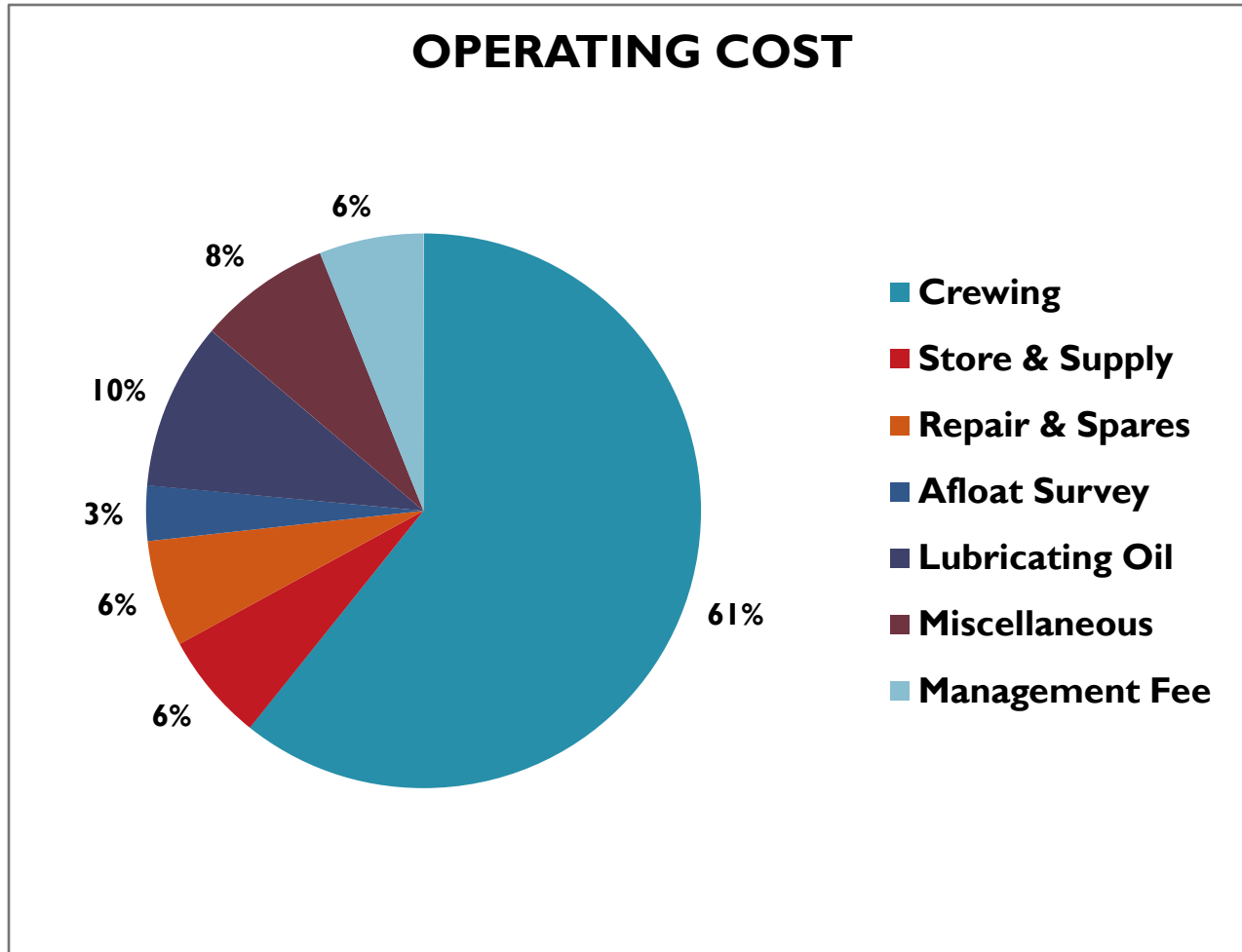


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Difficulties in Implementing Cost Saving Measures



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- ▶ **MAIN ENGINE CYLINDER L.O.
FEED RATE REDUCTION**

- ▶ **SLOW & SUPER SLOW
STEAMING**



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MAIN ENGINE CYLINDER OIL FEED RATE



M/E CYLINDER OIL FEED RATE

Maker's Recommended Minimum Feed Rate -

- ▶ ALPHA: 0.6 gms/BHP-Hr
- ▶ MECHANICAL: 0.8 gms/BHP-Hr

On Ship's -

- ▶ ALPHA: 0.9 to 1.0 gms/BHP-Hr
- ▶ MECHANICAL: 1.1 to 1.2 gms/BHP-Hr



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WHY IS THE RECOMMENDED FEED RATE NOT ACHIEVED??

Ship Staff is simply reluctant to reduce the feed rate!

Excessive Liner Wear Down



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FEED RATE CALCULATIONS

$$Q_{NCR} = BS \times \frac{OUTPUT_{NCR}}{C} \times \frac{24}{\rho \times 1000}$$

- Q_{NCR} : Specific Cyl. Oil Consumption @ NCR in Ltr/day-cyl
Output_{NCR} : Engine Output at NCR
BS : Basic Setting in gms/BHP-Hr,
P : Specific Density (0.92) for LO
C : No of Cylinders



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FEED RATE CALCULATIONS

M/Eng BHP at NCO	Excess cons./day	Excess cons./year
28380 – VLCC	150 ltrs	36,000 ltrs
16510 – Aframax	86 ltrs	20,640 ltrs
10496 – MR Tanker	54 ltrs	12,960 ltrs

Excess Consumption in USD considering unit cost of Cylinder LO to be \$2.10 per litre:

Type of Ship	Additional Expenditure/Year
For VLCC	USD 75,600/-
For Aframax	USD 43,344/-
For MR Tanker	USD 27,216/-



CONCLUSION

- ▶ **The annual savings by reducing the cylinder oil feed rate by just 0.2 gms/BHP-hr would be slightly less than the cost of two liners.**
- ▶ **The feed rate would still be maintained well above the minimum recommended by engine.**
- ▶ **Even if we consider the worst case that the liners wear down at faster rates - the cost of all the liners can be off-set in 3~6 years depending upon the type and trading pattern of the vessel!**



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WHAT NEEDS TO BE DONE

- ▶ Reassure & Convince!!!
- ▶ Regular & Close Monitoring!!
- ▶ Training!



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SLOW & SUPER SLOW STEAMING



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WHAT IS SLOW & SUPER SLOW STEAMING

POWER RATING	POWER OUTPUT
MCR	100%
NCR	85% ~ 90%
MEP	ABOUT 60%
SLOW STEAMING	60% ~ 40%
SUPER SLOW STEAMING	40% ~ 10%



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COST - BENEFIT ANALYSIS	AT ENGINE LOAD		
	60%	50%	40%
Approx Speed in Knots	12.2	11.5	10.7
M/E Fuel Consumption/Day (MT)	23.8	19.8	15.8
Boiler Fuel Consumption/Day (MT)	NIL	NIL	NIL
Add. AE FO Consumption/Day (MT)	NIL	NIL	NIL
Total Fuel Consumption	23.8	19.8	15.8
Sailing Days for a voyage of 1000NM	3.42	3.63	3.90
Fuel Consumed During the Voyage	81.40	71.88	61.62
Savings in Tons for the voyage	Datum	9.52	19.78
Savings in Tons/Day		2.63	5.08
Bunker Cost in USD/Ton	\$650	\$650	\$650
Savings/Year @ 200 days of Sailing		\$341,900	\$660,400



WHY IS IT DIFFICULT TO IMPLEMENT

Owners & Ship Managers are reluctant.

- ▶ The benefit is only for the charterers!
- ▶ The long term effects on Main Engine??
- ▶ Additional cost of some recommended modifications (slide type fuel valves, spare auxiliary blower motor...)!



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WHAT NEEDS TO BE DONE

Get the charterers to bear or at least partly share the cost of the required engine modifications?

VERY DIFFICULT!



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**THANK YOU
&
WISH YOU ALL
THE BEST**