

Appendix 5

Fuel and Maintenance/Repair Costs Glosten ARRV - Fuel, Maintenance & Repair Costs

Assumptions

Diesel Engine BSFC	0.34	Generator Eff	94%
Fuel Type	MDO	Generator Engine BSFC	0.34
Fuel Weight	7	Fuel Type	MDO
Fuel Cost	\$1.00	Fuel Weight	7

Note: Generators sets are assumed to burn diesel fuel in this case.

Fuel Costs	OPEN WATER			ICE BREAKING	
	OPEN WATER TRANSIT	TOWING	STATION KEEPING	STATION KEEPING	TRANSIT
Condition					
Speed	10 KTS SS 4			0	2.5' LEVEL ICE
Propulsion Power Required	2,500	2,000	800	800	2,950
Bow Thruster Power (hp)	0	0	450	450	450
Ship Service Power (hp)	790	790	880	880	790
Research Power (hp)	50	100	160	160	100
Sub-total Power (BHP)	3,340	2,890	2,290	2,290	4,290
Genset Load (kW)	2,493	2,157	1,709	1,709	3,201
Generator Engine Type	diesel	diesel	diesel	diesel	diesel
Generator Engine BHP	3,553	3,074	2,436	2,436	4,564
Generator Engine Fuel Rate - gph	172.58	149.33	118.33	118.33	221.67
Fuel Burned/Day (gal)	4,142	3,584	2,840	2,840	5,320
Cost (\$/day)	\$4,142	\$3,584	\$2,840	\$2,840	\$5,320
Fuel Costs - (\$/day)	\$4,142	\$3,584	\$2,840	\$2,840	\$5,320
Number of Days/Voyage	12	18	18	6	6
Fuel Cost - Voyage	\$49,704	\$64,511	\$51,118	\$17,039	\$31,921
Total Fuel Cost - Voyage	\$214,293				
Average Fuel Cost/Day	\$3,572				
Maintenance/Repair Costs					
Lightship Weight - MT	2,400	2,400	2,400	2,400	2,400
Hull M/R Factor - (\$/day/MT)	\$0.164	\$0.164	\$0.164	\$0.164	\$0.164
Hull M/R Cost	\$394	\$394	\$394	\$394	\$394
Machinery M/R Factor (% of fuel burned)	12%	12%	12%	12%	12%
Machinery M/R Cost	\$497	\$430	\$341	\$341	\$638
Total M/R Cost - (\$/day)	\$891	\$824	\$734	\$734	\$1,032

Average Hull M/R Cost	\$394
Average Machy M/R Cost	\$429
Total Average M/R Cost	\$822