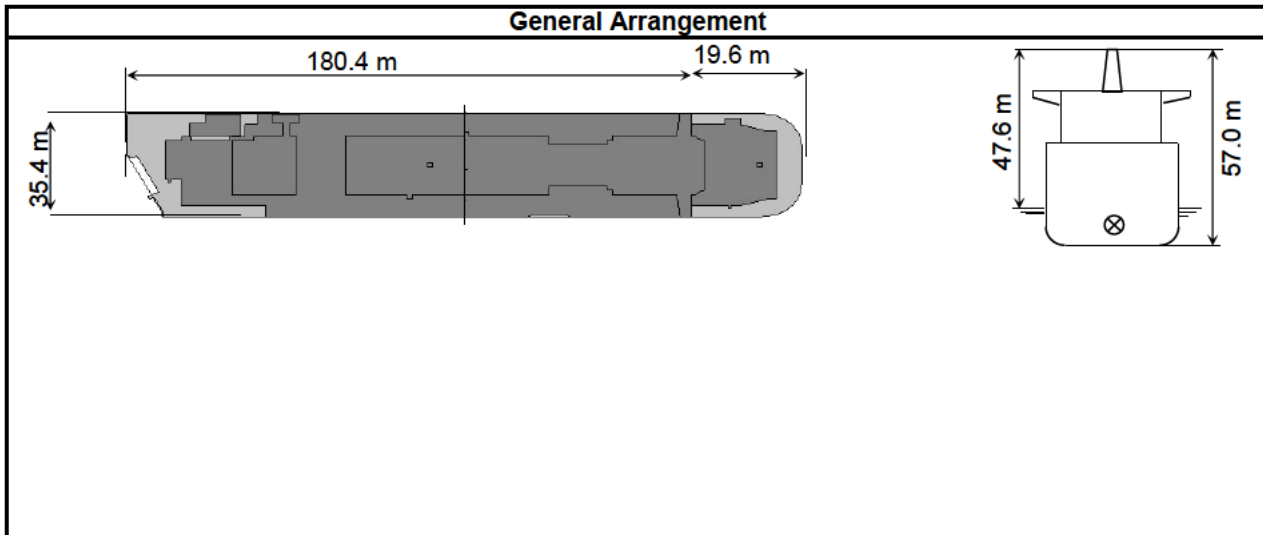


PILOT CARD

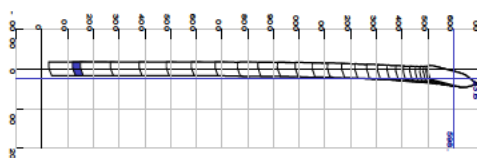
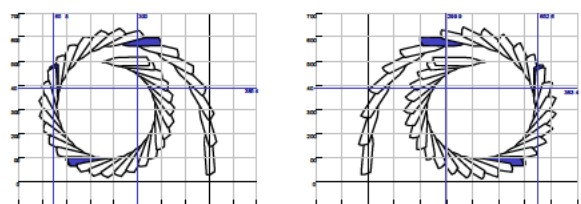
Ship Name: Golden Ray (L)	Loading Cond.: Partly-Loaded
	Type: PCTC

Ship's Particulars					
LOA:	<u>199.9</u>	m	Cargo (loaded) :	<u>7.700</u>	car unit
LBP:	<u>188.7</u>	m	Displacement:	<u>38.720</u>	metric-tons
Beam:	<u>35.4</u>	m	Block Coeff:	<u>0.60</u>	-
Draught (Aft):	<u>9.45</u>	m	Bulbous Bow:	<u>Y</u>	-
Draught (Fwd):	<u>9.40</u>	m	Frontal Windage Area:	<u>1.207</u>	m ²
			Lateral Windage Area:	<u>6.253</u>	m ²



Propulsion Particulars																																	
Engine Type:	<u>Diesel</u>	-																															
MCR:	<u>12,022</u>	kW																															
Min. RPM:	<u>18</u>	-																															
	<u>4.2</u>	kts																															
Propulsion Type:	<u>Single Screw FPP</u>																																
Propeller Diameter:	<u>7.6</u>	m																															
Pitch Ratio (P/D):	<u>1.047</u>	-																															
Direction of Rotation:	<u>Right-handed (Clockwise)</u>																																
			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Telegraph</th> <th style="text-align: center;">RPM</th> <th style="text-align: center;">Speed (kts)</th> </tr> </thead> <tbody> <tr> <td>Full Sea Ahead</td> <td style="text-align: center;">77.4</td> <td style="text-align: center;">19.6</td> </tr> <tr> <td>Full Ahead</td> <td style="text-align: center;">64</td> <td style="text-align: center;">16.3</td> </tr> <tr> <td>Half Ahead</td> <td style="text-align: center;">50</td> <td style="text-align: center;">12.5</td> </tr> <tr> <td>Slow Ahead</td> <td style="text-align: center;">35</td> <td style="text-align: center;">8.8</td> </tr> <tr> <td>D. Slow Ahead</td> <td style="text-align: center;">20</td> <td style="text-align: center;">4.8</td> </tr> <tr> <td>D. Slow Astern</td> <td style="text-align: center;">-20</td> <td></td> </tr> <tr> <td>Slow Astern</td> <td style="text-align: center;">-35</td> <td></td> </tr> <tr> <td>Half Astern</td> <td style="text-align: center;">-50</td> <td></td> </tr> <tr> <td>Full Astern</td> <td style="text-align: center;">-64</td> <td></td> </tr> </tbody> </table>	Telegraph	RPM	Speed (kts)	Full Sea Ahead	77.4	19.6	Full Ahead	64	16.3	Half Ahead	50	12.5	Slow Ahead	35	8.8	D. Slow Ahead	20	4.8	D. Slow Astern	-20		Slow Astern	-35		Half Astern	-50		Full Astern	-64	
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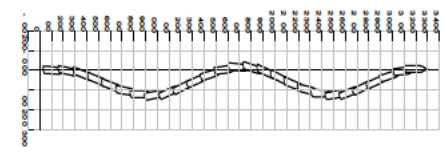
Steering Particulars			
Rudder Type:	<u>Spade</u>		Midships to Hardover: <u>12</u> sec
Rudder Area:	<u>32.62</u>	m ²	Bow Thruster: <u>1,300</u> kW
Max. Angle:	<u>35</u>	Deg	Stern Thruster: <u>None</u> kW

Manoeuvring Performance (Deep Water)			
Crash Stop (Half Ahead - Full Astern)			
Head Reach	<u>1598</u>	m	
Transfer	<u>23</u>	m	
Time to Stop:	<u>09:02</u>	min:sec	
Time to Zero RPM:	<u>00:53</u>	min:sec	
Time to Max. Astern RPM:	<u>01:56</u>	min:sec	
Turning Circle (Half Ahead)			
	Port/Starboard		
Advance:	<u>579/580</u>	m	
Transfer:	<u>300/299</u>	m	
Tactical Diameter (TD):	<u>651/652</u>	m	
Speed Loss at 90 deg:	<u>41%</u>		
Time to 90 deg:	<u>02:20</u>	min:sec	

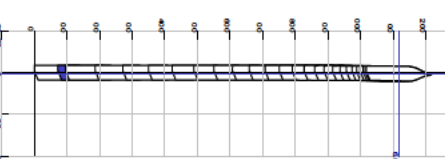
PILOT CARD

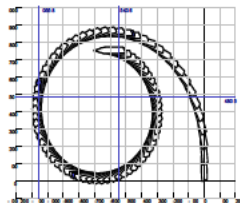
Ship Name: Golden Ray (L)	Loading Cond.: Partly-Loaded
	Type: PCTC

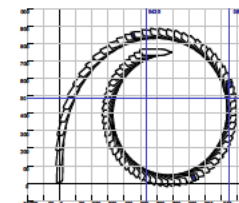
Manoeuvring Performance (Deep Water)		
10/10 Zig- Zag (Half Ahead)		
Time to 10 deg:	<u>00:50</u>	min:sec
1st Overshoot:	<u>4.9</u>	Deg
Time to overshoot:	<u>00:26</u>	min:sec
2nd Overshoot:	<u>6.6</u>	Deg
Time to overshoot:	<u>00:32</u>	min:sec



Manoeuvring Performance (Shallow Water, h/T=1.2)		
Crash Stop (Half Ahead - Full Astern)		
Head Reach	<u>1116</u>	m
Transfer	<u>2</u>	m
Time to Stop:	<u>08:34</u>	min:sec
Time to Zero RPM:	<u>00:53</u>	min:sec
Time to Max. Astern RPM:	<u>01:56</u>	min:sec
Turning Circle (Half Ahead)		
	Port/Starboard	
Advance:	<u>846/846</u>	m
Transfer:	<u>543/543</u>	m
Tactical Diameter (TD):	<u>1055/1055</u>	m
Speed Loss at 90 deg:	<u>49%</u>	
Time to 90 deg:	<u>05:14</u>	min:sec
10/10 Zig- Zag (Half Ahead)		
Time to 10 deg:	<u>01:37</u>	min:sec
1st Overshoot:	<u>1.8</u>	Deg
Time to overshoot:	<u>00:22</u>	min:sec
2nd Overshoot:	<u>1.8</u>	Deg
Time to overshoot:	<u>00:22</u>	min:sec







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For further information please contact:

Enquires REMBRANDT

E-mail: [REDACTED]

Tel: [REDACTED]

Fax: [REDACTED]

BMT

Spectrum Building, 1600 Parkway,
Solent Business Park, Whiteley,
Fareham, Hampshire PO15 7AH,
United Kingdom
Registered in England & Wales
Registered no. 02326888.