



## PORTS and MARITIME AFFAIRS

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### Directive No. SOLAS/05

#### **DISPLAY OF MANOEUVRING INFORMATION ON BOARD SHIPS**

Issued under the enabling power of the Ministerial Resolution 20/2016

Issue Date: 27 December 2016

#### 1. Introduction:

(1) With reference to;

- Ports and Maritime Affairs (PMA) Resolution no. 8/2016, Regarding the Implementation of the Requirements of the International Convention for the Safety of Life at Sea, 1974 and its amendments
- SOLAS 1974, Regulation V/23 "Pilot transfer arrangements"
- IMO Resolution A.601(15), "Recommendation on Provision and Display of Maneuvering Information on Board Ships".
- MSC.137(76), the Standards for Ship Maneuverability and
- MSC/Circ.1053, "Explanatory Notes to the Standards for Ship Maneuverability".

(2) The purpose of this directive is to ensure that appropriate information is available to the master and pilot alike and be kept on board in conformity to SOLAS requirements and the ISM Code.

(3) The provision and the display of maneuvering data on board ships should be as set out in the annex to Resolution A.601 (15).

#### 2. Application

(1) This directive applies to all Bahraini registered vessels of 150 Gross Tonnage and above;

(2) The PMA recommends that maneuvering information in the form of a pilot card, wheelhouse poster and maneuvering booklet should be provided as follows;



- (a) the pilot card on all ships to which the requirements of the 1974 SOLAS Convention, as amended, apply.
- (b) the pilot card, wheelhouse poster and maneuvering booklet on all new ships and fishing vessels of 100 meters in length and over, and all new chemical tankers and gas carriers regardless of size.
- (c) the pilot card, wheelhouse poster and maneuvering booklet on all new ships that may pose a hazard due to unusual dimensions or characteristics.
- (d) the maneuvering information should be amended after any modification or conversion of the ship which may alter its maneuvering characteristics or extreme dimensions.
- (e) pilot card, wheelhouse poster and maneuvering booklet, on all ships shall be periodically inspected, maintained and surveyed in accordance with this directive.

### 3. Maneuvering Information

- (1) Pilot card, wheelhouse poster and maneuvering booklet as required by the resolution A.601(15) "Provision and Display of Maneuvering Information on Board Ships".
- (2) Pilot card (Appendix 1)
  - (a) The pilot card is intended to provide information to the pilot on boarding the ship. This information should describe the current condition of the ship, with regard to its loading, propulsion and maneuvering equipment.
  - (b) to be filled in by the master, is intended to provide information to the pilot on boarding the ship. This information should describe the current condition of the ship, with regard to its loading, propulsion and maneuvering equipment, and other relevant equipment.

Note: The information provided in the pilot card should be available without the need to conduct special maneuvering trials.

- (3) Wheelhouse poster (Appendix 2)
  - (a) The wheelhouse poster should be permanently displayed in the wheelhouse. It should contain general particulars and detailed



information describing the maneuvering characteristics of the ship, and be of such a size to ensure ease of use.

- (b) The wheelhouse poster should be permanently displayed in the wheelhouse. It should contain general particulars and detailed information describing the maneuvering characteristics of the ship, and be of such a size to ensure ease of use.

Note: The maneuvering characteristics may be determined by conducting special maneuvering trials or by computer simulation techniques or by estimation. The master should bear in mind that the maneuvering performance of the ship may differ from that shown on the poster due to environmental, hull and loading conditions.

(4) Maneuvering booklet (Appendix 3)

- (a) The maneuvering booklet should be available on board and should contain comprehensive details of the ship maneuvering characteristics and other relevant data.
- (b) The maneuvering booklet should include the information shown on the wheelhouse poster together with other available maneuvering information.

Note: Most of the maneuvering information in the booklet can be estimated but some should be obtained from trials.

**4. Additional Information**

Any other relevant additional information should be added to the contents of the booklet, particularly information concerned with the operation of the bridge maneuvering control.

**5. Revision History**

Revision No. 1 of the present Directive is the first revision.

**Hassan Ali Al Majed**  
Undersecretary for Ports and Maritime Affairs  
27<sup>th</sup> December 2016



Res. A.601(15)

APPENDIX 1

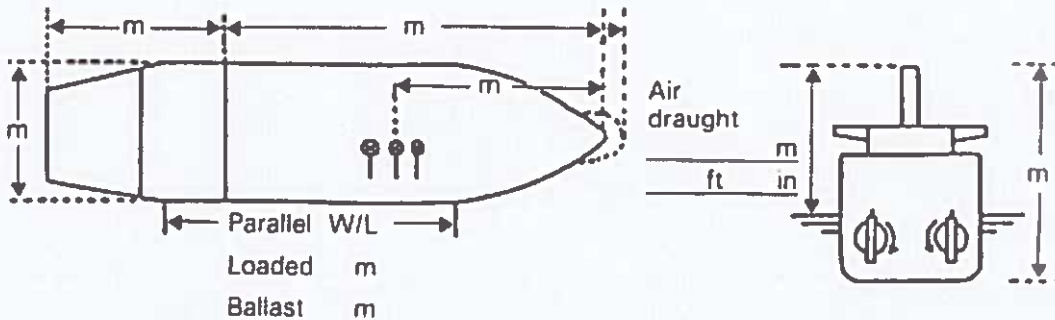
PILOT CARD

Ship's name \_\_\_\_\_ Date \_\_\_\_\_

Call sign \_\_\_\_\_ Deadweight \_\_\_\_\_ tonnes Year built \_\_\_\_\_

Draught aft \_\_\_\_\_m/\_\_\_\_ft \_\_\_\_in, Forward \_\_\_\_\_m/\_\_\_\_ft \_\_\_\_in, Displacement \_\_\_\_\_tonnes

SHIP'S PARTICULARS		
Length overall _____m,	Anchor chain: Port _____shackles,	Starboard _____shackles,
Breadth _____m	Stern _____shackles	
Bulbous bow Yes/No	(1 shackle = _____m/_____fathoms)	



Type of engine _____		Maximum power _____ kW ( _____ HP)	
Manoeuvring engine order	Rpm/pitch	Speed (knots)	
		Loaded	Ballast
Full ahead			
Half ahead			
Slow ahead			
Dead slow ahead			
Dead slow astern		Time limit astern _____min	
Slow astern		Full ahead to full astern _____s	
Half astern		Max no. of consec. starts _____	
Full astern		Minimum RPM _____ knots	
		Astern power _____% ahead	



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APPENDIX 1 (continued)

STEERING PARTICULARS	
Type of rudder _____	Maximum angle _____ °
Hard-over to hard-over _____ s	
Rudder angle for neutral effect _____ °	
Thruster: Bow _____ kW (_____ HP)	Stern _____ kW (_____ HP)

CHECKED IF ABOARD AND READY

Anchors	<input type="checkbox"/>		Indicators:
Whistle	<input type="checkbox"/>		Rudder <input type="checkbox"/>
Radar <input type="checkbox"/> 3 cm	<input type="checkbox"/> 10 cm		Rpm/pitch <input type="checkbox"/>
ARPA	<input type="checkbox"/>		Rate of turn <input type="checkbox"/>
Speed log <input type="checkbox"/>	Doppler: Yes/No		Compass system <input type="checkbox"/>
Water speed <input type="checkbox"/>	<input type="checkbox"/>		Constant gyro error = _____ °
Ground speed <input type="checkbox"/>	<input type="checkbox"/>		VHF <input type="checkbox"/>
Dual-axis <input type="checkbox"/>	<input type="checkbox"/>		Elec. pos. fix. system <input type="checkbox"/>
Engine telegraphs	<input type="checkbox"/>		Type _____
Steering gear	<input type="checkbox"/>		
Number of power units operating	<input type="checkbox"/>		

OTHER INFORMATION:



APPENDIX 2

WHEELHOUSE POSTER

Ship's name \_\_\_\_\_, Call sign \_\_\_\_\_, Gross tonnage \_\_\_\_\_, Net tonnage \_\_\_\_\_  
Max. displacement \_\_\_\_\_ tonnes, and Deadweight \_\_\_\_\_ tonnes, and Block coefficient \_\_\_\_\_ at summer full load draught

<p style="text-align: center;"><b>STEERING PARTICULARS</b></p> <p>Type of rudder(s) _____</p> <p>Maximum rudder angle _____°</p> <p>Time hard-over to hard-over with one power unit _____ s</p> <p>_____ s</p> <p>Minimum speed to maintain course propeller stopped _____ knots</p> <p>Rudder angle for neutral effect _____°</p>	<p style="text-align: center;"><b>ANCHOR CHAIN</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">No. of shackles</td> <td style="width: 50%;">Max. rate of heaving (m/shackle)</td> </tr> <tr> <td>Port</td> <td></td> </tr> <tr> <td>Starboard</td> <td></td> </tr> <tr> <td>Stern</td> <td></td> </tr> <tr> <td colspan="2" style="text-align: center;">(1 shackle = _____ m) _____ (altons)</td> </tr> </table>	No. of shackles	Max. rate of heaving (m/shackle)	Port		Starboard		Stern		(1 shackle = _____ m) _____ (altons)	
No. of shackles	Max. rate of heaving (m/shackle)										
Port											
Starboard											
Stern											
(1 shackle = _____ m) _____ (altons)											

Draught at which the manoeuvring data were obtained

Loaded	Ballast
Trial/Estimated	Trial/Estimated
_____ m forward	_____ m forward
_____ m aft	_____ m aft

**THRUSTER EFFECT at trial conditions**

Thruuster	kW (HP)	Time delay for full thrust	Turning rate at zero speed	Time delay to reverse full thrust	Not effective above speed
Bow		s	°/min	min s	knots
Stern		s	°/min	min s	knots
Combined		s	°/min	min s	knots

**PROPULSION PARTICULARS**

Type of engine	kW (HP)	Type of propeller	Speed (knots)	
			Loaded	Ballast
Engine order				
Full sea speed				
Full ahead				
Half ahead				
Slow ahead				
Dead slow ahead				
Dead slow astern			Critical revolutions _____ rpm	
Slow astern			Minimum rpm _____ knots	
Half astern			Time limit astern _____ min	
Full astern			Time limit at min revs _____ min	
			Emergency full ahead to full astern _____ s	
			Stop to full astern _____ s	
			Astern power _____ % ahead	
			Max. no. of consecutive starts _____	

**DRAUGHT INCREASE (LOADED)**

Under keel clearance	Estimated Squat Effect		Heel Effect	
	Ship's speed (knots)	Max. bow squat estimated (m)	Heel angle (degree)	Draft increase (m)
m			2	
			4	
			8	
			12	
m			16	

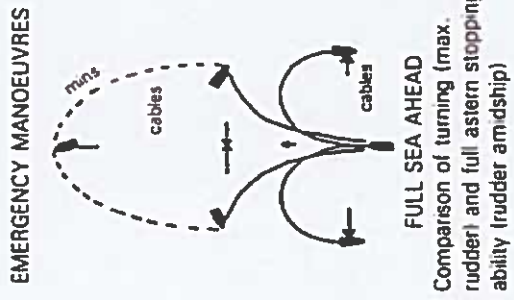
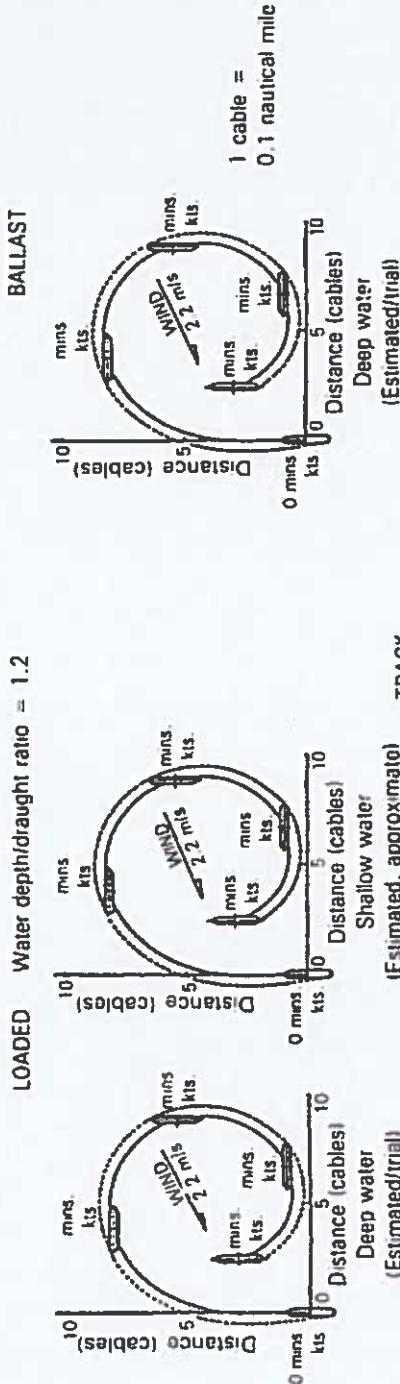


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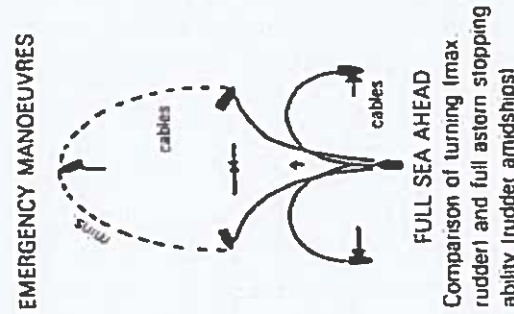
APPENDIX 2 (continued)

TURNING CIRCLES AT MAX. RUDDER ANGLE

Water depth/draught ratio = 1.2



TRACK REACH (20 cables)	LOADED	BALLAST
10	0.334	0.334
11	0.340	0.340
12	0.346	0.346
13	0.352	0.352
14	0.358	0.358
15	0.364	0.364
16	0.370	0.370
17	0.376	0.376
18	0.382	0.382
19	0.388	0.388
20	0.394	0.394
21	0.400	0.400
22	0.406	0.406
23	0.412	0.412
24	0.418	0.418
25	0.424	0.424
26	0.430	0.430
27	0.436	0.436
28	0.442	0.442
29	0.448	0.448
30	0.454	0.454
31	0.460	0.460
32	0.466	0.466
33	0.472	0.472
34	0.478	0.478
35	0.484	0.484
36	0.490	0.490
37	0.496	0.496
38	0.502	0.502
39	0.508	0.508
40	0.514	0.514
41	0.520	0.520
42	0.526	0.526
43	0.532	0.532
44	0.538	0.538
45	0.544	0.544
46	0.550	0.550
47	0.556	0.556
48	0.562	0.562
49	0.568	0.568
50	0.574	0.574
51	0.580	0.580
52	0.586	0.586
53	0.592	0.592
54	0.598	0.598
55	0.604	0.604
56	0.610	0.610
57	0.616	0.616
58	0.622	0.622
59	0.628	0.628
60	0.634	0.634
61	0.640	0.640
62	0.646	0.646
63	0.652	0.652
64	0.658	0.658
65	0.664	0.664
66	0.670	0.670
67	0.676	0.676
68	0.682	0.682
69	0.688	0.688
70	0.694	0.694
71	0.700	0.700
72	0.706	0.706
73	0.712	0.712
74	0.718	0.718
75	0.724	0.724
76	0.730	0.730
77	0.736	0.736
78	0.742	0.742
79	0.748	0.748
80	0.754	0.754
81	0.760	0.760
82	0.766	0.766
83	0.772	0.772
84	0.778	0.778
85	0.784	0.784
86	0.790	0.790
87	0.796	0.796
88	0.802	0.802
89	0.808	0.808
90	0.814	0.814
91	0.820	0.820
92	0.826	0.826
93	0.832	0.832
94	0.838	0.838
95	0.844	0.844
96	0.850	0.850
97	0.856	0.856
98	0.862	0.862
99	0.868	0.868
100	0.874	0.874

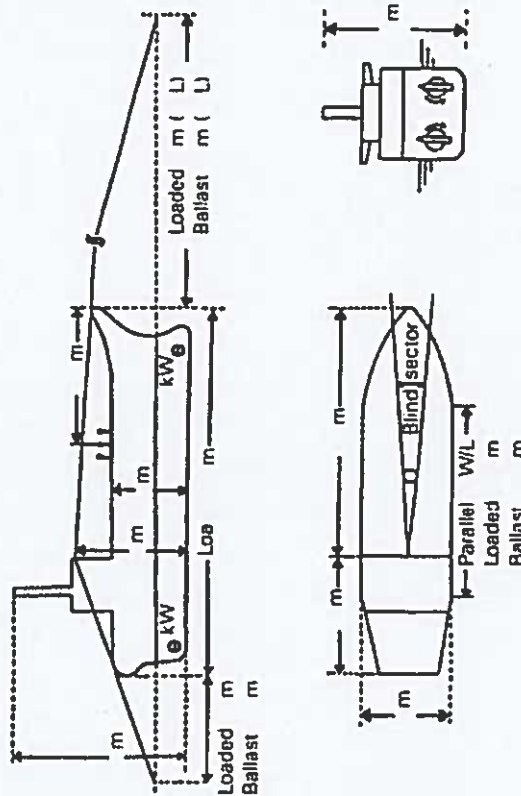




APPENDIX 2 (continued)

<p>MAN OVERBOARD RESCUE MANOEUVRE</p>	<p>SEQUENCE OF ACTIONS TO BE TAKEN</p> <ul style="list-style-type: none"> <li>• TO CAST A LIFEBOYD</li> <li>• TO GIVE THE HE-M ORDER</li> <li>• TO SOUND THE ALARM</li> <li>• TO KEEP THE LOOK-OUT</li> </ul>	<p>Insert a recommended turn</p>
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Prepared by \_\_\_\_\_  
Date \_\_\_\_\_



PERFORMANCE MAY DIFFER FROM THIS RECORD DUE TO ENVIRONMENTAL, HULL AND LOADING CONDITIONS





Res. A.601(15)

**APPENDIX 3**

**RECOMMENDED INFORMATION TO BE INCLUDED IN THE MANOEUVRING BOOKLET**

**CONTENTS**

- 1 GENERAL DESCRIPTION**
  - 1.1 Ship's particulars
  - 1.2 Characteristics of main engine
  
- 2 MANOEUVRING CHARACTERISTICS IN DEEP WATER**
  - 2.1 Course change performance
  - 2.2 Turning circles in deep water
  - 2.3 Accelerating turn
  - 2.4 Yaw checking tests
  - 2.5 Man-overboard and parallel course manoeuvres
  - 2.6 Lateral thruster capabilities
  
- 3 STOPPING AND SPEED CONTROL CHARACTERISTICS IN DEEP WATER**
  - 3.1 Stopping ability
  - 3.2 Deceleration performance
  - 3.3 Acceleration performance
  
- 4 MANOEUVRING CHARACTERISTICS IN SHALLOW WATER**
  - 4.1 Turning circle in shallow water
  - 4.2 Squat
  
- 5 MANOEUVRING CHARACTERISTICS IN WIND**
  - 5.1 Wind forces and moments
  - 5.2 Course-keeping limitations
  - 5.3 Drifting under wind influence
  
- 6 MANOEUVRING CHARACTERISTICS AT LOW SPEED**
  
- 7 ADDITIONAL INFORMATION**