South African Maritime Safety Authority

Ref: **SM6/5/2/1**
SM12/1/1

Date: **18 April 2017**

Marine Notice No. 9 of 2017

Performance Standards for Marine Radio Equipment required by the Merchant Shipping (Radio Installations) Regulations, 2002, amended by Notice 457 of July 2013, and the Merchant Shipping (Automatic Identification System) Regulations 2004 GNR 1291 GG 26938, 5 November 2004.

TO ALL REGIONAL MANAGERS, PRINCIPAL OFFICERS, SAMSA SURVEYORS, SHORE BASED RADIO TECHNICAL SERVICE PROVIDERS, RADIO DEALERS, SHIP OWNERS, MASTERS, SHIP'S OFFICERS AND AFFECTED PARTIES

Marine Notice No. 20 of 2008 is cancelled

Summary

This marine notice-

(a) Specifies the performance standards for Radio and Radar Transponder Equipment which must be approved by the Independent Communications Authority of South Africa in all cases, required to be fitted on South African Ships;
(b) Specifies the manner in which at-sea availability of radio equipment is to be ensured; and
(c) Should be read with the Merchant Shipping (Radio Installations) Regulations, 2002, as amended by Notice 457 of July 2013, and Merchant Shipping (Automatic Identification System) Regulations 2004 GNR 1291 GG 26938, 5 November 2004.

1 The Merchant Shipping (Radio Installations) Regulations, 2002, was amended by Notice 457 of 2013 and is currently in force.

2 Regulation 6 (1) requires radio equipment provided under these regulations to comply with certain performance standards specified by the Authority. For the purposes of that provision, the performance standards to be complied with are specified as follows:

(a) Where ships comply with the requirements of Part 2 (SOLAS requirements) of the regulations, the performance standards to be complied with are those adopted by the International Maritime Organization (IMO) and specified in Annex 1.

(b) Where ships comply with the requirements of Part 3 (Non-SOLAS requirements) of the regulations, the performance standards to be complied with are specified in Annex 2.

3 Regulations 17 (6) requires that at-sea availability of radio equipment be ensured in accordance with the requirements specified by the Authority. For the purposes of that provision, the availability of radio equipment on ships making voyages in sea areas A3 and A4 is to be ensured in accordance with IMO Assembly Resolution A.702 (17) as attached in Annex 3.

4 Attached are the following Annexes:

1) Annex 1: Performance Standards for SOLAS Equipment;
2) Annex 2: Performance Standards for NON-SOLAS Equipment; and
3) Annex 3: IMO Assembly Resolution A.702 (17).
4) Annex 4: Guidelines for ensuring the availability of radio equipment in Sea Areas A3 and A4.
5) Annex 5: Table of transmitter frequency tolerances.

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ANNEX 1[1]

PERFORMANCE STANDARDS FOR SOLAS EQUIPMENT

ITEM	EQUIPMENT	Equipment installed BEFORE 23 November 1996	Equipment installed after 23 November 1996
1	Digital Selective Calling system for use in the maritime mobile service, latest ITU specifications in force	-	ITU-R M.493[9]
2	Narrow-band direct-printing telegraph equipment for the reception of navigational and meteorological	A.525 (13)	A.525 (13)
3	Narrow-band direct-printing telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships (MSI) by HF	A.700 (17)	A.700 (17)
4	Ship earth stations capable of two-way communications	A.698 (17)	A.808 (19) Amends A.762(18), Annex 1 revised by MSC.149(77), Refer to A.694(17), A.762(18),
5	Shipborne VHF radio installations capable of – 1) voice communications and 2) digital selective calling (DSC)	A.609 (15)	A.803 (19) [2] Read with ITU-R M.493 and ITU-R M.489
6	Shipborne MF radio installations capable of – 1) voice communications and 2) digital selective calling (DSC)	A.610 (15)	A.804 (19)[3 and 10] Read with ITU-R M.493 and ITU-R M.1173
7	Shipborne MF/HF radio installations capable of voice communication, narrow-band printing and digital selective calling (DSC)	A.613 (15)	A.806 (19)[4 and 10] Read with ITU-R M.493 and ITU-R M.1173
8	Float-free satellite emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz[5]	A.763 (18)[6]	A.810 (19) MSC.56(66), 120.(74)
9	Survival craft radar transponders for use in search and rescue	A.802 (19)	A.802 (19) MSC.247(83)
10	Inmarsat Standard-C ship earth stations capable of transmitting and receiving direct-printing communications	A. 663 (16)	A.807 (19)[7] Amends A.663(16), Amended by MSC.68(68)
11	Enhanced group call equipment	A.664 (16)	A.664 (16)
12	Float-free satellite emergency position indicating beacons operating through the geostationary satellite system on 1.6 GHz	A.661 (16)	A.812 (19)
13	Survival craft two-way VHF radio telephone apparatus[9]	AS.762(18)	MSC149(77) (revises A.809(19)) ITU-R M.585-7 r/w ITU-R M.493
14	Shipborne GPS receiver equipment[8]	A.819(19)	A.819(19) Revised by MSC.112(73), but still in force for equipment installed before 1 July 2003
15	Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile frequency band	-	ITU-R M.1371[9]
16	Performance standards for shipborne Voyage data recorders (VDRs)	-	MSC.214(81)
17	Implementation of the NAVTEX system as a component of the world-wide navigational warning service	-	MSC.148(77)
18	Adoption of performance standards for survival craft AIS search and rescue transmitters (AIS-SART)	-	MSC.246(83)
19	Ship Security Alert System	-	MSC.147(77) Revises MSC.136(76)
20	Long Range Identification and Tracking of Ships	-	MSC.263(84) MSC.210(81), MSC.254(83)

NOTE

1 **All equipment must comply with the general requirements for shipborne radio equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for electronic navigational aids, set out in IMO Assembly Resolution A.694 (17).**

2 **Equipment installed on or after 1 January 2001 must comply with IMO Maritime Safety Committee Resolution MSC.68 (68), Annex 1.**

3 **Equipment installed on or after 1 January 2001 must comply with IMO Maritime Safety Committee Resolution MSC.68 (68), Annex 2.**

4 **Equipment installed on or after 1 January 2001 must comply with IMO Maritime Safety Committee Resolution MSC.68 (68), Annex 3.**

5 **Float-free release and activation arrangements for emergency radio equipment must comply with IMO Assembly Resolution A.662 (16).**

6 **Equipment installed before 4 November 1994 may comply with IMO Assembly Resolution A.695 (17).**

7 **Equipment installed on or after 1 January 2001 must comply with IMO Maritime Safety Committee Resolution MSC.68 (68), Annex 4.**

8 **Applicable to shipborne GPS receiver equipment, where this equipment is integrated into or linked to the radio equipment.**

9 **Note that the latest IMO resolution and ITU Recommendation that is in force are applicable in all cases. In considering this, the latest approved amendments by MSC is applicable.**

10 **MF/HF radio apparatus to comply with tolerances specified in Annex 5.**

ANNEX 2

PERFORMANCE STANDARDS FOR NON-SOLAS EQUIPMENT

VHF radiotelephone installation

1. A VHF installation provided in ships must at least comply with the latest performance standards for DSC Class D equipment, and conform to the latest ITU standards in force. (Reference to Annex 1 Item 5, most recent specifications in force).

Radiotelephone installation

1) Radiotelephone transmitters and receivers must comply at least with the latest performance standards set out in ITU-R M.1173, reference to Annex 5 of this Notice.
2) Radiotelephone transmitters and receivers must comply at least with the latest performance standards for DSC Class E equipment and conform to the latest ITU standards in force. (Reference to ITU-R M.493).
3) Narrow Band Direct Printing Telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships (NAVTEX) must comply with the performance standards set out in IMO MSC Resolution A.149(77).

Voluntary Fitted equipment.

1. Radio Equipment of higher standards that is not required by the regulations, need to comply with the appropriate standards as specified in Annex 1.
2. All other equipment not required by regulation, must be functional to at least the standard specified in this notice.
3. AIS equipment should be in conformance of ITU-R M.1374 as relevant to Class B technical specifications.

Radio life-saving equipment

1. Survival craft two-way VHF radiotelephone apparatus and Two-Way VHF radiotelephone DSC apparatus, must comply with the performance standards set out in item 13 of the table in Annex 1.

2. Survival craft radar transponders for use in search and rescue operations must comply with the performance standards set out in the IMO Assembly Resolution specified in item 9 of the table in Annex 1.

ANNEX 3

Resolution A.702(17)

Adopted on 6 November 1991
(Agenda item 10)

RADIO MAINTENANCE GUIDELINES FOR THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS) RELATED TO SEA AREAS A3 AND A4

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,

NOTING regulation IV/15, Maintenance requirements, of the International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended by the 1988 GMDSS Conference, and in particular regulation IV/15.7 concerning the methods of ensuring the availability of the functional requirements specified in regulation IV/4, for distress and safety purposes on ships engaged on voyages in sea areas A3 and A4,

NOTING ALSO resolution 5 of the 1988 GMDSS Conference which requests the Maritime Safety Committee to periodically review the requirements of regulation IV/15.7 in the light of experience gained,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its fifty-ninth session,

1. ADOPTS the Guidelines for Ensuring the Availability of Radio Equipment for Ships Engaged on Voyages in Sea Areas A3 and A4 Required by Regulation IV/15.7 of the 1974 SOLAS Convention, as Amended in 1988, set out in the annex to the present resolution:

2. RECOMMENDS that Governments, in applying regulation IV/15.7 to ships, take account of the annexed Guidelines;

3. REQUESTS the Maritime Safety Committee, when periodically reviewing the requirements of regulation IV/15.7, also to review and update the Guidelines as appropriate and to report as necessary to the Assembly.

ANNEX 4

Annex

GUIDELINES FOR ENSURING THE AVAILABILITY OF RADIO EQUIPMENT FOR SHIPS ENGAGED ON VOYAGES IN SEA AREAS A3 AND A4 REQUIRED BY REGULATION IV/15.7 OF THE 1974 SOLAS CONVENTION, AS AMENDED IN 1988

1 BASIC REQUIREMENT FOR ENSURING AVAILABILITY

1.1 Irrespective of the methods used to ensure the availability of the functional requirements specified in regulation IV/4, and as specified in regulation IV/15.8, a ship should not depart from any port unless and until the ship is capable of performing all distress and safety functions, as set out in regulation IV/4.

1.2 Irrespective of the methods used by the ship, all manufacturers' instruction manuals and maintenance manuals for each piece of equipment required and installed should be available on board. Adequate tools, spare parts and test equipment appropriate to the methods used by the ship, as specified by the Administration, should be provided. The manuals, tools, spare parts and test equipment, as applicable, should be readily accessible.

2 DUPLICATION OF EQUIPMENT FOR ENSURING AVAILABILITY

2.1 If availability is ensured by using a combination of methods which includes duplication of equipment, in addition to the radio installations required by regulations IV/7, IV/10 and IV/11, as appropriate, the following radio installations complying with regulation IV/14 should be available on board ships engaged on voyages in:

.1 *sea area A3* – a VHF radio installation complying with the requirements of regulation IV/7.1.1 and either an MF/HF radio installation complying with the requirements of regulation IV/10.2.1 and being able to comply fully with the watch requirements of IV/12.1.3 or an INMARSAT ship earth station (SES) complying with the requirements of regulation IV/10.1.1. The MF/HF installation or INMARSAT SES installed for duplication should also comply with regulation IV/10.3;

.2 *sea areas A3 and A4* – a VHF radio installation complying with the requirements of regulation IV/7.1.1 and an MF/HF radio installation complying with the requirements of regulation IV/10.2.1 and being able to comply fully with the watch requirements of IV/12.1.3. Ships operating in sea area A4 only occasionally and having originally installed an MF/HF radio installation, may, instead of the additional MF/HF radio installation, install an INMARSAT SES complying with the requirements of regulation IV/10.1.1. The MF/HF radio installation or INMARSAT SES installed for duplication should also comply with regulation V/10.3.

2.2 The additional radio installations specified in 2.1.1 and 2.1.2 of these Guidelines should each be connected to a separate antenna and be installed and ready for immediate operation.

2.3 It should be possible to connect the additional radio installations specified in 2.1.1 and 2.1.2 (hereinafter referred to as duplicated equipment) to the reserve source or sources of energy required by regulation IV/13.2, in addition to the appropriate radio equipment specified in that regulation (hereinafter referred to as basic equipment). The capacity of the reserve source or sources of energy should be sufficient to operate the particular installation (i.e. the basic equipment or the duplicated

equipment) with the highest power consumption, for the appropriate period specified in regulation IV/13.2.1 to IV/13.2.3. However, the arrangement for the reserve source or sources of energy should be such that a single fault in this arrangement should not be able to affect both the basic and the duplicated equipment.

3 SHORE-BASED MAINTENANCE FOR ENSURING AVAILABILITY

3.1 If availability is ensured by using a combination of methods which includes shore-based maintenance, an arrangement acceptable to the Administration should be established to ensure adequate support of the ship for the maintenance and repair of its radio installations. For example, the following arrangements, among others, may be suitable:

.1 an agreement with a company known to cover the trading area of the ship to provide maintenance and repair facilities on a call-out basis;

.2 provision of facilities at the main base of ships engaged on a regular trading pattern. Records of Equipment (Form P, R or C) should include an indication of the types of arrangements for shore-based maintenance.

3.2 It should be recognized that, despite the use of other methods, some reliance on shore-based maintenance to ensure the availability of the functional requirements of the GMDSS will always be necessary.

4 AT-SEA ELECTRONIC MAINTENANCE CAPABILITY FOR ENSURING AVAILABILITY

4.1 If availability is ensured by using a combination of methods which includes at-sea electronic maintenance capability, adequate additional technical documentation, tools, test equipment and spare parts must be carried on board in order to enable the maintainer to perform tests and localize and repair faults in the radio equipment. The extent of this additional technical documentation, tools, measuring equipment and spare parts to be carried on board should be consistent with the equipment installed and should be approved by the Administration. An indication of such approval should be entered in the Records of Equipment (Form P, R or C).

4.2 The person designated to perform functions for at-sea electronic maintenance should either hold an appropriate certificate as specified by the Radio Regulations, as required, or have equivalent at-sea electronic maintenance qualifications, as may be approved by the Administration, taking into account the recommendations* of the Organization on the training of such personnel.

* Refer to Assembly resolution A.703(17), "Training of radio personnel in the global maritime distress and safety system (GMDSS)".

ANNEX 5

TABLE OF TRANSMITTER FREQUENCY TOLERANCES.

Extract from ITU Radio Regulations 2016

APPENDIX 2 (REV.WRC-03)

Table of transmitter frequency tolerances

(See Article 3)

1 Frequency tolerance is defined in Article **1** and is expressed in parts in 10^6, unless otherwise indicated.

2 The power shown for the various categories of stations is the peak envelope power for single-sideband transmitters and the mean power for all other transmitters, unless otherwise indicated. The term "power of a radio transmitter" is defined in Article **1**.

3 For technical and operational reasons, certain categories of stations may need more stringent tolerances than those shown in the table.

Frequency bands (lower limit exclusive, upper limit inclusive) and categories of stations	**Tolerances applicable to transmitters**
Band: **9 kHz to 535 kHz**	
1 *Fixed stations*:	
– 9 kHz to 50 kHz	100
– 50 kHz to 535 kHz	50
2 *Land stations*:	
a) Coast stations	100 [1, 2]
b) Aeronautical stations	100
3 *Mobile stations*:	
a) Ship stations	200 [3, 4]
b) Ship's emergency transmitters	500 [5]
c) Survival craft stations	500
d) Aircraft stations	100
4 *Radiodetermination stations*	100
5 *Broadcasting stations*	10 Hz
Band: **535 kHz to 1 606.5 kHz (1 605 kHz in Region 2)**	
Broadcasting stations	10 Hz (WRC-03)
Band: **1 606.5 kHz (1 605 kHz in Region 2) to 4 000 kHz**	
1 *Fixed stations*:	
– power 200 W or less	100 [7, 8]
– power above 200 W	50 [7, 8]
2 *Land stations*:	
– power 200 W or less	100 [1, 2, 7, 9, 10]
– power above 200 W	50 [1, 2, 7, 9, 10]

Frequency bands (lower limit exclusive, upper limit inclusive) and categories of stations	Tolerances applicable to transmitters
Band: **1 606.5 kHz (1 605 kHz in Region 2) to 4 000 kHz** (*cont.*)	
3 *Mobile stations*:	
a) Ship stations	40 Hz [3, 4, 12]
b) Survival craft stations	100
c) Emergency position-indicating radiobeacons	100
d) Aircraft stations	100 [10]
e) Land mobile stations	50 [13]
4 *Radiodetermination stations*:	
– power 200 W or less	20 [14]
– power above 200 W	10 [14]
5 *Broadcasting stations*	10 Hz [15]
Band: **4 MHz to 29.7 MHz**	
1 *Fixed stations*:	
a) Single-sideband and independent-sideband emissions:	
– power 500 W or less	50 Hz
– power above 500 W	20 Hz
b) Class F1B emissions	10 Hz
c) Other classes of emission:	
– power 500 W or less	20
– power above 500 W	10
2 *Land stations*:	
a) Coast stations	20 Hz [1, 2, 16]
b) Aeronautical stations:	
– power 500 W or less	100 [10]
– power above 500 W	50 [10]
c) Base stations	20 [7]
3 *Mobile stations*:	
a) Ship stations:	
1) Class A1A emissions	10
2) Emissions other than Class A1A	50 Hz [3, 4, 19]
b) Survival craft stations	50
c) Aircraft stations	100 [10]
d) Land mobile stations	40 [20]
4 *Broadcasting stations*	10 Hz [15, 21]
5 *Space stations*	20
6 *Earth stations*	20