



Maritime high frequency (HF) radiotelephone in Australia

October 2019

Who

This consultation applies to all vessel categories, including SOLAS¹ vessels, domestic commercial vessel and recreational vessels. In particular, vessels operating outside VHF coast station range and without a GMDSS² satellite system or HF DSC³ radio are affected.

What

The Maritime Agencies Forum (MAF) provides a national forum for marine safety agencies to identify, agree and monitor the ongoing work required to implement the National Standard for Commercial Vessels (NSCV), coordinates technical maritime safety advice and operational maritime policy nationally and consider recreational boating issues.

MAF has recommended that jurisdictions (the states and Northern Territory) cease high frequency (HF)⁴ radiotelephone⁵ monitoring of distress and safety communications in Australia and stakeholders are invited to provide comments on the proposal.

When

Submissions can be made anytime up until **Friday 29 November 2019**.

Background

In the maritime environment, a HF radiotelephone is one method of providing distress and safety communication on the frequencies 4 125, 6 125, 8 291, 12 290 or 16 420 kHz. A HF radiotelephone can also be used for operational and general communications on frequencies identified in the International Telecommunication Union (ITU) Radio Regulations.

In Australia, the states and Northern Territory marine agencies or volunteer marine rescue organisations monitor the HF radiotelephone distress and safety calling frequencies, although there is no legislative requirement to do so and the service may not be provided on a 24/7 basis.

The use of HF radiotelephone as the first and only means of distress and safety calling has steadily declined. For example, over the four-year period to March 2018, there were only two distress and six urgency communications initiated by vessels, where a HF radiotelephone was the only communications used.

This has led the jurisdictions, through MAF, to review the ongoing requirement for HF radiotelephone monitoring in Australia. In considering ceasing monitoring, vessels operating outside VHF coast station range and without a GMDSS satellite system or HF DSC radio are the category that may be impacted.

¹ A SOLAS vessel is any ship to which the International Convention for the Safety of Life at Sea 1974 (SOLAS) applies, including Regulated Australian Vessels (RAVs) and foreign vessels.

² Global Maritime Distress and Safety System (GMDSS)

³ Digital Selective Calling (DSC) is a pre-defined standard (see Recommendation ITU-R M.493) for transmitting digital messages for alerting of a distress situation and is a component of the GMDSS. See Article **32** of the ITU Radio Regulations for operational use of DSC.

⁴ The HF frequency range is approximately 3 to 30 MHz.

⁵ A radiocommunication device set up for the transmission and reception of speech over a radio link or circuit.

Discussion

The National Coast Radio Network

The National Coast Radio Network (NCRN) was established in 2002 following the decommissioning of HF monitoring services subsidised by the Federal Government. This coincided with AMSA beginning to provide a HF DSC monitoring service in accordance with its international obligations. The states and Northern Territory, through nine transceivers, aimed to meet a National Standard for HF radiotelephone monitoring with approximately 200 nautical miles coverage and high availability. The *National Standard for the National Coast Radio Network* was approved by the Australian Transport Council (ATC) and published in 2005. However, it is not mandated through legislation and has not been updated since its first edition in 2005.

Following implementation of the NCRN, the requirement to monitor the HF radiotelephone distress and safety communication frequencies was reviewed twice (2005 and 2009) by the National Maritime Safety Committee⁶ (NMSC), both times it being recommended that there was an ongoing requirement for the NCRN, but that many of the sites needed to be upgraded to meet the National Standard.

Maritime safety information

HF radiotelephone-only and HF DSC radio can receive maritime safety information⁷ (MSI), including navigation warnings and weather information. MSI over HF is transmitted as synthesized-voice or facsimile and there is no intention to cease these transmissions when HF radiotelephone distress and safety calls cease to be monitored.

Alternative communication systems

In selecting an alternative system for distress and safety communication, vessel owners will need to consider three key things:

- 1) Applicable carriage requirements
- 2) Distance off-shore (ie outside VHF coast station coverage)
- 3) MSI requirements

Communication equipment carriage requirements depend on the vessel category and area of operation. Applicable requirements may be provided in State and Territory legislation, Federal legislation (eg Marine Order 27 or the *Navigation Act 2012*) or Standards (eg NSCV Part C7B – Communications Equipment).

VHF (radiotelephone or DSC-capable)

Within approximately 12 nautical miles of the Australian coastline, and for ship-to-ship communication, a VHF radio (preferably with DSC) is the most practical radiocommunication system available. Only local MSI is provided via VHF.

⁶ On commencement of the National System (administered by AMSA), it was agreed that the NMSC would be voluntarily wound down.

⁷ Within NAVAREA X, MSI is provided through the recognised mobile satellite service providers of the GMDSS. Within the AUSCOAST regions, MSI is provided using HF radiotelephone. Local MSI is disseminated on the State and Territory VHF networks. The boundaries of the AUSCOAST regions and NAVAREA X are available on the AMSA website: <https://www.amsa.gov.au/safety-navigation/navigation-systems/maritime-safety-information>

HF (with DSC)

For vessels operating further from the coastline and in locations where no VHF coverage is provided, the use of HF DSC equipment is recommended. HF DSC frequencies (except 2187.5 kHz) are monitored by AMSA as part of its GMDSS requirements in NAVAREA X. AUSCOAST and NAVAREA X MSI are provided via HF.

GMDSS satellite systems

GMDSS satellite systems are a carriage requirement for all SOLAS vessels, but can also be installed on non-SOLAS vessels. GMDSS satellite systems are more expensive than other radio options, often with a monthly/yearly subscription. Only NAVAREA X MSI is provided via GMDSS satellite systems.

Emergency Position Indicating Radio Beacons (EPIRBs)

Most States and Territories mandate carriage of a registered EPIRB and specific regulation applies. It is recommended that EPIRBs be activated if two-way communications cannot be established in a distress situation.

Comparison

The following table provides a simplified comparison of the alternative radio systems.

System	Distress and safety capability	MSI reception	Coverage	Cost (indicative) (radio-only)
HF DSC	Y – DSC with radiotelephone follow-on	Y	Global ⁸ ship-to-shore and shore-to-ship, and local ship-to-ship	\$3,200+
VHF radiotelephone	Y – radiotelephone only on channel 16 (and 67)	Y – local only	Ship-to-shore, shore-to-ship and ship-to-ship within line-of-sight	\$275 - 350
VHF DSC	Y – DSC with radiotelephone follow-on	Y – local only		\$300 - 400
GMDSS satellite	Y	Y	Within ± 70 degrees latitude ⁹ (ship-to-shore and shore-to-ship)	Not available
EPIRB	Y – no follow-on communication	N	Global ship-to-shore	\$250+ (manual) \$750+ (float-free)

Fees for attaining the relevant radio operation certificate(s) are not included in the indicative costs above.

⁸ Dependent on time of day and frequency, but approximately global. In operation, all possible distress and safety frequencies should be attempted. For DSC, it will automatically switch frequencies until an acknowledgement is received.

⁹ As Iridium GMDSS service comes online, a vessel fitted with an Iridium GMDSS terminal will have global coverage. Current satellite GMDSS service is provided by Inmarsat.

Relevant statistics

1. In November 2017, the Australian Communications and Media Authority (ACMA) Register of Radiocommunication Licences (RRL) included 6,399 ship station licences, which may or may not include HF equipment. The AMSA beacon register lists 15,164 HF radios (2,930 with DSC capabilities) as a means of communications. Due to the significant differences in numbers, it can only be estimated that there are between 6,399 and 15,164 vessels fitted with HF equipment.
2. A survey conducted by the Bureau of Meteorology (BOM) in 2010, indicated that 73% of respondents used HF weather services more than other weather sources, whilst at sea. This service is provided as synthesized-voice, or facsimile. The proposals in this paper do not affect this service.
3. Information from jurisdictions indicate HF radiotelephone is used to make test calls, scheduled operational calls and trip reports.

Implementation and timeline

States and Territories, with AMSA, will be required to implement this change. MAF recommended a minimum two year timetable for the cessation of HF radiotelephone distress and safety monitoring and therefore, it is proposed to cease monitoring on 1 January 2022.

Stakeholder communication and regulatory change will be required in the lead-up to the date, including making amendments to NSCV Part C7B – Communications Equipment. In accordance with AMSA's Annual Regulatory Program 2019 – 20¹⁰, it is anticipated a full review of NSCV Part C7B will be completed in 2020.

Amendment may also be required to radiocommunication legislation administered by the ACMA, taking into account any changes recommended in amendments to NSCV Part C7B.

Tell us what you think

Feedback would be appreciated on any aspect identified in this paper.

Making your submission

Submissions can be made anytime up until **Friday 29 November 2019**.

You can make a submission in two ways. You can either:

- Use our online feedback system. Where you see the 'Enter your submission online' links in the table below, click through to provide your feedback, or
- Complete our public comment form. If using this form, then you can either:
 - **email** the form to consultation@amsa.gov.au or
 - **post** the form to:

Standards Secretariat
Australian Maritime Safety Authority
GPO Box 2181
Canberra ACT 2601

¹⁰ <https://www.amsa.gov.au/about/corporate-publications/annual-regulatory-program-2019-20>