

22. Noise Suppression—If a device is provided to reduce the effect of impulsive noise, a switch shall be provided to disconnect it.

23. Construction—In all respects the mechanical and electrical construction and the finish of the receiver shall conform to good standards of engineering practice, and the receiver shall be suitable for use on board ships at sea.

24. Additional Safeguards to be Incorporated Where the Receiver Includes Semiconductor Devices—(1) Where semiconductor devices are incorporated in the receiver, the following requirements shall be met:

(a) Under all conditions of service referred to in clause 3 of this Part of this Schedule, the maker's maximum ratings for each type of semiconductor device shall not in any respect be disregarded. In particular, the maker's recommended maximum junction temperature shall never be exceeded:

(b) The semiconductor devices shall be effectively protected from damage if the power supply is subject to transient voltage changes:

(c) When the receiver is operated from a battery of secondary cells, the semiconductor devices shall not be damaged by a sustained increase in power supply voltage of 25 percent relative to the nominal battery voltage:

(d) Means shall be incorporated for the protection of the semiconductor devices from damage due to accidental reversal of power supply polarity.

(2) Although it is not practicable to specify the intensity of r.f. fields which may be encountered, attention is drawn to the need for screening and filtering to protect the semiconductor devices from damage due to r.f. energy

Part III

Reserve Radiotelegraph Transmitter—(1) Scope of Specification—This specification covers the minimum performance of a medium frequency radiotelegraph transmitter for use as a reserve transmitter in ships compulsorily fitted for radiotelegraphy and, as such, may form the basis for type-testing. This specification shall be assumed to cover, in addition to the transmitter proper, all equipment necessary for its operation, but not the source of electrical energy or the aerial system with which the transmitter is associated.

2. General—(1) The transmitter shall be capable, in accordance with the requirements of this specification, of transmitting signals of Class A2 on a frequency of 500 kHz.

All parts and wiring in which the direct or alternating voltages or both (other than radio-frequency voltages) combine to give an instantaneous voltage greater than 250 volts shall be protected against accidental access, and shall be isolated automatically from all sources of electrical energy when the means of protection are removed.

(2) All parts and wiring in which the direct or alternating voltages or both (other than radio-frequency voltages) combine to give an instantaneous voltage greater than 50 volts shall be protected against accidental access.

(3) If the transmitter is designed for operation only from a battery of secondary cells, the requirements of this specification shall be met for a range of supply voltage variations of plus 5 and minus 10 percent relative to the nominal battery voltage.

If the transmitter is designed for operation from a source of electrical energy which is not a battery of secondary cells, the requirements of this specification shall be met for a range of supply voltage variations of plus and minus 10 percent relative to the nominal supply voltage.

(4) Provision shall be made for protecting the transmitter from the effects of excessive current or voltage.

3. Climatic and Durability Tests—The transmitter shall meet the requirements of this specification when tested under

the conditions specified in the "Climatic and Durability Testing of Marine Radio Equipment" applicable to Class B equipment.

4. Power Supply—(1) The transmitter shall be capable of being operated from the source of electrical energy required by these rules for a reserve radiotelegraph installation. If more than one source of electrical energy is provided, arrangements for rapidly changing from one source of supply to the other shall be provided

(2) No vibrators or primary cells shall be employed.

(3) The transmitter shall not cause the ship's mains to be earthed.

5. Range of Load Impedance—For the purpose of type-testing, the transmitter shall meet the requirements of this specification when connected to each in turn of the artificial loads having values as specified in the following table or with loads having any intermediate values;

ARTIFICIAL LOAD (ELEMENTS IN SERIES)							
C	pF	250	300	400	500	600	750
R (non-inductive)	ohms	4.0	3.6	2.8	2.2	2.0	1.9

6. Power of the Transmitter—(1) The power of the transmitter shall be defined as the mean power developed under mark conditions in any load within the range specified in clause 5 of this Part of this Schedule.

(2) The power of the transmitter shall not be less than 15 watts regardless of the Power supply variations within the limits given in clause 2(3) of this Part of this Schedule and the climatic and durability tests specified in Clause 3 of this Part of this Schedule.

(3) When the transmitter is adjusted for full power, it shall be capable of—

(a) Transmitting continuously, without critical adjustments, telegraph signals at all speeds up to 30 bauds:

(b) Operating under steady marking or spacing conditions for a period of 15 minutes:

(c) Withstanding the effects of open-circuited or short-circuited aerial terminals for a period of 15 minutes while operating. In no case shall damage be caused to any part of the transmitter.

7. Modulation—(1) The fundamental modulation frequency shall be in the range 450 to 1350 Hz.

(2) The depth of modulation shall be between 80 and 95 percent and the harmonic content of the modulating voltage as it appears in the modulated output signal shall not exceed 30 percent.

8. Frequency Stability—(1) The transmitter shall conform to a frequency tolerance of plus and minus 1000 parts in 10^6 relative to nominal frequency.

(2) The transmitter shall conform to a frequency tolerance specified above, without adjustment, regardless of variations of the impedance of the load to which it is connected.

9. Operating Facilities—(1) The transmitter should deliver 15 watts or at least 75 percent of its full output, whichever is the greater, within six seconds of switching on.

(2) The transmitter shall provide facilities for readily using by approved means the automatic keying device in place of the manual transmitting key.

(3) The transmitter shall be so designed as to enable an unskilled person to set the transmitter for operation on 500 kHz within the terms of this specification and to connect the automatic keying device.

10. Dummy Load—A dummy load shall be provided for testing the transmitter on full power.