

not approach within 15 cm. of the receiver case, or it may be short-circuited

**15. Tuning Drift and Stability**—(1) After the receiver has been switched on for five minutes, the tune frequency shall not change in any further period of five minutes by more than that shown in column "A" in the table in subclause (3) of this clause.

(2) For any change of ambient temperature of 5°C within the range 0°C to 50°C, applied after the receiver has remained switched on for one hour, the tune frequency shall not change by more than that shown in column "B" in the table in subclause (3) of this clause.

(3) For a change of five percent in any one of the supply voltages to the receiver, or to a power supply unit associated therewith, the tune frequency shall not change by more than that shown in column "A" below:

Frequency	A Parts in 10 <sup>4</sup>	B Parts in 10 <sup>4</sup>
405–535 kHz	5	15
1,605 kHz–23 MHz	2	5

**16. Heterodyne Note Stability**—(1) For an input signal which is varied over the range of 40 to 90 dB above 1µV, the frequency of a heterodyne note which is initially 1000 Hz shall not vary by more than 200 Hz. The automatic gain control shall be switched on.

(2) For all input levels within this range, it shall be possible to obtain a beat note of 200 Hz, when tuning either towards or way from zero beat. The automatic gain control shall be switched on.

**17. Listening-through**—When an associated transmitter is operated in the same frequency band, means shall be provided for reducing the gain when the telegraph key is depressed, so as to permit listening-through at normal signalling speeds.

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

**19. Additional Safeguards to be Incorporated Where the Equipment 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 V**

**Radiotelegraph Automatic Keying Device**

**1. Scope of Specification**—This specification covers the

minimum performance of an automatic keying device for use in ships where the fitting of such a device is compulsory and, as such, may form the basis for type-testing.

**2. General**—(1) The function of the device is to send automatically certain specified signals when switched into circuit in place of the manual key. A jack or other means shall be provided for connecting the device, as required, to the reserve radiotelegraph transmitter, the main radiotelegraph transmitter, or auto-alarm test signal generator.

(2) If the device is electrically operated, it shall be suitable for operation from the ship's reserve source of energy.

(3) The requirements of this specification shall be met for a range of supply voltage variation from plus 5 to minus 10 percent relative to the nominal supply voltage.

(4) 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 automatically isolated from all sources of electrical energy when the means of protection are removed.

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.

(5) The device shall not cause the ship's mains to be earthed.

**3. Climatic and Durability Tests**—The device shall be subjected to tests in accordance with the requirements of the "Climatic and Durability Testing of Marine Radio Equipment" applicable to "Class B" equipment.

**4. Performance**—(1) The device shall be capable of keying only the following signals when switched into circuit:

(a) The radiotelegraph alarm-signal, consisting of 12 four-second dashes separated by one-second spaces:

(b) The radiotelegraph distress call, consisting of—

(i) The radiotelegraph distress signal SOS (three times)

(ii) The word DE:

(iii) The ship's call sign (three times)—followed by two dashes, each of 10 to 15 seconds duration.

(2) When keying the alarm-signal, the length of dashes and spaces shall be governed to within plus and minus 0.2 second of their nominal value. After the alarm-signal has been sent the device shall stop keying, leaving the keying circuit open, until it is reset.

(3) The characters of the distress call shall be keyed at 10 to 16 words per minute. The total duration of the keying sequence described in subclause (1) (b) of this clause shall not exceed 90 seconds.

The device shall, in this condition, automatically repeat this keying sequence once every 12 minutes (approximately)—

(a) Until the ship's reserve source of energy is exhausted, if the device is electrically powered; and

(b) For at least 36 hours, if the device is not electrically powered.

(4) The device shall be so arranged that, if it is switched out of circuit after transmission of the signal described in subclause (1) (b) of this clause has commenced, it shall be capable of being reset so that, after the device has been again switched into circuit, keying shall commence within 10 seconds at the beginning of the distress signal sequence.

**5. Operating Facilities**—(1) The device shall be suitable for operation by an unskilled person.

(2) If the resetting is by manual means, the device shall include a means for indicating when re-setting is necessary.

(3) The device shall be capable of being taken out of service