

1. General—All marine radio equipment submitted for type tests shall be subjected to any or all of the tests herein specified, at the discretion of the type-testing authority.

The type-testing authority may, at its discretion, agree to vary the sequence of the tests, and may also waive any of the tests specified where the manufacturer is able to provide evidence that the appropriate requirements of this Schedule are met.

2. Classification of Marine Equipment—For the purpose of these tests, marine radio equipment shall be divided into two classes, viz, Class B and Class X, as defined in Part 1 of this Schedule.

3. Testing Procedure—(1) The testing sequence shall be as follows:

<i>Class</i>	<i>Nature of Test</i>
B, X	Visual inspection and performance test.
B, X	Inspection under vibration.
X	Bump test.
B, X	Dry-heat cycle.
B, X	Damp-heat cycle.
B, X	Low-temperature cycle.
X	Rain test.
X	Immersion test.
B, X	Corrosion test.
X	Mould-growth test.
B, X	Visual inspection and performance test.

(2) The sequence given in subclause (1) of this clause shall be followed at least once.

(3) Unless otherwise specified, power shall be supplied to the equipment only during the periods specified for the electrical tests.

(4) Unless otherwise specified in the relevant performance schedule, the voltage applied to the equipment during the tests shall be the standard test voltage.

(5) Class B equipment shall be subjected to Inspection under Vibration, normal range (clause 5 (2) (a)), and shall not be subjected to Inspection under Vibration, extended range (clause 5 (2) (b)).

(6) For Class X equipment, the manufacturer shall have the option of submitting the equipment either to Inspection under Vibration, normal range (clause 5 (2) (a)), and the Bump Test (clause 5 (3)), or as an alternative inspection under Vibration, extended range (clause 5 (2) (b)).

4. Performance Checks—Except where otherwise stated, the term 'performance check', as used in this Schedule, shall be taken to mean a shortened form of the test required by the relevant performance Schedule such as could normally be carried out in 5 to 15 minutes. This time does not include any necessary period of preheating in cases where delayed switching is used. Normally the equipment specification shall contain a clause indicating which tests should be given particular attention during the performance check.

5. Description of Tests—(1) Visual Inspection and Performance Test—Visual inspection shall be carried out to ensure that the equipment is of sound construction. This is to be followed by the performance test in accordance with the relevant performance schedule.

(2) Inspection under Vibration—

(a) *Normal Range*—The equipment complete with its chassis covers and shock absorbers (if supplied) shall in its normal operating position be clamped to a vibration table, which shall be vibrated at all frequencies between 0 and 12½ Hz with a total excursion of 3.2 mm. The whole frequency range shall be explored in not less than 8 minutes, during which period the equipment shall be kept working continuously. A performance check shall be carried out during the above test.

The procedure may be repeated with vibrations in 3 mutually perpendicular directions.

(b) *Extended Range*—The equipment complete with its chassis covers and shock absorbers (if supplied) shall in its normal operating position be clamped to a vibration table, which shall be vibrated at all frequencies between—

(i) 0 and 12½ Hz with a total excursion of 3.2 mm:

(ii) 12½ Hz and 25 Hz with a total excursion of 0.76 mm:

(iii) 25 Hz and 50 Hz with a total excursion of 0.2 mm.

Each range of frequencies shall be explored in not less than 8 minutes, during which period the equipment shall be kept working continuously. A performance check shall be carried out during the above test.

The procedure may be repeated with vibrations in 3 mutually perpendicular directions.

(3) Bump Test—

(a) The equipment shall be clamped as described in subclause (2) (a) of this clause:

(b) The equipment shall be subjected to not less than 500 bumps at a fixed rate in the range of 1 to 4 bumps per second with a free drop of at least 2.5 cm. The surface on which the equipment is mounted shall be subjected to a mean peak deceleration of 40g ($\pm 4g$). The test shall be followed by a visual inspection, the equipment not being deemed to have failed if only simple repairs need to be carried out:

(c) A performance check shall follow the foregoing test.

(4) Dry-heat Cycle—

(a) Class B Equipment—

(i) The equipment shall be placed in a chamber which is maintained at a constant temperature of +55°C ($\pm 1^\circ\text{C}$) for a period of 2 hours. The equipment shall be kept working continuously. Radiotelegraph transmitters shall be arranged to send morse dots. Double sideband radiotelephone transmitters shall be modulated to a depth of 50 percent, and single sideband radiotelephone transmitters shall be adjusted to produce an output 6dB below rated peak envelope power when set to class of emission A3J and driven by 2 equal level audio frequency tones:

(ii) At the end of the 2 hours, the equipment shall be subjected to a performance check at the controlled temperature:

(b) Class X Equipment—

(i) The equipment shall be placed in a chamber which is maintained at a constant temperature of +70°C (plus or minus 1°C) for a period of 10 hours:

(ii) The chamber shall then be cooled to +55°C ($\pm 1^\circ\text{C}$), and the equipment shall be kept working continuously at that temperature for a period of 2 hours. Radiotelegraph transmitters shall be arranged to send morse dots. Double sideband radiotelephone transmitters shall be modulated to a depth of 50 percent, and single sideband radiotelephone transmitters shall be adjusted to produce an output 6dB below rated peak envelope power when set to class of emission A3J and driven by 2 equal level audio frequency tones:

(iii) At the end of the 2 hours, the equipment shall be subjected to a performance check at a temperature of +55°C ($\pm 1^\circ\text{C}$):

(c) Class B and Class X Equipment—

At the conclusion of the performance check, the equipment shall be exposed to normal room temperature for at least 3 hours before the damp-heat cycle.

(5) Damp-heat Cycle—(a) The equipment shall be placed in a chamber which, within a period not exceeding 2 hours, shall be heated from room temperature to +40°C (plus or minus 1°C) and shall be brought to a relative humidity of not less than 95 percent: