

semiconductor devices are incorporated in the equipment, 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 of the semiconductor devices 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) 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 the 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 II

Portable Radio Equipment for Survival Craft

1. Scope of Specification—This specification covers the minimum performance of a compulsorily provided portable radio equipment for use in lifeboats and liferafts and, as such, may form the basis for type testing.

2. General—(1) The entire equipment, including the aerials specified under clause 4 (1) of this Part of this Schedule, shall be contained in a single unit, and shall not exceed 14.07 kg in weight.

(2) The equipment shall be watertight and capable of floating in water. Provision shall be made on the equipment for lowering, but in the stored condition it shall be capable of being dropped into water from a height of 9 m without damage.

(3) Provision shall be made for securing the equipment, in the operating condition, to the person of the operator. Additionally, provision may be made for securing the equipment to a lifeboat.

(4) Simple operating instructions in a clear and durable format shall be affixed to the equipment. The supply voltage and current to operate the equipment from an external source of electrical energy shall also be clearly indicated. In addition a removable plate, on which is shown the survival craft's call sign in letters and digits and in morse characters, shall be attached to the equipment.

(5) Suitable protection to occupants of the survival craft from dangerous voltages shall be provided. A dangerous voltage is defined for this purpose as an instantaneous voltage, composed of direct or alternating voltages or both (other than radio-frequency voltages), greater than 50 volts.

3. Climatic and Durability Tests—The equipment shall be subject to test in accordance with the requirements of the "Climatic and Durability Testing of Marine Radio Equipment" applicable to Class X equipment. For this purpose, tests shall be applied to the equipment in the operating condition, except that the immersion test specified in the relevant clause of that specification shall be applied to the equipment in the stored condition.

4. Aerial and Earth System—(1) The following aerials shall be provided:

(a) A single-wire aerial consisting of between 8 and 24 m of high conductivity stranded or braided wire, capable of being supported from a lifeboat mast, without the use of topmasts, at the maximum practicable height:

(b) A collapsible rod aerial at least 5 m in height, or an alternative aerial of approved design, the base of which shall

be between 28.58 mm and 31.75 mm in diameter, capable of being easily and quickly installed in a lifeboat and in a liferaft.

(2) Other approved types of long-wire aerial consisting of between 27 and 29 m of high-conductivity stranded or braided wire may be provided if desired.

(3) A high-conductivity earth wire between 4 and 5 m. in length, securely connected to the equipment and loaded with a suitable sinker, shall be provided.

5. Power Supply—(1) A man-powered generator shall be provided, and shall be capable of generating all the required electrical power.

(2) Operation of the man-powered generator shall not impede the operation of any manual control on the equipment.

(3) Means shall be provided, visible at all times, to indicate that the generator is being operated at speeds such that the requirements of clause 6 (8) of this Part of this Schedule can be met. For the purpose of this specification, this range of speeds is referred to as the "normal range" of generator speeds. The extent of the normal range of generator speeds shall be at least 50 percent relative to the lowest speed value in that range.

(4) The man-powered generator shall be designed so that power can be generated by—(a) One person; and

(b) Two persons simultaneously.

(5) Over the normal range of generator speeds, the equipment shall meet the requirements of clauses 6 and 7 of this Part of this Schedule, and efficiency of the equipment as a whole shall be such that the power of the transmitter shall conform with the requirements of clause 6 (8) with a torque-speed at the handle or pedal of not more than 440 (N m multiplied by revs per minute) or, in the case of other forms of motion, equivalent power.

(6) It shall not be possible to turn the generator in the wrong direction.

(7) The equipment shall be capable of being operated from and readily connected to, an external storage device or other source of electrical energy. The required polarity from this external source shall be clearly indicated on the equipment.

(8) If it is possible to connect the man-powered generator and the external source of electrical energy simultaneously, arrangements shall be made to ensure that no damage can be caused to any part of the equipment.

6. Transmitter—(1) The transmitter shall be capable of sending continuously but not simultaneously, in accordance with the requirements of this specification—(a) Radiotelegraph signals of Class A2 on a frequency of 500 kHz and

(b) Radiotelephone signals of Class A3 on a frequency of 2182 kHz; and

(c) Radiotelegraph signals of Class A2 on a frequency of 8364 kHz.

(2) Modulation—(a) When sending waves of Class A2, the carrier wave shall be modulated to a depth of 100 percent by a wave of rectangular character and of frequency between 450 and 1350 Hz, so that the carrier wave is transmitted for not less than 30 percent and not more than 50 percent of a modulation cycle:

(b) When sending waves of Class A3, it shall be possible to modulate the carrier wave fully by speech, but there shall be protection against serious overmodulation. The microphone provided shall be watertight.

(3) Speed of Transmission—The transmitter shall be capable of sending telegraph signals at all speeds up to 16 bauds.

(4) Frequency Stability—The transmitter shall comply with the frequency tolerances specified in the Radio Regulations of the International Telecommunication Union current at the time of type-testing, without adjustment of any control and