

Date of design:- 1918.

This is an old type of Hydrophone plate and is being replaced by the Mark V. It consists of a microphone (1) mounted on a diaphragm (2) by means of an insulator (3).

The microphone (figure f.) is of the ordinary carbon granule "tutton" type. Highly glazed carbon dust (10) fills the cavity about three-quarters full. At the front and back of the cavity are two carbon electrodes (11) with highly glazed surfaces, with which the carbon granules (10) are in contact. The two electrodes (11) are insulated from each other by the mica diaphragm (12). Conducting wires are connected to each electrode.

The microphone (1) should always be mounted on the diaphragm (2) in or near the vertical. If mounted horizontally the carbon granules (10) fall and will not make contact with the upper electrode. This breaks the circuit through the microphone, thereby putting it out of action. When correctly mounted on a vibrating diaphragm, the carbon granules in the microphone are agitated. This has the effect of varying the electrical resistance of the circuit.

The voltage applied to the microphone should not exceed 3 volts and the most efficient current is about 20 milliamps.

The diaphragm (2) is held in position by a moulded rubber ring (4) which is carried by the mild steel ring (5), the latter being bolted to the heavy lead inertia ring (6) which is secured to the pressure hull (7) by means of the rivetted steel pad (8).

A watertight bung (14) at the back of the diaphragm (2) forms a damp proof chamber for the microphone (1). The cover (9) provides another damp proof chamber.

Diaphragms are so manufactured that they are all of approximately the same natural frequency.