XA4 TANK HYDROPHONE

Date of design:- 1929.

The Hydrophone consists of the following units:-

(a) Hydrophone Tank.
(b) Hydrophone Diaphragm Unit.
(c) Filling Unit.

The Hydrophone Tank is of oval shape at its base with a circular face on top in which studs are mounted to take the Hydrophone Diapnragm Unit. The base of the tank is shaped to the curvature of the hull, the joint being made by a channel section dermatine washer. The tank is kept in position against the hull (13) by means of bolts passing through brackets (11) attached to the frames of the ship and which screw down on shoulders on the tank casting (1). A tapped hole (9) is provided in one side of the tank for the attachment of a water filling pipe.

The Hydrophone Diaphragm Unit consists of a diaphragm (2) with a raised box (3) in the centre, on which is screwed a microphone unit consisting of a bakelite adaptor (4) and microphone (5) (see page XA3, figure f.) with electrical leads for connecting to two terminals inside the hydrophone. The external electrical leads are brought in through two glands (14).

A tapped hole (7) is provided at the side of the diaphragm (2) for the attachment of an air release pipe. This hole is in communication with the face of the diaphragm and allows air to escape when the hydrophone tank is being filled with water.

The Hydrophone Diaphragm Unit is bolted down to the top face of the tank, the joint being made by a dermatine washer (6). A domed cover (8) is bolted to the top of the Hydrophone Diaphragm Unit.

The Filling Unit (10) is a small water reservoir situated a few feet above the Hydrophone Tank. It is connected by a copper pipe to the tapped hole (9) in the side of the Hydrophone Tank. The air release pipe is fitted with a cock (12) to stop the water overflow when all air has been expelled from the Hydrophone Tank.