SUMMARY OF DATA

PURPOSE

Type 609 equipment is fitted into the existing submarine indicator buoys to enable them to transmit radio distress signals as well as the flashing light signal.

BRIEF DESCRIPTION

Each Indicating Unit is a cylindrical, pressure-tight (550 lb/sq.in) container housing the transmitting unit, timing mechanism, light-pulser, batteries and ancillary items. The radio aerial assembly, light dome and ON/OFF seal mechanism are mounted on the top cover. The hinged whip aerial is automatically erected when the buoy is released and this action switches on the Unit.

The transmitter consists of a 4.34 MHz crystal-controlled master oscillator driving a power output stage comprising four neutralised triodes in parallel. A 1350 Hz (± 30%) tone generator grid-modulates the power amplifier stage to produce a modulation depth of 65%, and the output power is 30 mW at 4.34 MHz. Automatic keying is provided by the Timing Unit which combines a spring-driven clock movement with a cam system driven by an electric motor. The sequence of operations, which repeats over a 10 min. cycle, is as follows:-

1.	Identification No. eg '001'	3 times in 30 secs.
2.	Distress Call 'S O S'	6 times in 30 secs.
3.	Codeword 'SUBSUNK'	3 times in 30 secs.
4.	D.F. Transmission Long Mark	Lasting for 30 secs.
5.	Repeat 1-4	
6.	Silent period of 6 mins.	

The Indicating Unit will operate from approx. 37 hr. in bad weather conditions up to 60 hr in good weather. The range is approx. 50 miles and may be increased up to 200 miles under favourable propagation conditions. For d.f. purposes, the short distance ground wave range is 20 miles.

The Light-pulser Unit is a separate electromechanical device which flashes the light at one second intervals for at least 60 hours.

The Monitoring Unit consists of a long tube which can be clamped into position over the whip aerial to enable functional monitoring of the Indicating Unit to be carried out without radiating r.f. signals. The signal is picked up by an internal probe which feeds a tuned circuit, rectifier and meter. Meter readings give an indication of radiated power and correct keying.

TYPE 609 FITTED IN SUBMARINE BUOY

MAJOR UNITS

		Quantity
AP 61764	Indicating Unit for Submarine Buoy (Radio and Light)	3
AP 61784	Monitor Unit, Des. 18	1

NOTE: Two indicating Units are installed in buoys in each submarine (fitted fore and aft) and the third is retained in the depot ship as a spare. Each of these Units comprises the following sub-units:-

-	Radio Transmitting Unit	1
AP 61765	Container, aluminium	1
AP 61766	Cover assembly for AP 61765 Container	1
AP 61767	Aerial Unit, Des. 46	1
AP 61769	Timing Unit	1
6135 - 101109	Battery, dry, 3 V (for Light)	4
AP 14245	Battery, Mallory type (for Radio)	1
AP 17243	Light-pulser Unit	1

PHYSICAL DATA

Diameter of cylindrical container (excluding flange)			9¼	in
Length of container to the hinge centre line		2 ft	6	in
Length of aerial (tip of the whip to end of feeder)		5 ft	9	in
Position of centre of gravity	Approx	1 ft	3	in below flange.
Total weight (including 13 lb of internal ballast)			90	lb

POWER SUPPLIES

Radio Transmitting Unit: Mallory Type battery rated at 120 V, 150 mA; 4 V, 330 mA; −16 V, 0.144A.
Light-pulser Unit: 4 x 3 V dry batteries.

HANDBOOK

BR 2182(1958)

ESTABLISHMENT LIST

E1112

INSTALLATION SPECIFICATION

B839