MORETON INVESTIGATOR ASSOCIATION

Technical Report No. 6 - RADIO - TRANCEIVERS & RECEIVERS

Introduction

Some time ago I recommended that the 5 Watt 27.88 MHz transceiver was the best installation for use of Association members.

One such set has been installed on my yacht TAMYL. Others are installed on GEM II, TASSY-Q and JULIE-ANN.

Drawing on the experience gained to date I am pleased to report that the results are encouraging, and I will briefly set out the findings to date and the recommended installation procedure.

An excellent receiver is also detailed.

Receiver

"Phillips" manufacture an excellent multi-band receiver which is ideal for use on the yacht. The unit can be operated from mains supply or dry cells. It is light in weight, yet has a great deal of power. The speaker magnet is very powerful; so keep the radio stowed well away from your compass.

Frequency ranges are: 500-1700 kHz
SW1: 1.5-4.8 mHz SW2 4.8-11 mHz SW3 10-23 mHz
Model No. is 90 RL 417 - Phillips

Note that the short wave coverage (band to band) is continuous - no gaps - and this is an important feature. Other sets inspected showed gaps in critical areas of coverage (e.g. 2.524 or 6.204 mHz) which is a poor feature for marine use.

Tranceivers

The two-way installation on my yacht has given me a great feeling of extra security and safety. At around $100 (if you have a battery) it represents a good investment in insurance. Incidentally, the sets will operate quite well from two 6 Volt dry batteries connected in series, if you don't want the wet cell battery with its disadvantages of initial high cost, extra weight, and acid spill risk. The greatest disadvantage of dry cells is the fact that they go flat without warning and cannot be kept "topped up" as can sulphuric acid wet cell batteries. Energy costs long term are in fact much greater for dry cell sources than wet cells.

Transmission Results

On my yacht the set is an American Electronics unit ($70) available from Bill Kennedy at Kingston.

Significant results to date are as follows:
Empire Point to ship 6 miles S.E. of Cape Moreton 5 x 5
St Helena - Ship at Amity Point 5 x 5
St Helena - Air sea Rescue at Southport 4 x 4

Whilst the equipment was being tested it was pleasing to note the number of other vessels equipped with this frequency and the assistance they give in reporting signal strengths.

Other Equipment

Equipment by Tandy Electronics, "Realistic", and Weston from O'Donnell Griffin is installed in other yachts.

Prices range from about $110 with aerial and co-axial cable for the "Realistic" to $188 for the "Weston".

Installation

(i) The transceiver should be mounted near the bulkhead and the main companionway to provide access and surveillance from both the cockpit and the cabin. This will provide the shortest practical coaxial cable run to the antenna.

(ii) It is recommended that the aerial be mounted on the pushpit. The steel work in the pulpit forms a ground plane for the base of the aerial. It is also clear of all rigging and of the boom.

Some improvement of range will result if the aerial is mounted on the mast cap, but it is felt that three disadvantages occur in this instance:

(a) the installation is much more complex, with a deck fitting which will cause problems and a long coaxial cable is required.
(b) the aerial fitting needs to be reversed when the mast is stowed for towing.
(c) transmission is not good if the mast comes down!

Conclusion

The 5 Watt 27.88 mHz do not represent the ultimate in long range communication but for the investment required and the duty desired by Association members I believe a very good compromise is gained.

The coverage of this frequency is increasing daily and as time goes by the results will become even better and safety improved further.

Author: A.J. Chew