

SECTION 2-3

WHIP ANTENNAS

1. GENERAL.

In shipboard radio antenna installations whip type antennas are replacing many of the wire antenna installations. The use of the whip type antennas give a cleaner rigging and a neater topside appearance to naval vessels.

2. TYPES OF WHIP ANTENNAS.

Several of the types of whip antennas that are commonly used in shipboard radio antenna installations are listed below:

- a. Navy Type-66044, 6 feet, one piece.
- b. AT-252/SR, 125 inches, one piece (part of Antenna Group AN/SRA-3).
- c. Navy Type-66053, 25 feet, 3 sections, non-telescoping.
- d. Navy Type-66046, 28 feet, 4 sections, non-telescoping.
- e. Navy Type-66047, 35 feet, 5 sections, non-telescoping.

Further details on these whip antennas may be found elsewhere in this manual under Chapter 5, "Antenna Data Sheets".

3. MOUNTING WHIP ANTENNAS.

a. GENERAL. - Since whip antennas are essentially self-supporting, they may be installed in many locations aboardship. They may be deck mounted or mounted on brackets on the stacks, superstructure, etc. If the stack is used, the outer casing will usually have to be reinforced to support the added weight and stress. When a whip antenna is installed on a stack, it should be mounted near the top and approximately 24 inches away from the stack. In all installations of whip antennas allowance must be made for swaying of the whip. The whip should be mounted in a clear space where it cannot strike other objects.

It should also be remembered that whip antennas that are to be used for receiving only should be mounted away from the transmitting antennas so that a minimum of energy from the transmitter will be picked up.

b. PREFERRED METHOD. - The preferred method for mounting whip antennas on shipboard is shown in Figure 2-37. The antenna is mounted on an antenna supporting insulator such as Navy Types 61428, 61335 and 61350. The Navy Types 66046 and 66047 whip antennas are self-supporting; when they are mounted in the above manner, they require no other brackets or clamps to support them. However, the Type 66053 whip antenna does require additional bracing.

The recommended method for terminating RG-10/U or similar types of solid-dielectric cable at whip antennas is also shown in Figure 2-37. A suitable termination box must be fabricated by the installing activity to enclose the base of the supporting insulator. The size of the box is determined by the size and type of supporting insulator used. Details of this termination box will be found in Figure 2-38. To prevent moisture condensation inside the box, it is recommended that the walls of the box be made with louvers in them. A hole one inch in diameter must be drilled in the side of the termination box for mounting the MX-1461/U End Seal. A short flexible lead connects the inner-conductor stud of the end seal to the stud of the supporting insulator. The necessary lugs are supplied with the end seal and insulator. This flexible connection is satisfactory for permanently mounted whips; however, for demountable whips which must be secured, a suitable quick-disconnect arrangement should be used.

c. ALTERNATE METHODS.—Several alternate methods for mounting whip antennas are shown in Figures 2-39 and 2-40. Many whip antennas presently installed on shipboard will be found mounted according to one of these methods; however, the Bureau of Ships has recommended that in the future all whip antennas be installed as shown in Figure 2-37. In all cases, a termination box with end seal should be used to enclose and protect the connection of the transmission line to the whip antenna.

Mounting hardware for ship antennas, such as the whip clamp and deck bracket, are shown in Figure 2-41. The Type 66053 whip antenna requires a clamp and bracket for additional support as shown in Method "A" of Figure 2-39.

d. TILTING MOUNT.—One method for providing a tilting mount for a whip antenna may be found in Figure 2-42.

This particular type of installation has been used on aircraft carriers to provide a means of lowering whip antennas that are installed along the edges of the flight deck. This tilting whip is pivoted on a trunnion and has a handle for raising or lowering the antenna. The antenna may be locked in either a vertical or horizontal position. The locking pin should be attached to a length of plumber's chain which is in turn fastened to the supporting framework. The counterweight at the base of the mount should be heavy enough to nearly balance the antenna in any position.

As can be seen from Figure 2-42, a trussed whip antenna is used in this installation. The bracing wires should be made of 7/16" diameter 6 x 19 wire rope or the equivalent. The antenna shown is a Type 66047 standard 35-foot whip antenna. It is insulated for connection to a radio transmitting equip-

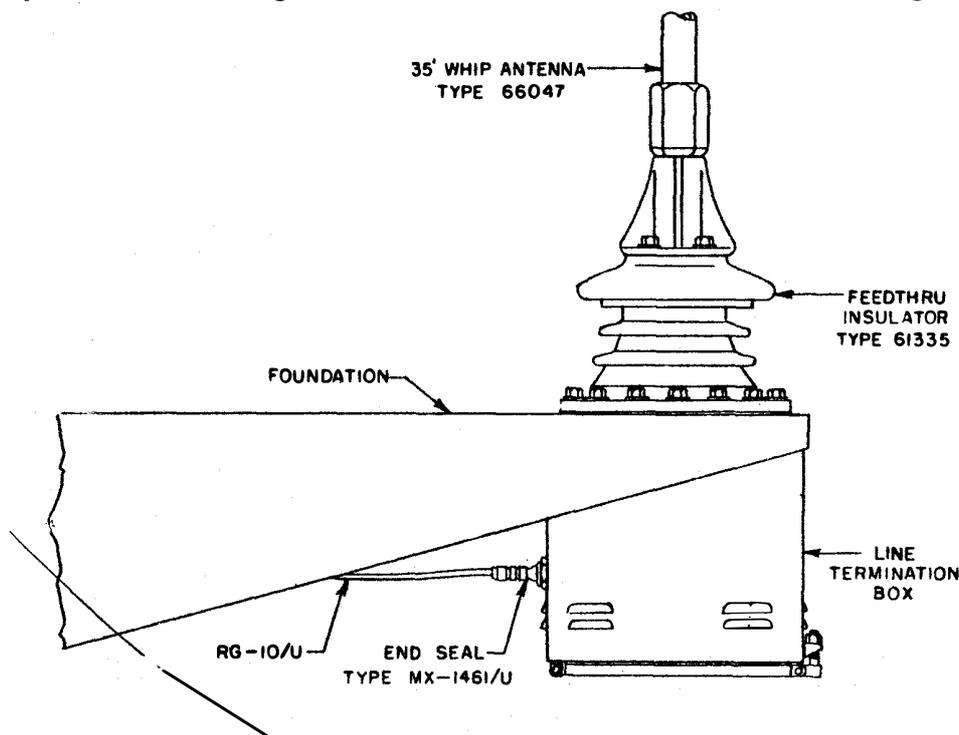


Figure 2-37. Recommended Method for Mounting a Whip Antenna

Type of Whip Antenna	Type of Base Insulator	Box Dimensions (inches)			Foundation Dimensions (inches)				
		A	B	C	D	E	F	G	H
66053	61428	10	10	10	2	10	2-1/2	5	6 holes 9/16" diam.
66046 or 66047	61350	15	15	15	2	15	9-1/2	10-3/4	8 holes 11/16" diam.
66046 or 66047	61335	18	18	18	2	18	13-1/8	14-5/8	12 holes 11/16" diam.

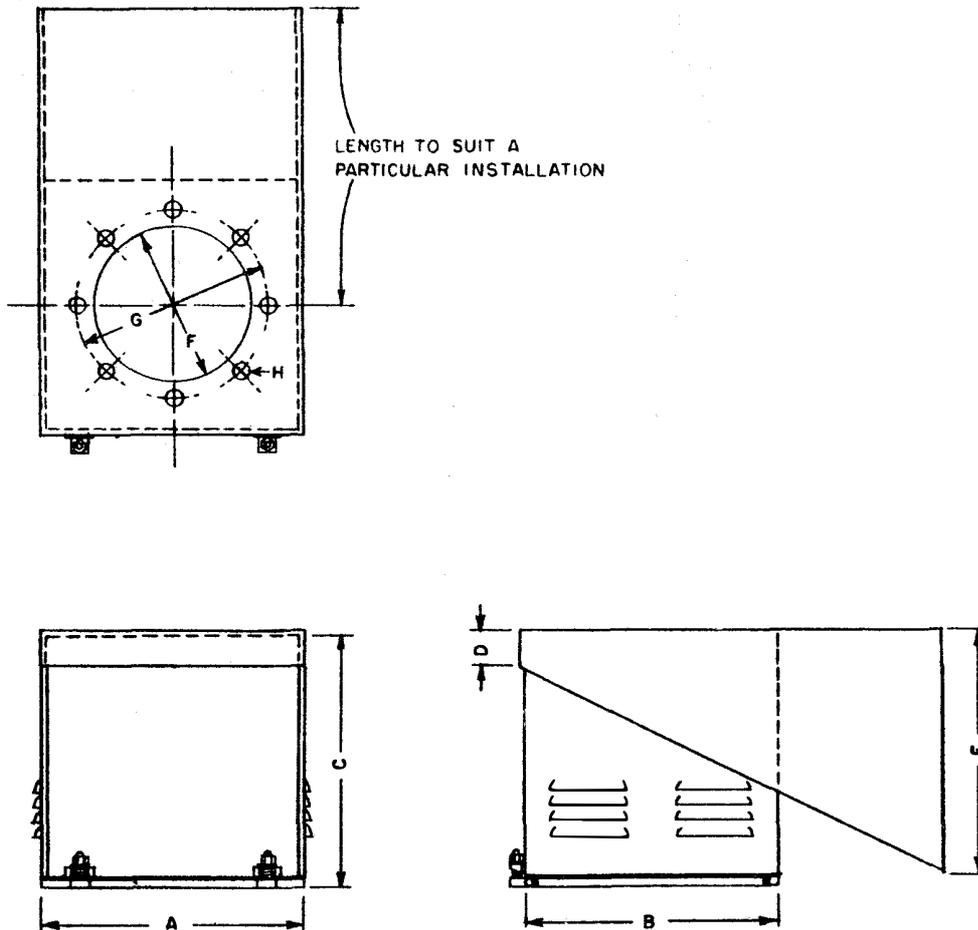


Figure 2-38. Details of Whip Antenna Termination Box