

**Figure 2. Half-rhombic antenna.**

Extensive testing has proven that the proper use of these antennas will significantly increase the range of our tactical FM radios in all types of terrain and under all weather conditions.

## *PART II--ANTENNAS FOR ARTILLERY APC'S*

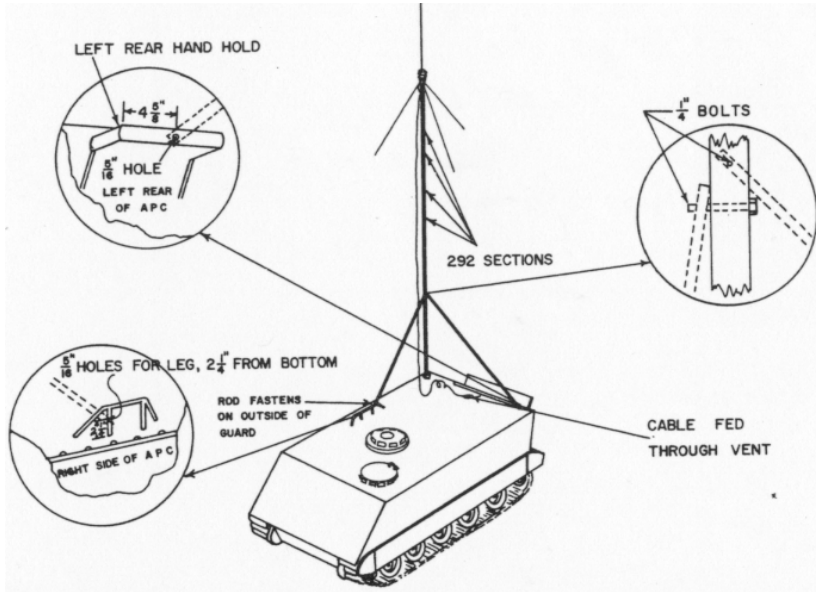
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Artillery

1st Cavalry Division Artillery

Has your armored artillery unit ever suffered from poor communications when using vehicular antennas? Have you frantically attempted to establish communication while fire direction center personnel assembled the sections of the RC-292 antenna, measured the distances for the pegs (precisely 120° apart), struggled to drive the pegs into frozen or rocky ground, attached guy lines, and, finally, erected the antenna shakily? **Has an incident of this nature ever happened in your unit?**

If so, you may be interested in the progressive thinking and initiative which one unit has shown in tackling this problem. Recognizing the need for rapid communications when terrain or distance prohibits the use



**Figure 3. RC-292 antenna mounted on M113 armored personnel carrier.**

of vehicle antennas, this unit devised a system of permanent mountings on the FDC armored personnel carrier (fig 3). These mountings enable two men to erect the RC-292 and have it operational within 1 minute.

Here are the construction details. First, fabricate the bracket shown in figure 4. This bracket should be mounted under the outside retaining bolts of the right rear lifting ring (fig 5). Next, attach a 14-foot length of 1 1/2-inch iron pipe to this bracket by drilling holes as shown in figure 6. In the final installation, this pipe will extend straight up from the right rear of the armored personnel carrier (APC). To support this pipe, two braces are needed—one from the left rear handhold bracket and the other from the right front antenna guard. The two braces are lengths of 1/2-inch concrete reinforcing rod, one section 11 feet long (lateral brace) and the other 10 feet 2 inches long (fore and aft brace). These rods should be drilled as shown in figure 7. To mount these rods, drill a 5/16-inch hole in the left rear handhold bracket, 45/8 inches from the outside edge, and a similar 5/16-inch hole in the antenna guard, 21/4 inches from the bottom. After the pipe and braces have been mounted as shown in figure 3, the RC-292 antenna can be erected.

In raising the antenna, first assemble the five sections of the antenna and pin them together with 1/4-inch stove bolts. This assembly will slide firmly but easily over the 1 1/2-inch pipe. Next, attach the standard RC-292 head and cable (taping the cable only to the RC-292 sections). Feed the cable through the troop compartment air vent at the rear of the APC and connect the cable to the radios. The antenna is

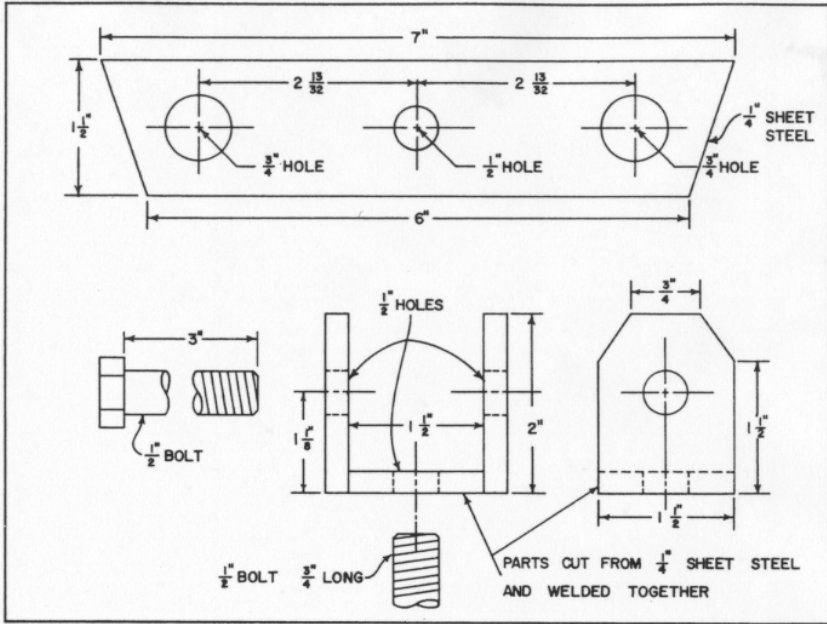


Figure 4. Mounting bracket.

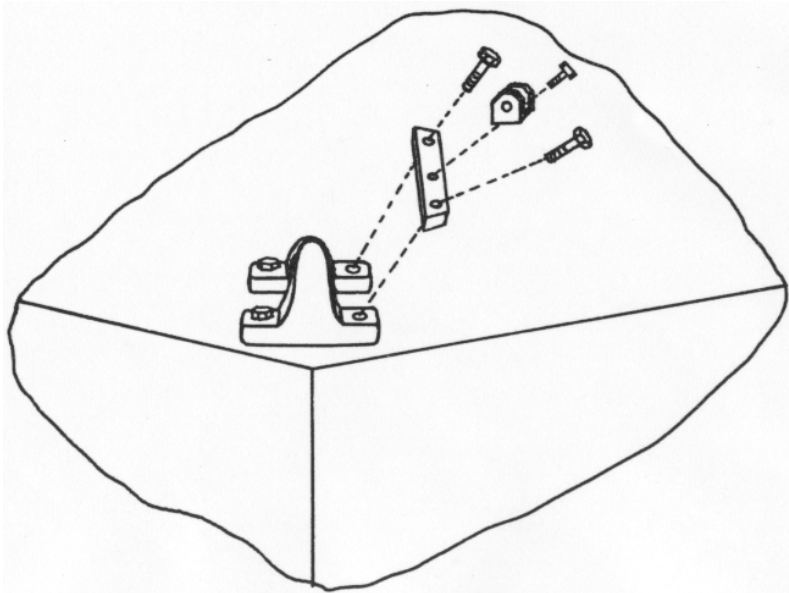
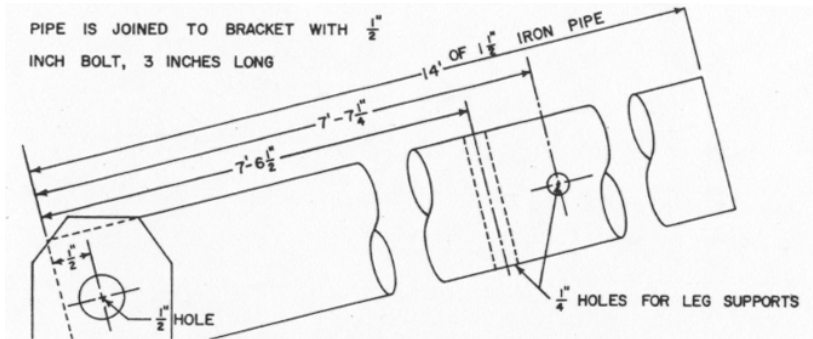
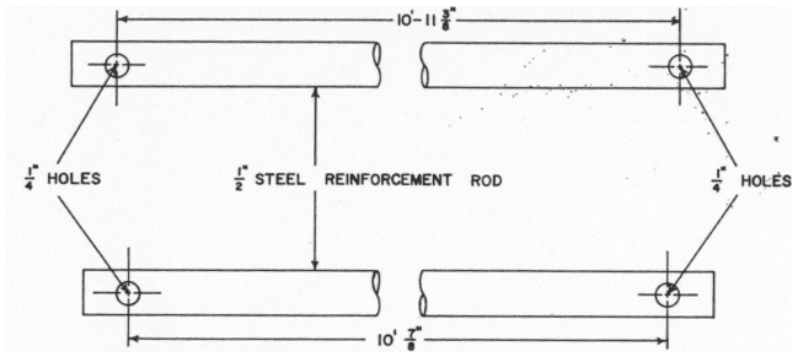


Figure 5. Bracket mounted under lifting ring.



**Figure 6. Method of mounting pipe.**



**Figure 7. Holes drilled in braces.**

now operational. Two men can erect this antenna as follows:

- Number one screws the antenna sections into the head and slides the complete assembly over the 1 1/2-inch pipe.
- Number two lifts the antenna and "walks" it up to a vertical position.
- Number one positions the braces, first the lateral brace and then the longitudinal one. He secures these braces with 1/4-inch stove bolts.

The parts needed for this system are few: a bracket, as shown in figure 2; a 14-foot length of iron pipe; two lengths of steel reinforcing rod; five sections of the RC-292 antenna with the complete head and cable; eight 1/4-inch stove bolts 3 inches long; a 1/2-inch bolt 2 1/2 inches long; and a 1/2-inch bolt 1 inch long.

Try this antenna in your unit; it could easily mean the difference between timely, effective fire support and ineffective firepower due to poor communications.