

# Feed Point Protection

*A little help for your bumper-mounted antenna.*

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Several years of heavy mobile HF operating (100,000 miles and 100+ countries) can reveal much about mobile antennas and bumper mounts. I have used a number of different mobile antennas and combinations, including the regular Hustler resonators in both single and "candelabra" configuration, the Swan M34 multiband antenna in three and four band configurations, and finally a homebrew multiband antenna. ("Four Bands, One Whip," *73 Magazine*, April 1984, page 56.)

The performance of each antenna and combination was satisfactory and none seemed to offer any dramatic difference in either transmitted or received signals. There are some differences in bandwidth from one antenna to another, but my HF transceivers (solid state) did not substantially reduce output power until SWR was well above 2:1. Some of today's HF transceivers are much less tolerant of reflected power than the Atlas 210X and 210XLE's that I used. In the best of conditions, a mobile antenna is no match for your tribander at sixty feet, or even a good dipole, but mobile antennas still perform remarkably well with reasonable band conditions. Still, you want to ensure their continued peak performance.

## Real Antenna Turn Off

I used only the Hustler bumper mount, but this one and a number of other mounts expose the feedpoint of the antenna to the elements. This feedpoint exposes these mounts to severe problems, particularly in winter weather. The culprits are wet dirt and salt. They will drop a S9+20 signal to an S5 or less. This will also play havoc with your transmitted signal, particularly if your HF transceiver is sensitive to SWR. Once salt has coated the antenna mount, it does not even have to be wet to cause problems. Ambient humidity provides enough moisture to allow the salt to conduct well.

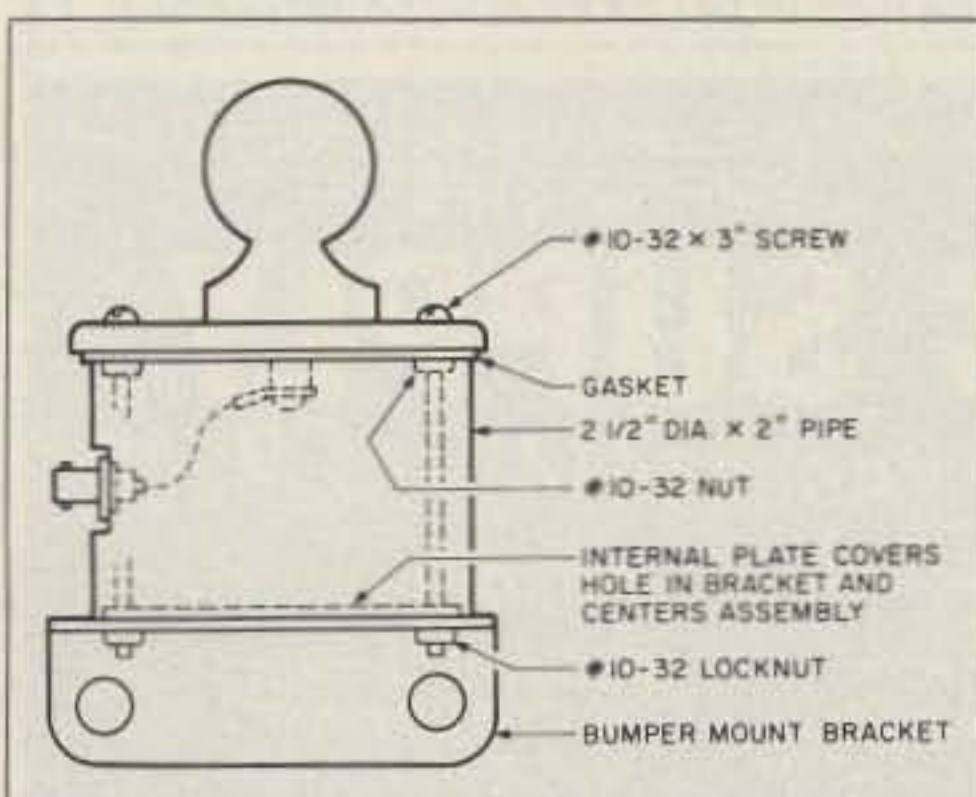


Figure 1. Assembly details of protected mobile antenna mount.



A BNC connector for the enclosure makes it easy to attach coax to the mount.

## The Solution

I solved this problem by protecting the antenna feedpoint from exposure to rain, dirt, and salt. I modified the Hustler mount to protect the antenna feedpoint by making an enclosure. I also added a BNC connector to the enclosure to make it easy to attach coax to the mount (see photo). BNC connectors are

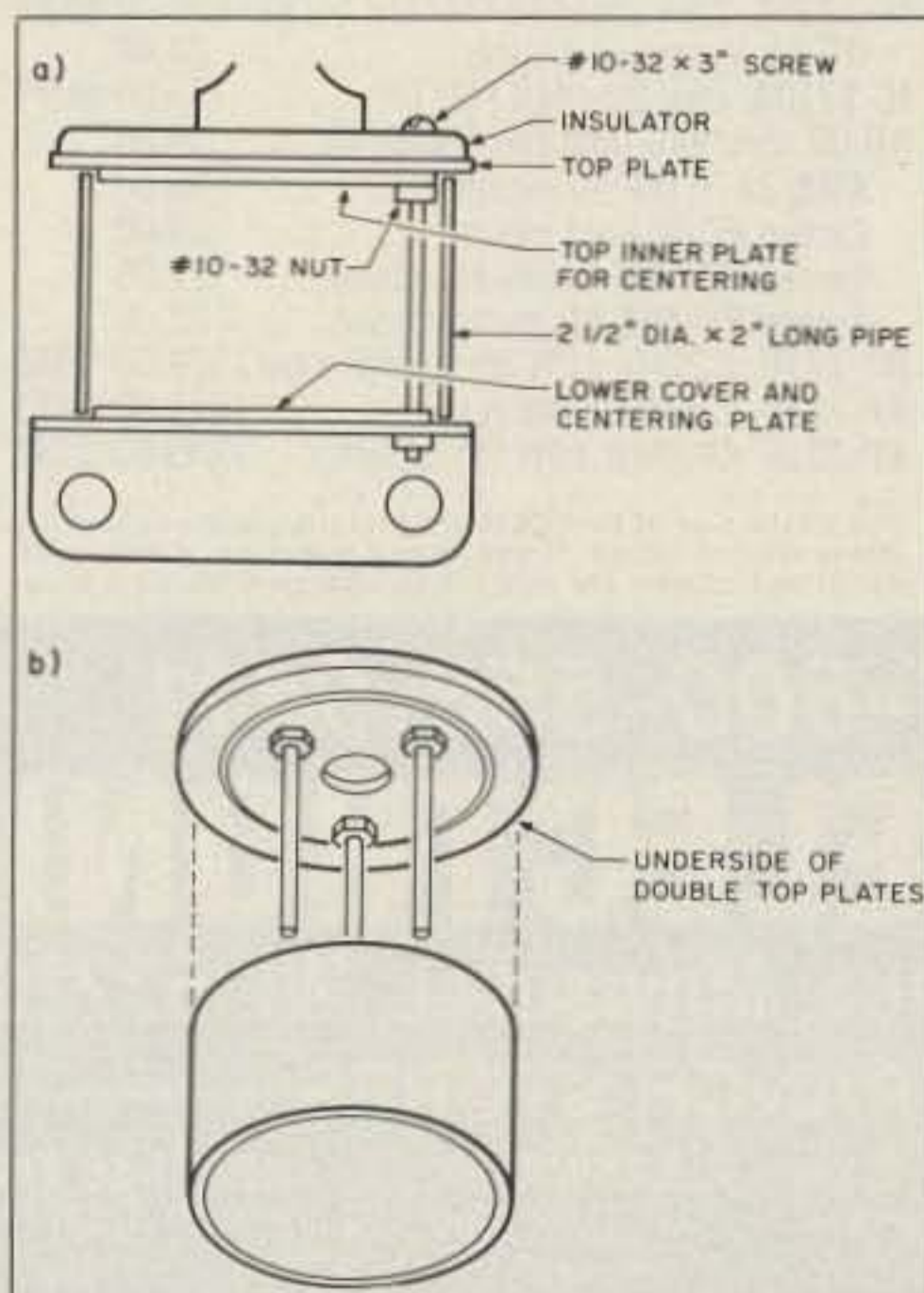


Figure 2. Alternate construction. This doesn't require welding.

weather resistant, as are several other types of connectors. The ease of removing or attaching the coax was important to me because I have used the Hustler mount on at least ten different vehicles.

## Construction

Figure 1 shows the construction of the enclosure I made for the Hustler mount. The core is a 2-inch section of 2½-inch diameter automotive exhaust pipe. I welded a top plate to the cylinder and cut out a section in the side of the pipe where I welded in a flat section to provide a good mounting surface for the BNC connector. For readers who don't have access to welding facilities, see Figure 2. This shows a non-welded method of construction. The plate at the bottom of the cylinder covers the large hole on the mount bracket and also helps center the cylinder assembly (Figure 3). There is no attempt to seal the bottom plate, as it easily keeps water from splashing into the enclosure and will allow any water which may seep in to run out the bottom. Paint all parts of the assembly to prevent rust.

The original Hustler gasket is used at the top of the mount. 10-32 x 3-inch screws secure the expanded assembly. Extra nuts and lock washers inside the cylinder at the underside of the top plate add stability to the assembly. Then assemble the ball mount and attach the center conductor wire from the BNC connector to the feedpoint on the ball mount stud.

The completed assembly is now attached to the bumper bracket with self-locking nuts, and the protected antenna mount is ready to pull in all those DX signals in all kinds of weather! **73**

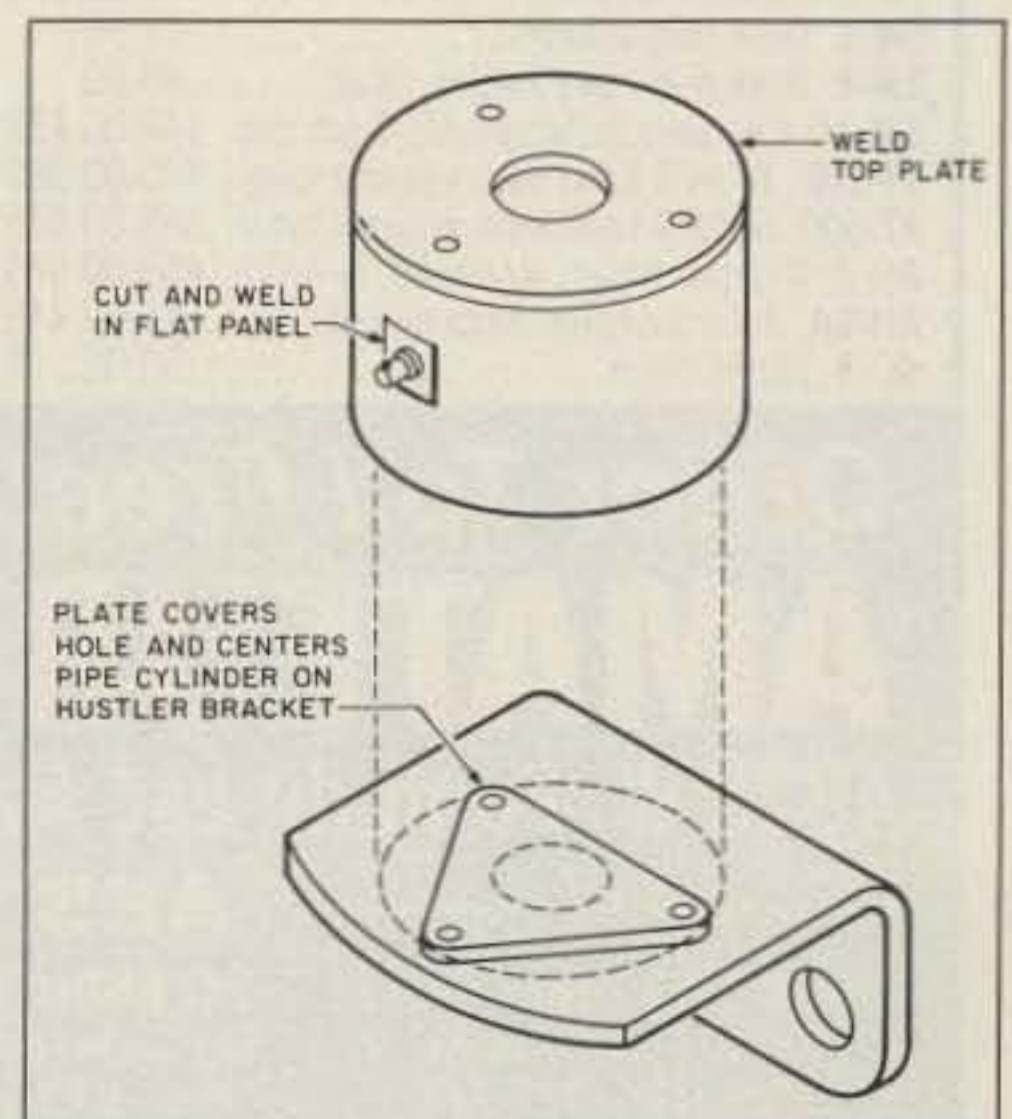


Figure 3. Lower plate covers hole in bracket and aids in centering the enclosure cylinder.