The
Broadcasters' Desktop Resource
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Tech Tip

Magnetic Mounting on Aluminum Vehicles

By Richard Rudman

[May 2017] One of the requirements when using magnetic base mount mobile antennas is ensuring that they stay firmly attached to a mobile vehicle at highway speeds. For a vehicle with an aluminum or fiberglass body, using magnetic mount antennas is, to state the obvious, a challenge. Here, Richard Rudman shares a solution he found.

As a member of the Ventura County Amateur Communications System (W6TIA), I need to have my ham gear available for emergency activations when on the road.

I have accumulated over the years high quality magnetic mount antennas for that purpose. I also have several magnetic mount antennas for my FM broadcast survey equipment and spectrum analyzers that I use in my contract engineering practice.

THE PROBLEM

Pending the invention of aluminum and fiberglass magnets, I basically have had to jury-rig my old mag-mounts until recently.

I have been searching for a better way to mount my magnetic mount roof antennae (including my survey antennas) on the aluminum roof of my truck since I left the world of steel top trucks over a year ago.

Among the ideas that I came up with (and discarded) was mounting an antenna base with an RF connector through the truck's aluminum roof. Unfortunately, not all antennas use the same RF connector.

One amateur radio outlet markets a bracket that you can bolt in that extends through the body seam for the hood. It worked, but the hood of a truck is certainly not the optimal place to mount antennas.

Either way, neither approach is really a good idea when it comes to trade-in value

SOLUTION

Recently, I can across what looked like a better solution: a neat dual suction cup thingy available on Amazon.

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It is just $12 or so and, for those with Amazon Prime, free shipping as well.

INSTALL

The FastCap HOD-DOUBLE dual suction cup handle easily attached to my roof when I tested it and seemed to have almost enough holding power after the snap handles were engaged to lift my F-150 off the ground.

After satisfying myself that the device had sufficient holding power, I bought a length of perforated angle stock from the local Ace hardware store.

After cutting it down to size, I used two 5/16" x 2-1/2' bolts that I through-bolted to the handle. (If you want to make the mount a bit prettier, use non-perforated angle stock.)

As you can see, it all fit perfectly.

OPTIONS

I am going to experiment with increasing the size of the mounting plate by using more steel to enlarge the ground plane area.

I have a Rig Expert R X analyzer. When I have some time to do it I plan to look at the load my radio is looking into, and a field strength meter.

This solution has worked well for me so far. Out on the road, the antenna delivered RF as would normally be expected – just a little less efficient than usual.

Others who have aluminum or fiberglass vehicles might find this solution useful.

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A regular contributor to ***The BDR*** *and a core member of the Broadcast Warning Working Group (BWWG)****,*** *Richard Rudman is the owner of Remote Possibilities in Santa Paula, CA. He has extensive experience from small to major markets.*

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