

6 METER HALO ANTENNA DESIGN

April 28th, 2002, By Steve KB1DIG

Please check out the comment section below for some insight on SWR adjusts. This can be a little tricky...

[Some comments about the 6-meter HALO antenna](#)

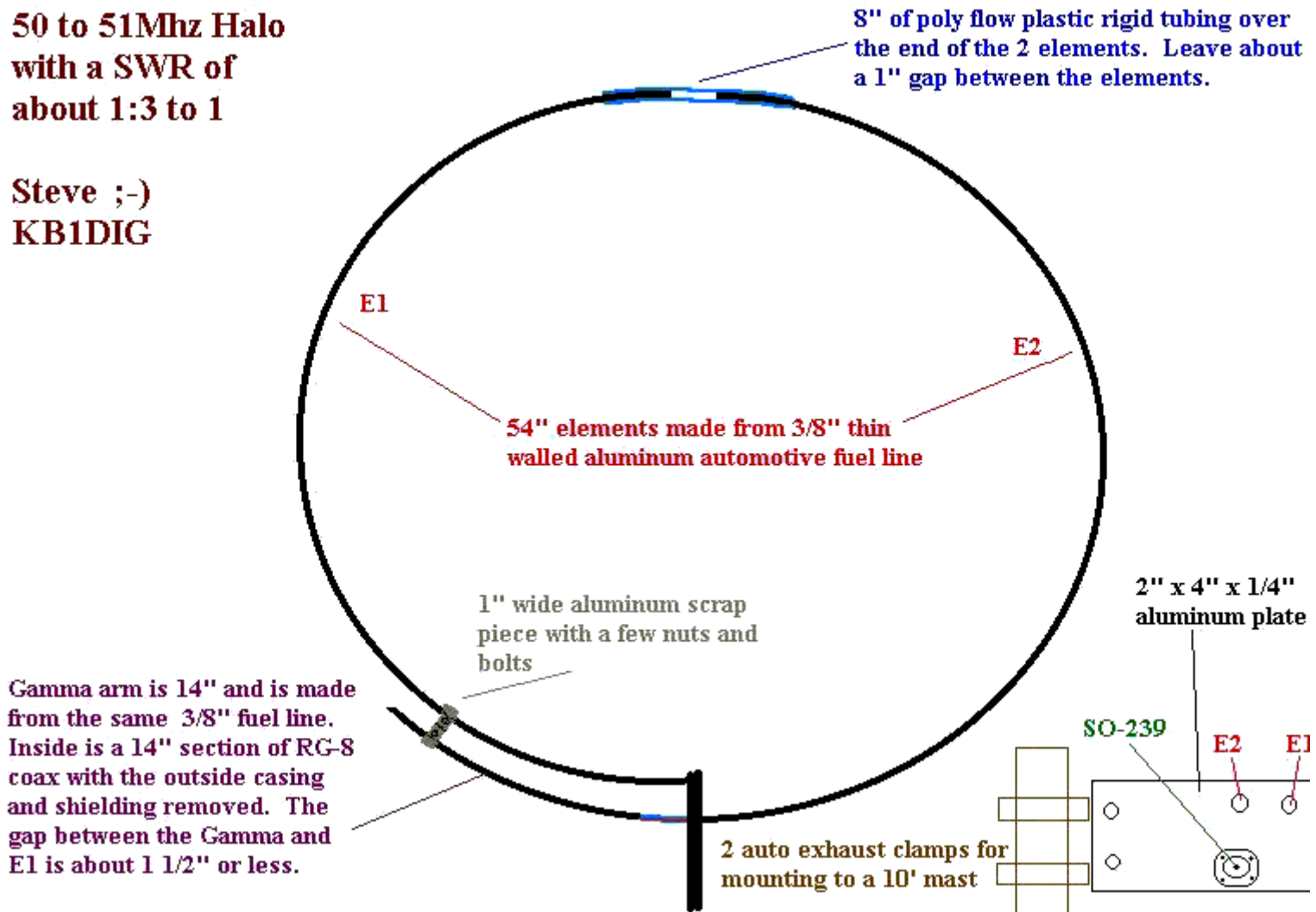
Check out Don N4UJW's Ham Webpage at: <http://www.hamuniverse.com>

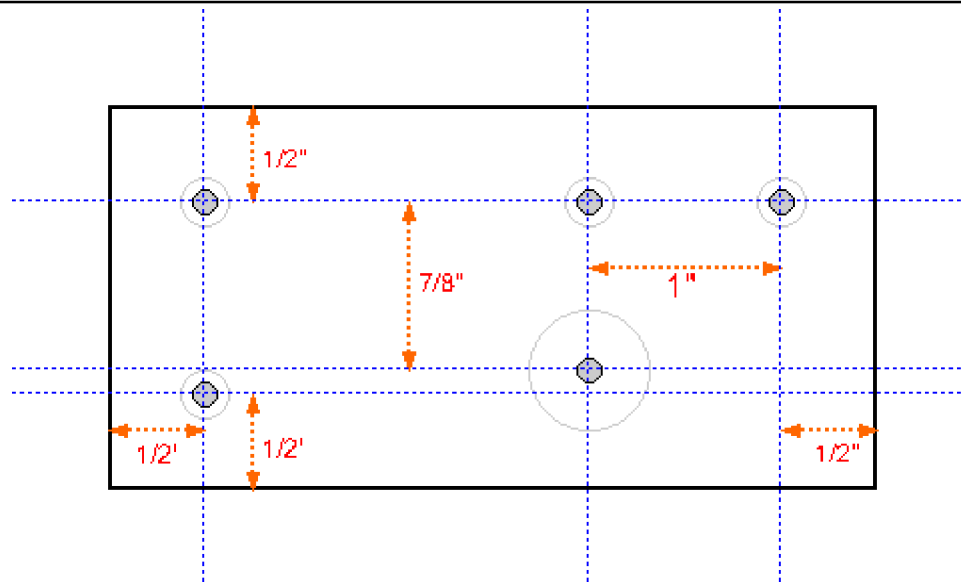
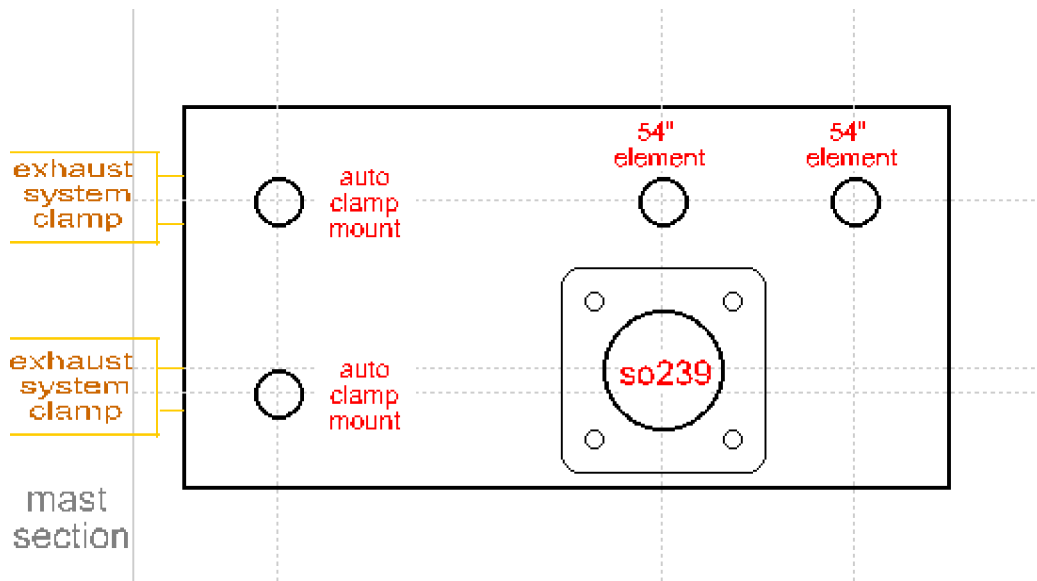
Also, see the page Don set up about this antenna design: <http://www.hamuniverse.com/6mloop.html> Thanks Don!

Something a little more advanced. Always fun to try out new bands.
This halo is made with a true Gamma Section this time and is fashioned from aluminum.
Most of the parts are leftovers from old car projects.
The best part is it's omnidirectional!

**50 to 51Mhz Halo
with a SWR of
about 1:3 to 1**

Steve ;-)
KB1DIG





The 3/8" fuel-line I used came from [Summit Racing Equipment: http://store.summitracing.com](http://store.summitracing.com) #SUM-G2538 and a 25' section costs only about \$20.00.

Some of the mods I came up with were:

Welded the elements to the aluminum plate with some of that "Alumalloy" stuff advertised on television. This online product is about the same. [AlumiWeld: http://virtual-adnet.com](http://virtual-adnet.com)

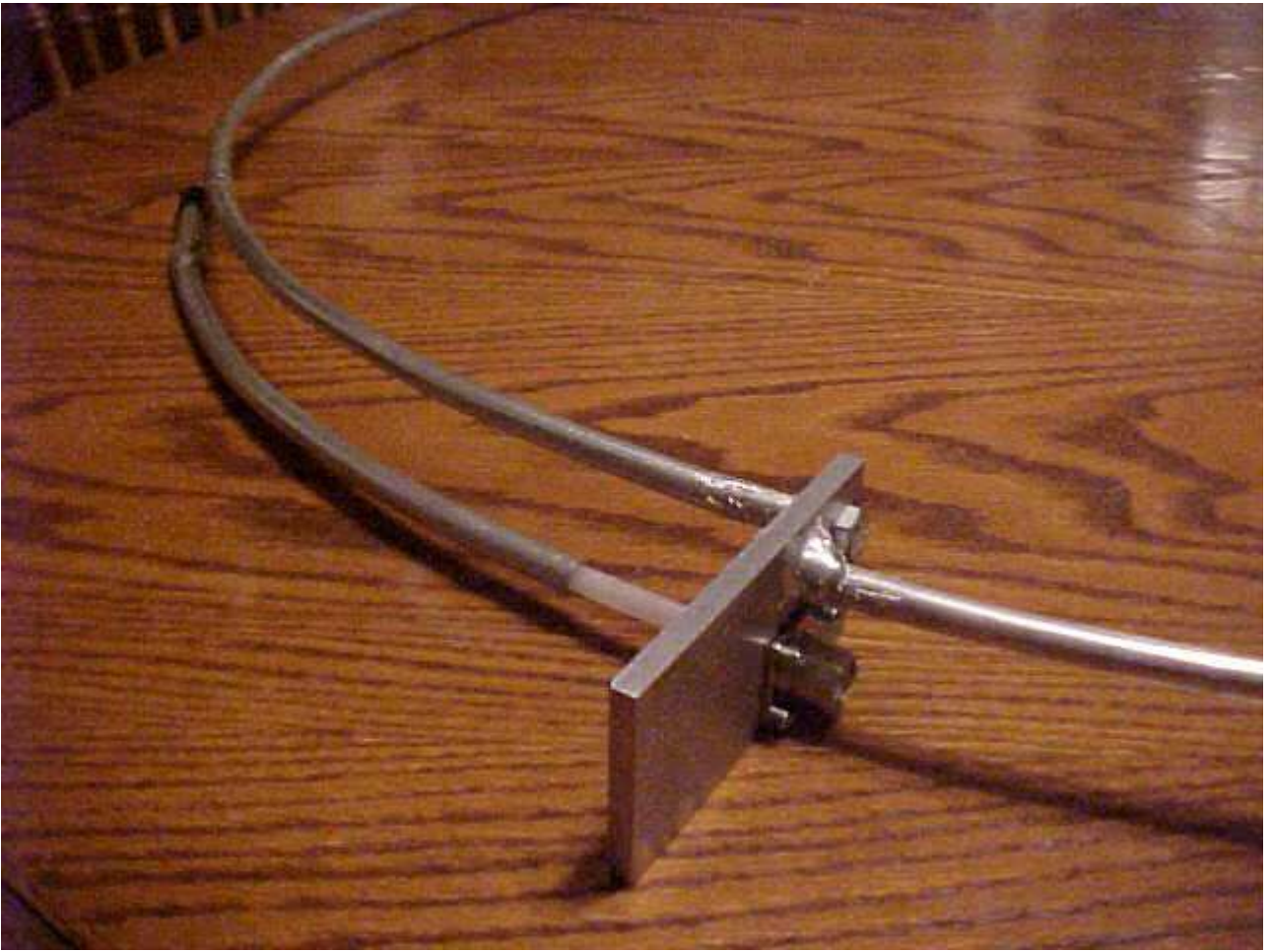
I drilled a small hole in one of the elements to allow condensation to evaporate.

Capped off the end of the gamma arm with a plug to keep the weather out. The plug was an automotive type use block off a PCV line from a carburetor.

After mounting horizontally to a 10' mast I added a support system made from 2 thin 3' fiberglass rods and some wire-ties. Also remember to hot-glove the wire-ties to the fiberglass rod.



Both 54" elements are bolted and welded to the mounting plate. Use galvanized or some other type of corrosion resistant bolts. The size of the bolts is not so important other than that they fit snugly into the ends of the 3/8" fu line and hold the elements in place while welding the elements to the mounting plate. This "Alumalloy" product great for this purpose and is more like soldering than welding. After the 2 elements are welded, leave the 2 bolts place for added support.



The so-239 connector is pop-riveted to the mounting plate. Face the pop-rivets out and away from the gamma section. Cut back and expose about 1/4" of the center conductor of the RG-8 section for soldering to so-239 connector.



Position the 1" wide aluminum bracket on the Gamma arm, inward about 3 1/2". Expose about 3" of the RG-8 center section. This is just a starting point for matching this antenna. I was lucky and didn't need to make any further adjustment for lowering the SWR. The SWR on this design seen here, just the way it is, was 1.2 to 1 at 50.125Mhz.



This halo design is intended to be mounted parallel to the ground. It should work well for base or mobile operation. I presently use this antenna at my home QTH and it has proven itself to be quite successful for SSB work. It is presently up on the roof, mounted to a 10' mast section in a 3' tripod stand. It can also be modified to work on the FM portion of the 6-meter band by shortening the length of the 2 main elements a little at a time. I have not done this. No change to the gamma arm will be required if this antenna is altered for 6-meter FM.

Good luck building! Works slick! CQ CQ DX!!!Have fun! 73@be good! Steve KB1DIG ;-)

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