

# **Modifications Needed To Build The SSTRAN Antenna With An In-line Coil**

by Joseph Gray



This modified design follows the premise of the original design: use off-the-shelf parts and simple hand tools for assembly.

To build the SSTRAN antenna with a coil that is in-line with the antenna and mast, modify the original parts list and instructions as follows.

On the “Antenna Diagram And Parts List”, make the following changes:

- Item 7 – Delete.
- Item 8 – Delete.
- Item 14 (top) – Replace with 1½” to ¾” threaded bushing.
- Item 15 (top) – Replace with 3” to 1½” reducer.
- Item 9 – Replace with 3” coupler.
- Item 15 (bottom) – Replace with 3” to 2” flush bushing.
- Item 14 (bottom) – Replace with 2” to 1 ½” threaded bushing.

Here is a picture of the needed parts.



The first two parts will replace the original top cap on the coil form. The last three parts will replace the bottom cap on the coil form. Assembled, they will look like this picture.



Follow the original instructions for building the antenna, with the following exceptions.

Under “Preparing The PVC Pipe Before Winding The Coil”:

- Step 3 – Mark the pipe 1 ½” in from each end and wrap masking tape...

The next two changes are **optional**, if you wish to make a shorter coil assembly.

- Step 1 – use a 9” section of 3” white PVC pipe (instead of 11”).
- Step 5 – mark and drill a 3/32” diameter hole 2” from one end (instead of 3” from one end).

Under “Winding The Coil”:

- Step 12 – Replace this step with the following instructions:  
After the second coat of varnish dries, remove the masking tape. Using a hacksaw, cut approximately ½” from the base of part 14 (top), so that it will fit flush when seated into part 15 (top). Assemble parts 14 (top) and 15 (top) with PVC cement. Assemble parts 9, 15 (bottom) and 14 (bottom) with PVC cement.

Under “Antenna Construction Steps”:

- Steps 9, 10 and 11 – Delete.

- Step 12 – Replace with the following instructions:  
Screw the threaded end of the adapter (ref. 6) previously installed on the  $\frac{3}{4}$ " copper pipe (ref. 4) into the  $\frac{3}{4}$ " threaded center hole in the top cap assembly. The threads are tapered so the fittings will get tight when they are threaded together about half way. Tighten firmly with a wrench or large channel-lock pliers. You probably will not be able to tighten things so that the copper fitting is flush with the PVC. However, you should get within  $\frac{1}{4}$ " of flush.
- Step 14 – Delete.



When mounting the completed antenna onto the mast, it should be obvious that the  $1\frac{1}{2}$ " steel mast screws into the bottom of the coil form.

To the right is a picture of the completed coil assembly. Note that this coil form uses the original 11" length and not the optional 9" length, as mentioned above.

The rest of the original instructions as to assembly, mounting and tuning remain unchanged.

Thanks to Phil at SSTRAN for the original plans and for agreeing to host this modified design on his web site.