

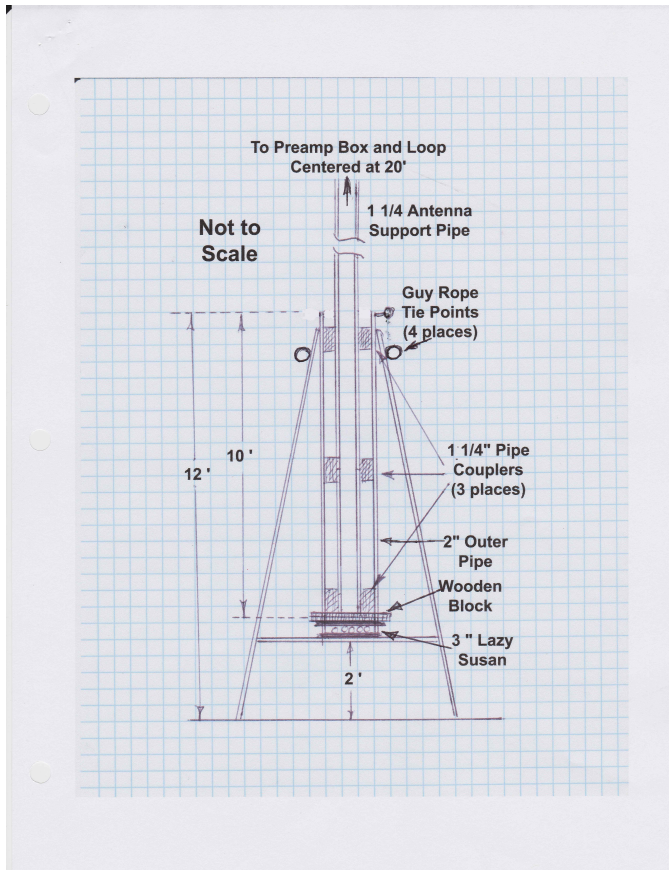
## Part 5 - Antenna Construction

It was anticipated that many different antennae would necessarily have to be exchanged over the period of this study. Since such would involve frequent raising and lowering, a somewhat elaborate and robust antenna mounting scheme was developed. Also, in view of my being hampered by old age and being of limited mobility, it was required that the scheme would allow me singularly to handle such activities. Otherwise these antennae, being of relative lightweight, could certainly have been more simply mounted.



### Tower Base Construction

(Pic left) A four-legged base constructed of 1x4 inch construction lumber supports a 10 foot section of Schedule 40 PVC pipe. The construction of the loop antenna is 'standardized' in that all are mounted on a 10 foot section of 1 1/4 inch Schedule 40 PVC pipe. With appropriately spaced 1 1/4 inch couplings joining additional sections to the antenna pipe, this antenna pipe can be snug-fitted within the 2 inch outer pipe allowing easy rotation. The length of the additional sections are chosen to position the center of all loops 20 feet above ground level.



(Pic above) The base of the outer pipe, with a compass rose attached, is supported on a wooden plate which is affixed to a 3 inch 'Lazy Susan'. This assembly permits the antenna to be easily rotated. (The 'Lazy Susan' is not in view in this picture but can be seen in the version at my TN QTH pictured next.)



(Pic right) View of the TN three inch 'Lazy Susan' awaiting the attachment of a compass rose. The 'Lazy Susan', being of metal construction with steel ball bearings, when exposed to the elements for extended periods is prone to rust. However for both of the units in NJ and TN after almost a year in use and through all kinds of weather, it has been found that the corrosion can be controlled by liberal periodic application of WD40 or light machine oil.

## Part 5 - Antenna Construction



(Pic left) Hinged base of tower permits it to be tilted over to load or remove an antenna by withdrawing or inserting the antenna pipe into the 2 inch diameter outer pipe.

(Pic below) Tower mount with 8 ft Loop installed - NJ QTH.



(Pic below) Son and Grandson inserting the 8 foot Loop's antenna pipe into the outer pipe. TN QTH.

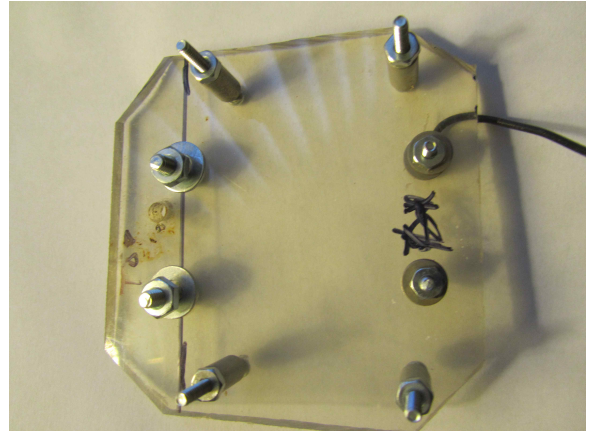


### Preamp Mounting

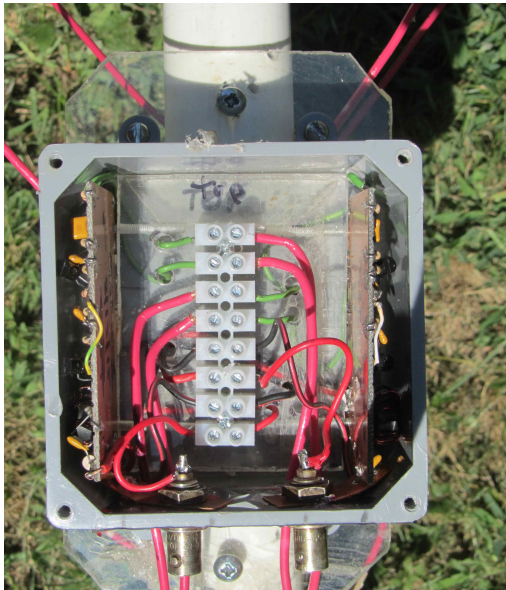
The LZ1AQ preamp was mounted in weatherproof PVC outdoor electrical boxes on the preamp's PVC mounting pipe. The internals of the box were configured to accommodate the material used in the loops construction ... wire or tube. Examples are given next.



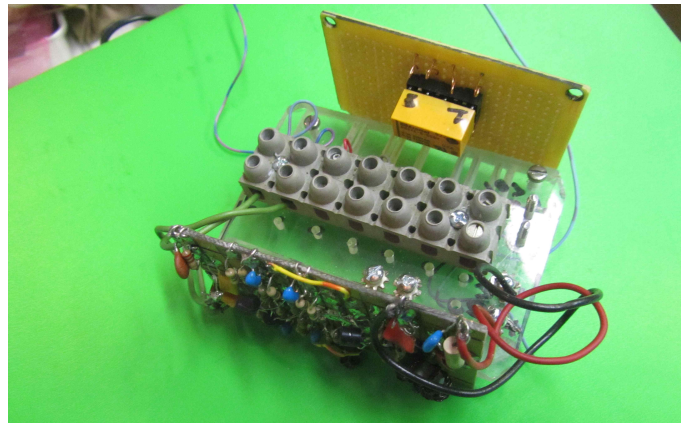
(Pic left) Carlon Marine Waterproof Box, type E998NNJ, 4x4x2 inches used for all preamp mounting in this project. The o-ring seal was found to be a particularly attractive feature. Purchased a local construction supply center.



(Pic right) The preamp is held in place by being affixed to a Plexiglas slab which was dimensioned to fit within the box. This particular slab was used to mount the connection to a wire loop, the connection being made to the two screw terminals on the left in the picture. The screw terminals on the right are for the V+ connection. The preamp was held in place on the four screws with standoffs at the top and bottom of the slab.



(Pic left) A pair of preamps held in place along the left and right sides of the Carlon box by screws into threaded holes in the Plexiglas slab.

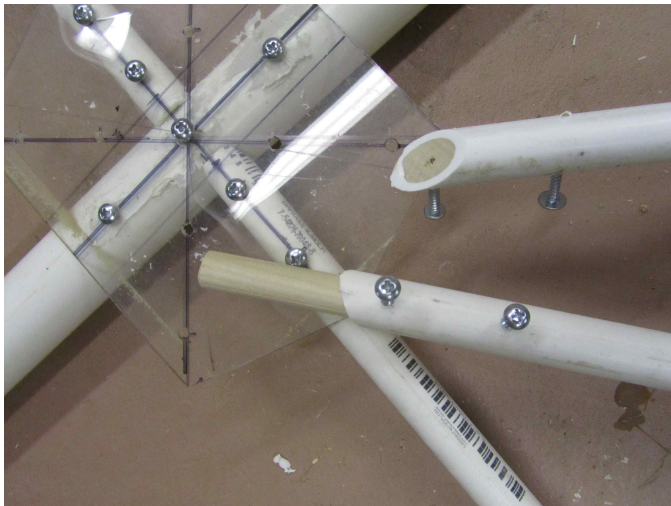


(Pic above) Yet another mounting scheme ...

### Loop Mounting



(Pic left) On loops requiring spoke support to maintain structural integrity, 1/4 inch thick Plexiglas gusset plates are used to lock the spokes to the PVC antenna pole. A short section of a 1 inch diameter wooden dowel is positioned inside the antenna pole directly beneath the gusset plate to strengthen the screw hold.



(Pic left) Likewise, and for the same reason, short sections of 1/2 inch diameter wooden dowels are inserted in the spokes where they connect to the gusset plate. Of the two unattached spokes seen in this picture, the lower one has the dowel partially removed for viewing.