

# Boomless Quad

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A Quad antenna is a full wavelength conductor in the form of a square (or circle or diamond). It is actually two half wave dipoles spaced half wave length apart, bent at right angles at 1/8th wavelength points and joined together.

If the Quad is fed at either sides it is vertically polarised and if fed at bottom or top it is horizontally polarised. The radiation will be perpendicular to the plane of the Quad. In this design a single feeder is used for all the bands, viz., 28 MHz, 21 MHz and 14 MHz.

The dimensions are the ones suggested in the January 1982 issue of QST, but the centre section design is altered to enable the quad to be rotated on the vertical as well as horizontal axis, so that the whole installation may be carried out easily.

A telescoping mast is suggested so that the complete installation may be done with the centre section at about ten feet level. This will clear the spreader touching the ground, while it is rotated on the horizontal axis during installation.

Eight 14 feet long good, strong and straight bamboos have to be selected and given two coats of waterproof varnish. The tie points of the elements on each bamboo will be marked as shown in the sketch. One person standing on the ground can hold the bamboo to the angles with suitable hose clamps or any other clamps that may be available. I have used old motor cycle chains for this purpose and find it most efficient since it clamps the bamboo quite tight and does not allow it to slip down. The centre section is rotated on the horizontal axis and all the bamboo spreaders are clamped in a similar manner.

Now nylon guys are fixed between the spreaders (radiators and reflectors) as shown. A hook may be fixed at the centre of each guy. This will be unhooked while rotating the Quad horizontally to clear the mast and hooked back again. After fixing all guys as shown in the sketch, the copper wire could be strung.

Copper wire, preferably 14 swg or stranded - insulated wire may be used. The elements have to be cut to the full length as shown, plus 3 inches for each egg insulator and termination points (i.e., 6 points about 18 inches). This is passed through the egg insulator up to

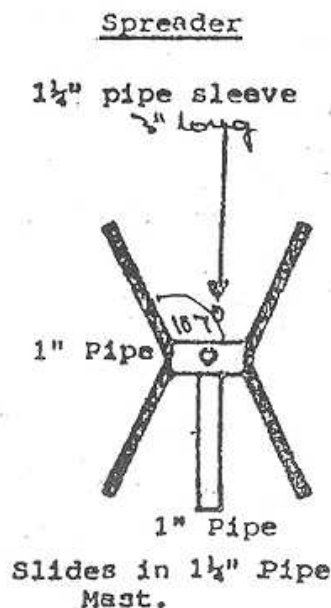
the appropriate point, given a twist and soldered at the twist. Nylon string, about 18 inches long is strung through the other end of each insulator to be tied to the appropriate points on the bamboo already marked.

All reflector elements terminate on a 4 inch insulator (if this is not available, two egg insulators may be used 4 inches apart). Stubs, about 9 inches long are soldered on either end of these insulators for tuning purposes.

All radiator elements terminate on either end of a 4 inch insulator at the centre of the 21 MHz element - so this 21 MHz element may be fixed first and the other two 28 MHz and 14 MHz elements may be fixed later, terminate at the same 21 MHz parts.

Tie the radiator elements to the bamboo spreaders standing on the ground, by rotating them on the horizontal axis so that all the spreaders can be reached, one after another. The horizontal axis is locked after this process is over.

With the centre section raised to about 10 feet, the bottom wire of the 14 MHz radiator will be about 1-2 feet from ground level. Each radiator may be tuned individually for best front to back ratio. Finally the complete quad may be raised to optimum height.



# Boomless Quad Dimensions

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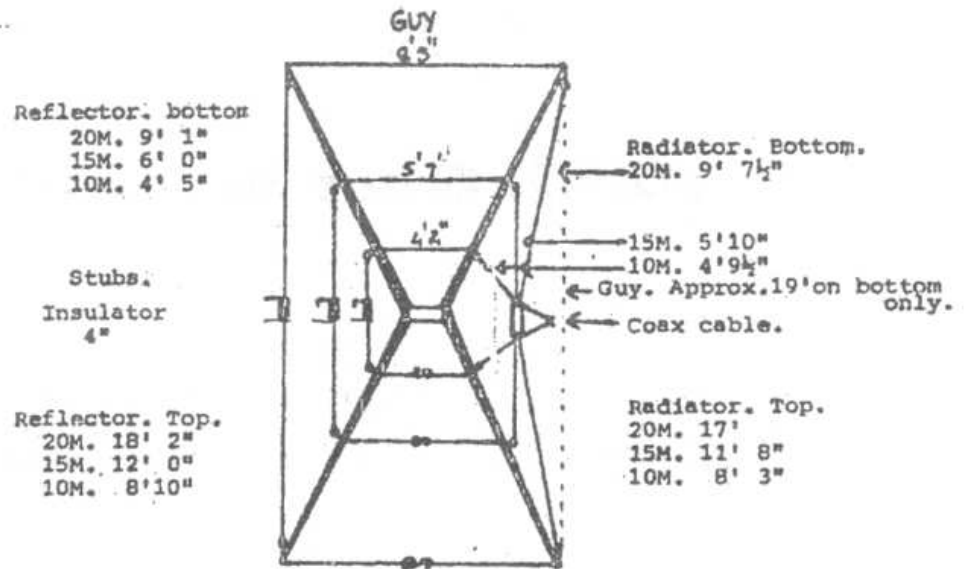
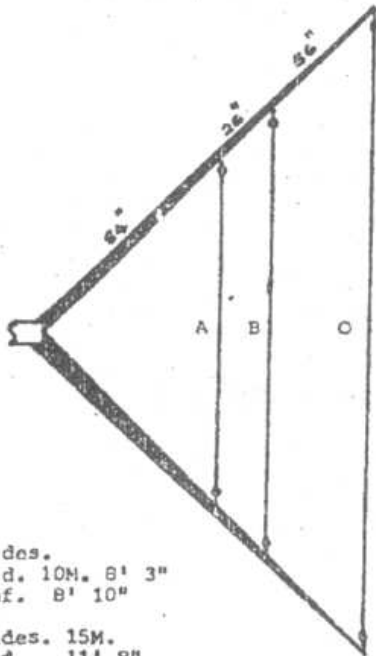


Fig. 1 As viewed from Top.



- A. Sides.  
Rad. 10M. 8' 3"  
Ref. 8' 10"
- B. Sides. 15M.  
Rad. 11' 8"  
Ref. 12'
- C. Sides. 20M.  
Rad. 17'  
Ref. 18' 2"

Fig. 2 As viewed from side.