A Turnstile Antenna For 2, 6 and 10

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For the 2, 6 and 10 meter bands I have tried out a large number of antennas. Little did I expect the Turnstile antenna to perform as it did. Although horizontally polarized, the pattern obtained is essentially that shown in fig. 1, and approximates 360° coverage.

Looking at fig. 2, we see that the antenna is fed to give a phase shift of 90° between each radiating element.

Each element is cut for ¼ wavelength. If it is desired to conserve space and/or to contribute to overall installation sturdiness, you can obtain the necessary length by adding vertical arms (of equal length)—either up or down—to each element. Try to keep the arms *below* ⅓ of the overall element length.

A measurement of field strength will disclose that it will be equal to the *field* when a broadside measurement to one of the dipoles is made. At any other point, the field strength will be equal to the vector sum of the *fields* radiated from the dipole at that particular measurement angle.

Feeding the antenna is not tricky. Again, referring to fig. 2, you will see that the transmission lines are fed in parallel.

The transmission line characteristic impedance actually matches each of the input impedances of the separate dipoles. Careful selection of coaxial cable is essential.

For proper termination, the feed portion of the transmission line (where it connects to point "X") should have a characteristic impedance *about* ½ of the two lines. If 72 ohm coax is used, the long-run line should be about 36 ohms. But having no 36 ohm coax, I used 52 ohm with good results in the lower part of the 10 meter band. On 2 meters, the results were not outstanding. Paralleling a 72 ohm coax line to a 52 ohm section was not practical.

On 6 meters I had better luck with the 72-52 ohm combination. But with a carefully designed balun, I managed to use the antenna on 2 meters very successfully.

Although the Turnstile antenna is not new, not too many hams have tried it.

But when band conditions are good you can work nearly anything you hear. At least it is very simple, inexpensive and worth a try. How about the Turnstile?

Let me know. I've had phenomenal luck with it! ■

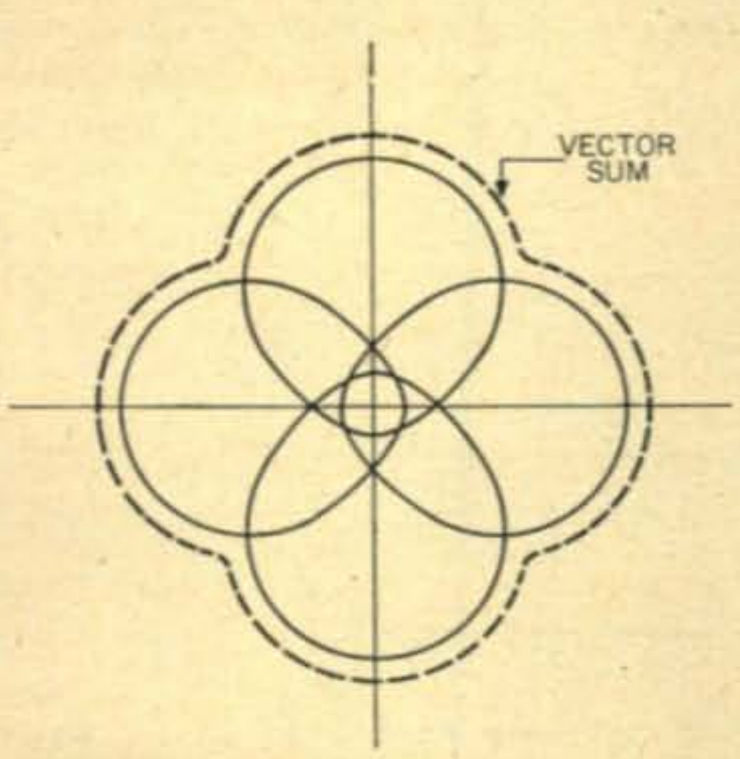

Fig. 1—Radiation pattern of the turnstile antenna. It provides almost a perfect 360 degree coverage.

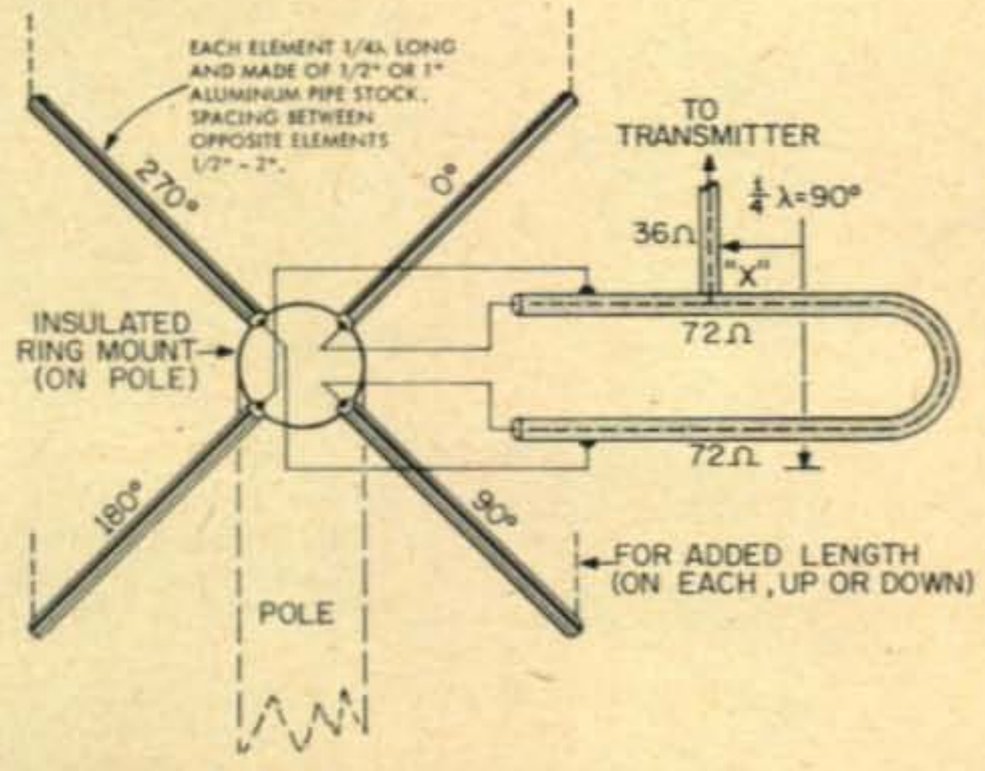

Fig. 2—Turnstile antenna dimensions for 2, 6 and 10 meters.