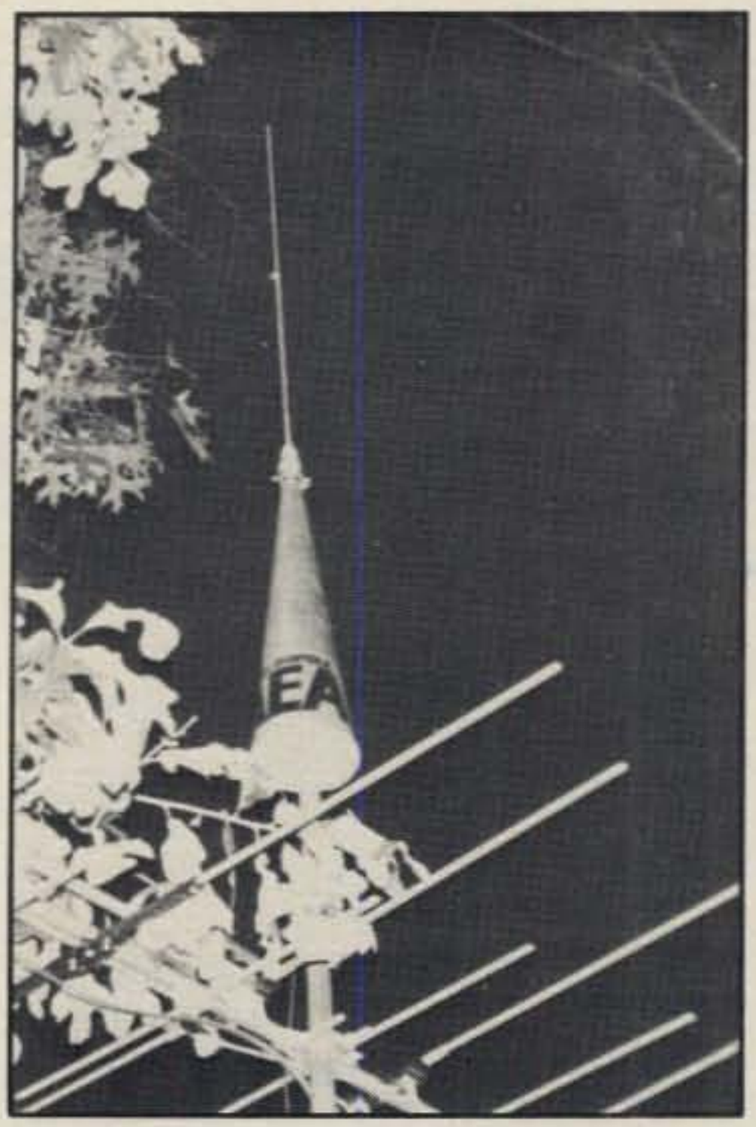
The AEA Isopole 144 Jr. antenna's low profile and adaptability for portable installations make it well worth considering if you're looking for a new 2-meter antenna.

The AEA Isopole 144 Jr. Antenna



The AEA Isopole antenna.

BY DAVE INGRAM*, W4TWJ

Every so often a unique item comes along which truly captures one's particular taste or needs at that time. A period of investigation and pondering may follow, with a resultant purchase soon being instigated. One such item in my own situation was the recent addition of AEA's Isopole 144 Jr. Antenna for 2-meter operations.

My older ⅝-wave antenna, with its weather-exposed connections, was producing an exorbitant s.w.r. during every springtime rain. The f.m. rig, in turn, kept protecting itself by reducing r.f. output to zero. An alternate situation to clear this dilemma was becoming necessary. Since my house already looked like a porcupine (tower/beam, verticals, longwires, OSCAR array, etc.), a relatively inconspicuous 2-meter antenna with reasonable gain was desirable. Enter the Isopole Jr.: weatherproof, attractive, and it could be placed atop my TV antenna mast (with coax routed down through that mast).

The antenna went together without a hitch and in a very few minutes time. The decoupling sleeve was slipped over the supporting mast and clamped into position, and then the coax connector was plugged into the top antenna section which also fitted over and clamped to the sleeve and mast top. Although all connections were fully protected from the weather, and it seemed unnecessary, I took time to mold a small amount of the new "Coax Seal" around that connection just for security (an item you'll despise and appreciate at the same time). Rains might wash away the neighborhood, but this antenna will continue working!

The Isopole took power beautifully right from the start. My f.m. rig produced full power output and both items have continued working like a champ since that time.

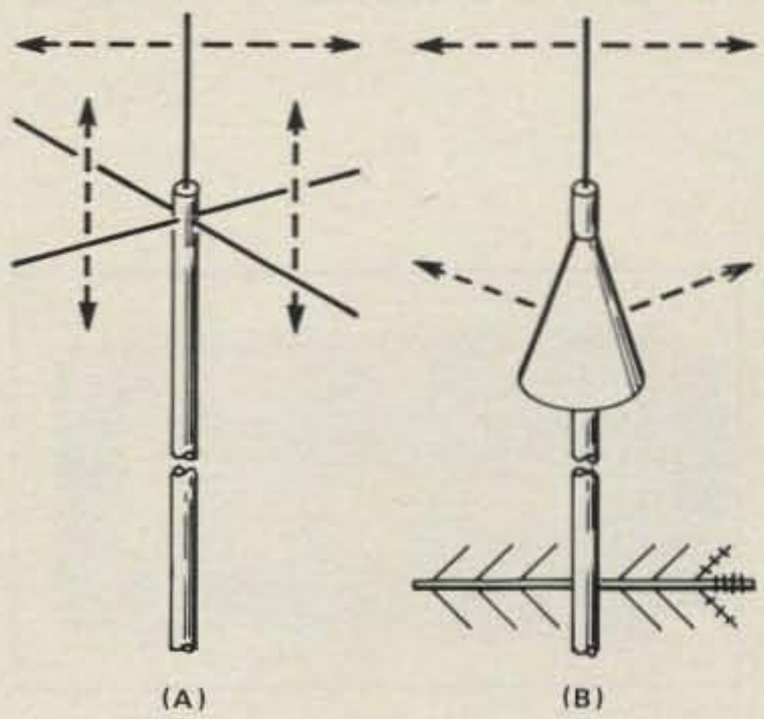


Fig. 1– Comparison of radiation fields emanating from antennas with (a) horizontal plane radials/decoupling, (b) vertical decoupler. Lack of r.f. energy below Isopole's cone allowed simultaneous use of TV antenna. Dotted lines indicate r.f. radiation.

Due to various physical locations, local terrain, etc., iron-clad gain figures for "smaller" 2-meter antennas such as the Isopole Jr. are difficult to accurately relate in a home installation. Indeed, height above ground and proximity to nearby objects may produce positive or negative effects that overshadow actual antenna performance.

Since omnidirectional radiators should necessarily concentrate all available r.f. energy at low angles (toward the horizon) rather than skyward (where it's lost rather than used), and since r.f. energy emanates at right angles from a radiator, the Isopole's vertically polarized conical sleeve has a decided advantage over horizontally positioned base networks found on other antennas. I observed that effect for myself, with the aid of a simple pickup loop and pilot lamp sensor as described in AEA's booklet "Facts About Proper VHF Vertical Antenna Design." The resultant "null" of r.f. energy below the Isopole eased my concern of mounting a regular TV antenna lower on that same mast (see fig. 1). In fact, both the TV and the 2-meter rig can now be used simultaneously without any problems whatsoever—a welcomed relief. While the antenna is mounted in exactly the same location as its ⅝-wave predecessor, it performs slightly better than the ⅝-wave antenna, particularly on "fringe area" repeaters. Apparently, this results from the Isopole's major lobe being situated at a very low angle and effectively utilizing all available r.f. energy.

All aspects considered, the AEA Isopole Jr. shapes up as an outstanding antenna for its class and price range. Its low profile and adaptivity for portable installations make it a real winner, particularly when one doesn't have available room for the two-cone Isopole Sr. Personally, I appreciate the antenna's weatherproof assembly—and an occasional laugh when watching birds trying to gain footing on that slippery aluminum cone. The antenna is manufactured by Advanced Electronic Applications, Inc., P.O. Box 2160, Lynwood, Washington 98036.

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