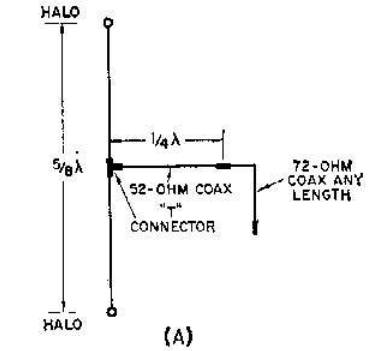
STACKED HALOS FOR OMNI-DIRECTIONAL COVERAGE

With the increased activity of emergency net operation on the v.h.f. bands, it has become quite evident that some type of omnidirectional antenna must be utilized in order to provide good signal coverage over a wide area. To solve the problem at my location, I have stacked two 6-meter halos 5/8 of a wavelength (12 feet for 50 Mc., 4 feet for 144 Mc.) and attached them to the side of my guyed tower that also supports a 5-element 6-meter beam (see photograph). Each halo was tuned after being mounted on the tower with the aid of an s.w.r. bridge. The feed-line arrangement for stacking two halos is shown in Fig. 3A. The 72-ohm feed line (RG-11/U) from each halo is parallel-connected at a coaxial "T" connector. This results in a feed impedance at the connector of about 36 ohms. A quarter-



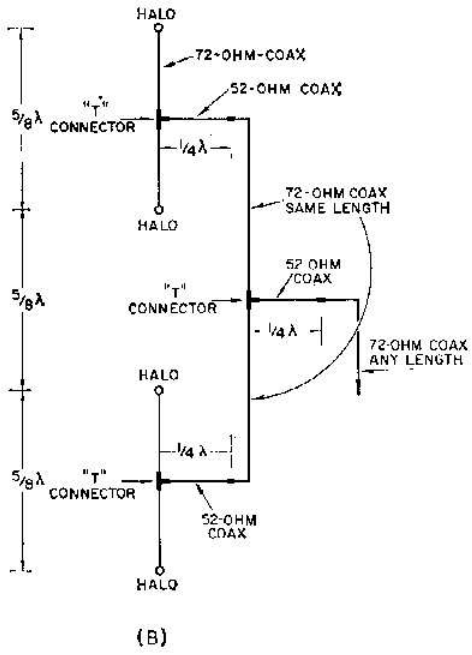


Fig. 3—Transmission-line hookup for stacking two (A) or four (B) halo antennas.

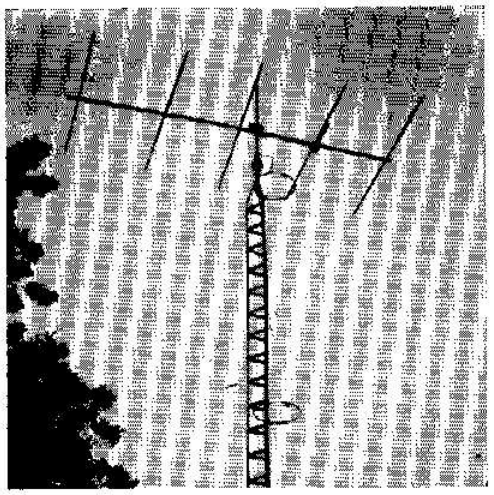


Fig. 4—K2JKA's stacked halos.

wave transformer (Q-section) made from a 1/4 wavelength of 52-ohm coax (RG-8/U) (37 inches for 50 Mc., 12 inches for 144 Mc.) transforms the 36 ohms back to 72 ohms. A 72-ohm feed line (RG-11/U) of any length is attached here and goes to the transmitter. Of course, proximity of the tower and other factors tend to upset the balance and match of the system. But in my case, the s.w.r. was about 1.3:1 at resonance. Since the halo is a relatively high-Q device, its bandwidth is rather narrow. Deviations of more than 150 kc. from resonance will cause the s.w.r. to rise above 2.5:1. If this antenna is intended to be used in net operations, however, this is not a major drawback as these operations are usually centered around a single frequency.

I use two commercially-manufactured halos that were intended for mobile applications and are not designed for super high power. For operation in the half-kilowatt or above range, the halo capacitors should be replaced with ones of larger voltage ratings and the plastic insulators replaced with porcelain ones.

More halos can be stacked as shown in Fig. 3B. It is easier to stack the halos in pairs.

The above antenna is by no means the ultimate in a radiating system for DX work, but for omnidirectional coverage it does the job.

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OILING UNREACHABLE PULLEYS

To oil a pulley which is out of reach on a mast or tower, use a toy balloon. Fill the balloon with a half cup of fairly heavy oil. Tie the neck of the balloon to the pulley rope with light thread and slowly pull the rope until the balloon is pulled through the pulley, which will break the balloon and spill the oil on the pulley bearings. If it's possible, it probably would be better to attach the balloon to the antenna side of the pulley, since here it would be in a better position to spill the oil down on the bearings.

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