

Scale model replica of the complete indoor beam.

A Paste-Pot Beam for 10

EDWARD J. WHITE, WINPL*

An evening's work and \$1.50 for materials can produce an indoor beam that is a bargain you can't afford to pass up.

THE MANY articles on 10-meter beams in publications devoted to amateur radio have been read with considerable interest and envy. Each article lauded the construction and particularly the proven performance. But for many months I have waited in vain for an article on a beam for the city dweller. I had been operating on an "inside" folded dipole. My particular problems had many aspects, most of which are familiar to amateurs not living in private homes. First: no outside antenna could be used. Second: I was hemmed in by a four-story apartment block to the south and a tin roof to the north. Third: BCI proved such a headache that NBFM had replaced AM modulation. These obstacles meant I had to install the beam in the unfinished attic or go without it.

It became apparent that I must overcome the problems myself. The cost of the beam had to be kept as low as possible, as I had visions that it would not work and I would find myself back to the folded dipole. The only materials on hand were a few pieces of plywood and several lengths of grounds (grounds being long wooden strips three-quarters of an inch square). These wooden strips would make swell elements if they were aluminum—so, the next step was to cover the grounds with aluminum foil. Remember this is an indoor beam.

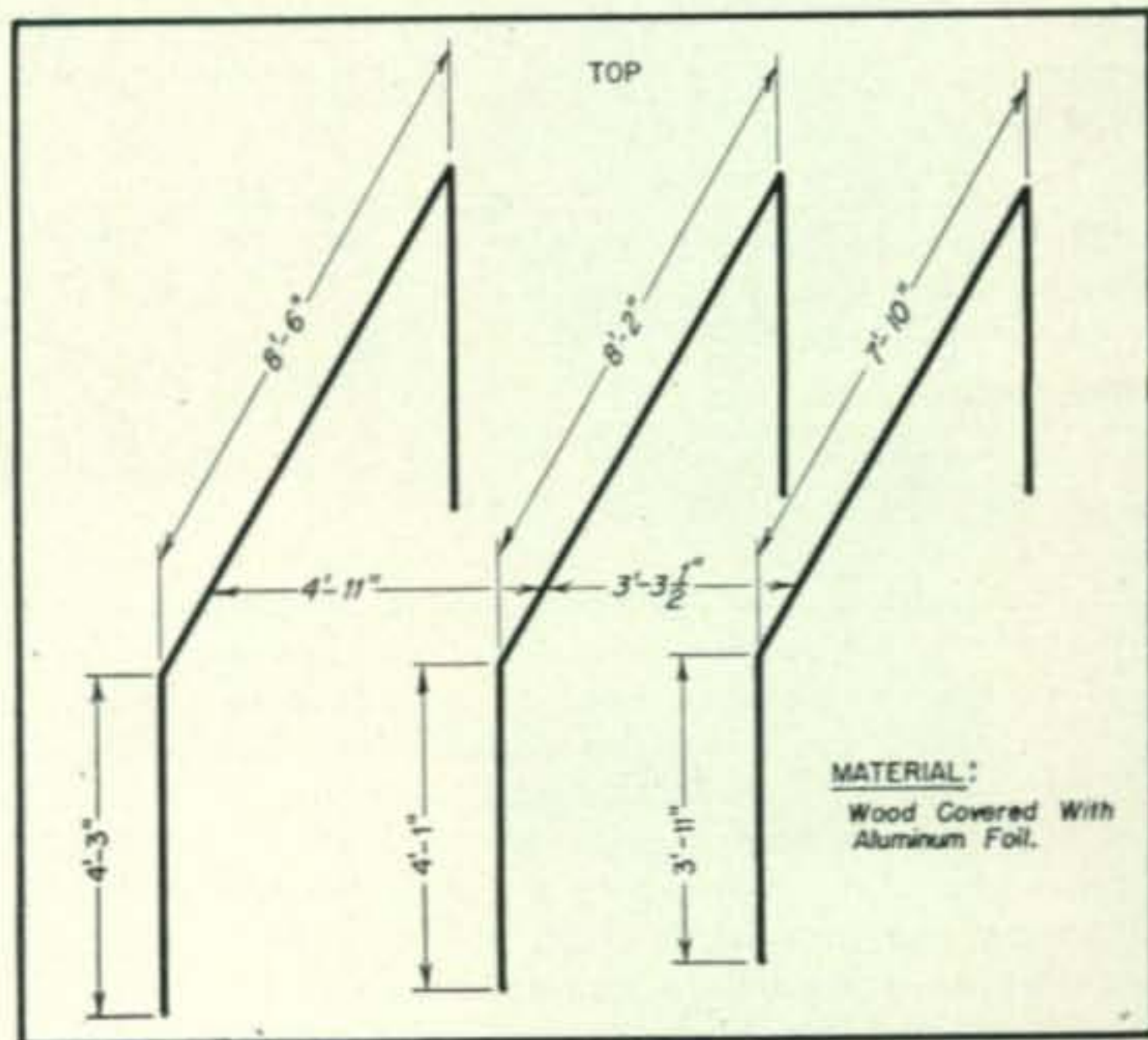
Aluminum foil was purchased¹ in a roll from L. L. Bean Mfg. Co. of Freeport, Maine, for sixty cents. Three elements were constructed. The library paste that was used to stick the foil to the grounds was of the 5 & 10 variety. Total expenditure to date—90 cents.

¹ Or use "Reynolds-Wrap," available at grocery stores. *136 Woodlawn St., Chicopee Falls, Mass.

Constructing the Elements

To construct each element a strip of foil slightly longer than the ground is cut from the roll. The aluminum strip should be about four inches wide. The foil is laid on the floor and paste applied to one side of the ground. Next, place the pasted side on the foil, and paste the foil around the ground, full length, not spirally. A thin film of paste is all that is needed. Smooth out the wrinkles and the element is complete.

Incidentally, the same aluminum foil has been pasted on the inside of the Masonite panels of the sides and back of my wooden-framed transmitter



The beam is folded to permit rotation in confined attic area. Dimensions are for 28.7 mc.

cabinet and has proved very successful in shielding the rig.

Surveying available space, it was obvious that a wide-spaced beam was definitely out. The longest length in the attic was 18 feet, east to west, so the elements were hung temporarily from the rafters as a close-spaced "fixed" beam. The spacing used was .1 and .15 for the director and reflector respectively. 300-ohm Amphenol Twin-Lead was used for the transmission line, and a "T" was used to accomplish the matching. The first adjustment of the T was made with the aid of a "Twin-Lamp" indicator.

During several contacts additional adjustments were made with the aid of the "S" meters. The final match setting was $26\frac{1}{2}$ " each side of center.

Bending to Fit

The performance of the beam while fixed in one position seemed to warrant the installation of a rotating device. The elements were approximately 16 feet long and the space between the pitch of the roof and chimney, north to south, was only about ten feet. So, I bent the elements. One-quarter wavelength was used on the horizontal and one-eighth wavelength vertically (downward) at right angles on each end of all three elements. An 8-foot boom was constructed from plywood and cross-braced grounds. The boom support consisted of a wooden tripod. The boom was set on the tripod and a shaft was extended to the floor.

A circular wooden disc was attached to the bottom end of the shaft. A disc of similar size was suspended over the stair-well of the attic stairs and another shaft extended downward, so it could be reached by opening the attic door. A compass card was mounted and an arrow attached to the end of this shaft to act as a handle for turning and also as a direction indicator. A length of clothesline was used to connect the two discs of the rotating drive unit. This did not prove satisfactory as there was slippage. Rubber tape was tacked to the rim of the discs, but the slippage was not entirely eliminated. The clothesline was replaced with old rubber-covered mike cord and the drive became slip-free.

The elements were fastened to the boom with stand-off insulators. The adjustment of the T match remained the same and the loading was satisfactory. Everything seemed to be in order. Locals that had been contacted on the folded dipole were again contacted and subsequent checks proved the beam to have a 24 db front-to-back ratio. My carrier level signal reports have noticeably increased. On receiving, the improvement is equally satisfactory compared to the folded dipole. One gratifying result was that locals (on the ground wave) previously unheard, were now Q5. While forward gain was good, the radiation from the ends was high, as compared to the conventional straight element beams.

Adding up the cost, I had spent a "grand total" of \$1.50, including the elements, paste and hardware.

I got a beam on ten—hurray!!!

\$7,400 For an Old Call Book

HENRY W. YAHNEL, W2SN*

BEING a great believer in the law of averages, I knew that sooner or later it had to happen. I have been expecting it ever since I took over the W2 QSL managership, sixteen years ago.

I'm not going to let it turn my head, however, and am going to try to continue living as a normal human being, although for the first few months it's going to be difficult. There are so many things I have been wanting to buy.

Well, gang, this is going to be hard for you to swallow but, so help me, it's true, and as far as I can see, it is also some kind of a record.

You see, it's like this. No doubt you have read articles in newspapers where sometime or other in his life, some fellow paused long enough in his busy daily routine to reach out and do some act of kindness for some other fellow, shook his head when offered money for his kind act, smiled, and went on with his daily routine, perhaps just a bit happier than usual.



Years later he was reminded of this act through some attorney, who advised that this unknown person had remembered him in his will when he passed out of this world of static to a better DX location. In some of these instances the amounts mentioned has run into a lot of cabbage.

About the same thing has happened to me, but, as I stated previously, I am not going to let it turn my head. Going to keep right on running the QSL Bureau for the gang, sorting cards, sending out envelopes and burning up cards that are uncalled for after a certain time when they begin to clutter up the files.

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