

Figure 2. RF Cage and Rear Output Element.

30 mm in front of the Cage (Figure 4) and 40 mm to the right of the front vertical. At this stage I was feeding the cage with twin lighting flex (Tru-rip) and according to the field strength meter had achieved a gain of about 150 per cent of a three-element Yagi. With a height of 730 mm, a length of 560 mm and a thickness of 120 mm, this beam was certainly compact.

Not having any fancy test equipment on hand, I had to estimate the feed-line impedance required by means of various resistors, switches and an SWR meter. I found that an impedance of

260/270 Ω matched extremely well, so made up a feed-line using 75 Ω coax, a toroidal balun and a short piece of 300 Ω ribbon. This combination raised the gain of the beam, but I had no way of establishing the exact figure. The front-to-back ratio was high, so I added an extra element to the right of the Cage (dotted line in Figure 4) to broaden it. This element was later removed.

A trial model was given to Bob ZL4THN and he was able to report outstanding results. At this stage Stan ZL4MB became interested, but was sceptical. He arranged a comparison test with a ten element commercial Yagi (per favour of Southern Aerial Services). This test was conducted between two hills with ZL4THN providing the signal. With the best equipment available the results were similar, each antenna showing the same amount of gain.

At about this time it was pointed out to me by Jeff F6BWO and others, that a beam such as I had should have a very low impedance—about 15 Ω , and that I had a mis-match with my high impedance feed-line. Calling on Peter ZL4LV, we checked and found that the impedance was indeed very low, but also that my high impedance feed-line matched extremely well with a most satisfactory SWR figure. Mystery!

Those who have read articles by L. A. Moxon G6XN on "More Gain from Close Spaced Beams" or heard of the Russian Mathematician UZKOV's theory on "massive gains from Infinitesimal spacing" will readily appreciate the direction I am taking. Crazy—a waste of time—I hope not. As Hams we must further the hobby, not just copy what someone has already done. There is still much to be achieved and time is running out.

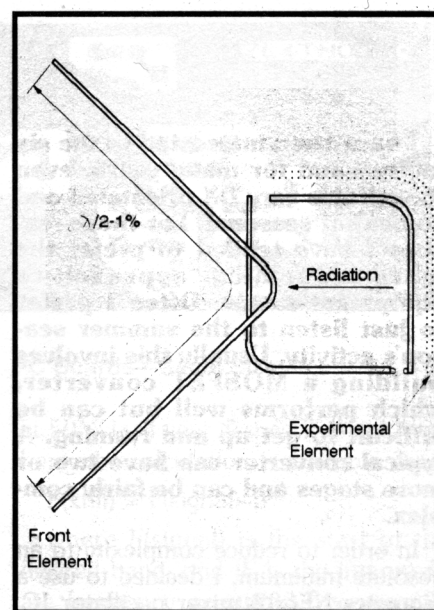


Figure 3. RF Cage and Front Element.

This is the story of experiments in ZL4. Recent visits from overseas Hams have extended the interest, and it is pleasing to note that G4VZR and G0KFT have both built STREB beams and are thrilled with the results. Now word from DL and HB9, indicate that development could soon be starting in those countries.

For those interested in building a STREB COMPACT BEAM, a word of caution—accuracy is the keyword. β

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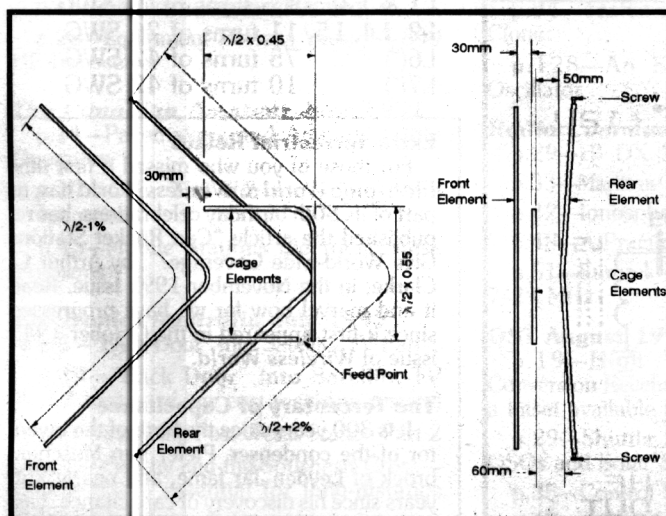


Figure 4. "STREB" VHF Compact Beam.

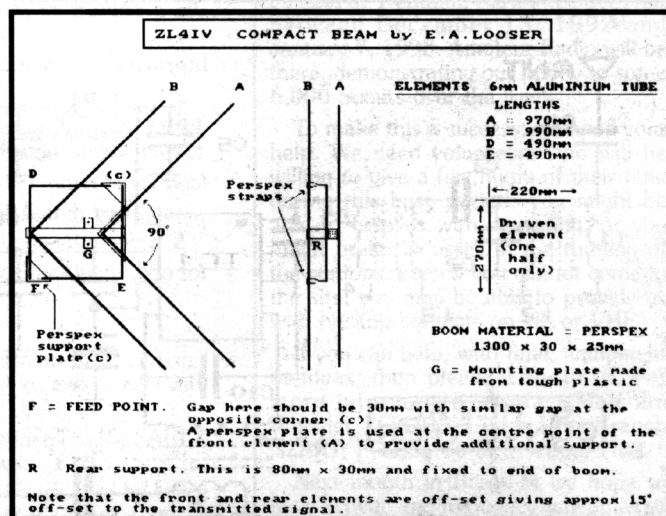


Figure 5.