



WCARC Beacon Project

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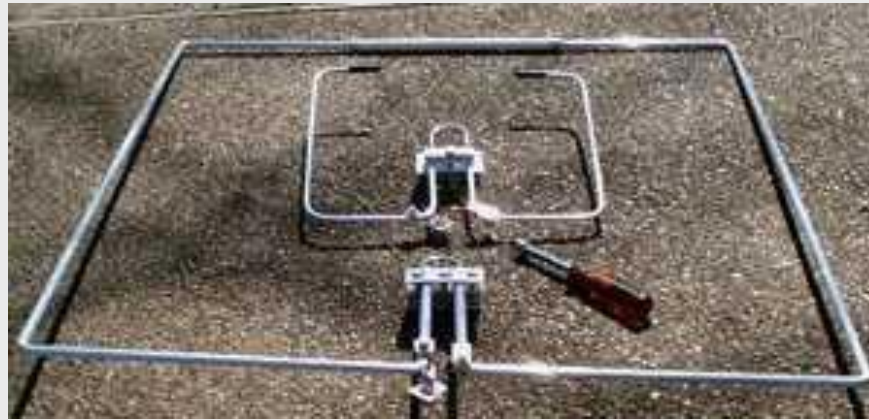


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Status Report

- **Enclosure with power supply, fusing, ID keyer and keying distribution amplifier is complete and now able to accommodate up to six beacon modules**
- **The 70CM beacon module has been installed and running flawlessly in my garage for over six weeks**
- **The 70CM KU4AB omni is mounted on a PVC conduit mast at about 10 ft up until tower mounting**
- **Heard in Cumberland, Kemptville and Perth**
- **The 125CM module is now installed and working with a temporary 125CM ground plane antenna on a separate PVC conduit mast about 10 ft up.**

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- **The two antennas on order - SQ-50 6M Omni with SQ-222 125CM Omni and nut driver for size comparison.**
- **Note that KU4AB omnis are bent dipoles and not loops. The SQ-50 has a sleeve across the opening for added strength. Both loosely approximate a circular pattern (They are cheaper but inferior in performance to the PAR omnis now unavailable to the ham market).**



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Status Report (cont)

- **Kieran VA3KS would like to continue operating the VA3SJS 2M beacon for the foreseeable future, and has ordered a second KU4AB omni to be stacked**
- **Our plan to order a KU4AB 2M omni has been switched to a KU4AB 6M omni for use by Bill W4TAA**
- **Soon we will mount the enclosure and mast with 70CM and 125CM omnics hung 58" (1/4 wave on 6M) off the side of the tower at VE3XK**
- **Initially we will continue to use the MFJ 4115 15A 13.5 VDC power supply inside the enclosure with 115VAC run up the tower**
- **Planned antenna configuration is as shown next**

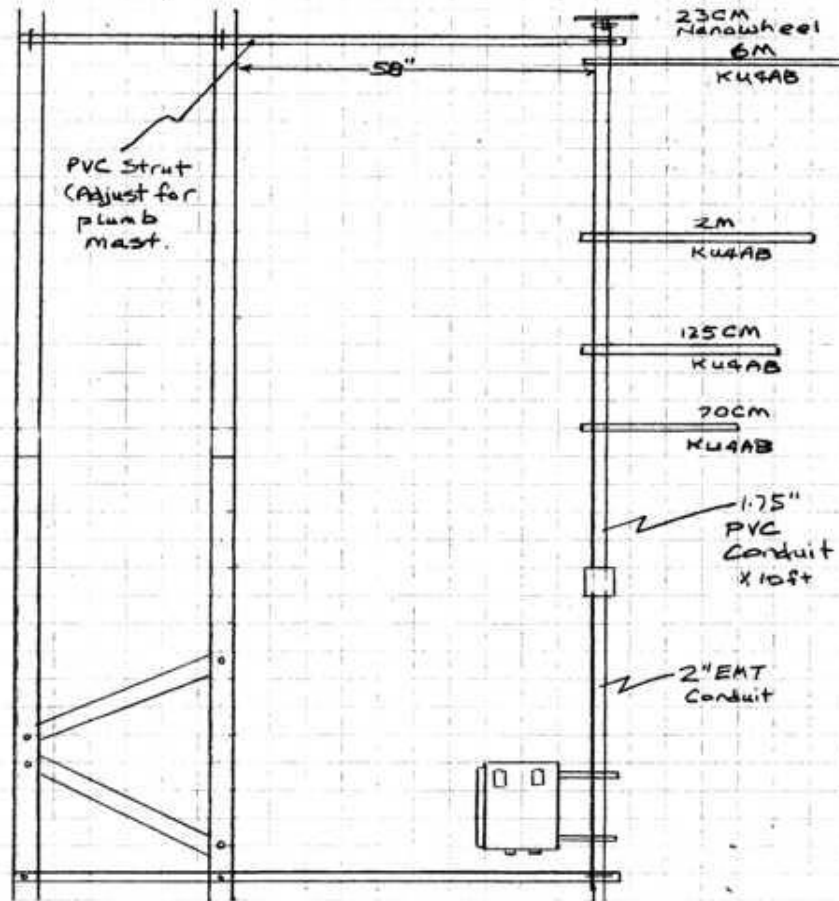
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VE3WCC VHF/UHF Beacon Antenna Layout

Note 1 - Coaxial feedlines
to be dressed along mast
with drip loop into connectors
on bottom of NEMA-4 weather-
proof enclosure

Note 2 - 13.5V DC power may
be from internal or external
power supply

Scale - 1 ft = 1/2" (2 squares)





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- **Use of U-bolts on the tower allows the struts to slide in and out to the 58" spacing needed for 6M.**
- **To compress the vertical space required on the mast, the 6M omni can be on top, half wave at 6M above the enclosure, with the lower band omnis each spaced a half wave below their neighbour.**
- **The smaller antennas have minimal effect on the larger 6M antenna, and the 6M antenna is outside the capture areas of the smaller antennas**
- **The future 23 CM "Nano-Wheel" antenna must be mounted on top of the PVC mast with a pipe clamp around the coaxial connector.**
- **What is planned for a WCARC 23CM beacon?**

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- **Kuhne Electronic GMBH (DB6NT)**
- **23 CM Beacon Module 800 MW; TCXO, -20C to +40C C\$370**



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- **Other DB6NT Beacon modules cover 2.4, 3.4, 5.7, 10.3 and 24.2 GHz ham bands, if and when we ever want to expand into the microwave bands.**
- **They are the perfect complement to Hamtronics which covers only the VHF/UHF bands - 6M through 35CM (except 23CM) – and the same size.**
- **The DB6NT module is a safer choice than adapting the 35CM Hamtronics TB-901 to 23CM.**
- **MKU 13 available only wired and tested - a bit more expensive, but quality of the DB6NT products is superb – well designed using proper microwave packaging and excellent craftsmanship.**
- **Only concern is temperature range and 40C TCXO**

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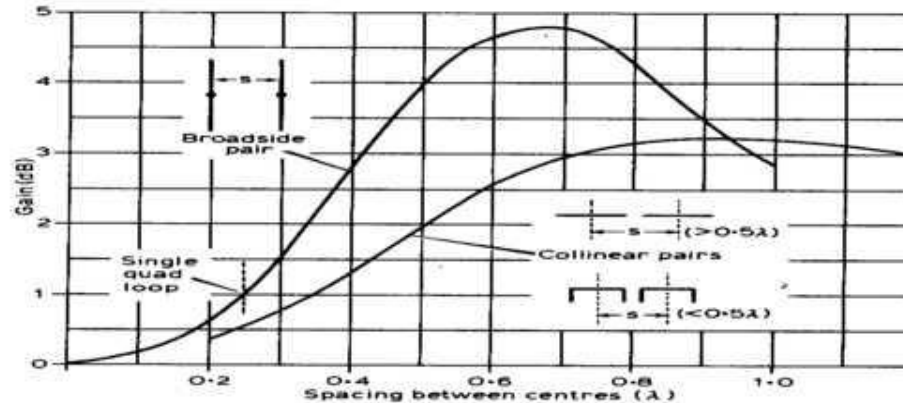


Fig 6.12. Variation of gain with spacing for collinear and broadside pairs

The Beacon Program Future

- Stacking two omnistacks $\frac{1}{2}$ wave apart provides good gain improvement without undue side-lobes while reducing the vertical lobe. Could lead to nesting of 6M, 2M, 125CM and 70CM stacks – all on 16 ft of PVC mast.
- Better location – well away from receivers of any kind