

directors (or reflectors) around the axis of the vertical radiator and electrically select the one(s) required for the direction needed. However the practical difficulties soon become as complicated as building a shortened 7MHz rotary beam and if the objective is to construct a simple and inexpensive aerial the project may become self defeating! An alternative approach to a switchable directivity vertical array is described in reference 4.

A worthwhile increase in gain (3-4dB) may be achieved by erecting a second similar ground plane aerial and feeding both simultaneously. See Fig. 4. A spacing of about $\frac{1}{2}\lambda$ will achieve maximum broadside gain when the aerials may be fed in phase by parallelling the two feeders which should be of equal length. Alternatively a close spaced (eg $\frac{1}{8}\lambda$ - $\frac{1}{4}\lambda$) end fire arrangement can be tried for directivity through the plane of the two vertical elements. In this case antiphase connection will result in a bi-directional pattern. A phase shifter or delay line is required for unidirectional operation (reference 5).

To be continued

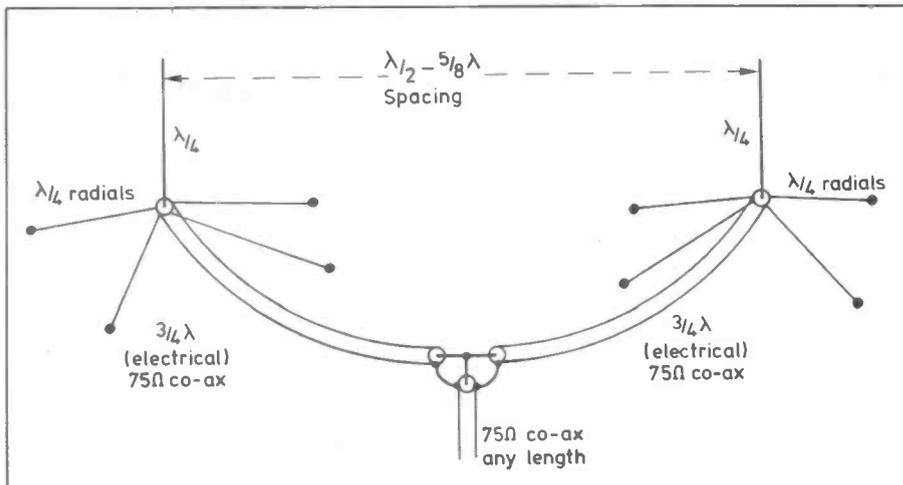


Fig. 4. Phased quarter-wave ground plane aerials — for bi-directional broadside radiation

REFERENCES

- 1) *A compact 40m Butterfly beam* — William Orr — *Beam Antenna Handbook* — 3rd edition — p158-161.
- 2) *A Yagi antenna with helically wound elements* — The ARRL *Antenna Book* — 13th edition — p219-221.
- 3) *A small Yagi for 40m* — The ARRL *Radio Amateurs' Handbook* — 1979 edition — Chapter 20 p19-20.
- 4) *A 360° steerable vertical phased array for 7MHz* — The ARRL *Radio Amateurs' Handbook* — 1979 edition — Chapter 20 p13-15.
- 5) *Phased Verticals* — The ARRL *Antenna Book* — 13th edition — p197-198.

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20 FARNHAM AVENUE HASSOCKS
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WPO COMMUNICATIONS

PROJECT **Ω** HIGH PERFORMANCE HF TRANSCEIVER

Are you building Project Omega yet???

The initial response totally overwhelmed us so we apologise for the delays in supplying kits, but it's worth waiting for with our initial tests on the finalised modules very encouraging. Remember, Omega can build any combination of facilities from a single band receiver only to a full 9 band SSB/CW/FM/AM Transceiver.

The October issue (published September) sees Omega as a complete 9 band SSB/CW receiver with the publication of the VFO and digital readout plus receive only SSB adaptor. November will see the 5 watt PA/filters and switching units to complete the QRP 9 band CW Transceiver. Next comes the Tx/Rx SSB adaptor in December, followed by the remaining units (QRO PA, FM adaptor etc). Other additions will include a 2 metre Unit (usable with any HF rig) and in-line SWR Bridge.

Kits available so far:

Main CIFPU unit (i.f.)	£69.50 (July HRT) (pcb only £6.50)
Active Filter (SSB/CW)	£15.45 (July HRT) (pcb only £2.20)
Preselector	£11.00 (Aug HRT) (Pair pcb's
Notch Filter	£11.20 (Aug HRT) £2.60)
Then, VFO Unit	£64.00 (Oct HRT) (Pair pcb's £7.90)
	plus crystals @ £5.00 ea or £40 set of 10.
Digital LCD Readout	£31.00 (Oct HRT)
Rx only SSB Adaptor	£6.20 (Oct HRT)

Watch these ads for the rest of the modules. Each kit is available just after publication of the relevant issue, and includes a copy of the article.

We have a mailing list for all actual or potential builders (ask to be put on if you are interested). This will carry latest info/mods, plus quick notification of any errors in the articles). Once the QRP PA is published, we shall also be starting an Omega Net on HF.

KITS VHF to HF TRANSVERTER

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Published in the August issue of HRT, this looks like being a real winner. If you can't afford Omega, try this way of getting on HF using your expensive VHF Multimode Transceiver or SSB handheld. Whatever your VHF rig does on 2 metres, it will now do on HF!

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