

calm to force nine gales, although the large wind-generator farms seem to cope. Efforts to harness the tides have so far had limited success in the UK.

For DXpeditions, the petrol-electric generator still seems to rule supreme. The laws of thermodynamics indicate that any form of energy should be capable of being converted to any other form. It seems likely that the future will draw increasingly on the most common element of all - hydrogen for fuel cells - rather than exhaustible and polluting fossil fuels. Meanwhile, for remote amateur stations, it looks as if the P-E manufacturers such as Honda still call the shots.

LOOPS LARGE AND SMALL

DR JOHN BELROSE, VE2CV, was interested to see in the October 'TT' the low (8ft high) horizontal loop-style antenna designed by Peter Ball, G3HQT, for 3.5MHz NVIS, but which he had found a surprisingly useful DX antenna on the higher bands. In effect, the antenna (Fig 3) was fed in a manner that resembled a very broad three-wire folded dipole rather than a conventional large horizontal loop antenna.

VE2CV writes: "Since I had never seen an antenna fed like that erected by G3HQT, I decided to model its vertical radiation pattern numerically with EZNEC/4: Fig 4. The antenna is a NVIS radiator for 16m (18.75MHz) - not shown - to 80m (3.5MHz), with little azimuthal directivity. The vertical plane patterns plotted are for a 90° azimuth, ie the pattern in the Y-Z plane, the broadside direction.

"The pattern starts to break down into lobes for 15m and below. The azimuthal directivity for the 15m (21MHz) band is in the X-Z plane (0° azimuth) but, for the 10m (28MHz) band, it is back in the broadside direction (90° azimuth)."

VE2CV has also sent along further comments on the CFA broadcast antenna, including some more of his articles on this topic and describing

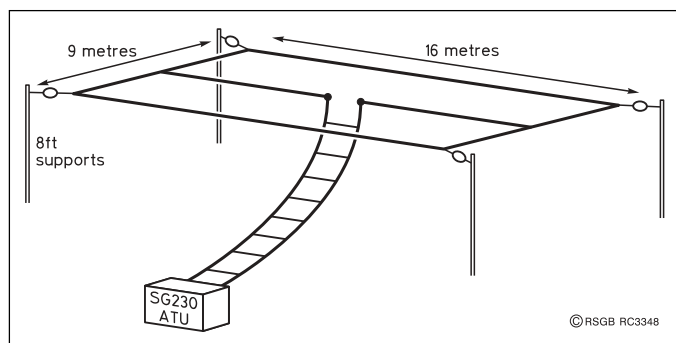


Fig 3: G3HQT's low large 'loop' antenna as described in 'TT' October 2002, p61.

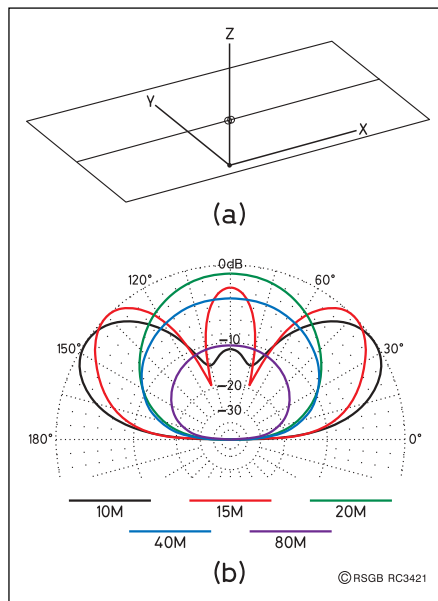


Fig 4: VE2CV's EZNEC-4 modelling of the vertical radiation pattern of G3HQT's antenna for 80, 40, 20, 15 and 10 metres.

further problems he encountered in trying to reproduce the performance claimed by the inventors. He has also provided an article he wrote in an attempt to explain the good results achieved at Tanta, Egypt, with the antenna erected on the roof on a building, although not found repeatable with the antenna on top of a building in Santos, Brazil.

I have also received through RSGB HQ a long description from Italy of the so-called 'E-H' antenna, which is a modified version of the CFA antenna developed in the USA by Ted Rule, W5FJ, with the assistance of American and Italian engineers. It is described as utilising Poynting Vector Synthesis (PVS), though no mention is made of the origins of PVS and the CFA. It is fed from a quadrature phasing network. VE2CV in one of his articles shows that the CFA broadcast antenna, when fed in accurate phase quadrature, does have improved efficiency, compared with the standard CFA installations. It may well be that the E-H antenna has some role to play in HF amateur practice, though I suspect that

PVS plays no significant part in its operation. Some may even see it as an ingenious, if justifiable, way of circumventing the Hately and Kabbary patents. Even if the E-H antennas prove more versatile than (and comparable in performance) to a short-stubby

dipole/monopole, this would not validate the PVS hypothesis!

SALVAGING PARTS FROM PCBs

STEVE KIMBER, W7VEU (QST, Hints & Kinks, November 2002, p69), describes a neat way of removing the components from surplus printed circuit boards, unharmed and ready for use in new projects. He writes: "To fill my parts box, I once used a heat gun, torch, soldering gun, etc to remove components from PCBs. Not any more. The answer is to mount a belt sander (with a fresh medium grit belt), belt side up in a vice and place a collection drop cloth under the sander.

"Now for the fun: with the power switch locked on, just sand the solder blobs off the bottom of the PC board, and watch all those parts fall on the collection cloth. In just a few minutes you have every part off the board, undamaged and ready for use. Make sure you use eye and breathing protection while sanding, and be safe around the belt."

W7VEU notes that this sanding method applies only to PC boards soldered on one side: "Most any kind of sander can be used by securing the PCB, component side down, with a couple of sheet metal screws and sanding off solder in the normal manner. Make sure there are no high points on the solder connections that might snag and rip the belt. This method makes the removed leads on components a little short, but there is no problem mounting them on new PC boards or Vector boards."

EMF HEALTH EFFECTS – CONTROVERSY CONTINUES

THE EXTREME difficulty of scientifically proving a negative is seldom appreciated by the public. No matter how many times it is suggested that there are no proven ill-health effects of low-level non-ionised radiation, including radio transmissions, there remains a seemingly irreversible belief that cellular UHF base-stations (and, by extrapolation, other transmitters) represent a health hazard to those living or working in the neighbourhood. It is not universally recognised that the 'inverse square law' means that a medium-power transmitting antenna on a mast or tower presents a far lower field than the hand-held units within an inch or so of the brain of the many people happy enough to use mobile telephones while organising protests against the antennas on nearby (but relatively distant) masts. Admittedly, one cannot rule out completely the possibility of effects of radiation from hand-held phones used over long periods in close proximity to the brain.

An inquiry in April 2000 by the British