

Metrewave

Cast your mind back to a couple of phrases which appeared in the last *METRE WAVE*.

One of those talked about today's "... enormous aggregate of VHF and UHF operators". The other invited the reader to "... look at a half-wave aerial rod" for UHF and went on to suggest that it was so apparently insignificant a thing that it would never but never on its own get you places on the air. Although disconnected from one another by several intervening paragraphs of typematter they were by no means unconnected. It is the purpose of the present instalment to show you why.

Well, then, what is the connection? Let us take a more detailed look. In the last article we analysed the tremendous proliferation of Class B licences which had occurred over the last year or two or three, and we made the observation that more than a third of the pages in the current *RSGB Callbook* are now taken up with them. That is a very sizeable proportion of the totality of today's UK ham fraternity — and here's the rub: every bone of them is a metre-wave person (you need to be careful not to say "metre-wave man": there are a lot of metre-wave YFs and YLs around these days).

What we see today, then, is a vastly increased and increasing body of enthusiastic VHF/UHF people attempting to cram themselves into a by no means increasing amount of frequency space on 2m (and to a lesser extent on 70cm). Our bands, prescribed by international edict, are finite in size, but the number of licensed amateurs wishing to use them certainly is not. Does the future hold the prospect of insupportable over-crowding in the metre-wave spectrum? To answer this question we need to traverse some of the past history of that spectrum.

Way back, before the arrival of today's "black box" era with its plenitude of rigs, to choose from a plenitude of suppliers, you were compelled to build everything yourself if you wished to get going

Our regular VHF column

By Jack Hum G5UM

on the metre-wavebands. Valves were *de rigueur*. What few transistors that were around were essentially 'HF devices', if even that. Then came two highly significant and related developments in the Sixties that slowly but irrevocably changed the face of the metre-wave scene as it had been perceived up to that time.

One of these developments was the enthusiasm with which mobile operating was taken up. The other — a few years later — was the arrival of Britain's first 145MHz repeater station.

Enter verticality

Mobile operation was slow to develop for the one practical reason that it was rather thirsty! The transceivers of the Fifties and early Sixties were perforce 'valvular' ones: transistor development had not at that time taken in the 'very highs'. And of course all-valve rigs were thirsty rigs, requiring a supply of several amperes from the vehicle battery as their power source. It was not unknown for the well-heeled radio ham to buy a small AC generator to carry about in the vehicle, generally in the boot — with adequate exhaust facilities! — to obviate his reliance on the car battery as a power source for his transceiver.

Needless to say, the arrival of transistors with VHF capability — at first receiving ones, but transmitting ones not long after — effected a revolution in the convenience (and consumption) of 'going mobile'. Out went the big bulky uneconomic valve transceivers: in came their transistor successors, modest in their square footage and peak amperage — and of course in their weight, by contrast to the old valve equipments with their call on well developed biceps when they were

lifted in or out of motor cars, not to mention their call on the capacity of car battery.

Even before the transistor revolution the concept of VHF mobile operation had so caught the imagination of the metre-wave fraternity that by the mid-Sixties something like 2,000 British hams were active in this mode — and their numbers are known for the good reason that separate "Stroke M" licence was required in those days before The transmitting licence was consolidated into its present form that allows home based or mobile or portable operation at no extra charge.

Recognising that all metre-wave antennas at that time were disposed in the horizontal plane, mobile operators at first arranged their vehicle antennas to be compatible, generally by means of a halo horizontally orientated. It did not take long to discover that mechanical convenience in fitting an antenna to a vehicle was better served if the device were vertical rather than horizontal. Thus began the trend towards 'verticality for vehicles' which is with us today.

That, then, was the first of the two related developments of the Sixties that so changed the metre-wave scene.

The second was the evolution of the repeater station concept from the pioneer work done by several 'professional hams' at the Pye establishment at Cambridge. From their prototype came the proliferation of repeater stations which now cover the country on both 2m and 70cm.

A repeater's *raison d'être* is to enable disadvantaged operators like those in motor cars to talk with their fellows on VHF when otherwise they could not do so. And because repeaters were (are) vehicle-directed it was natural that their antennas should be polarization-compatible with the antennas on the vehicles they were intended to talk to. That meant vertical.

Today tens of thousands of