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Mobile antennas

for the Home



For many years various radio publications have offered a score or more 'solutions' for the ham who wants to work 3.5/4.0 mc band but is restricted for space in which to hang a half-wave 'sky-wire'. Various types of 'bent' antennas, many versions of quarter-wave verticals with and without ground radials, ground planes of various types have all been put forth along with suggested use of quarter-wave horizontal wires with feeders tied together and working against ground as a 'Marconi' type.

Until recently I had no occasion to give more than a passing thought to these suggested schemes as I had ample space for a horizontal half-wave wire. As 75% of my ham activity is devoted to the 80 meter c-w traffic nets with only an occasional excursion to the higher frequencies, I have experimented with every popular form of HF antenna as it has appeared, over many more years than I care to count. Invariably I came back to the good old standby . . . the off-center fed half-wave horizontal single wire, using a single feed-line of random length . . . more recently termed the 'Windom'. My results have been excellent . . . it was not only a most effective 80 meter radiator but worked very well on all harmonic frequencies to and including ten . . . truly an 'all-wave' antenna.

I had no problem until lately when I was faced with the necessity for re-locating a forty foot mast and it was impossible to so erect it to obtain a 135 foot span without tangling with a heavily wooded area which could not be cleared. None of the 'solutions' previously offered appealed to me as I had had much experience with relatively ineffective antennas during many years of practically constant travel throughout eleven Western states during which time I carried a fifty watt portable c-w rig to maintain reasonably constant contact with the

c-w traffic nets. Living in Motels, as I invariably do, the antenna problem, particularly with the advent of TV in most Motel units(!) was quite something. Sometimes I could manage a random piece of hook-up wire tossed over the Motel roof after dark (owner less likely to notice!). At other times I used a seven foot automobile whip inside the room and with no tuning other than the pi network in the transmitter. It loaded, but results using either method were mediocre at best and my usual signal reports were often RST 3-2-9 to 3-4-9 . . . not good!

It occurred to me that with the many reports of very successful operation with mobile equipment using *tuned* whips which were becoming increasingly popular this might be the answer . . . there should be no sound reason why the whip had to be mobile!

Searching all available advertising produced a number of pretty decent looking tuned whips. Pursuing my study further made it appear that center loading had some advantages over either top or bottom loading methods. This narrowed the choice between several reputable makes. I finally chose one of the *Davis Electronics* five foot fibre-glass whips together with their 80 meter, '500' series, Hi-Q coil and their 36" base section. To this I added a complete set of their QWIK-ON connectors for convenience in quick assembly and disassembly without tools, as I moved on frequently.

Results were remarkable! The little Viking Adventurer, which I habitually carry, loaded perfectly and really 'poured it to' the antenna . . . I could draw a half inch arc from the top of the load coil! I fed the antenna with a random length of RG/58U direct from the transmitter with no external tuning arrangements. The comments I received over the air were most gratifying . . . signal reports were

never less than RST 4-6-9 and more often than not were RST 5-7/8-9 with an occasional RST 5-9-9! These were contacts with the same net stations previously contacted and from the same general geographical areas. AND . . . in only *one* instance did I have the whip outdoors! Invariably it was leaning against the inside wall of the room . . . a bit too long to stand completely upright!

My experience on the road with this arrangement began to affect my thinking for the new home antenna, now that I was one of the 'restricted space' boys. Sure, I knew that I'd get better results with the portable with a more effective and resonant antenna, but not to the extent I did. If the thing performed so remarkably well in the field, why not stick it up in the air at home and give it a try? I was fortunate in having a couple of summer months around the home QTH and I took advantage of this to mount the whip on a flat roof portion of the house with the base only fifteen feet above ground level. I tried this on the home rig . . . a Viking Ranger . . . with a random length (about 35 feet) of RG/58U coax, direct from the transmitter output terminal and again without any external coupling or tuning device. Once more I experienced the pleasure of getting *better* signal reports than with the Windom! A few stations reported little difference between the two but by far the majority gave me increased signal strength of from 1 to 2 S-units! For a period of about two months I tried one against the other under all conditions; day and night, good and bad band conditions, fading, static etc., and with the same set of comparison stations. The whip won, hands down! Not only in the 80 meter band, but contrary to accepted practice it doubled well into the 40 meter band with the 80 meter coil and gave some measure of success on 20 altho somewhat less than with the 'Windom'.

I was sold completely and proceeded to make a permanent installation of the center tuned whip. As my old forty foot mast was approaching the first stages of decay, I decided to abandon it and to get the whip really up where it had a chance, I chose a 'crank-up' tower as being most suitable for my purpose. As I am gone from home for long periods it appeared desirable to have such a support so that it could be left cranked down during my absences to lower the hazard of wind and storm damage. I chose a *Tele-View* No. 40 tower which telescopes to about twenty feet and extends to forty by means of a crank mechanism at the base. My choice was based on light weight (80 pounds), hinged base permitting easily tilting the entire tower to the ground for occasional maintenance, and the hollow tubular legs permitted running the coax feed-line up through one of the upper legs thus eliminating necessity for strapping the coax to the tower legs to prevent wind-slap.

I have little data on the effect that raising

the whip the additional twenty-five feet may have produced. Certainly signal reports did not suffer but they were so good with the whip at the experimental fifteen foot level that the higher elevation could hardly produce better reports from the same comparison stations! However, from the distances worked on 80, with consistent good signal reports it has been increasingly evident that the whip at forty feet actually surpasses results previously secured with *any* type of half-wave horizontal wire!

For my occasional excursions to forty I procured another Davis whip, base section and 40 meter '500' series Hi-Q coil and mounted this on the roof peak 22 feet above ground. Performance here, although in use but a relatively short period, has been every bit as satisfactory as with the 80 meter arrangement. I use a co-ax relay in the shack to shift the RG/8U feed from the transmitter to either the 40 or 80 co-ax line to the appropriate antenna. (I use the more rugged RG/8U at the home QTH and the lighter RG/58U for convenience on the road . . . the impedances are approximately the same). The Windom has been lowered and coiled away to join other relics of the past. Before too long I hope to have a 20 meter coil, whip and base section and then "W7OE Radio Central" will be complete!

Advantages

What a boon for the apartment dweller! Imagine just mounting a center-tuned whip on a flat roof six or eight stories above the street and forgetting the worry of 'where to string a wire'! For general portable operation and for Field Day participation, what an answer! State and County Fair set-ups . . . "Hobby Show" demonstration booths . . . the answer to any number of similar applications. For emergency use, set up the whip in seconds, and 'you're in'.

It is presumed that any *good* make of center loaded mobile whip will produce about equal results. The *Hi Q* coil and the *Kwik-On* assembly features of the Davis whip, appealed most to me. Likewise, any suitable support . . . tree, mast, roof-peak . . . what have you, can hold the whip at a fair height. I chose the tower for the reasons outlined plus the fact that it needs no guying as the lower section is supported against the house.

Give it a thought, you fellows with restricted space problems. Give it *two* thoughts, you who are using and probably swearing by a pet half-wave horizontal . . . you too might be missing the boat! ■

The omni-directional characteristics and lower angle of radiation of this antenna as opposed to the bi-directional hi-radiation angle associated with horizontals would explain the better coverage —Ed.