

**There's an old saying that "everything comes out in the wash" and it appears that VE3CUI is firmly "grounded" in that belief as he presents an economic view of 40 meters.**

# A Budget-Wise Forty Meter Vertical Antenna

BY EDWARD PETER SWYNAR\*, VE3CUI

## Forward

*This short antenna article, I must confess, will not rock the amateur radio world with its content.*

*It does, however, demonstrate what can be done, with very little, when one ventures beyond apparent limits or guidelines which are so deeply entrenched as "gospel truth" in the minds of the vast majority. So often our individual visions, or ideas, on some technical matter or another are not researched further by us due to the fact that a manufacturer does not offer said feature in his product line, or because some electronics wizard has not already published reams of information on the matter.*

*Hopefully, this brief article dealing with its simple subject will inspire someone, somewhere, to nurture his dream onward and beyond the limits set by what is "right" and what is "wrong"... hopefully, we have not lost our tradition as being experimenters and tinkerers.*

—VE3CUI

**T**he 40 meter vertical antenna intrigued me for years as a low-angle radiator effective in DX work. This impression was reinforced several years ago when I sat by my receiver quite dumbfounded and amazed (but impressed!) as a W5 station, claiming to feed 35 watts into a 1/4-wave vertical, battled it out in a pile-up of Europeans scrambling to work him in the lower c.w. portion of 7 MHz.

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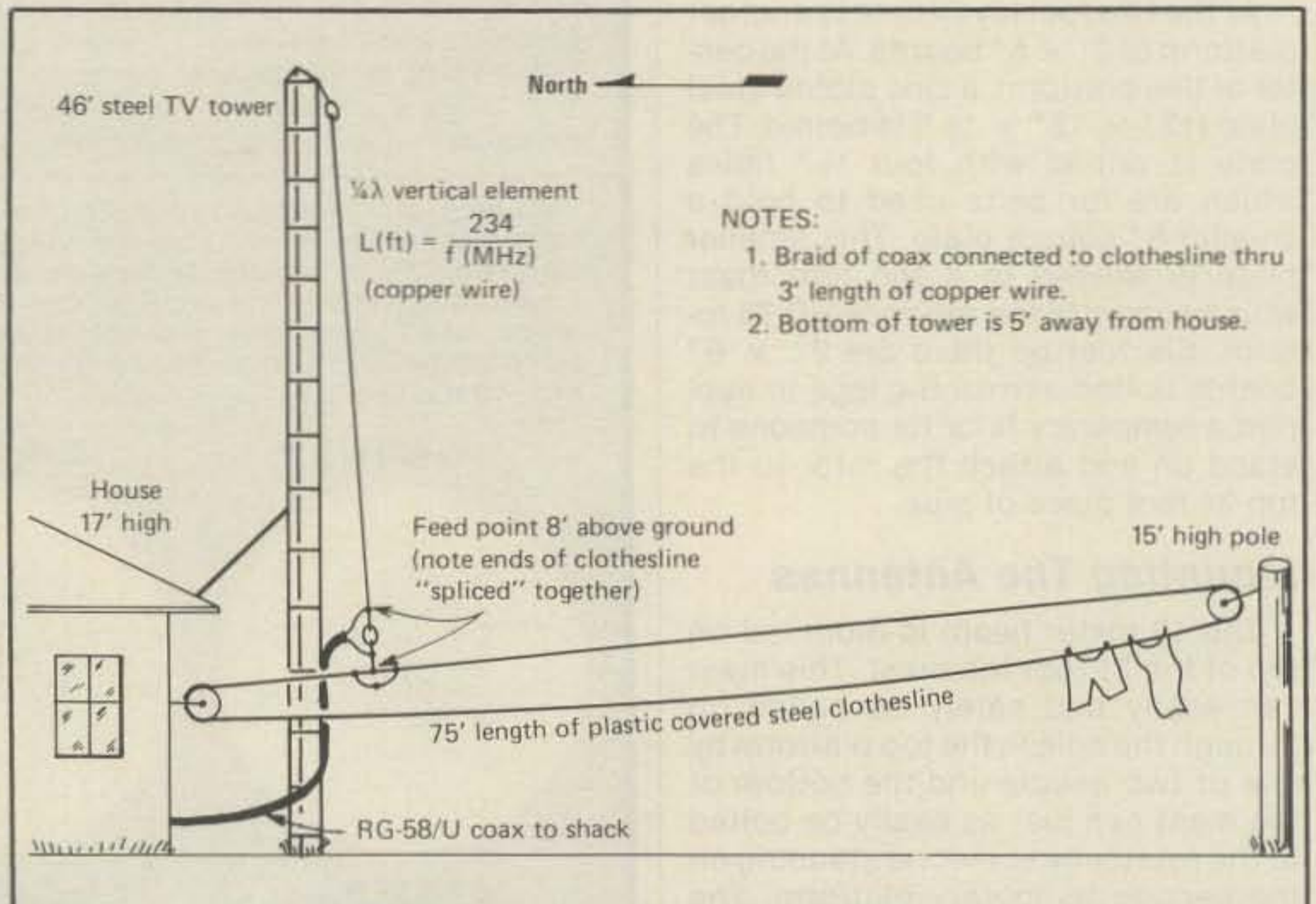


Fig. 1— The budget-wise forty meter vertical antenna is virtually undetectable as it performs its secondary function.

However, everything read concerning vertical antennas stressed the importance of a good "artificial" ground which, in many cases, amounted to scores of buried radials and, incredibly in some cases, beautiful subterranean geometric designs consisting of literally hundreds of feet of copper wire, entrenched rock-salt deposits, and hours of labor. All this seemed a bit too much for this operator, and led to the impression that a vertical antenna was practically useless without a costly man-made "mirror" immediately below it; consequently, DX operation on 40 was limited to a double zepp

at 50 feet, beaming Europe, and all went well until this past winter when a great windstorm leveled this skyhook and left me with nothing for 40 meters.


Not inclined to climb the tower in subfreezing temperatures to erect my "dream" wire yagi for 40, I left it to my curiosity (and a limited budget) to finally erect the vertical antenna illustrated in fig. 1. The results have been so gratifying (and surprising) that I am seriously considering changing the status of this antenna from that of temporary to permanent; it is, in short, an excellent performer and has dispelled in my mind many well-entrench-

ed myths apparently surrounding vertical antennas.

The setup is simplicity in itself, and surely can be duplicated in many apparently "hopeless" situations without the need of worrying about precise, identical copies. An added feature, obviously, is the low cost of this antenna.

There were qualms concerning the close proximity of the steel tower and the possibility of its greatly disturbing the radiation of the vertical; I have found that the tower seems to restrict QSOs to the north, but this is little hardship considering my main interest was working Europe (to the east) on 40 meters . . . and this I have done on a regular basis with little more than 100 watts output.

The steel clothesline "ground" results in this antenna being a "ground-plane," but not, I would think, in the strictest sense of the word; specifically, there are no 1/4-wave "ground" radials as such, but rather a large "lump" of ground (as I see it) attached to the braid of the RG-58/U with no thought of resonance whatsoever.

At any rate, the system works so well as to put my double-zepp to shame. Working 40 meter DX, I can honestly say, is far easier with the vertical. In closing, "invisible" versions of this antenna could be simply erected by those who have a need for this type; yet, invisible or not, simply use whatever is on hand for an artificial ground, disregard for a moment all of the "no-no's" surrounding vertical antennas which you have learned, and start calling "CQ DX." You too may well be amazed as you smile on your way to DXCC the "budget-wise 40 meter DX'ing" way. 

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