Truth Table

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They are still out there. I hear them on the air. And, so at the risk of the "You keep going over the same old stuff' letters, I'll proceed hoping to (at least for a few) nip it in the bud.

For some reason, that defies all logic, it seems there are amateurs who deeply and sincerely believe that even the slightest flicker of SWR, losing half-a-Watt from ideal, will make their signal inferior.

So let's present a ***Truth Table***. To put this into perspective, it would take about a 2 dB loss to have someone be able to hear the difference. Starting with 100 Watts:

99W -0.04 dB or 4/100 or 1/25 dB
98W -0.08 dB or 8/100 or 1/12 dB
97W -0.14 dB or 14/100 or 1/6 dB
96W -0.18 dB or 18/100 or 2/11 dB
95W -*0.22* dB or 22/100 or 1/5 dB

We used fractions because there are many who grasp fractions easier than decimals.
94W -0.26 dB or 26/100 or 1/4 dB
93W -0.32 dB or 32/100 or 1/3 dB
92W -0.36 dB or 36/100 or 3/8 dB
91W -0.41 dB or 4 1/100 or 2/5 dB
90W -0.46 dB or 46/100 or 4/9 dB

So, we have given up 10% of our power and the signal has lost less than half of a dB, of which there are six whole ones in an "S" unit.

Let's continue down the line of reducing power from the 100W level.
88W -0.56 dB or 56/100 or 3/5 dB
86W -0.66 dB or 66/100 or 2/3 dB
84W -0.76 dB or 76/100 or 3/4 dB
82W -0,86 dB or 86/100 or 5/6 dB
80W -0.97 dB or 97/100 or 1 dB
At about this time some Ham would be saying, "Oh, woe is me, woe is me, I will be mocked if I show up at the meeting of the radio club." Whereas, in reality, no one will be able to hear the difference.

Continuing further in reducing power from 100W.
75W -1.25 dB or 1/5 of an S-unit
70W -1.50 dB or 1 *4* of an S-unit
60W -2.22dB or 2/5 of an S-unit
50W -3.01dB or 1/2 of an S-unit

Art Buchwald once said, regarding his humor column, that he didn't have to make anything up, he just ripped it off the wire Meaning the news itself was so bizarre he didn't need to embellish it. I, KNS, instead listen to 75M Phone for my material.

So now let's compare this all to that nasty terrible SWR. Let's say that you have a 100-ft. run of RG8 and you are on 14.2 MHz. What follows are various SWR values and the loss due to that value of SWR.

1.1 0.01 dB 1/100
1.2 0.02 dB 1/50
1.3 0.03 dB 3/100
1.4 0.04 dB 1/25
1.5 0.06 dB 3/50
1.6 0.08 dB 1/13
1.7 0.10 dB 1/10
(Yes, at this level of SWR many have entered a state of heart palpitations. And, it's true: one-tenth of a dB.)
1.8 0.12 dB 3/25
1.9 0.14 dB 7/50
2.0 0.16 dB 1/6
2.5 0.29 dB 3/10
3.0 0.43 dB 6/14
(The horrid, marked in red on some SWR meters, 3.0 SWR results in a loss of less than 1/2 a dB.)
4.0 0.70 dB 7/10
5.0 0.96 dB 24/25
(True, an SWR of 5.0 and nobody can hear the difference.)

With an SWR of 5 you would have to use a tuner to match the rig and the feed line. Tuner loss, contrary to bunkum heard on the air. (depending on quality of the tuner) one-half dB to one dB max.

There are some strange attitudes out there in radio land. Forwarded to me from the International Headquarters of **Worldradio** was a letter from Utah in which the writer wanted to "express my extreme displeasure" about "Sterba's column dedicated to the same old tired topic, arrogant ranting and raving how he is right and everyone else is wrong."

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……. "useless waste of space.

Alas, I take no pleasure in being similar to the man who cleans up the street after the elephant parade. But, when a major organization in Amateur Radio puts out a computer program in which the voltage rating for 9913 cable is given as 600V, someone should warn the unwary. It's actually much higher than that, so go ahead and use it with no fear.

In a recent article on stubs the author gave the wrong velocity factor for the cable mentioned. But that particular bird makes so many mistakes he has become now, more pathetic than comical.

I just bought a McCraw-Hill book about antennas for $40. I think I was charged one dollar per mistake. I'll be writing about that book shortly. I may call the article "How NOT To Write An Antenna Book."

I don't do this just because they are wrong and I am right (which I am, of course) but rather so some readers can avoid the pitfalls one may encounter from bogus information

Please allow me to explain further. Amateur Radio operators come to this column in the hopes of improving their knowledge. I take my obligation to them seriously. Therefore one of my duties to prevent them from falling prey to slovenly work that appears elsewhere. Comes to mind (as but only one example) was one book by a major organization that gave the velocity factor of a particular type of coax as .08 instead of the .80 it really is. Should that have been the only book that some person had read on the subject they would be in a sorry plight indeed. Unless of course, they availed themselves of their uncle, kindly Kurt.

I hope that I have caught, quickly enough, new amateurs who, following advice in books, were about to embark on digging holes in their back yard that they could stand in. Such an effort would have been for naught.

Do I get thanks for trying to prevent people from building 3L Yagis with 1/2 WL booms? Or is my column a useless waste of space?"

Believe me, I take no pleasure in seeing this constant flood of bad information. It is a sorry indictment of a beloved hobby.