Two Meter Simplicity

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In the 1950s two meters was considered to be the outer edge of the usable spectrum for most hams, although higher frequency band allocations did exist for ham radio. It was prior to the use of FM and repeaters on the band, and communication was pretty much limited to the line of sight communications utilizing traditional double sideband, full carrier, AM or perhaps CW. Equipment was likely to be “home brew” or government (military) surplus. You used separate receivers and transmitters as was essentially done on all of the ham bands. Sometimes you would see a transmit-receiver which meant that both the transmitter and receiver were built on the same chassis. Sharing of components for transmit receivers was usually limited to power supplies and audio circuits.

The 1950s receiver often employed a converter dropping the signal down from 144 MHz to an intermediate frequency that was then fed into a shortwave receiver for further amplification, final detection and production of audio. The transmitter was usually crystal controlled. All circuits utilized vacuum tubes. There was no miniaturization as we know it and the relatively large component size contributed to distributed capacitance which was a big problem at these “incredibly high frequencies.” Most RF power tubes had to be significantly derated for operation on 144 MHz. It took a lot of effort to get on 2 meters and then the real challenge began: you had to find someone to talk to.

Two meters was an experimenter’s band, a ham’s ham kind of band. It was not for the faint of heart. It was not an entry level band, but something only an experienced ham would attempt. Two meter operation was anything but simple and whatever you did to get on the band, it took up the better part of a desk top or work bench to hold it.

Finally in the late 50s Gonset, Clegg, Ameco, Tecraft, Heathkit and others started to produce radios specifically designed for amateur use and the effort to get a functional station on two meters became significantly easier. These radios were all AM and were of course vacuum tube circuitry. If you were really adventuresome, for a week’s equivalent salary, you could even have a VFO!

Obviously things have changed. Today, two meters is the primary realm of FM transceivers which are easy to come by. Repeaters are well established and plentiful in most metropolitan areas. Indeed two meters has become the entry band for ham radio with integrated transceiver functionality in a box: you just add 12 volt power and an antenna and you are ready to go. It is difficult to imagine how much more things could have changed from the conditions of the 1950s. And indeed it would be difficult for a ham of the 1950s to have foreseen this dramatic change and the functionality that exists on two meters today.

Well, here we are: two meters in 2005 is fully optimized and there is nothing left to do. Perhaps the thencommissioner of the Patent Office, Henry L. Ellsworth, was correct when he commented in an 1843 report to Congress: “The advancement of the arts, from year to year, taxes our credulity and seems to presage the arrival of that period when

human improvement must end." Could he have possibly been thinking ahead to the two meter band of 2005? Is there indeed nothing left to do?

Well thank goodness for suppliers who must have something new to sell us. With their help and the technology that is becoming available to us, the next 50 years will likely see even more dramatic changes. Just as today contrasts significantly from the conditions of the 1950s, we will probably have something 50 years from now that we could not reasonably foresee today.

Mr. Ellsworth's predictions are indeed premature. However, if we expand on the concepts of today's twometer band, we could expect continued refinements on the repeater concept. Perhaps the repeaters will be on geosynchronous satellites which become as reliable and easy to use as 147.240. No tracking, no high-gain antennas, just hang up the antenna and work the entire western hemisphere. Employ the band compression techniques of digital modulation, and there is no QRM, phase distortion or intermodulation distortion.

Don't want the western hemisphere? Switch to a different satellite and work Europe. A third would be available for working Asia. Africa and the region of the Indian Ocean is always a problem for DX from the Pacific Northwest. Maybe there will be an inter-satellite link for picking up that part of the world which is shadowed from a single satellite that we can see from within our horizon. But will it happen on 2 meters? Probably not.

We need to look to the higher regions of the spectrum just as the hams of 50 years ago looked at two meters which was then considered to be a waste of time by many operating in that period. And that is what all of the fuss is about when you read that the ARRL is contesting the loss of amateur allocated space in the Super High Frequency (SHF) spectrum (3 – 30 GHz). That region has little interest to most of us today because technology and amateur satellite systems do not provide any real functionality for us in that portion of the spectrum. But tomorrow, well, just maybe you could be working a Nine November Alpha on 10.368 GHz and wondering how long it will take to get a QSL.

Two-meter simplicity is anything but simple. It wasn't simple fifty years ago as it eventually emerged as the most popular band in ham radio, nor is it simple today as it represents our likely model to step into the future of ham radio.

By the way, if you have any loose change, send a little to those guys in Newington who are trying to keep the amateur SHF allocation in tact while we figure out how to use it.

73 and good DX