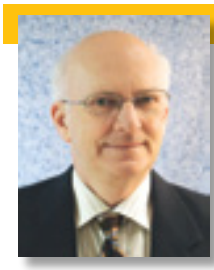

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Technology Is Taking Us…Where?

"Telecommunications technology is moving like an accelerating airplane. As radio amateurs will we be pilots or simply passengers — or left behind on the ground?"

Preparing for the ARRL Centennial has provided an opportunity to review and reflect upon a century of accumulated experience with the introduction, adoption, and adaptation of wave after wave of advances in telecommunications technology. At the dawn of the 20th Century the telegraph was well established as a tool of commerce but was too costly for casual use to send personal messages. Residential telephones were rare except in well-to-do urban households and long-distance calls, if available at all, were prohibitively expensive. Personal news traveled at the speed of the US Post Office. In retrospect it's no wonder that wireless communication captured the public imagination.

Years before they were first licensed in 1912 and before the ARRL's creation 2 years later there were thousands of radio amateurs, using everything from simple spark transmitters and passive receivers to communicate a few blocks to high-powered rigs rivaling — and even surpassing — official stations. What we now call World War I brought a temporary halt to Amateur Radio but it soon blossomed forth again.

The pace of postwar technological advancement must have seemed dizzying at the time. In the space of just a few years vacuum tubes and "continuous wave" (CW) transmissions took over and the era of spark came to an end. Vast numbers of spark enthusiasts either couldn't or wouldn't make the transition and were left behind. The discovery that the "short waves" could support transcontinental and intercontinental communication — even in the daytime! — rendered their gear obsolete and they eventually faded away.

Some technologies are, like CW, so disruptive of the status quo that they cause older ways of doing things to disappear. Others simply expand the scope of what we can do, adding to the range of alternatives. As an example of the latter, amateur experimentation with television began in the 1920s and continues right up to the present day as the province of a small but healthy community of enthusiasts. They have had the satisfaction of seeing their work put to good use in public service communications, supplementing voice descriptions from the scene of an event with live video.

Sometimes the arguments for incorporating new technologies in our Amateur Radio activity are strong, but unpopular. It may seem strange now, but for a time the ARRL had to actively encourage the use of VHF and UHF for local communication instead of the crowded HF bands; many amateurs didn't want to incur the expense and bother of acquiring additional equipment. In the '50s and '60s the transition from double sideband, full carrier AM to single sideband was widely resisted until affordable SSB transceivers with reasonable voice quality became available. If you think your favorite HF band is crowded now, imagine what it would sound like without these important developments.

At other times there are compelling reasons for us to change our ways. The advent of FM repeaters offered powerful incentives; not only could you communicate reliably from your car, you could even make phone calls! In that regard, 40 years ago amateurs were in a class by themselves. A decade later we were able to exchange error-free text messages by packet radio long before the general public acquired the capability.

Technology often opens new doors but leaves it up to us whether to enter. Software defined radios can give us more information about what's going on in the radio spectrum than our poor brains can possibly process, but we're free to limit ourselves to what vintage equipment delivers to our own ears. Today there are boundless opportunities to explore digital protocols for any communications application we might think of, yet we are not obliged to do so; we can stick to what we enjoy.

The integration of Amateur Radio with the Internet has created new capabilities, some of which — such as the ability to chase DX using remote stations — come with their own share of controversy. If we are heavily invested in a competitive activity we tend to resist developments that change the rules of the game. Is it the same achievement to work 100 countries on a challenging band by using remote stations on both coasts as by using an antenna in your own back yard? Most of us would say no, but it is pointless to decry the technology that makes it possible. The earliest DXers — those who opened the short waves to global communication in the '20s — no doubt would be amazed at the array of spotting assistance and other aids that we have at our disposal today, and amused at our efforts to categorize them as good or bad, fair or unfair.

What about the future of Amateur Radio in the broader context of telecommunications technology? It is sobering to contrast the environment of today with that of 100, 30, or even 10 years ago. While it is still true that radio amateurs are exceptional in being able to communicate any time from almost anywhere, we must acknowledge that personal mobile communication is commonplace today even in developing countries. Of course, this also means that people miss it all the more when it is not available.

To what extent will technology further change what we do in Amateur Radio and how we do it? When the sesquicentennial of the ARRL is celebrated in 2064, what breakthroughs of the previous half-century will be highlighted? We cannot know the answers to these questions, even as we set out to answer them. May the ARRL members of that time be as inspired by our future contributions as we are by the past.