



David Sumner, K1ZZ – dsumner@arrrl.org
ARRL Chief Executive Officer

Exceptions

“We live in an era blessed with telecommunications services that could not have been imagined just a few years ago. Mobile broadband allows us to access information and communicate with almost anyone from almost anywhere, at almost any time. But there are exceptions.”

Like other Red Sox fans I remember the 1986 World Series. For most, the dominant memory is the shock of seeing the error that caused defeat to be snatched from the jaws of long-awaited victory. Mine is of being in Buenos Aires at the IARU Region 2 Conference, unable even to hear the games.

A generation later, while attending the IARU Region 3 Conference in Ho Chi Minh City I was able to follow the November 6 election results on my laptop as quickly and in as much detail as if I had been home. While on an excursion to the Mekong Delta a few days later I watched another conference as he kept up with his e-mail and tracked the progress of our bus on a map on his iPad.

Although we have only enjoyed these capabilities for a relatively short time, they have become such an integral part of daily life that it can be very disorienting to be without them. Yet, we know that no technology is 100% reliable and no infrastructure can reach every point on the planet. Access to good communications is the rule but we must be prepared for the exceptions. As radio amateurs we are, or should be, better prepared than most of our fellow citizens.

When it comes to radio communication and to Amateur Radio in particular, exceptions can be both good and bad. Of all the users of the radio spectrum, amateurs are by far the most knowledgeable about the vagaries of ionospheric and tropospheric propagation. We want to communicate as reliably as anyone, but we also want to experience the thrill of reaching out past our normal limits. There are many among us who live to exploit unusual band openings; you may not hear them on the air from day to day, but if propagation conditions look promising they will come out of the woodwork.

What's good for us may be bad for others, particularly if they haven't taken exceptional propagation into account. A recent case in point involved the Township of Woodbridge, New Jersey. In December 2008 the FCC granted the Township's request to use 15 frequency pairs in television channel 20 (506-512 MHz) for a trunked land mobile system serving its police, fire, emergency and other government services. TV channels 14-20 (470-512 MHz) are shared between broadcasting and the fixed and land mobile services, but land mobile operation is limited to certain metropolitan areas and the idea is to maintain enough geographic separation from TV transmitters that interference is avoided. Installation of the new system was completed in late summer 2009 at a cost of approximately \$10 million.

Woodbridge is about 95 miles from a channel 20 TV transmitter in Waterbury, Connecticut. That might be far enough apart

to avoid interference most of the time. However, any amateur in the Northeast with UHF operating experience could have predicted what happened: Woodbridge's shiny new system often was rendered useless by tropospheric ducting, which occurs frequently and for long periods of time along the coast. The digital TV signal drowned out the handheld portables used by Woodbridge's public safety personnel.

In September 2012, three years after its \$10 million system went into operation, the Township received permission from the FCC to substitute frequencies in TV channel 19 for the remaining ones it had been using in channel 20. (Some of its operations had been shifted to frequencies in channel 16 two years earlier.) By staying in the so-called "T-Band" the Township was able to preserve most of its investment, but in the meantime the safety of its citizens and personnel was compromised.

Woodbridge's experience notwithstanding, ducting is a rather benign weather-related phenomenon. A hurricane is not, as Sandy demonstrated on October 29. By the time most hurricanes make it to the northern latitudes they don't pack as much of a punch as they do in Florida and the Gulf. Sandy was an exception. Considering the magnitude of the storm the communications infrastructure held up pretty well. Even so, four days later the FCC reported that in the most severely impacted area 15% of the cell sites were still out of service. The wired telecom network fared no better, with widespread outages caused by power failures and downed lines. Despite being victims of the storm themselves, hundreds of amateurs answered the call to report to shelters, Emergency Operations Centers and hospitals and to provide SKYWARN observations. It was an exceptional response to an exceptional situation.

Most of the time, we can rely on electricity to reach our homes and businesses. We can pick up a telephone, confident that we will hear a dial tone. We can open a web browser and expect to see a home page. We can look at a cell phone and see the little bars that say we have service. We can count on our favorite repeater being there if we want to talk to someone.

Most of the time, we can. Sometimes we can't. One measure of our skills as radio amateurs, of our ability to be of service to our communities, is how well we handle the exceptions.

A handwritten signature in black ink that reads "David Sumner, K1ZZ". The signature is written in a cursive, slightly slanted style.