

This has been quite a year so far. With this centennial year of manned flight, there was the tragic loss from our nation's space program of the second entire Space Shuttle crew. It is unfortunate when these dangerous missions using leading edge technology become commonplace until a disaster makes the news. These brave men and women were anything but commonplace, and we all mourn their loss.

With the war in Iraq displacing just about all other news, with networks providing round the clock news coverage, we were privy to "you are there" views of battle from the cockpits of military aircraft on combat missions, from tank turrets in the desert, and from rooftops overlooking ground skirmishes below. The aftermath has been more subdued, as most of the big names in broadcasting have taken off their desert fatigues, combed their hair, put on business attire and returned to their talking head role behind a desk with hot coffee at their side.

These are just two instances that have brought telecommunications technology advances to the cornea of the public eye. Telecommunications plays a key role in the transfer of data to space program technologists monitoring system performance, to battle commanders—and to the public. The public knows more now about the mechanisms used for data transfer from the space shuttle systems to ground controllers. They have witnessed the firing of missiles from ships at sea toward the shore battle area during the actual event—quite different from the news reporting mechanisms used during the last gulf war, in which cell phones played such a major role. Now, from around the world, we can see real-time action snapshots/video to go with the reporter's sound bites—quite different from heretofore traditional after-the-fact media reporting.

Unfortunately, U.S. viewers are so tuned to the special effects nature of TV entertainment, that telecommunications technology sometimes appears geared to sensational entertainment vice reporting the total facts for viewer interpretation. In the case of the Iraqi war, for example, a more balanced, objective reporting of Iraq's leadership atrocities might have helped temper worldwide opinion at a time when the U.S and England were forced to go it alone. Among other charges against network reporting of the war, at least one reporter was fired when it was found that one of the photos he sent back for publication had been altered by digitally merging two photos to show quite a different picture from the less spectacular original. Unlike the Iraqi news service, which continued to falsely report the situation in the news to its people, we in the free world could have used our telecommunications superiority to present more even reporting.

Unfortunately, it's not the technology that's at fault. Technologists have little influence on how new advances in telecommunications and digital video, for example, will be applied by the media. That's when our role changes from technologist to public, consumer advocate to change the *misuse* of technology. Food for thought.

Photo Ops

Pictures included in our anniversary issue and on page 14 of this issue show NARTE in action. In future issues, we'd like to provide more up to date photos of members at work (and play). Share your (captioned) pictures and we'll review for possible publication in future issues. No advertising content, please.

Vote! Vote! Vote!

It's that time of year again. Don't delay—carefully detach the double-sided page 9-10 of this issue, vote for the candidates of your choice, fill in the membership information required, and get your ballot back to NARTE headquarters lickity-split! It must be postmarked no later than May 31, 2003 to be counted in the election tally for selection of your leadership up for election. We are counting on you!



"Static Crashes" or Short Wave Sky Wave Propagation?

Dear Editor:

A note on Donald Kimberlin's article on Marconi's Mystery in the Winter 2002-2003 NARTE NEWS.

Before Guglielmo Marconi was born, Mahlon Loomis had demonstrated wireless telegraphy over approximately a 14 mile path and had written about spanning the Atlantic with wireless telegraphy. He received a US patent for his wireless on 30 July 1872. So the ideas and concepts are not new. But let's address Marconi's demonstration.

In the May, 1985 Ham Radio Magazine, Bill Orr (the proliferate writer of many books and articles on antennas and radios, and the editor of the Radio Handbook), addressed the issue of Marconi's trans-Atlantic test. As we all know and Mr. Kimberlin points out, it is highly unlikely that propagation at 820 or 850 kHz (the estimated fundamental frequency of the Poldhu transmitter) would be detectable with Marconi's receivers. The description of the events in Bill Orr's article indicated that Marconi and Mr. Kemp did not hear just three dots (the letter "S"), but rather a series of three repetitive clicks in the static clashes. It was this rhythmic sequence of repetitive clicks that apparently convinced Marconi and his assistant that they had received the signals. So how was this possible?

Consider what the emission spectrum of Marconi's spark gap transmitter must have been. In particular, what levels were being radiated at the 3rd, 4th, 5th and higher harmonics. If these harmonic levels were, say, -20 to -15 dB, there would have been several hundred watts radiated at "short wave" frequencies. Also, it is noted that the reception was on an untuned receiver. Mr. Orr's suggestion is that what occurred is that Marconi was receiving harmonics of his transmitters possibly in the 3 to 5 MHz range. Of course he had no idea what was happening, and radio developments in the short term after his experiments went to longer wavelengths for enhanced range. The "experts" in the 1901-1915 era considered wavelengths less than 200 meters as useless. Kimberlin in his article states that "the chances of any HF transmission from Poldhu have been rather effectively ruled out." This seems to be based on the modeling of the antenna based

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Headquarters Highlights *continued . . .*

Corporation to help revamp and revitalize our web site. The new site will have easier navigation, more features, including a member-only password-protected area, as well as:

a) On-line Membership Directory—a database of members including member name, city, state, certification expiration date, discipline, and areas of interest. This database will be searchable by field or by a character string.

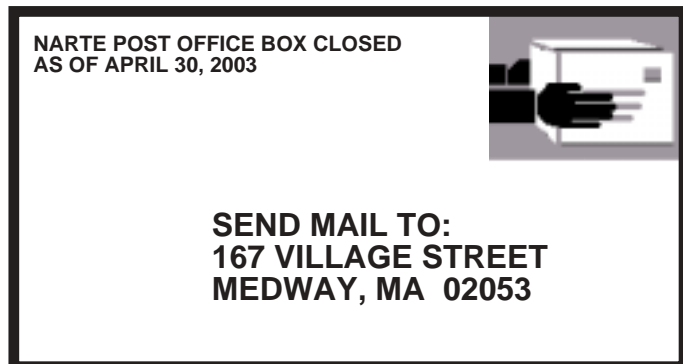
b) Personal information update—members will be able to change/update their own contact information and control how this information is shared with others.

c) Resume Postings—members will be able to post their resumes on-line and maintain their own consultant listing.

d) Bulletin boards—to facilitate the exchange of information.

There are a lot more things going on that I should pass along but I have to get a carpet to the cleaners. ☹

Russ



EMC Post Cards—From the Wireless Side

by David A. Case, NCE

If you have not heard the great news, NARTE has been officially recognized to exist. Just like in the Miracle on 34th Street where the U.S. Post Office recognized the old gentleman as Santa Claus and forwarded to him mail addressed to "Santa Claus," the U.S. Post Office now has recognized NARTE and will deliver mail to us at our Headquarters location in Medway, Massachusetts.

For those NARTE engineers who live in Texas, you will be required to use a new designation NCEEIT (NARTE Certified Engineer Except in Texas).

On February 27, the official terrorist alert code was lowered from orange to yellow. However, it is my understanding that the code has been raised to "Red Ultra Alert" on the 8th floor of the FCC building (where the commissioners reside) after the recent FCC vote on the contentious issues regarding telephone company access and sharing of broadband and voice services!

All kidding aside – it has been an interesting and busy several months.

• On January 31, the U.S. Radio LAN industry and DoD reached a compromise on acceptable Dynamic Frequency Shift (DFS) levels that will allow Radio LAN to operate in the 5250-5350 and 5470-5725 MHz band while protecting radar. This agreement was quickly incorporated into the U.S. position papers for CITEL (Inter-America Telecommunications Commission) and the World Radio Communications Conference. The DFS level is part of the recently approved CITEL Inter-American Proposal.

Letters *continued from page 2*

on some conflicting data about its design details as presented in a comment on Belrose's website entry: "But for our model the antenna is inductive for all frequencies greater than the fundamental resonant frequency response of the antenna system. One must conclude therefore that the Poldhu spark-transmitter system radiated efficiently only on the fundamental oscillation frequency of the tuned antenna system – about 850 kHz."

Since none of us were there and the record is ambiguous, we will never know if Marconi and Kemp actually heard the click of the "S" transmitted from Poldhu. However, I think based on the descriptions I have read, that perhaps it was not static crashes as proposed by Mr. Kimberlin - if what was heard was a rhythmic series of three clicks at a constant interval as described in other articles. Rather, perhaps it was the early (but unrecognized) demonstration of short wave sky wave propagation from the harmonics of the Poldhu transmitter. Food for thought.

Donald Lee Garlock, Jr.
Fairfax, VA

Comments, Don? (Ed.)

Looking For EMC Horror Stories

Ladies and Gentlemen of the EMC Community: I am searching the internet for good examples of EMC related incidents and/or accidents. Have you got any good tips on where to look?

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Based on the above agreement between the U.S. Government and industry, the FCC is preparing a Notice of Proposed Rulemaking on opening up the 5470-5725 MHz band for Radio LAN devices. It is almost 110% likely that Radio LAN devices operating in this band will be required to operate under the requirements as proposed in the U.S. World Radio Conference proposal, including mandatory use of DFS.

• The FCC released a Notice Of Intent (NOI) addressing adoption of possible receiver specifications on March 13. This action is a part of the actions being addressed by the Spectrum Policy Task Force Report.

• The comment periods for both NOIs addressing rural broadband access and opening up additional unlicensed spectrum below 900 MHz and in the 3650 – 3700 MHz band have come and gone. These actions resulted partly from the Spectrum Policy Task Force Report.

• The State Department has started the preparation meetings to form the official U.S. delegation for the upcoming World Radio Communications Conference to be held from June 9 – July 5 in Geneva, Switzerland.

• Hong Kong has just adopted 5GHz requirements for Radio LAN. This information can be accessed via the Office of Telecommunications Authority web site at www.ofta.hk

• Canada has released an update to RSS-210 Rev 5. This is Amendment 1 and removes the requirement for processing gain measurements for Direct Sequence Spread Spectrum devices.

Please send comments, thoughts, or opinions to me at davecase@cisco.com ☹