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These articles are summary reports of presentations at the NASB 2003 Annual Meeting

FCC Updates, Questions and Answers

Tom Lucey

FCC

In a recent FCC rule-making, the change from four broadcast seasons a year to two broadcast seasons a year for FCC-licensed International Service was made official. The Commission's Order will be put in the Federal Register any day now. It will become effective 30 days after being put in the Federal Register. The frequency/hour fee per season will not change, because that is set by Congress. Effectively, the annual fees for HF broadcasters are cut in half because of the

official reduction of seasons from four to two. This change will be in effect for the B-03 Season.

The next HFCC meeting will be held in Norway the last week of August. The deadline for submitting B-03 requirements to the HFCC is July 18. The following HFCC meeting will take place in the United Arab Emirates the second week of February 2004. Russia is slated to host the conference following that.

The FCC has almost completed updating their HF database to include the items that the HFCC requires. The FCC would appreciate if all those broadcasters who can would submit their requirements in the HFCC format. (Prior to his presentation, Tom distributed forms showing the HFCC format.)

The Notice of Inquiry regarding power line use for distribution of broadband carrier transmission will be going out soon. See the FCC website. There is concern that this mode may interfere with reception of shortwave.

IBB Report and Update (Spectrum Management Division)

John Wood/Del Carson/Dan Ferguson/Bill Whitacre

John Wood gave an overview and report on the Spectrum Analysis program. They've been heavily involved in preparations for WRC-03, both for USA interests and for Inter-American interests (CITEL). Recommendations were developed regarding additional allocations for broadcasting in the 4-10 MHz range. Much monitoring and scheduling data was analyzed to arrive at a conclusion that around 250 kHz additional would adequately address co-channel collisions, and that around 850 kHz of additional frequency allocations would cover both co-channel and adjacent band collisions.

Del Carson of IBB Leasing reported that this year they have their highest leasing budget ever (approximately \$13 million), largely due to the conflicts in Afghanistan and Iraq. After the Iraq war, this will probably decline for budgetary reasons. At present, IBB is leasing about 150 hours per day on non-IBB facilities (about 90 hours for RFA; about 60 hours for VoA and RFE/RL). Of the leased time, about 86% of it is shortwave. The main trends Del sees in shortwave are privatization of facilities (many old state-run transmitters now in private hands), a lot more sharing of time on facilities (such as Merlin with VOA, for example), and consolidation (fewer stations overall). The IBB uses satellite distribution mostly

for program delivery to local outlets rather than for direct broadcasting. There are not very many consumer satellite receivers at present.

Dan Ferguson of IBB Frequency Management told of adding three major services in the past year: a 21-hour-per-day Persian service for Iran called Radio Farda, a Pashtu and Dari Afghan service that's on shortwave 20 hours per day, and in March the Arabic Radio Sawa service was increased to 24 hours per day on shortwave.

Bill Whitacre of IBB Frequency Monitoring related that 60 Remote Monitoring System sites are active. Additionally, they employ a major network of human monitors. They've been doing some monitoring work for the HFCC verifying whether or not coordinated transmissions are in fact taking place. This effort has turned up many "wooden transmitters"---cases where more frequency hours are coordinated than are actually used. The HFCC makes contact with major offenders. Resolving this problem is a process, not a one-shot effort.

WRC-03

Don Messer
IBB

The 2003 World Radiocommunication Conference will take place in Geneva, Switzerland, beginning on June 9 and ending on July 4. Over forty agenda items are slated for consideration. This presentation will address only the agenda items of concern to shortwave broadcasters.

The US delegation to WRC-03 is headed by Janice Obichowski. Two US delegation committees with relevance to shortwave broadcasters are Working Group 4C and GT Plan 2. Relevant items under consideration are the introduction of digital techniques into the HF bands, realignment of 7 MHz for the amateur service and other users, and more spectrum for HF broadcasting in the 4-10 MHz range.

The proposal regarding introduction of digital techniques is written to permit digital modulation in any of the bands allocated for shortwave broadcasting. Any digital broadcasts must be coordinated through the HFCC and other committees the same as for analog transmissions. The protection ratios developed out of the DRM tests show that DRM broadcasts must reduce the average power 7 db from what would have been used for an analog transmission on the same

broadcast circuit. There will be no restrictions recommended on DSB or SSB modes of broadcasting in the proposal to permit introduction of digital techniques.

Regarding additional allocations for amateurs in the 7 MHz band, they desire 300 kHz of exclusive allocation for Regions 1, 2, and 3. This would impact the broadcasting band allocations in Regions 1 and 3. It has proven difficult to develop a unified proposal going into the conference, and it is very uncertain how this issue will fare at the WRC-03.

The final agenda item of relevance to shortwave broadcasters is the proposal for additional spectrum allocation for HF broadcasting in the 4-10 MHz range. At the time of this presentation, the US position was still being worked out. One position proposes around 300 kHz of additional allocation, which should address only co-channel collisions. Another position proposes around 800 kHz of additional broadcast allocations, to address both co-channel and adjacent channel collisions. At the other end of the spectrum of positions, some propose no additional spectrum for broadcasting at all.

The GT Plan 2 group is charged with proposing items that should be on the agenda for the WRC-07 conference. The 7 MHz and 4-10 MHz issues may get postponed to the 2007 conference. The US position is to deal with those items at WRC-03.

NASB Representation at the HFCC Meetings

Doug Garlinger
LeSea Broadcasting

Jeff White
Radio Miami International

This session was presented as a slide show, so did not lend itself very well to a written report. Doug and Jeff have already given comprehensive written reports on these conferences in past issues of the NASB Newsletter.

Doug attended the August 2002 meeting, held at the Landmark Hotel in Bangkok. The US representatives included Tom Lucey (FCC), Doug Garlinger (LeSea), George Ross (TWR), and Dennis Dempsey (EWTN). This was the first time that all three organizations, Asia-Pacific Broadcasting Union, Arab States Broadcasting Union, and the HFCC, coordinated in a single global database.

Jeff attended the February 2003 HFCC meeting in Sandton, a suburb of Johannesburg. The conference was hosted by Sentech, and held at the Sandton Hilton hotel. For the first time, Radio Havana Cuba sent a representative to the conference.

For the complete written report on these two conferences, see the September 2002 and the February 2003 NASB Newsletters at the NASB website.

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DRM Update---Technical and Marketing

Don Messer
IBB

One idea about a secondary application of DRM technology is to provide local service on the higher HF bands that don't see a lot of use---21 and 26 MHz. This could be accomplished using low power transmissions (500 w-1 kw), and would provide a service comparable to FM in quality.

Don gave recognition to Mike Adams for his efforts in arranging for test and demonstration of DRM transmissions, and to Herb Jacobsen for his work in developing a DRM capable transmitter exciter. About six types of DRM exciters are ready for marketing (shortwave and mediumwave).

Wide mediumwave usage of DRM is necessary if it is to find sufficient support for practical shortwave application.

At WRC-2003, around a dozen DRM transmissions at various frequency ranges will be broadcast into the Geneva area. Several of the participating broadcasters have committed to continuing with DRM transmissions after this special demonstration period.

Receiver manufacturers expect to have consumer-type DRM-capable receivers available by the end of 2004. These receivers will be capable of working with other modes (eg. AM/FM), and may be customized to the market in which they will be distributed (i.e. models for Europe may differ in some regard for models intended for sub-Saharan Africa).

At this point, Don anticipates that making a DRM-capable receiver will increase the cost by about \$50.00 above the cost of a comparable receiver without DRM capability.

Specifications and standards for implementing DRM technology are worked out, improved, and available.

Some DRM features are still being tested relating to channel width, with simulcast (both analogue and digital simultaneously) approaches, and with automatic selection of the best receive frequency (when multiple options are available). Another aspect still under test is the application of DRM technique to single-frequency networks, such as are commonly already used in Europe for public broadcasting (to cover an entire country with a service using one frequency on multiple synchronized transmitters).

Don is pushing within the DRM group for the preparation of a “how to” manual for broadcasters. This would explain at a user’s shortwave level how best to make application of DRM technology.

The DRM signal has much more energy, proportionally, near the edges of the occupied channel than does a double sideband transmission. This raises the possibility for much more adjacent channel interference by a digital transmission as compared to an analogue transmission. Tests and analytic work show that, for an adequate interference protection ratio, a digital signal must be operated at about 7 db less power level than would be appropriate if it were a regular analog AM transmission being used. That this factor was not observed in the past on-the-air tests, and because some DRM test transmitters were not adjusted to comply with the DRM-specified emission “mash”, resulted in many complaints by listeners of major interference (excessive occupied bandwidth), for some DRM test transmissions.

TCI---A Dielectric Company

Ron Wilenski

TCI, which became part of Dielectric in 2001, has supplied antennas to many of the US shortwave broadcasters. Dielectric is the largest antenna supplier in the world. They cover the frequency range from MF to UHF. They install and service antennas, as well as manufacturing them. Dielectric started out in 1942. They have provided 70% of all the TV transmitting antennas in the USA.

SPX, a Fortune 500 company that began in 1911 as the “Standard Piston Ring Company,” acquired Dielectric in 1998. Dielectric consists of five companies with about 800 employees:

Dielectric (antennas, transmission lines, switches, combiners/filters, power splitters)

Brookstone Telecom (cellsite construction, antenna and line installation, microwave installation, base station installation, equipment rental)

Central Tower (manufactures and installs towers in the USA, provides inspection and maintenance services)

Flash Technology (aviation obstruction lighting systems, monitoring of tower sites for power outages and lighting outages, repair and preventative maintenance for tower sites)

TCI (largest supplier in the world of HF and MF antenna systems)

TCI has done projects in 106 countries. In fact, 80% of TCI's business is outside the USA. By way of contrast, 90% of Dielectric's business is inside the USA. TCI sells much in the way of HF antenna systems, transmission lines, balanced line and coaxial switches, and baluns to shortwave broadcasters, the military, and to government entities. TCI has made over 60 MF installations at the 600 kw level, and several dozen in the 1-2 megawatt range.

TCI also provides surveillance systems that acquire, listen to, and locate most kinds of wireless transmissions. These systems find application in spectrum monitoring and management, and in government and military intelligence.

Dielectric features the world's broadest antenna product line. And they install what they sell. They can design, fabricate, and install antenna systems. Installation services range from technical consulting, to supervision of a local crew, to full turnkey jobs.

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