Chapter 24, Inc.
Madison, Wisconsin

Society of Broadcast Engineers January 2002

TOWER INDUSTRY PART 13 – WHAT TO EXPECT

By Vicki W. Kipp

For the final article in a series about the tower industry, tower industry experts will predict what to expect for the tower industry during the next few years.

INDUSTRY EXPERTS

Each tower industry expert who I interviewed for this article shared unique and interesting thoughts based on their involvement in this industry.

Bernie Heinemann is the owner of Wave Communications/ Skyline tower company in Sun Prairie, Wisconsin. He is a founding member of NATE (National Association of Tower Erectors)

Larry Kitchens of is a field superintendent for Kline Iron and Steel of Columbia, South Carolina. He supervised the reinforcement of the Madison Candelabra Tower for the addition of DTV antennas, and the installation of those antennas.

Rich Wood owns Resonant Results, LTD. in Cottage Grove, Wisconsin, and consults on AM, FM, and TV transmitters, transmission line, and antenna issues. He is a founding member of NATE.

BUSINESS FIRST

No one would argue that the past few years have been a great time to be in the tower business – it's been a booming industry thanks to two technologies: wireless telephone and digital television. But the brisk pace can't last forever.

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Next Meeting:

Thursday, January 17, 2002

High Tech Surveillance Equipment

Dutch Treat Dinner at 5:30 PM

at J.T. Whitney's 674 S. Whitney Way

Meeting and Program at 7:00 PM

In This Issue:

EFFORT TO REDUCE SPAM MAIL

By Stan Scharch

There is an effort underway in the Internet Service Provider industry to reduce the amount of spam that subscribers receive. Spam is unsolicited mail. You have probably received some if you have an Internet Mail account. Spam consumes an inordinate amount of mail exchanger resources and subscriber time. A mail exchanger is a server that receives mail from senders and sends it to recipients.

Some mail exchangers require authentication (sender and/or recipient are validated) to occur before mail is accepted and processed. Some do not. The exchangers that don't require authentication are known as open mail relay. In the past open mail relay was a useful tool and the most common way for an exchanger to be configured. Now, spammers exploit open mail relays, which act as amplifiers and anonymizers for junk mail. The industry has begun to adopt a dim view of open mail relay exchangers because of their vulnerability. It is believed they pose a significant threat to Internet operations because of the spammers abuse.

In an effort to reduce spam, the exchangers of some Internet Service Providers do not accept traffic from exchangers that allow open mail relay. This is intended to decrease the amount of spam that such a provider and its subscribers will receive. Providers that do this use information collected by organizations that test and monitor the open relay status of all exchangers. The information is contained in a "Black Hole List". The list contains the IP addresses of exchangers that are configured for open mail relay.

As with many solutions, there are undesired side effects. Disruption of legitimate Internet Mail is one of them. We will explore that problem next month.

CHAPTER 24 OFFICERS

CHAIR:
Tom Smith (WHA-TV)
W - 263-2174
smithtc@vilas.uwex.edu

VICE CHAIR:
Vicki Kipp (ECB-TOC)
W - 264-9631
vkipp@ecb.state.wi.us

SECRETARY:
Tom Weeden (WMTV-TV)
W - 274-1515
tcweeden@nbc15.com

TREASURER:
Stan Scharch (WISC-TV)
W - 271-4321
sscharch@wisctv.com

Past-Chair:
Kevin Ruppert (WISC-TV)
kruppert@wisctv.com

COMMITTEE APPOINTEES

Program Committee:

Denise Maney	277-8001
Steve Paugh	277-5139
Fred Sperry	264-9806
Steve Zimmerman	274-1234

Membership:
Paul Stoffel
stoffel@vilas.uwex.edu

Sustaining Membership:
Fred Sperry W - 264-9806
fsperry@ecb.state.wi.us

Special Events:
Lonnie Cooks W - 264-9631
lcooks@ecb.state.wi.us

Certification and Education:
Jim Hermanson 836-8340
jmh@execpc.com
Tim Trendt (UW-Platteville)

Frequency Coordination:
Tom Smith W - 263-2174
smithtc@vilas.uwex.edu

National SBE Chapter Liaison:
Leonard Charles
W - 271-4321 FAX - 271-1709
lcharles@wisctv.com

December Business Meeting Minutes

Chapter 24 of the Society of Broadcast Engineers met on Wednesday, December 19, 2001 at the WKOW-TV in Madison, Wisconsin for the chapter's monthly meeting. There were 15 members in attendance, all of whom were certified, and one guest.

The meeting was called to order at 7:08 PM by chairman Tom Smith. Minutes of the November meeting as published in the newsletter were approved.

Sustaining membership chair Fred Sperry was absent. Vicki Kipp reported that there were five recent renewals: Belden, Norlight, WISC-TV, WKOW-TV, and Richardson Electronics. The total number of sustaining members is 23.

Special Events Coordinator Lonnie Cooks reported nothing new is pending.

Certification chair Jim Hermanson reported that Leslie Franzen of WMTV recently passed his certification for television operator. The next local exam session will be held February 8-18, with a registration deadline of December 28.

Frequency Coordinator Tom Smith reported no local activity. Nextel is reportedly proposing some frequency swaps to consolidate frequencies, which will affect 2 GHz and 700 MHz bands.

National Liaison Leonard Charles reported that SBE National is pushing participation in the January 12th Strategic Planning Day at Indianapolis. The 5th edition of the TV Operators handbook is out, and computer disks for all certification levels are available. The leadership seminar will be held in Indianapolis in June and August. The fund for September 11th is still open, information is at the www.sbe.org web site. The ATSC seminar that had been scheduled for October will be held February 20-21 in St Louis. SBE and ATSC are co-sponsoring the seminar. Registration is at the www.atsc.org web site. And at least five meeting reports need to be on file at the National office for local chapters to be eligible for a dues rebate.

Newsletter editor Mike Norton announced the deadline for articles for the January issue will be due at midnight, Friday, January 4th. The folding party will be held Wednesday, January 9th at WKOW-TV.

Treasurer Stan Scharch reported that the chapter's bank balance was in the black.

There was no old business.

In new business, Tom Smith reported on communication with Chapter 112 chair Tom Viste of WEAU-TV proposing

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Meeting Minutes (continued)

publishing WBA's DTV brochure with some changes. The Green Bay chapter wants to go along with the idea. Tom suggests a web page effort with the WBA. A DTV promotion committee will be formed to study the idea, and Tom will solicit volunteers via the SBE list server.

After some discussion on a Chapter 24 contribution to the WTC Fund, Mark Croom made a motion for Chapter 24 to contribute $100. Leonard Charles seconded, and the vote was approved.

Leonard Charles reported that XM radios are now being displayed at Best Buy in Madison.

In personal and professional announcements, Steve Zimmerman reported that Dan Maney is now working at Pro Video. Tom Smith said that the Milwaukee SBE newsletter reported that Terry Baun has moved to Indiana. Also the WHA-DT transmitter was proofed today and that the studio-to-transmitter link is in house. WHA-DT may be on the air in January.

The meeting adjourned at 7:45 PM.

Steve Paugh introduced this month's guest speaker, UW Telecommunications Professor Dr. Barry Orton, presenting the topic "Narrowcasting on Broadband: American Mass Media and The Future of the *AOLTimeWarnerDisneyFoxComcastMicrosoft Corporation*."

(Submitted by Tom Weeden, Secretary)

Thanks to Steve Paugh for arranging the telecommunications speaker for the December program.

AMATEUR RADIO NEWS

By Tom Weeden, WJ9H

• The FCC has written a Cincinnati AM radio station and the electric utility serving that region to help resolve an unusual and longstanding interference situation affecting local amateurs. Sharon Bowers of the FCC's Consumer Information Bureau wrote Clear Channel-owned WLW, which broadcasts on 700 kHz, and Cinergy Corp citing numerous reports of apparently spurious signals associated with WLW transmissions that have been monitored over a wide area and frequency range.

"Many of these reports indicate that, although the noise is associated with WLW transmissions, the strongest signals appear to be originating some distance from the WLW transmitter site, possibly on a high-voltage tower owned by Cinergy Corp," Bowers wrote. "From the extent of the reports and the wide geographical area involved, it is likely that there are multiple sources involved." Bowers conceded that some of the reports received by the FCC do not involve WLW transmissions and likely are typical electrical noise problems.

Bowers noted that WLW and Cinergy already have "expended considerable efforts" to locate the noise source and cause, but the noise remained "as strong as ever according to recent reports." The letter also stated that, under FCC Part 15 and Part 73 rules, incidental noise radiated by power company equipment or spurious emissions from a broadcast transmitter must be corrected if they cause harmful interference to radio communications. The FCC has requested that WLW and Cinergy advise the complainants within 30 days of the steps they're taking to correct the reported interference.

• For the first time, there's an all-ham crew aboard the International Space Station. The Expedition 4 crew of Commander Yuri Onufrienko, RK3DUO, and flight engineers Dan Bursch, KD5PNU, and Carl Walz, KC5TIE, is settling into the ISS quarters that will be its home for the next six months. Amateur Radio on the International Space Station school contacts already are tentatively set for January and February.

Penciled in on the ARISS schedule for the new crew are contacts with St Clare School in Waveland, Mississippi, during the week of January 7, and with Harrogate Ladies College (GB2HC) in Harrogate, England, the following week. Depending on the crew's work activities, an effort will be made to schedule one ARISS school or educational contact during a typical week.

New amateur radio antennas carried into space for the ISS have been stowed for the time being. Current plans call for them to be installed around the perimeter of the Service Module by the Expedition 6 crew. The new antennas will allow future operation from HF to microwave frequencies, once additional ham gear is brought aboard the ISS.

(Excerpts from "The ARRL Letter" and the www.arrl.org web site)

TOWER INDUSTRY PART 13 (continued from page 1)

Wireless telephone service was the technology that started the boom. According to Kitchens and Heinemann, however, the cellular/PCS boom is over. Heinemann summarizes, "There is still a lot of work going on, but it is more fill-in and fine tuning rather than new carriers starting up." Wood is more optimistic, replying, "Another 100,000 cellular and PCS sites are slated to go up in the next 8-10 years."

The other driving technology is the transition of broadcasters from analog to digital television (DTV), which creates a need for fortification of towers and installation of massive TV broadcast antennas for hundreds of TV stations. The FCC requirement that commercial stations broadcast in digital by 2002 and non-commercial stations by 2003 has tower companies hustling to finish all of the installations in time. Kitchens predicts that the DTV tower work boom will continue for now and end between 2004 and 2006. Wood gives a longer estimate: "It will be eight years before the final configuration. When NTSC ends, those antennas will have to come down."

The experts do agree that when the tower work boom subsides, there will be an excess of tower technicians. Excess tower technicians may be laid off, and the hourly wage of the tower technician is expected to drop.

CONSOLIDATION

Consolidation of many small family-owned tower companies into large companies has been and will continue to be a trend. Rich Wood explains, "Most small companies are eager to sell to large corporations because it is their golden opportunity to sell out for big money."

As the tower industry matures, specialization has occurred. Consistently, I got the message that the largest companies will concentrate on new tower construction and reinforcement, while smaller companies will focus on maintenance tasks such as repair, lighting, and painting. Wood explains, "The large companies have not gotten into tower maintenance yet because they are concentrating on big money in tower infrastructure build out." Most of the experts agreed that American Tower Corporation and SpectraSite Corporation are the biggest players in the tower industry.

SAFETY

Tower owners are requiring tower technicians to complete approved safety training as a prerequisite to working on their towers. In my opinion, more tower owners will set this requirement to decrease their liability. In addition to tower climbing safety courses, there are also courses on limiting exposure to electromagnetic energy and installing and maintaining tower lighting.

OSHA rules will continue to be a main concern for tower company owners and employees. Experts predict that OSHA will continue to enforce existing rules and add new rules. When asked if new rules from OSHA would hinder work, Kitchens responded, "It will hinder our work to a degree, but if it's going to make it safer, everyone is in favor of it." Wood states, "OSHA will continue to move compliance so it constantly gets tougher [to comply.] They favor bigger companies. The tougher rules raise the cost of doing business and drive the smaller companies out of business."

Commuting is an expensive part of tower work. Besides mobilizing to the tower site, tower technicians also have to commute up the tower to perform their work. Ascending to the top of the

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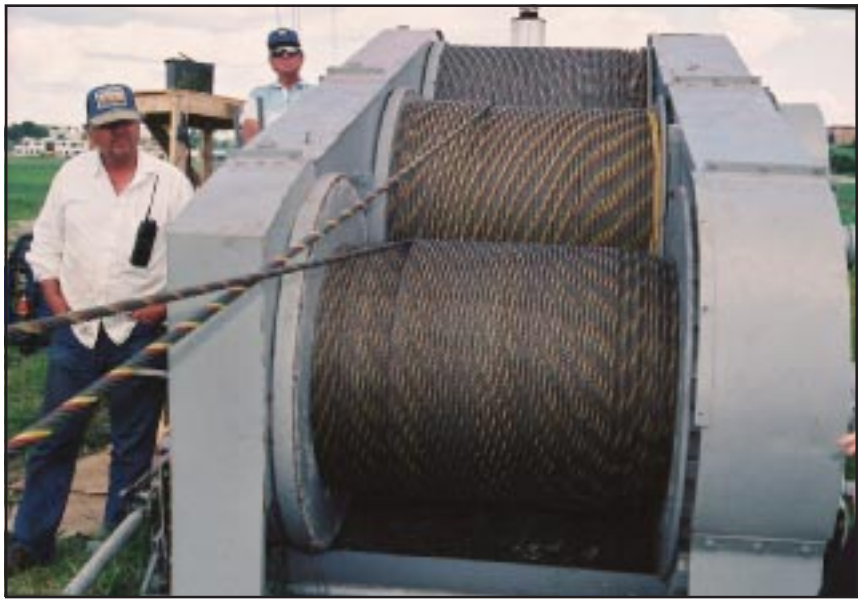

Figure 1. Three-drum winch used for Madison Candelabra DTV project.

Thanks to WISC-TV for maintaining the web server for the Chapter 24 Web page!

Thanks to WKOW-TV for providing copying and folding facilities for the Chapter 24 newsletter!

TOWER INDUSTRY PART 13 (continued)

tower at the start of the workday and descending at the end of the day can add up to several hours of climbing time.

Technicians will be doing less climbing as more towers are built with elevators. Man-riding, also called "riding the [winch] line", will be done to save climbing time. A tower technician rides in a "man basket" attached to a winch-driven line. Although efficient, man-riding has its risks and has become a touchy subject between NATE and OSHA. Experts predict that NATE will continue negotiating with OSHA to reach agreement on standards for riding the winch line safely.

A drum winch (Figure 1), a power-driven spool wound with wire or cable which is used to lift or pull, is a required tool for raising men or hardware up a tower. Winch drums can be used for jumping the jin pole (moving it up the tower), power tagging loads, temporary tensioning of guy wires, and man-riding.

Traditional mechanical winches are dangerous because their planetary gear can be kicked out of gear and allowed to free wheel. They are poorly designed for fine movements. With a mechanical winch, the operator must manually control the single brake system. The mechanical winch is being phased out and replaced with the planetary type hydraulic hoist winch with an automatic braking system. New hydraulic winches will be "man-rated" meaning that they are rated for lifting personnel.

GIN OR JIN POLE?

Due to a lack of standardization for the jin pole (Figure 2) – a steel device used to give a height advantage when stacking consecutive sections of tower steel or equipment in place– controversy surrounds the device. Even the spelling of the word 'jin' or 'gin' is debated. ComTrain instructor Winton Wilcox says, "OSHA has been trying to get us [the tower industry] to tell them what a jin pole is for years. NATE is trying to standardize the spelling of the word jin to g-i-n. ComTrain wants to standardize the spelling to j-i-n since we believe that the word g-i-n means something entirely different to the tower technician. Others want to spell it g-y-n."

Jin poles are custom created for a specific job. They vary in terms of size, rated strength, and design. Many jin poles are built in someones garage. The lack of standardization and load rating of a jin pole is a problem because the pole needs to be sized to the specific task at hand. Since fabricating a jin pole is expensive, it is usually reused after the original project. When a jin pole is reused on a different job, there is a risk that the pole could be overstressed by the load or that it could overload the tower. Either situation could cause a tower to collapse.

Figure 2. Gin pole mounted on left side of Candelabra is used to raise antennas into place.

Until recently, few formal standards existed for the manufacture of jin poles. However, that is starting to change. In 2001, the TIA/EIA (Telecommunication Industry Association/Electronic Industries Association) Safety Facilities Task Group Subcommittee drafted jin pole standard 'TIA/EIA-PN-4860-Gin Poles' which specifies structural standards for steel jin poles used for tower work. Jin poles will become safer as standards are set, and the poles are clearly marked with load ratings, equipped with measurement devices that display how much force is being placed on the jin pole, and outfitted with mounting devices to make it easier to attach the gin pole to the tower.

SAFER BROADCAST ANTENNAS

Tower technicians who work on broadcast towers complain that it is very difficult to comply with OSHA regulations when climbing a broadcast antenna because most antennas do not facilitate 100% tie off. "Why is a climber so well protected when climbing the tower to the base of the antenna and then asked to climb the last 100 feet in the open – with no support – at night – and have no available tie off points?" asks

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TOWER INDUSTRY PART 13 (conclusion)

Heinemann. "I feel we will see more effort put into this area, both in new antenna construction and retrofit kits for existing ones." Kitchens recommends a temporary safety climb cable from the top to the bottom of the antenna. The mountings for the cable could be left on permanently, but the cable would need to be removed after tower work. Wood was not as optimistic about creation of an antenna safety system: "Tower technicians could be considered 100% tied-off on an antenna just using two lanyards; the extra system is not necessary." Wood explained that a metallic safety system would be problematic because it would alter the RF coverage area, while a non-metallic safety system would be unreliable because it would be susceptible to the effects of RF.

Class 1	Amateur, CB, and 2-way radio towers and residential wireless towers
Class 2	Virtually all towers except those named in other classes. Includes broadcast towers.
Class 3	Towers in which the loss of said tower would result in high hazard to human life and property, and those towers used for essential communication. Built to be indestructible.

Figure 3. Classes of towers under EIA/TIA 222G

CODE 222G

The EIA/TIA Code 222F tower standard has been replaced by EIA/TIA 222G. Improved tower analysis tools and increased knowledge of construction materials have led to new recommendations. Code G brings more thorough and precise design criteria. Using new theories that require less steel for a tower, a superior tower can be built with thinner legs and thus less windloading. When Hurricane Hugo hit in 1989, it caused the collapse of many towers that were never expected to fall. At that time, tower simulation analysis was based on exposing the tower to a very high wind speed called the fastest mile for just an instant. According to the new rules, towers must be able to sustain a three-second peak wind gust.

In addition, Code 222G will divide towers into three classes (Figure 3.) There are new specifications for ice loading. Code G requires that a geo-tech report be completed for a tower base area before construction. There are now three classes of soil: sand, clay, and rock. New grounding requirements replace previous requirements for a minimum number of ground rods with a new electrical requirement for maximum allowable grounding system resistance of 10 Ohms. Towers built in states where earthquakes can occur must meet earthquake specifications. Lastly, the new code gives mounting bracket specifications for certain antennas. Whenever there are major modifications to a tower structure, it should be brought up to code G.

The new 222G code is in effect, but following the code is still optional. Even though there is no legal mandate to follow EIA/TIA 222G, the tower owner may be pressured to follow it by their tower's insurer.

TOWER CONSORTIUM

Concerns about aesthetics and fear of property value decline may cause citizens to mount a fierce opposition to having a tower built near their home. In some cases, a tower which has been licensed by the FCC is effectively "unlicensed" by a local zoning board. Could relief from tower zoning struggles be on its way? In response to confusing, costly, and unnecessarily long regulations that govern towers and antennas at all levels, a group of spectrum users and allied organizations formed the National Tower Consortium in late 2001. Their goal is to create a national antenna and tower policy that would provide a fair and reasonable structure for antenna zoning and land use regulations. They want to address the fact that the US does not have a cohesive policy to evaluate the rights of properly licensed terrestrial spectrum users. SBE member Fred Baumgartner is the current chairperson of the National Tower Consortium.

CONCLUSION

Looking forward, trends predicted for the tower industry include: end of wireless telephone and DTV construction booms, contractor consolidation and specialization, required safety training, new rules from OSHA, NATE guidelines for "riding the line" safely, safer hydraulic winches with automatic braking, jin pole standardization, integral safety systems for broadcast antennas, implementation of EIA/TIA Code 222G, and a call for consistent tower zoning policies from the National Tower Consortium. Will the aforementioned tower industry trends occur as our experts have predicted? Time will tell.

Information for this article came from the following sources: ERI PowerPoint "The New G Code"; Umansky, Barry "Tower Siting: Relief Ahead?" Radio World; ComTrain "Basic Tower Technology".

TELECOM INDUSTRY NEWS

By Neal McLain

UPDATING SOME OLD PREDICTIONS ABOUT AREA CODES

This being the time of the year when columnists from Ellen Goodman to George Will are reviewing their past predictions, I guess I should do the same. Except that in my case, the predictions weren't made in 2001; they were made in 1994. They were predictions about area codes, and they were published in an article titled "The North American Numbering Plan, Part 2" in the September 1994 issue of this *Newsletter.* That article was the second in a series of two articles about the change in the area code format scheduled for January 1, 1995.

THE 1995 AREA CODE FORMAT CHANGE

Before proceeding to a review of my predictions, let's first review the details of the 1995 area code format change.

Before 1/1/95, there were 144 possible area codes in North American – or in what's more properly called "World Zone 1." WZ1 includes all areas of the planet that can be reached by dialing 1+ (or 0+). In those days, WZ1 included the United States, Canada, and a hodgepodge of geopolitical entities in the Caribbean. It did not include Mexico, although some contemporary telephone directories erroneously printed obsolete codes that had once been used for Mexico.

The limit on the number of possible area codes was dictated by several factors, but the primary reason was a restriction on the second digit: this digit could only be 0 or 1. This restriction was an artifact of the original numbering plan set up by the Bell System back in 1947.

In September 1994, the last of the original 144 area codes went into service, and World Zone 1 had run out of area codes. Even though several states were running out of telephone numbers in some exchanges, they couldn't get more numbers because of the area-code situation. By the end of 1994, the situation was so severe that in at least three states (Alabama, Arizona, and Washington) some paging and cellular companies couldn't sign up new customers.

On 1/1/95, the restriction on the second digit was changed to allow any numeral in the range 0-8. This change opened up about 500 new combinations that could be assigned as area codes.

With this background in mind, let's review my predictions.

PREDICTION 1

Prediction: Many new area codes will be assigned.

No question here: this prediction has indeed come true. According to Area Code Info (http://www.areacode-info.com/) 219 new area codes have been introduced since 1/1/95. That's more than the total number of codes that existed before the format change.

My predictions missed the boat on one point: I didn't anticipate the popularity of vanity area codes. Lexington, home of the University of Kentucky, is now in UKY, while Knoxville, home of University of Tennessee's Volunteers, is in VOL. Canada's northern territories are at the TOP of the world. Daytona Beach has FUN while Miami gets SUN and Cape Canaveral does the 321 countdown. Several of those Caribbean entities have commemorated themselves: Anguilla (ANG), Antiqua (ANT), Bahamas (BHA), British Virgin Islands (BVI), Grenada (GRE), Puerto Rico (PTR), St. Lucia (SLU), St. Vincent and the Grenadines (SVG), and Trinidad and Tobago (TNT).

But Nevada couldn't get 777, so it had to settle for 775. All "YYY" combinations (222, 333, 444, etc.) are reserved for some unspecified future purpose.

PREDICTION 2

Prediction: The 521-529 area code block will be assigned to Mexico so that Mexican telephone numbers can be dialed from WZ1 by dialing 1+ (or 0+).

This prediction was based on the notion that since all Mexican telephone numbers are (or were) eight-digit numbers (including the "*clave*," Mexico's equivalent to an area code), Mexican telephones could be reached from WZ1 by dialing 1-52X-XXX-XXXX.

This prediction has partially come true: the 521-529 block has been assigned to Mexico on a temporary basis. But it hasn't been implemented, and at this point it never will be, because Mexico has changed the format of its telephone numbers: the old eight-digit numbers have been expanded to ten digits.

So it now appears that calling Mexico from WZ1 will continue to require international dialing: 011+52-XX-XXXX-XXXX for areas with two-digit *claves*, or 011+52-XXX-XXX-XXXX for areas with three-digit *claves*.

PREDICTION 3

Prediction: Wireless gadgets will continue to proliferate, and many of them will be designed around the availability of regional and national access codes. The wireless PDA, combining the functions of telephone, alphanumeric pager, voice mail box, e-mail box, fax message display, clock, calendar, calculator, caller ID display, personal telephone directory, and interactive game toy, will be the next big whiz-bang consumer gadget.

Part of this prediction has come true: wireless gadgets have indeed proliferated. Wireless PDAs combining a cell phone with various other functions are now on the market. Some of them even incorporate a function that I didn't anticipate: a GPS receiver so that emergency calls can be pinpointed. And I certainly didn't anticipate using a blank PDA screen as a makeup mirror, but that function seems to have evolved by itself.

But another part of this prediction

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TELECOM INDUSTRY NEWS (continued)

hasn't come true: the "availability of regional and national access codes." At the time, I believed that some "area codes" would actually be assigned to large geographic areas, perhaps even nationwide, for certain types of wireless phone services. So far, this hasn't happened, because the wireless companies want to use "local" numbers, in the same area codes that landline companies use.

Indeed, this very issue was the root of a contentious FCC proceeding in 1995. At the time, Ameritech tried to assign a separate area code (630) for wireless services in the Chicago area. The wireless companies didn't like having to use those "funny" numbers, so they complained to the FCC. The FCC eventually ruled against any sort of "technology-specific" area codes.

But this situation may change soon. At the behest of several state utility commissions, the FCC recently rescinded the prohibition against technology-specific area codes. It probably won't be long before some states start assigning separate area codes for wireless services whether the wireless companies like it or not.

Another complicating factor: "Calling Party Pays" (CPP), a new payment option being proposed by several wireless companies. Under this plan, the calling party would be billed for airtime charges for a call to a wireless phone.

But how does the calling party know that calls to certain numbers are essentially toll calls? A voice announcement ("this call will incur a charge of ...") raises its own set of complications. How does a hotel owner bill a guest who makes such a call? What about digital PBXs (like Rolm's CBX) that digest the dialed number and don't cut it through until the call is actually connected? Putting all CPP phones in a separate area code would help solve these problems: hotel switchboards and digital PBXs would be able to screen the calls based on area code.

So this part of my prediction still stands: some area codes will be assigned on a regional (or perhaps even national) basis for certain wireless services. Indeed, two such plans are already under consideration:

• The California Public Utilities Commission is considering statewide area codes for all wireless services, including CPP.

• Canada is considering nationwide use of code 600 for CPP. Canada already has the exclusive right to use code 600, and it currently uses it for ISDN and a few other special services.

PREDICTION 4

Prediction: What we now call "area codes" will lose significance as indications of geographic location. Just as "LOcust" and "UPtown" dissolved into the regional inventories of seven-digit numbers, area codes will dissolve into the continent-wide inventory of ten-digit numbers.

In much of North America, this prediction has not come true: most area codes still clearly define specific geographic locations.

But there are exceptions. In states and provinces with overlay area codes, two or more area codes define the same geographic area. Two states (Connecticut and Maryland) and one territory (Puerto Rico) now have statewide overlays. And five cities (Atlanta, Dallas, Houston, New York, Philadelphia) have "triple overlays," with three area codes covering the same area.

So this prediction still stands.

Visit Chapter 24 on the World Wide Web

http://www.sbe24.org

Steve Paugh is the editor for the HTML Version of this Newsletter, available monthly on the SBE Chapter 24 web page.

SBE Listserver Info

Chapter 24 members are invited to join the chapter listserver. To subscribe, send an e-mail message to the following address: majordomo@broadcast.net.

In the body of e-mail message type: *subscribe msnsbe*. (The subject line can be left blank.) Instructions and a confirmation message will be sent to you. To post to the list, address you e-mail to: msnsbe@broadcast.net.

Also, join the Wisconsin SBE Chapters listserver. To subscribe, send e-mail to: majordomo@broadcast.net.
Body of e-mail message: *subscribe sbe-wi* To post to the list, send e-mail to: sbe-wi@broadcast.net.

The SBE National also has a listserver: To subscribe, send e-mail to: majordomo@broadcast.net
Body of e-mail message: *subscribe sbe*. To post to the list, send e-mail to: sbe@broadcast.net.

There are also various other listservs of technical interest, such as the following discussion groups:

Digital Television (dtv), Electronic News Gathering (eng), Low Power FM (lpfm), Broadcast Radio Technical (radio-tech), SBE EAS (sbe-eas), Broadcast Television Technical (tv-tech), as well as others.

For more information on the operation of the listserver, send a e-mail message to majordomo@broadcast.net. In the body of the message, type: *help*. The system will automatically reply with additional information.

SBE Short Circuits – January 2002

By John L. Poray, CAE
SBE Executive Director

RELIEF FUND EXCEEDS EXPECTATIONS

The Relief Fund for families of the six broadcast engineers lost at the WTC on September 11 has been successful beyond anyone's expectations. Initiated by SBE and the Ennes Educational Foundation Trust on September 13, the Fund has received more than $168,000! Each of the six families received $18,000 from the fund by December 3 and will receive another $10,000 by January 7. We have received notes of appreciation and gratitude from several of the families thus far.

Every dollar contributed is going to the six families. SBE and the Ennes Trust are absorbing any expenses related to the fund.

As the financial loss for many of these families is very large, we continue to accept your tax-deductible contributions. Make your check payable to, "Ennes Educational Foundation Trust" ("Relief Fund" on the memo line) and send to: SBE, 9247 N. Meridian Street, Suite 305, Indianapolis, IN 46260. The Ennes Trust is a 501(c)3 non-profit charitable organization as designated by the IRS. Its EIN is 35-1506445.

SBE PARTNERS WITH NAB TO PRODUCE BROADCAST ENGINEERING CONFERENCE

For the eighth straight year, SBE will partner with NAB to produce the NAB Broadcast Engineering Conference held as a part of the NAB Spring Convention in Las Vegas. Seven members of the ten-member committee are members of SBE. They include, Milford Smith, who serves as committee chairman, SBE President Troy Pennington, former SBE national officer Tom Weber, Andy Laird, Jeff Littlejohn, Ted Teffner and Lewis Zager. Representing the Ennes Workshops is SBE Board member, Jerry Whitaker.

The NAB Broadcast Engineering Conference will begin on Saturday, April 6 and continue through Thursday, April 11. A special workshop will be presented on Saturday by the Ennes Educational Foundation Trust, as well as a tutorial by the Broadcast Technology Society of IEEE. Technical papers and panels will be presented beginning Sunday morning.

For information about registration, go to the NAB web site at www.nab.org/conventions. Members of SBE are eligible for the special Partner registration rate, a savings of $230 of the non-member rate.

SBE TO RELEASE UPDATED EDUCATION TOOLS

The Certification Committee of SBE will be releasing two updated educational tools. The 5th Edition of the SBE TV Operator Handbook, by Frederick Baumgartner and Douglas Garlinger, will be released in January. The SBE Practice Test computer discs, used to prepare for the SBE Certification Exams, are also being updated with new versions for all certification exam levels. They will be available in January.

ATSC SEMINAR RESCHEDULED

The ATSC DTV Standards Seminar originally scheduled for October 23-24 in St. Louis, MO, has been rescheduled for February 20-21. To register, go to www.atsc.org. The program is co-sponsored by SBE.

2002 LEADER SKILLS SEMINARS SET

SBE has scheduled the two-part Leader Skills Seminar for June and August, 2002. Course I will be held on June 5-7 and Course II on August 7-9. Both courses will be held in Indianapolis at the Marten House Hotel and Conference Center. Dick Cupka, who has instructed management training and leadership skills specifically designed for broadcast engineers for more than 30 years, will be our seminar leader. To register or for more information, call Angel Bates at the SBE National Office at (317) 846-9000 or e-mail Angel at abates@sbe.org. The seminar fee for each course is $475.

CERTIFICATON EXAM SESSION DATES ANNOUNCED FOR 2002

The SBE National Certification Committee has announced exam session dates for 2002. Check the list below for the exam period that is best for you. For more information about SBE Certification, see your Chapter Certification Chair or contact Linda Godby, Certification Director at the SBE National Office at (317) 846-9000 or lgodby@sbe.org.

2002 Exams	Application Deadline
Feb. 9-19	CLOSED
April 9	March 12
June 8-18	April 27
Aug. 17-27	June 16
Nov. 9-19,	Sept. 29

NEW FCC MAILING ADDRESSES

By Tom Smith

Effective on December 18th, the FCC now has a mail contractor to receive all of its mail and hand-delivered paper filings. All messenger hand delivered filings for the Commission's Secretary should be delivered to 236 Massachusetts Avenue NE, Suite 110, Washington, D.C. 20002. All other hand delivered documents including non-US Post Office overnight mail is delivered to 9300 East Hampton Drive, Capital Heights, MD 20743. All Post Office delivered filings are still addressed to the FCC at 445 12th Street, SW Washington, D.C. 20554, but are delivered to the FCC Capitol Heights facility.

All hand delivered filings must have any envelopes removed and disposed of before entering the building.

The FCC has also changed the FAX number for general correspondence to 202-418-0188. The FCC will not accept filing of applications or comments by FAX.

From FCC Release (www.fcc.gov)

FCC Rulemakings

Compiled By Tom Smith

PROPOSED

MM Docket No. 01-317 and 00-244; FCC 01-329
Rules and Policies Concerning Multiple Ownership of Radio Broadcast Stations in Local Markets, and Definition of Radio Markets

This notice was reported in last month's newsletter, but the FCC had not set the due dates for comments and replies. The notice was published in the FEDERAL REGISTER on December 11, 2001 and the dates for commenting set. Those dates are February 11, 2002 for comments and March 11, 2002 for reply comments.

FINAL RULEMAKING

Gen Docket No. 01-74
Service Rules for Television Channels 52-59

The FCC has issued rules concerning the allocation of TV channels 52-59 at the end of the DTV transition. Existing TV stations currently broadcasting in that band will be protected until the end of the DTV transition by retaining the existing broadcast allocation. The band will also be allocated for fixed and mobile services. LPTV and translator services will be able to operate on a secondary status in this band after the end of the DTV transition. There were no specific rules adopted concerning the clearing of the band for new services.

The 48 MHz band will be split up into three 12 MHz blocks with each block consisting of two 6 MHz pairs and the fourth block being a 12 MHz contiguous block. One of the 12 MHz paired blocks will be allocated to each of the 734 statistical market areas (MSAs and RSAs), and each of the remaining two 12 MHz pairs and the 12 MHz contiguous blocks will be assigned to six regional areas giving a total of six licenses in each group.

The new services will be regulated under part 27 of the FCC Rules and be allowed a maximum 50 kW effective radiated power.

This notice was adopted on December 12, 2001.

ET Docket No. 00-221
Additional Spectrum for Wireless Services

The FCC has reallocated 27 MHz in seven bands from Federal Government use for new wireless services. The FCC allocated the 216-220 MHz band for fixed and mobile services, elevating the Low Power Radio Service to primary status and grandfathering other services in the band.

Allocated to fixed satellite use are the bands of 1390-1392 MHz for downlink use and 1430-1432 MHz for uplink use. The 1390-1392 MHz band will also be allocated on a secondary basis for fixed and mobile use.

The FCC shifted the Wireless Medical Telemetry Service from 1429-1432 MHz to 1427-1429.5 MHz to allow for separation from a higher power land mobile service.

The bands of 1392-1395 MHz and 1432-1435 MHz were allocated on a paired basis for fixed and mobile service.

Also allocated were the 1670-1675 MHz and the 2385-2390 MHz bands for fixed and mobile services. These bands are allocated as separate bands and are not paired.

This action was adopted on December 21, 2001.

IB Docket No. 98-172; FCC-01-323
Redesignation of the 18 GHz Frequency Band, Blanket Licensing of the Satellite Earth Stations In the Ka-band, and the Allocation of Additional Spectrum for the Broadcast Satellite Use

The FCC is redesignating the band from 18.58-19.3 GHz from co-primary use between fixed satellite service and terrestrial fixed service, to fixed satellite service. Fixed terrestrial stations in the 18.58-19.3 GHz band operating under Part 101 of the Rules will have to relocate by June 8, 2010 and stations in the 19.26-19.3 GHz band have until October 31, 2011. Stations operating under Parts 21, 25 and 74 in the Bands of 18.58-18.8 GHz can continue to operate on a secondary basis after June 8, 2010. Stations in the 19.26-19.3 GHz band have until October 31, 2011 before they must operate under secondary status. Secondary status requires the stations to accept interference from the satellite services and not cause interference to these services. The stations operating under Part 101 can negotiate for earlier relocation with the satellite service. The FCC will not accept any new applications for fixed terrestrial service after April 1, 2002.

This action is effective on January 7, 2002 and was published in the FEDERAL REGISTER on December 7, 2001 on pages 63,512-63,516.

Compiled from FCC Releases (www.fcc.gov) and the Federal Register (www.access.gpo.gov)

CONGRESS KILLS NEXTWAVE SETTLEMENT

By Tom Smith

The FCC almost had a solution to the Nextwave bankruptcy and default of its auction payments. Nextwave defaulted on $4.3 billion of payments that it owed the FCC after making the first payment of $0.5 billion. The FCC then canceled the licenses and reauctioned the spectrum for nearly $17 billion. A Federal Bankruptcy court ruled that the licenses were protected under bankruptcy law and the FCC could not revoke them.

In testimony before the House Committee on Energy and Commerce, FCC Chairman Michael Powell outlined a settlement that the winners of the second auction had worked out with Nextwave, so that they could acquire the licenses. The agreement called for the winners of the second auction to pay the Government $15.85 billion, of which the government would receive $10 billion. The Government would pay Nextwave $5.85 billion to give up all claims to the 80 licenses.

Powell stated that while the settlement was not ideal from the Government's point of view, it would still reap $10 billion and avoid drawn-out court battles. He also called on Congress to change the bankruptcy laws to prevent auction winners from using bankruptcy to avoid making full payment for auctioned spectrum.

The FCC and the Bankruptcy Court had both signed off on the settlement, but Congress was still required to approve the expenditure of the settlement to Nextwave. The parties had set a deadline of December 31st to complete the deal, but congressional action was blocked by Senators Ernest Hollings and John McCain. Hearings are promised in the near future, with the parties involved looking for some assurance that Congress will approve the settlement.

Even with the hope for renewed negotiations, the 13 companies with winning bids in the second auction asked the FCC, on January 4th, to refund $3.3 billion that they made in down payments. According to the New York Times, they stated they would like to use the money for productive uses to benefit their consumers. They would also like to receive the $3 million that they are losing in interest each week. The companies involved include Verizon Wireless, VoiceStream Wireless, AT&T Wireless, and Cingular Wireless.

From FCC release (www.fcc.gov) with additional information from Washtech.Com and the New York Times (www.nytimes.com)

DO YOU HAVE AN IDEA FOR A SBE PROGRAM?

Is there a topic you would like to see covered at one of our local Chapter 24 meetings? Is there a technology that you would like to learn more about? Or, better yet, is there a topic that you are qualified to speak on at an upcoming meeting?

Please forward your ideas to one of the Program committee members, or to one of the Chapter 24 officers. They are listed on page two of this newsletter.

EAS TEST SCHEDULE AVAILABLE

The schedule of Required Weekly Test and Required Monthly Test times to be sent on Wisconsin Public Radio is listed on the web. It can be found at at www.wpr.org/eas.

CHAPTER 24 SUSTAINING MEMBERS

LATEST RENEWALS:

Fujinon Inc.
Panasonic Broadcast
WKOW-TV 27

THANKS TO ALL OUR SUSTAINING MEMBERS:

Alpha Video
Belden Wire and Cable
Broadcast Richardson
CTI
Clark Wire and Cable
Graybar
Harris Corporation
maney-logic
National Tower Service
Norlight Telecommunications
Roscor Wisconsin
Ross Video
Scharch Electronics
Sony Broadcast
Swiderski Electronics
Token Creek Productions
WISC-TV 3
Wisconsin Public TV
WMSN-TV 47
WMTV-TV 15

SBE Chapter 24 Newsletter
2029 Greenway Cross #11
Madison, WI 53713-3000

FIRST CLASS MAIL

Newsletter edited on Pagemaker 5.0 by: Mike Norton
Contributors this month: Vicki W. Kipp, Neal McLain, Stan Scharch, Tom Smith, and Tom Weeden.
Thanks to Leonard Charles for his work on the Chapter 24 WWW page.

JANUARY MEETING and PROGRAM

Society of Broadcast Engineers
CHAPTER 24 MADISON, WISCONSIN
Thursday, January 17, 2002

High Tech Surveillance Equipment

Boldtronics is known by many broadcasters in Madison for their outside, self-contained camera equipment. In addition to standard indoor and outdoor video monitoring equipment they are involved with high tech surveillance equipment. In this month's program, Burt Boldebuck will cover some of the high tech surveillance equipment, technology, and techniques used in his business. If available, he will have one of his surveillance vans at the meeting for us to look at.

Dutch Treat Dinner
at 5:30 PM

at J.T. Whitney's
674 S. Whitney Way

Meeting and Program
at 7:00 PM

Visitors and guests are welcome at all of our SBE meetings!

2002 UPCOMING MEETING/PROGRAM DATES:

Day	Date	Program
Tuesday	February 19	Sonic Foundry software
Wednesday	March 20	FCC Rules and Q&A
Thursday	April 18	Elections and NAB Review

Program Committee: Denise Maney 277-8001, Steve Paugh 277-5139, Fred Sperry 264-9806, Steve Zimmerman 274-1234