



**Chapter 24
Madison, Wisconsin**



Society of Broadcast Engineers

January 1998

A Tribute to Jim Crooks

*By Fred Sperry,
Chapter 24 Chair*

As many of you are aware, long-time Madison area broadcaster, SBE member, and Chapter 24 sustaining member Jim Crooks passed away back in December. Many of you, myself included, probably knew Jim as a "tower guy" and the president of Broadcast Communications (now BCS Wireless) in New Glarus. I was unaware though of his vast background in broadcasting throughout his career, which included extensive involvement with Christian radio.

As a tribute to Jim and his contributions to broadcasting and the community as a whole, Chapter 24 is dedicating this month's newsletter to his memory. What follows are a number of tributes to Jim from just a few of the many broadcasters who knew Jim well, and had the pleasure to work with him throughout his career.

One Small Legacy - The Story of Jim Crooks

*By Jean Muehlfelt
BCS Wireless*

He sat in the high school classroom wondering why he signed up for the class. The title of the course was Radio, but he understood the curriculum to be radio announcing, not radio theory. The intent in taking the class was to help him overcome his shyness.

By the end of the second week, young Jim began to understand the formulas on the blackboard. He had been too embarrassed to drop out of the class. It didn't take long for Jim to understand the daily lessons and begin to apply himself. Before he knew it, the semester was over and Jim couldn't get enough of radio theory and all its future possibilities. Several years later he graduated high school as Valedictorian and began thinking about his future career.

The year Jim graduated, our country was in the middle of one of the bloodiest wars in history, World War II. All of Jim's high school friends were signing up for the U.S. Navy and heading out to sea. Young Jim didn't want to be left behind, and signed up too.

It took almost three years of continual training before Jim Crooks graduated

from the Naval electronics training. He felt confident about his understanding of electronics, but had very little practical training. His first assignment at the Naval Base on Manus Island was repairing a Teletype machine. Jim had never seen a Teletype before, and didn't happen to mention that fact when he was given the assignment. Within a short time, the Teletype was repaired and back into operation.

While in the Navy, Jim was assigned to a project which required moving a large transmitter. There were only three men to relocate the heavy equipment to the basement of the building. Jim took the underside of the transmitter in the stairwell. He was to guide the equipment downstairs while the other two seamen supported the weight. During the move, the transmitter slipped out of the rigging. Jim stopped the transmitter from crashing to the basement, but severely injured his back. His injury was to plague him for the rest of his life.

After twelve years of Naval service, Jim was back in Des Moines working for KRNT-TV as their Assistant Chief Engineer. He enjoyed the broadcast engineering field, and finally felt he had found his life vocation. It wasn't long before an engineer from another

Next Meeting:

**Thursday,
January 22, 1998**

**Review of WOLX
Tower Collapse**

**Dutch Treat Dinner
at 5:30pm**

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

**Meeting & Program
at 7:00pm**

**WNWC-AM/FM
5606 Medical Circle**

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Des Moines TV station stopped by to talk to Jim. As the story goes, the other engineer was asked to come to Madison, Wisconsin and start a new TV station. Young Walt Hariu would become the Chief Engineer and he wanted Jim Crooks to take the Assistant Chief Engineer's position. The two engineers packed their bags and moved their families to Wisconsin. WISC-TV needed to be built so Walt and Jim built the massive transmitter in a Quonset hut, back in 1956. Day and night they worked in the metal building while the tower company built the tower outside.

A few years after WISC-TV had been on the air, a problem developed
(continued on page 4)

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December Business Meeting Minutes

Chapter 24 of the Society of Broadcast Engineers met on Tuesday, December 16, 1997, at J.T. Whitney's Restaurant, in Madison, Wisconsin.

There were 16 persons in attendance, including 14 members (all certified) and two guests. The meeting was chaired by Chapter 24 Chairman Fred Sperry.

Call to order: 12:35 pm. The meeting began with a round of self-introductions.

The minutes of the previous meeting were approved as published in the December.

Membership Report: No report.

Treasurer's Report (reported in Stan Scharch): The chapter balance is in the black.

Newsletter Editor's Report (reported by Newsletter Editor Mike Norton): The deadline for the January Newsletter is midnight 1/9/98; the folding party is 5:30 pm 1/14/98 at WKOW-TV.

Sustaining Membership Report (reported by Sperry): Recent renewals include Norlight, Clark Wire and Cable, Richardson Electronics, WISC-TV, and CTI. The Chapter now has 25 sustaining members.

Program Committee (reported by Steve Zimmerman): Plans for the January program were announced.

Certification and Education: No report.

Frequency Coordination Report (reported by Tom Smith): No activity.

National Liaison Report (reported by Sperry and Leonard Charles): (1) SBE members are reminded that, as SBE members, they can register for the NAB convention at the NAB member rate. (2) The Chapter has received a copy of the National SBE's Financial Report for 3Q97; it's available for inspection. (3) EBS equipment may be removed from service as of 1/1/98.

Old Business: Sperry noted that the planned equipment demonstration at Discreet Logic has been postponed until 2/19/98.

New Business: Tom Smith reported on several pending FCC matters including DTV allocations and auction procedures.

The business meeting was adjourned at 12:49 pm. The program featured a presentation by Tom Sibenaller of Roscor, about video servers.

Submitted by Neal McLain, Secretary

Jim Crooks Remembered

By **Bob Zuelsdorf**

Grass Valley, California
(formerly Chief Engineer, WKOW-TV)

When I first met Jim Crooks he was with WNWC radio, a bright and vigorous young engineer with a foundation of strong Christian principles.

In the years that followed I worked with Jim on many projects, mostly the construction and maintenance of many towers and antennas. We often seemed to share the same vision - it was always a pleasure working with him.

When I last saw Jim a few years ago he was a bright and vigorous engineer, still founded on those same Christian principles which served so well throughout his life. Jim Crooks will be missed.

Memories of Jim Crooks

By **Jim Hermanson**

I met Jim Crooks during my years at WKOW-TV and at WTSO/Z104. In later years, I worked more closely with him when I was chief engineer of WTSO/Z104, and when I oversaw the construction of WMMM-FM, Verona. And, there was a time or two when Jim, after working for many hours on WNWC's FM transmitter, called me to see if I'd mind coming over to help with a stubborn problem. Together, we worked until we found a solution.

Working long hours was a pleasure in his company. Jim was gifted in so many ways. He was a veteran broadcast engineer, and a hard worker who was satisfied with nothing less than his best. He encouraged the best in others. He showed us how to blend professionalism with a loving family. His friendly humor always brought a smile. He took time to care about others. He was an example of a good man, professionally and spiritually.

I'll probably never forget Jim's dedication, commitment, and warm personality. His calm manner and good heart gave encouragement and was an example for those who knew him. He will be missed.

God bless Jim, for all that he has given us.

AMATEUR RADIO NEWS

By **Tom Weeden, WJ9H**

Wisconsin's amateur radio newspaper, "Badger State Smoke Signals," has learned of a bill introduced into the state assembly which would prohibit the use of a "mobile telecommunications device" to interfere with safe driving or to impede traffic. AB680 provides for fines of up to \$400. If passed, this bill could affect not only amateur radio operators, but cellular/PCS phone users and other mobile two-way radio operations.

We are now about a year into the current 11-year sunspot cycle, according to the Solar Cycle Prediction Panel. The SCPP, a panel of 12 scientists from government agencies around the world, published a revised report in October. The report states, "the Solar Cycle 23 Panel recommends that October, 1996, be used as the effective onset of Cycle 23." The panel also predicts that the level of solar activity will be strong, comparable to Cycle 22, which was the third largest cycle in the almost 250 years that sunspot numbers have been recorded. The predicted peak of Cycle 23 will lie between June 1999 and January 2001.

Hams in upstate New York are responding to the weather emergency caused by ice storms across the Northeast, where a state of emergency has been declared in at least five upstate New York counties. Albany County Amateur Radio Emergency Service (ARES) was activated January 8th to assist the American Red Cross. The Red Cross has set up shelters in affected areas. Hams have been stationed at the Albany Red Cross Chapter House, the National Weather Service in Albany, and at the New York State Emergency Management Office, as well as at designated river level recording sites along the Mohawk River. Damage assessment was expected to continue throughout the weekend.

(Excerpts from January 1998 "QST" magazine and e-mail reports)

Chapter 24 World Wide Web Site

<http://www.sbe24.org>



Leonard Charles is the editor for the Electronic Version of this Newsletter uploaded monthly onto SBE Chapter 24's web page.

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One Small Legacy - The Story of Jim Crooks (continued)

inside the TV antenna. Several companies had been hired to diagnose the problem and make the repairs. Night after night the tower crews would climb and troubleshoot the problem. No one could find the problem, and the station engineers were becoming frustrated. Finally one night, Jim Crooks went outside and asked to borrow a climbing belt. He didn't have any experience in climbing a tower, but he felt the antenna problem needed fixing right away, and fix it he did. Soon, other broadcast engineers in the Madison area called Jim and asked him to make repairs on their antennas.

Around 1960, a new Christian radio station was coming to Madison. The owner asked Mr. Crooks if he would be interested in building WRVB-FM from the beginning. Little did Jim know that constructing the station included stacking the tower steel. His answer to the proposal was "Yes, I would. I enjoy a good challenge." The station was soon built by Jim, including the tower, the transmitter building and the studio.

In the mid-60's, Ampex was in full swing with reel-to-reel tape manufacturing. They had recently developed the "instant replay", and the sports world was excited about the future of videotape. Ampex was looking for someone with unique talents who could develop and present videotape courses to large customers around the world. With Jim's background in studio production, lighting, scripting, and technical expertise, Ampex quickly hired him for the new Video Institute in Chicago. For the next few years, Jim traveled to faraway places. From Germany to Haiti to the Pentagon, Jim enjoyed teaching the future instructors of video productions. Whether the students were foreign government officials or the U.S. Military, Jim took the time to teach each person about

studio production at their own level. Jim commented many times during those Ampex years about his use of broadcasting to expand the world of videotape.

The ice storm of 1976 brought Jim back to Wisconsin. Bob Zuelsdorf, the Chief Engineer of WKOW-TV in Madison, had contacted Jim requesting his assistance in getting the station back on the air. After a quick assessment of the damage, Jim hired his sons and spent the next year climbing and repairing antennas and tower structures throughout the State.

Although Jim had repaired broadcast stations for many years, he found the work to be very seasonal and sporadic. To feed his family, he kept a daytime job and did his broadcasting work at night. Whether it was building another transmitter or performing a Proof of Performance, the nighttime hours proved favorable to the broadcasting life.

Jim also spent a few years as Telecommunications Coordinator for the City of Madison and Dane County. During his tenure, he was appointed by the Governor to develop a statewide 9-1-1 law. As Chairman of the Wisconsin State 9-1-1 Commission, Jim brought together the policies and the eventual law that regulates the emergency system throughout the State.

Of all the major achievements Jim Crooks had throughout his 70 years, he was most proud of his broadcasting background. His company, Broadcast Communications, grew as a result of bringing together family members to work for broadcast engineers. There is no better legacy than to have a passion for an industry that provided such a rich life. Who knows what will happen to the communications in the future.

Maybe some of the major achievements will be made by another shy student who was too embarrassed to admit signing up for the wrong radio class.

(Editor's note: Jean Muehlfelt is the daughter of Jim Crooks, and works at BCS Wireless.)

"Pray for Patience"

By Chris Cain


One cold November morning, about 3AM, I was working with Jim Crooks at the WMGN tower just North of Oregon. We both were facing challenges, Jim at 670 feet working on the strobe lamps and yours truly on my back inside the Continental 20 KW FM transmitter. Jim was replacing a small circuit board way up there in the dark & I was upside-down working on a capacitor in the IPA cabinet.

When Jim finished the repairs to the strobes he returned to the ground to find me kicking wastebaskets and transmitters. I had just spent close to 3 hours upside down putting in a defective capacitor, and I had just realized that.

Jim picked up his hat off his head and kind of scratched a little, and he said something I find remarkable even to this day. "Chris I think we need to pray for patience." Next thing I know, Jim had the IPA chassis apart as he rolled up his sleeves and replaced the errant capacitor with a working unit.

To this day when the stuff is hitting the fan all around me I find that I am saying to myself: "pray for patience." It does help!


Thanks, Jim.



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BCS TOWER WORK FOR COMPLETE CHANNEL TV

By Neal McLain

I met Jim Crooks in 1976 when I first joined Chapter 24. I had just moved to Madison to join Complete Channel TV (forerunner of today's TCI) as Director of Engineering. At the time, Jim was employed by the City of Madison. After Jim established his own tower business, Broadcast Communications Services (BCS), he worked with us on a number of microwave tower projects, eventually involving eight different towers. This article relates the story of those eight towers.

But first, some history. When CCTV first began operations in 1973, it served just the City of Madison. In order to serve the entire city without exceeding its amplifier-cascade specification, three microwave paths were constructed. The transmitter was located at CCTV's office on Tokay Boulevard; the three receive sites were located in downtown Madison and in the city's northeast and southeast quadrants. The three transmit antennas were supported by a 100-foot self-supporting tower.

Over the next dozen years, as CCTV constructed or purchased cable systems in surrounding communities, the microwave system was expanded several times. The first expansion occurred in 1982 when CCTV obtained the franchise in DeForest. This project required a taller tower at Tokay Boulevard. BCS removed the old 100-foot tower and replaced it with a new 160-foot tower. The old 100-foot tower was moved to DeForest, where it became the fourth receive site.

In 1984, CCTV purchased most of the assets of U.S. Cable of Viking. Viking had been operating cable systems in several of Madison's eastern and southern suburbs: Cambridge, Marshall, McFarland, Monona, Oregon, Sun Prairie, Stoughton, and Verona. CCTV purchased everything except the Verona system.

Viking also used microwave to distribute its signals. Figure 1 shows how things were configured at the time of the sale:

- CCTV's Tokay Boulevard transmitter served four receive sites: three in Madison,

and one in DeForest. CCTV also owned the cable system in Cross Plains; however, it was served from a separate headend.

- Viking owned two transmitters. One transmitter, located south of Stoughton, delivered signals to Cambridge, Monona, Oregon, and Verona. The second transmitter, located in Sun Prairie Township, received signals from Stoughton and retransmitted them to Sun Prairie and Marshall. At one time, the Sun Prairie Township tower had been part of a three-hop microwave system that extended all the way from Stoughton to Portage via relay stations at Sun Prairie and Lodi; however, the Lodi tower was vandalized in 1981 and was never rebuilt.

After the sale was concluded, CCTV consolidated the two cable systems. Over the course of the next year or so, both Viking transmitters were dismantled, and the former Viking systems were connected to CCTV's transmitter in Madison. In addition, CCTV's Cross Plains system was added to the mix.

(continued on page 6)

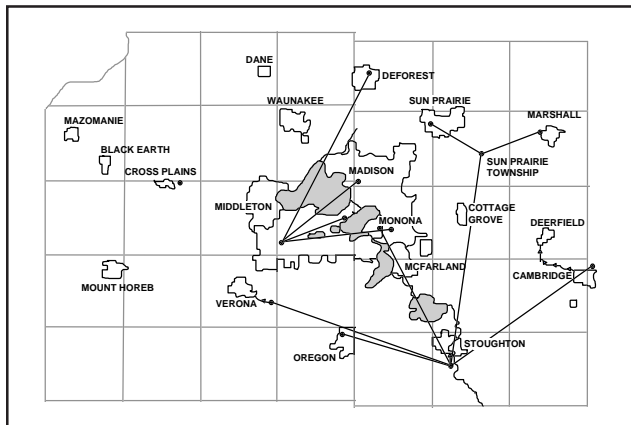


Figure 1. Microwave configuration before the CCTV/Viking consolidation. Note the locations of three microwave transmitters: Madison (CCTV), Stoughton (Viking) and Sun Prairie Township (Viking).

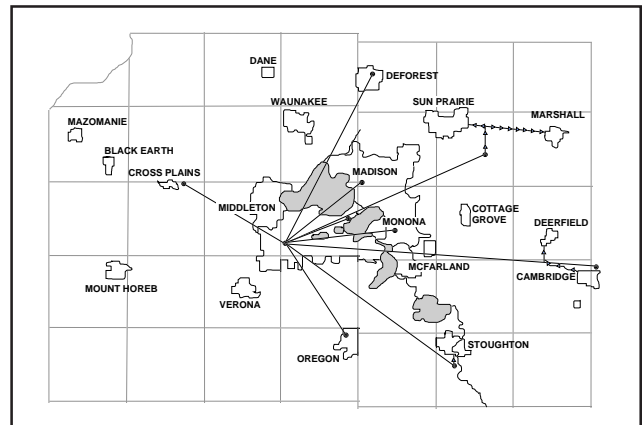


Figure 2. Microwave configuration after the CCTV/Viking consolidation. Note that both Viking transmitters have been eliminated, and the former Viking systems are fed from CCTV's transmitter.

L O U T H
A U T O M A T I O N

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LOCAL LEGALS

Compiled by Tom Smith
PROPOSED

New FM, Mount Horeb, WI

These three parties have filed applications for a new FM station for Mount Horeb to operate at 106.7 MHz.

Dodge-Point Broadcasting Co. Inc. (Louise E. Hamlin, Dodgeville, WI) requests to operate with a transmitter location on U.S. Highway 151, .7 km

SW of Barneveld with 2.51 kw ERP at 150 meters.

David and Lynn Magnum of Tomah wish to operate with 6 kw ERP at 100 meters.

Congregational Services (Roy E. Henderson, Houston, TX) seeks to operate with the transmitter located 8 miles south of Barneveld with 6 kw ERP at 100 meters.

(Compiled from BROADCASTING & CABLE)

BCS TOWER WORK (continued)

As always, the tower and antenna work was contracted to BCS. Most of Jim's extended family worked on the project at one time or another, although, Jim subcontracted some of the work to Skyline Communications of Cottage Grove.

Here's a tower-by-tower rundown of the changes:

- Madison: BCS removed the 160-foot tower it had just built two years earlier, and built another tower in its place: a 355-foot self-supporting Rohn. The four microwave antennas were transferred from the old tower to the new one, and five new microwave antennas were added.

- Oregon: BCS moved the old 160-foot Madison tower to Oregon, and reconstructed it with a new 38-foot extension. The final height (198 feet) was selected to avoid FAA marking and lighting requirements.

- Stoughton: The old 400-foot Viking transmit tower was much taller than necessary. BCS removed the top 200 feet, along with the old transmit antennas, and installed a new receive antenna.

- Cross Plains: BCS constructed a

new 160-foot tower using steel removed from the Stoughton tower.

- Cambridge: BCS increased the height of the existing guyed tower by 30 feet and reaimed the antenna.

- Monona: The old Viking receive site (which formerly fed signals to Monona and McFarland) was removed, tower and all, and the cable systems were connected directly to CCTV's coaxial plant.

- Sun Prairie Township: This tower turned out to be the only one which didn't have to be either shortened or extended. BCS simply reaimed the existing antenna, and CCTV staff replaced the old microwave links to Sun Prairie and Marshall with coaxial cable.

Figure 2 shows the final configuration.

This configuration still exists today, although it no longer carries signals: its functions have been replaced with fiber. But seven of the eight towers still stand: Cambridge, Cross Plains, DeForest, Madison, Oregon, Sun Prairie Township, and Stoughton.

Thanks to David Devereaux-Weber for information used in this article.

THREE FCC RULEMAKINGS THAT WILL AFFECT BROADCASTERS WALLETS

By Tom Smith

The FCC has issued three notices of proposed rulemaking concerning auctions or spectrum fees. Two of the notices affect broadcasters directly and one of the notices concerns the use of auctions by the FCC for all spectrum users.

MM Docket No. 97-234; GC Docket No. 92-52; GEN Docket No. 90-264; FCC 97-367

Competitive Bidding for Commercial Broadcast and Instructional Television Fixed Service Licenses; Comparative Broadcast Hearings

The FCC has issued a notice of rulemaking concerning the use of competitive bidding (auctions) for new broadcast and ITFS licenses. This notice seeks comments on the use of auctions for new applicants and also asks if auctions should be used to determine the outcome of applications that are currently in contest.

The FCC has been told by Congress in the Balanced Budget Act of 1997 that they are to use auctions to determine the granting of licenses when there is more than one applicant for a particular frequency. Due to certain rulings by the courts, many of the criteria used to determine the best applicant in comparative hearings were thrown out, and the Commission has been unable to define a new set of criteria that would meet a court test. Congress had given the FCC the choice of using auctions previously, but in the 1997 Budget Act, Congress required the FCC to use auctions.

For new applicants, the FCC is proposing to create short windows of time

(continued on next page)

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for filing for new stations. They are planned to happen four times a year. New applicants would no longer file the current applications to request to construct a new station, but instead would file a short form 175 application which is a request to participate in an auction. The long form application would be filled out by the winner of the auction.

The FCC is seeking comment on the type of bidding (multiple round, sealed, etc), credits for small business, minorities and women, and other issues concerning the use of auctions including conflicting applications for upgrades of existing stations.

These proposed rules will change nearly all the existing rules concerning the applying for a new broadcast station.

Comments are due on January 26, 1998 with replies due on February 17, 1998. This action was adopted by the FCC on November 25, 1997 and released on November 26, 1997. It was published in the FEDERAL REGISTER on December 12, 1997 on pages 65,392-65,401.

**MM Docket No. 97-247; FCC 97-414
Fees for Auxiliary or Supplementary
Use of Digital Television Spectrum
Pursuant to Section 336 (e) (1) of the
Telecommunications Act of 1996**

The FCC has issued a notice of proposed rulemaking on the establishment of a fee collection program to assess DTV stations a spectrum fee on revenue they receive for data and other subscription services they may wish to offer.

The Telecommunications Act of 1996 requires the spectrum fee to be paid for any DTV service other than advertiser supported free TV. The FCC would like comments on the type of fee system to be used such as a fixed fee, percentage of gross revenue or profits, etc. The FCC also seeks comment on methods to determine the amount of the fee.

Congress has put in the Telecommunications Act of 1996, two requirements, the first that the fees return some value in relation to what would have been received if the spectrum was auctioned, and the second that the broadcaster cannot gain "undue enrichment". This seems to be the more difficult question in this inquiry.

Comments are due on March 3, 1998 and replies on April 2, 1998. This notice was adopted on December 18, 1997 and released on December 19, 1997. It was published in the FEDERAL REGISTER on January 6, 1998 on pages 460-466.

**WT Docket No. 97-82
Amendment of Part 1 of the
Commission's Rules - Competitive
Bidding Procedures**

**ET Docket No. 94-32
Allocation of Spectrum Below 5 GHz
from Federal Government Use**

In this notice, the FCC seeks comment on rule changes to the general rules concerning spectrum auctions. They would like to make rule changes to correct problems that have occurred in past auctions and to make the rules more standard and streamlined. They would also like to make the rules more consistent between auctions for various services, so that they would have less of a need to write new rules for each service that they auction.

All auction issues are discussed from method of auction, to forms used, payments, defaults, and credits for small business, minorities, and women.

Comments are due on February 6, 1998 and replies are due on February 17, 1998. This notice was adopted in December 18, 1997 and released on December 31, 1997.

[From the FCC Web site (www.fcc.gov) (full text) and the FEDERAL REGISTER (www.access.gpo.gov)]

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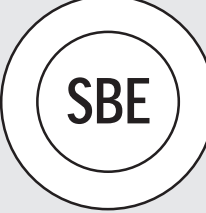
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SBE Chapter 24 Newsletter
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FIRST CLASS MAIL

Newsletter edited on Pagemaker 5.0 by: Mike Norton

Contributors this month: **Chris Cain, Jim Hermanson, Neal McLain, Jean Muehlfelt, Tom Smith, Fred Sperry, Tom Weeden, and Bob Zuelsdorf.**

Thanks to Chris Cain for his work on the Chapter 24 WWW page.

JANUARY MEETING and PROGRAM



**Society of Broadcast Engineers
CHAPTER 24 MADISON, WISCONSIN
Thursday, January 22, 1998**

Review of WOLX Tower Collapse

This month's meeting will be cover the events surrounding the tower failure of the WOLX-FM tower, which occured December 31, 1996. Rich Wood from Skyline Communications will report on the facts of the tower failure.

**Dutch Treat Dinner at 5:30pm
J. T. Whitney's
647 S. Whitney Way**

**Meeting & Program at 7:00pm
WNWC-AM/FM Conference Room
5606 Medical Circle**

Visitors and guests are welcome at all our SBE meetings!

1998 UPCOMING MEETING/PROGRAM DATES:

Day	Date	Program
Tuesday	February 17	Test and Measurement Equipment
Wednesday	March 18	ATM Technology
Thursday	April 16	Elections and NAB Review

Program Committee:	Kerry Maki 833-0047	Denise Maney 277-8001	Steve Zimmerman 274-1234	Mark Croom 271-1025
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