

Special Meeting Notice

Tuesday, April 27th 12:00 noon

Christopher Sound & Vision.

6120 S. Yale in the Two Warren Place, Suite 108

Tulsa, OK

Lunch available RSVP Don Dobbs

918-581-8694

April Chairman's Report**By Don Dobbs**

It is time once again for Chapter elections. It's time to elect a new slate of officers to continue leading our local SBE chapter on to bigger and better things. It's been a pleasure to serve as your Chairman for the past two years. It's also been an enriching experience as it gave me the opportunity to work with many extraordinary people throughout the SBE. Even though I cannot serve as Chairman again, I will look for other ways to make Chapter 56 an even better chapter in the coming year.

I want to thank the other outgoing officers for their hard work and support. Our Vice-Chairman, Roger Herring, our Secretary Jim Hobbs and finally our Treasurer, Jim Hicks. I also want to thank Gerald Weaver, committee chair for our internet home page and Bill Lee, committee chair for the Newsletter.

The Society of Broadcast Engineers is highly regarded for their leadership within the broadcast industry. That leadership comes from the participation of each member in the local chapters. We have many members in our local chapter that consistently go far above the call of duty. In March, 1997, I outlined my goals and objectives for our Chapter when I began serving as Chapter Chairman. Those goals included the Internet Home Page, the new Internship Program, the continuing education initiative and participation in the OAB Technical Session. I am very proud of our achievements over the past two years and look forward to new challenges in the future.



A reminder to all SBE Chapter 56 members. I appreciate any articles that you would care to write for the newsletter. You can e-mail articles to me at willilee@oru.edu Or mail a disk to me at KWMJ, PO Box 3286 Tulsa, OK 74101-3286. If your local or national chapter dues are set to renew, please renew today.

**Local Business Offers State of the Art Facility
Tour of Christopher Sound**

Our program this month offers a rare opportunity to tour the State of the Art facilities of Christopher Sound & Vision. They are located at 6120 S. Yale in the Two Warren Place, Suite 108, in Tulsa.

Christopher Sound & Vision is a state-of-the-art production facility, focusing on original music, scoring, sound design, and audio post; custom built for maximum sound quality and fortified with intelligent extras like laptop computer ports in every studio. The facility is run by a team of producers, musicians, and engineers with a combined 50 years of experience, who design and post sound using the latest digital technologies, and who have the talent and resources to underscore any idea, from concept to script to finished product to awards show ceremony.

Box lunches will be available from Camilles Sidewalk Caf  for only \$6.00. Please RSVP to Don Dobbs 581-8694 so we get an accurate count for lunches. Parking will be available in the guest lot or in the parking garage. You can see Christopher Sounds & Vision's web sight at www.csoundvision.com

Note: We will not meet this month at Rosie's Rib Joint.

**"CONTINUING EDUCATION OPPORTUNITIES FOR THE
PROFESSIONAL ENGINEER."****LOCAL AUTHOR TO SPEAK AT MAY MEETING**

Please make plans to attend our May meeting when the program will be "Continuing Education Opportunities for the Professional Engineer." It will be presented by Charles Herndon, coauthor along with Bernard Grob of the sixth edition of Basic Television and Video Systems. Mr. Herndon is an electronics instructor at the Tulsa Technology Center. He has been actively involved in video, audio and 2-way radio service for many years. An electronics technology teacher for over 30 years, he has taught many areas of electronics; currently he teaches telecommunications electronics and television and video systems.



www.broadcast.net/~sbe56

Don Dobbs Chairman

KOTV Channel 6
Voice (918) 582-6666
Fax (918) 581-8616

Roger Herring Vice Chairman

KTUL Channel 8
Voice (918) 445-8888
Fax (918) 445-9512

Jim Hobbs Secretary

TCI
Voice (918) 669-4730

Jim Hicks Treasurer

KBEZ/KHTT
Voice (918) 492-2020

Richard Hardy, CBRE Frequency Coordination

Richardy Productions
Voice (918) 627-4607
FAX (918) 627-2328 7am-11pm

Meeting Information

Chapter meetings are held at 12:00noon on the fourth Tuesday of each month, except December, at Rosie's Rib Joint, 8125 E. 49th Street, Tulsa OK

Entire Contents © 1998 SBE Chapter 56, Inc.

Inside This Issue

- 1 Chairman's Report
April Meeting
- 2 Meeting Minutes
- 3 Ennes Workshop
Ham's Corner
- 4 Ennes Workshop
Ham's Corner
Short Circuits
- 5 DTV Survey
Short Circuits continued
- 6 Short Circuits continued
SBE Chapter 56 Ballot

Society of Broadcast Engineers Chapter 56, Inc. March Meeting Minutes

A regular meeting of SBE Chapter 56 was held on Tuesday, March 23, 1998 at Rosie's Rib Joint in Tulsa, Oklahoma. The meeting was called to order at noon by Don Dobbs, Chairman.

Minutes

No minutes were read, since there was no quorum at the last meeting.

Treasurers Report

Jim Hicks reported \$2,651.52 in treasury.

Newsletter

Bill Lee reported that E-mailing the newsletter has had a few glitches.

Nominating Committee

The nominating committee presented nominations for all four position:

- Chairman: Gerald Weaver, KOTV
- Vice Chairman: George Chambers, KRAV
- Treasurer: Larry Miller, KTUL
- Secretary: Bill Lee, KWMJ

There were no nominees from the floor. Members present voted and ballots will be in this month's newsletter for those not present.

Certification Report

No report this month.

Frequency Coordination

No report this month.

Web Site Report

Gerald Weaver reported much activity. People are probably downloading the newsletter.

Internship Committee Report

No report this month.

EAS Report

No report this month.

Today's Program

The program this month was a video titled "The Entrepreneurial Engineer."

Digital Audio for Broadcast Engineers Ennes Workshops NAB 99

All true education is a delayed-action bomb, assembled in the classroom for explosion at a later date. The latest date you should mark on your calendar is April 21, 1999, the place Las Vegas Nevada. The NAB/SBE Ennes Workshops on Digital Audio for Broadcast Engineers will provide the information you need to lead you into the year 2000 and beyond. Come! See! Learn! Ennes Educational Foundation Trust Education Director Richard A. Farquhar CPBE of RAF Companies Inc. will moderate the sessions.

Leading off the program will be opening comments; The 2000 Engineer by Paul J. McLane, editor of Radio World, who will share his thoughts on consolidation. Three years after the Telecomm Act launched dramatic change and consolidation in our industry, radio engineers approach the millennium with a new set of employment demands new levels of management to deal with, and new career opportunities.

As editor of Radio World Paul J. McLane observes and writes about these trends. How has consolidation affected the profession? Can radio fight off losses of good engineering talent to other technical fields? Why does McLane think this could be a new golden era of radio engineering? Find out how broadcast groups are re-thinking the roles of the station engineer, the director of engineering, the contractor and the consultant.

Next Gary Stephens of Leitch Inc. will present the first audio session; AES Audio for Broadcast Systems. This workshop presents a comprehensive overview of AES audio, which will include the Basics, Benefits, Definitions, Broadcast Applications, Operating Levels, Distribution, Synchronization, Reference, MADI, A/D D/A Converters, Distribution and Routing. In addition there will be working demonstrations of Synchronous AES Quiet Switching, Distribution Amplifiers, Digital Audio Reference Generator (DAR) and adapters to go between balanced and unbalanced systems. This is one audio session you won't want to miss. A workbook will be provided to attendees.

Following Gary's presentation will be Chriss Scherer editor of Broadcast Engineering Radio. Chriss will present "Computers: The Radio Connection". This workshop will cover the basics of computer-based audio systems for radio, particularly as they are used in a networking situation. Almost every station has some form of computer-based audio system in use. With consolidation, the need to tie these individual systems together becomes an important issue. Topics include network basics, the advantages and types of networks, discussion of wire categories CAT3, CAT5, CAT5EX Coax, and Fiber along with Servers, Routers, Hubs, LANS, WANS and Extranets.

Whether you are connecting your facility across the room, the city, the country or around the world, this session is a must see at NAB99. Handouts *Cont'd page 4*

Ham's Corner By Glenn Thomas

I was really excited to hear the fifteen meter band in mid March really open up to all parts of the world. It was impressive to hear how my new FT1000MP separated stations and made the bands seem like they were wider. At first it was a little daunting to figure out how all the controls worked but after a few weeks we began to feel comfortable with how it operated. I guess beyond how sensitive the receiver is it was how it worked in QRM. I am really looking forward to working the high bands as we reach the Sun spot maximum.

I miss the small hamfests that in the past were in many small towns in the area. For some reason they have all died out. I wish the local hamfest would choose a easier place to get to. I visited with Merlin Griffin, W5OSM and he reported it was a very good convention. There were two manufacturing groups and two dealers plus many pieces of equipment and small parts offered for sale. He said seventeen people passed the exams for new or up graded licenses. He felt it was a better convention than in the past. I guess I will just have to make it next year.

With the new rig I have rediscovered forty meters mostly in the day time. Being retired gives me time for day time operation. There is a number of hams who are retired and have time for rag chewing. I have met many new people around the country the new rig sure gives you a boost to get on the air. The control circuits are different than on the american rigs I have been using. The old rigs supplied the twelve volts DC to run the relay to cut the linear in or out and worked with the push to talk switch. This new rig only provides a contact for the ground side of a twelve volt power supply to operate the relay.

I guess the next project here is to go over the old transceivers and put them in peak shape or what is the best they will do. No I don't expect like new performance but sure don't need three transceivers around here either. I guess it would be best to keep the Swan as it isn't worth very much and does work well on 75 as a back up. While the Ten Tec has some market value and is solid state.

An example of the fuzzy thinking coming out of Washington DC is the idea of licensing low powered broadcasting stations on open frequencies around the country. The idea with low cost equipment and low power the cost would be such that people with limited means could get on the air.

I don't know who thought up this dumb idea but the only thing it would generate would be junk and more junk. Maybe a church or civic group might bring it off but for a small operation it would not have much of a chance. Radio stations run on advertising or donations. A small limited coverage station would not generate enough revenue to pay the salaries of a sales force. Look at the smaller broadcast stations around this city.

How many are now under one ownership, this has come about because they were not able *Cont'd page 4*

Cont'd from page 3 will be provided. Chriss Scherer will open the afternoon workshop session with "Technology in Transition". There is plenty of news and discussion about the trend in ownership consolidation. There is, however, another consolidation trend going on. The staff and licensees are moving together — and so is the equipment. More and more equipment is being controlled by a micro-processor. As we continue toward a completely digital future, the equipment we use will become more integrated.

Some of this has already happened; more is on the way. The radio broadcast engineer is also changing roles. The technical staff needs a new set of skills to keep the station of tomorrow operating smoothly. This is the next step in consolidation.

In the final session of the day David Baden of Radio Free Asia will take us through the process of "Building a Digital Station". This is a case study of the RFA plant in Washington DC which encompasses 11 Production Studios, 18 Mini Studios, one Master Control and a large office area with specially outfitted computer workstations.

The move to a digital platform for radio stations is no longer an option. With the gradual elimination of analog equipment and analog tape medium it is no longer a question of whether a facility will migrate to an all digital platform, but when they will migrate.

This session will cover the real life experiences of building a complete digital station from Conceptual, Preliminary and Detailed Design through installation and performance verification. This session will also cover documentation and dynamic monitoring. As you can see, this workshop puts it all together in one dynamic system. Handouts will be provided.

The NAB Ennes 99 workshops will be a real nuts and bolts experience. Why not spend the day with other Broadcast Engineers and experience the world of audio?


Workshop Schedule April 21, 1999

- 9:00 a.m. Workshop Opening Remarks, Richard A. Farquhar CPBE, RAF Companies Inc.
- 9:15 a.m. Opening remarks "The 2000 Engineer", Paul J. McLane, Editor Radio World "AES Audio for Broadcast Systems"; Gary Stephens, Leitch Incorporated
- 10:30a.m. "Computers-The Radio Connection" Chriss Scherer CSRE, Editor Broadcast Engineering Radio
- 12:00 Noon Engineering Luncheon
- 2:00 p.m. Opening remarks "Technology in Transition" Chriss Scherer CSRE, Editor Broadcast Engineering Radio
- 2:15 p.m. "Building a Digital Station" David Baden, Director of Technical Operations Radio Free Asia
- 4:45 p.m. Workshop Close

For registration information please contact
 NAB 800-424-8806 <http://www.nab.org/conventions>

Cont'd from page 3 to go it alone. What chance would a low powered station have? I recieved my first issue of QEX last month. QEX is devoted to experimenters and any one interested in communications. So at this writting I have not found time to really get into all the articles. The article on the design and building an advanced ham band tranceiver is a little daunting but interesting. One article is right down my ally is about verticle antennas. I have read many articles about verticle antennas and this one seems to plow some new ground. Although I have a cabinet full of hand books and other information on antennas etc. and have built many verticle antennas with good results. I always seem to find new ideas on antennas.

I hear a lot of rumors about a computer bug going around and supposed to hit this week at the end of march. I don't use use this computer on the internet but use a Sony unit on a 20 inch Sony TV here in the radio room. I guess if it does pose a,problem I will hear about it or maybe experience it. The grandson says they have a block on some incoming E mail to filter out this bug.

The latest CQ has information about really large low band antennas. About all I cando is read and wonder what it would be like to have such an antenna. I would be very happy to just have a lazy H array or maybe two of them to cover the world on 75! On the lot I live on that can only be a dream. How time change, there an article in the latest CQ about building a 30 ft mask and what it cost. My 30 ft tower including a yard of concert with top and base section cost less but that was some time ago! The gift of two tower sections from K5KW was also a big help. 

73'S W5INU

SBE's Short Circuits April 1999 A Monthly Update from the Society of Broadcast Engineers

LETTER TO GMs PROMOTES SBE CERTIFICATION

On March 29, a letter was sent by First Class mail to all radio and television station general managers in the U.S., from Terry Baun, SBE Certification Chairman. Mr. Baun's letter described the benefits of having a competent, professional engineering staff and that SBE Certification is one of the best ways to ensure that they do. The letter encourages each GM to support in tangible ways, the efforts of their engineering staff to become certified. GMs were reminded of the tie between having a qualified engineering staff and an improved station bottom line.

MAKE 1999 THE YEAR YOU BECOME SBE CERTIFIED

There are now four SBE Certification exam periods held each year in local chapters, plus, exams may be taken during the NAB Convention in Las Vegas. You have more opportunities to become certified - at times convenient to you. For more information about SBE Certification, see your Chapter Certification Chair or contact Linda Godby-Emerick, Certification Director at the SBE National Office at (317) 253-1640 or lgodby@sbe.org.

INDUSTRY SETTLEMENT ADVANCES STANDARDS PROCESS FOR THIRD GENERATION WIRELESS SERVICES

In response to the announcement by telecommunications equipment makers, Qualcomm of the United States and Ericsson of Sweden, regarding their settlement of a patent dispute, FCC Chairman, William E. Kennard, today stated that: "This resolution clears the way for finalizing the development of standards for IMT-2000 systems. This step will allow for a speedier deployment of exciting wireless broadband services for the benefit of consumers." International Mobile Telecommunications-2000 (IMT-2000), also commonly referred to as third generation or 3G, equipment is intended to carry digital traffic such as Internet messages at high speeds over wireless handsets.

Under the agreement, which is subject to necessary regulatory approvals and other customary conditions, Ericsson and Qualcomm agreed to jointly support a single world Code Division Multiple Access (CDMA) standard for the next generation of wireless communications. CDMA is a wireless telephone standard developed by Qualcomm and, though mainly used in the United States, also has been deployed around the world. The agreement also provides for cross-licensing of intellectual property rights for all CDMA technologies, including cdmaOne, WCDMA and cdma2000. The other major competing technology used in IMT-2000 technology is Time Division Multiple Access (TDMA) and is also undergoing standardization within the International Telecommunication Union (ITU) IMT-2000 process.

In addition, the companies will commit to the ITU and to other standards bodies to license their essential patents for a single CDMA standard or any of its modes on a fair and reasonable basis free from unfair discrimination.

The companies also have agreed to jointly support approval by the International Telecommunication Union (ITU) and other standards bodies, including the U.S. Telecommunications Industry Association (TIA) and the European Telecommunications Standards Institute (ETSI) of a single CDMA standard that encompasses three optional modes of operation: 1) direct sequence Frequency Division Duplex (FDD), 2) multi-carrier FDD and 3) Time Division Duplex (TDD).



Exam Date(s)	Location Application	Deadline
April 20	NAB Convention	CLOSED
June 11 - 21	Local Chapters	April 30, 1999
August 18 - 28	Local Chapters	July 5, 1999
Nov. 12 - 22	Local Chapters	Sept. 30, 1999

NEW RADIO CHIEF OPERATORS HANDBOOK PUBLISHED BY SBE

SBE has released a brand new book written by Jack Layton, titled, "SBE Radio Chief Operator Handbook." This 84 page book is written for the non-technical operations manager, program director, air personality, GM or station owner who are many times appointed the Chief Operator at radio stations today. The Chief Operator is legally charged by FCC Rules to be the "watchdog" of the facility, assuring that the station operates in compliance with the terms of the Station License and FCC Rules.

The book is written to enable a person with some exposure to the equipment in the broadcast facility to carry out the duties of the Chief Operator. It also is written to enable the Chief Operator to recognize problems that cause the operation of the radio station to be beyond the limits of the station License and/or the FCC Rules, indicating the assistance of competent technical personnel.

The author is a 40 year veteran of broadcast engineering. Jack Layton has served as Chief Engineer at radio stations WVON and WGCI, Chicago, WIND in Chicago and KDKA in Pittsburgh. He is owner of Layton Technical Services in Pittsburgh. He is a regular contributor to "Radio World Newspaper" and "The Radio Shopper Magazine." He has also authored "Directional Antennas Made Simple," and "Directional Broadcast Antennas: A Guide to Adjustment, Measurement and Testing." He is certified by SBE as a Certified Professional Broadcast Engineer and holds the Amateur Extra Class License, W9UK.

The SBE Radio Chief Operators Handbook is now available from the SBE National Office. Call (317) 253-1640 to order. You may also fax your order to (317) 253-0418. Use your VISA, MasterCard or American Express. The cost is \$35 per copy for SBE members and \$45 for non-members, plus \$3 shipping within the U.S. You may also mail orders with a check or credit card information to: Radio Chief Operators Handbook, SBE, 8445 Keystone Crossing, Suite 240, Indianapolis, IN 46240. Copies of the Handbook will also be available for review and purchase at the SBE Booth during the NAB Convention. Author, Jack Layton, will at the booth (#s 1 & 2 in the LVCC Lobby) and will sign copies on Tuesday, April 20 from 10:00 am to 11:00 am.

Continued page 6

The SBE Chapter 56 Inc. Newsletter is published on the 16th of each month, except December, and mailed to members and other interested parties. A \$15 annual donation is requested to cover publishing costs. Make checked payable to SBE Chapter 56, Inc., PO Box 703155, Tulsa OK 74170-3155. Other SBE Chapters may use excerpts, if attributed to the original author and this newsletter. The deadline for submitting articles is the 15th of each Newsletter month.

DEADLINE DRWAS NEAR FOR LEADER SKILLS SEMINAR SIGN-UP

Persons interested in participating in the 31st Leader Skills Seminar, sponsored by the Society of Broadcast Engineers, must register by April 30. The seminar will be presented June 7 through the 11, in Indianapolis. This in-depth course teaches leadership and management techniques and is designed specifically for broadcast engineers. Our seminar leader will be Richard Cupka. Mr. Cupka has presented this program for most of its 31-year history, training over 1000 broadcast engineers along the way.

Cost for the five-day program is \$675 and includes all instruction materials, breaks and a course certificate. Transportation, lodging and meals are additional.

Here's what past Leader-Skills Seminar participants had to say about the seminar: "I came in expecting to learn how to deal with others. I feel I have learned much: even learned how much I knew, but wasn't aware I knew; also many things I didn't know before. I feel this was very helpful." Keith Harrison, WRAL-FM, Raleigh, North Carolina

"I feel positive about the seminar. In today's field of broadcasting, technical people are being promoted to leadership positions. However, they are being given very little guidance and training in how to be an effective leader." Wayne Chaney, WCPO-TV, Cincinnati, Ohio

To register, or for more information, contact John Poray at the SBE National Office, at (317) 253-1640 or jporay@sbe.org. Registrations must be received at the National Office by April 1.

SBE MEETINGS AND EVENTS SCHEDULED FOR NAB '99

The NAB Broadcast Engineering Conference, co-presented by SBE and NAB, will be held Sunday through Thursday. The Ennes Workshops will be the audio conference session track offered on Wednesday (not on Saturday as was done the past two years). Admittance to the Ennes Workshops is included with Full Convention Registration. There is no additional fee. Exhibit Only registrants will not have access to the Workshops or other sessions.

SBE's exhibit booth will be located in the Grand Lobby of the Las Vegas Convention Center, outside the new expanded North Hall. We are booth #'s 1 and 2.

MONTHLY HAMnet BRINGS SBE TO REMOTE AREAS
At 8:00 pm EST, 0000 GMT, on the second Sunday of each month, SBE Chapter 73 takes the air. Hal Hostetler, WA7BGX, of Tucson, Arizona, is the control station for the "meeting." Updates on SBE activities are given each month and participants can discuss technical issues and visit. HAMnet was originally begun to help serve members who lived too far to attend meetings of any regular chapter, but any amateur operator is welcome and encouraged to participate. Look for HAMnet on 14.205 MHz.

SBE Chapter 56	
Election Ballot for Chapter Officers	
<p>Chairman</p> <p><input type="checkbox"/> Gerald Weaver</p> <p><input type="checkbox"/> _____</p> <p>Treasurer</p> <p><input type="checkbox"/> Larry Miller</p> <p><input type="checkbox"/> _____</p>	<p>Vice Chairman</p> <p><input type="checkbox"/> George Chambers</p> <p><input type="checkbox"/> _____</p> <p>Secretary</p> <p><input type="checkbox"/> Bill Lee</p> <p><input type="checkbox"/> _____</p>

The SBE Chapter 56 Inc. Newsletter is published on the 16th of each month, except December, and mailed to members and other interested parties.

Name:
Title:
Company:
Phone:
Address:
City: **State:** **Zip:**

A \$15 annual donation is requested to cover publishing costs. Make checked payable to: SBE Chapter 56, Inc., PO Box 703155, Tulsa OK 74170-3155.

Rex Gotcher 455-5864	Pager # 745-7527
GOTCHER TOWER SERVICE Specialty Tower Maintenance	
3728 S. Elm Pl. Broken Arrow, OK 74011	Professional Tower Maintenance



SBE Sustaining Members

 <p>1355 ARMOUR BOULEV. 1D MUNDELIN, IL 60060-44 1 (800) CABLE IT • (847) 949 944 FAX (847) 949-9595 E-MAIL: SALE@CLARKWIRE.COM WWW.CLARKWIRE.COM</p>	<p>HARRIS CORPORATION</p>  <p>Communications Sector Broadcast Systems District Sales Office Post Office Box 2577 Glen Rose, TX USA 76043</p> <p>STEVE SCHOTT District Sales Manager Radio Systems ISO 9001 <i>next level solutions</i></p> <p>telephone 1-254-898-9200 24-hr service 1-217-222-8200 Broadcast Ctr. 1-800-622-0022 facsimile 1-254-898-9300 e-mail: sschott@harris.com www.harris.com</p>
 <p>Tim Bock Regional Sales Manager</p> <p>5424 South Mingo, Suite A • Tulsa, Oklahoma 74146 Tel (918)610-0808 • Fax (918)610-3340 Pager (888)597-3396 • e-mail timbock@ix.netcom.com</p>	 <p>VIDEO/TELEMETRY LINKS</p> <p>6570-B East 51st Street Tulsa, Oklahoma 74145 (918) 663-4877 TEL (918) 664-0309 FAX</p> <p>W. M. "Bill" Grass President</p>
 <p>RUSSELL RUGGIERI Director of Engineering</p> <p>825 South Detroit Avenue / Tulsa, Oklahoma 74120 918-585-9910 FAX: 918-585-9851</p>	<p>FAIRVIEW • AFX</p> <p>Providing Solutions for Audio and Video Applications Tom Roberts • Chris Miller • Ken Ostmo (918)664-8020 • 4932 S. E. Ave., Tulsa, OK 74145</p> <p>SPARTAN SCHOOL OF AERONAUTICS Founded 1935</p> <p>Communication Technology 8820 E. Pine Tulsa, OK 74115</p> <p>(918) 831-5117 (800) 657-5767</p>
 <p>RF Specialties® OF TEXAS, INC. Don Jones http://www.rfspec.com</p> <p>1-800-537-1801 (806) 372-4518 Fax 806-373-8036 P.O. Box 7630 Amarillo, TX 79114</p> <p>VISIT OUR ON-LINE WEB CATALOG AT: http://www.rfspec.com</p> <p>Complete product pricing and information featuring many of the most important radio broadcast product lines. Always current and in more detail than the paper catalog. You can also download the latest version of our "RFS" technical software & read articles from our newsletter.</p>	<p>STARLIGHT COMMUNICATIONS</p> <p>Commercial Satellite Services Antenna - TVRO - Data P.O. Box 50232 Larry Crutcher 918-428-3540 Tulsa Ok. 74150</p>  <p>Richardy Productions Richard Hardy (918) 627-2937 3239 S. 90th E. Ave., Tulsa Ok 74145</p>

Crouse - Kimzey Company
 4108 Amon Carter Drive Suite 202
 Fort Worth, TX 76155
800-433-2105 or 817-283-7700
fax:817- 283-8133

Distributors of Professional Audio and Broadcast Equipment

Internet address:
<http://proaudio.com/proaudio/ckhomepage.html>

DAVID HUBBLE
 Regional Sales Manager

1715 West 109th Street
 Jenks, OK 74037
 Phone (918) 298-8971

VIDEOTEK
 A Zero Defects Company

VIDEOTEK, INC.
 243 Shoemaker Road
 Pottstown, PA 19464-6433

(800) 800-5719
 (610) 327-2292
FAX (610) 327-9295

e-mail: dhubble@videotek.com
www.videotek.com

 **SKYHAWK**
 COMMUNICATION CORP.
 TOWER INSTALLATION & MAINTENANCE

Rick Bales, President
 (405) 382-0042 P.O. Box 2078, Seminole OK 74818

 **Midcom**

Mike Simpson, President
 (214) 869-2144
 6311 N. O'Connor Rd.
 Irving TX 75039

 **EVS**
 ELECTRONIC VIDEO SYSTEMS

- BROADCAST
- INDUSTRIAL
- CCTV

Mark deLind
 Regional Sales Manager
 800-497-4131

501-315-7499
 Fax (501)315-9007
 1-800-299-4387
 (Corporate Office)
 102 W. Ashley
 Benton AR 72015

Continental Electronics Corporation



Bret Brewer
 District Sales Manager

AM/FM Transmitters
 Studio Equipment

Dallas, TX
 (972) 517-9250 or (800) 733-5011
 E-Mail: bbrewer@contelec.com
<http://www.contelec.com>

 **Belden**

Belden Wire & Cable Company
 2200 US Highway 27 South
 Richmond, Indiana 47374-7279

Telephone: 918 396-3592
 Facsimile: 918 396-3495
 Phone Mail: 800 241-7564
 Box 2424

Sandy Stines
 Sales Representative

Sandy_Stines@notes.interliant.com
<http://www.belden.com>

Audio precision

P.O. Box 2209
 Beaverton, OR 97075-2209
 Tel: (503) 627-9832 Fax (503) 641-9906
 US Toll Free 1-800-231-7350

Oklahoma Representative:
 Ron Fisher & Associates, Inc.
 9802 East 37th Place, Tulsa, OK 74146
 Tel: (918) 465-8699 Fax (918) 463-9456

Website: www.audioprecision.com

 **Media Specialists**
 Audio, Video & Data Media Tape

Sony, Quantegy, Maxell, Panasonic, JVC, BASF, Imation

Corrine Dalby, President
 5333-E South Mingo Rd.
 Tulsa OK 74146

Phone 918-622-0077
 Fax 918-622-0159
media-specialists@b-its.com

 **Media Concepts**
 YOUR USED VIDEO ADVANTAGE!

2128 N. Yellowood Ave.
 Broken Arrow, OK 74012-9101
 Phone (918) 252-3600
 Fax (918) 250-1155
 FactsBack (918) 250-5111
www.mediaconceptsinc.com

 **PREMIER FUNDING**

Brian Murray, Lease Consultant
 Phone (918) 252-5500
 Fax (918) 250-1155
 2128 N. Yellowood Ave.
 Broken Arrow, Oklahoma 74012-9101
www.mediaconceptsinc.com



56 Inc.

Society Of Broadcast Engineers
Chapter 56 Inc. • Eastern Oklahoma
PO BOX 703155
Tulsa OK 74170-3155

First Class Mail

