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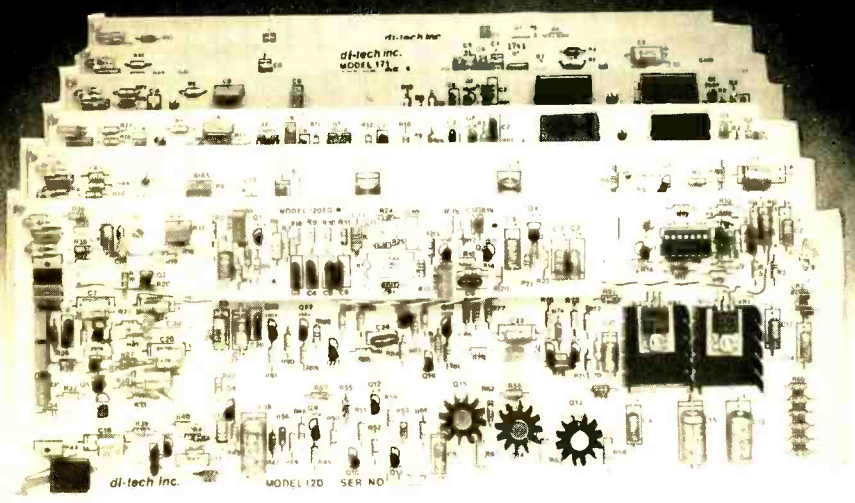

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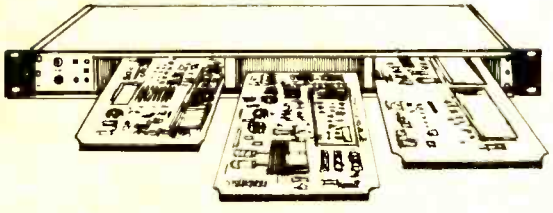

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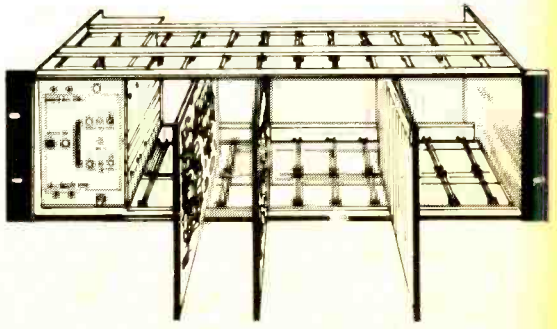

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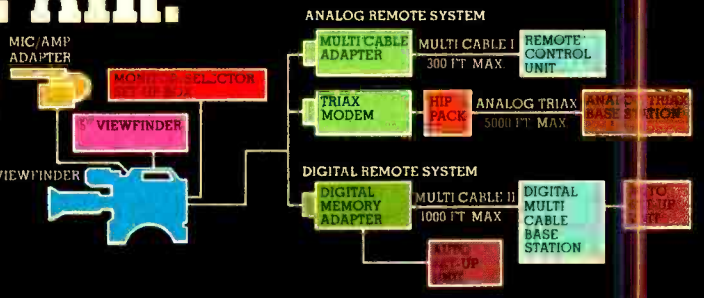
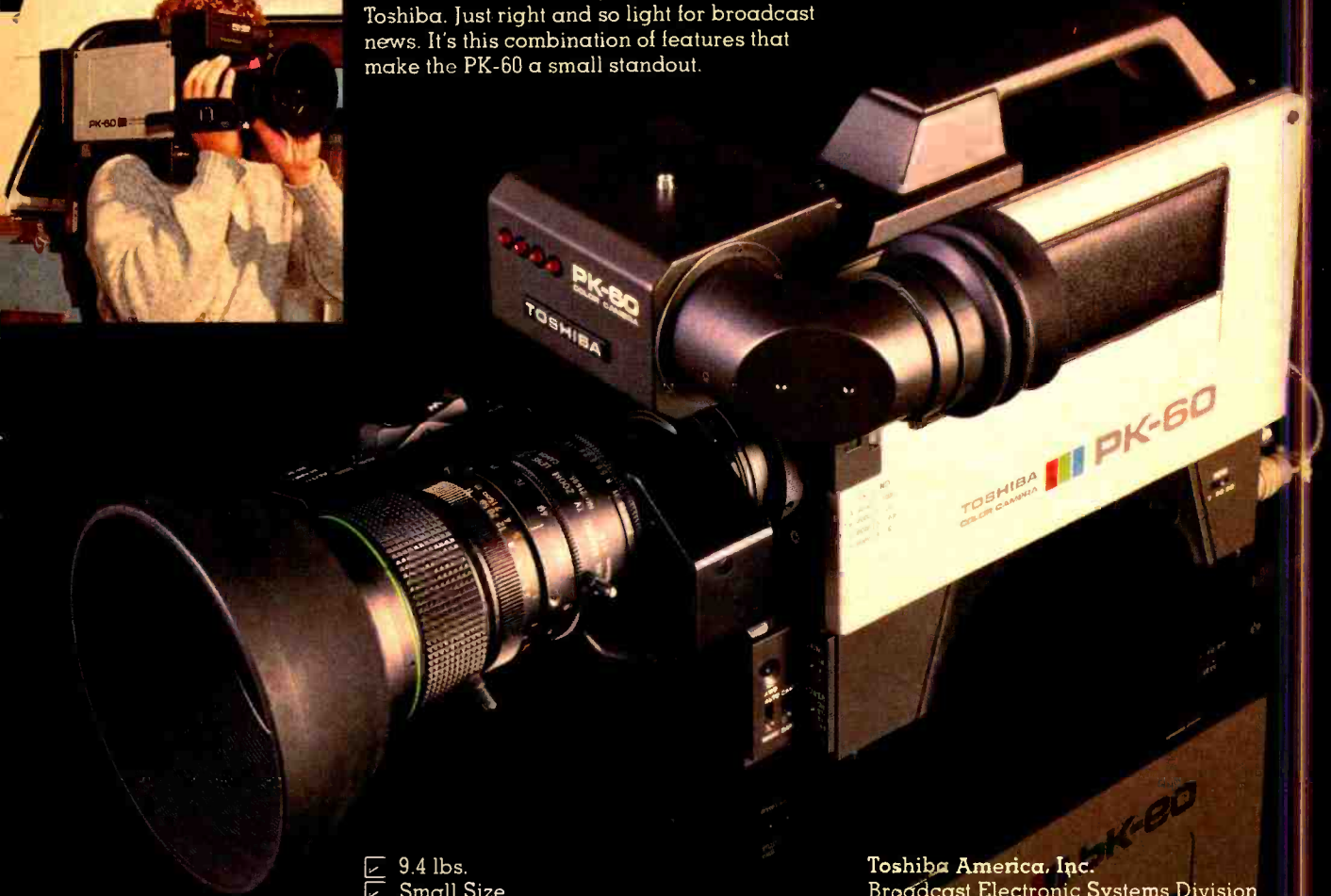


Here's the newest ENG/EFP camera from Toshiba. Just right and so light for broadcast news. It's this combination of features that make the PK-60 a small standout.



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In Touch with Tomorrow

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JANUARY 1981 VOLUME 4/NUMBER 1

BROADCAST COMMUNICATIONS

THE INTERNATIONAL JOURNAL OF BROADCAST TECHNOLOGY

Departments

Cover — This month's issue reflects on the continuing evolution of ENG into the more-refined form of electronic field production (EFP). Beginning on page 41, *BC* goes on the road with TV stations, radio stations, and a major production facility to explore this movement from the studio to the field. *(Cover design by Mary Christoph)*

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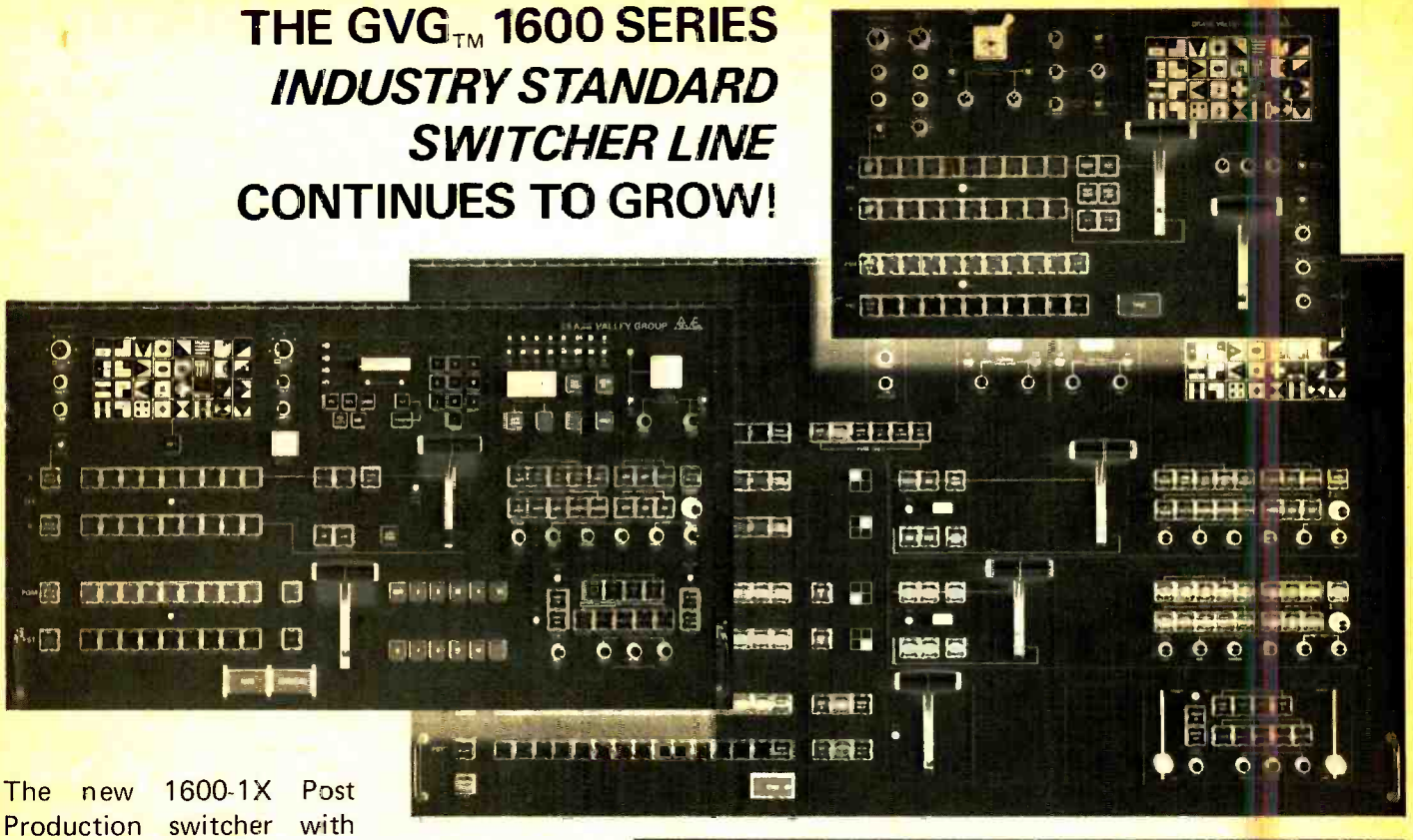
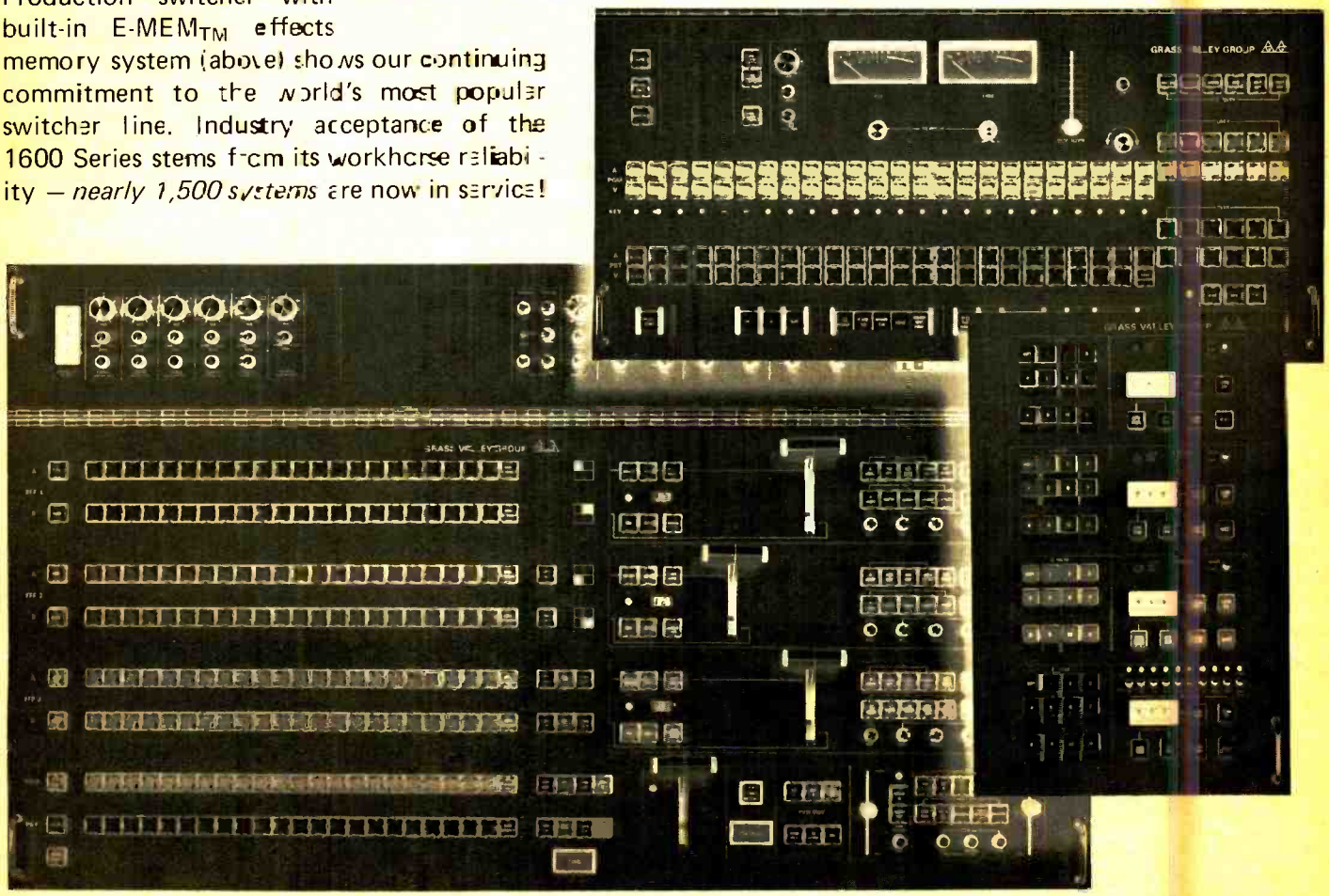


The new 1600-1X Post Production switcher with built-in E-MEM$_{TM}$ effects memory system (above) shows our continuing commitment to the world's most popular switcher line. Industry acceptance of the 1600 Series stems from its workhorse reliability — *nearly 1,500 systems* are now in service!



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The AK-760's feedback beam control reduces comet tailing by stabilizing highlights that exceed normal white levels. What it doesn't reduce is dynamic range or horizontal resolution. And because it's only activated during extreme highlights, feedback beam control helps prolong tube life and preserve edge geometry.

The AK-760 also gives you the edge with a S/N ratio of 54dB at standard illumination of 200 foot-candles at f/4.0. And with the 18dB high-gain switch, all you need is 5 foot-candles at f/1.8.

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And whether you use it for ENG or EFP, the AK-760 is fully self-contained, and includes genlock, internal sync, adjustable blanking as well as subcarrier and phase controls.

For studio production, you can add an optional remote control unit, 5" CRT viewfinder and zoom lens conversion kit.

Panasonic also makes broadcast quality easy to afford with the AK-750B 3-tube Plumbicon. At $16,000* it comes complete with 2-line enhancement, a $2,000 option last year, plus genlock, a rechargeable battery, microphone and VTR cable.

There's also the AK-710. An electronic news-gathering camera at a newsworthy price, $10,950* Its three Saticon® tubes and high-index prism optical system result in horizontal resolution of 500 lines center and a S/N ratio of 52dB.

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ON-THE-AIR

RON MERRELL

Two-way is better than one

Welcome to On-The-Air. Beginning with this issue of BROADCAST COMMUNICATIONS, On-The-Air will be a regular feature column of this magazine. Officially, it makes *BC* a two-way magazine. If you have an opinion on where our industry is going — and maybe how it's going to get there — we'll put you "on the air." If there are ideas you would like to share, a question in need of tough answers, we'll field that too. Just address your correspondence to On-The-Air, Broadcast Communications, 4121 West 83rd Street, Prairie Village, Kansas 66208.

One of the hottest issues on the broadcast scene today is the FCC's proposal to drop the First Class License. This month's column will jump right into that issue, and then get into solar energy, disasters, and a few safety tips.

Going into the new year, we find the NAB and NRBA backing the FCC proposal that the First Class License be dropped. Generally, the position is based on the idea that the test has not been practical, up-to-date, and that it would be better if a test were devised and administered by the industry itself. Only the Society of Broadcast Engineers (and this magazine) has declared opposition.

Of course, we're getting letters on the subject, and so far they're opposed to the FCC proposal. Jack C. Parker of Bis-Mark Consultants, Bismarck, North Dakota, summed up one of the typical complaints when he wrote, "This overemphasis on deregulation, to the detriment of the service involved, causes me to wonder where we reach the dividing line between deregulation and abdication of responsibility."

David Solinske, WEFM in Chicago, opened his comments filed with the FCC this way: "Any crowded radio spectrum in any given city exhibits, even at the present time, varying degrees of operation, from A-1 to illegality. The FCC has thus far demonstrated a weak degree of enforcement. Those violations found are usually treated with kid gloves, complicating operation competition for everyone through distortion, overmodulation, or abuse of composite limiting."

The odds are probably good that First Class testing will cease. And meanwhile, the spotlight will fall directly on the SBE, with everyone hoping that a new set of tests will be devised and made available quickly. The SBE will want to do it right from the beginning, so it won't be an overnight job.

Shifting to the brighter side, the nation's first solar-powered radio station, WBNO in Byran, Ohio, is alive and doing well. General manager Luke Thaman told BROADCAST COMMUNICATIONS, "We feel that advances in energy alternatives like solar power are directly leading us into an age where energy is no longer at a premium. The more people we show around the station, the more secure we are about the future."

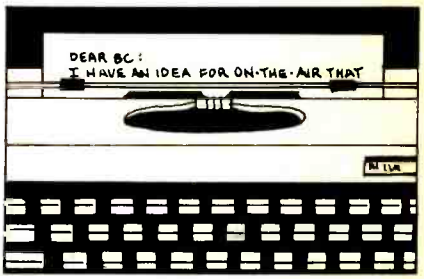
Brad Arnold, WMOO, Mobile, Alabama, has a suggestion about solar. It goes like this: "Personally, I think there is too much talk about DC systems. Why not produce 3-phase AC from a turbine system. This is being done now in Israel. I would need 150 kW for the transmitter here. According to ORMAT, this can be accomplished with a 15,000 square foot salt pond to convert waste material into gas to turn a turbine. This sounds practical to me, since I have an area on our 10-acre site which could be turned into a pond. What makes this appealing is a $35k-buck savings the first year."

If you have any ideas, or if you're experimenting on solar heat or power generation, drop *BC* a line and we'll put it on the air. Shifting away from commercial power could help you avoid some disastrous power bills, and solar is coming.

Speaking of disasters, the MGM Grand fire should make us all a lot more concerned about where we stay when we're on the road. Aside from the tragedy, it would be wise to get your reservations for the NAB convention now. The 2,600 rooms of the MGM Grand will not be open for the NAB convention.

It's been several months now since Hurricane Allen hit the West Indies. But Linford Fevrier of Radio St. Lucia gave *BC* a running account of how his station survived the storm, and even served as a refuge for some people who were looking for shelter. At least 30 men, women, and children found shelter at Radio St. Lucia.

The island and station were battered by 115 mph winds! The station was off the air for a few hours, but not because the tower went down or because of equipment failure. Instead, a sheet of galvanized iron sailed through the air and landed at the base of the tower, effectively shorting it out. Hats off to Radio St. Lucia!



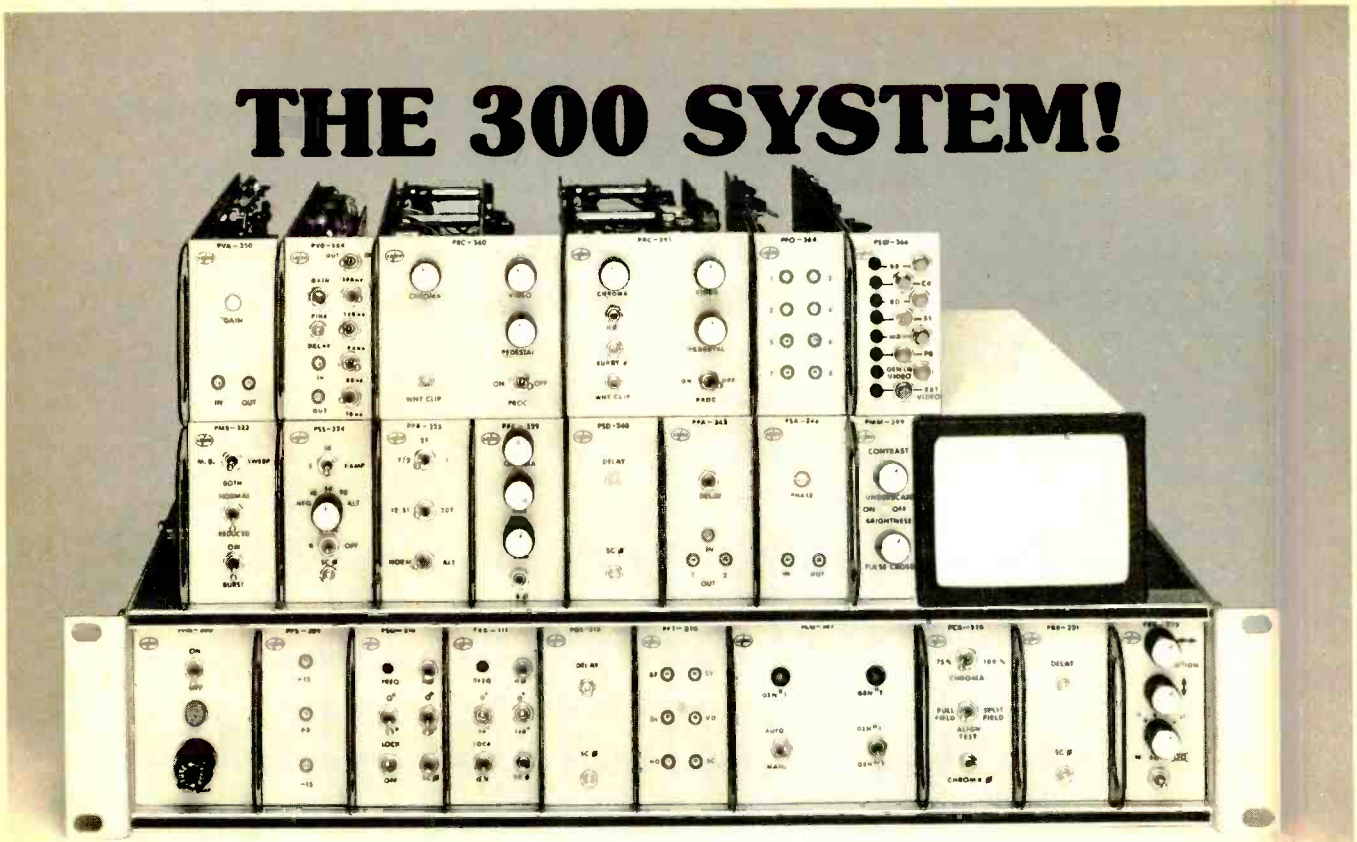
In this issue of *BC* we've included other disaster accounts from WOAI and KNDO. They stand as two more examples of broadcasting's traditional intent to serve in the best public interest.

And in the interest of those who spend their days — or nights — around transmitters, Pineway Electronics Limited of Ontario, Canada, sent some tips on safety. Here are a few:

Keep a set of battery jumper cables at the site. They are perfect for shorting towers while working on ATU components or to avoid lightning. They also are handy for starting your vehicle from the standby battery. Also, use only CO_2 and dry chemical fire extinguishers at the site, and prominently display the numbers of your fire department, ambulance service, and local hospital.

Next month we'll take on a variety of other comments coming from the field, including fiber optics and speech synthesis. In the meantime, we invite your ideas and comments on any subject that's of concern to you or your station. Drop us a line right away, and we'll put you On-The-Air. BC

THE 300 SYSTEM!



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WORLD UPDATE

SMPTE moves on to S.F.

BY JOE ROIZEN

In keeping with the general growth of the industry, the SMPTE 122nd Technical Conference had more of everything: more attendees, up to 9,000 from last year; more exhibit booths (311); more exhibitors; more committee meetings; and, unfortunately, it also was more expensive.

At the opening press conference on Sunday, November 9, Bob Smith, the outgoing SMPTE president, announced that SMPTE membership had grown significantly, to a current level of over 9,200 active members, with a substantial increase in the international area. Charles Anderson, the incoming president, reiterated the Society's commitment to the standardization work it engages in, and Roland Zavada, engineering vice president, outlined the procedures by which information about such Society activities could be publicized.

Program chairman Richard Marcus explained the attempt of his committee to obtain papers that covered both new technology and a little nostalgia, particularly for the younger, newer members who may have had little exposure to the technical history of their chosen field.

The opening lecture ("New Television Technology, Once Over Lightly") was an invited tutorial suggested by Richard Marcus and Robert Paulson, the program and associate program chairmen. Its intent was to give a general overview of the cur rent leading edge in TV technical developments and to define the nomenclature related to these. The author presented a pictorial synopsis of such topics as direct broadcast satellites (DBS), digital video recorders (DVRs), digital video effects (DVE), fiber opticals, teletext, viewdata, videocassette recorders (VCRs), video disc recorders, closed captioning, computer graphics, and many others.

Monday afternoon was pure nostalgia. Vladimir Zworykin, the "father of electronic television," was on hand to watch a taped interview that Rombex had made with him. He was also presented with his Fellowship Citation plaque by the Royal Television Society, the key officers of which were on hand to make their multimedia presentation on "The History of British Television."

BBC authors Phil Sidey, Bob Longman, and Tony Pilgrim pooled their knowledge of the early years of British TV with David Glencross of the IBA, who filled in for the later emergence of commercial television in the United Kingdom. The presentation included historical films and tapes dating back to the early thirties, and showing the John Logie Baird mechanical scanning system producing 30-line images. England had the first public broadcast TV service in the world, which the BBC put into operation in 1936. This was a monochrome 405-line/50-field system which was then considered a high-definition one. The authors alternately traced the growth of television, its switch to 625-line PAL color, and its current high state of development and expansion in their country. They had also brought with them, as a visible souvenir of their earliest TV efforts, an actual Emitron camera that was used during the 1937 coronation of King George VI.

The Royal Television Society and the authors had gone to a great deal of effort to put together this historical review, and it gave the audience an excellent picture of the origin, growth, and present state of British television.

Tuesday morning's papers were again a mixture of tutorial reviews and current technology. Donald Fink, director emeritus of the IEEE and a moving force in the NTSC color deliberations of the early fifties, covered the forces at work behind America's color TV standards and made some comparisons with PAL and SECAM, the color TV systems used in other countries.

The afternoon session was devoted to a single topic, computer-generated video graphics, a subject which has become very popular with TV broadcasters, as more and more of this kind of equipment begins to filter into studios and post-production facilities.

Again, the first paper was a tutorial titled "An Introduction to Digital Computer Graphics for Television," authored by Tom Porter of Ampex, and delivered by a colleague, Rodney Stock. This well-illustrated lecture familiarized the audience with most of the basic concepts: the differences between analog and digital systems, and the frame store method that is employed in 2D and 3D image synthesis. This paper layed the base for the following presentations which related more directly to emerging or existing computer-assisted video graphics.

Dr. Richard Shoup of Aurora Imaging presented a paper on a system his company is developing that allows for real-time animation on a computer graphics system. He described a relatively simple method for doing limited interactive real-time animation using frame buffer image modification by "look-up" techniques, usually referred to as "color table animation." Shoup then showed a selection of short tapes made with such a system, at NASA during the Saturn fly-by, and at KQED-TV, the PBS station in San Francisco, for the program *Over Easy*. The animated graphics showed space images depicting the solar wind and other planetary phenomena, while the *Over Easy* ones illustrated internal functions of the human heart and other organs.

Wednesday morning was also a potpourri of various papers covering TV cameras, lenses, enhancement systems, teleproductions, batteries, and telecines. The nostalgia in this case came from Frank G. Back, the inventor who coined the term "zoom," and built the world famous Zoomer Company around his innovative optical inventions. Back traced the history of the zoom lens, from his 1944 development of a variable focus viewfinder for the U.S. Signal Corps to the subsequent line of "varifocal" lenses used in film and TV.

On the camera side, Richard Streeter of CBS described the design considerations which must go into a lightweight TV camera that is destined for electronic cinematography. He pointed out that to get the "film look" and 35mm quality from an ENG-type camera took special attention to such factors as resolution, S/N ratio, transfer characteristics, and enhancement.

Speaking of enhancement, another paper by Yves Faroudja described a new approach to automated control of video enhancing system designed for ENG "color under" VTRs. The system employs a record boost circuit which amplifies low-level (small detail) video signals prior to recording, so they will not get suppressed by the action of the VTR. Coupled with this action is a calibrated pilot carrier of 1.7 MHz is inserted in five blank lines of the vertical interval. In playback, the recovered carrier is used to automatically optimize the enhancement circuits. Faroudja showed some tape recordings which had been subjected to this enhancement system, and which exhibited the improved images he claimed.

W. P. Vinten, of that well-known English camera pedestal company,

Continued on page 14

Joe Roizen is international video editor and president, Telegen, Palo Alto, California.

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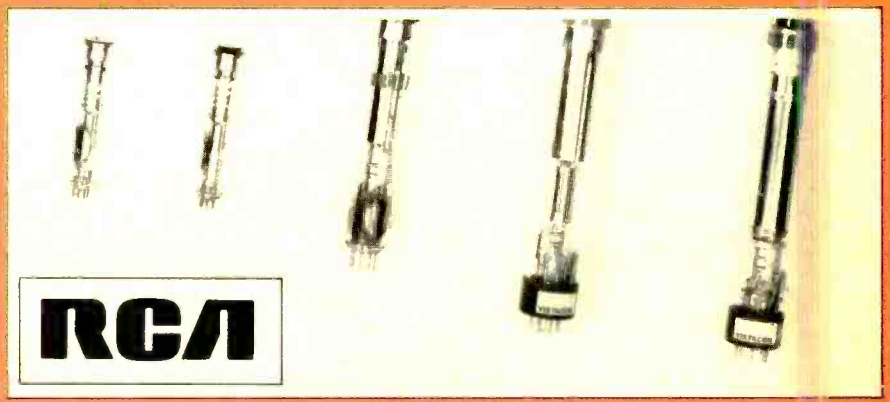

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made what might have been a dull subject very interesting. He showed the cost-effective relationships between moving cameras and operators, or just moving cameras. His major point was that TV cameras have remote electronic viewfinders, therefore the camera operator can remain stationary while the camera is raised, lowered or shifted, as long as the "feel" of the action can be relayed by servo mechanisms.

The problem of finding, training, motivating, and keeping good maintenance personnel also came up, and the suggestion was made that people with a digital background, who are trained in video techniques, are preferable. The plant design should also take into account service needs, and a standardization of documentation would be advantageous.

Videotape recording was the major topic on Thursday, with two historical papers leading off. George Shiers, a West Coast journalist with an affinity for TV, authored a review titled "The Rise of Mechanical Television, 1901-1930," which was read by SMPTE archivist Steve Chamberlain. The paper traced the earliest efforts of phototelegraphy, televised shadowgraphs, and silhouettes. Various methods of television were covered, including the intermediate film system with fast processed film which was then scanned by a television disc.

Charles Ginsburg of Ampex followed with a repeat of his first VTR paper, given in 1957 at the SMPTE conference in Philadelphia. Ginsburg showed slides of the very first pictures obtained from an accurate-scan predecessor to the quadruplex VTR system they finally selected for a commercial product. It was hard to imagine that in the intervening 23 years since that paper was first given over 14,000 quad VTRs have been put into service, and that the numbers of other format VTRs now reach into the millions, affecting every aspect of television.

Friday was the all-digital day, with a series of reports on the status of various standardization efforts in digital audio and video, followed by some papers on editing, digital video effects, SMPTE time code, and others.

Frank Davidoff, one of the most ardent proponents of digital video standards, started the session with a status report on the work of the task force on component digital coding. Davidoff stressed the hard work and frequent meetings that his group has had, and the two documents it has prepared on Quality Objectives and Worldwide Compatibility for digital television. Davidoff also described the close liaison that is being accomplished with the EBU Technical Committee, and the future joint meeting scheduled for February in conjunction with the Winter Television Conference.

Bill Connolly of CBS, chairman of the study group on digital VTRs, gave a progress report on his group's recent activities. He commented on the extensive user survey that was made by sending out a comprehensive questionnaire to 1,500 broadcasters and other interested parties. He was pleased with the over 23 percent return rate, considering the complexity of this document.

While the returned data has not yet been extensively analyzed, Connolly had some preliminary results. These reflected the users' desires for a future digital VTR, and they showed that most potential users want a DVR that will perform about the same, consume approximately as much tape, and have the same features as a current Type B or Type C one-inch helical VTR. The major feature for a future DVR that everyone wanted was 10 generations with no degradation of picture quality. The questionnaire also showed a general understanding that the lowest-cost DVR was not necessarily the optimal solution, and that users would expect to pay extra for improved performance or special features on a DVR. Connolly revealed that at least two digital VTRs operating in the 14:7:7 sampling mode would be demonstrated by Sony at the Winter Television Conference in San Francisco — the format would be a modified Type C machine, and the tape consumption is about the same as the BVH-1100.

It was evident from Connolly's remarks and from statements by other speakers, who have recently covered the DVR topic, that there are two camps of opinion on digital VTRs, which divide on the question of practical packing densities and sampling rates. Sony appears to be favorable to higher than the currently achievable levels, while both Ampex and Fernseh have expressed their leanings toward the lower figures of 160 Mbs and 12:4:4 sampling rate.

Connolly also discussed the advantage of a hierarchy of digital codes to encompass 525- and 625-line TV systems. If the right luminance and chrominance sampling rates are chosen, with the proper simple mathematical relationships, upward and downward extensibility to the system is assured, and that would be desirable.

Mr. Doi of Sony followed up with a well-illustrated and humorous description of the standardization work being done in the digital audio field. He also showed some detailed charts of various digital audio disc systems and the progress made in packing density for digital signals.

The overall feeling was that many of these digital problems in standardization may be resolved at the joint SMPTE/EBU meetings in San Francisco at the upcoming Television Conference.

The theme of the 15th annual SMPTE Television Conference, scheduled for February 6-7 at San Francisco's St. Francis Hotel, is "Production and Post-Production in the '80s." Again this year, the conference will feature papers and panel discussions on the latest in broadcast technology, including New Camera Technology, Digital Video Recording, The All-Digital Studio, and Future Directions for Television. There will also be an exhibit of equipment which is relevant to the technical program. And this year's conference will be the location of two major events related to the future of television technology.

The first is a series of demonstrations of digital component coding techniques being put on for the various standardizing groups of both the SMPTE and the EBU. The purpose of these demonstrations is to give committee members adequate information on which to base a specification that could lead to a worldwide compatible, digital coding system for digital TV studios.

In addition to these demonstrations, there will be some newer versions of the experimental digital video recorders that have been previously shown, exhibiting the latest advances made by various VTR manufacturers in that field.

The second special feature of the conference is the first showing in North America of the NHK Research Laboratories' high-definition television system.

NHK Labs has agreed to bring over from Japan the complete color camera and display equipment developed for their 1125-line color television system. This includes a special broadband color camera with unique two-inch Saticon pickup tubes and a large screen, and a direct-view color picture tube display device with a high-resolution faceplate. This equipment, which has been seen by only a few people who have recently visited the NHK Laboratories, will be in operation during the conference for delegates to get a good first look at what high-definition broadcast color TV could look like in a few years.

The papers lineup is also impressive, with a complementary set of papers on the conference theme of production and post-production in the '80s. Experts from various parts of the world have been invited to present the latest word on advanced television technology, and major TV networks and equipment manufacturers will also be represented.

Continued on page 16

Computer set-up and triax too

Today, broadcasters are classing computer setup and triax as necessities. Ikegami offers you a choice of two such cameras. Both are proven in the studio and field.

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The session schedule follows:

Friday morning, February 6 — Digital Video Recording: SMPTE Digital Television Tape Recording Study Group Users Survey Report, David Schmuelle, TPC Communications, Pittsburgh, Pa.; 8/16, A New Channel Code for Magnetic Digital Recording, Max Artigalas, Thomson-CSF, France; Recent Developments in Error Concealment Techniques, M-J. Colaitis and D. Nasse, CCETT, France; A Format for Digital Television Recording, John Baldwin, IBA, U.K.; Digital Video Tape Recording with Increased Packing Density, Progress Report, Masahiko Morizono, H. Yoshida, Y. Hashimoto, and T. Eguchi, Sony Corporation of Japan; Aspects and Considerations About the Mechanical Format of Digital VTRs, Hans Groll, Robert Bosch GmbH, West Germany; Mechanical Tape Format Considerations for Digital Television Recording, C. Robert Thompson, RCA; Formats for Digital Video Tape Recorders, D. Dolby, M. Lemoine, M. Felix, Ampex.

Friday afternoon — New Technologies in Cameras: DVTR Editing Considerations for Multiplexed Audio Versus Separate Audio Edge Tracks, Kenneth Clunis, 3M Company, Mincom Division; Digital Television Error Reduction, A. Goldbert and John Rossi, CBS Technology Center, Stamford, Conn.; Reflections of a Camera Designer, L. Germany, Pye TVT, U.K., and H. Blom and E. Tienkamp, Philips, Holland; A Super Camera Using a Built-in Computer Control System, Takaghi Sueska, Japan Broadcasting Company; Advances in EFP Camera Design, John Ryan, Ampex; High-Resolution Camera System, A. Fronken, Philips, Holland; Lag Reduction and Lag Characteristics of Television Camera Tube Signals, R. G. Neuhauser, RCA.

Saturday morning, February 7 — Future Directions for Television: Multiplex Sound Television Broadcast in Japan, K. Iizuka, Tokyo Broadcasting System; Questions on the Orientation of Research in High-Definition TV in the '80s, M. Joseph Polonsky, Thomson-CSF, France; High-Definition TV Studies on Compatible Basis with Present Standards, W. Wendland, Dortmunder University, West Germany; The Present State of the Study of High-Definition Television Systems in Japan, Dr. Takashi Fujio, NHK, Japan; NHK Demonstration of High-Definition Television.

Saturday afternoon — The All-Digital Studio: Systems Engineering Considerations in the All-Digital Television Production and Transmission Center, Michael Tooms, Protel Broadcast Services, U.K.; Digital Decoding of PAL and NTSC Signals Using Field Delay Comb Filters and Line-Locked Sampling, C.K.P. Clarke, BBC, U.K.; Test Signals in the Digital Domain, J. Judge, Tektronix; Worldwide Standardization — Now or Never, Thomas Robson, IBA, U.K.; Panel Discussion on Digital Video Component Tests Performed by the SMPTE Committee on New Technology.

Other activities include a Get-Together Luncheon on Friday and a Wine and Cheese Party for registrants on Friday evening. A post-conference tour has also been scheduled, and a program for spouses is planned.

Criteria set for SBE scholarship

The Society of Broadcast Engineers (SBE) has established the criteria for awarding the first annual Harold E. Ennes Scholarship. At the same time, the SBE is accepting donations to the

Continued on page 20

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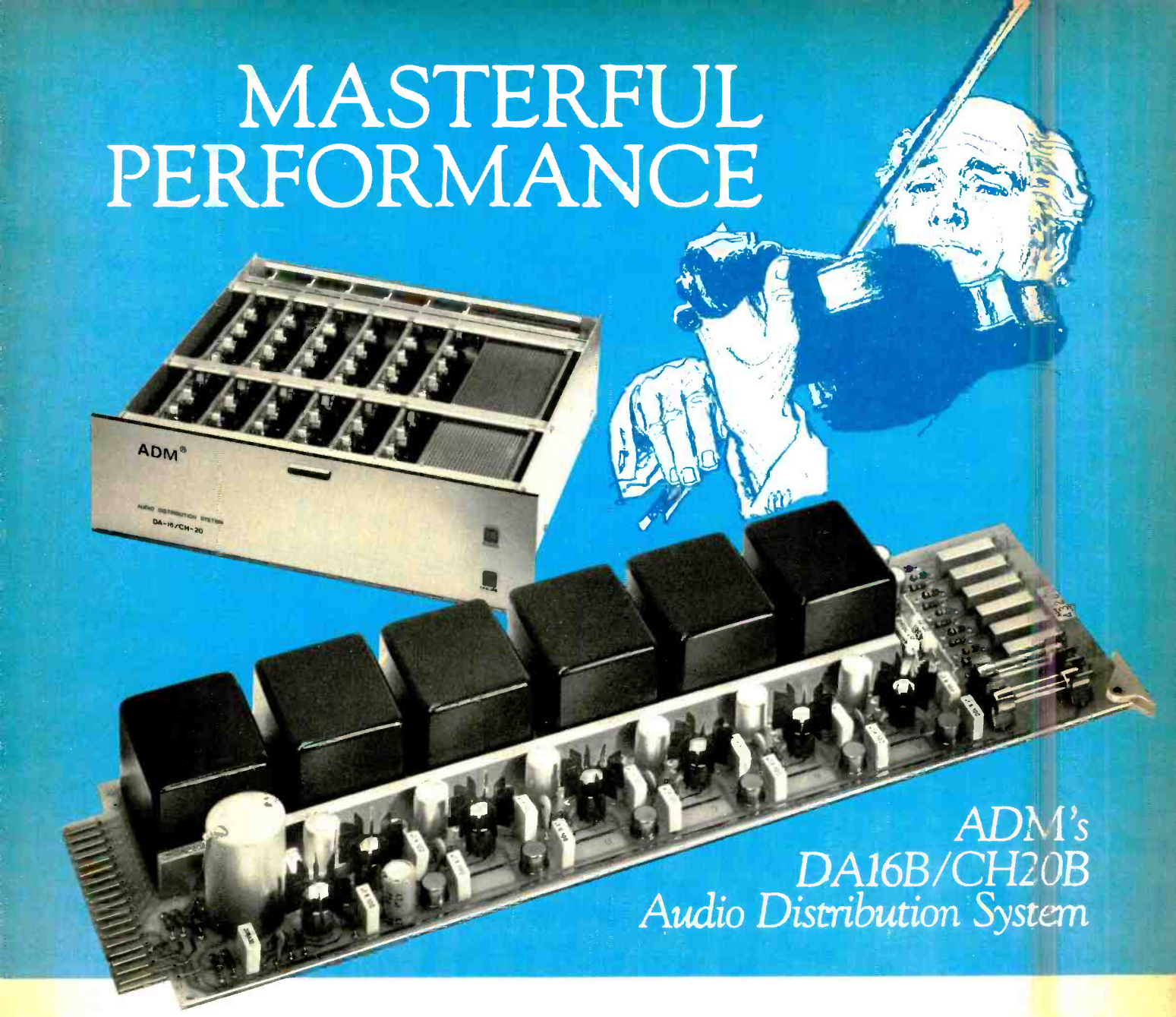

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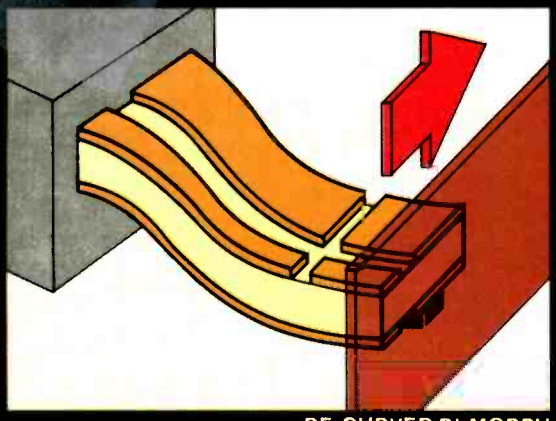

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fund. The Scholarship winner will receive $700.

Harold Ennes, known to many as the father of broadcast textbooks, devoted the latter years of his life to sharing his vast knowledge of practical and theoretical electronics. At the time of his death, Ennes was a regular column contributor to the SBE newsletter, *The SBE Signal*, and was the digital editor of BROADCAST COMMUNICATIONS magazine.

Recognizing Ennes' long-time interest in helping engineers entering broadcasting, the SBE initiated the Harold E. Ennes Scholarship Fund shortly after his death in 1980. Contributions may be sent to SBE's national office at P.O. Box 50844, Indianapolis, IN 46250. Checks should be made out to The Harold E. Ennes Scholarship Fund.

In announcing the criteria for applications, the SBE submitted the following rules:

1. The applicant must submit an application no later than February 1, 1981. The application should be sent to the SBE national office address above.
2. The application should contain a brief biography and statement of interest and goals in engineering.
3. A technical paper should be included, describing in the applicant's own words, anticipated technical changes five years into the future.
4. A description of how the award will be used.
5. And the application should include full name, age, address, telephone number, current position, and two SBE member references confirming eligibility.

The technical paper should be 400 to 500 words for potential publication after completion of the educational training. Announcement of the 1981 winner will be made at the annual national SBE meeting, which is held in conjunction with the NAB convention.

According to the SBE, the Award Committee will be chaired by James Hurley, immediate past-president of SBE. Other members include Leonard Ballard and Hugh Cleland, representing the SBE board of directors; Ron Merrell, vice president/editorial director of *Broadcast Communications;* and Lewis Wetzel, senior vice president for engineering, NAB.

FCC REPORT

Lotteries don't win at FCC

Over the years there seldom is a case that comes before the FCC that gets tougher treatment than lotteries or numbers games. Here's a short review that will help avoid these headaches.

A lottery has three basic ingredients. Eliminate any of the three and you no longer have a lottery. What are they? The language of the law starts with *prize*. This does not need to be money. Any prize will do. It could be tickets, savings bonds, a paid-for vacation, a car, or any of an endless list of winnings.

Consideration is the second element. Normally, consideration means that you must put money into the pot, or at least you must purchase something. Technically, if you have to purchase *anything* to have a shot at the prize, it qualifies as consideration.

The final element is *chance* . . . or the luck of the draw. If you have to purchase anything for a shot at the prize(s), and if your name must be drawn by chance, you have a lottery.

Take the case of a Miami station. The Commission recently denied their license renewal because the judge found that the station did not abide by its written promises to the Commission about broadcasting false, deceptive, or misleading matter in connection with contests. So contests can rank right up there with lotteries.

RX4M, the Voice of Clipperton, has been silenced. Actually it was the voice of a Seattle station capable of worldwide coverage. Using sophisticated mobile tracking equipment, engineers traced the signals to the home of a man in Seattle.

Operating in the 7 and 21 MHz bands, RX4M was another example of shortwave operations worldwide that jam up the frequencies and interfere with other services. In the 7 MHz band, you might think there are more shortwave stations than hams. Now there's one less.

RTNDA looks at new technology

BY PHILLIP KEIRSTEAD

Broadcast journalists and exhibitors packed the Diplomat Hotel in Hollywood, Florida, last month for the 35th International Conference of the Radio-Television News Directors Association (RTNDA).

The beachside resort was warm and windy, but the greater portion of delegates skipped the tanning benches for cool, dimly lit session rooms. In fact, some vendors said too many delegates stayed in the sessions. The attendance at the equipment displays was moderate except during breaks in the program. And many exhibitors found themselves having to "educate" touring news directors.

The "educational" approach was necessary because the conference exhibits were technology-intensive. Some vendors were casting about for interpreters who could explain the merits of their products to the largely non-technical journalists.

During the conference there were reports that RTNDA is planning a computer seminar, perhaps within the next six months, as a result of news and weather computer vendors showing up in full force and becoming the focal point of the show.

Newsroom computer systems were displayed by Basys, Jefferson Data, McInnis-Skinner, Station Business Systems, and System Concepts. Slyboom stayed home as did Integrated Technology, which has just installed a system at KCBS in San Francisco. System Concepts decided to promote a more elaborate system which included word processing as well as various storage and record-keeping functions. One well-informed source reports System Concepts prefers to remain a system oriented to aiding a news director, rather than programming a comprehensive newsroom, as do the other systems.

Basys and Cables News Network, Jefferson Data and WBTV, Station Business Systems and KSL and WQAD, were all busy answering questions from curious news directors. Systems are or have been on-line with these organizations.

McInnis-Skinner added a financial record-keeping program to its Newscan system. An old firm in information retrieval, Mead Data Central, showed up with a journalists' version of its legal-research system, LEXIS. The new line is called NEXIS and it stores huge quantities of news and analysis from domestic and international wires, newspapers-of-record and news magazines, plus an encyclopedia.

Two computer newsrooms, Jefferson Data and Station Business Systems, were cross-promoting Beston Electronics, a prompter firm. Other prompters were shown by Cinema Products, Q-TV/Telesync, and Telescript.

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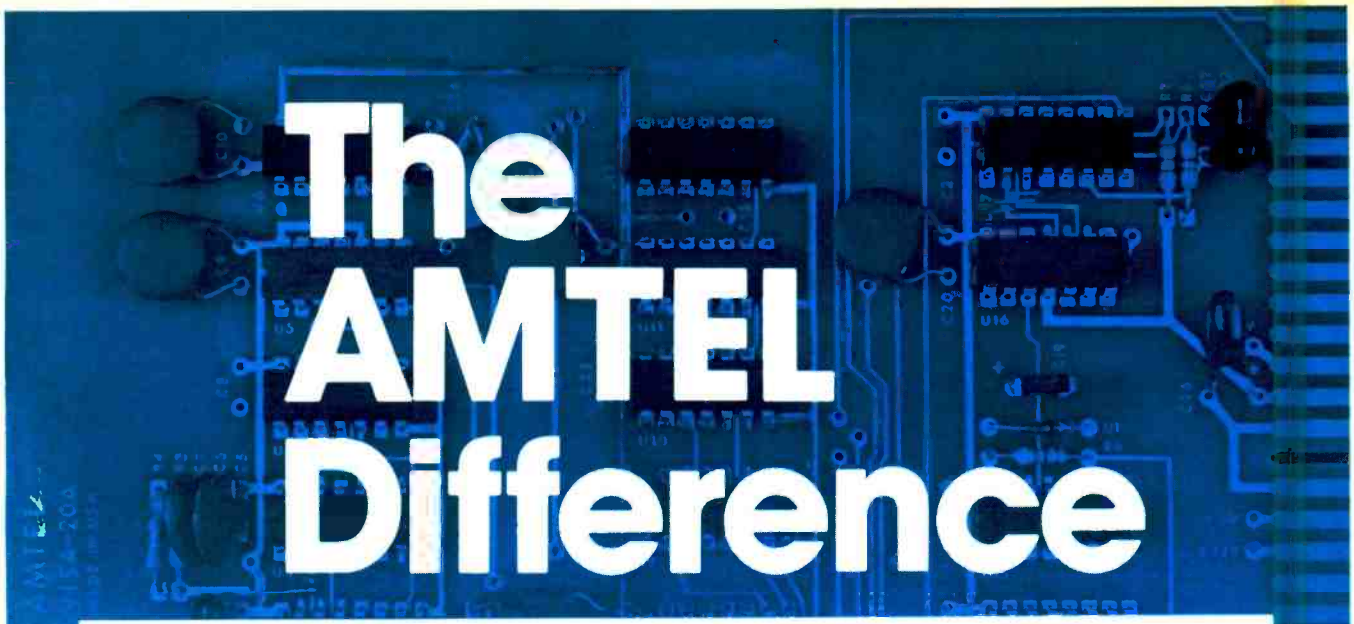

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The Visa-20A is compatible with all gen-locked HVS 504 and 520 Time Base Correctors. The modification kit is quickly and easily installed within the Time Base Corrector. Kits for Time Base Correctors of other manufacturers are available on request.

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Computerized weather information systems attracted a lot of attention. Colorgraphics Systems showed color weather graphs; Information Processing Systems added a color graphics system to its satellite weather recorder; Mesomet promoted its computerized meterological and environmental service; SynSat International was selling its Med-Weather System, which shows how a region's weather will impact on health; Technology Services showed color weather radar; Weatherscan displayed its weather data service and weathergraphics system; and Weathermation showed its color remote radar.

The word on the floor was that as news directors acquire greater total responsibility for station information services — news, weather and sports — they are becoming more interested in weather electronics.

There were also displays of rapid-update sports graphic and computer systems.

To an extent the glow was off helicopters, although two helicopter firms and several microwave manufacturers were present. One microwave manufacturer pointed out his dilemma saying he wanted to educate news directors, but he didn't want to offend his best customers — the chief engineers.

While the news directors were showing a great deal of curiosity about computerized newsrooms and color weather graphics, a number said the bottom line was still improved ENG equipment. RCA responded by showing its new TK-86 — which reportedly absorbs all the best modifications of the TK-76 and is supposed to be easier to carry for long periods of time.

Ikegami brought the HL-79 and HL-78A; Sony had a full line of cameras, recorders, and editing equipment; and Toshiba, a late arrival, set up in a hospitality suite.

Perhaps the irony of the biggest-ever RTNDA convention was summed up by a Sony representative who pointed to a piece of gear which was shown in Hollywood (it will be available for delivery by the spring NAB Convention) and will already be replaced on the display by a more sophisticated model when general managers and chief engineers hit the massive Las Vegas Convention Center for the NAB.

Engineers asked to recertify

The Society of Broadcast Engineers (SBE) has announced plans to notify all engineers certified under the grandfather provision in January 1977 that their certification expires on January 1, 1982.

The announcement was made during the SBE's semi-annual Chapter and Certification Chairmen Meeting, held recently in St. Charles, Missouri.

According to Mary Brush, certification secretary, notices will be mailed in May asking these engineers to recertify themselves. Applications, available from the SBE national office in Indianapolis, will be accepted six months prior to the expiration date.

Brush said applications for recertification should be made directly to the SBE certification secretary. The national office will then mail the applications to the SBE chapters for review of all local activities for SBE members and nonmembers. Also available from the national office is a recertification brochure. For more information, contact the SBE, P.O. Box 50844, Indianapolis, IN 46250.

Also at the meeting, chapter chairmen discussed a need for better communication between chapters, ways to improve their chapter newsletters, chapter rebates, meeting attendance and programs, local seminars, membership, and the image of the SBE.

Bob Jones, SBE president, told the meeting that the board of directors is planning to continue the fight against the FCC Docket 20817 proposal to discontinue the First Class license. (Jones presented the official SBE position on the license issue in the December issue of BROADCAST COMMUNICATIONS.)

Business Hotline

US JVC CORPORATION — JVC has moved into new headquarters at 41 Slater Drive, Elmwood Park, New Jersey 07407. The new facility is a three-story structure with 176,000 square feet of space and 16 major access loading docks. Speaking at the official ribbon-cutting ceremony, JVC director and president, N. Sakoda, said, "We at JVC have made a serious commitment to the U.S. market. Our people have worked very hard to make US JVC a success. I think you can clearly see how strong our commitment to the U.S. is, with our fine new headquarters . . ."

MICRO CONTROL ASSOCIATES — The Republic of China recently placed an order with Micro Control Associates for aural studio-transmitter link equipment and accessories, totaling in excess of $250,000. According to the company, Micro Control's STL equipment was selected for the superior design and outstanding performance of the STL re-

Continued on page 24

The big news is performance. The good news is price.

Once again Panasonic makes headlines with our newest ENG camera, the AK-710. And the reasons are simple: High performance Saticon® tubes plus prism optics—all for a newsworthy price of $10,950*

The AK-710's compact size, light weight and durable die-cast chassis make it a natural for electronic newsgathering. While the performance of a high-index optical system with built-in bias light and three Saticon tubes makes it a natural for news broadcasting. Performance like horizontal resolution of 500 lines center, a S/N ratio of 52 dB and standard illumination of 200 footcandles at f/3.5. And for even more light-gathering capabilities, there's a 2-position high-gain switch.

You'll also get colors as intense as the action, thanks to the AK-710's automatic white balance circuit and built-in color temperature conversion filter wheel. And for minimal comet tailing, the AK-710's feedback beam control stabilizes highlights that exceed normal white levels without reducing dynamic range or resolution.

Equally newsworthy is the AK-710's built-in genlock and adjustable horizontal and vertical blanking intervals. With them the AK-710 can double as a system camera. There's also an optional remote control unit, as well as a 5" CRT viewfinder for studio use.

So if news is what you're after, go after it with the AK-710. A newsmaking camera from Panasonic.

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*Manufacturer's sugg. price. (Lens not included.)
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VIDEO SYSTEMS DIVISION

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ceiver. Robert Richards, MCA president, reports that pending international orders which appear imminent could send Micro Control Associates into the new year with a half to three quarters of a million dollars in new orders.

DATATRON — Datatron reported a $43,056 profit before taxes on sales of $1,899,241 for the first quarter ended September 30. Herbert Perkins, president, stated that expenses associated with the company's relocation to its new facilities, and increased development costs attendant to the introduction of the company's new Vanguard videotape editor and Spectrum benchtop integrated circuit tester, impacted the first quarter results. Headquartered in Tustin, California, Datatron is a leading manufacturer of computerized videotape editing systems, semiconductor test systems, and a broad line of indicators, displays, and wire-wound magnetic components.

MCI/QUANTEL — Quantel has received an Emmy Award for engineering achievement with its DPE 5000 digital production effects system. The company was cited recently by The National Academy of Television Arts and Sciences "for the development and implementation of digital techniques for the production of video special effects." The DPE 5000 is a computer-based effects system that allows television pictures to be electronically processed during live broadcasts in post production. Pictures may be compressed, enlarged, repositioned, frozen, squeezed in any direction, flipped, tumbled, rotated, or otherwise manipulated.

AMPEX — Field Communications has ordered nine VPR-2B helical videotape recorders and an HPE-1 editing system worth $850,000 from Ampex. Field Communications plans to install the recorders at WFLD-TV in Chicago, WLVI-TV in Boston, and WKBD-TV in Detroit. The Detroit station also will receive the editing system.

COMPACT VIDEO SALES — Electronic Location Productions of Reno, Nevada, has purchased a Compact 22 mobile field production unit from Compact Video Sales. Purchase of the C-22 is part of the company's entry into the facilities leasing field in northern Nevada and adjacent states. The C-22 can handle up to six broadcast cameras, two 1-inch VTRs, portable VTRs, and an integrated system of switching, audio monitoring intercommunications, and terminal equipment. BC

SBE MONTHLY LOG

CHAPTER 2 — Northeastern Pa. The program on new QEI Tunable Stereo Modulation Monitor and FM Test Set, model 691, was arranged through courtesy of Val-Tronics Inc. in Pittston, Pa.

CHAPTER 3 — Kansas. Brock Jabara and Phil Nelson of Superior Sound presented a very interesting program on various aspects of audio. Different types of microphones were discussed, a familiar technique of microphone phasing was demonstrated, and many impressive instruments were on hand to complement the demonstrations.

CHAPTER 9 — Phoeniz, Arizona. Ralph Dodson discussed the design criteria for their new KMCR studios on the Mesa Community College Campus. The studios, operational in April 1980, were designed with acoustics, operational needs, and engineering taken into account. KMCR is an affiliate of the National Public Radio Satellite Network.

CHAPTER 11 — Boston, Mass. Richard Cerny, marketing director, and Ted Witkowitz, engineer, with Valtec presented a program on Exploring Applications for Fiber Optics. This included two-way discussions to explore the technology of fiber optics and some of the now common, and some of the future requirements in the radio and television broadcast field.

CHAPTER 14 — Connecticut Valley. Arthur Machia of Panasonic gave a presentation and demonstration of the Panasonic ¾" editing system. He was assisted by Harry Davies and Greg Johnstone of National Video Services. A tour of the television production facilities of Northeast Utilities followed the program.

CHAPTER 17 — Minneapolis-St. Paul, Minn. The group toured the recently rebuilt studio facilities of KTCA-TV, an educational VHF/UHF station serving Minneapolis-St. Paul. The studio features some of the latest technology in video and audio, including extensive use of microprocessor-based broadcast gear.

CHAPTER 22 — Syracuse, N.Y. Fred Huffman of RCA Broadcast Systems gave a presentation on "The Design, Development and Performance Characteristics of an all Solid State 5 kw AM Transmitter." Robert Parkhurst, CE, WSTM-TV, was elected vice-chairman and Mark Humphrey, WAER-FM, was elected treasurer to replace the former officers who resigned because of changes in employment.

CHAPTER 28 — Milwaukee, Wis. A film was shown, detailing the fiber-optics system used in covering the Winter Olympic Games in Lake Placid.

CHAPTER 39 — Tampa Bay Area, Fla. Tektronix presented an educational program on "New Concepts in Audio Distortion Measuring Techniques."

CHAPTER 52 — Central Ohio. John Hull of MUS-I-COL Sound Recording Studios lectured on their facilities, including the recording techniques used in 16 track, stereo disc mastering, noise reduction, microphone placement, etc., plus he arranged a complete tour of the plant.

CHAPTER 53 — Miami, Fla. Joe Ewansky of RF Technology gave a talk and slide show on their microwave equipment for ENG and helicopter use. He also showed how the networks did the political conventions with portable microwave units.

CHAPTER 60 — Richmond, Va. Fred Huffman of RCA Broadcast Systems gave a very interesting & informative program on the new RCA BTA-55 AM 5 kw solid-state transmitter.

CHAPTER 66 — Fresno, Calif. The meeting featured an SBE-sponsored picnic at the Meadow Lakes picnic grounds, 4500 feet in the Sierra Nevada Mountains. Meadow Lakes is the home of KFSN-TV; KFTV; KJEO-TV; KAIL-TV; KFYE-FM; KFRY-FM; KKDJ-FM and KFCF-FM. A tour of all these facilities followed the picnic with each station providing a representative.

CHAPTER 67 — North Texas. "Where Do We Get The Parts We Need?" A moderated panel discusion with representatives of the major electronics parts distributors in the Dallas/Fort Worth area. Moderator: Clyde Miller, director of engineering, KERA-TV/FM. Guests also answered questions from the floor.

CHAPTER 68 — Birmingham, Ala. Newly elected officers are James E. Gray, chairman, Marion J. Hand, vice-chairman; and Al Renfro, sec/treas. Due to the election and a number of business matters discussed, no formal program was planned.

CHAPTER 71 — Eureka, Calif. Videomedia of Sunnyvale, Calif., gave a demonstration of their new Z6 editing system with Micro-lock. Also demonstrated was the new JVC KY-2000 portable camera and the new Hitachi SK91 portable camera.

FOR ADDITIONAL INFORMATION about the Society of Broadcast Engineers, contact the National SBE Office, P.O. Box 50844, Indianapolis, IN 46250; (317) 842-0836.

Harris' 9100 Facilities Control System leads the way to lower operating expense.

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*Circular Polarization

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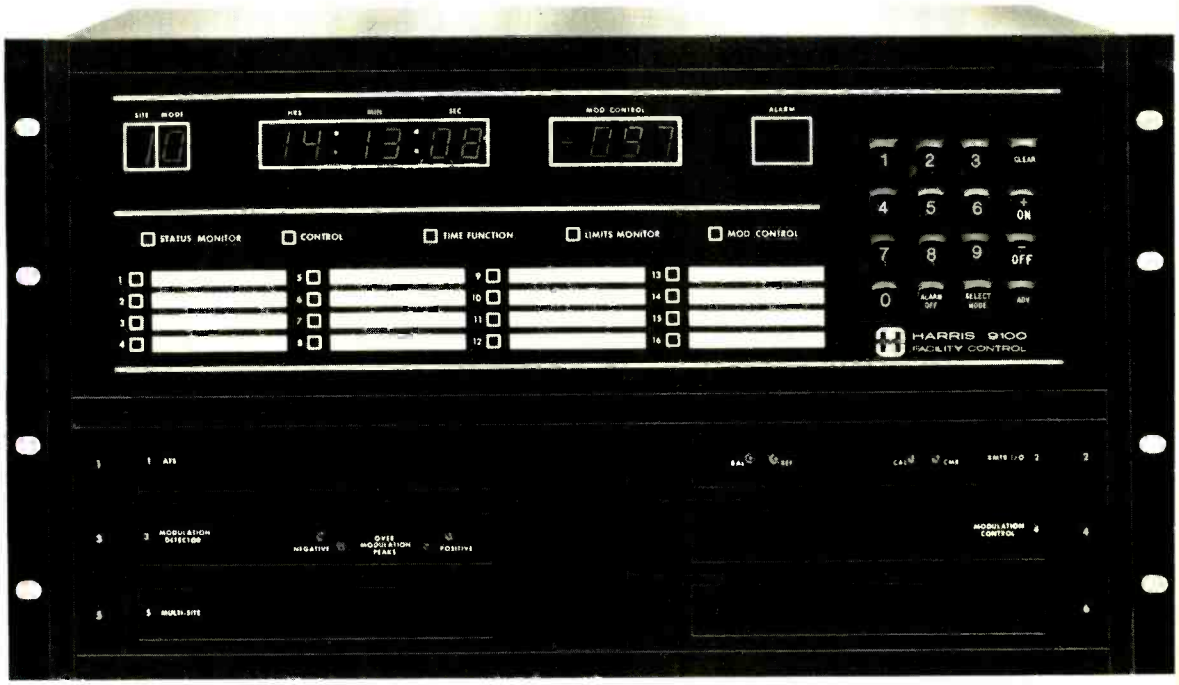

CP* provides the best TV signal. Harris provides the best CP system.

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GLOBALVIEW

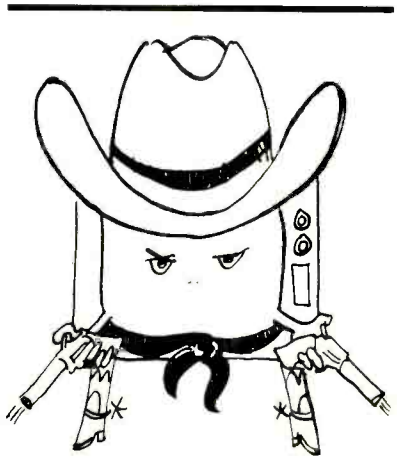
High rollers on low power

When the FCC gave its initial approval for the creation of low-power TV stations in the U.S., the broadcasting community shuttered. Where would all these stations go? And isn't the broadcast indostry already facing enough problems as it is, what with cable and pay TV?

Needless to say, the dice have been thrown and the crowd is anxiously awaiting the new cast of Washington characters which will take over the Hill this month.

In the meantime, some high rollers have already raised the stakes. Among them is Neighborhood TV Company, a new firm backed by Allstate Insurance venture capital.

As reported in *Video News*, Neighborhood TV has submitted an application to the FCC seeking the right to build 101 low-power UHF TV stations coast-to-coast. The goal is to link these low-power stations via satellite with KUSK-TV in Prescott, Arizona. Being called "country television," KUSK would broadcast country and western music, comedy, rodeo, "Zane Grey adaptations," etc., from one end of the country to the other.



And to answer the question, "Who are these low-power stations going to serve?" William Sauro, Neighborhood TV stockholder and construction permit holder for KUSK, says by 1982 the company will provide free TV service and carry national advertising to about 90 translators, making "country television" available to 65 million people.

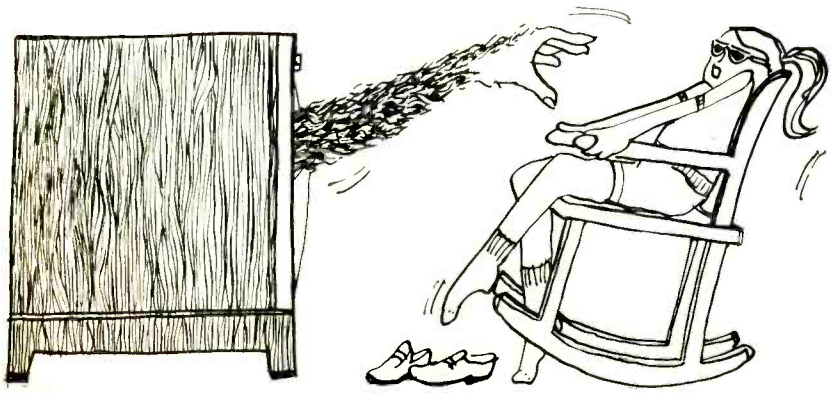
> "There is no longer any widespread wish to push too hard at the state-of-the-art barriers if this involves a real risk of projects having later to be abandoned, or running over time-scale or where no realistic estimates of costs are possible. In times of financial restraint the virtues of 'plain ordinary television' become more and more evident—not that any television can in truth be considered as plain or ordinary."
>
> —Pat Hawker, principal engineering officer, Independent Broadcasting Authority (U.K.), in a recent issue of COMBROAD

The 3-D attack is back

Put on your cardboard special glasses and get ready. From out of the '50s, from beyond outer space, three-dimensional films have returned . . . via pay TV.

Last month, SelecTV in Los Angeles broadcast *Miss Sadie Thompson*, a 1953 production starring Rita Hayworth and Jose Ferrer which was shot in 3-D, and *Spooks*, a 3-D short featuring The Three Stooges, over its pay TV system. And this month, Milwaukee pay TV subscribers will also be reintroduced to this lost technology.

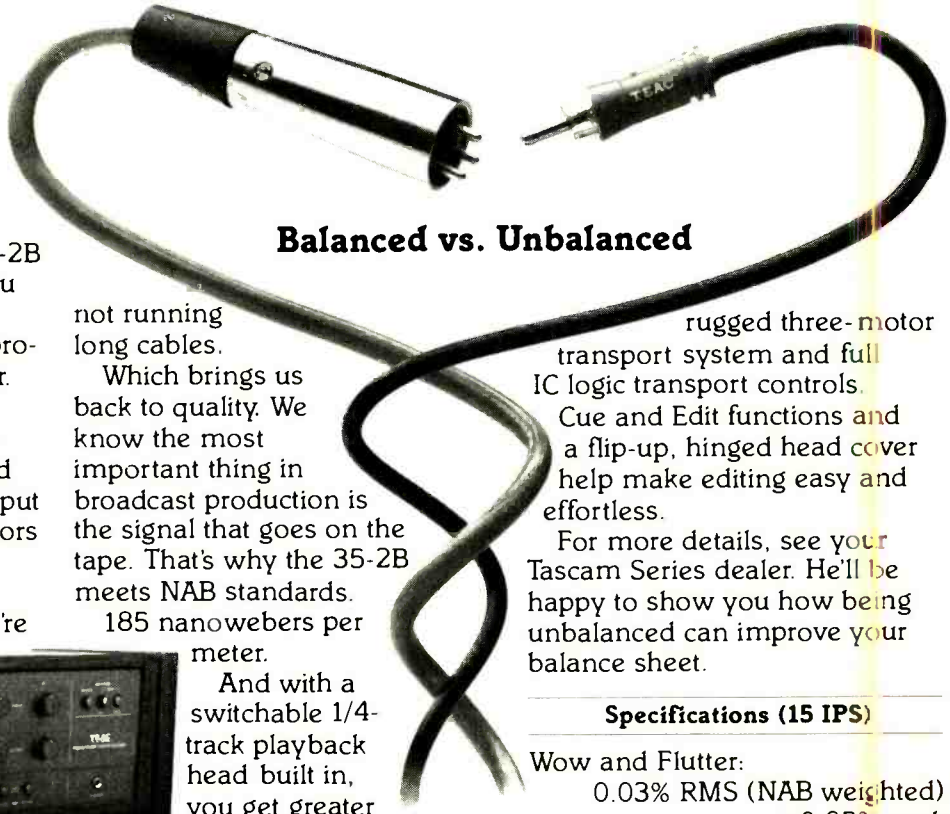
Broadcasting 3-D movies over television is possible from a new process, developed by 3D Television Systems, which electronically transfers movies originally filmed in three dimension onto a master 3D videotape. According to the company, the new system provides true three-dimensional vision capable of portraying objects literally leaping out of the screen to within several inches of the viewer's eyes and then going back into the television screen.



Over 120 three-dimensional movies were produced during the 1950s in an attempt to halt the inroads television was making into the entertainment business. The first 3-D feature made in Hollywood was *Bwana Devil*. Others include such famous 3-D'ers as *Creature from the Black Lagoon*, *It Came from Outer Space*, *The Maze*, and *House of Wax*.

SelecTV subscribers received a special coupon in their monthly program guide that entitled them to two pairs of 3-D glasses when turned in at any local Sears. Subscribers also received a special 3-D party invitation for friends.

IF WE SAID YOU COULD MAINTAIN HIGH PRODUCTION STANDARDS FOR LESS THAN $2000, YOU'D SAY WE'RE UNBALANCED.



Balanced vs. Unbalanced

By using a −10 unbalanced system, instead of +4 balanced, we eliminated hundreds of dollars of line amplifiers, transformers and balanced audio cables.

And that's how the Tascam 35-2B recorder/reproducer can save you money.

Without compromising your professional quality one nanoweber.

Unless you're running cable hundreds of feet long, there's no real difference between balanced and unbalanced. Since input/ouput levels and impedance aren't factors in recording quality.

So it pays to use the Tascam 35-2B in production, where you're not running long cables.

Which brings us back to quality. We know the most important thing in broadcast production is the signal that goes on the tape. That's why the 35-2B meets NAB standards.

185 nanowebers per meter.

And with a switchable 1/4-track playback head built in, you get greater flexibility at no extra cost.

What's more, the 35-2B features a rugged three-motor transport system and full IC logic transport controls.

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For more details, see your Tascam Series dealer. He'll be happy to show you how being unbalanced can improve your balance sheet.

CS-600 Console optional.

Specifications (15 IPS)

Wow and Flutter:
0.03% RMS (NAB weighted)
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Frequency Response:
40 Hz-22 kHz, ± 3dB at 0 VU

Signal to Noise Ratio:
Reference 1 kHz at 10 dB above 0 VU (650 nW/m) 65 dB A weighted (NAB) 92 dB A weighted with integral dbx*

*"dbx" is a trademark of dbx Incorporated.

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The 32-2B and the compact 22-2 recorder/reproducers can save you even more money.

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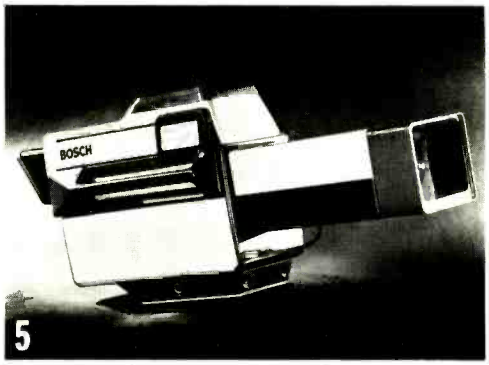

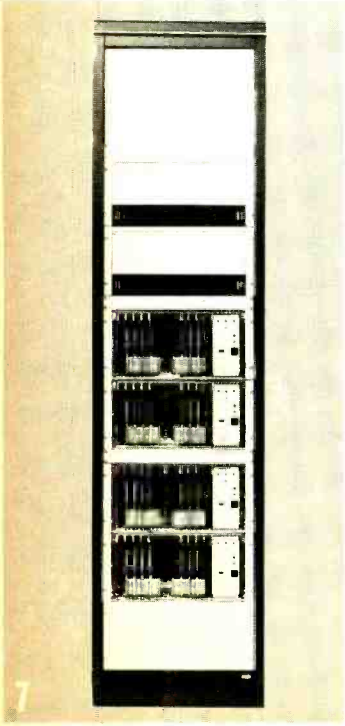

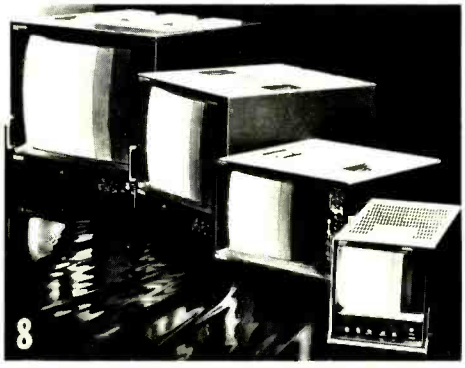

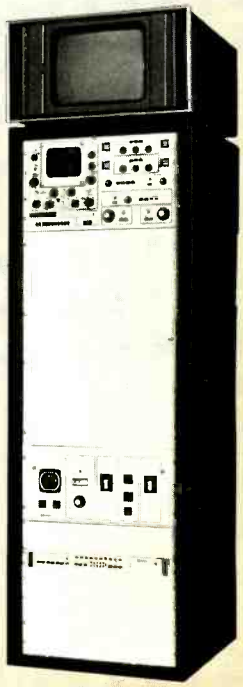

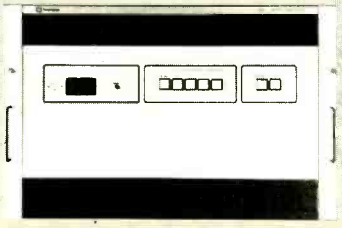

The most comprehensive family of products now offered to the broadcast industry.

VTR's. Superb Bosch mechanical engineering provides 1-inch interchange and multi-generation performance that is unsurpassed. Shown (1 at left) are the reel-to-reel portable BCN-20, the reel-to-reel studio recorder BCN-51, and the world's first automatic multicassette machine with 16 hours of continuous playback: BCN-100. Also in the BCN family is the unique BCN-5, 18 lbs. lighter than any other 1-inch portable. (2)

Mach One™ Computer-Assisted Editor. By any comparison, Mach One's keyboard requires the absolute minimum number of keystrokes for all operations, which include special effects and auto assembly. Controls up to six VTR's. (3)

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NEWSMAKERS


ANGEVINE

Eric Neil Angevine and **Phillip O. Keirstead** have joined the staff of BROADCAST COMMUNICATIONS, it has been announced by **Ron Merrell**, editorial director.

Angevine, the new acoustics editor, holds a B.S. in Architectural Engineering and an M.S. in Architectural Engineering specializing in acoustics, both from the University of Texas at Austin. He is a certified intern engineer in the state of New York and is a visiting lecturer in the School of Architecture at the State University of New York at Buffalo. Angevine is a member of the Acoustical Society of America and the American Society of Heating, Refrigerating and Air Conditioning Engineers, for which he serves on Technical Committee TC 2.6 on Sound & Vibration. He is also an affiliate of the Institute of Noise Control Engineering. Angevine Acoustical Consultants Inc. is located in West Falls, New York.


KEIRSTEAD

Keirstead, news technology editor, has a B.S. in Broadcasting from Boston University and an M.A. in Journalism from the University of Iowa. He began his career as an announcer/newsman for WCCC-AM/FM in Hartford, Connecticut. Within a year he moved to WNHC-TV (now WTNH) to be continuity and traffic supervisor. After completing his M.A., he moved to Winston-Salem, North Carolina, to become the bureau chief for WFMY-TV, Greensboro. Later he added duties as a weekend anchor/producer. In 1967 Keirstead moved to St. Joseph, Missouri, to be news director of KFEQ-AM/TV (now KQTV and KFEQ). A year later he returned to Hartford to head the news department at RKO's WHCT-TV.

In 1969 he joined The Associated Press, first as newsman/regional broadcast editor in Boston, and then as a writer/national broadcast editor in New York. Subsequently, he joined CBS News, where he served as a writer/editor/producer/reporter until 1977. During that time he won three national awards for documentaries produced for CBS News. In 1977 Keirstead switched to teaching. He is currently an associate professor of journalism at Florida A&M University in Tallahassee. He has published three textbooks dealing with broadcasting and has written a variety of articles covering legal and broadcast topics. He also consults for government agencies in the area of energy education.

Keirstead is a member of the SPJ-SDX Freedom of Information Committee, the Broadcast Education Association Internship Committee, the Association for Education in Journalism, and the Radio-Television News Directors Association.

Maurice Lemoine, a principal engineer in Ampex Corporation's Audio-Video Systems Division, is the recipient of the David Sarnoff Gold Medal for 1980 from the Society of Motion Picture and Television Engineers. Lemoine received the award for his leadership in and technical contributions to digital equipment design that lead to the introduction of digital time base correctors for several videotape recorders, and more recently, to the achievement and demonstration of high-quality videotape recording. A 15-

Continued on page 32

9100 Digital Video Processor

NoiseReducerFrameSynchronizerTimeBaseCorrector.

The new Thomson-CSF 9100 Digital Video Processor gives you all three capabilities—yet costs only slightly more than ordinary systems.

We developed noise reduction technology that delivers up to 15 dB of S/N improvement in four presettable settings. So satellite signals become clearer. Film-to-tape transfers are less noisy, less grainy. And for ENG applications, signals come out sharper, without the excessive low-frequency chroma noise identified with ¾-inch VTR's.

But here's what makes the 9100 such a wise investment.

We've added a frame synchronizer that gives you the added feature of freeze-frame capability. A built-in line-by-line time base corrector for ¾-inch VTR's. And, a convenient 4 x 1 switcher frees valuable cross-points while a processing amplifier provides complete output signal control.

Only Thomson-CSF gives you so much versatility and signal improvement in a single video processor.

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year Ampex veteran, Lemoine currently supervises engineers engaged in the study of pulse code modulation video recording, including the design, building and evaluation of experimental recorders. He continues to work on a higher performance digital videotape recorder.

Carol Cotter and **Mack Anderson**, representing WHA-TV, Madison, Wisconsin, at the International Film and TV Festival of New York, accepted the award for "top documentary of the year" on behalf of the station and the Wisconsin Educational Television Network. The winning program originally aired last May on *The Wisconsin Magazine* under the title "Seraphim." Retitled "Passing Judgment," the segment was later aired on the national public television series *U.S. Chronicle*. WHA staff took advantage of Wisconsin's new courtroom policy allowing cameras to take a close look at Seraphim's flamboyant behavior and interviewed Seraphim in his chambers on his "law and order" image. Cotter is WHA executive producer for public affairs; Anderson is a producer for public affairs.

Scott Michels was recently named vice president, station services, affiliate relations, CBS Television Network. He succeeds **Tony Malara**, who was appointed vice president, affiliate relations, CBS Television. Michels joined CBS in December 1978 as district manager, affiliate relations, CBS Television. He has been responsible for the development and maintenance of relations, communications, and clearance efforts with CBS Television Network affiliated stations in the Mid-Atlantic District, encompassing Indiana, Kentucky, North Carolina, Ohio, South Carolina, Virginia, and West Virginia.

Business Moves

Gary Bailey, former assistant vice president at United Bank (Arizona), recently assumed the newly created post of general manager at Tangent Systems. Also at Tangent, **Thomas Scott** was named sales manager with primary responsibility for broadcast sales and development of international markets, and **Craig Olsen** was named national sales manager. Olsen will concentrate his activities on domestic sales to recording studios and the sound reinforcement markets.

Dennis Brajkovich joined the sales staff of Ramko Research. Brajkovich, who has 15 years' experience in sales and marketing, was formerly a sales representative for Panasonic.

Richard Sirinsky has been appointed marketing manager of Ampex Corporation's Audio-Video Systems Division. Sirinsky will develop and implement marketing activities for the division's professional audio- and videotape recorders, broadcast cameras, switching systems, and computerized editing and video storage systems. He will be located at the corporate headquarters in Redwood City, California.

Gary Armour recently joined Dynair Electronics as sales engineer. Armour has extensive sales and service experience in the television industry. Most recently, he was with Midwest Telecommunications, where he worked as a field engineer, service manager, and sales engineer.

Michael Messerla is the new national market development manager for the Professional Video Division of US JVC Corporation. Messerla had been JVC's video sales manager in the Midwest. Prior to that he spent two years in a similar position with Sony Corporation. BC

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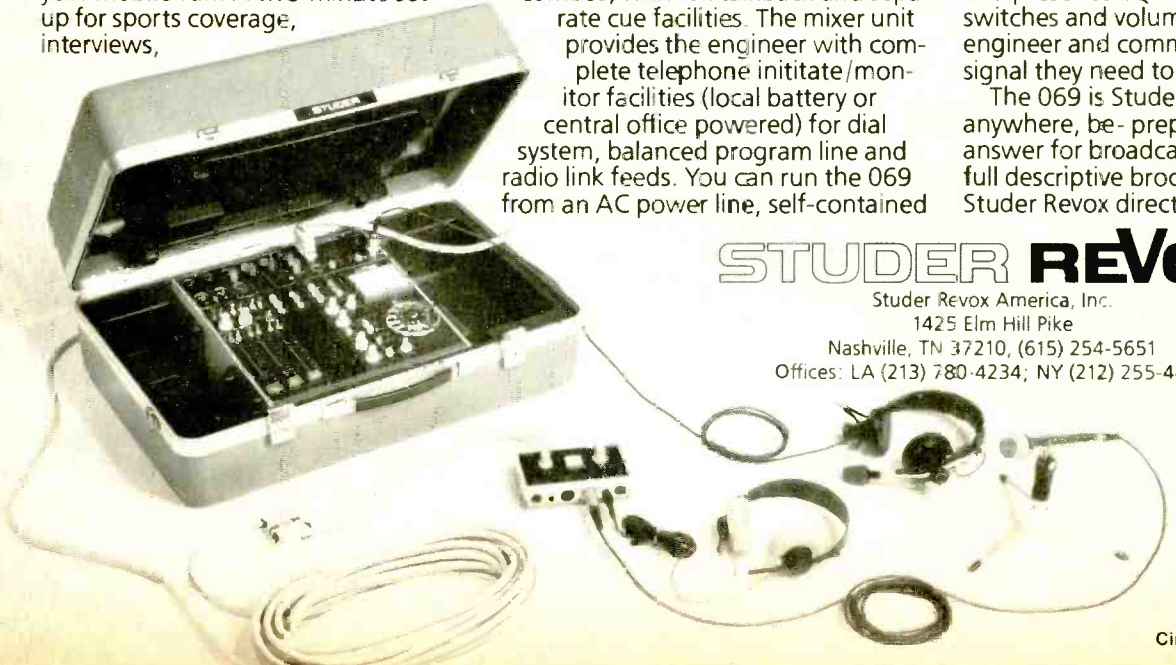
Wherever you're on the spot, the Studer 069 gives you everything you need. Fast. Mixer, limiter, telephone and broadcast line feeds, mikes, cables, monitor phones. All in a single suitcase or permanently parked in your mobile van. A two-minute set-up for sports coverage, interviews, fast-breaking stories. Without jury-rigged lash-ups between multiple units to cause "technical difficulties."

The unique 069 Commentator Box gives you a single-run connection for two mikes, phones, or mike/phone combos, with full talkback and separate cue facilities. The mixer unit provides the engineer with complete telephone inititate/monitor facilities (local battery or central office powered) for dial system, balanced program line and radio link feeds. You can run the 069 from an AC power line, self-contained NiCads, or a 12V car battery for complete operating freedom.

Two mike/line inputs and a separate recorder feed are individually assignable to either or both output channels, and all three have selectable low-cut and presence EQ. Four 6-way monitor switches and volume controls give both engineer and commentator the exact signal they need to hear in each ear.

The 069 is Studer's complete go-anywhere, be-prepared-for-anything answer for broadcast remotes. For a full descriptive brochure, contact Studer Revox directly.



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F/1.7 low cost
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New
F/1.7 14x9.5 lightweight zoom
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F/1.7 17x9 zoom
with built-in
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F/1.6 10x11
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are equipped with FUJINON lenses.

F/2 22x12.5 zoom
with built-in
2X extender

New
F/1.7 14x9.5 lightweight zoom
with diascope
and 2X extender

New
F/1.7
12x9 lightweight
zoom with 2.2X extender

That makes FUJINON first.

More camera manufacturers, more networks, more stations and more production companies rely on FUJINON lenses than any other kind. They and you have made FUJINON first.

That may be because FUJINON has scored so many firsts. Such as the first ENG/EFP lenses to offer built-in 2X extenders. The first (and only) 6mm wide angle lens that can cover a 70° horizontal field of view and focus in as close as the lens surface.

Other firsts: a 3.5x6.5 wide angle zoom, a 17x9 zoom with built in 2X extender, a 14x9.5 lightweight, combining both a 2X extender and built-in diascope, and a 22x12.5 zoom with 2X extender (the ultimate EFP lens).

Other factors: The most effective optical coating system available — the patented Electron Beam Coating (EBC) — which contributes to FUJINON's unmatched clarity, high contrast and brightness with virtually no flare or ghosting. Adjustable back focus that speeds lens changing — eliminating internal camera adjustments. The most complete range of accessories for converting news and field cameras to studio use — including the only remote focus controls on the market.

Whatever the future brings, FUJINON will continue to be first. In variety, quality, and performance. FUJINON, tv's undisputed lens leader.

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NEWS DIRECTIONS

PHILLIP KEIRSTEAD

ENG: Economical news gathering

Electronic news coverage has rapidly come to the state where if you have money, you can do practically anything. On the other hand, if you are a news director in a smaller market, you had better put down your electronics catalog "wish book" and find economical ways to deal with the hard realities of expanded news coverage.

WINK-TV is in Ft. Myers, Florida, the 126th market according to Arbitron. But news director Harry Horn must cover Naples, 37 miles to the south, and Port Charlotte, 26 miles north. The answer has been a combination of film and tape.

WINK originally followed the lead of other stations and switched entirely to ENG. Just under a year ago, however, Horn spent $4,000 to put the film processor back in shape. He got a bargain on four CP-16s when WCKT in Miami went all-ENG. In addition, the station has eight silent cameras.

Now coverage from the more distant points in the eight-county market is done on film because it is easier for a single reporter/photographer to handle SOF than tape. The eight silent cameras have provided an inexpensive means to cover high school sports, since students from the schools do the actual shooting for the station.

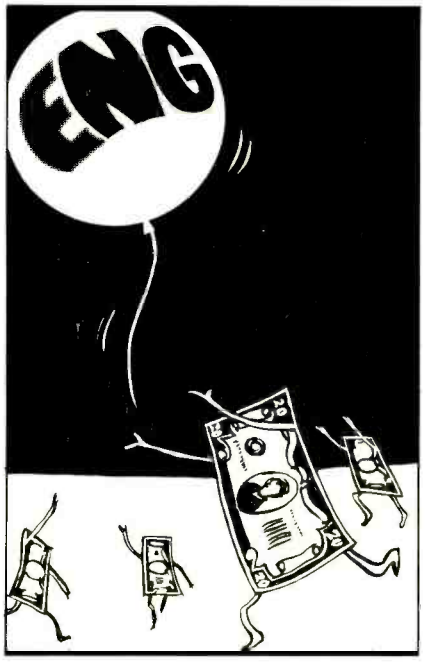
Horn says the greater part of the film is transferred to tape for editing. The station has two editing positions and will soon get a third.

Even though WINK has returned to using film, it hasn't abandoned ENG. The station has one Sony 1610, two TK-76's, and one Ikegami 78. Another Ikegami 78 is on order.

Having a flexible system has allowed WINK to send cameras home with staffers, and it allows "one-man-band" reporters to get out into the fringes of the market to cover stories.

News director Dan King at WCTV-TV (Thomasville, Georgia/Tallahassee, Florida) found he picked up a double advantage when the station went all-ENG in July 1979. The first was reduced processing time. The second, and more important, advantage came from a historical quirk.

The station had once operated studios in both Thomasville and Tallahassee. More recently, a consolidated plant was constructed on the state line, approximately 20 miles from each city. When WCTV was using film, the time consumed in driving film to the studios seriously crimped coverage of close-to-deadline stories. Now that WCTV is using tape, the videographers can hook their gear into an existing microwave relay at the old studio site in Tallahassee, and feed directly to the station. This is a big time-saver, especially when the Florida legislature is in session in Tallahassee.



The station has a tower at Thomasville, and will soon be able to microwave stories from south Georgia. The microwave feeds directly to the editing rooms adjacent to the WCTV newsroom. The Tallahassee link is also used for live inserts from Florida State University football games. (The station does not have live play-by-play rights.)

A handy device which is finding multiple uses is the low-frequency extender manufactured by Comrex of Sudbury, Massachusetts. Using two units, an encoder and a decoder, the Comrex equipment turns a common telephone line into something which approximates a dedicated, equalized phone line.

WCAX-TV, Burlington, Vermont, uses the low-frequency extenders to feed audio from bureaus in Rutland and Montpelier: Rutland uses film and Montpelier uses tape to shoot stories.

Once the stories are shot, they must be shipped to Burlington for airing. And that's where the low-frequency extenders come in. They are used to do narrations over ordinary dial-up phone lines at something close to field-recording quality. If you've ever made a long-distance phone call in Vermont, you'd appreciate the miracles these devices are performing.

Several mountains to the east — in Augusta, Maine — the Comrex equipment is hard at work helping the fledgling Main Information Radio Network (MIRN) do its work.

The network has a local 5kc line to the State House bureau, but relies on ordinary (and believe me, it is ordinary) telephone service from bureaus in Portland and Bangor. Managing editor Mal Leary says using the low-frequency extenders on the watts lines gives a sound "comparable to about a 4kc line."

The network has three decoder circuits plus equalization at the studios and two portable decoders for field service. The weather reports, which are subcontracted, are brought in on Comrex equipment.

The low-frequency extenders have another interesting application at MIRN. The net uses a combination of regular phone lines, microwave, and subcarriers on FM stations to distribute programming to 38 affiliates from Ft. Kent on the far north to Biddeford on the south — 600-plus miles.

MIRN sends the net signal to WDEA-FM in Ellsworth on a phone line. The signal is decoded and equalized at Ellsworth and transmitted on the FM subcarrier at a quality equivalent to 4kc. The patchwork transmission system is used because Maine doesn't have 5kc net loops available for long-line service.

By the way, Leary says the net is using DBX, Dolby noise reduction, with great success for foners done from the studio.

BC

Before I turn down the pot this month, I want to encourage news directors and news staffers to drop BC *a line. Suggestions on money-saving or time-saving uses of technology in the newsroom are welcomed. Or, if you have discovered a super new piece of equipment, please share your find with us. Please write to: Phillip O. Keirstead, Department of Journalism, Florida A&M University, Tallahassee, FL 32307.*

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SOUND IDEAS

ERIC NEIL ANGEVINE

In search of acoustic advice

A client of mine recently moved into new studios created in the renovation of an existing building. While the new facility was being designed, the station manager inquired of his colleagues whether they should engage an acoustical consultant. He called several local stations which had built new studios in existing buildings in recent years. None of them, he learned, had used an acoustical consultant. Yet all of them felt their studio acoustics were acceptable and the noise control between spaces to be adequate.

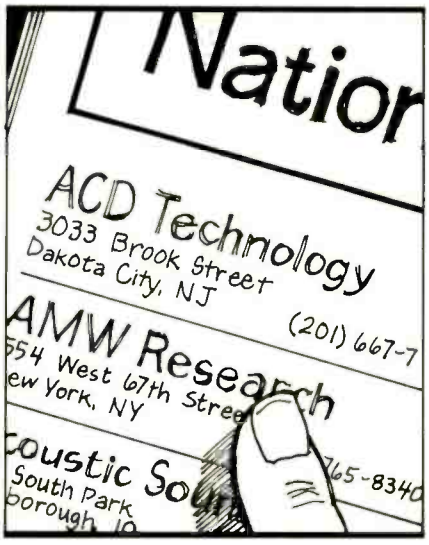
Another client's architect was resisting the efforts of the station to hire an acoustical consultant. He pointed to a recording studio he had designed as evidence that he could do a good job without the advice of a consultant.

Do these examples indicate that consultants are a waste of money? I think not. In the first case, the stations were fortunate in that their new studios were constructed in buildings with existing solid, massive walls. In the latter, a quick discussion with the architect disclosed that many dollars had been wasted on excessive wall constructions while doors and windows provided only minimal sound attenuation. Each of these examples demonstrates a way in which a consultant can help.

One of the most economical ways to use any consultant is to assure you that you are doing the right thing. It is not necessary to hire an acoustical consultant to do the designing you are paying your architect for. But a qualified consultant can review the architect's plans and confirm that his design is good. Quite likely, he will point out some details in the plans that can and should be changed before construction begins. Changes made during construction inevitably cost more than the cost of a consultant, who could have avoided the change. Making changes in a completed facility is always expensive and often impractical.

A competent acoustical consultant can advise you on what to expect from various constructions. Quite often, a construction effort is a compromise between what you want and what you can afford. I have yet to meet a client with unlimited resources. Since your budget is limited, it makes sense to spend it wisely. Since the consultant knows what each of the alternatives will accomplish acoustically, he can guide you in making the most economical selection.

For example, almost everyone has heard that lead is a good sound barrier. But pound for pound, so is gypsum wallboard. Many people have used a thin layer of lead in studio wall constructions to improve the sound attenuation. Here, a properly sealed extra layer of drywall could be more effective at a fraction of the cost.



Everyone in this business knows something about acoustics. I would be dishonest if I didn't admit that. But the broadcast engineer is an expert on broadcasting, not acoustics. Just as your greatest expertise is in *producing* the right sound, the acoustical consultant's is in *controlling* that sound. You wouldn't want your architect to design your new facility without input from your staff, so why allow him to work without the help of an expert on architectural acoustics?

Since you're not an expert on acoustics, how can you select the best consultant? Most of you don't know any acoustical consultants, and have heard of only a few. When you begin to look, you find that there are several groups of people striving to get your business.

One of the groups you are likely to encounter first are the studio consultants. These individuals are very familiar with your business and your problems, but not all of them are familiar with the fundamentals of architectural acoustics. If a potential consultant tells you what brand of equipment to buy, be sure that he is not a salesman in disguise. Many manufacturers offer consulting as a sideline in order to get an edge on their competition when it comes time for you to place an order. Some even offer "free" consultation . . . assuming that they will be successful in selling you on their products.

A qualified acoustical consultant should be an expert on acoustics, and he won't be afraid to prove it. He should be a member of the Acoustical Society of America and may belong to the Institute of Noise Control Engineering.

The National Council of Acoustical Consultants is an organization of acoustical consulting firms. Membership in NCAC requires that member firms not be "associated with the manufacture or sale of any product if such association could jeopardize . . . the ability to render unbiased decisions." The principals of each member firm must be full members or Fellows of the Acoustical Society of America. NCAC publishes a directory of member firms, which includes short profiles of each firm. The directory is available for $2.50 from NCAC headquarters, 66 Morris Avenue, Springfield, New Jersey 07081.

Don't be afraid to ask a potential consultant for references of previous studio projects. He should be able to provide you with the names of several satisfied clients. Also, don't hesitate to ask what he will charge you and what you will get for your money. Consultants are not inexpensive, and rates do vary. Another question you may want to ask is who will work on your project. You can engage a large firm with prestigious senior consultants, only to discover that their newest employee works on your job.

Remember, although good consultants cost money, they can save you money. Correction of acoustical errors is always expensive, and often will not produce the same effect as doing the job right in the first place.

Next month I will review a few good books on architectural acoustics for those who want to improve their own knowledge of the subject.

Editors Note: If you have a particular question regarding studio acoustics, send it to Eric Neil Angevine, care of BROADCAST COMMUNICATIONS. Individual replies cannot be supplied, but questions of most general interest will be covered in future columns. ac

Good times, J.R., and WKYT

On-air promotions enhance a station's image, improve a station's ratings, develop a station's audience, and create a lot of fun in the process. But on-air promotions are geared primarily to the "non-paying" public. Promoting your station to those companies which give their support through advertising is equally — if not more — important, and should be part of your annual promotion plans.

Client promotions can be just as creative, and just as much fun, as any over-the-air promotion. And, they can vary from a personalized "thank you" card to a Premiere Party to kick off the new television season.

On the surface, having a Premiere Party is pretty simple. You just pick a date and time. Then you select the theme, place, and send out invitations. For WKYT-TV's 1980 Premiere Party, the theme was based on the hit CBS television series *Dallas*, and throwing a Texas-size party was complicated.

"The annual Premiere Party is the way management says 'thank you' to those companies that support the station," said Sally Briley, promotion director of the Lexington, Kentucky, station. "It is absolutely not an over-the-air promotion. The sales department compiles the invitation list and sends invitations only to select clients. But we have heard that some invitations are actually being 'scalped' to the highest bidder because of the station's 'party' reputation."

WKYT enhanced their reputation this year with a party to top all parties. Here are a few of the telephone conversations overheard during the planning stage:

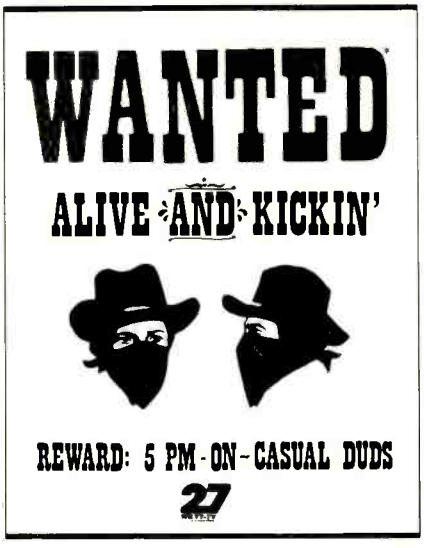
"Sure we have plenty of room for 1,200 people . . . Oh, you also need space for a 45-foot television mobile unit? Well, we may have a slight problem in finding room for 50 feet of projection screens . . . train! You honestly think you can find a place with room for a train, too! . . . (dissolves into laughter)."

"We want to order 1,000 personalized cowboy hats and an equal number of personalized bandanas. We have to have them in three weeks . . . sir . . . sir . . . I think he hung up."

"But what are you going to do with a Marlboro billboard?"

When guests arrived at the Jerrico parking lot — having been told to dress casually for a trip to "Dallas" — they didn't know what to expect. After boarding the 20 buses rented for the event, each guest was given a cowboy hat and bandana to prepare them for a night of western fun.

To say that the guests were surprised and impressed to find "Dallas" inside Rupp Arena is an understatement. The home of the University of Kentucky Wildcat basketball team, which seats 23,000 fans, was unrecognizable! Guests found themselves in a western ranch fea-



turing open-pit barbeques, gourmet foods, saloons, and plenty of entertainment. Few people realized that they were inside a building as straw, fences, and cedar trees brought the outdoors inside.

After recovering from the surprise, guests were delighted to find plenty to see and do. The Kentucky Heritage dancers performed "clogging" routines and the Coon Creek Girls from Renfro Valley sang and played country bluegrass.

There were still other activities, such as the Dallas County Frog Races, which proved to be one of the evening's most popular events.

Guests could polish up their cowboy skills by lassoing wooden horses, and there were even wild poker games in the saloon. Horseshoe pitching, hermit crab races, and dancing kept the crowd busy.

Everyone could be a star by participating in tapings of a *Dallas* skit. And everyone had the opportunity to shoot a poster of J.R. Ewing.

Clients registered to win free commercial time on the CBS series *Dallas*, while everyone was urged to name the suspect of their choice in the "Who Shot J.R.?" contest. The winner received a weekend trip for two to Dallas, Texas.

As for the food, J.R. Ewing couldn't have thrown a better barbeque. Open-pit barbeques featured ribs and chicken. And no one could have left hungry as Texas-sized burgers, tacos, chili, corn-on-the-cob, ice cream, and assorted fruits and cheeses were in abundance.

The numerous "saloons" were well-stocked with a variety of liquor and beer, including a plentiful supply of the Texas-brewed Pearl beer.

Of course, the highlight of the evening was the multi-media presentation featuring the 1980-81 television season on WKYT-TV and CBS. Five, 10-foot-wide screens commanded the audience's attention as tape and slides were displayed simultaneously. A remarkable presentation, it took close to 75 hours to edit the tape, according to Briley.

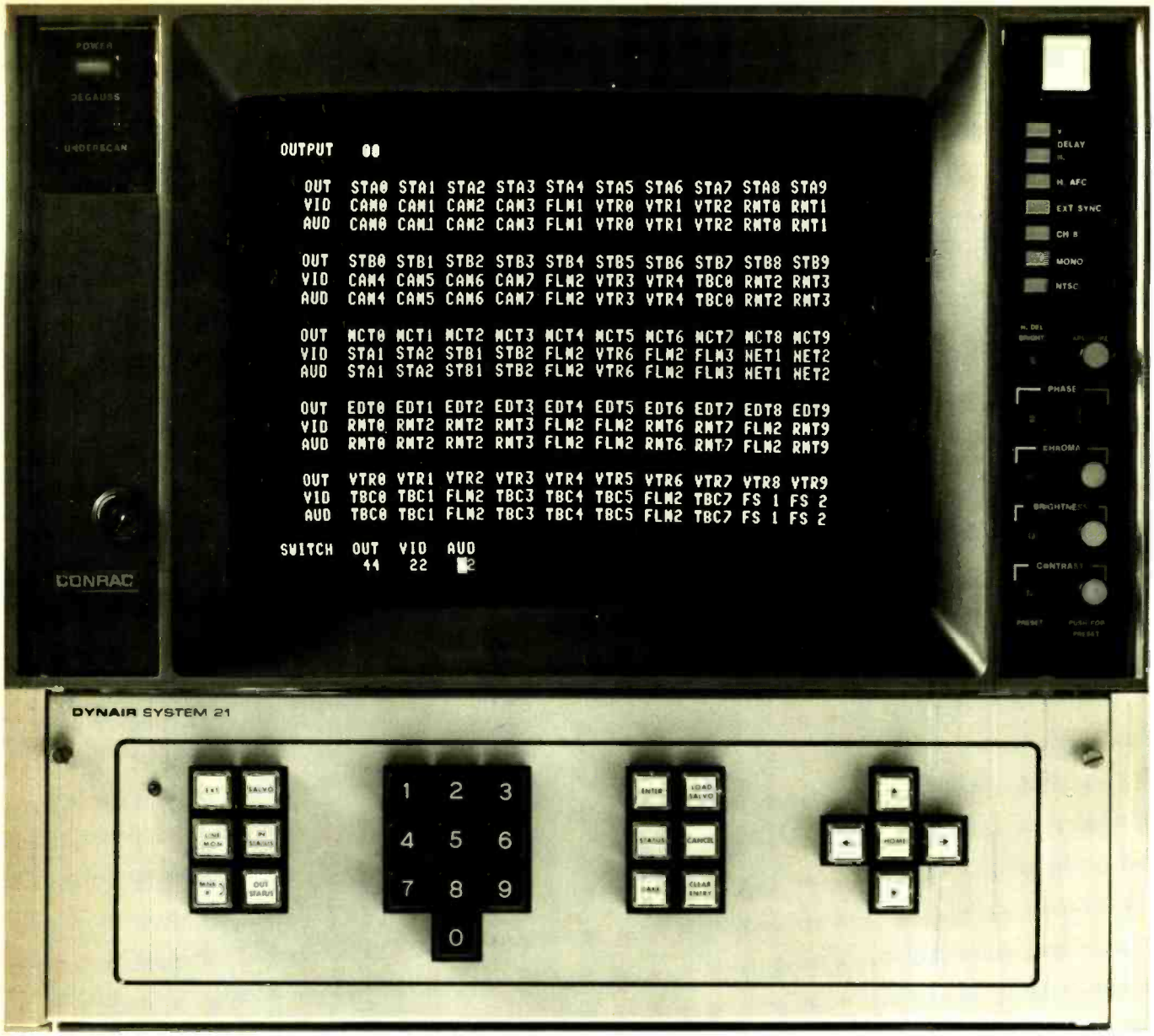
"The first 14 minutes of the presentation consisted of our local shows and local news programs," Briley said. "This was followed by a 20-minute CBS Network sales presentation on the new season, and a 10-minute segment which combined network and local material. The station's segment consisted of local clients and station employees making the CBS 'looking good' sign."

While the multi-media presentation was primarily for the party goers' entertainment, Briley said it also demonstrated the station's technical ability to help local companies develop and produce quality television ads.

"The Premiere Party shows the local business community that WKYT is a creative organization that cares. And it helps keep the station number one in the market."

As WKYT has shown, giving something back to the local business community is important to your station's image as well as bottom line. On-air and client promotions *should* be in your station's future plans. Although WKYT's party was a high-ticket promotion, remember that a successful Premiere Party can also be geared to fit your needs and your budget.

Portions of this column originally appeared in the BPA Newsletter. For more information about the Broadcasters Promotion Association, contact BPA, 248 W. Orange Street, Lancaster, PA 17603; (717) 397-5727.



What's up?

Plenty! CRT distribution switcher status monitors are not new, but DYNAIR's SCA-250B is in a class by itself. It makes the System 21 tell all.

It's a master control . . . using easy to understand keys, call for any one of the System 21's 1000 outputs. Connect it to any of the 1000 inputs, different video and audio if desired.

Not enough? Load 80 preset selections. Edit at will and then make all switches on the *same vertical interval.*

Status by the output? Pick a number and you'll see that output plus the next 49. Choose numerics or mnemonics. Roll through outputs 50 at a time.

Status by the input? Key in a source and the display lists all outputs on line . . . *right now* . . . in numerics or mnemonics.

There's more! So ask about System 21's capabilities. The SCA-250B is only a 5¼" example.

SYSTEM 21

DYNAIR 5275 Market Street, San Diego, California U.S.A. 92114; Phone: (714) 263-7711; TWX: (910) 335-2040

Circle (25) on Action Card

ENG/EFP:
On the road to profitability

The movement really got under way in the 1970s, but today there's a discernible shift of production from the studio to the field. As we climb into the 1980s, broadcasting may begin to look a lot like an industry on the road.

But going on the road to get the job done doesn't stop with broadcasting. As this issue of BROADCAST COMMUNICATIONS will show, it runs past ENG and into a new dimension of EFP. Stations across the nation have found that getting out into the community for daily on-the-road shows improves both ratings and the bottom line. Noon-time shows aside, consider the success of *PM Magazine*. It's a format that has met with unusual success, a monument to the viability of those who say, "We're on the road (to profitability) again."

Trans-American Video, owned by Merv Griffin, not only puts its own Merv Griffin show on the road, it actively seeks other outside-the-studio assignments. In recent months TAV has taken on jobs that couldn't have been considered by a production service company 10 years ago. Their vans have been shipped across the ocean for assignments. And closer to home, they have been shooting and sending Las Vegas productions to France and Japan via satellite. As TAV's Lou Steinberg put it though, "We're living in a Buck Rogers world in the sky, but on the ground it's still the Pony Express."

Steinberg's complaint is that our satellites are capable of dropping signals practically anywhere. Trouble is, not every station is equipped to receive. And if you have to hop through too many points to get up or down, it's not only expensive, but the signal could suffer along the way.

Compact Video's answer to this is to carry the earth terminal right on the van. This way, the van becomes both a production center and an uplink. Like the satellite telephone services, if you're calling for cities in the system, it's both fast and inexpensive. Trouble is, not everyone can be reached by the system. Not yet, anyway.

What all this activity shows is that ENG has inspired EFP, and EFP has quietly become the way to do business. At many stations the emphasis was so hard and heavy on ENG that only occasionally did that same equipment get pulled aside for local productions. But as it became an economical way to go — using the same portable equipment for ENG and EFP — more stations joined the crowd.

Today there still is a line of resistance at some stations, because as they say, there just isn't enough happening in town to make ENG equipment investments pay off. Yet on the flip side there are stations that have found EFP such a rewarding experience that they are purchasing portable equipment and vans strictly for EFP uses. As stations learn how to take advantage of EFP, they don't want two departments jousting with priorities for the right to use the equipment.

Using the equipment to work both sides of the street is a cost-effective way to go, but consider the choices when an EFP assignment is under way and an exciting ENG situation develops. By the time you get the equipment in from the field, it may be too late for an effective ENG report. In some markets, both activities are so heavy that this situation has resulted in a division of both equipment and crews.

One alternative is to buy or rent a helicopter. Right now there are about 100 helicopters owned by stations, and that number is expected to continue growing.

When helicopters began bringing back live TV pictures, it brought a new dimension — if not perspective — to ENG. But those pictures were always at the mercy of winds that buffeted the helicopter, microwave that might be too weak to use for more than a few seconds at a time, or a signal that might be totally lost at the worst time.

Today there are refined camera stabilizing systems, vastly improved microwave systems, and remote pickup systems guaranteed to bring it back live. Better yet, the effective range of helicopter feeds has jumped well over 100 miles for some systems.

With satellite connects becoming more and more popular for distant ENG, microwave vans, and especially helicopters, there are few holes left in the news system. If you really want it, you can get it.

Perhaps the best expression of ENG's potential is Ted Turner's Cable Network News (CNN). While the critics have mused over CNN live reports that occasionally fall through or out, the evidence suggests that we are entering an era where stations can plug into almost anything they want . . . at any time . . . from any place.

Technology, of course, has spurred the transition from a studio-bound communications industry to one that's going on the road. Quality portable cameras are in such abundance that selection is no easy matter. Tape recorders are truly portable, meeting stringent standards. And TBCs, editors, even battery packs and belts are in sync with the professionalism needed to confidently take the industry outside the studio.

Just a few years ago EFP was a risky business. But R&D aimed at ENG has slipped quietly into electronic field productions. And the fact that quality improved so greatly added to the ease with which broadcasters and production service companies could gear up for the road. In fact, it's possible that someday all outside-the-studio activities will be considered EFP.

In the face of the potential for almost runaway audience fractionalization by DBS, STV, pay TV, cable TV, and now low-power TV broadcasting, EFP may point the way to a profitable future. On a horizon lined with detractors, who is better suited to put the show on the road?

The Goodyear blimps . . . TV'S LARGEST OB VEHICLES still fascinate viewers

BY GLEN PENSINGER

Columbia, America, Enterprise, Europa: the Goodyear blimps. They're superb camera platforms, the ultimate public-relations vehicle, and our link to the romantic era of Henri Giffard and Count Ferdinand von Zeppelin.

These four are all that remain of powered lighter-than-air flight, and they provide a reminder that the idea is not altogether dead. The Enterprise is based in Pompano Beach, Florida; the America at Goodyear's Blimp Base north of Houston; the Columbia at Carson south of Los Angeles; and the Europa at Capena 18 miles north of Rome.

It was at Carson that I caught up with one of my childhood dreams and the crew of the N4A Columbia.

Services of the airships are donated by Goodyear Tire and Rubber Company as part of its public-relations effort. Only about 10 percent of each ship's approximately 2,000 yearly flight hours are for TV coverage. Most are half-hour passenger flights for invited guests of Goodyear and its distributors, or flights of the night-sign whose spectacular animation usually broadcasts public-service messages for non-profit community causes.

Glen Pensinger is the television engineer for San Jose State University and is also the associate director for engineering for the ITVA.

The Goodyear airship Columbia (above) is an impressive sight. A descendant of man's earliest form of powered flight, the Columbia can trace her ancestry back to 1852 when Frenchman Henri Giffard flew the first power-driven aircraft, a 145-foot airship propelled by a 3 hp. steam engine. *(Photo courtesy Goodyear Tire & Rubber Co., Airship Operations)*

This 18 wheeler is the Columbia's mobile maintenance facility. It includes a machine shop, night sign equipment, portable mooring mast, and spare parts supply. *(Photo by Glen Pensinger)*

On the ground, these ships are the four largest windsocks in the world: 192 feet long, 59 feet high, and 50 feet wide. Even in hangars there is enough air movement to keep them slightly in motion. Docked to their outdoor mooring masts, they move slowly back and forth, tracing the prevailing winds.

In flight, the sensations are an odd mixture of the familiar and the unique. Trimmed for passenger flights, the ships are about 50 pounds negative, or just heavy enough to drift slowly downward when power is removed. Two constant-speed, reversible props are driven by twin six-cylinder, 210hp Continental engines in pusher configuration.

At takeoff, the props bite hard into the air and angle of ascent can be very steep, well in excess of 20 degrees. No worry about stalling here. Once leveled off at a cruising altitude of 1,000 to 1,500 feet with a forward speed of about 35 mph, the sound is that of a two-engine light plane, but the windows are open and only a light breeze is felt.

There are few obstructions to the view. The gas bag is out of sight (its only reminder being three ropes dangling dead ahead, hanging as if from nowhere). The small car, 23 feet long and

Continued on page 44

More creative programming in half the time.

Televisa, S.A., is one of the world's leading television program transmission and production companies. Headquartered in Mexico City, the privately-owned organization produces a prodigious amount of programming to satisfy the more than 70 daily hours required of it to serve its four channels in Mexico City, its affiliates throughout Mexico, and its 11-city Spanish International Network in the U.S. To provide this programming Televisa operates San Angel, a video tape production center in Mexico City. San Angel recently switched from quad editing to the one-inch format and a CMX editing system. San Angel's Chief Engineer, Cenobio Moriel, directed the installation of the new system. Here he talks about the update and its significance to Televisa.

"By the time the late 1970's had arrived, the future television program production requirements we were facing at Televisa were staggering. In 1978 we produced 2,500 thirty-minute shows, virtually all of which had to be edited. Up to this point we were editing with quad machines and making our decisions during normal editing time. They were tied up 24 hours a day, making it difficult to use the VTR's for ordinary recording time. We knew we had to change our method of program production.

"To move into the 80's, we established a clear-cut goal of producing a better product at a lower cost in the shortest time. With the guidance of Victor Hugo O'Farril, San Angel's Vice President, Operations, himself dedicated to keeping Televisa in the forefront of television equipment technology, we were ready to select the right product mix.

"Recognizing that one-inch was the wave of the future, we installed 46 Ampex one-inch machines, 18 of which are at San Angel. Over the years we had worked closely with TeknoMerica, the CMX representative in Mexico.

"Since we were in the process of changing from quad to one-inch, it was critical that we achieve full interface with both formats. CMX 340X was our choice.

"Once on-line with the 340X, everything we projected about speed in editing and resultant cost savings proved accurate beyond question.

"Now we provide the producers with a cassette copy of the master tape. With time code added, they are able to make their own off-line decisions without tying up the production machines. Then, we give the editors the cassette copy and they use the CMX to assemble their programming materials — combining video tapes, adding effects, dissolves, audio, musical background and the rest.

"We're doing our editing in less than half the time required before, and we're saving literally thousands of dollars every month because of it. Easily, the system has paid for itself. We've doubled our production and the quality of our product has improved substantially.

"Our technical personnel were current on CMX from the start after attending the company's training seminars in California.

"The 340X is a solid, reliable system. It has made such good sense that we've ordered a second system. The space is already reserved."

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Circle (53) on Action Card

With the port-side panel removed, the TV camera has a virtually unobstructed view. Each Goodyear blimp contains a Fernseh KCT-40 camera system with Terracom GCN-6 2 GHz microwave and Schneider 30 X 12.5 lens. *(Photo courtesy of Goodyear Tire & Rubber Co., Airship Operations)*

4½ feet wide at the floor, is very stable. Movements are slight and gradual.

With the port-side panel removed, the TV camera has a virtually unobstructed view. A special yoke mount designed by Goodyear Aerospace engineer John Pascu allows wide range of movement and can even accommodate shots inside the car.

The TV equipment is owned by Goodyear. Each blimp's package consists of a Fernseh KCT-40 camera system with Terracom GCN-6 2 GHz microwave and Schneider 30 X 12.5 lens which are flown as needed from storage in Akron to the site of the telecast. A Goodyear TV technician comes along to install and calibrate the equipment and check out the network or production company TV personnel who will operate it in flight.

The first TV flights were circa 1963 and early equipment was loaded and bolted down one component at a time. Installation frequently took more than four hours. Today the electronics are in a single short rack and installation takes less than an hour.

TV flights are long — four hours plus — with heavy fuel loads. These takeoffs are not the sharp, nose-up affairs of passenger flights. There is a long run to build up air flow over the bag and provide the necessary lift. Takeoff is usually an hour before air time and once aloft there is always something for the pilot to contend with. Altitude for most events is 1,000 feet.

Some forward speed is required to maintain the lift which counters the ship's negative trim. That trim is constantly changing as fuel is consumed and temperatures and winds change. Helium expands and contracts with temperature, and air must be adjusted in the ballonets to maintain an even pressure against the skin of the bag. The ship's shadow must be kept off the playing field; position must be optimum for the camera; and golfers and neighbors don't want to hear the ship's engines.

TV assignments are mostly football, with golf second and a smattering of tennis, baseball, auto racing, and even a rock concert or two. Multiple blimps for an event are not unheard of. The 1980 World Series telecasts used the Enterprise in Philadelphia and the America in Kansas City.

The blimp's stock-in-trade are "beauty" shots: the bumps that carry viewers away from the stadium to commercials and then back into the stadium. However, most directors are finding other uses for the blimps. ABC has been effectively using a straight-down, "chalkboard" shot for college football on plays that have a lot of backfield motion or passing. Golf coverage usually begins with beauty shots and then progresses to coverage of the leaders as they move down course.

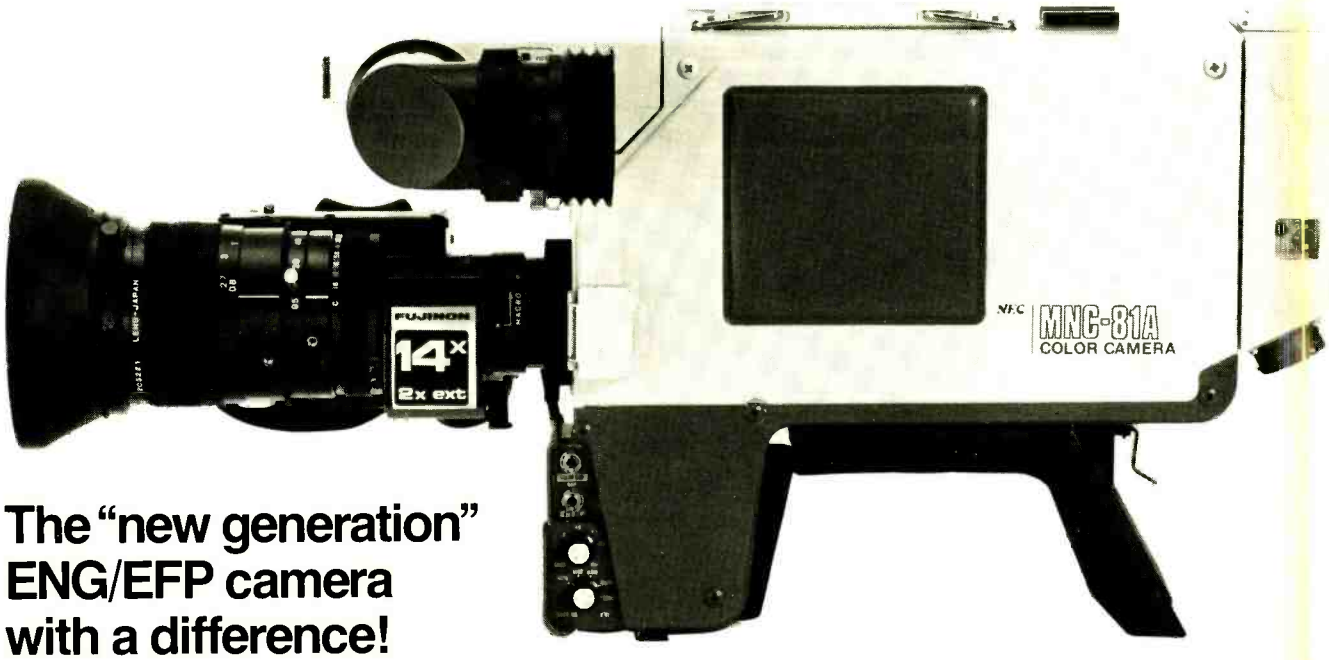
A couple of years ago during the Bob Hope Desert Classic, freak rains filled one of the ravines through the course leaving ground TV crews stranded on the side away from the leaders. Columbia was the only camera available and managed to provide solo coverage until the troubles subsided.

A new use has developed on post-produced videotape shows such as *Battle of The Network Stars* in which the blimp is used without its live ground link. An associate director and VTR go up with the usual crew of pilot, video operator, and camera operator, and the ship works as an independent second unit.

All requests for TV coverage by the three domestic ships are coordinated

Continued on page 46

Introducing *NEC*'s all-new MNC-81A



The "new generation" ENG/EFP camera with a difference!

Get a headstart on the 1980's with NEC's newest "state-of-the-art" ENG/EFP camera: the MNC-81A.

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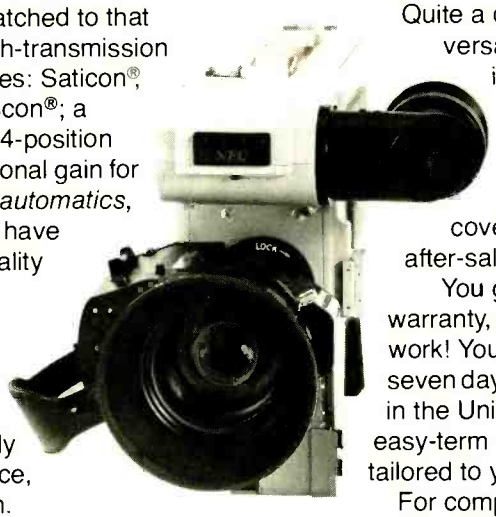

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At its mooring mast with the Carson Blimp Base in the background, the N4A Columbia traces a southwest breeze. *(Photo by Glen Pensinger)*

through Goodyear's New York office. The Europa's services are arranged for through Goodyear International in Akron.

You can't separate the ships from their crews. Each is operated by a crew of 22: five pilots, 16 ground crew of varying specialties, and a public-service representative. On the road six months of the year, they travel in a four-vehicle caravan consisting of a custom 22-passenger MCI coach, an 18-wheel ground-support shop tractor-trailer, utility van, and a car. They keep in radio contact and generally within 50 miles of the airship. A day's travel seldom covers more than 500 miles.

The crew's love of their work is infectious. The pilots, typified by Joel Chamberlain and John Clayton, are like pilots everywhere: cool, in control, distantly friendly, until they start to talk about TV flights. Then they sound like any freelance TV camera operator you ever knew. They like directors who keep them informed and use them well. They are less enthusiastic about those who don't talk to them, whose five-minute cues become one minute after only 30 seconds has elapsed and whose spontaneous style results in an "Oh my god we're hot!"

Barrie Spielman, Columbia's senior airship mechanic, finds fixed-wing aircraft boring and breaks into a big grin as he looks up at her: "I don't care what it says on the side. That's my ship." Public-relations representative Bob Urhausen describes his as "the easiest PR job in the world. Even in Los Angeles, people call *us*. Everybody's excited about seeing the blimp and it gets you high on your job."

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Circle (32) on Action Card

WOAI and San Antonio profit from the NEWS/TALK FORMAT

BY JOHN FURR

Listening to WOAI news and entertainment was a way of life as I was growing up in South Texas in the '40s and '50s. Fibber McGee and Molly, Bob Hope, and Cavalcade of America were broadcast from NAB. My family listened to the noon news and weather program as faithfully as we went to church.

Seldom did we miss the 10 p.m. news block. I can still hear the news intro in my mind, boasting: ". . . Associated Press, International News Service, and United Press. All three wire services plus WOAI's own local staff." It was no surprise to me years later, when I worked for a competitor in San Antonio, to hear that WOAI was going news/talk.

News has always been stimulating to work around. Between the natural disasters and political intrigue, there are always programming and engineering challenges. Recently a bordello was exposed and the madam arrested. It had apparently been operating for 20 years untouched by the vice squad.

In another instance we aired a well-publicized special conference of the city council called by the city manager. In this meeting investigations of police cover-up were to be made public. Because this took place at 5:00 p.m., TV did not carry it live, but we did . . . from our city hall bureau. It proved to be one of our most listened-to broadcasts.

Our local news-gathering operations go far beyond our station work in the newsroom and news cars. We operate and staff full-time news bureaus at the city hall and county courthouse. These are linked to WOAI by equalized phone lines, so we can enjoy first-class signal quality.

During our afternoon news block, we regularly feature live feeds from these bureaus with two-way conversation with the anchorman. Our city hall bureau also has a signal feed from the sound system of the city council meeting room. Most of the news from the courthouse involves well-publicized trials that are taking place as well as county politics.

Local news coverage outside of these areas is accomplished by several means. We have two news station wagons equipped with two-way radio, and a repeater on top of a tall building in downtown San Antonio. Also included in the vehicles is a scanner receiver.

Every newsperson goes out with a cassette recorder and "clips" to send feeds over available telephones. If the cars are in service, and a walkie-talkie is not available, a reporter takes a pocket pager and reports in by phone.

WOAI has been affiliated with NBC for over 50 years. We have also been affiliated with CBS for the past five years. NBC news is aired in the morning on AM, and FM carries NBC every hour. CBS is the main source of AM network news and is also supported by Mutual. MBS supplies some of our sports, including college football and Dallas Cowboys football. We also carry Larry King at night. (An earth station for MBS is not yet complete, but is now

John Furr is chief engineer, WOAI, San Antonio, Texas.

News editor Ernest DeSoto researches a news story from a newsroom work station.

being installed.)

With the networks, local loops, and data loops, we have over 20 phone circuits, excluding instrument phone lines, coming to the WOAI building. Southwestern Bell is now in the process of expanding our cable facilities to the local exchange.

We now have five wire services: AP, UPI Radio, UPI Newspaper, Wall Street Journal, and U.S. Weather Bureau. These wire services are located in the newsroom on a permanently installed table equipped to hold six Extel printers. This table has an enclosed opening in the back that allows the paper to dump into a lower shelf with a hinged door. The paper folds itself into a neat stack rather than being dumped on the floor. An intermediate small shelf between the top and the lower box-shelf provides space for the modems, ribbon, cleaner, and wire connections.

Normally a newsperson will pull an hour's or more input from the machine and take it to a "tear table" that has workspace for three people. There the cartridges are stored on the wall and the newsperson can pull carts, arrange stacks of news copy, and dispose of the rest in large containers under the table.

The newsroom also contains three work stations. In order to provide the most flexible audio switching system, a simple matrix switcher was provided. This switcher accommodates 12 inputs and 9 outputs. All of the networks appear as inputs as well as the two-way, downtown bureaus, phone, reel-to-reel, cart cassette, air, and equalizer. Any output can be switched to any input simultaneously. This means a network feed can be taped on the reel-to-reel at the same time a two-way feed can be taped on cassette, while a cartridge tape is sending a voicer over the phone — all in one station.

One of the two news station wagons.

Output rows go to cartridge, reel-to-reel, monitor, equalizer, phone, cassette, etc. An additional row of 12 buttons is included on the switcher, which involves the 10 police receivers and two-way. There is a row of 12 monitor speakers at each work station. If the news editor hears a fire or similar emergency, he can press the button for that monitor and it will be amplified at his station only.

Technically, the stations can separately amplify the monitor of three simultaneous events while making calls and taking care of feeds.

The equalizer on each work station has been a great help. The MXR graphic is very inexpensive and provides a 10-band range of adjustment, and it is zero in-out unbalanced. This box often makes bad phone feeds useable. We use this same equalizer in each control and production room.


George Jennings, news director, anchoring the afternoon news block.

Sports broadcasts, both from a news standpoint and program source, make up an important portion of the broadcast day. A direct line to the local sports arena brings back the Spurs' local basketball games. Out-of-town games are carried through phone couplers. Two couplers are located both in Studio C and D.

Across the hall from the office of the sports director, Greg Lucas, is Studio F,

Continued on page 50


Sports director Greg Lucas prepares for the afternoon broadcast in Studio F.

auxiliary production. This room is used to catch any overflow from the main production rooms and designed to record interview talk programs. It is the regular production room of the sports director who tapes sports interviews from network feeds and phone feeds from special events. Lucas also hosts a call-in show, "Sports Line," featuring conferenced calls with managers of teams whose games are carried regularly.

During the Texas Open Golf Tournament in San Antonio, we set up a phone line for program and instruments to coordinate the listeners' calls to the remote site at the Open. All of our call-in programs run with a six-second digital time delay.

WOAI runs five hours of news broadcasts each day. Along with the various features previously mentioned, traffic reports are featured as well. An independent firm supplies the information to WOAI over a phone line and this is displayed on a CRT in both AM and FM control rooms. I predict we will be seeing more computer-related devices for news gathering and preparation in the years to come. (Remote pick-up will be used more in the future at WOAI, as we just received the license for a wide-band transmitter to be used for class-A signal quality from remote sites.)

Natural disaster has not escaped WOAI's news reporters either. When Hurricane Allen blew into the Texas coast, we prepared for coverage by first constructing a ham radio station in the studio building. Then we began gathering information from ham operators in areas that were in the storm. One of the signals we received and later broadcasted was of a sinking ship near Jamaica which was caught in the hurricane's winds. Later we monitored signals all up and down the Texas coast obtaining information on traffic conditions in areas being evacuated. News reporter Glenn Moyer was sent earlier to Corpus Christi to send reports by long distance.

Hurricanes have a long history of wreaking havoc with long-distance phone cables as well as local coastal phone facilities. To insure continuous coverage of the impending disaster, station manager John Barger arranged for a four-wheel-drive vehicle which we equipped with ham radio gear, fuel, generator, and other necessities. Since the FCC rules were not specifically clear concerning ham radio transmissions being broadcast in disasters, we obtained permission from the FCC with certain restrictions.

The traffic was so heavy during the evacuation that the normal three-hour trip from Corpus Christi to San Antonio was taking up to 14 hours. One of the station personnel, Johnny Marks, was caught in this jam. He reported that everyone on the highway was listening to WOAI: "When you would get out of your car, it sounded like gigantic speakers mounted on hills in front and in back. It was the sound of everyone's car radio listening to WOAI."

We withheld the four-wheel vehicle until the storm passed, as this would pose less danger to the news people and would be more useful when normal means of communication were no longer available. Because Allen moved inland in such a way that communications lines were operational and damage to Corpus Christi was minimal, the post-hurricane coverage project was suspended.

WOAI has a heritage of providing comprehensive news coverage. Because we are the Class I-A EBS station for the South Texas area, we feel the necessity to continue to be the news leader in radio. News/talk has also proven to be financially successful in this era when AM radio is facing stronger competition from FM. BC

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EFP CAN BE PROFITABLE if you shoot for quality

BY BC STAFF

Looking around the broadcast industry, it's difficult to find the line that separates ENG and EFP. The way some stations staff up, gear up, and produce ENG, it looks a lot more like EFP than ENG. For those who like to keep the acronyms static, there is solace in the fact that ENG normally takes its flavor from the news events that aren't always planned. What's more, stations with a serious approach to EFP are using equipment that's a cut above the typical run-and-shoot ENG hardware.

That's the way it is with WFAA-TV in Dallas.

Starting with a single-camera technique, WFAA-TV went into EFP with a separate staff and separate equipment. But as operations manager Bob Turner puts it, "We found out that shooting with the single-camera technique is good in the sense that it limits the number of people on a remote, but it is bad in the sense that it crams up your editing room. You could go out and shoot for half a day and then edit for two days. Just from an equipment and building space situation, that wasn't good.

"The next phase we evolved was going out with multiple cameras — two and sometimes three — and trying to shoot like we would in a studio, limiting our post production to maybe adding an open and close or graphics. Now, depending on what the situation is, we use single- or multi-camera techniques."

According to Turner, the single-camera technique is used most often when the EFP crew is shooting a commercial. As Turner says, "It's just much faster to go in with a single camera, shoot the footage (most of the time audio isn't even involved in it), and edit that together in the afternoon. You can have the whole thing put together in one day."

On the other hand, most program material is difficult to edit if you shoot with the single-camera technique. WFAA has a morning children's show that includes assignments such as going to an Air Force base and doing segments to show what it looks like inside an airplane, and to have the pilot explain what goes on during a flight. Turner adds, "The editing time for a daily 30-minute show — if you go out and shoot using the single-camera technique — you just can't run it all through an editing room. Now if you're running a show once a week, you can run it through an editing room."

Other types of single-camera shots are tough, too. "We used to look for interviews where the guy would give an answer that was real long. If he just says Yes and No, you're splicing your head off. That's the single-camera technique."

Of course being committed to EFP and the type of equipment it requires

This arrangement (above) shows the EFP van ready to tow a trailer for a commercial shoot. *(Photos by Clyde Chappell)*

With the lights and camera powered from the van, the car (at right) appears to be driving along as the shoot takes place.

The camera is checked over for a commercial shoot for the city of Grapevine. From the helicopter, WFAA-TV's EFP team shot scenes of water skiers and boats above the city's attractive lake.

means that the EFP crew will be operating from their own van. When BROADCAST COMMUNICATIONS asked Turner how they were geared up at WFAA-TV, it was easy to evaluate the depth of their commitment. "We have three vehicles," Turner said, "and two of them are identical single-camera units, basically. They have a lift in the back to help load the equipment, and they're extended Dodge vans. They're about the size of recreational vehicles. We have a shooting rack on top and a shooting platform on the front. We carry battery boxes in there for power. We carry generators which are loaded and unloaded. We also have racks for the tape machine and the CCU for the camera. They're racked up so you can roll them in and belt them down with airplane-type belts."

WFAA also has what they call their Aux truck. It was an auxiliary truck to the WFAA big cruiser. They converted it into a control room for multi-camera shoots. It's more the size of a delivery truck. The switchers, audio console, CCUs, and lighting equipment are rolled into the truck. The truck also has a self-contained generator. But as Turner adds, "I'm not saying it's ideal. We just had it and we converted it very easily. When we went into the first phase of EFP, everybody thought we were going to do single camera from now on. What we've found out is that there's a place for single camera and multiple camera. It depends on the product, time to produce, the quality level you want, the lighting situation, whether it's on the 25th floor or the first floor, considerations like that."

Turner's team does carry camera and recorder battery packs, but they've usually found that they can plug into a wall outlet or rely on their generator. "I think in ENG," Turner says, "battery operation is just the way you go. You're moving a lot more and you're a lot less likely to be somewhere where there is AC power. But in EFP you're quite often in a very nice setting because you're doing a different kind of pickup."

PM Magazine at WFAA-TV is basically done out of the news department. As Turner puts it, "You might call that ENG because of that fact." As Turner sees it though, "It tends to be toward EFP. We sometimes do multiple-camera shoots for them out of the production department because they [the news department] have no multi-camera equipment. I think in that area, you're talking about where money and everything else depends on good EFP. It makes money."

Generally, however, WFAA-TV has not nailed its EFP operation down tight to profit and loss. While producing commercials obviously is a real benefit to the bottom line, local productions may be another matter. In Turner's words, "I can't say that it (EFP) adds to the commercial value of it. It's a question of a station being proud of its image and proud of what its individual product is . . . wanting to do quality material."

Reviewing the WFFA-TV ENG and EFP operation, Turner insists that the two operations must be separate, even though the EFP department will cross over the line and assist the news department. EFP requires cameras with viewfinders, switchers, sophisticated pedestals or heavy-duty tripods, and other special support equipment you would not expect to find out on an ENG assignment. According to Turner, "The amount of work a news department like ours does and the amount of work that we do for programming or commercial time has been of such a volume that sharing equipment is just not practical. Anyway, with 5-inch viewfinders and rear focus on our cameras, they're not set up for ENG. Ours is a studio configuration."

In the end, WFAA-TV shows that simple is not always best. Single-camera shoots on a steady diet requires too much editing time. But neither does it get into technical overkill, because Turner insists that there are times when the single-camera technique is sufficient, especially for most commercials. But most prominent in the scheme of things in WFAA-TV's EFP operation is their commitment to product quality through their people and their hardware. It's another example of the value of being on the road and the desire to produce a quality product. BC

TAV makes news as the LAS VEGAS ROAD SHOW

BY RON MERRELL

The morning of the tragic MGM Grand Hotel fire in Las Vegas opened with clear blue skies and many sleepy — and some restless — vacationers. When the day was over, more than 400 people would be injured as they tried to escape the fire. More than 80 would die, marking it the second worst hotel fire in the nation's history.

Before the day was finished in Las Vegas, broadcasters would be pressed to produce a comprehensive and compassionate ENG and RENG representation of that disaster. There would be enough to do and hard decisions to be made. In fact, as the smoke billowed from the hotel it probably escaped many at the scene that a full-service TV production van from Trans-American Video (TAV) was there taping.

Caught in the challenge of reporting the fire, and surrounded by rescue and fire trucks, along with ambulances and police cars, Las Vegas broadcasters may have taken little notice that TAV was taping coverage that would be seen over KTTV in Los Angeles and over NHK in Japan.

It's no surprise that today production companies are finding a way out of the studio and onto the road. So it was no small coincidence that TAV's president, Murray Schwartz, called Las Vegas and gave Ross Eastty an ENG assignment. Within 30 minutes the TAV van was at the scene.

Continued on page 56

TAV was at the scene of the MGM Grand Hotel fire, taping coverage that was later seen over KTTV in Los Angeles and NHK in Japan. *(Photos courtesy Trans-American Video)*

KFI KNOWS EXACTLY WHAT THEY WANT IN A 50 KW TRANSMITTER.

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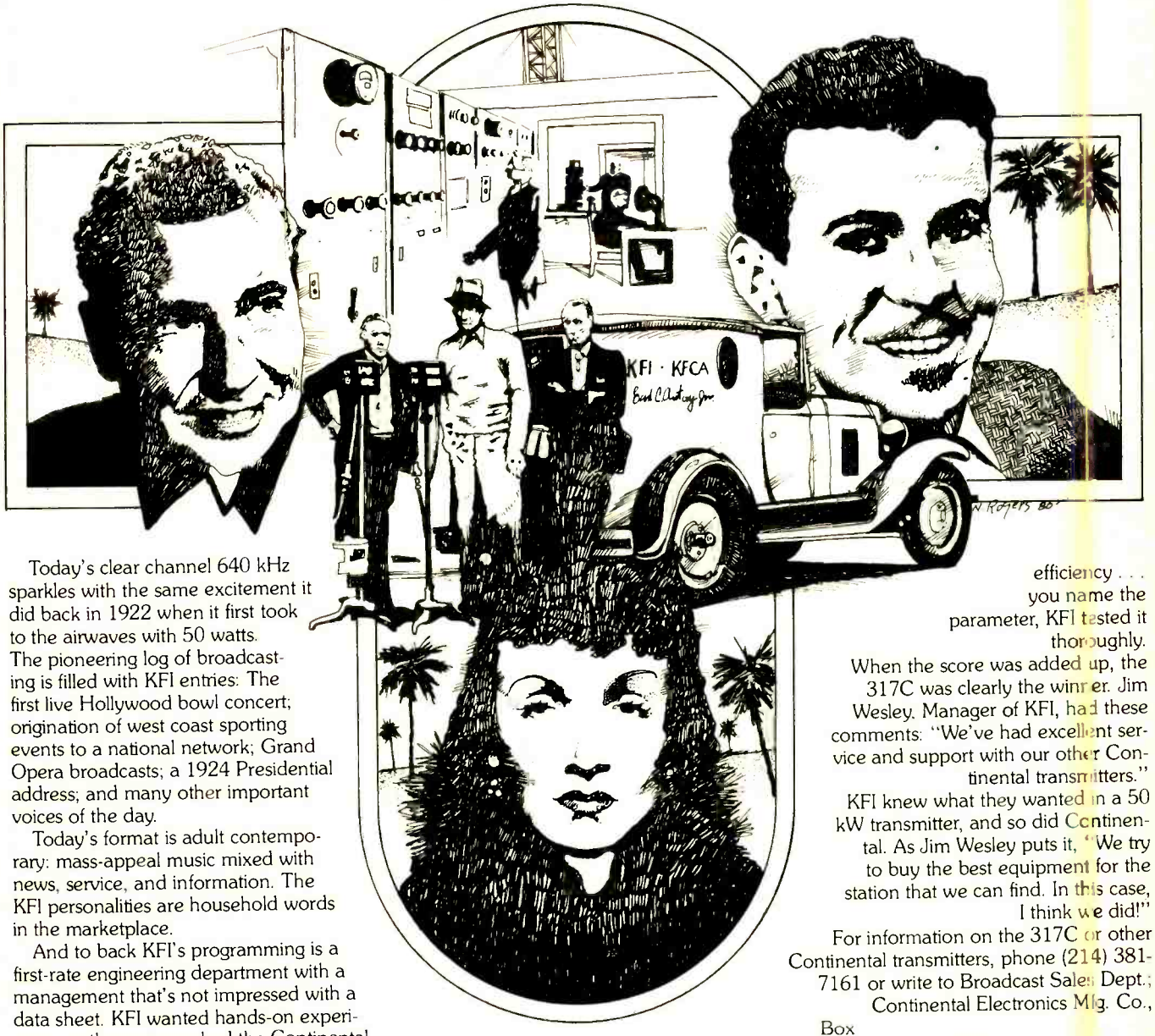

Today's clear channel 640 kHz sparkles with the same excitement it did back in 1922 when it first took to the airwaves with 50 watts. The pioneering log of broadcasting is filled with KFI entries: The first live Hollywood bowl concert; origination of west coast sporting events to a national network; Grand Opera broadcasts; a 1924 Presidential address; and many other important voices of the day.

Today's format is adult contemporary: mass-appeal music mixed with news, service, and information. The KFI personalities are household words in the marketplace.

And to back KFI's programming is a first-rate engineering department with a management that's not impressed with a data sheet. KFI wanted hands-on experience, so they approached the Continental 317C transmitter and its competition with extensive test requirements.

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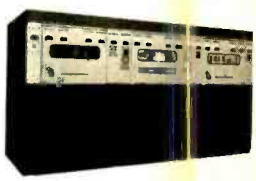
When the score was added up, the 317C was clearly the winner. Jim Wesley, Manager of KFI, had these comments: "We've had excellent service and support with our other Continental transmitters."

KFI knew what they wanted in a 50 kW transmitter, and so did Continental. As Jim Wesley puts it, "We try to buy the best equipment for the station that we can find. In this case, I think we did!"

For information on the 317C or other Continental transmitters, phone (214) 381-7161 or write to Broadcast Sales Dept.; Continental Electronics Mfg. Co., Box 270879, Dallas, Texas 75227.



Continental Electronics

Circle (35) on Action Card

TAV is something special

Among the many TAV credits is the Jerry Lewis Muscular Dystrophy Telethon.

Trans-American Video (TAV) is a division of Merv Griffin Productions, with offices in Los Angeles and Las Vegas. This article is based on interviews with TAV president Murray Schwartz in Los Angeles and executive vice president Ross Eastty in Las Vegas.

Among TAV credits are the Jerry Lewis Muscular Dystrophy Telethon, *Hollywood Squares, Flo, You Bet Your Life*, segments of *That's Incredible*, of course *The Merv Griffin Show, The John Davidson Show*, numerous championship fights from Caesar's Palace, *Waylon, Dance Fever, The Loretta Lynn Special*, and a host of others. TAV also provides technical services and post-production services for a variety of shows.

Since his acquisition of TAV, Griffin has taken his crew and equipment all over the world. The huge mobile studios have been loaded into ships and sailed to Monte Carlo, Venice, and to Israel to provide Griffin with the facilities for his specials.

For a production company that handles the single largest entertainment package in Las Vegas history, for a production company that has a list of credits as long as this article, such an assignment would seem beyond their interest, though certainly not their capability. But when you talk with Schwartz and Eastty, you quickly understand that being on the road means nothing is going to outdistance TAV's interest or experience.

Schwartz recalls that it was about 10 or 11 years ago when CBS decided to do a week in Las Vegas. "We did our first week at the Hilton Hotel . . . with TAV, which was not yet our company. That evolved into a 10-year association at Caesar's Palace. The business evolved from one week a year to 10 weeks a year over the last 10 years." The new package is with the Riviera Hotel.

And why put the vans in Las Vegas? Schwartz says it's for "the inherent value of doing shows on the road. The reason we need Las Vegas is because the city itself is a studio, as opposed to trying to mount a production in one of our theaters."

Trans-American Video is a division of Merv Griffin Productions, and that fact alone would keep most production companies on the run. Still, the Las Vegas connection is a natural one. As

Continued on page 58

TAV televises President-elect Ronald Reagan in an interview sent via satellite to French Television 3.

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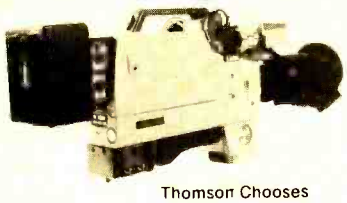

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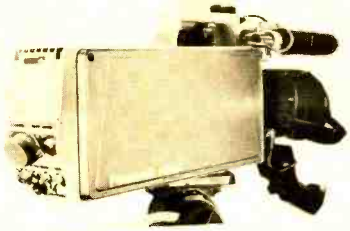

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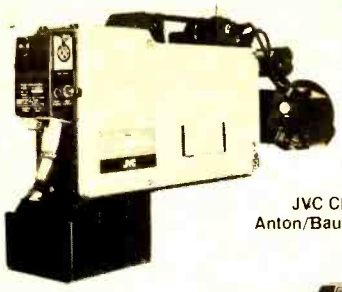

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Circle (58) on Action Card

KGO Radio . . . LIVE FROM THE MIDDLE EAST

BY JERRY JOHNSON

A local radio station doing live broadcasts from the Middle East? It's unprecedented, too expensive, and probably impossible. Wrong!

Last February, ABC-owned radio station KGO, San Francisco, originated 18 hours of live programming from Cairo, Egypt, and Jerusalem, Israel. The programs were complete with phone calls from listeners in Northern California to top leaders and public figures in both Middle Eastern countries.

The whole idea began in April 1979 on one of our regular remotes from

Jerry Johnson is operations manager at KGO Radio, San Francisco, California.

(At left) KGO Radio's Herm Stallberg (left) checks audio levels as producer Hap Kaufman talks to an associate producer in the KGO studios in San Francisco. The Cairo Radio-TV Center in downtown Cairo which KGO broadcast from during the historic broadcast is the main supplier of radio and TV programming for the entire Arab world.

(At left) Owen Spann (right) interviews Shimon Peres (left), leader of the opposition in the Israel Knesset.

Another KGO "first"

KGO Radio's live broadcast from the Middle East was an historic event. Yet, in 1978 KGO was involved in another historic "first." It was just two years ago that *BC* publisher Mike Kreiter (left) congratulated Veldon Leverich, KGO's chief engineer, on becoming the first subscriber to BROADCAST COMMUNICATIONS, the international journal of broadcast technology, which made its debut in October 1978.

Washington, D.C. KGO Radio takes the popular *Owen Spann Program* (9 a.m.-12 noon) to the nation's Capitol three times per year. Each week the guest list includes top spokespersons from the administration, state department, and Congress. The object of the broadcasts is to get first-hand information on matters that have an effect on Californians.

The site of the Washington originations is the Hyatt Regency on Capitol Hill. Satellite communications are arranged through the Robert Wold Company of Los Angeles. The programs are fed via satellite to Los Angeles and land lined to San Francisco. Since KGO Radio (by far the top-rated radio station in Northern California) has a news/talk format featuring phone calls from listeners 17 hours out of a 24-hour broadcast day, live phone calls from the audience also are fed to Washington and the top-level guests.

During the April remote, KGO Radio in a one-hour segment had the ambassador from Egypt, the Honorable Ashraf Ghorbal, and Zri Brosch, press officer for the Israeli Embassy, as guests. Following the discussion and phone calls from listeners, both Ambassador Ghorbal and Mr. Brosch said to Owen Spann, "If KGO Radio can do this from Washington, why don't you come to our countries and do the same thing?"

With that question ringing in our ears, the course was plotted for 10 months of hard work and intercontinental "diplomacy" on a broadcaster's level which led to the historic broadcasts from Cairo and Jerusalem.

The first question I was asked when discussing the matter with KGO general manager and ABC vice president, Michael Luckoff, was, "Can we get a signal out of Cairo and Jerusalem? And, what about phone calls?" The question was straightforward, the answer very illusive. In fact, we didn't really know, until the first night in Cairo, whether the answer was Yes or No!

Our first technical contact was made with the Robert Wold Company. Wold has a long relationship with ABC and with KGO Radio. Conversations with Wold led to conversations with our own traffic people at ABC in New York.

Ed Mackensack, traffic manager for ABC Radio, was instrumental in coordinating communications within the United States, making arrangements with Wold to get the KGO Radio signal from New York to San Francisco, via satellite to Los Angeles. Ted Czarnecki, of RCA Global Communications located at the United National Secretariate in New York, was our contact to bring the signal from the Middle East to New York. The

Continued on page 62

(At left) Egyptian Prime Minister Mustafa Khalil (far left) prepares for his interview with KGO Radio's Owen Spann (far right) from the Cairo Radio-TV Center. Other KGO Radio personnel shown are engineer Herman Stallberg (in headphones) and producer Hap Kaufman. The *Owen Spann Program* originated from Cairo for nine hours on February 6, 7, and 8, 1980.

broadcast link would be completed, we hoped, via our fast-developing local contacts in each capitol. Our plan originally was to originate out of a hotel suite in each city. Local press representatives assured us that it would be no problem to get a broadcast loop from any major hotel to the local telephone company. (We were later to find out differently.)

I was being pushed for a decision, a "go or no-go" on the venture. Promotion had to be arranged for on-air as well as TV and print. A myriad of travel arrangements had to be made for a broadcast crew of five. Yet, a definite answer to General Manager Luckoff's original question was impossible.

There was a particularly difficult time over the Christmas holidays because of the 10-hour time difference between San Francisco and Cairo. To speak via phone with our contacts in the Middle East during their office hours meant calling between 2-3 a.m. At least six nights of sleep were lost in repeated attempts to contact Nabil Osman, head of the Foreign Press Office in Cairo. I was told things like, "The circuits aren't working tonight"; "It's rained in Cairo and the phone system is down"; or I simply would not get an answer. It became a real concern. If we couldn't get an ordinary phone call through, how did we expect to pull off the sophisticated broadcast scheme that was planned!

The fact that we were forced to resort to telex didn't bring much reassurance to a radio broadcaster. Both press offices said via telex (or direct phone contact in the case of Jerusalem) that all was well and the broadcasts were possible. Based on that information, plus the commitment from ABC and RCA Global Communications, I told my general manager, "Yes, we can do something no other local radio station has done." The Middle East project was on for KGO Radio!

Our broadcast crew arrived in Cairo on February 2 with the first program to go on the air Wednesday evening, February 6th (9 a.m.-noon is 7 p.m.-10 p.m. in Cairo).

There were problems. Despite assurances of the ability to originate from the Sheraton Hotel, we could not do so. Doing our usual telephone talk format required two regular business phones in addition to the broadcast line. The phone company in Cairo had understood that we could just hook our mixer to the regular pair of house phone lines. Thanks to the splendid cooperation of Nabil Osman and his staff, we were offered studio space in the Cairo TV-Radio Center, overlooking the Nile River.

The Center was a marvel. Built in the 1930s and originally part of the Marconi Company (whose logo was still visible on some pieces of equipment), the TV-Radio Center provides programming for the rest of the Arab world. The staff had many women engineers, several of whom were assigned to our project. Everyone was very professional and extremely helpful.

At 7:00 p.m. Egyptian time on Wednesday, February 6, 1980, there was plenty of tension. Our first guest was the Honorable Mustafa Khalil, Prime Minister of Egypt. KGO Radio had committed a lot of money, had sent a broadcast crew half-way around the world, had the second most important man in Egypt sitting in a small studio along the Nile . . . yet we didn't know what we had! It's hard to describe the relief as our producer in San Francisco told us via the direct phone line that the signal was coming through.

Listeners throughout California were

Continued on page 64

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hearing Owen Spann say, "This is the first international two-way live satellite broadcast in American history, maybe even world history." It was quite a night!

Communications went smoothly. The broadcast was land-lined from the Cairo TV-Radio Center to the telephone office. Another land line took the signal to Paris where the link was made to RCA Globe Com's Intelsat. The first satellite beamed the signal to New York where Western Union's Westar took over. Land lines again took the signal from the satellite station in Los Angeles to the KGO Radio studios in San Francisco. Calls from listeners were fed to Egypt via regular phone lines and then were put on the satellite feed via the mixers in the Cairo Studio.

We originated three nights, or 9 hours of live programming, from Cairo on February 6, 7, and 8. Other guests were the Minister of Economic Cooperation Gamal el Nazer; Egyptian Antiquites Director Shehatta Adam; rebel film director, Laila Abou Saif; technical experts on making the desert bloom; Egyptian oil and other energy sources; and a panel of Egyptian journalists.

I went ahead of the rest of the crew as advance producer in Jerusalem. Arrangements went quite smoothly in Israel. We were able to broadcast from a suite in the King David Hotel, overlooking the ancient city walls of Jerusalem. The Israeli Telephone Company was cooperative, especially after I had made a deposit of $500 of my own money to secure the lines. It helped that Egyptian President Sadat had used the King David as his headquarters during his visit to Israel. The technical people as well as hotel management were accustomed to international events and were willing to tackle even a live broadcast to California!

Although there were minor drop-outs on the satellite connections — which forced us to use the stand-by telephone line — the three nights of live programming from Jerusalem went very well. Guests interviewed included Ambassador Abba Eban, Jerusalem Mayor Teddy Kollek; Shimon Peres, who many believe will be the next Prime Minister of Israel; Deputy Prime Minister Yigael Yadin; and many other representatives from the Israeli Kinesset, and experts from the fields of agriculture, industry, tourism, and alternative energy sources.

On the final night, we drank a champagne toast in the last minutes of the final hour. Upon coming back to San Francisco, our impressions of the success were reaffirmed and even amplified. The staff at KGO Radio told of not a few tears in eyes (along with the stomach ulcers) as the first broadcast came through from what might be considered the birthplace of civilization. Letters poured-in with congratulations, expressing the hope that KGO Radio wouldn't stop with this one effort (something we are currently working on).

KGO Radio and the Middle East broadcast team were honored by local consulates of both Israel and Egypt. All the work and lost sleep had been worth it.

As operations manager, I was especially gratified to see the Arbitron Metro rating share for persons 12+ come in for January/February. ARB had KGO Radio rated at a 10.6 of the listening audience. We have led the pack for years, but this was an all-time high for the Bay Area market.

What started as an idea in Washington, D.C., had come full circle. We had done what had not been done before. This is part of what makes broadcasting the special industry it is. BC

When in need, WEHT CALLS ON MAX

BY ELMER CHANCELLOR

If you're in a market that won't support a helicopter, another answer for getting to those tough shots is Max, a small all-terrain vehicle. It's a two-passenger amphibious unit that can go almost anywhere. I say almost because I've learned never to underestimate the interests of the news department.

WEHT-TV is an Evansville, Indiana, station that got into ENG six years ago. It wasn't long after that beginning that the station began making plans on how to efficiently incorporate a multipurpose ENG/EFP live mobile unit into the news operation.

At first we planned to operate only one live unit, so we conducted a study to determine the most suitable vehicle in which to mount the equipment. Since news situations don't always occur at easily accessible locations, two-wheel-drive vans weren't the whole answer. We needed a different type of vehicle that would help us cover news events live from almost any location. We could have opted for a four-wheel-drive van, but further study pointed out that the four-wheel mode would be used less than 2 percent of the time the vehicle was on assignment.

We did purchase a ¾-ton GM van for our general ENG/EFP uses. For those tought-to-get-to remotes, we chose the Max II. It has a Tecumseh 16 HP electric-start gasoline engine, and it's capable of up to 20 mph on land. On water it's a lot slower, but you can get around at 5-6 mph.

The large low-pressure tires seem to float over soft ground, so if we have to drive it on private property, it won't leave unsightly tracks on the ground. For use in loose, deep snow, tank-type tracks are available.

Equipment carried in the unit consists of an ENG cart with a 2 GHz 2-watt transmitter, mike preamp, and a 5-inch TV set. A 12-volt 7 AH ni-cad battery is also carried in the ENG cart. When extended operations are under way, the crew can power up a Honda 400-watt 12 VDC/115 VAC generator.

Microwave and camera equipment can also be operated from the 12-volt vehicle battery. A 14-foot telescoping mast with a Nurad Dual-Mini antenna is mounted on the rollbar, along with two high-intensity lights.

Because Max runs at relatively low speeds, the unit is pulled behind the van on a tilting trailer. Of course this also requires fewer people on an assignment, because the crew can drive the van near a hard-to-reach site, unload the MAX II, and move from there right into the scene.

So how has Max and his running mate the van worked out? It's been useful on many occasions. It was used in the search for the bodies of two young girls who drowned after breaking through the ice of the frozen Ohio River floodwaters. Once it was used to reach the scene of a railroad chemical tank car derailment by driving down the tracks. During the flooding of the Wabash River, Max was used to reach the scene of emergency dam building and repair in an attempt to save thousands of acres of corn and soybeans.

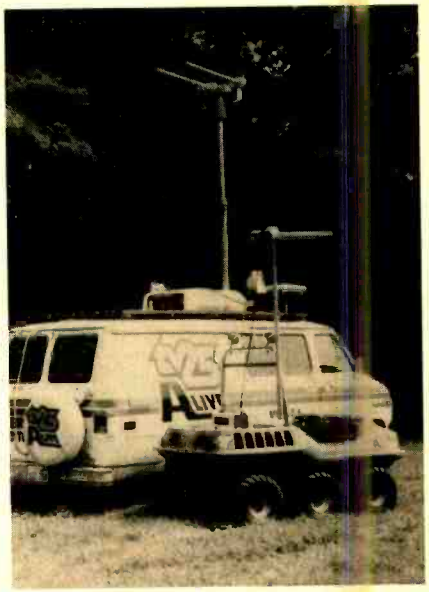
What's more, the station promotion department has used Max and the ATV in parades and displays.

And the cost? About $3,500 for Max and its trailer. Anyway, the insurance and operating costs are well below that of a four-wheel-drive vehicle. And when we need it on the road, it's invaluable.

If there isn't a helicopter in your budget, Max is a practical substitute BC

Elmer Chanceller is director of engineering, WEHT-TV, Evansville, Indiana.

Microwave and camera equipment can be operated from the 12-volt vehicle battery. A 14-foot telescoping mast with a Nurad Dual-Mini antenna is mounted on the rollbar, along with two high-intensity lights.



WEHT-TV uses a ¾-ton GM van for general ENG/EFP use. But for tough-to-get-to remotes, the station relies on MAX II, a two-passenger amphibious unit powered by a Tecumseh 16 hp electric-start engine.

Ashes to ashes . . .

KNDO redefines 'DISASTER COVERAGE'

BY LARRY BAKER

As trite as it may sound, Sunday, May 18th, began like most days. The early spring in the Yakima Valley provides an ample supply of cherry blossoms, and warm sunshine. Except on this day. On May 18th, the birds weren't singing . . . the air was silent and still. The sun was shining, but an immense, dark cloud to the west was threatening to ruin my day.

I was mowing the lawn when my wife called from the back door to say that Stephanie White, my assignment editor, was on the telephone. Her message: Mount St. Helens had erupted. Not a minor eruption like we had seen a month before, but a major blast. A call to the Washington State Patrol confirmed that the darkness to the west was *not* an approaching rain storm, but a huge cloud of volcanic ash headed our way.

Without word from me, our news staff of five assembled at the KNDO studio to begin what would end up being a marathon lesson in how to cope with a volcano, a subject we hadn't been taught in school.

The first priority, getting word of the eruption on the air, was relatively easy. Simple news bulletins explaining the situation were used with the promise of more information as it became available. In the next 15-hours that information would come from several sources: the news wire, the State Patrol, the National Weather Service, and local emergency services personnel. As it turned out, not all the sources would always agree on the information and it became necessary to compare facts and make judgment calls as best we could.

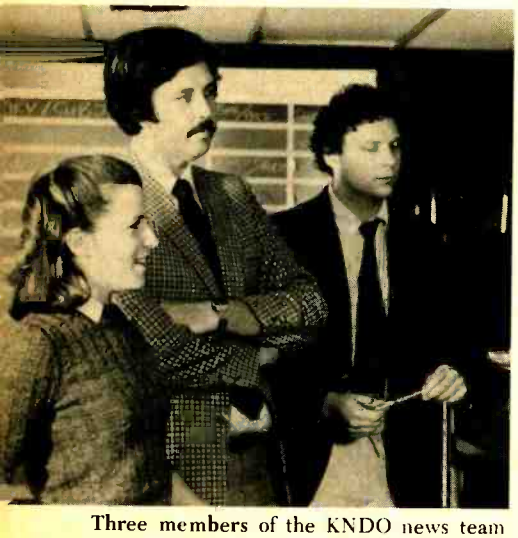
When the volcanic ash hit, it hit hard. Within an hour of the initial report at about 9 a.m., the sky over much of Central Washington had turned midnight black.

Our original ENG idea was to take the Sony 1610 cameras out on the street, but the ashfall was so heavy that the light level was too low. Even though it was daytime, it was so dark outside that the street lights were on. So we opted for using a Hitachi SK-80 to take shots along the main streets so our viewers could see what it was like downtown. Obviously no one wanted to venture out into all that ash. It was no time for sightseeing.

For the uninitiated, volcanic ash is not like ash at all. A substantial portion of the stuff is silica, or sand. For this reason we had to rig plastic garbage bags around the ENG cameras to protect them from any damage we were anticipating. Another problem that came quickly to the surface was the annoying way our news cars came to a stop each time the air filters became clogged with the ash. We found ourselves having to periodically stop and shake out the air filters.

You must keep in mind that none of our staff had ever been exposed to a regional disaster before. We had all seen the coverage done on tornados, hurricanes, floods, and similar acts of nature, but that was on a national news basis and from a distance. We had to modify our actions to deal not only with the hard-news aspects of the local coverage, but also the job of being a focal point for community announcements and also being the information center for providing video to the NBC network and other stations in the Northwest.

Larry Baker is news director at KNDO-TV, Yakima, Washington.



Three members of the KNDO news team that took to the streets during the Mount St. Helens eruption: (left to right) A. K. Lienhart, Larry Baker, and Alan Sillence.

The Mount St. Helens eruption as photographed by Jerry Coughlan, *The Columbian*, Vancouver, Wash. *(Photo courtesy of KEX, Portland, Oregon)*

This latter point required us, at times, to walk the fine line of diplomacy. Our foremost responsibility was to our viewers and everyone else had to come second. I must add that the cooperation between stations in the Northwest was exceptional and transcended the bounds of network affiliations.

Once our equipment priorities were set and the lines of communications determined, the crews were assigned stories and the reports from the field began to come in on a more-or-less regular basis by radio. Our communications input included every available source, including monitoring the KGW (Portland) line.

We developed a system of half-hourly break-ins of about five-minute duration to provide comprehensive updates on local developments. Live remote microwave reports would have been ideal in this situation, but a market the size of Yakima cannot justify the expense.

As the day wore on, another problem that was to plague us for the next month came up; the gritty ash was having an effect on the field recorders. This problem was also translated to our editing equipment via the ash that had worked its way into the videocassettes. There was no solution other than to use compressed air to blow-out the equipment as it was brought in from the field. Fortunately, our engineering staff recognized the problem early on, and long-range damage to the equipment was avoided.

Meanwhile, stories that were of a human-interest nature were everywhere: the convention of CB radio operators that was stranded in Yakima for three days; the run on the hospitals by those wanting surgical masks for protection from the ash; the hold-up of a drug store by two men wearing surgical masks (the report by police dispatcher was worth the price of admission).

The next day, the sun finally broke through the ash cloud and the full force of the damage done to the city could be seen. It would be weeks before the ash could be cleaned from the streets and rooftops, and months before the full financial impact would be known.

St. Helens is still showing us displays of its power. From what we learned on that first day, we have developed an almost casual routine for reporting and supplying pictures to our viewers of eruptions that have occurred since May. We know now that a repeat of "Black Sunday" is unlikely from St. Helens, but none of us has forgotten what we learned by trial and error . . . techniques that can't be taught in school or in books. I think it made better reporters of us all, and I for one am glad we had the experience of Mount St. Helens. BC

SUNSHINE STUDIO puts focus on WOWO

BY ANDREW DAWSON

Speaking theoretically, the Sunshine Studio is more of a concept; the reality of the situation is a 24-foot custom converted Angosy Airstream Motor Home, with transmitting equipment where the toilet should be and audio control equipment in what otherwise would be the kitchenette.

The vehicle was purchased as an aluminum frame on a chassis with nothing inside except a drivers seat and a steering wheel. All the rest was built to specifications determined by the WOWO engineering department.

The heart of the mobile studio's environmental and electronic systems is a Kohler 7.5-kilowatt, 120-watt, water-cooled generator.

This unit supplies power to a pair of roof-mounted air conditioners as well as two thermostatically controlled electric heaters. This equipment supplies cooling and heating to the entire mobile studio. The Kohler's water cooling system is ducted so that it can supply additional heat to the office/studio in the colder winter months.

A Logitek five-input console is the center of the broadcast studio. It is fed by two EV RE-11 microphones (for announcer and guest), an ITC triple-deck cart machine, a cassette player, and a Shure mixer for groups that exist outside the mobile studio.

The console output goes through a DAP 310 processor to a 450 Megahertz Marti transmitter. (Or a telephone company supplies phone lines when the distance of the remote makes it necessary.) These units are mounted in a 28-inch rack also part of the studio. Other pieces of equipment in the rack are a McKay-Dymek receiver to monitor 1190, two Crown amplifiers (one for studio monitoring and the other for outside weatherproof speakers), as well as systems patch panel to allow for maximum flexibility when setting up the mobile studio for a particular remote.

A hatch in the center of the roof allows the final links (transmitting antennas and fiberglass speakers) of the mobile remote system to be set up for a broadcast. A 43-foot pneumatic antenna mast is planned for early 1981.

So much for the technical stuff. Now, for how it is used. First of all, because of

The Sunshine Studio is a customized Angosy Airstream Motor Home fully equipped with audio control and transmitting equipment. *(Photo by Dennis Stierer)*

Andrew Dawson is with WOWO, Fort Wayne, Indiana.

the exterior graphics, it is a rolling billboard wherever it goes. That in itself is a strong benefit. Beyond that there are three ways in which it is used.

The first way, which is the most common, is in parades. We just pull up in a parade, send out a few individuals from the promotion department to run along side handing out WOWO sun visors or bumper stickers, and drive through the parade. It is much more effective than a float, in our opinion, because maintenance is so difficult on a float . . . not so on a Sunshine Studio: a wash and wax does it.

The Tri-State area we serve is very big on community parades, so each spring we pick about 30 from the hundreds we're invited to participate in each summer and attend. Having a vehicle such as the Sunshine Studio for that purpose cuts down dramatically on the time and money normally expended for summer and fall parades.

If the Tri-State area is big on parades, they're even bigger on festivals. Virtually every county has a fair and many, many small towns have summer festivals. Again, the Sunshine Studio gives us a way to be a part of these activities. We make arrangements with the event sponsors for a location near the center of activity and then set up shop with the Sunshine Studio. Generally, we'll broadcast all day from the festival while events are going on, and speak with the various people there to help convey the spirit of the event over the air.

The third way which we use the Sunshine Studio helps recoup the approximately $70,000 we have invested in it. The use is commercial remotes. For a certain amount of money, we'll bring the vehicle out to a store location and do a series of live 60-second commercials from the Studio over a period of three or four hours, extolling the virtues of the establishment.

The vehicle is in demand for commercial remotes as a result of the extensive market positioning we did for it when it first arrived. Using the power of the media, we made it into a celebrity of sorts.

We anticipate continuing to use the Sunshine Studio as I've described it here. Being on the road again does pay off.

Editor's Note: Most stations that have an attractive van consider it a travelling billboard. What's more, it has (as WOWO proves) been commercially profitable. Another use of such a vehicle would be to point it more toward electronic news gathering. If your station has a unique vehicle, or if you're using one in an unusual way, drop BROADCAST COMMUNICATIONS a line. We'll put you on the road to sharing it with the industry. BC

KOOL-TV makes two helicopter flights every day, including a live weather report. One of the helicopter's features is a retractable microwave antenna mount.

The station uses a Tayburn Auto-Tracker system (at right) which searches out the helicopter's transmitter signal and then locks on it for a maximum signal. The helicopter can move around, and even away from the city, without losing the signal.

THE MICROWAVE SETUP

KOOL-TV makes good use of the helicopter-to-studio connection

BY SHARON KROCKEY

"Live" being the name of the game in today's news gathering efforts has resulted in some innovative but virtually commonplace microwave set-ups, done on minimum notice and time, and done successfully.

A few years ago if a 4-hop microwave system was contemplated, its feasibility went first to the engineering drawing boards and calculators for a thorough analysis, predicting a reliability factor and so forth. In today's news gathering efforts at KOOL-TV in Phoenix, Arizona, (probably many others do the same) the 3- and 4-hop microwave system is set up with portable equipment for single news stories or sporting events stories.

Sharon Krockey is a promotion assistant at KOOL-TV, Phoenix, Arizona.

A case in point was covering "The John Adamson Trial" (confessed killer of a Phoenix newspaper reporter, Don Bolles) which was moved to Tucson, Arizona, 125 miles from Phoenix. The competition ordered in telephone company full-service video and audio circuits. We chose not to order Telco. Instead, we dispatched four out of our seven portable microwave units to see if we could set up a relay back to Phoenix from the courthouse in Tucson. We did not even attempt a helicopter relay due to the waiting of the story's development making this approach unworkable.

We actually found two methods to set up a portable multi-hop microwave system. The first was used to pick up a sports story "live" from the University of Arizona football stadium in Tucson.

This was done via a 42-mile 2 GHz hop from the top of the stadium to a portable receiver set up on a desert mountain (Picacho Peak). Since we could not set up on a single high peak to clear the terrain, a 13 GHz hop was used for only 500 feet to clear the long paths, then another 2 GHz hop was used from Picacho to South Mountain (50 miles), our normal ENG receiver site. Although this method worked, it was awkward since the communications and cues had

to be relayed back to Tucson via two-way radios at the microwave relay sites.

The second method was used for the Adamson trial coverage from the courthouse in downtown Tucson. It was set up with a 13 GHz hop from downtown to Tumamoc Mountain (two miles away with a good road to the top), then a 2 GHz hop from Tumamoc to Pinal Peak, a 7900-foot mountain 74 miles away, a site used for a Phoenix-to-Tucson intercity microwave system. Since the intercity microwave (75-mile hop on 7 GHz) was available, it was interfaced to the portable 2 GHz receiver to feed the information to the KOOL-TV studios.

We also accomplished communications via this method. The setup cues and information had to be relayed, but the on-the-air cues were quasi-normal. Tumamoc Mountain was able to receive the KOOL-TV air signal which was fed to our cueing low-power Comrex system; thereby, the anchor at the KOOL-TV studios in Phoenix could carry on a two-way "on the air" conversation with the reporter and interviewees in downtown Tucson.

Except for the intercity hop, all of this was done with portable equipment set up on the day of use.

Helicopter remotes are another story. KOOL-TV makes two helicopter flights every day because, as Al Hillstrom, chief engineer, explains, "It keeps our people sharp and alert." Then when something big does break, everyone knows what to do and how to do it. Making use of the helicopter during these flights includes doing the weather live. It certainly does offer a different perspective and an interesting dimension for that segment of the news show.

What makes helicopter remotes a lot more reliable for KOOL is the use of the helicopter's retractable microwave antenna mount and the Tayburn Auto-Tracker. The auto tracking system searches out the helicopter's transmitter signal and then locks on it for a maximum signal. Then the KOOL helicopter can move around, and even away from the city without losing the signal.

According to Hillstrom, the range is about 65 miles, but that's not due to any limitations of the Tayburn system. "Communications (from talent to anchor) is the key to live pickups. But we can only go to the limits of our two-way communications equipment. The TV signal could come back from, theoretically, as much as 100 miles."

The KOOL two-way system includes 450 MHz equipment and a repeater. Combined with the microwave relay system and staff experience, little escapes the capability of ENG at KOOL-TV. BC

New system stabilizes helicopter reports BY RON MERRELL

Getting on top of the scene in a helicopter can be a real advantage . . . unless the weather is bumpy. If the helicopter is bouncing around, it may as well be on the ground. Pictures would just make viewers seasick.

Advancements have been made in aircraft camera stabilization systems, and these systems do offer marked stability over hand-held or hard-mounted methods. Now there's real relief in sight. Sfena Corporation has developed a system they've dubbed Ministab. Turbulence or not, it helps the helicopter ENG/EFP crew bring back steady shots.

What makes Ministab so different from more standard solutions to bumpy and turbulent weather conditions is that it effectively stabilizes the helicopter, not the camera.

This new system, said to have been adapted from a military device originally designed to stabilize gunships in the air, is a minicomputer that takes up very little space in the helicopter. Its main function is to aid the pilot in controlling the helicopter under adverse conditions. Three identical computers with integral rate gyros are dedicated to the three axes of flight: roll, pitch, and yaw. Their output is sent to three separate actuators that work in series with the pilot's manual control linkage. When engaged, it permits hands-off operation.

Camera mount and stabilization systems are very effective for dampening the beat of the rotors and aircraft vibrations, but demonstrations have shown that when Sfena Ministab is added, camera shots can be made with a long zoom even during turbulent weather.

(This system is not used on the helicopter in this article. It's presented here as an introduction to the industry for a unique device that can make a substantial contribution to ENG/EFP helicopter assignments. If you'd like more information, circle 142 on the Action Card in this issue.)

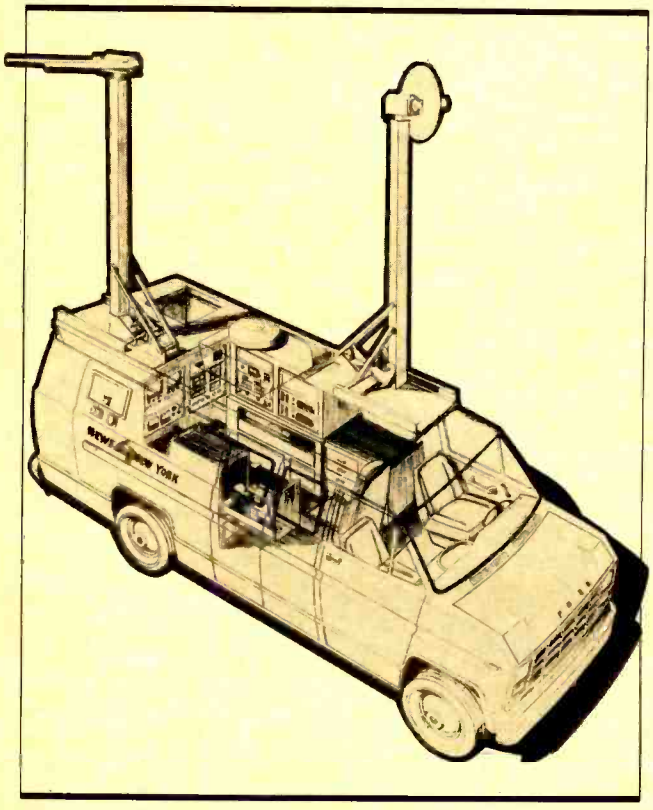
At WNBC-TV...

UNIQUE MOBILE VAN DESIGN makes ENG more reliable

BY WARREN ALLGYER

Early in 1980, WNBC-TV began to consider replacement of its aging fleet of electronic journalism (EJ) microwave trucks. In preparation for this, a considerable amount of time and effort was spent studying operational problems encountered in the field by the technicians who operate these vehicles. The list of problems will not be new to anyone who is familiar with live microwave newsgathering. The vehicle built by Wolf Coach and Tele-Measurements is an attempt to address these areas and is, we believe, unique in its approach.

Warren Allgyer is director, WNBC-TV Technical Services, New York.



The custom-designed vehicle, built by Wolf Coach for WNBC-TV, will be equipped with the latest state-of-the-art equipment. A unique feature — and an important consideration for the New York station — is the folding aluminum mast which lies horizontally along the roof when the vehicle is in transit, and allows for lower vehicle clearance.

Microwave Transmission and Relay

It was found that WNBC-TV News crews performed a high percentage of microwave pickups which required a double-hop or intermediate relay point due to signal blockage caused by the numerous multi-story buildings in Manhattan. In addition, because a double hop was either impossible or too cumbersome to set up, late-breaking news stories were often being missed. A fundamental decision was made at the outset to equip each vehicle so it could function either as origination point or as a relay from another vehicle.

WNBC microwave receive sites were already equipped for reception on either 2 GHz or 7 GHz. To take advantage of this, the new truck would be provided with full-power, frequency-agile transmitters *and* receivers on each band. The truck-mounted antennas would automatically be connected to the receivers when the transmitters are powered down. In this way, the vehicle would be provided with fully redundant microwave capabilities, as well as relay capability. In theory, the number of "hops" and, therefore, potential transmission distance is limited only by the number of vehicles available.

The transmitters supplied by RF Technology each consist of a 1-watt exciter driving a mast-mounted amplifier to 12 watts. The removable exciter, coupled with a portable antenna, provides the equivalent of the normal 13 GHz window unit. Eliminating the need for the 13 GHz system offsets somewhat the cost of the additional microwave equipment in this application. The real benefit of this arrangement lies in the fact that the receiver portion of the system is permanently mounted and connected to the truck signal system. Instead of time-consuming setup on the roof of the vehicle, activation requires only that the receiver be turned on and the antenna be pointed toward the transmitter. This can be done from the safety and security of the vehicle. The crew is also provided with the option of using the portable configuration as a primary link to the station receivers, bypassing the truck completely.

Studio-to-Field Communications

The state of the art of portable microwave technology has progressed to the point where many stations are able to receive program video and audio from locations too distant for effective radio communications. Typically, WNBC-TV EJ crews have relied on handheld 450 MHz transceivers for communications and reception of instructions and cues from the studio control room. This arrangement has not proven satisfactory, especially when the radio must be worn strapped to the operator's belt. External antennas are an

improvement but may be time consuming and cumbersome to set up.

The new vehicle is equipped with two high-power mobile transceivers on 450/455 MHz. These units consistently outperform the handheld radios at a remote site due to their use of vehicle mounted antennas and their enhanced receiver performance. Audio outputs from these radios are mixed with off-air audio from a demodulator and the output of the 161 MHz dispatch radio. Two separate mixes of these sources are produced by using two four-input, broadcast-type mixers. The mixer outputs are then returned down the camera cable to the remote site. This allows the camera operator to receive one mix of the sources; typically, he requires 450 radio, off-air, and 455 cues, while the talent receives only off-air and 455 cues. Talent is not disturbed by technical communications in this scheme. Since all sources are available to each, the system is flexible enough to accommodate those situations where one radio system is more effective than the other.

Inputs to the vehicle signal system are:

1. Camera Cable #1	6. Test/ID Generator
2. Camera Cable #2	7. Trunk #1
3. 2 GHz Receiver	8. Trunk #2
4. 7 GHz Receiver	9. Trunk #3
5. BVU-110 Tape Out	10. Off-air Demodulator

Outputs required are:

1. 2 GHz Transmitter	6. Return Feed #1
2. 7 GHz Transmitter	7. Return Feed #2
3. Tape Machine In	8. Trunk #1
4. Switchable Monitor	9. Trunk #2
5. Switchable Monitor	10. Trunk #3

Table 1

This system provides reliable communications and has been used by WNBC-TV EJ crews for some time, although this truck is the first to employ it as a built-in capability. Heretofore, its effectiveness has been limited by the requirement that the camera be connected utilizing a multiconductor cable that would allow return audio to be fed from the truck. In those situations where a window-unit microwave is used to relay the video to the truck the system is useless. Comrex has provided a solution to this. Two Comrex model CTA Cue transmitters are supplied in the truck equipment racks. These transmitters are supplied with the line-level outputs from the two return-feed mixers and retransmit an FM signal at 1 watt on 26 MHz. Two matching receivers are supplied with each transmitter to be worn by the crew and talent. Even though the transmitter is limited to 1 watt output, the truck is normally parked in close proximity to the camera site and the system has been shown to outperform handheld radios which would be the only reasonable alternative.

Need to Minimize External Work

Inclement weather conditions coupled with crowds which tend to be disruptive if not outwardly hostile, make it desirable to maintain as much of the operation and equipment as possible inside the vehicle. For this reason the antennas, power amplifiers, and foldover masts are permanently mounted and left connected on the roof. The masts are motorized and may be raised and lowered without requiring a crew member to climb onto the roof. The antennas themselves are mounted on remotely controlled pan-tilt heads and may be oriented from within the truck.

Cable access to and from the vehicle is through a connector panel mounted on the curb side of the vehicle. The watertight cover on this panel is supplied with a two-position locking cover which, in the second position, allows cables to enter and exit the panel but secures access to the connectors. This is to prevent unauthorized persons from disconnecting cables in a crowd-control situation.

A wireless microphone system is provided in the vehicle with the receiver and antenna permanently mounted and connected. This, coupled with the wireless return feed capability, will allow the talent to roam freely within several hundred yards of the camera position.

Vehicle Signal System

Even though the specifications for this vehicle called for greatly expanded capabilities, it was also explicitly stated that the vehicle must be as simple and straightforward in its operation as possible. It soon became obvious that the use of the classic distribution amplifier-patch panel method of signal routing would not be able to satisfy this requirement. Analysis of signal flow showed a minimum of seven video inputs to the system and at least as many outputs. Further, any output must have easy access to any input. Clearly this became an application for a small routing switcher. A 10X10 switcher manufactured by Dynair was chosen because it also had the ability, through internal battery backup, to "remember" its settings during periods when the vehicle is powered down. This allows the switcher to be used in lieu of the patch panel and does not require that the entire system to be programmed each time the vehicle is used.

A single keypad at the operator position is able to program the entire switcher. The normal mode of operation is audio-follow-video but the switcher also has an audio breakaway input which is connected to the output of a trunk-mounted audio mixer. This allows the audio on each output to be that associated with the respective input or to be the output of the mixer. In this way, for example, the talent might transmit narration over a tape playback in the truck.

The incorporation of such a sophisticated switcher into an EJ van might seem to be an example of overkill. However, the physical space requirements and resulting complexity of the DAs and patch panels needed to accomplish the same feat make the routing switcher an attractive alternative.

Antenna Masts

It has become common practice to provide a news microwave vehicle with some mechanical means of extending the antenna to some considerable height above ground. This is due, of course, to the line-of-sight characteristics of microwave propogation. The most common method used is the pneumatic mast which normally provides about 30 feet of additional elevation. Wolf Coach supplies a pneumatic mast as part of their standard van package. Alternatively, they allow the option of selecting a folding aluminum mast designed by Wolf Coach engineers. This mast, which lies horizontally along the roof in transit, is built with a power winch to raise it into operating position. Total height above ground using this method is limited to 20 feet, but it has some attractive advantages.

Since two masts are required in this truck, the internal space used by the pneumatic and its associated compressor became a factor. The foldover mast is entirely external to the vehicle and still allows lower vehicle clearance than the pneumatic. This is an important consideration in Manhattan where the vehicle must be housed in existing garages with limited clearance. The disadvantage of a lower antenna height is not really a factor in the WNBC-TV operation since the mast is used primarily to raise the antenna above street traffic. BC

BATTERY PACKS/ BELTS: New answers for old problems

BY BC STAFF

Back when ENG became an exciting buzz word and then a "we'd better get into it" way to go, portable power was a problem. Cameras were tied to vans and the real essence of the ENG promise was coming up short at the end of a cable run.

Early on there were battery manufacturers who saw the needs of the new way to go after the news, but those who were around when it started can recall that the ENG team was so loaded down with bulky equipment that they looked more like deep sea divers than electronic journalists. A lot has changed since then.

When BROADCAST COMMUNICATIONS went to the battery pack/belt and charger manufacturers and suppliers for product review information, we also asked for tips and hints on battery use. From their perspective, manufacturers feel they are meeting the variety of basic needs of the ENG crew, still they are finding that users often are misinformed about battery basics, and old wives' tales still prevail.

At Kapco Communications, for example, company president Kenneth Rubel says, "In the winter, always remember to store the battery in a room where the temperature isn't too hot or too cold, i.e., 65 to 75 degrees Fahrenheit, and never leave a battery in a car for more than an hour in the winter if it is below freezing."

Of course at Anton/Bauer, their new "Perpetual Power Belt" is bound to solve long shoot problems. The belt accepts two Snap-On batteries. When one is depleted, the belt automatically switches to the second one. The depleted one can be taken off and another added. This could go on indefinitely.

Roger Doty of Yardney says that most battery problems are battery abuse. Silver batteries, he says, are abused when they are overcharged, continuously trickle charged, exposed to high temperatures for long periods, or discharged to complete exhaustion or reversal. Doty adds that the preferred method of balancing cells is to bring each cell to a full charge cutoff of 2.0 volts at a normal 20-hour charge rate. Imbalance is a problem brought on by discharging the battery below the stable plateau. As batteries are cycled or deeply discharged, the cells tend to reach different states of charge, or imbalance. The weakest cell in a series connection controls the pack performance.

Speaking for CINE 60, Don Civitillo says that with the nicad cell there is no harm in keeping it on a slow charge beyond the recommended 14 to 16 hours. However, he doesn't recommend establishing a routine of leaving batteries on a slow charge beyond the recommended time because it can contribute to a "depressed voltage" condition. In this condition, you may find that your battery seems to be fully charged, but it will not deliver its rated running time. This is commonly referred to as "memory."

To cure this condition, Civitillo suggests the following: (1) Discharge the battery down to 1 volt per cell. A 14.4-volt battery would be discharged to 12 volts, a 12-volt battery to 10 volts (measured under no load); (2) Recharge the battery using the overnight or slow charge mode for a period of 20 hours in a room temperature of 77°F; (3) Repeat this procedure of charging and discharging two more times. This will break down the excess crystals and remove the depressed voltage condition.

At Frezzolini Electronics, Jim Crawford acknowledges the charging problem. He agrees that most problems stem from improper charging, overheating battery cells, and overcharging. As Crawford puts it, "Any team out there on the street, on the front lines, can say amen to that."

Now just as Crawford acknowledges the rough conditions equipment is used in, Ray Turner of Perrott Engineering Labs says that certain shocks from dropping or mishandling batteries, especially battery belts, will hurt the batteries. These batteries can take considerable punishment, but as Turner says, you should keep in mind that any electromechanical device eventually will suffer from shock treatment. In belts, for example, it's well to remember that the cells are wired together. Rough treatment and excessive flexion can take its toll. However, Turner acknowledges that manufacturers are making this a design consideration.

Turner also told BROADCAST COMMUNICATIONS that his company recommends using 90 to 100 percent of capacity on each cycle. The danger comes, says Turner, when you take the battery into deep discharge. That can be defined as discharging the battery below 1 volt per cell. It's possible that you could ruin a new battery by taking it well into deep discharge.

The spice of the industry is that everyone has a selected way to go. That is, you really have a choice of basic battery types. Each manufacturer, of course, has an explanation for their choice. Cost becomes a factor quickly, but a point that needs to be investigated by stations is how that initial cost bears up against battery life. Some also will operate better under widely varying temperatures. Lead acid batteries are usually less expensive, but they tend to be lower in their volume-to-power ratio than nickel cadium, for example. Silver zinc has three times the power density of NiCad, but some feel it may be operationally sensitive even though in many cases it can run a camera all day. But silver zinc is usually priced above NiCad. NiCad is rugged, long lasting, and easy to charge. And the trade-offs go on from there. Essentially, the choice of battery types should be tied to cost factors and applications.

And, as is so true in other broadcast equipment categories, battery and charger manufacturers are almost con-

Continued on page 76

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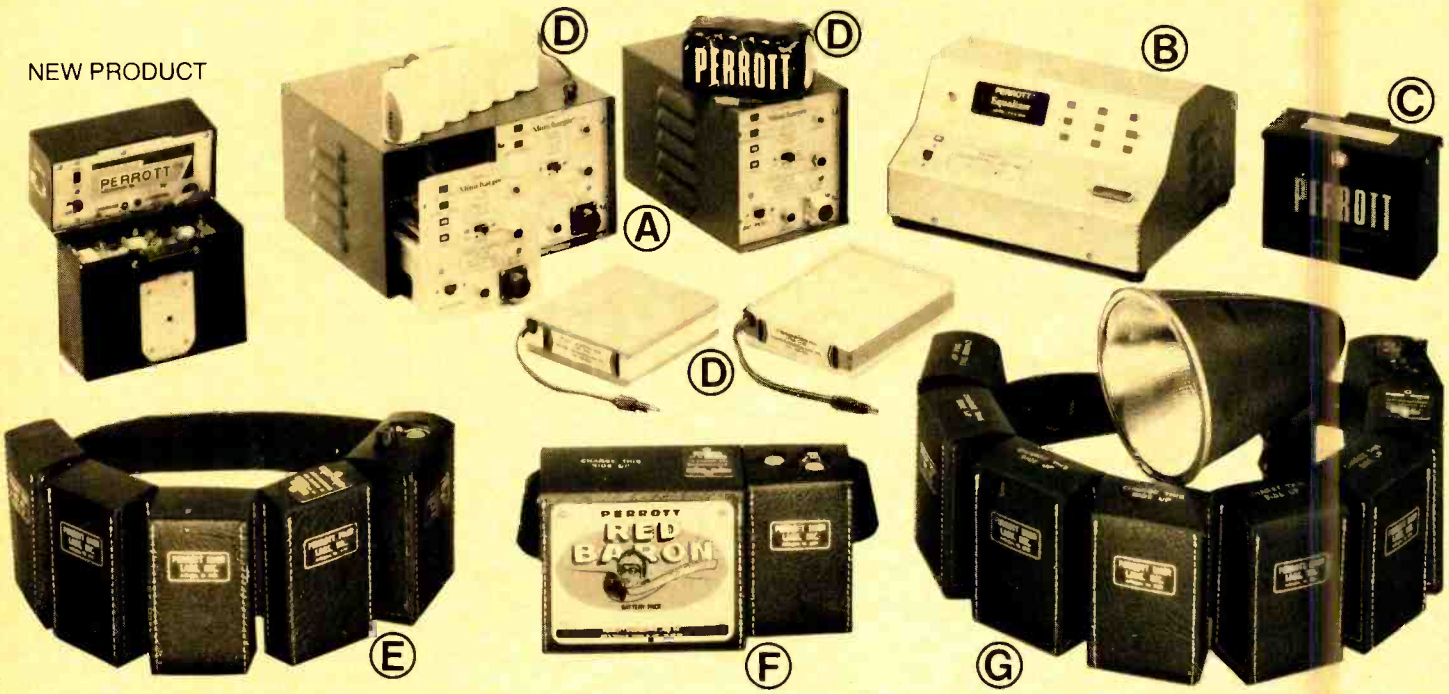

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stantly into R&D that will make them more competitive while holding the line on costs. In some cases the R&D is spurred on by potential government contracts, but generally, the effort is aimed at broadcast sales.

At Frezzolini Electronics, Jim Crawford says the company is performing R&D on electro-chemical systems of rechargeable, comparatively low-cost nickel-zinc battery packs whose output capacity will range from 2 AH to 100, 300, 400 AH and higher outputs.

Aside from the usual problems of charging batteries, Richard Alexandres of Alexander Manufacturing told *BC* that one important point is often overlooked by users. Because of their typically lower cost, many users first bought lead-acid batteries along with a charger. Later, when they switched to nickel-cadium or silver, they used the same charger that came with their lead-acid batteries. If you fall into this group, you could be mistreating your batteries. And because this problem comes up in more than battery belts and battery packs, the problem is more widespread than many would suspect.

Fortunately, the progress in batteries and chargers is apparent, even though it's not running at breakneck speed. Just as the theme of this issue of BROADCAST COMMUNICATIONS is "putting the show on the road," battery belt/pack and charger manufacturers and suppliers are making certain ENG and EFP crews have the flexibility they need to get away from the van and bring home the picture.

Editor's Note: BROADCAST COMMUNICATIONS wishes to thank the following manufacturers for their background information on the care and treatment of batteries: Anton/Bauer; Christie Electric; CINE 60; Frezzolini; Kapco; Perrott Engineering; and Yardney.

Let's begin our review of Anton Bauer with a reminder that we have included an Action Card number with each manufacturer's information. If you need more specs or prices, circle up the appropriate number on the Action Card and drop it in the mail. If you're in a crunch to solve an "I need it yesterday" problem, refer to the telephone number with each manufacturer.

Anton/Bauer
(Circle **151**)

66 Center Street, Shelton, CT 06484
203-735-3305

The most popular model is the patented SNAP-ON™ system which the company manufactures as standard equipment for more than 10 camera manufacturers. The standard unit is a 4 AH NiCad pack with cases made of aircraft alloy aluminum and Lexan. The SV-13 is an optional Snap-On battery. It's a silver zinc model with three times the capacity of the NiCad pack yet it's about the same size and weight.

The company also offers the unique Perpetual Power Belt that accepts two Snap-On batteries simultaneously. When one runs down, the belt automatically switches to the second battery.

Offering what may be the most complete lineup of batteries camera-mounted, Anton/Bauer nickel-cadium batteries are available from 12 to 14.4 volts in a price range from $320 to $410. For silver zinc prices, call the company direct.

The micro-charger is an overnight charger. It is switchable between 115/230 volts, incorporating an LED for charge indication. The line includes a light one-hour fast charger that weighs in at just 2½ pounds. There is a new one — the SQ4N — that's a desk-top unit capable of charging four batteries simultaneously. It's priced at $385. The model SVDC-13 is a digital-controlled unit that will fast- or slow-charge two silver batteries independently. It checks in at $1,595. Other chargers in the belt line.

Their belt models include the 30-volt, 4 AH LB 30D and the 13.5-volt, 8 AH model DB13.

Alexander Manufacturing Co.
(Circle **162**)

P.O. Box 1645, Mason City, IA 50401
515-423-8955

Since many stations are using two-way radios on ENG assignments, it's nice to know that someone with broadcast industry background will supply batteries for all your two-way and pager equipment.

But Alexander also is known as a company that will rebuild your battery belts, and with nickel-cadium batteries. However, they do not build battery belts. The company does offer a line of battery packs that fit right on the back of the camera. These also are nickel-cadium in the 4 AH range.

Along with their batteries, Alexander has battery chargers. In fact, if you buy three of the rechargeable nickel-cadium battery pack replacements, they will throw in a charger designed to charge nickel-cadium batteries. Called the 20A-11, this charger will handle three packs in 10 hours or less, depending upon the state of charge of the battery.

Christie Electric
(Circle **152**)

20665 Manhattan Place, Torrance, CA 90501
213-320-0808

Christie's ReFLEX-20 System gives you NiCad battery reliability as well as recharging completely discharged battery packs in 12 to 20 minutes. The ReFLEX-20 works at 90 to 97% efficiency, extending battery life up to 10 times that of conventional NiCads and 50 times that of other rechargeable batteries.

What's unique about this system is that it employs a revolutionary patented charging concept: interjection of controlled Negative/Discharge Pulses during the charging process. In the care and feeding of a charge, this is like burping the battery before continuing the feeding. This allows the Christie charger to get a complete charge in so quickly.

Christie starts with special NiCad cells. Each is then put through additional forming cycles, screened and three-way matched. This insures that each pack contains virtually identical characteristics in charge, discharge, and temperature. All connections use nickel-plated straps.

For more information on how the system works, use our Action Card or take a look at the article in the *SMPTE Journal*, April 1977, Volume 86, page 204. This is an extremely fast charging cycle system, and it does work.

CINE 60
(Circle **153**)
630 Ninth Avenue, New York, NY 10036
212-586-8782

This is a full-line company aimed right at the broadcast industry. Their extensive lineup is available in a guide that allows you to make selections correctly. You can use the circle number above to get this guide.

CINE 60 rechargeable VTR batteries are replacements for five Sony VTRs and JVC/Panasonic. These are lighter weight than the original OEM batteries yet they fit into the same space. All are one-hour fast charge types. The battery for the Sony BP-90 may be charged by Sony's BP-90 charger. Depending on model, VTR batteries range from $195 to $225.

Their "On-Board" rechargeable nickel-cadium camera batteries are one-hour fast types which snap right onto the cameras equipped with OEM 3-hole battery brackets. They are used on the camera with a "shorty" power cable, and off the camera with the standard power cable. The company has a full line of mounting brackets available. "On-Board" battery prices range from $375 to $395.

Sofbelt is a new-style fast-charge battery belt. Designed for comfort, it's equipped with a line-isolated high-frequency charger, meeting UL and IEC 65 safety standards. Lightweight molded modules with snap-off/on covers provide ready access to the cells, electronics, and wiring. A full range of 12- to 30-volt models for all battery-operated video equipment and lights are available in a price range from $475 to $950.

The company now has a new line of high-frequency, high-efficiency charging systems that weigh in at just a fraction of regular chargers, and they're line-isolated. They are automatically regulated to maintain the correct amount of charging current.

Prices of high-frequency chargers are $65 to $90 for the 110- or 220-volt Overnight Chargers; $295 to $435 for car (DC) Fast Chargers; and $350 to $445 for AC Fast Chargers.

The company has over 200 types of batteries, along with battery cables and related accessories.

Comprehensive Video Supply
(Circle **154**)
148 Veretans Drive, Northvale, NJ 07647
201-767-7990

PAG Power has recently made its way into the mainstream of ENG and EFP through their U.S. distributor, Comprehensive Video. These are nickel-cadium batteries encased in sturdy, lightweight battery belts appropriately dubbed PAGBELTS.

PAGBELTS, with internal overnight chargers, are available in 12, 14, 30, 12-0-12, and 7-0-7 volts. The 4 AH 12- and 14-volt models weigh a bit over 5 pounds, while the 30-volt unit is 12 pounds. The 7 AH versions start at 7¾ pounds. The price range runs from $544 for the 5¼-pound 4 AH version to $997 for the 30-volt unit.

SPEEDCHARGE PAGBELTS with internal overnight chargers requires the 9404 Speed Charge 4000 charger for rapid charging. They are available in 4 and 7 AH versions and weigh about the same as the PAGBELTS. They're available in 12, 14, and 7-0-7 volts, with prices ranging from $672 to $984.

The 4000 charger sells for $895. It electronically considers temperature, pressure, and voltage in determining the duration of the charge.

Film/Video Equipment Service Company (Circle **163**)
1875 S. Pearl Street, Denver, CO 80210
303-778-8616

This company markets the Schneider SLA 14100 belt that will power up a TK-76 and a 100W sun gun. It's a 14 volt, 10 AH system that gets about 45 minutes of running time with the camera and light going, and from 2½ to 3 hours with the camera alone. The model SLA 12100 at 12 volts, 10 AH is available for 12-volt systems. These are sealed lead acid batteries.

The usual extras are built-in, and they include a meter, a charger that won't overcharge, and a crack resistant Naugahyde belt. Among their other batteries, the company has belts for all film and video cameras and 30-volt lights. What's more, they offer a two-week free trial.

Frezzolini Electronics Inc.
(Circle **155**)
7 Valley Street, Hawthorne, NJ 07506
201-427-1160

Here's a company that's been into portable broadcast power even before ENG and EFP were a factor. They're one of the manufacturers that usually opens the convention booths to visitors and questions.

Lightweight "On-Board™" Frezzi™ battery packs are in the popular hook-on-the-camera-back configuration. They meet all the power requirements and electrical/electronic connections specified by Hitachi, Ikegami, JVC,

Continued on page 78

Philips, RCA, Sharp, and Sony portable video cameras without cables (except for the RCA TK-76A/B/C). These nickel-cadium battery packs operate specified cameras one or two hours in outputs that range from 2 AH to 4.5 AH with prices that run from $175 to $395. Sealed lead batteries also are available for $135. All are compatible with camera factory-supplied mounting brackets.

Battery-pack mounting brackets are available, most at $95, several at higher prices due to cameras that require special connections.

Frezzi™ continues to manufacture various belt-style battery packs and packs in other styles, both for powering various older and new portable video cameras and for powering their Frezzi-Lite™ portable lights and other camera lights.

Frezzi-Fast™ chargers are highly efficient transformer type units with a line-isolated output. Housed in metal cabinets with cables and plugs permanently attached, the standard model operates from 120 VAC. The international model operates from 100, 220, or 240 volts at 49 to 61 HZ.

Organizations having a variety of Frezzi™ battery pack models, old or new types, can use the Frezzolini® Sequencer charger that will fully recharge a mix of up to five specified Frezzi™ Battery Packs automatically in sequence in 10 hours or less. The company also manufactures several different low-cost Frezzi™ Trickle Chargers.

Gould Inc.
(Circle **156**)

1110 Highway 110, Mendota Heights, MN 55118
612-452-1500

Gould is a company that markets a line of rechargeable nickel-cadium batteries, but unlike most of the manufacturers in this review, these are not designed to power up a full-blown ENG/EFP camera or recorder. They are included here because these batteries are applicable to handheld and portable equipment that often is used on the road. Two-way equipment applications are typical.

Their Again & Again™ line of batteries can be charged up to 1,000 times, which accounts for their name. A complete system, consisting of two size AA rechargeables, the charger and adapter, are priced at $8.95. Other popular sizes such as C, D, and 9 volts are also available.

Kapco Communications
(Circle **157**)

5221 N. Elston Avenue, Chicago, IL 60630
312-545-2544

Kapco is the distributor for the Gates/Kapco Battery Pack. As a video production company that does 80% of its work on remote productions, Kapco discovered the Gates battery by accident.

As a sealed lead-acid entry, it checks in as an under $100 pack. It's a 12 volt, 5 AH, weighing 6 pounds. Its size is 8 x 3 x 4 inches, and it comes complete with charger, case, and shoulder strap.

The pack has a one-year money-back guarantee and is designed to power a camera/recorder combination for an average of four hours. Kapco claims the pack is one of the "most forgiving" with regard to temperature extremes, useful life, and ability to sustain a direct short.

Media Concepts Inc.
(Circle **158**)

559 49th Street South, St. Petersburg, FL 33733
813-821-2122

Media Concepts has the Porta Power 12-volt, 10 AH battery pack. The unit is supplied with a charger and comes with a cable for your camera or VCR. The model LAB 128 is packaged in a plastic pouch-type container complete with belt loop and shoulder strap.

The Porta Power unit may be charged from the cigarette lighter socket of any 12-volt vehicle. The unit was designed for use with ½-, ¾-, and 1-inch portable video recorders, cameras and 12-volt DC lights.

Media Concepts is the sole distributor to the broadcast and industrial user. The price, including the charger, is $129.95.

Multiplier Industries
(Circle **159**)

464 South Tenth Ave., Mount Vernon, NY 10550
914-699-0990

Multiplier Industries has manufactured a complete line of rechargeable nickel-cadium batteries for use in transceivers and pagers for over six years. While the company did not furnish specs and prices, they did supply the following. They're not one of your typical battery companies.

Their batteries carry a full one-year warranty (nickel-cadium). They claim the lowest failure rate in the industry. Recently they also have added alkaline and mercury batteries to their line. Also, the company will manufacture specialized batteries on request.

Perrott Engineering Labs
(Circle **160**)

1020 N. Fillmore Street, Arlington, VA 22201
703-528-5861

Perrott is one of the heavyweights in the industry, but they offer both nickel-cadium and silver-zinc lightweight batteries. For example, their Minipacks™ are designed to power both video and film cameras, recorders, lights, microwave transmitters, portable transceivers, and other special equipment for ENG and EFP.

The KWIK-KLIP™ camera batteries with 12 AH silver zinc weigh in at 4½ pounds and sell for about $1,000. The 4 AH nickel-cadium version is six pounds and goes for $425.

Belts to power cameras, recorders, and lights include the following: 12 AH silver zinc (5 pounds) for $1,000; 4 AH nickel-cadium with a built-in charger (6½ pounds) from $305; and 7 AH nickel-cadium with built-in charger (8 pounds) from $405.

Minipack video recorder batteries are available at 8 AH in silver zinc for $850 and 4 AH nickel cadium for $165.

On the economy side, Perrott has a lead acid model (3 pounds) that sells for $52.

The PE 100 Silver Zinc Minicharger™ is a solid-state unit that cuts off automatically when the battery is fully charged. It's of modular construction so more than one charger can be put into the same housing to allow multiple batteries to be charged at the same time. The single price is $580 and the dual is $940.

Perrott also sells a PE 38 Minicharger® for nickel-cadium overnight charging, and it sells for $130.

Yardney Electric Corp.
(Circle **161**)

82 Mechanic Street, Pawcatuck, CT 02891
203-599-1100

Yardney has been successfully marketing their Silvercel® batteries for ENG and EFP, and their power packs are available for at least six major cameras as well as Sony VTRs.

Their cells for ENG are the LR12(SS), a 12 AH unit, and the LR8, an 8 AH cell. The LR12 cells are typically employed in a series pack of nine cells which can provide from four to six hours of camera time per charge. They are equipped with high-pressure relief valves which relieve internal pressure if cells are abused.

Properly applied, the Silvercel® exhibits a very flat voltage potential during almost the entire discharge. Recent improvements in silver cell design and the introduction of the pulse charging technique with fast and moderate charge options have further increased cycle life performance and recharging capability.

Yardney batteries are designed for minimum size, low weight, high energy-density for both TV camera and VTR applications. Most recently, their silver zinc batteries also have been used to power up portable data-link transmitters used by ENG operators for direct relay. BC

PRODUCT PREMIER

SMPTE product review

For more information on products highlighted in this section, use BC's convenient Action Card.

In keeping with the times, all conventions are becoming the stage for new equipment introductions. From all sides, there is concern these days that introductions are coming so fast and furious that it's difficult to decide which unit is best or whether it's best to wait for a new generation to be unveiled. That would seem to be the bad news.

The good news is that the choices are wider, the prices more competitive, and the options allow you to economize or go all the way to the bottom line of your budget. Let's kick off this month's Product Premier with a bevy of new products we found in the booths of the SMPTE convention in New York City.

Editing system software (Circle 141)

FERNSEH INC. — Several new products were on display for the first time in the U.S. in the Fernseh SMPTE booth. Along with their CCD FDL telecine and its new frame-by-frame color corrector, Fernseh demonstrated the Mach One computer-assisted editor.

This is the first unit of its type designed around a single keystroke per command concept. It was shown with a new "cluster event" software that allows the editor to preview and record a complex series of transitions in one operation.

The new software was especially designed for use with production switchers having effects memory capability. The Mach One system was demonstrated with three Bosch BCN 1-inch VTRs, one of which was a new extended play version. The extended-play VTR, designated the BCN-51-EP, can record and/or play a 140-minute program.

Electronic graphic system (Circle 132)

ADDA CORPORATION — The ESP C-Series is the newest generation of the company's electronic storage and recall system. The system can access up to four standard computer-industry disc drives — up to 3,000 separate graphic stills online, with the request answered in less than a half second.

Dual-channel memory permits preview selection of stills and last-minute editing of graphics prior to on-air use, or creation of multi-layer visuals from conventional video sources (videotape film, character or effects generator, live camera, etc.) or computer-assisted and computer-enhanced graphic production systems using the NTSC format. Sources may be synchronous or non-synchronous since the ESP C-Series input is fully synchronized.

Image stabilizer (Circle 140)

ARRIFLEX — Arriflex has a device that weighs just five pounds and mounts in front of the lens of your camera. It's an important ENG/EFP accessory because when it's attached to the camera, you

Continued on page 80

New cameras at SMPTE

The fall SMPTE show is not noted for new equipment introductions, so the recent convention in New York City took on a new look as several product introductions were announced. More surprising yet, four new cameras were on display.

CEI showed their studio performance camera — dubbed The Americam — for the first time. Including lens, tubes and viewfinder as standard equipment, The Americam features prism optics and excellent registration controls. Options include a full complement of lenses, remote control, and triax.

Homer Hull, CEI's director of marketing, said, "The Americam offers a very practical alternative for the television producer who needs a high-performance broadcast studio camera, but until The Americam was developed, he could not fit it into his budget." According to CEI, the camera is priced under $30,000 and deliveries will begin in February 1981. For more information on this camera, use number 128 on our Action Card in this issue.

HITACHI unveiled their KP-500 solid-state color television camera. This is not a CCD camera. Instead, it's a unique design that uses three MOS pickup devices. Weighing in under 4 pounds, the KP-500 lists a resolution of more than 400 TV lines, has a signal-to-noise ratio of 49 dB, and takes a standard lens.

Hitachi says its features include high sensitivity, no "sticking," no lag, no geometric distortion, and no effects from external electromagnetic fields. The circuitry in this camera is fully solid-state, ensuring a long service life and no maintenance. For more information on the KP-500, use number 129 on our Reader Action Card.

In the **RCA** suite, the TK86 ENG/EFP camera was on display. It's a new model that uses the new low-capicitance Saticon or lead oxide pickup tubes which provide improved signal-to-noise performance. The mechanical design includes a form-fitted curved bottom which aids in weight distribution and balance. The camera retains the rugged, rain-tight design of its predecessor, the TK-76.

The TK-86 features a built-in battery holder for on-camera snap-on batteries, a built-in microphone connector, and a chroma-key adapter for chroma-key capabilities. Wireless field production systems also are available in the triax mode of operation.

For more information on the TK-86, use circle 130 on the Action Card.

In the **TOSHIBA** booth, Ron Fried (division vice president and general manager) was on hand to show the PK-60. In addition to its digital memory and automatic setup functions, Fried said the PK-60 was conceptualized and designed for versatility in the field and features a digital base station, monitor selector setup box, microphone holder with a built-in amplifier, analog base station, and a wireless/triax transmission system.

Information stored in the PK-60 non-volatile memory of the Digital Data Loc unit maintains centering, black levels, and white levels. So the camera can be set up in the studio and then used on remotes with no additional setup required.

For more information on the PK-60, circle 131 on Action Card in this issue.

can go well beyond a safe 50mm focal length. With the ARRI Image Stabilizer, helicopter shots can be steady and sure.

A gyro's directional stability makes it resist off-axis movement, such as panning the camera. Using military aerospace technology, a precision brake causes the gyro to lean with the panning motion, steadily. Even deliberate jiggling will not bounce the picture.

There are no lenses in the device. Light passes through optical flats front and rear, and reflect off two front-surface mirrors, so there is no light loss and no image degradation. The first mirror is effectively floating in space. The image is reflected to the second mirror and into the camera lens.

The Image Stabilizer works with any camera and with any prime lens longer than about 35mm.

Animated video system (Circle **136**)
CONVERGENCE CORPORATION — The Animated Video AniVid System was demonstrated in the Convergence booth. It's designed to produce frame-by-frame animation directly on videotape. It will take any form of network, manually or computer generated, and produces a full-color broadcast-quality finished product.

All the artistic techniques available to the film animator are possible on the Animation Video System. Its major advantages over conventional film animation are greatly increased speed of production, lower costs, and a higher quality finished image for TV use.

Operation of the system is simple and straightforward. You need only turn on the power, load the VTR with suitable tape, and begin operation by pressing the expose button.

Camera battery pack (Circle **138**)
FREZZOLINI ELECTRONICS — Here's a new, low-cost line of on-board nickel-cadium battery packs which are compatible with the factory-supplied camera battery mounts of the Ikegami HL-79A and the Hitachi FP-40.

The battery pack consists of capacity graded nickel-cadium cells housed in epoxy-coated aluminum cassettes. The battery pack can be charged in less than one hour with the "line-isolated" domestic and universal chargers.

The voltage of the model BP-13 is 13.2 VDC at 4.0 AH, and the capacity is listed at approximately 120 minutes. The weight is four pounds.

The BP-13 is listed at $290. The compatible BC-77 Fast Charger is $395, and the Trickle Charger is $40.

ENG/EFP camera lens (Circle **135**)
ANGENIEUX CORPORATION OF AMERICA — The company has a new ENG/EFP lens: the 15x9 with focal lengths from 9 to 135mm. The aperture for this lens is f/1.5 (9 to 100mm) and f/1.9 (9 to 135mm).

The minimum object distance is 0.8 meters or 32 inches, and the transmission factor is 1.1. The range extender turrent is 2x (18-270mm, f/3 to f/3.8). On the zoom servo control side, a rocker switch is standard and a pistol grip is optional.

The weight of this lens (with turrent and rocker switch control) is 4.6 pounds. BC

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