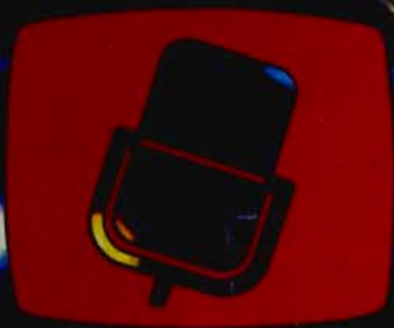


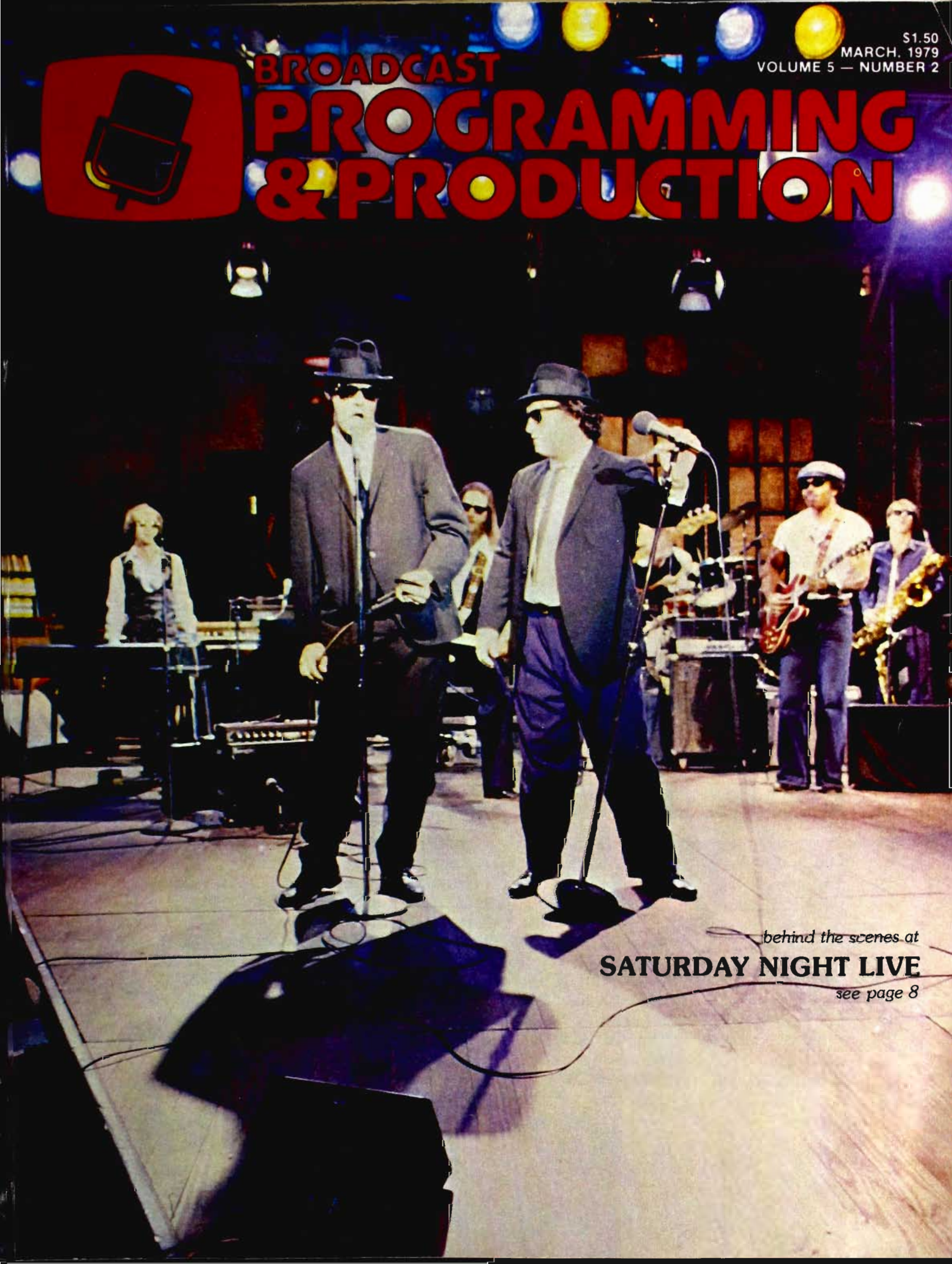
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MARCH, 1979

VOLUME 5 — NUMBER 2



BROADCAST PROGRAMMING & PRODUCTION



behind the scenes at
SATURDAY NIGHT LIVE
see page 8



CARNEGIE II: A Formula For Change Or More Of The Same?

The two most significant reports on Public Broadcasting since 1967 were released within four months of each other — the Corporation For Public Broadcasting's, (CPB), Task Force On Minorities in Broadcasting's Report, "A Formula For Change," and the Carnegie Commission Report on the Future of Public Broadcasting, "A Public Trust."

Much fanfare and publicity was afforded the so-called Carnegie II Report in February of 1979, although it followed by four months the CPB Task Force Report in November of 1978, which heavily criticized the lack of responsiveness of the public broadcasting structure to the needs and interests of minorities. Few people realize that, notwithstanding all of the prose, style, recommendations and philosophical comment of "A Public Trust," that it will just be another report if the concerns and severe problems highlighted by "A Formula For Change" are not addressed by the Congress, the FCC, and the public broadcasting community.

Since the inception of the public broadcasting structure in 1967, minorities have been attempting to gain access to and make public broadcasting responsive to their needs, tastes and interests, especially because taxpayer dollars provide much of the support for public broadcasting.

For several years, beginning in 1973, six years after the creation of the CPB, minorities had been attempting to have positive, direct and meaningful actions taken on their complaints over the lack of responsiveness of public broadcasting to their needs and interests. In 1973, a CPB Board Panel on Effective Minority Programming was established which in 1974 made the following report to the CPB:

There continues to be a dearth of programs in public broadcasting that relate to the needs and interests of minorities. As a consequence, no matter how much or how frequently the allegations of minority activists are discounted, the demand for greater minority involvement in a medium supported by public funds continues to gain momentum . . .

During the ensuing years, the CPB Board passed several "Resolutions" regarding the need for specific considera-

tion and responsiveness to the needs of minorities and other specialized audiences leading to the creation in 1976 of a Human Resources Development Department at the CPB. In 1977, 10 years after the establishment of the CPB, the CPB Board established a "Task Force" on Minorities in Public Broadcasting to assist it in maximizing minority involvement in all phases of public broadcasting. Eighteen months after its inception, the Task Force reported to the CPB Board on its findings and recommendations in its report "A Formula For Change," which listed 46 findings and 66 recommendations.

What did this distinguished multi-racial group conclude after eighteen months of study? As stated in the Report's Executive Summary, the "public broadcasting system is asleep at the transmitter" in terms of its responsiveness to minorities. Among the most serious allegations were that national minority programming was seriously deficient; only one PBS station program cooperative-funded minority show was on the air, and was only purchased by 77 of 276 stations; that National Public Radio (NPR) in fiscal 1977 only devoted 4.7% of its distributed programming to minority related programs; that 51% of public radio and 16% of public television licensees had no minority employees; that only one of 15 persons then working in top decision making jobs at the CPB, PBS, and NPR was a minority; that of 26 programming decision-makers at these public broadcasting operations, only one was a minority; and, that only .8% of public television program managers were minorities.

The Summary concluded:

The findings of this report would suggest that any serious . . . [minority] . . . actors, managers, producers, directors, and writers interested in making a career in public broadcasting would be well advised to keep their rent low.

The Carnegie II Response

Copies of the CPB Task Force Report were given to the staff of Carnegie II with high hopes that this "Blue Ribbon" panel would pick up the ball and strongly support the spirit and message of the Task Force in the final Carnegie Report in its recommendations, especially since Carnegie I in 1967 failed to relate to such

concerns. In fact, the third recommendation of the Task Force was for Carnegie II to give "priority consideration to the specific requirements and needs of minorities in the entire public broadcasting system and that it weigh all its recommendations relative to their potential impact on minorities."

If minorities were holding their breath for a strong endorsement of their concerns from Carnegie II, they learned in February that they had better come up for air, and soon. Although the Carnegie Report, "A Public Trust," did make mention of the problems of minorities in employment, programming, and access, and even quoted figures from the CPB Task Force Report, it certainly did not provide a strong "call to action" to remedy the problems and concerns expressed in the Task Force report. Of course, there was mention of minorities, and the need for improvement, and greater diversity, but most of the 46 findings and 66 recommendations of the Task Force did not receive the priority attention that "A Formula For Change" would seem to demand. The main thrust of "A Public Trust" was to applaud public broadcasting as a "national treasure," recommend reorganization of the present structure, seek over a billion dollars in long term funding, and urge more autonomy for public broadcasting.

One reason for the lack of a strong statement from Carnegie II on the problems of minorities in public broadcasting is most likely related to its composition. The members of the Commission were distinguished, highly respected and well-meaning persons. However, of the 17 members, only two were Black (Actor Bill Cosby, originally a member, resigned due to other commitments) and 10 were affiliated or associated in some degree with colleges, universities, or some aspect of the present public broadcasting structure (the Task Force had found that the lowest level of minority participation on public radio and television station boards was among stations licensed to universities). Furthermore, it could also be argued that the main concern of the Carnegie II members and staff was to reinforce the good of public broadcasting and condemn almost blanketly, commercial broadcasting. For example, the Carnegie Report makes the following statements:

- "The power of the communications media must be marshalled in the interest of human development, not merely for advertising revenue.

- "... a flourishing public communications service" uncensored by commercial imperatives.

- "Unlike commercial radio and television, most print media and many new communications services, public broadcasting creates programs primarily to serve the needs of audiences, not to sell products or to meet demands of the marketplace."

- "The noncommercial nature of public broadcasting permits dissemination of informational and educational activities that can elevate the level of public debate and understanding of our evermore complex local, state, and national activities."

Most disturbing to minorities and other

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The Cover:
The Blue Brothers, appearing on NBC's "Saturday Night Live". Photo courtesy NBC Television.

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The Washington Connection

by Clarence McKee

critics of certain aspects of public broadcasting should be the following Carnegie II statement:

Many public groups, once staunch supporters of public broadcasting against the blandness and vulgarity of commercial broadcasting, began to express disappointment about the record of public broadcasting on programming for minorities and women . . . [and] . . . equal employment opportunity . . . Perhaps criticism was inevitable, given public broadcastings very limited resources. Expectations of a system that calls itself 'public' are necessarily broad, and perhaps overambitious . . . [emphasis added.]

"Inevitable"? "Given . . . very limited resources"? "Overambitious" expectations? Really! What will minorities say about their concerns and criticisms being considered "inevitable" due to "limited resources" and overambitiousness. Minorities will not see the problem as just money, but rather as a matter of commitment, philosophy and priorities.

Minorities who worked so hard on the CPB Task Force to present a "Formula For Change" have received a Formula For Change from Carnegie II, but not quite what was hoped for in terms of minority participation, programming and involvement. If public broadcasting is presently "asleep at the transmitter" on minority issues, notwithstanding pressures from minorities, the Congress, and citizen groups, what will happen if it is left almost totally on its own as some of the recommendations suggesting reorganization to extend to nine years the terms of persons charged with establishing its policies, nearly automatic funding, and creation of a second board to supervise programming.

Hopefully, the Congress will take a long hard look at Carnegie II and not act as hastily as it did on the recommendations of Carnegie I in 1967 until there has been a full review of the Carnegie II proposals and approach in conjunction with the CPB Task Force Report. To act on the former without also respecting the opinions, views, and concerns expressed by the latter would be to ignore the pleas of minorities and public broadcasting critics which have been expressed for over a decade. In undertaking a coordinated review of both of these major reports, perhaps the Congress or the public will ask why we cannot make necessary reforms and implement needed changes without reorganizations, creation of new agencies, trusts, and other mazes of bureaucracy which, in most instances, result in more of the same in the future. □ □ □



station meeting minutes

by

Howard W. Coleman



DOWN THE MIDDLE OF THE ROAD

"Possible futures in our programming will be the subject of our next staff meeting," WAA Radio station manager Matt Rolfe memoed his staff. "I'll turn the session over to the program director, Gina Marina, and news director, Pete Peterson.

"In thinking toward our meeting, you might be interested in this information, which I picked up from a college text titled *Case Studies in Broadcast Management*: 'In terms of total day share-of-audience, rock stations scored number one in the first and ninth markets nationally; all-news was first in the fourth and sixth markets (also fourth in the first market); talk was first in the number two market and second in the number one and number four markets.

'But note that *various*, meaning a mixed bag, scored number one in markets three, eight and ten; second in markets seven and eight.'

"With 200,000 radio households," Rolfe concluded, "we quite obviously are not in that league — but there might be some lessons. See you Friday morning."

As invited, Gina Marina opened the staff session: "Matt, it was very interesting to me that the hard-to-define category of MOR — *Middle-of-the-Road* — did not emerge in the text you quoted. Unless, of course, that almost-undefinable category of *various* includes MOR.

"Here at WAA Radio we are for all practical purposes a middle-of-the-road operation. We're hitch-hiked, in a comfortable sort of way, to a very successful jointly-owned television operation; we share news and feature beats; on our own we play a pleasant blend of what's new and tuneful and the 'Golden Oldies' . . ."

"Gina," promotion manager Zip Rowlings interrupted, "I had a marvelous phone call this week from an indignant gentleman who said: 'You offered the information that at 8:00 p.m. you were going to do a showcase of the *Golden Oldies* — and it turned out to be Elvis Presley plus Dickie Do and the Dont's! For your information, young man, the *Golden Oldies* are Benny Goodman, Artie Shaw, the Dorsey Brothers, Helen O'Connell, Duke Ellington, and a lot more!'"

"Absolutely right, Zip," Gina responded. "MOR is one thing when the road is I-95, six lanes either way and with a hundred foot middle strip — and quite another when it's two wagon ruts with some scrub grass inbetween.

"I'd like to propose for WAA a compromise that would not in any way take away from the fact that we are the MOR station in this market — even though it would seem evident from Zip's report that we may not be focusing in on *all* of the generations of the 'Golden Oldies' — we might well season our program elements with 60-to-90 second splashes from the *Spice Rack*, *Rock News*, *Entertainment News*, *Consumer Information*, *Neighborhood News*, *School News* — all interspaced in regular programming."

"All good, and my department would, of course, have a heavy hand in it," said news director Pete Peterson. "Much like any other news director, I'd like to go for a heavy-driving, all-news operation. But it's obvious that we can't afford the personnel in our market.

"But I do believe that we could heavy up on news programs in key morning and evening drive times; make them more significant and solid. We have the basic AP service plus AP Audio for national and international service — we go for more local action and build possibly four 15-minute hard news periods: seven and eight a.m., five and six p.m. And we'd need two additional staff people to do it."

"I really jump on the *Spice Rack* concept," Zip Rowlings said. "I can see consumer ads locally promoting all kinds of local information at specific times, from a spice rack piece of art — and trade ads telling about how we do it in our market."

"Some good concepts here," manager Matt Rolfe entered the conversation, "but we have to contemplate additional costs. Pete admits to the need for two additional people to flesh out what he sees.

"For a professional and truly musically erudite person to make the concept of the

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...new, Electro-Voice shock-mounted microphones do for sound.

DO56 Omni – The DO56 shock-mounted omnidirectional microphone is virtually impervious to mechanical noise. Its isolated capsule eliminates the possibility of capsule/case collision making the DO56 the ideal microphone whenever there is lots of action. The excellent "G-factor" margin makes this new microphone less susceptible to the bell-like clang typically heard from other shock-mounted microphones when they are accelerated or decelerated rapidly. Plus, a built-in blast filter reduces "P-popping" dramatically to keep your audio clean.

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These are microphones to depend on, in the studio or in the field. If they weren't, E-V couldn't offer this warranty. When your application calls for a shock-mounted microphone, test one of these at your E-V professional microphone dealer.



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Behind the scenes at
Saturday Night Live

by Steve S. Ryan

It's like the good old days of television, but with an up-to-date look and sound. It's exciting. It's fresh. It's entertaining. It's TV at its best . . .

"IT'S SATURDAY NIGHT LIVE!"

Saturday Night Live has quickly become an American television institution. The program is so well produced it appears to run effortlessly . . . but that's only the side the viewers see. The show is born each Saturday night at 11:30 at NBC-TV in New York City, but its gestation period of six days is harried and hectic.

We'll go behind the scenes and look at the feverish activity that goes into making *Saturday Night Live* the polished production that it is, and meet some of the professionals whose combined talent and experience make this one of television's premiere shows.

The *Saturday Night* writers, Repertory Players, and producer Lorne Michaels have been hailed as TV's new comedy wave and may well be the most exciting, innovative show on television since *Laugh-In*. But credit also should be given to the *Saturday Night* production crew which helped develop a production style, schedule and format perhaps unique in the history of television.

Writers

The writers work six days a week beginning

on Monday and ending on Saturday. They arrive in the afternoon but meet as a group to develop ideas for that week's show. Producing a show that runs so late in the evening seems to have affected the rhythm and pattern of most of the people's lives who work on the show, so that their day usually doesn't start till late morning or early afternoon. "They are all night people." Production manager Bob Lissner puts in his regular workday at NBC, then he or his colleagues have to stay through the evening or even later to work with the *Saturday Night Live* crew.

That Monday evening around 7:30 the fourteen writers meet with producer Lorne Michaels to bring up ideas they think would make good sketches. Together they decide on what ideas will definitely be developed for the show that Saturday. "People mention what they want to work on, what they are thinking about," stated writer Don Novello. "Sometimes there are ideas that are kind of developed, sometimes they are really general topics and it is pretty free. You can do pretty much what you want to." Novello also doubles as the Vatican priest in "Weekend Update."

Once producer Michaels and the writers decide what ideas will be developed, the writers move into high gear. Monday they usually work through midnight. Tuesday they come back in the early afternoon and work all

night getting done around 4:00 or even 10:00 Wednesday morning. They get a few hours sleep in beds provided in offices, and then there is a read-through of the scripts they have written. This read-through is attended by all of the cast and by all the major crew members, so that all can get an idea of what the show will look like. Wednesday afternoon at 3:30 is the first time the full cast and crew see the scripts for the show that is to be done that Saturday.

Rehearsal

Thursday and Friday afternoons and evening will be spent blocking the various sketches. The Repertory Players and the guest star will walk through their sketches without costume, stopping to work out any technical or physical problems. In the early evening the audio crew will rehearse with the band, in this case the Blues Brothers, to get the proper audio balance, equalization, etc. Then the cast will return to run through more of the sketches which will usually run till 9:00 p.m., though the Friday I was there they ran all the way till 11:00. Late Saturday morning they will again rehearse with the band. Then Saturday afternoon there will be an entire run-through of the show with the cast in costume, though very seldom do they ever get through everything. Here the director and cast will work more on such things as timing of lines, facial

Golden Oldies a major attraction, I sense the need for a new staff person. *The Spice Rack* I think we can handle through our program manager — but with some free lance purchase from time-to-time.

"We know that we are a reasonable voice in the community. And stable. Where should we go from here?"

Station manager Matt Rolfe faces the questions:

- Stand pat with a fairly good market situation, gambling on a stable market situation;
- Strike out (with additional hard dollars in terms of personnel and production) for the potential of increased audience and rate card revenue.

□ □ □

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from: Steve A. Glaser
Production Supervisor
KLIX Radio
Twin Falls, Idaho

Just recently your January, 1979 issue was tossed my way by somebody knowing of my interest in contemporary radio drama. I found your article "Radio Tries A 'Dramatic' Comeback" pretty good as far as it goes. But, once again I find that my heroes have been overlooked, and I intend to call it to your attention.

I first discovered ZBS Media in 1973 or late 1972. Either way, I believe the first ZBS production pre-dates the CBS Radio Mystery Theater. The production I found coming through my radio that night was entitled, "The Fourth Tower of Inverness." Fourth Tower was a 15-week serial combining mystery, adventure, suspense, Eastern philosophy, and a lot of humor into the most enjoyable and sophisticated piece of radio I had ever heard — until, that is, they released the second serial, "Moon Over Morocco." ZBS Media achieved effects that I would have considered impossible to do on radio . . . or at any rate impossible to do well. And they achieved those effects magnificently.

"Fourth Tower" and "Morocco" played primarily on college radio stations and other progressive outlets, such as the Pacifica Stations. I personally know the sort of excitement they stimulated among their listeners. You just didn't dare disturb a ZBS fan while he or she was listening to the Fourth Tower; they were liable to get violent . . . well, at least verbally abusive.

In fact, were it not for ZBS rekindling a nearly dormant love for the medium of radio, I very well might not be in the business now, and I know of others who've been similarly influenced by exposure to the ZBS productions. So perhaps you can understand why I am less than pleased when I discover this fine company being overlooked in an article such as yours.

ZBS Media's address, should you wish such is as follows: ZBS Foundation, R.D. #1, Ft. Edward, NY 12828.

Should you wish to sample one or two of their shorter episodes, I personally recommend one entitled, "The Flatback Dragon, or, Oh! Those China Nights." On the more comedic side you might like, "Come Back Duke of Earl." Both from the "Stars & Stuff" series. Although I maintain that the truly superlative ZBS works are the extended serials.

"The Greater Indianapolis Garage Sale," sponsored by WIRE-AM Radio, a mammoth two day event, has become an annual event, a smashing success and a permanent fixture in the life of the Hoosier housewife, according to program director Gary Havens.

Havens added that "The idea was originally conceived as an early assist to the homemaker with her spring cleaning, while providing WIRE Radio listeners with a scavenger's paradise." After three events, the sale has grown to include organizations and commercial exhibitors, along with the average homemaker. One of a kind sales have included two busses by the local Metro bus service and police cars from the Indianapolis City Police Department, along with a large quantity of unclaimed bicycles. And . . .

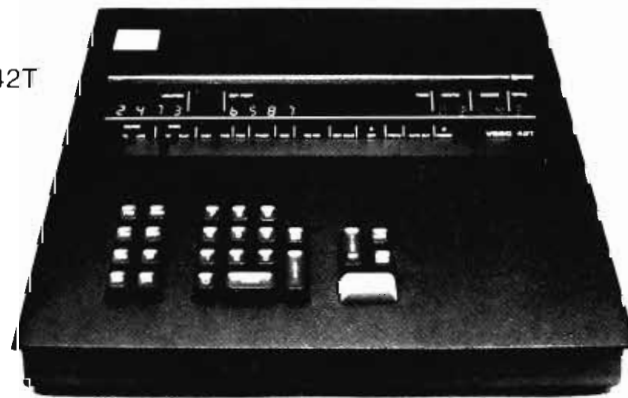
Portland, Oregon will never forget the day that KEX's 35-year veteran DJ Barney Keep retired. It was Valentine's Day and that was appropriate because, as one observer put it, "The city has never experienced such an out-pouring of love." Keep broadcast his final four-hour program from the Portland Civic Theater. An estimated 5,000 persons turned out to say "so long" to the man who woke them up for over three decades.

Oregon's Governor Victor Atiyeh proclaimed it "Barney Keep Day" in the state and, never missing an opportunity to tease politicians, when Portland's Mayor Goldschmidt announced he'd been practicing what to say for two weeks, Keep cracked, "Two weeks! You've been practicing for two terms!"

KEX personality Jim Hollister steps in as morning man.

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Write or call Jatex today. And ask for the free Time Machine brochure. Contact: Mike Eason, P.O. Box 35593, Dallas, Texas 75235, (214) 690-5657.



director Wilson adds, "Sometimes the cameramen find so many more things than you can imagine are there."

Cue Cards

How much does the cast ad lib? Almost all of the Repertory Players were chosen by Lorne Michaels because of their improvisational backgrounds. Chevy Chase, the first to emerge as a star, was originally hired as a writer as was Grant Morris. John Belushi, Gilda Radner and Bill Murray came from "Second City" in Chicago. Dan Aykroyd was from "Second City" in Toronto. Laraine Newman came from "The Groundlings, an improvisational theater group in L.A. Jane Curtin came from "The Proposition, an East Coast improvisational theater group. But they do not simply improvise a given sketch. There are two sets of cue cards written out for each sketch, one set for each camera. However, if a cue card gets out of order or if someone flubs a line, the cast's improvisational background and talent will pull them through. To improvise totally, however, would throw everyone off.

Al Siegel is in charge of the cue cards and his is a never ending job. He starts working on the cue cards Wednesday night after the script read-through. For a given show he will have anywhere from 700 to 1,000 cue cards. During the actual dress rehearsal and telecast he may have two other people who work with him in holding up cards. Also, stage hands stand by to take the cards once he has used them on the set. Siegel stated, "On a lot of shows you can just write the script and the changes are minimal. Here we make changes right up to and including being on the air. And once the cue cards are written, they may be changed several times before the show airs." When changes are necessary, he covers over the original copy with white masking tape and then writes the changes in over the tape. Different actors or actresses from the Repertory Players get different colors depending on how many are in the sketch. The host always gets black. He prints out an average of fifty to sixty cards per sketch. Sometimes a given sketch may have different parts taking place in two different areas of the studio. This necessitates four different sets of cards and keeping them all properly numbered. The main challenge on a show like this is being accurate and getting things done on time. Siegel may get a script for a particular sketch ten minutes before they are going to block it. He has been known to put in forty to fifty hours within a three day period doing cue cards. Even when I was interviewing him, he never stopped writing. Inevitably by Saturday night his fingers are covered with different colored inks.

Audio

Another very complex aspect of *Saturday Night* is audio engineering. There are three different sound systems used on the show — the broadcast sound system, the foldback system and the PA system. The power source for the audio systems is completely separate from, though of the same phase, as that of the studio lighting and house utility lights. The foldback operator, Vincent Kane, uses a Yamaha PM 1000 16 channel mixing console to, for example, feed to the vocalist in a band the sound from the drums so that he or she can

hear the rhythm. Great care is taken to avoid feedback. Also, because of the acoustical characteristics of Studio Eight where *Saturday Night* is broadcast, some equalization is necessary.

An even more difficult operation is the house PA run by Dave Gould. The audio crew worked for a year-and-a-half on setting up the proper PA. They pink noised the studio and, through trial and error and equalization, finally arrived at the right solution so that the PA sounded right and natural resonance frequencies were eliminated. "It is not like a normal theater where the PA is all coming one way. We have PA in almost every section," stated Gould. The way the audience is dispersed within the studio the configuration of the various PA speakers and audience response pick-up mikes is somewhat unique. Approximately 225 seats for the audience are located in the upstairs balcony and are spread out from stage right to stage center and each contains about four rows of seats. Another 75 seats, which look somewhat like barber chairs with large circular wooden bases, are scattered about on the studio floor. The audience in the balcony can see anything on the raised stage areas. But some sketches are played right underneath the balcony audience and, therefore, they have to watch that particular sketch on the studio monitors. "While action is being conducted at one end of the studio," explained Gould, "we can perhaps minimize the PA at that end of the studio and maximize it everywhere else. So, we have our faders color coded depending on the staging configuration. If they are playing on stage one, I have a fader arrangement to hold the PA in this area somewhat in check while maximizing it everywhere else. Some PA must also be provided for the audience on the studio floor."



Audio engineer Scott Schachter is responsible for riding levels on upwards of 60 different mikes. A Neve 36-channel broadcast audio console is used.

The studio area measures 115 feet by 70 feet, which is 8,050 square feet. The audience at one end of the studio without the PA would have trouble hearing what was going on at the other end. The PA mixer is located in the middle of the balcony audience and is a Yamaha PM-1000 24-channel audio mixer. There are about 20 speakers in the studio over the audience. The balcony has fourteen LR-2 Electro-Voice column speakers and there are two large Music Master speakers in the middle of the

studio. On stage for the foldback mixer there are sixteen JBL LE-8 speakers.

The microphone configuration to pick up audience reaction sounds is also very sophisticated. Over the audience are eight to ten DL-42s, six RE-16s, and eight 77-DX microphones. The large number of microphones and PA speakers is necessary because of the unusual audience configuration and the close proximity of some of the sketches to parts of the audience. There are in effect three audience areas in the balcony, two of them at right angles to each other.

The audio department consists of eleven people and is probably the largest department operating daily on *Saturday Night*. It also is in charge of all intercom systems. The stage managers were at that time experimenting with a wireless system called a normal cue receiver, a radio transmitter that has its antenna imbedded in the studio concrete floor. A small receiver is clipped on the stage manager's belt giving him great mobility without any trailing umbilical cords.

But the biggest burden falls on the shoulders of the audio engineer responsible for the broadcast sound, Scott Schachter, and his assistant, Joel Spector. The mixer used for the broadcast sound is a Neve 36-channel broadcast audio console. In addition to handling the audio of upwards of ten different sketches, the audio mixer must handle the mixing of sometimes three different bands on a given evening. One show, for example, required over seventy-five different mikes. Even though Studio Eight H, where *Saturday Night* is produced, was formerly a radio studio from which the Tchaikovsky radio concerts were broadcast, it has been considerably changed. Getting good sound requires a great deal of effort. "The studio is not acoustically designed," said Schachter. "It sounds like a barn. You try to deaden that as much as you can and then have reverb and sweeteners added in. That is why we work with very tight mikes on every instrument." (I was told of one instance where eleven mikes were used on one drummer, one for each drum.) "We add the reverb while it is going over the air. You just have to know how much to add." They also do a great deal of equalizing and compressing when a band comes in. They are in effect doing a sound mix like for a recording session. I asked them if they had the time to do so sophisticated a mix and the audio engineers answered, "It isn't that we don't have the time. We have a lot of time, but we do the equivalent of a 16-track recording that may take weeks and months in a studio. We do it all in real time. There are no tapes. All the effects, all the cues that have to be made, all the balancing is done in real time. The mixer only gets one shot, and the band will vary in its performance from rehearsal to dress to air. One has to be aware of the changes continually."

Schachter operates the console and does the broadcast mix. He also color codes his faders for the different bands and sketches, and handles the musical bridges and dialogue passages which are pre-bridged. A separate sound effects department creates both live and recorded sound effects for *Saturday Night*. There are so many various sound effects, films, video tapes, recorded music, etc., used that a second associate director handles them on the

expressions, acting, mood, etc. At 5:30 they break for a meal and come back around 6:30 to run through "Weekend Update." The script for "Weekend Update" is written late Friday night and is coordinated primarily by writer Alan Zweibel. "Weekend Update" and the opening monologue are written later than the other scripts so that they can be as topical as possible. The dress rehearsal is done before a live audience. The night I attended *Saturday Night Live* the dress rehearsal was scheduled for 7:30 but didn't actually start till 8:10. The dress rehearsal is done before a live audience so that everyone can get a feel of how the sketches are going and how people are reacting to the skits, though the Repertory Players do not deliver their lines at performance level as they will at 11:30. The dress rehearsal is the first time everyone sees whether costume changes, make-up changes, and camera movements can actually be made in the allotted time. There is no stopping unless there is a major break-up of some sort. Though *Saturday Night Live* is an hour-and-a-half long show, the dress rehearsal I attended went from 8:10 to 10:50, about twenty minutes over the actual running time of the show. Two sketches had to be cut to bring it under time. However, this is done almost as a routine thing. Shows are written deliberately long so that sketches that do not work for the dress audience can be cut or rearranged by air time.

The producer, Lorne Michaels, stays on the floor of the studio during the dress rehearsal. He has a desk where he can watch a monitor and with headphones monitor the sound of each sketch, or more often than not he works with the guest, the talent, and the people on the set of each sketch to get a feeling of the show's movement.

According to producer Michaels, "A good director, and Dave Wilson is certainly the best I have ever worked with, is always on the shot coming up and not on the shot on the air. So you can't gauge performance the same way. If you have to deal with others talking to you, it is impossible to deal with the show on a pure comedy pacing basis such as staging, rhythm and timing . . . It's fine tuning that I try to concentrate on, and my relationship tends to be with the cast and the writing. David and I have a real good shorthand in terms of where he leaves off and I begin and vice versa."

Decisions must be made regarding which sketches play well, which should be cut, and the best possible running order for them all. "A lot depends on running order," stated Michaels. "A piece can get hurt by the piece in front of it or by the piece that follows it. Or, if it's too early for a particular style of comedy, then you need to win them over with another style for them to be ready to laugh at that." But the best possible running order may not always be practically possible. Things then must be worked out with the technical people, for the most feasible running order. A crane or boom may not be able to traverse the studio in time. Costume changes or logistics may prevent one sketch from following another. "I may not necessarily get the show that I think would be best from a purely theoretical point of view," lamented Michaels. During the half-hour or so between dress and air when these decisions about running order must be made, the producer's office is really buzzing!

Rewriting

Once the scripts are handed in Wednesday, the writers don't just go home and wait till Saturday. The writers, according to Don Novello, are involved with their sketches up to and including air time. Once the scripts are read, usually partial or even complete rewrites are in order. During the run-through the writer of a particular sketch is usually there watching, seeing what plays well, thinking up new lines or ideas. "You keep revising the script," said Novello. "It's pretty much the writer who takes care of his or her own piece. It's great to be able to have a say in the piece. It's nice that when you are thinking about a piece, you can talk with the art director, design people, costume people." Early in the week the writers and Lorne Michaels work with director Dave Wilson.

The writer is even responsible for seeing that the proper changes are made in the cue cards and that they are in their proper order. The writers almost become assistant producers for their own sketches. All of the cast contribute ideas for sketches. Lorne Michaels is a producer-writer and spends some of his time writing.

The amount of control and involvement allowed a writer on *Saturday Night* is certainly unusual compared to standard West Coast TV productions where in some cases scripts are written months in advance and writers get to see what was done with their script when the show is done for a studio audience. Writer Novello commented that his own personal satisfaction as a writer is much greater than on other shows he has worked on. "You are closer to the piece. You have much more control over it. It is your idea and it is up to you to make it work, which is terrific! On no other show is it like that. But on the other hand, "Everything happens quicker because we work week-to-week, and therefore you don't have as much time."

Set Design

Because of the shortness of time and the large number of sketches, *Saturday Night* has three or four set designers who each plan for two or more skits. These set designers sit it on the Wednesday read-through of the scripts, but in order to get a head start they frequently visit the writers Tuesday night to see what they are working on. According to set designer Lee Mayman, they send some drawings to the shop before the Wednesday night read-through to see if it is possible to use sets that they have designed for other shows. Ultimately, however, the final word comes from the producer, and he may cut some of the ideas, scripts and sets suggested.

The set designers also work with the director, Dave Wilson, to work out the layout of the studio, where the various sets will be positioned. The designs that were drawn up before the Wednesday read-through are built in the Brooklyn studios of NBC, then shipped in to Rockefeller Plaza. Some of the sets are usually set up by Wednesday night. By Thursday all of the set are basically in place, though there is still plenty of painting and set dressing to be done. The sets are dressed Thursday and Friday morning. The set designers at times keep even later hours than the writers and usually finish up around 2:00 in

the morning Tuesday and Wednesday. Set designer Mayman estimates that he works around eighty hours a week to get the job done. "There is very little time for change," said Mayman. "[But] there is a lot of pressure for final changes even in-between dress and air. To try to get it all together and also deal with changes in the script, you really have to run."

Cameras

Unlike a taped show where everything is pretty much set and each cameraman gets a shot sheet, working on *Saturday Night* is quite different and apparently much more fulfilling for a cameraman. In the Thursday and Friday run-throughs the physical movements of the cast and the general position of the cameras are blocked out. The director, Dave Wilson, doesn't call each shot, rather, he said, "It's sort of a give and take . . . rather than locking it in before . . . what I try to do is, when we lay out a scene and dry block it on the floor, we have an idea of where the cameras have to be to cover it and then we move them into position . . . and really the guys start pointing. Obviously, if they come in from the right and the center is on a wide shot, they are going to have to play the tight shot. It's more a case of letting the cameramen feel their way. Frankly, my whole attitude has always been, 'Let the crew get involved.' You can't come in and lock everything in before they know the piece. You can't treat them like mechanics."

According to head cameraman Al Camoin, "When you block a scene, it becomes a picture in your mind. We go through our blocking and make our notes on little things. We have in fact a shot sheet, but we don't number them like in a soap opera, because here it is a completely different kind of photography. You know that Bill or Danny crosses here and you get a close-up. If they don't cross, that's where you have to change. They are very loose. They almost create practically on the air. They are the hottest on the air. That's when they are really socking it to the people. So, sometimes, if something occurred in the dress rehearsal, they will add a little bit to it to the air show. It may change their position. It may change what they are doing at that time, so as a result we have to keep that kind of looseness. I think on a show like this you are more of a cameraman than you are in soap opera situation. Your contribution is always accepted more readily than it is in a soap opera. The director does listen and accept your photography. You have that ability to do something on your own, to be an individual. There is no question that it is more rewarding. It is so exciting to do this show because it is live."

Teamwork, particularly between the director and the cameramen, is important on any TV show, but even more so on *Saturday Night*. The cameramen almost seem to read the director's mind and anticipate rather than have to be told what to do or what shots to get. As cameraman Camoin says, "We know each other very closely here. We are friends and not just workers, and we understand each other's problems. As a result even when you are not doing a particular type of shot, you are always feeding something, so that in case a director is in trouble or in case he sees something, he can punch it up. Everyone is always working whether you have got the light or not." And

But for "Rippy," the air show isn't all that difficult. "The air show is the easiest thing there is. It is the transitions that are the hardest. We never seem to rehearse the in-betweens." Also the changes between dress and air can present special problems for the TD. They re-routine the show like a deck or cards. He may have made notations and set up special effects which then have to be changed. But in spite of the special problems that arise for the TD, he is still enthusiastic about the show. "I am happy to see this kind of thing — the fun of live TV (he had been the TD on original live shows like *Your Show of Shows*). It is immediate. It is there. People are spontaneously creative, not fixed or rigid. All around here are hip people. They swing with it. With video tape by the eleventh time you rehearse something it does work, but it doesn't have the snap of live TV."

Production

The fact of *Saturday Night* being live also affects members of the production crew such as prop men, stagehands and set designers. Once the stagehands put up the sets that have been built and transported to Rockefeller Plaza from the NBC Brooklyn studio, others dress them, put in furniture, lamps, pictures, etc. But during an actual show some sets have to be changed and dressed while other sketches are being played nearby.

According to Jim McKearnin, "The only time we can find out for real if we can make all our moves is in the dress rehearsal. That is when we do it according to real time."

The stagehands work under the direction of the scenic designers and are responsible for

putting finishing touches on the sets. They must frequently wait till very late in the evening to do their work. According to Frank Illo, head of the stage crew, "We have people who haven't had time to get home. They sleep in the building so that they can come in early the next day."

Bill Day is responsible for obtaining props for the various sketches. He must at times come up with some weird items on very short notice. Where does one go to buy a conehead? One of the problems buying props, in production manager Bob Lissner's opinion, is that, "There are times when you really don't have time to shop and get a lot of things for the show. So, you pay whatever you have to to get it." Prop man Bill Day has worked at NBC for the past thirty-two years on almost all the major shows. Yet for him, "This is the toughest show we have ever done. Everything changes here. Even on a Broadway show everything is the same after day one. Here everything changes."

Because of the complexity of *Saturday Night* the show has two stage managers, Joe Dixon and Bob Van Ry. Joe Dixon's main responsibility is to stay with the guest star of the show. He also is responsible for the actors and uses an intercom system that connects to a speaker in each dressing room to call the actors when his or her sketch is ready. He also works closely with wardrobe to arrange for costume changes. He has to work out ahead of time where changes will be made. "Many times there is only a minute-and-a-half to do a change," said Dixon, "So, I'll dress them right here, because I figure it is another thirty

seconds from here to the star dressing room and another thirty seconds back, and that is an expensive one minute." When Carrie Fisher was the guest star and many people had drifted onto the studio floor to watch the show, at the end of a sketch he would grab Carrie Fisher and, like a pulling guard in football, would use his arm like a plow and charge through the crowd shouting, "Comin' through, comin' through!" He had to do this to get her to her dressing room, changed and back in time for the next sketch.



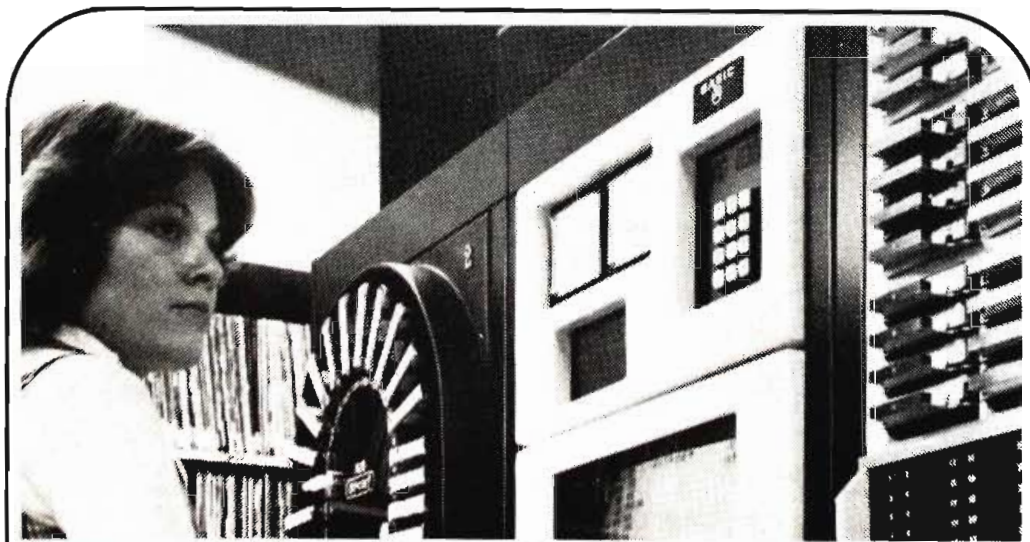
The director of *Saturday Night Live*, Dave Wilson.

His countdowns for the beginning of the show are also great attention grabbers. As he counts down the seconds his voice gets higher and more excited. In mock terror he shouts in a mounting crescendo, "Fifteen seconds! Five seconds! Four!!! Three!!!!"

Since he worked so much with the actors, I asked him if there were any ego problems he had to deal with. He said, "All actors have egos, but I will tell you, for the type of show it is, and what is demanded of these folks, they work very well together. Otherwise the show wouldn't function." On *Saturday Night* there seemed to be a real sense of teamwork on the part of both cast and crew.

There are two stage managers so that they can crisscross each other. While one is taking care of the talent, the other can be making sure the scenery is changed in time. Bob Van Ry's main responsibility is the changing of the scenery, though he and Joe Dixon will alternate in their functions. "By the time we get to air," said Van Ry, "the stage crew really knows what it is doing and I double check making sure that they are doing it, that everything is on its mark." If a set change involves a fair amount of noise and if the director is about to come back into the show, he will count down the stage crew so that they are quiet when the director takes to the studio.

The area of make-up, costume changes and hairdressing is a particularly complicated one for a live show as ambitious as *Saturday Night*. On Saturday night there may be as many as twenty people working in make-up and wigs to make sure the Repertory Players and hosts get made up, wigged and costumed properly and make their various entrances on time. It may happen that someone like Jane Curtin ends one scene and is to begin another in two minutes. As Joe Dixon says, "Sometimes we don't get it all on (all the various costume parts). At least they are there to make their



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show. To Schachter, the biggest challenge is that things are unpredictable. "We plan as much as we can. We rehearse as much as we can. But you just don't know what people are going to do. Will the performers do their music the same way?"

Lighting

The people who put in perhaps the longest hours are the lighting directors Phil Hymes, Howard Strawbridge and Gene Martin. They have to set up the basic lighting at times when no one is building the set, dressing it or rehearsing on it. They go to the Wednesday afternoon general meeting where the script is read through, so that they can get an idea of where the sketches will be run and what the basic sets will look like. Then they come in at 6:00 in the morning Thursday through Saturday and work through 11:30 setting up basic lighting for each set. When the run-throughs start in the afternoon, they have to be on hand.

They have to keep right up with the director. When everyone is finished with one set, they have to jump in and brush up what has to go into the set and set up another light plot, so that when everyone comes back two hours later, they can do another sketch in the same area.

Even during a rehearsal when there is a lull in the action, they will reach up with a long pole to turn a light slightly or tap a barn door to get a better angle of light on a scene. In general each set is lit to 150-200 foot candles depending upon the mood desired. Even though it might be easier to light every set in a basic flat lighting, they try to key everything as much as possible and model everybody, unless a certain sketch calls for flat lighting. There is very little actual shifting of lights during the show when it is on the air. If a certain sketch calls for a certain effect, they will roll in a floor lamp and fire it up on cue. In many of the studio areas there are two sketches set up in the same floor space. When one sketch is over, the flats will be moved back and another set placed in front of them. Electricians on cue will open or close barn doors and move lights slightly to give the desired effect for the new set. The lighting director works with the chief electrician, Willie Braton, and eight other electricians who do the actual hanging and adjusting of the Mole-Richardson lights.

The lighting director must also work very closely with the video engineer in an attempt to get the best possible picture.

In addition to the changes that occur such as one or two sketches being dropped and the running order of others rearranged, the biggest challenge for the lighting directors is, of course, the 11:30 deadline. The other problem is that it is live. There is always pressure.

Video Engineering

Because of *Saturday Night* being live, every camera shooting a scene may potentially be taken at any time, which makes the job of video engineer Nick Bruno all the more difficult. He has to be constantly watching and adjusting the video levels on each camera so that they match all the other cameras. To do this he uses a master switcher that places the controls for Iris, Pedestal, Gain and Color for each camera at his fingertips.



Arvin-Echo Frame Storer Model EFS-1 is used almost like a slide projector. A still frame is stored by Mike Madigan to be used later with sketch credits.

Bruno cited an example. "One picture may look a little red. So, I will take out a little red and add a little blue. But in the meantime another camera is coming up and I have to handle that. So, it gets pretty hairy at times. You really have to stay right with it so as to make very shot or every brightness more or less alike, so that the viewers' eyes don't jolt at home."

He is responsible for shading the four RCA TK-44 cameras while video engineer Steve

Roskin shades the portable TKP-45 camera and helps spot potential video problems on the other cameras.

The technical director Heino Ripp uses a Grass Valley switcher with two effects busses and triple re-entry. He looks like he could use another pair of hands to switch some of the complicated effects that *Saturday Night* uses.

According to Ripp, "We use everything that everyone else uses, only it's live. The switching is getting more-and-more complicated. With the amount of jazz that has been added, you practically have to tie up the whole board (to produce these effects) besides doing the show."

On *Saturday Night* the TD not only switches but also communicates directly to the cameramen and relays the director's commands. Cameras, video tape inserts, commercials, films, special effects — everything ultimately funnels down to the TD who must get them on the air. He has to keep his mind on six different things at once, not only the things that are happening in the studio but the noises in the control room, the chatter on the PL lines, etc. Somehow he has to filter out the essentials from what is going on around him. "It's worse than being an air traffic controller," mused the TD, Heino Ripp. In addition, out of the corner of his eye, he is watching the various scopes and vector scopes in front of him which tell him how to adjust video levels for color shifts and warn him of any technical problems before they actually appear on the air. By using a vector scope he can, for example, better match colors for a particular Chroma Key effect.



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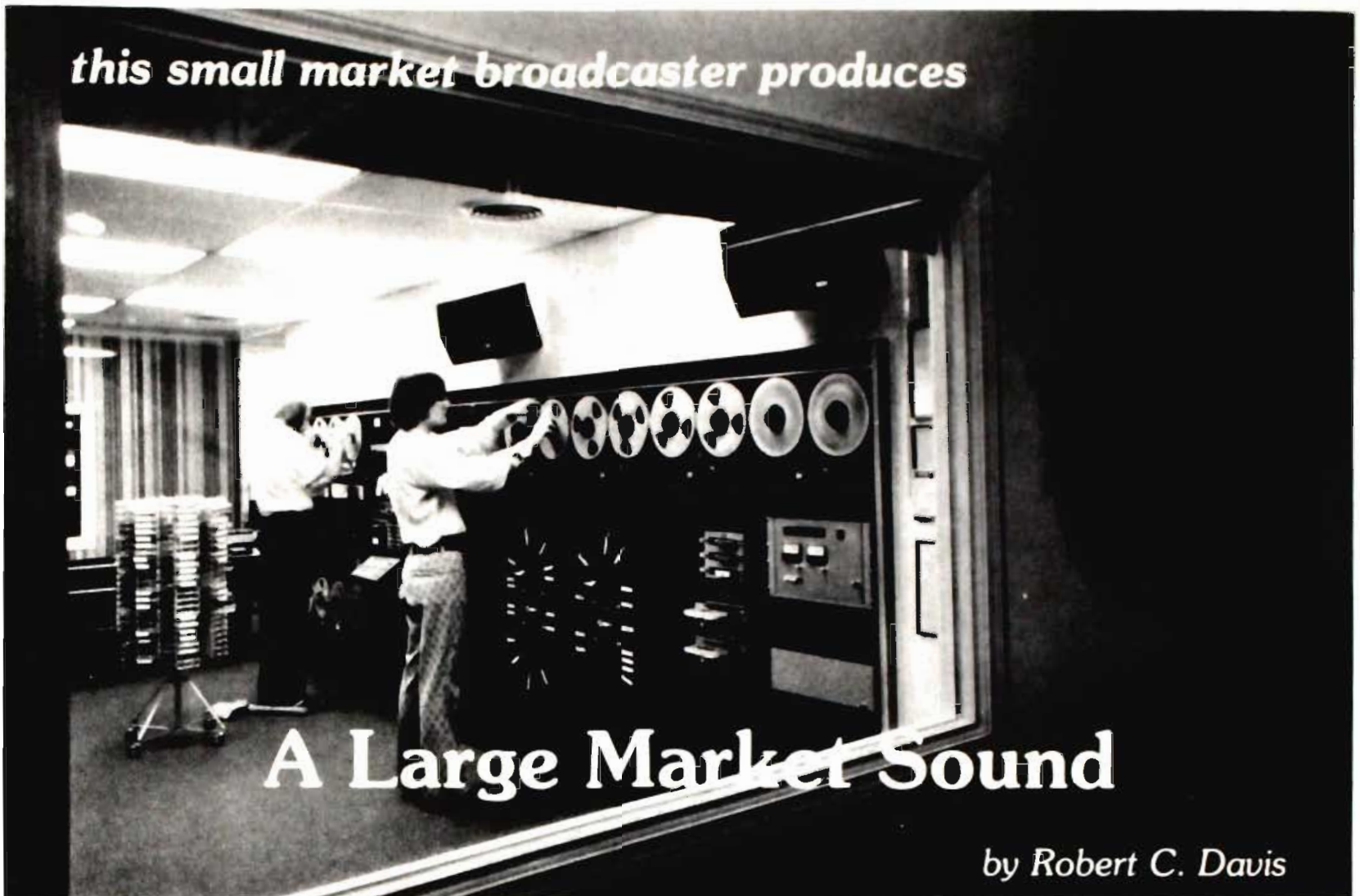
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A Large Market Sound

by Robert C. Davis

In the fast paced world of radio broadcasting, attention to details usually makes the difference between the "so-so" stations and the real winners. In the case of WAIK-AM/WGBQ-FM, Galesburg, Illinois, attention to details has given them a showcase facility any large market broadcaster would be envious of... and a professional sound to go along with it.

In 1975 Creative Broadcasting, Ltd., bought WAIK-AM in Galesburg, a west-central Illinois community with a population of 38,000. After changing the format from "MOR" to "Beautiful Music," revamping the news department, and much hard work, WAIK was turned into a competitive operation.

In the meantime, Creative Broadcasting had applied to the FCC for an FM license. After waiting for over two years, permission was granted to build sister station WGBQ-FM. It was then time to move to larger quarters.

"We exhausted every alternative in searching for a new facility," recalls Dave Simmons, director of engineering and FM operations, "and we finally decided to buy and renovate an old W.T. Grant department store located right in the middle of downtown Galesburg."

The old building has now been transformed into "Radio Village Mall," a modern shopping mall with the new WAIK/WGBQ studios nestled between eleven quaint boutiques and offices. Creative Broadcasting is understandably proud of its new facility, and a glance through the large picture window separating the shoppers in the mall from the busy station personnel inside tells you several things. From the clean, spacious layout you can see the

studios were carefully planned and constructed. And the modern equipment, most noticeably the new Broadcast Electronics Control 16 program automation system next to the window, tells you the station is serious about creating a professional sound.

"A tremendous amount of logistics thinking went into the planning of the station," says Mr. Simmons, who designed the facility. "Every decision from floor plan to equipment purchasing was made with four questions in mind: (1) Will it work properly? (2) Will it be easy to operate? (3) Will it have easy accessibility for repair?, and (4) Will it look good? And of course, I tried to keep it as simple as possible. For example, all connections between studios are made with wire bundles, and each wire is plainly numbered. Whenever we need a wire we just pick one out and note on our wiring diagram what equipment the wire is assigned to. There is about four miles of wire in the station, so that simplifies it somewhat. And there isn't a wire visible anywhere unless you get down on your hands and knees and look for one."

Many other useful ideas were incorporated into the studio design to save time, space, and aggravation. For instance the Control 16 automation system used for FM and the SMC 3060 system used on AM are both fully visible through glass windows from all control and production rooms, so the announcers can see as well as hear what is happening at all times.

Double windows and walls are used in all critical areas to prevent sound leakage. And in addition, the hallway between the business offices and the studios incorporates two ninety

degree turns as an added sound barrier between the two areas.

Creative Broadcasting is obviously very concerned about the on-air sound of both the AM and FM stations. To meet this end all equipment in both control rooms was carefully chosen for the best possible compatibility and sound.

The FM control room uses a custom-built Broadcast Electronics SL-3110 Stereo Control Console with both rotary and slide faders for maximum flexibility. Inputs to the console include: two Scully 250 reel-to-reels for master commercial production before dubbing to carts; a Spotmaster[®] 5304A three-deck cart machine with record amplifier for recording all FM carts, including those used for news and weather; an Akai GXC-730D cassette deck for dubbing commercials onto cassettes to play to clients; two Technics SL-150 MKII turntables; and a Shure SM-7 microphone.

A SAE-5000 Impulse Noise Reduction System and Orban Dual Reverb unit are also used in the FM control room so the quality of the recorded music closely matches that of the Century 21 tapes.

Sources in the AM control room include a Spotmaster[®] 5300 three-deck cart playback machine, ITC RPD Record/Delay unit, ITC 850 and Ampex 440 reel-to-reels, and two Technics SL-150 MKII turntables, all linked to a Harris Gateway 80 audio console. An SAE-5000 Impulse Noise Reduction System is also used for AM.

ESE digital clocks are used in all control and production rooms, and are tied into the master clock in the Control 16 automation system.

entrance. Those are the trials and tribulations of a live show." Frances Kolar in make-up tells of having to change someone's make-up while he was still on the set of a sketch. In a conehead scene someone's eye had to be blackened. "So, we had to have someone hide under the bed to make that change." While the camera was on another actor, the make-up person reached up and did a fast make-up job on the eye.

Kolar further relates, "Sometimes you have to be quick like the aging scene in the Rose Bud snow sketch. We had a scene where the actor playing Orson Welles aged. So, we had to throw a mustache and wig on him very quickly while the scene was going on. That gets a little hairy sometimes. It's not like doing a dramatic thing that has to be perfect, but the main thing is just being quick on your feet and making sure all the changes are being coordinated with the wardrobe people."

The guiding force behind *Saturday Night* is the producer, Lorne Michaels. He had worked with the CBC in Canada as a writer, producer and director. He then came to New York with a friend as a comedy performing and writing team, and wrote for people like Joan Rivers and Woody Allen. On the West Coast he worked on the *Smothers' Brothers Show* and wrote specials for Richard Pryor and Lily Tomlin. His Tomlin Special was tested by ABC who didn't like the results and held it back for nine months. It later won him an Emmy award.

Then Herb Schloser, head of NBC Programming at that time, wanted to do a series of pilots on Saturday night. This idea was later changed to a series. Dick Ebersol, vice president of Late Night Programming, came to Michaels and asked him to do it. The rest is history.

Saturday Night Live may be somewhat unique in the history of broadcasting. As associate producer Audrey Dickman says, "I don't think this sort of technique was used even in the early days of TV when all shows were live. I think they were a good deal less complicated than ours is . . . That is why it is essential that we have a first class crew like we have, in order to be able to handle everything. The first year it was incredibly hard. But we seem to have done so many impossible things that I suppose basically it gets easier."

The crew all seem to take great pride in their work and know that *Saturday Night* is something special. There is almost no turnover on the staff. Most of the crew have been working there since day one. No one has ever called in sick in four years of the show's running! No matter how close to 11:30 it is or what seemingly impossible moves or tasks need to be done, no one seems to doubt that this crew will pull it off. As stage manager Bob Van Ry puts it, "I just wonder if anyone else could do it but this particular crew, without a few weeks running starters."

Fred Silverman this year came forward and hailed the *Saturday Night Live* staff as the new wave of creativity in TV. *Saturday Night* seems destined to be one of TV's great success stories. There's an electricity in the air when *Saturday Night Live* comes on the air.

Perhaps producer Lorne Michaels best summed up the feeling . . . "Every *Saturday Night Live* is like a Broadway opening."

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This modular one-two-or-four-track machine is the ultimate analog audio tape recorder. In every specification, electrical or mechanical, it is the state of the art. Tape handling superiority comes from a unique closed-loop triple servo system that protects your valuable masters. Convenience features begin with the wide-open



Even the production studio and control room furniture is of special design. The legs on the tables have built-in equipment mounting hardware, and function as a handy yet out-of-the-way location for such equipment as reverberation units and noise reduction systems.

The same detailed study went into choosing the new equipment for this station as went into the studio design.

"We looked closely at four different program automation systems before buying the Broadcast Electronics Control 16 for WGBQ-FM," says Bud Bastian, vice president of Creative Broadcasting. "When you're in a small market, everyone usually knows when you are automated and it's got some 'negative' connotations to the advertisers and listeners. After studying the four systems, we decided with the Control 16 we could create a very professional, very live sound. So far we have received over 2,000 phone calls and letters, many of them asking for requests — the listeners just don't realize we're automated!"

Director of engineering Dave Simmons has some additional reasons why WGBQ-FM opted for the Control 16. "The main problem with any automation system is accessibility to the information in the memory. Obviously, the easier it is to get the information, the easier it is to operate the system on a day-to-day basis — to insert something other than what was programmed ahead of time, for instance. The information retrieval is very easy with the Control 16."

The "information retrieval" Mr. Simmons is referring to consists of five different displays which can be called up at any time on the Control 16's video display terminal. They include the *program display* for monitoring on-air programming; *assignment display* for making initial system assignments; *log display* for reviewing the last 10 lines of logging data; *events display* for reviewing the sequence of any 96 program events; and *compare time display* for reviewing the chronological order of any 72 compare times.

For maximum flexibility WGBQ uses two video monitors. One is located next to the keyboard where the system is programmed, and one in the FM control room, so the announcer can see exactly what the system is doing.

"When you have complete access to the information you have complete control of the system," says Mr. Simmons, "and you can do anything you want — nothing is forbidden!"

WGBQ-FM, or "Q-93" as it is generally referred to in the Galesburg area, uses the Century 21 "Z" format (popular-contemporary music) along with news and special events scattered throughout the day.

Mr. Simmons explains the programming technique used with the Control 16: "We have five different formats we use every day, seven days a week. Each of the formats maintains continuity of music rotation, and also lets us day part.

"For example, from 5:00 a. m. to 8:00 a. m. we play mostly top singles, and have time announcements six or eight times an hour. During the day from 8:00 a.m. to 5:00 p.m. we



Automatic logging printout tells Cindy Hottell not only what events played at what time, but also what was scheduled to play and didn't. Logging descriptions are a full 80 character line printed in English.

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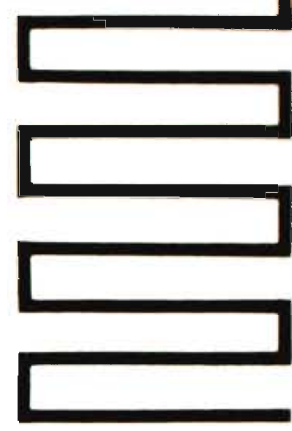
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When you hear recording engineers about the "Ampex Sound," they're talking about the sound of transparency. To the limits of technology, Ampex recorders and mastering tape let the production qualities and the sound of the talent come through the recording process intact. Here's a brief review of Ampex professional products for the serious studio...

MM-1200. Lay Down the Ampex Sound

Ampex designed the MM-1200 as a money-making proposition for studio owners. It'll work around the clock as group after group lays down the audio, and then it'll keep right on working as you go back for sweetening, for a vocal, or even for a final mix to a video production (with the addition of a video layback head). Quick-change heads make the MM-1200 even more useful—you can go back and forth between 8, 16 and 24 channels, and switch from one-inch to two-inch tape as easily as a clarinet player changes reeds.

ATR-100. Mix Down the Ampex Sound

This modular one-two-or-four-track machine is the ultimate analog audio tape recorder. In every specification, electrical or mechanical, it is the state of the art. Tape handling superiority comes from a unique closed-loop triple servo system that protects your valuable masters. Convenience features begin with the wide-open



USE THIS CARD FOR MORE FACTS ON ITEMS SEEN IN THIS ISSUE

Name _____
 Title _____ Issue Date (required): _____
 Station/Company _____
 Address _____ Office Home
 City _____ State Zip

PLEASE CHECK APPROPRIATE CATEGORY:

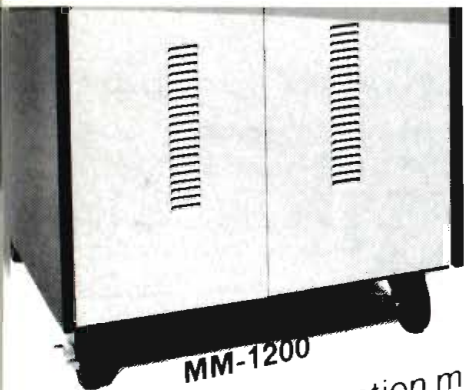
RADIO: AM FM Stereo Live Automated Format
 Manufacturer Syndicator Production Co Other
 TELEVISION: VHF UHF
 Manufacturer Syndicator Production Co Other
 Your Comments _____

SEND INFORMATION ON ITEMS CIRCLED BELOW:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120

Use this card up to 6 months after issue date.

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 rn it. To qualify
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 use.
 e a hit. The path will
 ound of the talent
 ; transparent per-
 dware and tape—
 essional's choice.



MM-1200

... switches and connectors to resist the punishment of normal use over many years of constant service.

Switchable equalization makes for fast setup, and full meter monitoring takes the guesswork out of recording and playback. The ATR-700 is a solid money-maker in the studio, too, when you use it for producing and editing commercials.

Grand Master Audio Tape. The Medium for the Ampex Sound

You'll find a reel of Ampex Grand Master audio tape to fit every one of these professional machines. Every width and every length, packed on reels that fit most professional machines in current use. Best of all, you can use both Grand Master or 406/407 without changing the bias setting on your recorders. Use Grand Master or 406/407 tape for state-of-the-art performance by every measure, from dropouts to edge-to-edge consistency. This is the finest mastering tape you can buy.

Golden Reel Awards. The Reward for the Ampex Sound

A Golden Reel is more than just another award. It's a

... performance of... for decades, the p...



ATR-700



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OFFICIAL SUPPLIERS
 VIDEO RECORDERS
 AND MAGNETIC TAPE
 XXII OLYMPIAD

decrease the number of time checks to two an hour. Then from 5:00 p.m. to 8:00 p.m., we add a few album cuts; from 8:00 p.m. to 10:00 p.m. we add a few more; and then we add even more album cuts after 10:00 p.m.

"The Control 16 handles all the different formats easily. Pre-programmed compare times send the system back and forth between formats at the proper times, automatically. We have consistent program control with a consistent live sound."

Q-93 uses a "main format/sub format" type of programming, with the musical "main format" on reel-to-reel machines and the commercial "sub format," on carts. Everything is recorded ahead of time, including news, special weather bulletins, contest winners, etc., for a more professional sound.

"There are four commercial breaks per hour," says Mr. Simmons, "and a maximum of eight commercial minutes each hour which gives us the possibility of 480 events per day in the sub format."

"Then we use 600 events and 18 compare times per day for our main routine, which is repeated every day. With the Control 16's standard 3,000 event memory, we can program the commercial content almost five days in advance if we need to."

However, Q-93 has not yet found it necessary to program the subformat that far in advance, especially since it takes less than an hour each day for the traffic coordinator to make up the commercial log and program it into the memory.

Q-93 uses an optional memory load print

terminal (the electronics are standard in the system) with cassette drive to record each day's sub format on tape after it has been programmed. In this way, it would take only minutes to re-program the sub format directly from the cassette should the occasion ever arise. A cassette containing the main format is also available to the operator.

Creative Broadcasting was somewhat apprehensive about the reliability of a microprocessor based automation system. But all fears have been vanquished by the system's reliable operation.

"We unpacked the system, installed it, plugged it in and it's worked ever since," says Mr. Bastian. "The only errors that have been made have been our own input errors, not the system's fault."

One feature of the system which simplifies Mr. Simmons' job is the instant display of diagnostic codes should an event be aborted. For instance, if the power is off on a certain source, the system will automatically bypass the source when it is called upon. The video terminal will then display the event number of the aborted event, along with an English description of the cause, in this case, "Source Power Off."

"By looking at the CRT or the log," says Mr. Simmons, "you can always identify the problem immediately . . . every time!"

"I have also found the easy source substitutions to be very useful," says Mr. Simmons. "Say a reel runs out of tape on a source that is supposed to play next. You can substitute another for the one that is out of action very quickly and easily, and without upsetting the air sound."

"All you do is call up the assignment table on the CRT, and enter your substitution in on the keyboard, for example Source #03 = Source #04. Now everytime #03 is supposed to play, Source #04 will play instead. When the tape is rewound, you simply cancel the Source substitution."

Another programming technique Q-93 frequently uses is "special event insertion," for events such as weather bulletins.

"To override the programmed schedule, you just hit the 'manual' key on the keyboard, which takes the system out of the automatic mode," says Mr. Simmons. "Next you push the 'special event' key to set up the weather bulletin as the next event to run. Then you simply insert the cart containing the bulletin in the pre-assigned special event source, and it will be the next event on the air."

"We use the same technique with contest winners. A listener calls in with the answer to a contest question, for instance, and you record the conversation, then add whatever promo information you want. The whole thing can be done in less than two minutes, and it sounds so 'live' it's incredible. And we still get the consistent professional sound we want."

Has paying attention to details paid off for Creative Broadcasting? By the looks of the modern, human engineered studio and top quality equipment inside, one would have to say "yes." And vice president Bud Bastian has a more important reason to agree. "I'm completely happy with the total sound of the station," he says.

And after all, "sound" is what radio is all about. □ □ □



Not all program automation systems...

- can** tell you in plain English why a commercial, music tape or other event did not play as scheduled. **Control 16 Does!**
- can** let you insert into the normal program sequence a cluster of events for sponsored bulletins. **Control 16 Does!**
- can** use one universal source card interchangeable with any other source card. **Control 16 Does!**
- can** display the program log printout on the video monitor. **Control 16 Does!**
- can** guarantee response of ± 1 dB, distortion $< 0.5\%$, signal to noise > 70 dB, stereo separation > 55 dB, measured from 40 Hz to 20 kHz. **Control 16 Does!**

Compare Control 16 to the other systems and you'll prove to yourself it can do what the others can't. For more information on the Control 16's superior performance, call John Burtle at 217/224-9600, or write for our 8 page brochure.



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component placement for easy maintenance, and go all the way to a compact lift-out remote control that sets up all functions, channel by channel. And for the last word on reliability, talk to an ATR-100 user.

ATR-700. Carry Around the Ampex Sound

Unsnap the cover of this reel-to-reel portable, plug in the power, and you're ready to work in monaural or stereo. The ATR-700 has a wider dynamic range than you'll find in most other portables, and it has heavy duty switches and connectors to resist the punishment of normal use over many years of constant service.

Switchable equalization makes for fast setup, and full meter monitoring takes the guesswork out of recording and playback. The ATR-700 is a solid money-maker in the studio, too, when you use it for producing and editing commercials.

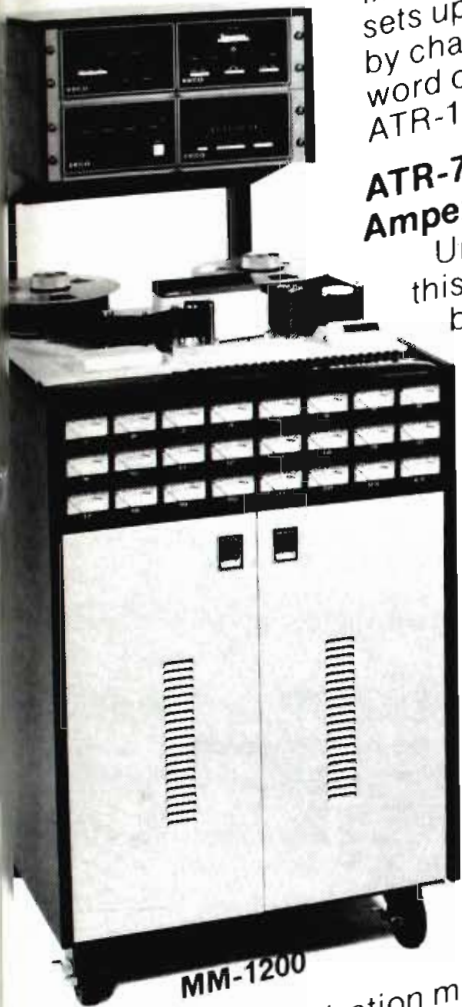
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Golden Reel Awards. The Reward for the Ampex Sound

A Golden Reel is more than just another award. It's a

thousand dollars for the charity of your choice, if you earn it. To qualify for a Golden Reel, you must sell a million singles. Or half a million albums. And you must master your hit on Ampex tape. (Which over 70 top recording artists have done over the past two years.) We're proud of the people who win this Ampex award, and we're even prouder when they give it away to a good cause. Go ahead and make a hit. The path will be smoother when the sound of the talent comes through, with the transparent performance of Ampex hardware and tape—for decades, the professional's choice.



ATR-700



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 Ampex Corporation, 401 Broadway, Redwood City, California 94063, 415/367-2011



time with WMAF, Dartmouth, Massachusetts, and KFBU, Laramie, Wyoming. Former operates summers only, soon disappears. Latter moves to another frequency, leaving WLW with a clear channel.

• January, 1925: WLW begins program tests with 5 kw.

• September, 1925: WLW orders 50 kw Western Electric transmitter.

• October 4, 1928: WLW starts 50 kw operation from new transmitter site at Mason, northeast of Cincinnati. Longwire antenna puts "local" signal into Jacksonville, Florida, and Washington, D.C. WOR, Newark (710 kc) complains of co-channel interference. Federal Radio Commission station list dated November 11, 1928 shows four other 50 kw stations:

660 kc - WEAJ, New York, (National Broadcasting Company).

790 kc - WGY, Schenectady, (General Electric Company), limited time.

800 kc - WBAP, Ft. Worth, (Carter Publishing Company), sharing time with KTHS, Hot Springs, Arkansas.

980 kc - KDKA, Pittsburgh, (Westinghouse Electric & Manufacturing Company).

• KFI, Los Angeles; WSM, Nashville; WCFL, Chicago; WFAA, Dallas and WTIC, Hartford, have 50 kw construction permits. And in Mooseheart, Illinois, the Supreme Lodge of the World, Loyal Order of Moose, is a buildin' their 20 kw limited-time WJJD.

And Crosley's radio business is booming. He has bought out The American Radio and Research Corporation near Tufts College outside of Boston. By 1927, The Crosley Corporation grosses \$18 million with a profit of \$3,605,973. It has added patent medicines, scalp massagers, tire patches, the Shelvador refrigerator, the Cincinnati Reds and WSAI, a second station for local listeners. It has also begun initial plans for a compact car to be sold through department stores like Macy's.

The power of Positive Powel did not end with a mere 1-A clear channel and fifty thousand watts. Harold Vance, of the Engineering Products Division, RCA Manufacturing Company, remembers conferences about a 500 kw transmitter in May of 1932. While RCA's parent company (General Electric) and Westinghouse had experimented with up to 300 kw, there were no commercial designs for such an animal.

Evidently both parties were doing their homework, for RCA had a completed design by late that year. And in either December, 1932 or January, 1933 Crosley Broadcasting signed a contract for the beast. We must assume that the FCC had given some sort of blessing to the project, assuring that the beast would not turn into a white elephant.

And, in early 1933, the on-site installation did commence at Mason.

Some questions go unanswered at this point. Was Powel alone in his journey up the power tower? Was his application for "special authority" one of several? Many? Why was WLW singled out for the grand experiment? The initials FDR, NRA and GOP emerge from the murk of forty-six years, but the vision remains unclear.

But the political-socio-economic implications of the decision took a back seat for the

members of the WLW engineering staff. Of that we may be sure.

Up went an 831-foot Blaw-Knox diamond-shaped "vertical radiator" next to the WLW longwire. It would be a half-wave antenna, ended, and the fat middle's purpose was to handle the point of highest RF current. It alone cost 46,000 depression-dollars. The downward pressure of the tower and its pre-stressed bridge-cable guys was over 200 tons, and one giant insulator took it all. The station's call twinkled across the mid-section, which was as wide as a four-story building is high.

The old-timers in Mason came to watch and shook their collective heads. Science was wonderful.

To carry a predicted ninety amperes of RF current, a coaxial line about fifteen inches in diameter was mounted on concrete pilings across the grassy lawn of the site. The outer conductor was of aluminum, with spring-loaded expansion joints every twenty feet or so. A mica material suspended the heavy center conductor. Styrofoam would come later, like kilohertz.

But the big job was at the transmitter building. The back wall was torn out, and a new room about twenty by forty feet was added, complete with an extension on the basement. Out front, a pond 75-feet square was excavated and lined with cement. A crane on the side of the building could swing large loads into garage doors on either floor.

Up at Camden, a lot of original research would soon get a test. The 500 kw would act as

a power amplifier, using RF generated by the Western Electric 50 kw rig. Since only low-level modulation was used then, it would have its own modulator section. Imagine the look on the engineer's face who calculated the final weight of the double modulator transformers: 35,700 pounds each, including 725 gallons of oil!

The final power amplifier would actually be three PAs in parallel, a decision which was to prove most fortunate. Each PA would house four UV-866 RCA tubes — that's twelve. Add to it four more in each of the two modulator sections. Then there was the power supply, sort of a DC Incredible Hulk. The UV-866s required DC for their filaments. This would be supplied by several big generators. Cincinnati Gas & Electric ran two 33,000-volt lines toward Mason and a special substation on the WLW property. There was an automatic switchover out there, assuring power from one line or the other. 2,300 AC volts actually entered the building.

All of this original design was fitted into a cabinet about fifteen feet high and thirty feet wide. A catwalk about three from the floor led to tube compartments. Five double wooden doors, complete with interlocks, granted access to the rear.

Enough dials and meters for a small Boeing covered the front panels.

And several unusual bits of apparatus took their place here and there: a water still, which would manufacture all the distilled water for the inside cooling system. To isolate the high-

THE CROSLLEY RADIO CORPORATION
WLW - WSAI - W8XAL
TRANSMITTER RECORD

Operator BFJ - W.S. Date May 2, 1934

TIME	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30
						WLW						
LINE VOLTAGE	2330	2330	448	446	446	445	446	2300	2320	2320	2320	2310
FILAMENT VOLTAGE	33.8	33.8	70.2	20.3	20.3	20.0	20.0	33.8	33.8	33.8	33.8	33.8
H. P. A. GRID BIAS	1400	1400						1420	1420	1400	1400	1400
P. A. GRID BIAS	630	630	300	300	300	300	300	740	740	650	650	650
ANTENNA CURRENT	71	71	195	195	195	20	19.5	(72)	72	72.3	72.5	72.5
H. V. RECTIFIER	11.7	11.7	16.7	16.5	16.5	16.6	16.5	11.8	11.7	11.8	11.8	11.7
P. A. PLATE CURRENT	64	65	8.1	8.1	8.1	8.3	8.1	6.4	6.3	6.4	6.6	6.6
D. C. GRID CURRENT	3.5	3.5	-	-	-	-	-	4.1	4.1	4.2	4.3	4.25
P. A. TANK CURRENT	95	95	38	38	37	38.5	37.2	96	95	97	98	98
L. V. RECTIFIER	3000	3000	1600	1600	1600	1600	1600	3000	3000	3000	3000	3000
CRYSTAL IN SERVICE	2	2	2	2	2	2	2	2	2	2	2	2
						WSAI						
#1 CRYSTAL TEMP.	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6
#2 CRYSTAL TEMP.	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8
P. A. PLATE VOLTAGE	6.7	6.8	6.8	6.8	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.15
P. A. PLATE CURRENT	800	800	800	800	410	410	410	410	410	410	410	410
LINE CURRENT	2.4	2.4	2.4	2.4	1.35	1.35	1.4	1.4	1.4	1.4	1.4	1.4
CRYSTAL IN SERVICE	2	2	2	2	2	2	2	2	2	2	2	2
						W8XAL						
#1 CRYSTAL TEMP.	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5
#2 CRYSTAL TEMP.	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4
P. A. PLATE VOLTAGE	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
P. A. PLATE CURRENT	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85
LINE CURRENT	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
CRYSTAL IN SERVICE	2	2	2	2	2	2	2	2	2	2	2	2

An Era Begins — Transmitter log for May 2, 1934, shows 500 kw testing from 5:15 to 6:30 p.m., official superpower operation starting at 9:02 p.m. by remote control from the White House. Antenna current (circle) jumps from 19½ to 72 amperes. Bill Schwesinger's notes also show effects of unlimited audio peaks during dedication program. (Note: WSAI was co-owned by Crosley Broadcasting, as was shortwave W8XAL. Latter simulcast with WLW, later programmed Spanish-language fare beamed to South America.)

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500,000 Watts

Most Powerful in the World

At all hours WLW has such a great portion of the national radio audience that no national radio campaign is complete without it. By itself WLW offers a vast radio audience in the center of America's best market.

THE CROSLEY RADIO CORPORATION
HOWEL CROSLEY, Jr., President CINCINNATI

You can tell when a man owns a powerful radio station. There's a bit of a swagger at the NAB convention, which means either a 1-A clear channel or four years at West Point. There's a tendency to drop little gems: "Son, I spill more watts than that on the floor just warmin' her up." And the habit of referring to lesser licenses as "coffeepots."

What follows is a fond recollection for the power trippers of kilocycle avenue — a look back at a station located at that bend of the river where Kentucky, Ohio and Indiana meet. It was called "The Nation's Station," a true statement in an industry prone to superlatives.

It boomed out with enough watts (500,000) to literally dim the street lights. In an age free from layers of man-made hash, it got requests from the royal family of Britain, not to mention loyal families from Portland to Portland.

It was a one-station network with a rate card like the NBC Red, a cast of thousands, a Who's Who alumni club, a 750-acre farm and a heart as big as the buzzing, arcing giant out at the Mason, Ohio transmitter site.

To a staff musician, WLW may have meant "World's Lowest Wages," but to the propagation power trippers it will always mean "Whatta Lotta Watts!"

Actually, Powel Crosley, Jr., never intended

to be a broadcaster. Son Powel, III, in the very early twenties, pestered Dad for one of those wireless outfits. When they went shopping for what the elder Crosley considered a toy, they found only rich men's playthings.

Instead of spending \$100 for a wireless, they bought "The ABC's of Radio" for 25¢.

The next step involved parts for a crystal set. Then came a \$200 receiver, and soon a 20-watt transmitter.

And Powel Crosley playing such records as "Song Of India," thrusting his head down an eight-foot morning-glory horn to ask for listener reports, then playing the record again.

His American Automobile Accessories Company continued to churn out inexpensive devices for a mass market: "reliners" made from old tires; a flag holder for a radiator cap (big World War I item); anti-draft shields and "Little Shofers" for Model T Fords — the latter helped keep wheels straight on badly rutted roads.

The "Harko" was soon added to the line. It was the first Crosley radio receiver — a ready-to-use crystal set. Crosley's marketing acumen produced a model T of radios: it cost as little as \$9 without earphones and an antenna.

But it was not too aware of the ether floating by. Nor were the models that followed. Inexpensive, but not sensitive. There was a simple solution. Make the ether stronger. And

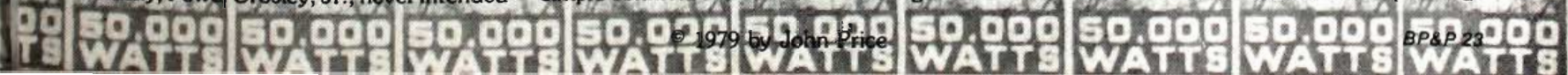
superpowers and borderblasters - part one

"The Nation's Station"

by John Price

power-minded Powel did just that:

- Summer, 1921: Department of Commerce issues license for 8CR as a "special land station." Power is 20 watts, transmitter by the Standard Precision Instrument Company, of Cincinnati.
- March, 1922: Call letters WLW assigned by the new Federal Radio Commission. WLW is 65th licensed radiotelephone station to go on the air. Letters are received from Colorado, Maine, Michigan, Wisconsin, Connecticut.
- November, 1922: 20-watt WLW conducts DX-ing contest. Winner lives in Vallejo, California.
- January, 1923: Power increased to 100 watts. A free box of candy is offered for the first letter from each state. Entries arrive from 42, the District of Columbia and three Canadian provinces. Requests for the *Crosley Radio Weekly* come from Maine, California, Cuba, Mexico, Panama and The West Indies.
- Late 1923: Power is now 500 watts. *Weekly* now mailed to 25,000 listeners. The "Lightening Bugs" club has 10,000 card-carrying members. The Crosley Orchestra plays music to be heard on Crosley radios.
- 1924: WLW power now 1,000 watts. Time shared with WMH, owned by Precision Instrument Company, at 710 kilocycles (kilohertz came later). Battles for Monday and Wednesday nights ensue — for awhile, both stations broadcast at the same time on the same frequency. Arbitrated schedule has WMH alternating with WLW and WSAI on Wednesday nights of alternate months. Got that?
- June 1, 1927: WLW moves to 700-kc, sharing



the appearance of the studios that they first auditioned at another station. But vocal director Grace Raine hired them on the spot, and they spent the next seven years under the heady umbrella of The Nation's Station.

"Let's face it: it was a one-station network," Al recalled in 1972. "I'm sure they tried to soften the fact for the benefit of other stations, but that's what it was. When you have daytime listeners in Honolulu, that's no ordinary Cincinnati coffeepot."

The Aces sometimes helped rouse a sleepy nation on the "Top O' The Morning" show from 6 to 7 a.m., then fell to rehearsing their Griffin program, which aired from 8 to 8:15. "We did 715 performances. Ask anyone old enough what followed 'bong-bong-bong.' They'll still tell you 'It's Time To Shine.'" (I've tried it. He's right.) It was a good line for a shoe polish program.

After a part on the noontime show, the Vocalaires/Aces might also pull a performance on some nighttime program. Mrs. Reinhart remembers the extra tingle when a show would also be on "the line to New York." Just where the line terminated is a conflicting point. Best guess is WOR which, with WLW, became starting points for the Mutual Broadcasting System.

If WLW was a one-station network, it jolly well acted the part:

1 - There were no recordings on the station. None, except for sound effects. Later, some ET [electrical transcription] programs began to creep in. (In fact, a point of controversy during that time was the "transcribed" announcement which the FCC required between sides of a continuous half-hour ET show.) But nobody played the phonograph on The Nation's Station.

2 - The only thing the eighth floor of the Crosley Building may have lacked was privacy. Al Rinehart estimated 40 to 50 "legitimate" musicians, about 75 hillbilly-western ones, and a dramatic staff of 25 to 30. He wasn't far off. At an FCC hearing in 1938, station manager James Shouse set the payroll at 159 full-time, 31 part-time in the production department alone.

3 - From 1927, when WLW started originating "The Crosley Hour" for the NBC Red, the station became a growing source of network programming. During one season, twenty-two shows per week were sent to various nets. The station's own affiliation was something of a grab-bag, however: they needed it more than it needed them. Consequently, WLW took its pick from several. The 1936 *Broadcasting Yearbook* shows it as an affiliate with the Red, the Blue and Mutual. WCKY, WSAI and other Cincinnati stations evidently picked up what WLW couldn't fit into its schedule.

4 - Perhaps the most famous WLW program of all was called "Moon River," and it wasn't the Audrey Hepburn or Andy Williams variety at all. It began in 1930 to showcase the three-manual seventeen-rank Wurlitzer dedicated to the memory of Powel Crosley's mother. Naturally, Mr. Crosley wanted it to start yesterday, so Eddie Byron, the production manager, retired with some other staffers to a . . . er . . . night spot for an after-hours idea session. They combined Fritz Kreisler's "Caprice Viennoise" with some original verse,

and found the numerous . . . ah . . . ladies in attendance profoundly moved. They knew they had a winner. They did. When Peter Grant (or any of the various Moon River announcers) laid these lines over Mrs. Crosley's seventeen-rank Wurlitzer, the world listened, and nodded that somewhere all must be right tonight.

What were the golden phrases? Brace yourself:

*"Down the valley of a thousand
yesterdays*

Flow the bright waters of Moon River.

On and on, forever waiting to carry you

Down to the land of forgetfulness,

To the kingdom of sleep.

To the realm of

Moon River.

A lazy stream of dreams

Where vain desires forget themselves

In the loveliness of sleep.

Moon River.

Enchanting white ribbon

Twined in the hair of night

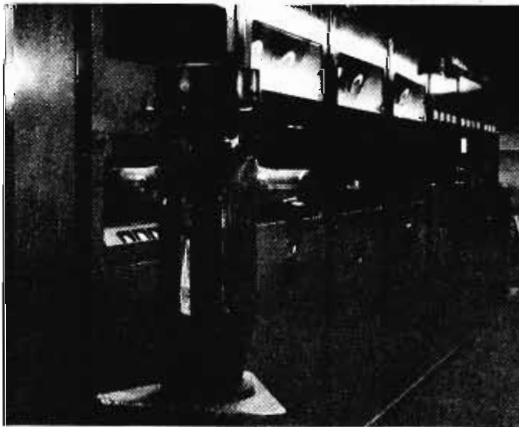
Where nothing is but sleep.

Dream on, sleep on

Care will not seek for thee.

Float on, drift on,

Moon River . . . to the sea."



50 KW Plant — Original Western Electric 50 kw rig, dedicated in October, 1928, still serves as WLW auxiliary main unit. Last three cabinet contain new circuitry. RCA type UV-898 tube (foreground) was used in 500-A amplifier.

Cue the Clooney Sisters with "Deep Purple." Cue announcers like Jay Jostyn and Don Dowd and Ken Linn with poems such as "The Roses," by John Smith, or "The Shooting of Dan McGrew."

"Dan McGrew! Who read Dan McGrew? Fire the bastard!" "But sir, it was a request from a regular listener." "No listener is going to dictate . . ." "The Duchess of Edinburgh, sir. She cabled us last night . . ."

If loyal listeners sent for free boxes of candy in 1923, that was peanuts compared to the 500 kw mail count. Said count was issued every Saturday, and the mail room was crowded with hungry egos, hoping to be the winner.

Some letters were more than the typical fan variety. Babies were named after Lenore Reinhart's "Susie" character, used on several programs. After Susie's radio birthday party on "Charlie's Singing School," the Salvation Army had to haul away the handkerchiefs, cakes and dolls. And Tex Owen, who sang and played guitar with more than the minimum charm, was willed three farms by widows he had never met!

Meanwhile, back at the transmitter, the

"special problems" to which Mr. Vance had alluded did not go away by themselves. Director of engineering Jim Rockwell, who had replaced Joe Chambers, told the FCC that WLW had 63 engineers and operators. Jim Wagner understands that up to seventeen men manned the transmitter site at times.

Why? Well, this was all virgin territory, and there had to be some measure of design deficiencies. For one, the massive power supply seemed to be both good and bad news: unbelievable as it seems in this day of multi-stage audio processing, there was no limiter amplifier — they just weren't used until the late thirties. Couple this with the sudden peaks that are bound to sneak through from 100% live programming.

Somebody would let fly with one, and the big rig would call "power!" all the way back to CG&E. During a moment of overmodulation, an AM carrier all but loses its negative side, so there you were, all powered up with no place to go. Something had to give, and it did.

WLW had a "transmitter control room" with an operator who acted as the final gain rider, and who typed a running log of what did and didn't get on the air. These are fascinating documents, for they not only show the program schedule for the station, but show the problems that continued, more-or-less, through the 500 kw period:

May 4, 1934 . . .

" . . . Ma Perkins OK. 500 kw Ann OK. Muldowny - Refrigerator Adv-off-on 2:12:12, PA #7; same one again 2:12:55; — closing ann peaked 30. Low Down - off-on 2:29:30, PA #7 again. Sputter And Whine - off-on 2:33:40, PA #7 and PA #8 — off-on 2:40:53. Took couple seconds 2:45 to isolate PA #2, and #1 PA isolated shortly after. #2 PA rushed back in service 2:47:30, neutralizing condenser in #1 PA blew . . . "

" . . . 6:57:50 ten secs lost due antenna gap holding arc . . . "

" . . . 7:01 transmitter off to find trouble in coupling house, thinking it was a fire there. . . "

The wisdom of foresight caused each power amplifier to have an "isolate" circuit, which would power it down after so much internal trouble. It left the station with some, if not all, its superpower.

Bill Schwesinger recalls especially eerie happenings when angry amperes teamed up with mother nature. Lightning loved the big Blaw-Knox, and would let loose with enough power to not only arc across the arrester gap at the base, but around the guy wire insulators, too. Once started, the RF energy would keep the arcs alive until the transmitter was shut down. Nighttime time-exposure photos exist of this sight.

Finally, a photocell device was mounted in a box, with a lens trained on the arrester gap. Wired into the interlock system, it gave the transmitter an off-on to break the arc.

Inside the building, flash-overs sounded like pistol fire. Bill remembers the huge mercury-vapor rectifiers "rattling the place" when they arced.

And not all the fireworks came from the transmitter farm. Foes cried "foul" for both technical and economic reasons. Loudest of all were WOR, Newark, (at 710 kc) and CFRB, Toronto, (at 690). Since CFRB was 375 miles

voltage B+, this water would circulate through miles of Pyrex tubing instead of metal pipes. A heat exchanger in the basement would warm a secondary system using tap water. This was routed through more big Westinghouse pumps to the outside cooling pond, where fountains helped lower its temperature before a return trip.

And oil-filled transformers would turn sour eventually, so acidity-testing and removal equipment was ready. (This may be the first transmitter in your memory which needed an oil change.)

Finally, there was a big brass nameplate. It credited the rig to RCA, although it was actually the joint effort of RCA (design), GE (RF) and Westinghouse (control). It also proclaimed a digit often quoted: "Serial Number 1."

Although Harold Vance told the FCC that installation chores were completed early in 1934, this was not the sort of thing that plugs in and plays. There were many hours of testing that winter and spring, and we can only surmise what sights and sounds the farmers just west of Mason may have heard and seen during the wee hours of a Depression spring. Diplomatically, Vance stated only that "special problems" had to be solved during both the design and installation. The test periods continued, using a test call of W8XO. Down in Cincinnati, Mr. Crosley undoubtedly waited with a certain air of impatience.

On April 17, 1934, the FCC granted Crosley Broadcasting authority to use 500 kw experimentally, during regular hours, with its regular WLW call.



Antenna Line Switch — Transferred tower antenna line from 50 kw Western Electric to 500 kw RCA.

Bill Schwesinger remembers the night of May 2, 1934 well. The Crosley transmitter log remembers him well, too — his handwriting is all over it. A signal pair had been ordered to terminate at 1600 Pennsylvania Avenue, where a man whose fireside chats had made him well aware of the power of radio was prepared to assist. The golden key which Woodrow Wilson had used to open the Panama Canal was connected.

That log shows a final high-power test from 5:15 to 6:30 p.m.

"Instantaneous" acetate transcriptions weren't available that spring night, but we can assume that Charles Sawyer, Ohio's Lieutenant Governor, the Crosley Symphony, the Crosley Glee Club, Henry Thies and His Puroil Orchestra and Virginio Marucci and His South Americans did yeoman service for the occasion, not to mention the beef filets and shrimp cocktail Louisiana.

9:02 p.m. Cut to remote line from Washington. President Roosevelt: "I have just pressed the key to formally open Station WLW ..."

Far from the downtown festivities, I'll bet quite a cheer went up at the transmitter house. Bill made his entry in the log. Over in Mason, the street light dimmed just a bit. And around the world, folks found a new friend on their radios: *The Nation's Station*.

Al Reinhart started his career at KFJB, in Marshalltown, Iowa. Thirteen-and-one-half hours a day, six days a week for \$7.00. After stints at WHO, Des Moines; KMA, Shenandoah and KFAB, Omaha, he had collected his wife Lenore and various in-laws into a group called (with guitars and accordian) The Five Novelty Aces or (with piano and backup band) The Vocalaires. When musicians at the WLS National Barn Dance unionized, the gals were forbidden to play instruments, and would receive no pay for singing. Al remembers telling his agent to see about an audition at that high-power station in Cincinnati.

The group was unimpressed enough with

Stressing Quality



The Orange County VS-1 Stressor belongs in your AM chain, working quietly and reliably, as well as in your production studio, helping you produce powerful spots and promotions. And for "D.J. mike" enhancement, the VS-1 will give you extraordinary punch and impact on the air.

- Ultra-fast peak limiter with 250:1 slope for absolute overmodulation protection
- Compressor with adjustable ratio, threshold, attack and release times, for loudness enhancement
- Highly effective expander/noise-gate for noise reduction
- Powerful parametric equalizer
- Adjustable limiter asymmetry for positive peak modulation
- Performance specs and construction to the highest industry standard

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sounded out of tune," Al Reinhart recalled. "They went to work for Paul Whiteman in New York. He wouldn't have known if they were out of tune."

And the hills were alive with the sound of billies: Minnie Pearl, Ernie Lee, Skeeter Davis, Margie Bowes, Cowboy Copas, Bonnie Lou, Shug Fisher, Merle Travis, Lulu Belle and Scotty, Red Foley, Whitey Ford ("The Duke of Paducah"), George Gobel and Kenny Price. And wonderful old Pa and Ma McCormick, who tended the flock.

One year, the Saturday night Boone County Jamboree troupe (later the Midwestern Hayride as WLW's fame spread) played to 72 county fairs in five states.

The "legitimate" musicians, with their union cards, looked askance at the hillbillies with their fiddles, guitars and banjos. But the money for Western music rolled in from sponsors eager to ride the waves of the big transmitter.

And there was Smilin' Ed McConnell, all three hundred pounds of him. Has reality dimmed to legend, or did Smilin' Ed pitch the first radio per-inquiry deal for the Olson Rug Company that Sunday morning? And did so many listeners hear and follow this pied piper that the Olson Rug Company nearly went through receivership for one program that cost what a 13-week schedule did on the rate card?

And Lazy Jim Day, who played guitar and sang the news. Never wore a suit. Got married in one once. Marriage didn't work out, so he went back to bib overalls. Put some money in a bank and the bank closed. So the money went behind the bib, with the safety pins.

Al bought a beautiful new 1939 Buick. Jim saw him in the parking lot. "Would they sell me one of those?" "Sure," said Al.

The dealer was haughty. "Used cars are on the second floor." "I don't want one that someone's used," said Jim. He fell in love with a white cabriolet (convertibles came later, like kilohertz). He unpinned his cash, astounded Mr. Haughty counted out fifties and hundreds until he had enough, and off went Lazy Jim, through a fence and into the river a few nights later. No one had told him about windshield wipers.

Back in the showroom, Mr. Haughty counted out enough bills for another Roadmaster — a dry one.

Radio frequency power can do funny things, if there is enough of it. There was, and it did. Some of the WLW "resonance" stories are hard to believe, but you want to believe them anyway.

Of course, the lights in farmhouses and barns near Mason burned without the aid of CG&E. Of course, the tin roofs — indeed almost any length of wire (water pipes, fences, bedsprings) — could talk at you on a humid summer night. And the little old lady who heard voices in her head. They probably did go away after the dentist adjusted her bridge-work.

There is an elderly employee of CG&E who used to man the substation which fed one of WLW's two 33 kv industrial lines. He could tell, he says, when the station was on his line at 500 kw. The final voltmeter would dance ever so slightly in time to the music. Wow!

There were too many foes crying "foul" with ferocity. There may (or may not) have been a station owned by FDR's son which lost business to The Nation's Station. Or, a sizable contribution made to the wrong party at the

wrong time.

In any case, the regular application for another six month superpower extension was set for hearing in 1938. Duke Patrick, former general counsel for the Radio Commission, waded into a hearing and presented WLW's case in the brou ha ha that took a good deal of that hot summer season.

On March 1, 1939, under a headline proclaiming "Stay Refused, WLW Returns to 50 kw," *Broadcasting* announced the end of The Nation's Station. "WLW," stated the article, "announced the power reduction February 28 to its audience with a simple news statement."

The street light in Mason would dim a few more times during the war years, and Der Fuehrer would be heard to curse "those bastards in Zinzinnati," but that is another story for when the tears have dried.

Last January 19th, the warm and well-lit studios at 3 East Fourth Street sent a well-modulated Dolly Parton through solid state program amplifiers, but the eighth floor of the Crosley Building at 1329 Arlington was dark and damp.

The play-by-play was smooth and professional, but there was no sound in the studio where the Crosley Organ used to pair its lazy stream of dreams.

Out at Mason, a discriminant audio processor and a screen-modulated Doherty circuit created a maximum modulation envelope, but the big rig in the back room wasn't speaking to the Duchess.

The Nation's Station is from another time and place. 500 kw doesn't compute on a microprocessor. And yet, alone in the darkened back room, it seemed that the faintest of red glows came from deep within dusty glass. And listening very carefully, you could just make out the voice of Peter Grant as he spoke of an

*Enchanting white ribbon
Twined in the hair of night
Where nothing is but sleep.
Dream on, sleep on
Care will not seek for thee.
Float on, drift on,
Moon River . . . to the sea.*

Thanks go to Jim Hampton, WLW's current vice president/engineering, for permission to prowl the nooks and crannies of the big rig. And to Jim Wagner, his sidekick and unofficial tour guide, whose interest in The Nation's Station led to a job as engineer there. And to Bill Schwesinger and Ed Dooley, who were there when it happened, and can remember. To John Bruning, of WCET in the Crosley Communications Center, who let me and my camera in after hours to photograph the name plate for the 500 kw. And to Al and Lenore Reinhart, late of Al's Music in Camarillo, California, now retired and out of touch, but not forgotten. And, finally to Dick Perry, author of the delightful *Not Just A Sound: The Story of WLW* (Prentice-Hall, 1971) which should be on your shelf if you call yourself a broadcaster.

Next: An advertising doctor, goat gonads, "sunshine between the nations," and a hunt for the phantom transmitter of the Rio Grande! □ □ □



Studio A — Largest studio at the Arlington Street complex was used for "Moon River," plus large musical and dramatic shows. Pipes for the "Powel Crosley Organ" are behind grill at rear. Console, behind which "Fats" Waller is said to have hidden his gin bottles, is at left. Note unusual microphone designs — most were built by station's engineering staff.

distant compared to Newark's 500, it was decided that The Nation's Station would go directional to protect the maple leaf.

In fact, CFRB howled so loudly that on December 21, 1934, WLW returned to 50 kw at local sunset until the directional could be completed.

Two quarter-wave self-supporting towers were erected across the road to the south, in the middle of Everybody's Farm, which was also owned by Crosley Broadcasting. An open-wire transmission line made from streetcar trolley wire rambled across the fields. No phasing equipment was used — the line length was adjusted to do that job. When it was finished, WLW had a nice null to the north-northeast. Power tripper note: radiation in the null direction was only 50,000 watts!

The WOR problem wasn't so easy to solve. Ed Dooley, now the chief at WLWT, was in the Crosley propagation department. He describes a team, armed with portable ET cutters, receivers and signal-strength meters. The team traveled from Alabama to New England, cutting discs of the first quarter of each evening hour: alternate four-minute segments of WOR, then WLW, then WOR. The discs are still extant, and give a wonderful overview of what radios were receiving as we climbed out of the Depression.

The kitchen got hotter and hotter, but Powel Crosley was committed to stay for the duration. He was not alone: by May 1, 1938, Broadcasting was able to report fifteen other applications for superpower, from KDKA, KFI, KNX, KSL, WBZ, WGN, WGY, WHAS, WHO, WJR, WJZ, WOAI, WOR, WSB and WSM. And apparently every six months, the Crosley counsel battled through another six-month extension of that 500 kw "special authority."

And no wonder.

Romance of the superpower aside, the business of WLW required lots of black ink. It's silly to assume that the fiscal reward to be derived from fifty times the power of anybody else's radio station never crossed Powell Crosley's mind.

Testifying before the FCC, one E. J. Ellig, comptroller for the Crosley Corporation, charted these figures for their fiscal year 1937: Gross Revenue, \$2,662,704; Net Income, \$702,954 and a Net Profit of 26.4%.

Not bad for a business "recovering" from the Great Depression.

Broadcasting for June 1, 1934, carried an item to the effect that WLW's rates would be increased by ten per cent on July 1, and another ten per cent or so in October. The current evening rate was listed at \$990 per hour, \$660 per half and \$440 per quarter. After the second increase, that hour would cost about \$1,200.

Opponents of WLW (and of superpower in general) were sure to have made notes in their little black books.

The business of broadcasting descended on Cincinnati in September of that year as the NAB's annual convention got rolling September 16th — the Chesapeake and Ohio Railway taking space in the trades to advertise air conditioned comfort via its George Washington, Sportsman and FFV runs.

Powel Crosley was chairman of the local committee to handle arrangements. While not

a part of the official agenda, you can bet there were numerous tours in the direction of Mason, Ohio.

Meanwhile, across the street, WCKY, Cincinnati, ran a series of double-trucks using the brave line "Doing the real job" of radio in Cincinnati. L. B. Wilson, WCKY's owner, signed a somewhat capitulatory effort in December, 1934, which read:

We are proud that our neighbor, WLW, is the greatest broadcasting station in the world. We are happy in the tribute that WCKY is accepted as the next choice for covering the Cincinnati market.

Undoubtedly, number two was trying harder.

There were limits to WLW's profit motives. Jim Shouse told the FCC that less than half of all station breaks used the name "Crosley" in them. Spot announcements were not solicited, and were never broadcast between two sponsored programs. There was careful screening of all commercial copy originating with the station. (The FCC still wondered about "Dick Tracy" as a children's program, and such sponsors as the Chicago Bedding Company, Kruschen Salts, and Lydia Pinkham's "Voice of Experience.")

As early as 1932, reports of WLW's pioneering merchandising service were carried. It included field men in Indianapolis, Columbus and Wheeling. Al Reinhart remembers field trips to country schools for Ideal Hams: six people, a bass fiddle, accordion, two guitars and a fiddle in one car — that was the budget. But Al never remembers being the talent for any Crosley product in either a spot or sponsored program.

Evidently those station breaks were enough.

And oh, what followed those station breaks:

UNIVERSAL SOUNDS UNLIMITED THE NIGHTWATCH
DAILY FIVE MINUTE DRAMATIC NARRATIVE HORROR RADIO VIGNETTES OFFERED EXCLUSIVELY BY
UNIVERSAL SOUNDS UNLIMITED INC.
P.O. BOX 835, DEER PARK, WASH. 99006 509-276-2071

for additional information circle no. 11

Radio's Who's Who could be written from the WLW pay records. True Boardman, of "Famous Jury Trials." Jay Jostyn, who would later protect our life, liberty and the pursuit of happiness as Mister District Attorney. Jane Froman sang on "Moon River," and so did the Clooney Sisters — Rosemary and Betty.

When Mrs. Crosley's Wurlitzer in Studio A wasn't getting 'twined in the hair of night,' or providing music for Ma Perkins, one Thomas Waller used to experiment with it. He was fired when discovered playing one of his jazz tunes on it . . . ironically, one he called "Ain't Misbehaving."

And Doris Kappelhoff sang with Jimmy Wilber's Little Band. She with the freckles.

Red Skelton originated his "Avalon Time" from the studios for one of the networks. (Anyone remember Avalon cigarettes?) There was Singin' Sam, The Lawnmower Man, before Harry Frankel moved to New York and Barbasol.

Little Jack Little. The Mills Brothers ("four boys and a guitar"). The King, The Jack and The Jester: that got shortened to The Ink Spots.

Red Barber did a mean play-by-play. Durwood Kirby did a smooth anything. Later there was Rod Serling, Eddie Albert, Dick Noel, Andy Williams, Frank Lovejoy — and don't forget the McGuire Sisters.

"The Modernaires were fired because they



Master Control — This control center fed programming down a bank of phone lines to the transmitter site. During 500 kw years, WLW program listings appeared in up to seventy-six newspapers from Texas to Connecticut. Programs were routed to WLW, WSAI, W8XAL, the "New York Line" and various national networks.

and recorder with news is an excellent way to start acquiring electronic field equipment," Fickas believes. "And if a station takes proper precautions, I think the arrangement can be profitable in even small markets."

"We'll get back to those 'proper precautions' in a minute, but for some background on the KFMB experiment itself.

It began with Fickas and his crew of two "borrowing" an Ikegami 77 minicamera, a Sony 3800 three-quarter-inch video tape recorder, and related equipment one full day each week. The news crew ordinarily assigned to that ENG unit shifted to film for the day. The production unit subsequently paid the news department back for the extra film shot during the day it used the minicamera, typically a few hundred feet.

"Our news department has a microwave truck and uses ENG quite a lot," Fickas explained, "but with three cameras they were always able to get what they needed.

"At KFMB, commercial production has priority over news in use of the electronic equipment. In most cases we are shooting spots that have already been sold, and must be on the air within a few days — or even hours. Our clients are also buying EFP for a reason — they want the convenience they know they cannot get with film."

Channel 8 has found EFP literally sells itself to advertisers with its instant playback capability. Traditionally, clients have had to wait until film was processed and edited before seeing what would appear on the screen.

"The ability to see the commercial as it's being shot is a source of tremendous relief for our advertisers," Fickas said. "All that anxiety is gone!"

Clients monitor the progress of their commercial on one of several monitors housed in a Chevrolet van that has been especially outfitted to accommodate the EFP unit's own Ikegami 77 portable minicamera, Sony 3800 VTR, and 17-kilowatts-worth of lights. A trailer-mounted U.S. government surplus generator is hitched to the van on the approximately one out of three shoots where extra electricity is required.

In May, 1978, KFMB upgraded the mobile unit through the acquisition of a new Ampex VPR-1 one-inch video tape recorder with accompanying Ampex TVC-1 time base corrector. This brought the station's total capital investment in EFP equipment to approximately \$100,000.

This does not include equipment Fickas and crew members Stefan Kosicki and Mark Griswold share with the news and program departments inside KFMB's modern building on Engineer Road. Final production takes place in a small studio within the news department, where the EFP crew have priority in the use of two Sony 2860 three-quarter-inch VTRs interfaced with a Convergence ECS-100 Superstick video tape editor. The original material, with special effects added, is transferred up to 2-inch tape, then back to 1-inch for final editing. The final 2-inch product, by now a fourth-generation transfer, is used on the air.

Occasionally, the production unit will need extra time in the master studio for producing "A" and "B" roll effects or other special visuals.

"We follow the production all the way

through," Fickas explained. "The field production staff that shoots the spot is the same one doing the final editing."

KFMB program director Jules Moreland, whose department encompasses the electronic field production unit, emphasizes the station's commitment to EFP as a customer service, rather than a separate money-making enterprise. At \$160 an hour, plus \$40 an hour for travel and the cost of tape stock, the unit more than pays for itself, even without considering the benefits of in-house production (which accounts for some 20 per cent of the crew's time).

"The service is not actively promoted beyond its being mentioned to clients by salesmen in the course of their work," said Fickas. "We could probably generate enough business to support a second crew and truck if we went door-to-door soliciting advertisers or had computerized editing capability. But we're selling air time, not simply producing commercials. Our policy limits us to producing commercials only if they will be aired on KFMB. If their buying schedule excludes us we turn clients down."

(Some broadcasters, such as Los Angeles' KTTV and San Francisco's KPIX, have separate electronic field production units strictly devoted to commercial production.)

In spite of KFMB's considerable success at EFP, Fickas believes that for the most part the production technique has not yet been fully exploited in the market. Three or four stations in the San Diego market, he argues, could operate EFP units and remain in the black.

The secret to success, he added, is to start slowly and with a minimum of overhead (i.e. manpower).

"I'd recommend stations starting out should stick with a two-person crew. Each individual should be able to handle everything that might come up, so it's to your advantage to look for a strong background in production, rather than news. Everyone on our crew, for example, has experience in camera work, lighting, studio direction, audio, video editing, film work, and even minor maintenance," said Fickas, himself an ex-maintenance engineer.

The KFMB unit employs two crew members on most ¾-inch shoots, basically one on camera and one on audio. Where one-inch video tape is used, or extensive lighting, the third member is assigned. The crew also uses about 9,000 feet of film each year, most of it in in-house production.

"We produce a large volume of commercials — from 25 to 50 each month," Fickas estimated. "That's the maximum number we're capable of producing with current manpower and equipment."

Current EFP income at KFMB represents a 56 per cent increase since the minicamera was introduced to advertisers in 1976. During last year alone, the unit's income rose 18 per cent from 1977's level, despite the loss of a single regional production account representing 16 per cent of the EFP crew's business.

"The people we're getting on the air are by and large businesses that never bought television time before, because they thought producing commercials would cost them thousands of dollars," Fickas explained. "We can produce a complete spot for them for 250 dollars or less."

A glance at the production schedule for the EFP crew reveals a wide range of assignments. Besides the ubiquitous auto dealers, there are furniture and appliance stores, restaurants, fitness centers, department stores, housing developments, boat dealers, hardware stores, radio stations and newspapers.

Typically, clients are interested in exposure of their merchandise or store as it really exists. Many do their own voicing and on-camera introductions.

Because many advertisers are buying TV time for the first time, the EFP crew makes a special effort to put the client or agency representative at ease.

"The keywords are tact and diplomacy," the crew manager stressed. "Luckily, EFP has a lot going for it in terms of putting the client in a comfortable atmosphere."

Isela Edwards, who doubles as a client relations executive and hostess/producer for the public affairs program "Latin Profile," agreed:

"You can't blame someone for being apprehensive when they're taping a studio spot, surrounded by bright lights, technicians, and equipment. With a minicamera it's another story. The client is in familiar surroundings, the crew is small, and often no extra lighting is required. In addition, they're more relaxed about the cost."

Most of the commercials produced by the EFP unit are in the \$300 to \$800 range. This is based on standard hourly rates for field and studio production time, plus tape and other material costs.

"In the long run, I think the station makes more money from the 'little guy' who spends a few hundred dollars on production than the client whose ad requires \$15,000 worth of production and two or three days of shooting and editing time," Fickas contends.

"We'll always get our money back on the production, but the 'big guy' may buy little or no more air time than the small-budget advertiser. Ultimately, more money is generated when a higher volume of spots are being produced because they sell more air time."

Although KFMB won't say exactly how much its EFP unit has been worth to the station, it's clear the benefits have gone beyond merely paying for the equipment and overhead of maintaining a crew.

The operation helps the station meet its written commitment to the area Chicano community that they will produce regular prime-time public affairs programming that utilizes film and video tape field recording.

The crew is also called upon for field production (including "live" microwaved segments) for KFMB's early-morning "Sun-Up" news/feature program.

In recent months the EFP unit has also helped launch an extensive on-air promotional campaign, produced a one-hour special on ice skating, and provided "live" election night coverage.

What next?

"I'm convinced that one-inch video tape and computerized editing systems are going to play big roles in the future of our industry," Fickas confided. "We haven't made any decisions about our own future in EFP at KFMB — but we're looking at it."

□ □ □

KFMB minicamera pays its way . . .



Electronic Field Production

by Richard Mahler

It's late in the annual budget meeting before our favorite local television station's news director gets a chance to speak.

He rises to his feet and surveys the room full of hardnosed accountants and non-nonsense executives. He feels like a doomed man awaiting execution.

"I realize money is tight this year," the newsman ventures, "but do you think we could spare just a hundred thousand dollars or two for some electronic news-gathering equipment?"

"Absolutely not!," the group thunders. "What kind of market do you think you're in, New York City?"

Management's sentiment is overwhelming: the initial expense of ENG equipment does not yet justify its potential for attracting viewers, expanding news coverage and reducing film expenses.

This fictional episode may sound familiar to the many small and medium market news directors anxious to jump on the ENG bandwagon.

Although the increasing profitability of local newscasts and the continuing technical evolution of ENG equipment has blunted the criticism of station managers in some instances, nevertheless many broadcasters

have chosen to stick with film, at least for the time being.

But many others are discovering ENG outfits need not be the expensive toys of the news department managers often make them out to be. These stations are finding the same gear can, successfully pay its way through electronic field production (EFP) of local commercials, by exploiting many of the same advantages ENG crews have enjoyed for years.

A typical example of such an application in a medium-sized market is found at San Diego's KFMB-TV, Channel 8, a CBS affiliate.

"When our news department began converting to ENG in 1975 and 1976, management agreed to experiment with shared use of that equipment for commercial production in the field," recalled EFP unit manager Erwin Fickas. "It was such a success that we acquired a camera and recorder of our own during 1977. By the end of last year the equipment had more than paid for itself."

Commercial production was not an overriding factor in KFMB's decision to purchase three minicameras and related ENG gear for its news department. The station already had a film-based mobile production unit, as well as complete in-studio capabilities. Nevertheless, general manager Robert Myers convinced executives at the Illinois headquarters of Midwest Television, Inc., KFMB's owner, that part-time electronic field production would help offset the several hundred thousand dollars they had already invested in ENG equipment.

"I'm convinced that sharing a minicamera

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John Mosher KPQX

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at mid-day. Some are doing lengthy live interviews within their mid-day news blocks.

A considerable number of all-news stations are really all-news and *sports*. Sports call-in shows, scoreboard broadcasts and live sports coverage are becoming increasingly prevalent in the evening and on weekends.

One of the newest converts is WCBS, New York, the flagship CBS all-news station. WCBS will carry New York Jets football starting next summer. According to John Wheeling, manager of news operations, the primarily Sunday Jets schedule fits in nicely with live sports programming already provided by the CBS Radio Network. Unlike other all-news stations, says Wheeling: "We are not doing it because we're in trouble in the ratings."

Some all-news stations have begun carrying radio drama, such as the CBS Radio Mystery Theater in the dark of night.

So over-all, the trend is away from solid all-news and toward all-news plus.

The plus is an effort to find programming which will increase an audience when the male-dominated commuter rushes are over, or families have turned to their TV sets.

The theory behind carrying sports is twofold: (1) It's easy money, since sponsorship is usually lined up and supplemental sponsors are pretty easy to find and (2), the stations hopes to entice sports fans who might not normally listen to an all-news station. It has worked well for some stations, notably Westinghouse's KYW, in Philadelphia.

The turn to sports and call-in shows have provided an easy and inexpensive solution to nighttime and weekend programming.

Mid-day continues to give the all-news programmers ulcers.

Some stations valiantly stay with all-news, but others modify their personnel, pace and content. Currently there's a trend to do long-form live interviews, either in the studio or on the phone. In some cases, the live interviews concentrate on current news stories, putting the newsmakers on the air. Of course, this serves as a double purpose, since salient comments can be excerpted for use during the afternoon drive block.

Other stations program mid-day talk shows which allow their morning news staff to 'hit the streets' and cover a multitude of civic meetings and municipal offices.

Some stations look for personalities, feeling that a controversial person or a Hollywood star will attract the elusive mid-day female audience.

Poll-Taking

One of the latest trends in all-news is to do same-day audience polls.

A station in Providence, Rhode Island, reports considerable success in boosting its afternoon drive audience through this technique.

The typical all-news station which does a same-day poll will broadcast a question during morning drive, take responses by telephone throughout mid-day and announce the result during afternoon drive.

There are at least two ways to handle the mechanics of same-day polling:

The telephone company has equipment which will count phone calls. All you do is

assign one phone number to "yes" or positive side of the issue and another phone number to the "no" or negative side. The telephone equipment counts the number of incoming calls on each line, displays the total — and voila' — there's your poll.

A source in the telephone industry suggests checking out the Code-a-Phone telephone answering device. It can play a short promotional or acknowledgement message and has a counter built in to tally calls. The source indicated other telephone answering devices could probably be adopted. Most of these devices are FCC registered and type-approved. A ballpark estimate is that this type of recorder could be purchased for \$250. Reportedly, the telephone company gets \$12 a month in some locations, after installation, for a counter.

Another method, used at WWQT, involves having people call one number, and record a yay or nay vote. The equipment consists of an ordinary telephone answering device, which gives the caller brief instructions and then allows five seconds for a response. Only the responses are recorded, so a station staffer can rather quickly run through the tape or tapes and tally the votes.

An experienced advocate of polling suggests frequent repetition of the question of the day until the polls close, but infrequent announcing of the result — so the afternoon drive audience will have stay-tuned longer to get the result!

Alice In Wonderland — Or The Technology Explosion

Radio, which has been lagging behind a bit in certain technological areas, is taking a giant step forward.

The all-news stations have been particularly involved in some of the modern devices being marketed to beef up news coverage.

Among the technical innovations affecting the growth of all-news radio are: word processing, RENG, automated cart recording and low-frequency extenders.

The most esoteric technical area revolves around word processing machines. An experiment has been underway at KCBS, in San Francisco, which uses video display terminals to originate and process news.

Basically, this is how it works. The reporter or writer sits down at a console, which is like an electric typewriter keyboard with a TV screen and many subminiature electronics.

Changes in the copy are made by moving a little flashing rectangle of light called a "cursor" up, down or sideways until it is either on top of or beside the copy to be changed. A simple correction can be handled as a strike-over while a more complicated change requires the use of an "insert" or "delete" button. If desired, pages, paragraphs and words, as well as letters, may be wiped out. In fact, copy can be electronically rearranged to move sentences or paragraphs.

If the reporter wants to do a local rewrite on the latest federal cost-of-living figures, he or she can punch up wire copy from any or all the wire services plugged into the system, check over the source data from Washington, and then either erase the screen, or split it, reading source copy on one side, while typing the rewrite on the other.

The reporter can insert local data, either

from his notebook or from information previously stored in the terminal.

Once he finishes, the story can be stored for later use, or picked up on the editor's screen for review. Then, hard-copy can be printed for the anchorperson, or the anchor can read directly off the screen on the studio terminal.

This is only one slice of the pie. The same equipment will permit an all-news station to always have the latest sports scores — including those dastardly line scores — up-to-date at the punch of a button. Weather data can also be handled on a continuous update basis, without someone in the newsroom having to call the weather service.

And then there's storage retrieval. Any broadcast news person with more than a couple of years experience is dramatically aware how little useful information is kept on file in the typical radio newsroom. For the most part, it's because there isn't anyone available with time to file old stories and source material.

Now, with a data terminal, copy can be stored for almost instant retrieval. No more wondering what you said last month about that zoning dispute at the city council meeting! One button punching sequence . . . and it's right there on the screen.

There was a ripple of excitement running through the Radio-Television News Directors Association Convention last September, in Atlanta, as the news directors became aware of how much computers are going to help in the newsroom.

One network news executive said he couldn't wait for word processing to be installed. For years he has been frustrated by Washington-originated newscasts which didn't come up to the exacting standards of his New York newsroom. As soon as the terminals are installed, a correspondent in Washington will type copy on a video display terminal, the copy editor in New York will call it up on his screen, and the final script will be New York approved. This is expected to lead to greater consistency and a more consistent quality in the network's hourlies.

RENG — what's that? It's what the television folks have had for several years.

Somehow or another, TV got ahead of radio on live coverage capability. A well-capitalized TV station can now broadcast live audio and video from almost any location within its service area, without hard-wiring and with decent quality.

RENG is *Radio Electronic News Gathering*. It hinges on a sophisticated generation of two-way transmitters, repeaters and transceivers.

Ideally, tomorrow's radio reporter will leave the newsroom with a subminiature cassette recorder and a transceiver (walkie-talkie). No matter where the reporter goes, he or she should be able to transmit a high quality signal by using either a repeater installed atop a high building or in the station's news car — or both.

CBS is operating a RENG system in Washington, D.C. It permits high-quality feeds from throughout the metropolitan area. The two-channel system is designed so that an editor can cue a second correspondent while another correspondent is on the air. Cue can also be fed to the correspondent who is broadcasting, as well as everyone else who has a transceiver. The cue channel may also be used for air feeds. The transceivers are backed

the new in all-news radio . . .

Automation and a Technological Revolution

by Phillip O. Keirstead

About the time that NBC was pulling the plug on its News and Information Service (NIS) format, Lowell B. "Bud" Paxton did what might be considered by some an incredulous thing. He bought a station in the Clearwater, Florida, area and turned it into an all-news station. The result was by Spring of 1978, he had propelled the station's position from dead last in a 31 station market to number 17. When he took over the station he changed the call letters to WWQT and used the slogan, "Hear it on the QT." He did another amazing thing . . . when you 'hear it on the QT,' you're also hearing it on automation, and that makes WWQT unique among all-news stations. The station has developed a system of operator-supervised automation which greatly reduces the number of operating and newsroom personnel needed compared to similar stations.

WWQT has a six person staff compared to a similar station on the Florida Coast which employs at least a dozen news personnel.

WWQT uses dual anchors. Each team prepares a two-hour block of state and local news. Then they go into a recording studio and record 10 two-and-a-half minute segments, alternating stories. The total 25-minutes of news is used twice in the two-hour period, but it is laid into a different bed of features, network news and commercials in the second hour.

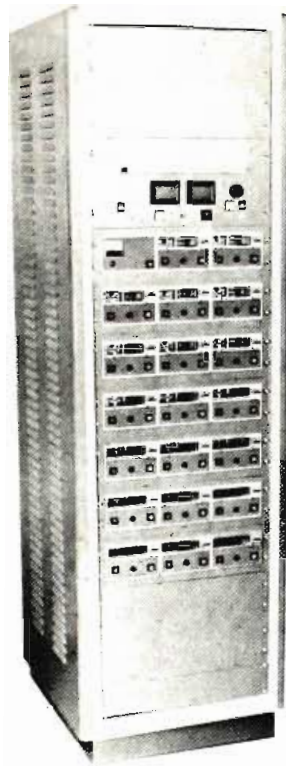
After the recording is done, the anchorpeople then return to the newsroom and resume their duties, writing local stories and working the phones.

WWQT also has two reporters who cover the area in mobile units.

Managing editor Jim Stanley stated, "We're automated, but that isn't the best word to use. Automated radio stations are music stations you just turn on, crank up in the morning, and then leave for the day if you want to. They pretty much run themselves. Our's is an operator-assisted automation. We have one or two operators on at all times constantly re-programming the hour. We're very flexible, but everything is recorded first, on cartridge."

Besides the time-saving aspect, automation allows WWQT to record and re-broadcast a multitude of incoming materials from UPI Audio and the Florida Network. All scheduled off-line recording is done by the automation equipment, which then plays the programming at the appropriate time.

In the case of the UPI hourly news feed, it is



The News Recording System developed by the Broadcast Products Division of UMC Electronics Co. is a computer logic device incorporating a series Beucart cart machines and sequencing logic.

moved automatically to :15 and :45. The same newscast is repeated twice during the hour, but the computer is programmed to move around segments and delete or not delete filler copy in such a way the second airing appears to be a fresh newscast.

Breaking news isn't a great problem. If any of the 10 local news segments need to be updated, the cartridge is simply pulled and a new one inserted. If more news time is needed, a news cartridge can always be inserted to replace a feature.

And, of course, if all else fails, the station can go live, since the newsroom is fully staffed from 4:00 a.m. to sign-off.

WWQT makes heavy use of features, using net feeds from UPI, plus programming from Barrett-Gorin and the Christian Science Monitor.

The station programs all-news all day on weekdays, but strays from the fold on weekends.

Oddly enough, WWQT reports better audiences in the mid and late morning than in drive times. Jim Stanley says this probably results from the area's large number of senior citizens, who wish to keep informed, but don't need to rise as early as the working population.

On weekends, the station features a program from 6:00 a.m. to 2:00 p.m. in which listeners call in and bid on certificates which are good for services such as meals from sponsoring firms. The show is usually followed by live sports.

Sunday morning features religious and ethnic programming, and, in the afternoon, more live sports coverage.

All-News . . . Well, Mostly All-News

The switchoff to live sports reported by WWQT is far from unique.

Many, many all-news stations are becoming all-news — and something else.

Some have inserted audience call-in shows

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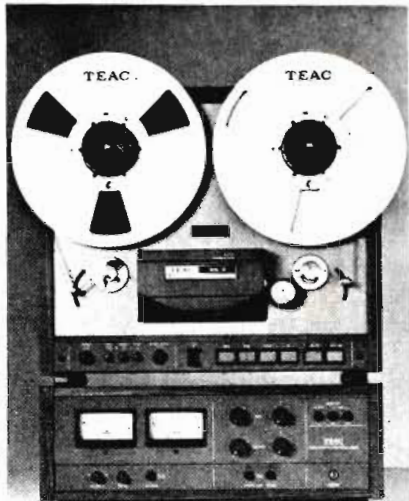
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NEW PRODUCTS & SERVICES



TEAC/TASCAM MASTERING DECK — 35-2

TEAC/Tascam Series is debuting the 35-2, a new mastering deck with optional dbx, a rugged transport system and an electronic package that includes full logic with motion sensing, up-front bias and EQ controls, and a separate 1/4-track playback head to complement the 1/2-track record/play head. The suggested retail price is \$1,900.00.

The reliable transport system, evolved from TEAC Japan's years of engineering data processing and computer processing units, features a DC-servo capstan motor, eddy current induction reel motors with tension servo, a feather-touch logic control system with motion-sensing direct mode changes, four high-density permaflux heads for 2-track record/play and 4-track play, pitch control for accurate tuning of the tape speed, punch-in recording facility, cueing and editing, and flip-up head cover for easy editing and maintenance. The unit is boxed in rosewood.

On the electronics side, the 35-2 features optional plug-in dbx noise reduction cards, six-step bias selector and variable REC EQ control for precise matching of the deck to various tapes, 3-position monitor switch for source/cal/output, independent left and right level controls for input and output, and wide excursion VU with LED peak indicators.

The separate transport and electronics design reportedly allow more flexibility in installation.

The 35-2 accepts 10 1/2 and 7-inch reels, has a wow and flutter of 0.03% at 15 ips, overall frequency response of 40 to 22,000 Hz at 15 ips, signal-to-noise ratio of 100 dB with dbx, overall harmonic distortion of 0.6% at normal operating level, and stereo channel separation of 50 dB/1,000 Hz. The unit measures 18-13/16" x 16 1/2" x 10 1/2" and weighs 72 3/4 pounds.

**TEAC CORPORATION
OF AMERICA
7733 TELEGRAPH ROAD**

**MONTEBELLO, CA 90640
(213) 726-0303**

for additional information circle no. 24

NEW SONY VIDEOCASSETTE RECORDERS

Sony Video Products Company has introduced two new videocassette recorders, the LVO-7000, and the TVO-9000.

The LVO-7000 is a two-hour machine utilizing the 3/4" videocassette. The unit records in the two-hour format but is also capable of playing back one-hour tapes recorded on the U-Matic format.

The company said that the new unit was introduced to meet the growing need for a high quality format to play back films converted to tape that usually exceed one hour. The LVO-7000 has been designed for use by cable networks, hotel-motel entertainment systems, shipboard and off-shore oil rig movie systems.

The LVO-7000 is equipped with connectors to allow use with a time base connector for customers who wish to broadcast the output signal, it also incorporates Sony's unique video dub system which greatly improves multiple generation copies.

Suggested list price of the new recorder is \$4,200.

The new TVO-9000 utilizes 3/4" videocassettes and is capable of recording in six time modes (72 minutes, 12 hours, 24 hours, 48 hours, 72 hours and 96 hours). The recorder features still frame, slow motion, and step back capability during playback.

The TVO-9000 incorporates a specially designed head drum that allows clear playback of the picture material free of guard band noise. When playback is in the normal mode (72 minutes), this feature is operative regardless of recording speed.

Koichi Tsunoda, president of Sony Video Products Company, stated that the new TVO-9000 has wide application in the areas of data storage, security, and scientific applications. In addition to time lapse photography applications, broadcasters and advertisers can use the TVO-9000 as a station logger. Tied to a security camera system, the TVO-9000 can record 96 hours of activity that can be reviewed.

Delivery of the unit is scheduled for spring, and the approximate retail price is \$7,500.

**SONY VIDEO PRODUCTS CO.
9 WEST 57TH STREET
NEW YORK, NY 10019
(212) 371-5800**

for additional information circle no. 25

TATE PRESENTS CAVOX EIGHT FORMATS

In a continuing presentation to interested stations, Lee Tate, president of Cavox Stereo Productions, Inglewood, California, has demonstrated the Cavox "8 Powerful Formats" during the NAB, Dallas.

The formats, designed for automated or "live" radio, include: *Good Music, Conservative Tempo, Beautiful Music, Easy Listening, Contemporary MOR, Standard Pop, Adult MOR Contemporary, and Cavox Country.*

Cavox Stereo Production is a part of the Tape-Athon Corporation, manufacturer and supplier of a complete line of audio playback equipment, background music systems, message inserting systems, CATV audio program systems, electronic tower chimes, and producers of one of the world's largest background music libraries.

**CAVOX STEREO PRODUCTIONS
502 S. ISIS AVENUE
INGLEWOOD, CA 90301
(213) 776-6933**

for additional information circle no. 26

JBL ANNOUNCES THE 4301E

James B. Lansing Sound, Inc., announces the 4301E, a self-contained professional amplifier and broadcast monitor loudspeaker system. With a power amplifier specifically designed to complement the characteristics of the system's transducers and frequency dividing network, the remarkably clean output signal which is gained results in highly accurate, efficient and flexible monitoring.



The power output capabilities and compact size of the 4301E make it an ideal system not only for broadcast applications, but for mobile recording and editing as well. The system can produce a sound pressure level of 98 dB in a typical 6 x 8 x 10 foot broadcast booth. It can bridge a line-level output from a mixing board or broadcast audio console and thereby substitute for the lower-quality monitor amplifier often provided in such installations.

The 4301E is energized by a built-in amplifier which delivers 10 watts continuous sine wave (0.05% total harmonic distortion at full rated power). The amplifier offers completely symmetrical, full-complementary circuitry and wide bandwidth to preserve accurate reproduction of complex musical waveforms.

The frequency dividing network was specially-developed for use in the 4301E and features conjugate circuitry and continuously variable control.

**JAMES B. LANSING SOUND
8500 BALBOA BOULEVARD
NORTHBRIDGE, CA 91329
(213) 893-8411**

for additional information circle no. 27

IGM INFORMATION RETRIEVAL INSTACART

Reportedly new to the industry, and a different idea for off-air revenue, is the Information Retrieval Instacart, a new version of the widely used broadcast Instacart from IGM. The Information unit can play any or all of its cartridges simultaneously — each to a differing output — enabling a station to lease out separate information cartridges to advertisers for telephone access by listeners. This "income expander" augments data in commercials played on air and supplies new additional revenue for television or radio stations.

At the NAB, Dallas, IGM/NTI exhibited a complete Basic A automation system, a typical on-line system with hardware including Instacart and Go-Cart. The unit is programmed through a simple keyboard, with entires appearing on a CRT in English. Using three microprocessors for distributed intelligence, Basic A has extensive capabilities including unique provisions for voice

up by a larger unit which can be plugged to any power source, or run on batteries for coverage in outlying areas.

WBZ, in Boston, has been using RENG for some time to cover their complex metropolitan area. WBZ also uses the Comrex low-frequency extender (which we will cover next) to pipe the transceiver signal through telephones.

Some stations use a variation of the system by employing a wireless mike to feed the relay unit in a nearby mobile unit.

Two broadcast manufacturers who are heavily involved in this type of equipment are McMartin and Marti Electronics. The traditional manufacturers of mobile two-way equipment, Motorola, GE and RCA can supply RENG systems.

The low-frequency extender is used to encode and decode a high-quality audio signal through ordinary telephone circuits so that the signal comes out high-quality at the receiving end.

A field reporter is assigned a little box manufactured by Comrex. The reporter then goes to the site of a news story, finds a conventional telephone, unscrews the mouth-piece, the same way you do when preparing to use a alligator clips, and attaches the low-frequency extender. The reporter then feeds audio from a microphone, a cassette recorder or a transceiver, into the extender, through the telephone circuits to the rack-mounted decoder at the station. Here the signal is reconverted into a high-quality broadcast signal. Basically, what the low-frequency extender does is shift the low-end frequencies

which the telephone system cuts off upward, and then shifts them back down at the decoder. Ironically, little noticeable loss occurs at the top end during this process.

The low-frequency extender has met with enthusiastic response from the radio networks, which are using it for sports remotes. CBS News is equipped all of its overseas bureaus with the device. WBZ, in Boston, is using the low-frequency extender in lieu of network lines for sports networking. The receiving station simply dials a dedicated number at WBZ and receives the encoded air signal over the telephone, which is then decoded at the station for rebroadcast.

The Comrex equipment is expensive, but it can pay for itself easily if it replaces specially-ordered telephone lines. Besides, you'll have plenty of time to put aside the dough — Comrex is sold out for the next six months!

WINS all-news radio in New York wanted to be able to record a glut of incoming audio without having to expend a great deal of expensive manpower. The answer: the actuality retrieval terminal, or ART.

UMC Electronics developed ART specifically for Westinghouse. The system consists of 20 Beaucart Type 10 cartridge machines, a common record amplifier, an equalizer for input of the telephone lines, four silence sensors, a 16-tone touchtone decoder circuit, and a specially designed computer logic sequencer.

ART goes along recording incoming feeds, warning personnel of aborts by the news service and losses due to machine malfunction. The system gives both a visual and an

aural alarm when reloading time is approaching. The system can also operate remote reel-to-reel, cassette and other types of backup machines to prevent losses.

What you get when a feed is over is clean, air-ready cuts with a 150 Hz tone to actuate fast-recuing systems.

ART eliminates a great deal of tedium and cost-ineffective labor currently being done by tape studio personnel.

All-news radio is alive and reasonably well.

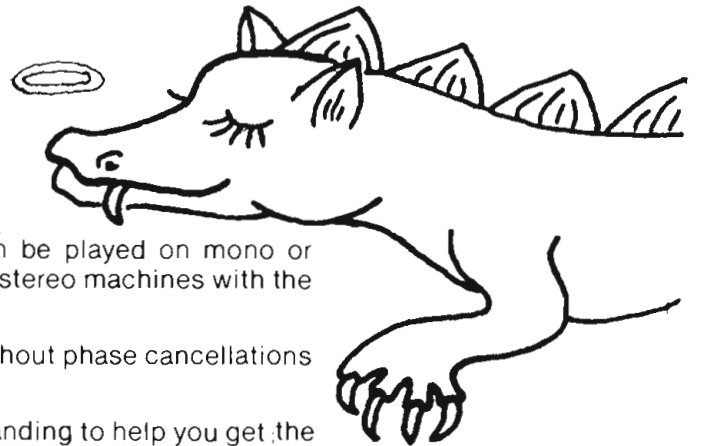
Some bearers of doom and gloom say the failure of all-news to go in Washington forebodes a downward slide for this segment of the industry.

On the other hand, all-news is starting up in Tampa.

What seems to be happening is a shaking out of the all-news format. Stations which were committed to potential losses for two or more years have come to the moment of truth. Some have abandoned all-news as a costly experiment. Others have modified their programming — in most cases going to sports to boost low-audience periods. Some stations have chosen talk-programming as the second ingredient, and a few are mixing talk and live sports.

Oddly enough, the success of all-news in drive periods has pushed other stations to program something close to all-news during drive time.

So, things are looking up for all-news radio. It has suffered some growing pains, but now as it moves into its third decade of service, the prognosis for its future is bright and exciting. All-news radio is alive and well. □ □ □



- * cart compatibility—cartridges made using the Monstermat can be played on mono or stereo machines, and your old mono carts can now be played on stereo machines with the full mono signal on both channels
- * full fidelity—your mono listeners will receive your broadcasts without phase cancellations which result in muddy monaural sound
- * super signal-to-noise ratio—the Monstermat employs dbx companding to help you get the best out of your system



Taking up only 1 3/4" of rack space, the Monstermat solves the problem of broadcasting in stereo to a predominantly mono audience. By putting your all-important L + R mono signal safely on to one cart track, it eliminates the possibility of phase shifts due to machine misalignment or tape warp. The second track carries the difference, L - R, signal. Full stereo is restored on playback and dematrixing. No special cartridges are necessary for stereo use.

The use of the dbx noise reduction system ensures the best possible signal-to-noise ratio and dynamic range from your equipment. Switching of the dbx circuitry is automatic, so dbx-encoded and non-encoded carts may be mixed.

Eventide the next step

Monstermat is a trademark of Eventide Clockworks, Inc.

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When does a portable color camera become an affordable studio camera?

When it's a Panasonic ENG/EFP camera.

Now you can stop admiring ENG/EFP color cameras, and start owning one! The surprisingly affordable Panasonic AK-750. Thanks to its impressive list of options, our three-tube Plumbicon® portable camera doubles as a studio camera.

In the field it's a fully self-contained portable camera that weighs only 20 lbs. (with our optional 12:1 zoom lens shown), so it's easy to handle. It's just as easy on the power, using only 23 watts. You can interface the AK-750 with any EFP system, because it can be externally synchronized with a single cable. Timing and phase adjustments are built right into the camera head. Or connect it to any studio system, simply by adding the optional Remote Control Unit and studio viewfinder.

Indoors or out, you can look forward to impressive performance: With an S/N ratio of 49 dB, and horizontal resolution of 500 lines center at the recommended illumination of 200 footcandles at f/4. There's even a +6 dB gain for a minimum illumination of just 15 footcandles at f/1.8.

Some impressive circuitry was built into the camera: Like a Y I/Q encoder, an RS-170A sync generator with genlock for studio or EFP use, and a color bar generator.

It also features an optical black, and automatic white balance. And there's electronic color conversion, as well as a filter wheel behind the lens.

Horizontal and vertical blanking are both adjustable to meet a variety of recording or playback requirements. And your picture is always crisp and clear thanks to horizontal aperture correction and 1-line vertical aperture correction built right into the camera head.

Not only do you get a long list of standard features with the AK-750, there's also a long list of camera options available. Such as 2-line vertical aperture correction, a chroma key unit, and more.

So if you're pricing both studio cameras and portable cameras, price one camera that can do both. The Panasonic AK-750.

Plumbicon is a registered trademark of N.V. Philips of Holland for TV camera tubes.

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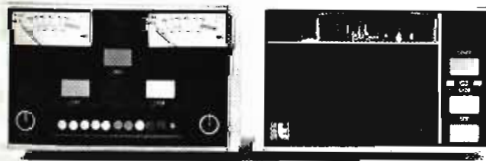
ITC INTRODUCES TWO NEW PRODUCTS

The new ITC 1K audio library system and the new Series 99 Reproducers and Recording Amplifiers have joined products manufactured by International Tapetronics Corporation, Bloomington, Illinois.

The Series 99 Reproducers and Recording Amplifiers fully utilize the most advanced mechanical and electronic states-of-the-art. Specifications quoted include: Frequency response: ± 1 dB from 31.5 Hz to 16 kHz. Wow and flutter: 0.12% or less DIN-weighted. Signal-to-noise ratio: 54 dB or better mono, 52 dB or better stereo. Crosstalk: 50 dB or better between channels at 1 kHz. Distortion: 0.5% or less for amplifier, 1.5% overall.



A microprocessor controls all transport logic and motion sensing, and generates and detects all cue and test tones. It also control the ELSA functions: cartridge erasure, azimuth (phase) adjustment, and splice location.



Four main areas of improvement are reported in the electronic/mechanical design. 1) Tape transport: A brushless DC, crystal-referenced servo motor, and a positive, mechanically latching solenoid hold tape speed stability to within 0.1%. 2) Electronics and head design: Head design is an exclusive ITC open-face conformation. Modular construction with plug-in sub-assemblies are used throughout. Headroom is increased to +26 dBm before clipping. 3) Operator convenience: The ELSA cartridge preparation system is fully automatic. A cartridge positioning system assures precise, rigid tape-to-head alignment. A function switch panel provides fingertip control of operations: high speed cue, cue track erase, meter selection, stop-tone add and defeat. VU-type meters are larger. 4) Simplified maintenance: Reliability and serviceability are reportedly outstanding. Heat is reduced

43%. Components are plug-in modular. Manual adjustments are minimal. Calibration controls and a microprocessor controlled multi-function test-tone generator simplify and speed maintenance.

The ITC 1K audio library system receives, stores, moves, and plays 1,024 cartridges, automatically, with back-to-back capability, and quality reel-to-reel sound.

The 1K can reportedly assist live, creative air presentations. Provide total, walk-away automation. Or, fill any role in between, varying the role day-by-day or hour-by-hour. Programming can be as loose or tight as desired.

The 1K is accessed through a controller of the user's choice. It will accept four program lists, each 32 events long. Up to 24 playbacks, optimally programmed, provide back-to-back capability. Events can be added, deleted, re-sequenced.

Redundancy, and the attendant reliability, is provided by two identical storage cylinders, two identical transfer mechanisms, and up to 24 individual playbacks.

The 1K feeds up to 4 stereo audio channels simultaneously, typically 2 for AM and 2 for FM, permitting cross fades and overlaps, and the grouping of related events.

The 1K will be marketed and serviced as a central component in systems offered by such original equipment manufacturers as Cetec, Harris, McCurdy, Schafer and others.

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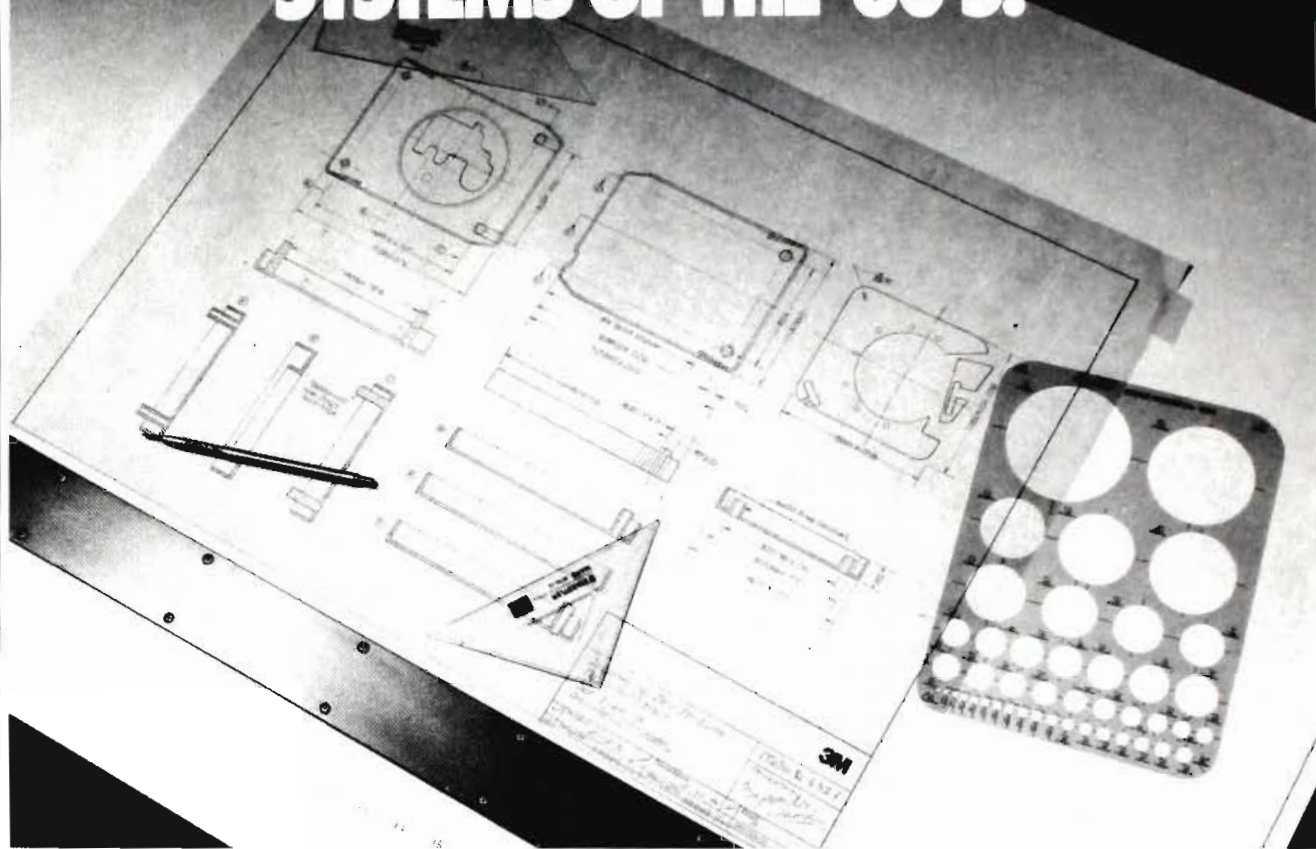
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