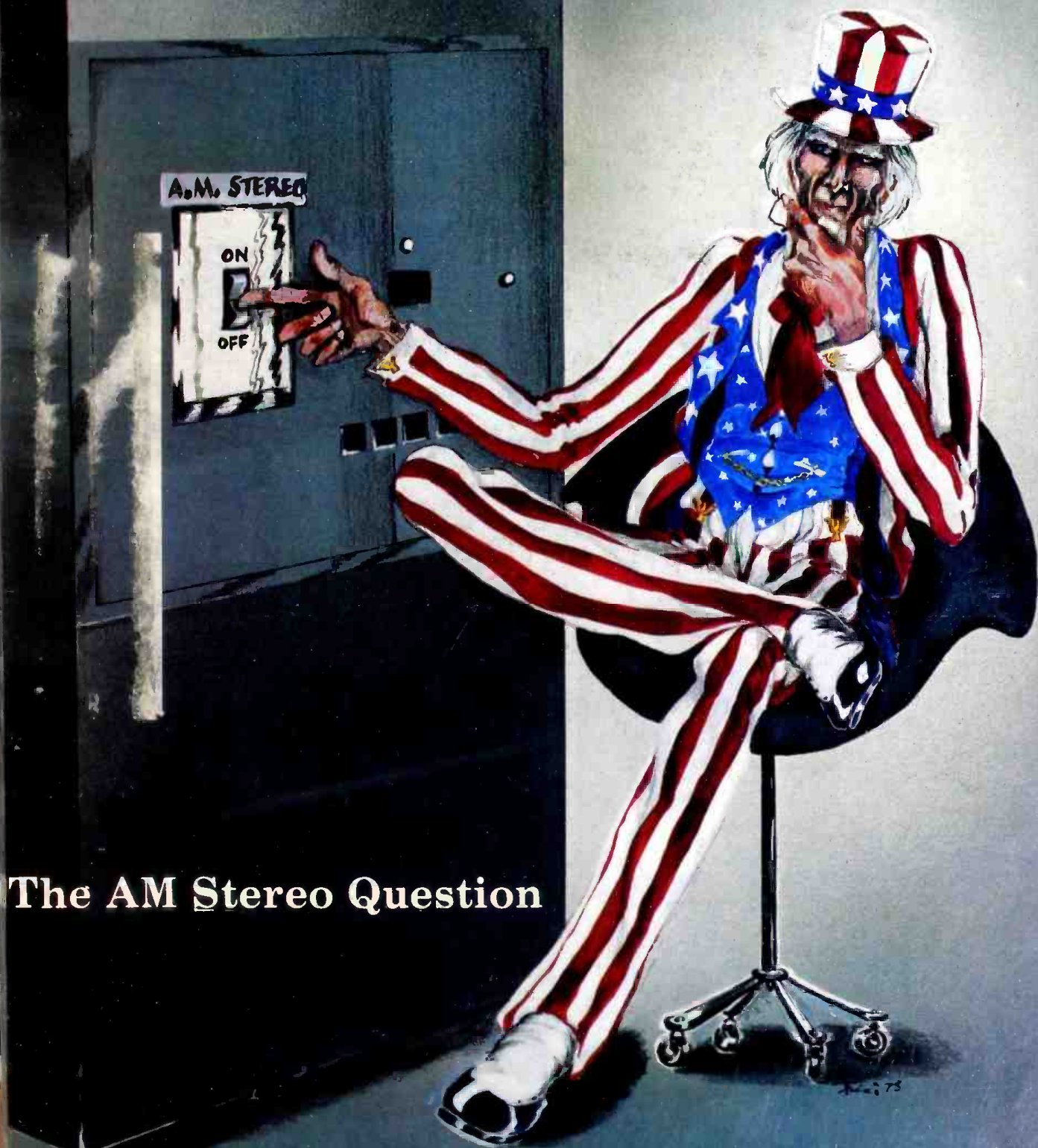


May/June 1978
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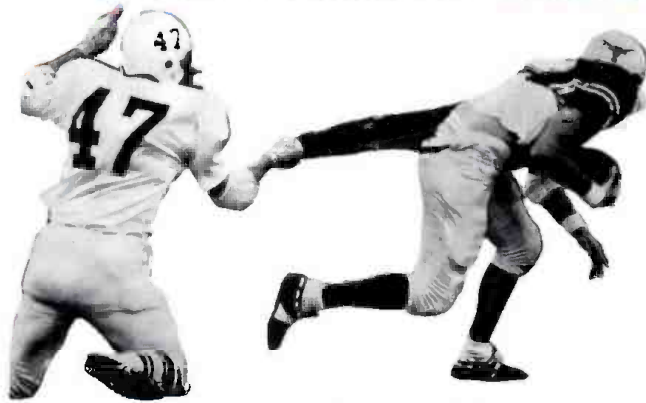
BROADCAST PROGRAMMING & PRODUCTION

The Magazine of Contemporary Radio/Television Broadcasting



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The Cover: The FCC, personified Uncle Sam, will decide if AM stations can air stereo broadcasts.
Artist: Trici Venola

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The Washington Connection

by

Clarence McKee



TONY THE TIGER, BROADCASTER JUDGMENT AND BIG BROTHER

Recent proceedings and activities of the Federal Trade Commission (FTC), Federal Communications Commission (FCC) and the Department of Health, Education and Welfare (HEW) could make us all aware of the close relationship between Tony the Tiger, broadcaster programming discretion and governmental influence — in a disturbing and ominous way.

We all know Tony the Tiger, the popular cartoon character appearing in many children's television advertising commercials. Also, most of us in communications understand that broadcaster judgment and responsibility is the foundation of our broadcast-regulatory scheme. And, we have all heard the term "Big Brother" used to describe that day when our lives have been taken over by an omnipresent, omnipotent government that decides what is best for all people, at all times and in all ways. How have certain governmental actions put Tony's life in danger, threatened the slow demise of broadcaster flexibility and independence in programming decisions, and apparently strengthened the concept of "Big Brother" in 1978 instead of Orwell's predicted 1984? Let us see.

The Federal Trade Commission's recent actions relating to the banning of all television advertising to very young children and the elimination of television commercials dealing with highly sugared products is only the first sign that the "Feds" may have a "contract" out on Tony's life.

Over at the Federal Communications Commission, the FCC has reopened the children's television inquiry and recently sought comments on a proposal by Action for Children's Television (the same group that had asked the FTC to ban children's TV ads of certain products) which asked the FCC to adopt rules restricting and eventually banning all commercial material from children's television programs. If Tony the Tiger did not seek protective custody when he heard of the FTC action, he had better start looking for cover after the FCC proceeding.

New Wave of Programmers

These actions, in addition to raising serious first amendment and censorship questions, could have a chilling effect on children's television program production and sponsorship. If the FTC and the FCC eventually determine that broadcaster judgment, responsibility and industry self-regulation are not what certain people think they should be, then who will become the new monitor, the new censor and the new programmer? Obviously those who author the rules, regulations, directives and policies in those little offices in Washington will become the "new programmers".

If the double-barreled FTC/FCC proceedings *vis-a-vis* advertising on children's television programs were not enough to send chills up and down the spines of broadcasters and civil libertarians, another Federal frontal assault, which most certainly should raise the goose bumps, is the joint FTC and HEW action asking the FCC to review its policies on public service announcements (PSAs). In order to understand the full meaning of this action, a little history is in order.

Last year, the FCC denied a request of the Public Media Center seeking more time during more desirable time periods for the airing of PSAs. The request proposed that specific obligations be imposed on television and radio broadcasters as to the number, duration and source of PSAs so aired. In denying the request, the FCC stated that even if the first amendment and censorship provision of the Communications Act were not barriers, to adopt the proposal would have been an "inappropriate intrusion into the sensitive area of programming". The Commission went on to state that "nothing in the petition has been presented to show that we should substitute our judgment for that of the licensee . . . we see no reasons to change our view that the best course to follow is providing broadcasters with substantial flexibility in airing PSAs."

The Public Media Center sought reconsideration of the Commission's denial of its

request. Comments on the request were due in December. A few short weeks ago, in May, HEW and FTC asked the FCC to allow them to comment on the Public Media Reconsideration request. The HEW/FTC request was not unexpected even though it was most untimely since the comment period closed over six months ago. On January 11, 1978, HEW Secretary Joe Califano told the National Interagency Council on Smoking and Health that HEW and FTC would ask the FCC to review its policies on PSAs "so that more would be aired throughout the entire broadcast day".

There is no question that broadcasters could more liberally disperse PSA messages throughout the broadcast day. However, that decision is within the purview of a licensee's programming discretion and judgment. The FCC should become involved only where a broadcaster abuses that discretion and judgment and thereby breaches the fiduciary duty as trustee for the public interest. Neither the FCC, the FTC or HEW should begin to substitute its judgment for that of the program directors, station managers or traffic managers of the nation. To do so would provide a massive dose of protein and vitamins to the "Big Brother" concept.

There would be reason for concern if the PSA issue had been raised by the Public Media Center alone. However, where two major and powerful federal agencies — HEW and FTC — seek to have another powerful agency — the FCC — exert greater influence over broadcast programming and production decisions, it represents a concerted alliance of political and governmental power and influence that could have ominous consequences for the industry and the public. Will the FCC now "reopen" or "restudy" the PSA issue as it did the children's television advertising issue? Don't be surprised if it does.

Staff Competition

I have the greatest amount of respect and admiration for the Members and Chairmen of both the FCC and the FTC. However, considering the recent activities at these agencies, observers in Washington who have been hinting at a rivalry between the newly appointed staffs of these two agencies to see who can "out consumerize" the other are gaining supporters. If the new staff competition is a fact, the newly appointed staffs should heed the words of scripture that "the greatest among you shall be the servant of all".

The public is composed of all people of all philosophies and their voice should also be represented. The new staffs must be made to understand that broadcasters, advertisers and those parents who want to determine on their own, free of governmental dictum, what foods their children eat, what products should be purchased and what kind of programs they will turn off, are also members of the public.

It is ironic that the very same FTC which is considering banning certain products from children's television programs in the public interest recently adopted a rule forbidding price restraints on advertising for eyeglasses, contact lenses and eye examinations. How "Big Brother" can judge the public to be quite competent to choose its eyeglasses in one action and yet, in other action, indicate that the same public can not intelligently determine what its children should eat or what foods it should purchase is inconsistent to say the least.

The time has come for individual licensees and members of the public to raise their voices to their Congressmen and Senators on these issues, especially where those Congressmen and Senators are members of the House and Senate Subcommittees on Communications. The broadcast and advertising trade associations in Washington should not have to carry the entire burden of speaking out. They should and must be supported by individuals and licensees who represent the other point of view. If they remain silent, the result will be stacks and stacks of rules and regulations which slowly erode their civil rights and liberties to give and receive information.

As Alexis de Tocqueville once warned about governmental power:

It covers the surface of society with a network of small complicated rules, minute and uniform, through which the most original minds and the most energetic characters cannot penetrate, to rise above the crowd. . . . Such a power does not destroy, but it prevents existence; it does not tyrannize, but it compresses, enervates, extinguishes, and stupifies a people, till each nation is reduced to nothing better than a flock of timid and industrial animals of which the government is the shepherd.

A former staff attorney with the FCC, columnist Clarence V. McKee is a perceptive observer of the Washington scene as a result of government service dating back to 1966. He entered private practice as a partner in the Washington law firm of Law, Murphey & McKee after stepping down from his position of legal assistant to commission members Benjamin L. Hooks and Tyrone Brown in 1977. Previous to that, he served as deputy chief of the FCC's Industry EEO Unit. His government background also includes duty with the Civil Aeronautics Board, several Senate committees and the Department of Health, Education and Welfare. McKee has also worked as a professional radio and television announcer. His contributions to the legal profession have earned him wide recognition including the Outstanding Achievement In International Law Award and the American Jurisprudence Award for Outstanding Achievement in Constitutional Law, Remedies and Criminal Procedures. His current practice specializes in communications law.

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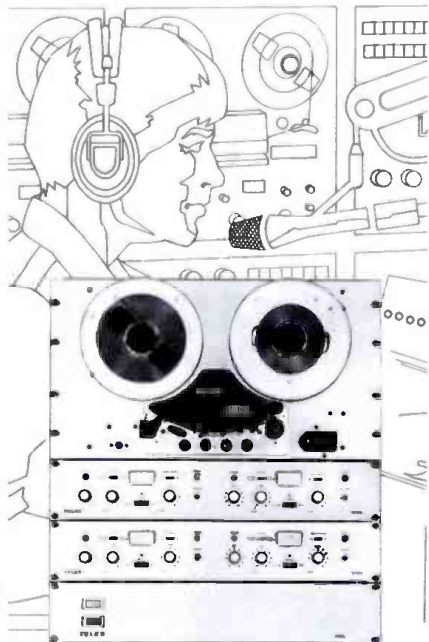
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station meeting minutes

by

Howard W. Coleman



USING THE COMMERCIAL SIDE'S APPROACH FOR HANDLING PSAs

WAAZ is a dominant, longtime AM radio service in a market of 40,000 households. While under the video umbrella of a nearby major market, the station stands as a strong local community voice.

The Cast

Station Manager	Hal James
Program Director	George Barnes
News & Public Affairs Director	Marge Parsons
Sales Manager	Joe Carruthers

Hal James, general manager of station WAAZ radio, felt himself a beleaguered individual.

In a meeting with his staff he described his state of mind exactly that way and then amended his words to add: "Damn, I can talk plainer than that. We are being nickel-and-dimed to death by the demands of civic groups for public service announcements. If we went along with their requests — and some are really demands — we'd never have time for a commercial spot or a program!"

Program Director George Barnes asked: "Can't we just put some of this in briefer form and sort of allocate weeks or months for different groups?"

And Marge Parsons, who doubled as news and public affairs director, added: "How about stepping up the one-minute actualities — a kiss here and a pat on the back there to placate some of these people?"

James sighed. "Realistically, you all know we don't have the personnel to give the subject that kind of attention. More importantly, that's what I don't want to do. Look, there was a trade ad recently by the KOMO stations in Seattle, and it really grabbed me. I have no illusions of grandeur — we are not the Seattle-Tacoma market by any means — but I had parts of the message copied and here they are . . ."

If the citizens of Seattle ever get around to commissioning a heroic sculpture to symbolize the essence of the city's soul, it should undoubtedly be a bunch of people at a committee meeting. For we are clearly a city of busybodies. Not to mention dogooders. There are committees of every kind. Voluntary, official, advisory, ex-officio and ad hoc. For the arts, education, the environment, the economy, the future and the status quo.

"And the real heart of the ad, to me," James added, "is in this set of people definitions: A *bleeding heart* is one who cares for others . . . A *busybody* is a civic activist . . . A *mossback* is one who cherishes what's best and finest from the past . . . And they're all on the committee."

Marge was thoughtful: "That's a new approach. I've been as guilty as anybody in using those labels — without really considering the people I put them on."

"Okay," George Barnes entered, "But let's face it — so much of what those good people and their groups come at us with is half-formed, not thought out: facts aren't available — and it's at the last minute."

"Sometimes we don't even get a name or a phone number for something that's mailed in and labeled *urgent*," Marge added.

Joe Carruthers, WAAZ sales manager, had been silent until now: "You know, it

might just be that the money-making side might have an answer!"

"You know that we have a continuity department, with an editor and two writers who service local sponsors. The reason is simple: in this area there are few advertising agencies to create for local clients.

"My point: for one of our writers to go to work on a client's account, we require a lot of information. We have a long client questionnaire. We want contacts, copy points, background, history, sales record, distribution, competition — it's the only way that we can do a good job for our commercial clients.

"How about applying the same technique to your public service contacts? Two things might result. We are going to be able to do a much better, more concise job on the announcements themselves. Secondly and obviously, just maybe having to spend the kind of time and effort to organize and write their information for the questionnaires would discourage the less important requests for air time."

Carruthers warmed up to his subject: "However, more importantly, let's make it policy that they *must* reveal to us the results of whatever the message is so that we can put some kind of yardstick on the effectiveness of what we are doing for them. Here's where I can see a great overlap of commercial messages and public service messages — *what's the result, what's the result?*"

"It's dollars-and-cents on our commercial side. We get a pretty quick reading of effectiveness. I see the challenge in getting a similar reading from the public service side of the action. As long as we are going to carry this stuff, we might as well be able to use any results in our overall sales presentation. As it is now, we don't know what's working or not."

Marge chuckled: "And I thought all you did was play golf with clients!"

A secretary's minutes recorded three conclusions reached during the meeting:

1) Henceforth, all requests for public service announcement air time must be accompanied by a completed, detailed, questionnaire making full and recorded disclosure.

2) This policy may cut down on the number of capricious requests for air time.

3) Results of carrying public service messages must be passed on to the sales department for possible use in demonstrating our civic reach in commercial sales presentations.

With NBC Chicago and later with Time-Life Broadcasting in Minneapolis, columnist Howard W. Coleman's broadcasting experience has encompassed publicity, advertising, promotion, sales, programming and station management. He joined A. C. Nielsen Company in New York City in 1964 as press relations director and in 1969 moved to his present position as associate director of the Department of Press, Radio and Television for the Lutheran Church in America. As an author, he wrote *Case Studies in Broadcast Management* as well as edited or completed parts of several other books. Coleman is also a frequent contributor to broadcast trade publications. Active in academic circles, he is an adjunct assistant professor at Hunter College in New York City and has taught at St. John's University in the same area.

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quency saturation due to excessive EQ.

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Letters

from: **J. F. Phelan, Manager**
Professional Sound Products
Shure Brothers, Inc.
Evanston, IL

It was with great interest that I read the Howard Cummings interview with Dave Williams (*January/February 1978 BP&P*) on the audio setup for *The Tonight Show*. It is always enlightening to be able to see how the pros do their job.

However, there are two points which I feel should be clarified for the benefit of your readers who deal in television audio. First, the microphone that was used for Doc Severinsen's trumpet used to be the Shure SM7. This microphone is the only studio microphone that Shure makes with an equalizer built into it. The SM57 has no built-in equalization of any kind. Secondly, the Shure SM59, which is presently used on Doc's trumpet, is certainly not the same as an SM7 without the built-in equalizer.

The SM59 is a completely different structure — from the diaphragm size right down to its unique mechano-pneumatic shock mount. This latter feature was the subject of an entire Audio Engineering Society paper, presented in Los Angeles in May, 1977.

I would like to thank both Dave Williams and Howard Cummings for a fine article on television sound. I hope to see more articles/interviews of this nature in the future.

This is just one more question which I haven't been able to find the answer to. What is kinetic phasing?

Reader Phelan is correct about Doc Severinsen's microphone. The error in the article was a typographical mistake. In answer to the last question, kinetic phasing is a sound reflected or refracted from objects in the studio — be they hard or soft — that returns to the same or other mikes. Mikes are originally tested in anechoic chambers, but what we're looking at is a different environment on the stage.

— Howard Cummings & Dave Williams

from: **Michael Fred Pierce**
KONI-AM/FM
Spanish Fork, UT

We are an album oriented Basic Country music station.

If the Association of Country Entertainers would care to send us some of the hundreds of new records they claim are just going in

the waste baskets of major market stations we would be happy to program most of them.

We add around 16 new singles each week and 5 or more albums per month. We work the entire library. Our "playlist" is determined each day by listener requests. They tend to request mostly the older traditional country records although we receive and answer many, many requests for the modern country sounds as well.

from: **David H. Moran, President**
Moran Associates, Inc.
Salem, VA

As I read Jeff Craig's article, "Some Do's and Don'ts of Radio Syndication", the last five years of my life began to pass before my eyes!

As usual, you had selected a writer who knew his subject and had obviously paid his dues.

Congratulations on an outstanding publication . . .

and best wishes for continued success!

from: **Tom Hesse**
Program Director
KNIS-FM
Carson City, NV

I wanted to register an accolade for *BP&P*. It's really an outstanding publication and is routed to every member of our program staff.

I particularly enjoyed your first issue of 1978 which included a very thorough and accurate treatment of "Voice Tracking and Automated Radio Programming". I was especially interested because I was the program director at KKBC when the station first took on Concept Productions. I worked with the system for a year and experienced many of the "growing pains" indicated by Mark Hutchins. I was impressed with Dick Watner's product then and still am today as I listen to "The State of the Art" in automated programming. In my opinion he is one of the front runners in the industry.

In the meantime, you guys at *BP&P* keep up the good work.

from: **Joseph Bahr**
WVIS-FM
Virgin Islands Stereo
St. Croix, Virgin Islands

I wish to congratulate you for the excellent article on "Voice Tracking and Automated Radio Programming." The article was very informative.

I look forward to more articles on automation; programming the automation based on format, and also would like to see sort of an article reviewing the various systems, like an equipment report. For example, a review of the Harris System 90, the Schaffer 7000, IGM/NTI Basic, IGM . . . articles where the equipment could be

explained in detail as to its capabilities, advantages, and other uses.

I also look forward to articles on audio processing and stations using the various pieces of equipment . . . and talk about FM loudness, stereo separation, etc.

Keep up the good work . . . and I look forward to reading *BP&P* monthly, instead of bi-monthly!

An automated system in use at a Chicago radio station is profiled in an article beginning on page 33 of this issue.

— Editor

from: **Frank Sumrall**
Vice President
WAML
Laurel, MS

In your March/April issue you published an article by Don Elliot entitled "The Practical Radio Production Console." In this article Don Elliot talked about a "harmonizer".

We are interested in purchasing a unit like this for our production studio.

Please send us information on the company or companies who make this type equipment.

Incidentally, we thoroughly enjoy your magazine.

The harmonizer described in the article falls under the classification of a digital delay or pitch changer. Several manufacturers market such devices that are available through most professional audio shops. These include Eventide Clockworks' Harmonizer, the Lexicon 201, the Marshall Time Modulator and a unit from MXR Innovation. EMT's Model 250 is available through its exclusive sales agent, Gotham Audio in New York.

— Editor

from: **Jack R. Cresse,**
Vice President
Billy J. Parker,
Music Director
KVOO
Tulsa, OK

We read your article regarding Country Radio Programming, Part I and Part II (*March/April, 1978 BP&P*), and we both feel that your information regarding country music is not of the best interest in country programming for this reason. Whether an artist belongs to the CMA or to ACE has no bearing on the programming of country music. The most important fact is whether a record fits a country format. It makes no difference if a record is a brand label, a known artist or whether it is an unknown label or an unknown artist; if the sound is country and lyrics tell a story and fits a country format, it should be played. A program director or a music director that knows a country sound and listens to a record, he or she knows if it is country! A

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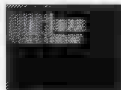
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music director or program director should be able to listen to a record and know whether it should be played or not be played. They should not have to wait till they see a record reported by *Billboard*, *Cash Box* or *Broadcasting*. It is their responsibility to help break a record. Anyone can take a reference and play the Top 100, Top 50 or Top 20. It takes a country music ear to recognize a country song.

If country music dies because of the fight between ACE and CMA, contemporary country and traditional country, it is because there are too many program directors and music directors that do not have an ear for country programming. We believe it is possible to program with good judgement both traditional and contemporary country, but it is impossible to do this with a short playlist. Country music tells a story. In programming a short playlist you overkill the story and create a tune-out. The more stories you tell in the course of a day, the better sound a country radio station has, regardless of who the artist is or who the record company is, and whether they belong to the CMA or ACE! The average country listeners know more about country music and the artists, than any program director in the United States.

The secret of country success is programmers who will take a chance on unknown labels and unknown artists and who play lots of country music, regardless of what the surveys show. Someone has to

break a record before your powers, such as KLAC, WHN and WMAQ see this record on a survey chart. A short playlist will kill country music and then all the experts will say country music was a fad, because the majority of your program directors and music directors in major markets would not know a good country music song, by an unknown artist or a known label if they heard it. They only thing they can do is read trades and play hit records. But before a record can be a hit, some station has to break the record.

Country music is as strong as the radio station that will pick the unknowns or knowns. Any eight year old that can read, can program from a chart.

from: **Jarrett N. Day**
Promotion Director
KSO
Des Moines, IA

Your recent articles on "Country Radio Programming" raise some interesting questions concerning the direction of country music and the direction of country radio.

However, it is interesting to note, that during the October/November Arbitron ratings sweeps there were only two country stations in the United States that were number one in total persons, 6 a.m. to midnight, Monday through Sunday. Surprisingly, neither station was mentioned

in your otherwise fine article.

We can not speak for WBAP, Dallas/Ft. Worth, and their approach to country programming, but we can speak for KSO, Des Moines . . . the only other country station to sit atop its market, in total audience.

KSO plays 60 singles as a matter of routine, and quite often as many as ten extras at any given time. This does not include the album cuts, which are played mostly in the evening.

The only page we have taken out of the rock "handbook" is that all of our personalities have come from Top 40 radio. From big stations in big markets. Markets like St. Louis, Houston and Minneapolis.

We are playing number one oldies that go back as far as 1949, though they do not get heavy play. It is the feeling at KSO that it is the duty of country music and country radio to remember its roots . . . it is also our duty, by playing 60 singles to plant the seeds for the future, so the roots will be there thirty years from now.

There are so many stations broadcasting country formats that the sheer size of this sector of the industry makes it difficult to cover fully. But we do agree that KSO and WBAP, by virtue of leadership in their respective markets, are two stations which should be included in any story on country radio.

— Editor

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from: **Joel F. O'Brien**
WTSA
Brattleboro, VT

It was with fond memories that I read, and re-read the article "Yo Ho Ho and a Bucket of Megawatts", in *BP&P*, Volume 4, Number 2.

Not only did I listen to Radio Caroline while I was stationed in Berlin, West Germany with the American Forces Network, but I was able to do a few shows for Caroline, too.

The programs were taped in Berlin and sent to England for forwarding to the ship. Dennis King, of Caroline, and myself did about a dozen shows that originated from West Berlin.

By the way, if Ronan O'Rahilly is reading this, you may send my paycheck to me care of WTSA, Brattleboro, Vermont.

Thanks for the piece on Caroline. There were many other "pirate" operations in the past, how about something on them?

Because there are so many areas of broadcasting that we plan to feature in future issues, we are unable to devote too much emphasis to any one topic. We would be hard-pressed to do follow-up articles anyway, even if space permitted. The pirate broadcasters, by virtue of their unlicensed and unregulated status, have proved to be quite a slippery lot — starting, stopping, moving and even occasionally sinking on a moment's notice.

— Editor

WHAT TO DO DURING YOUR NEXT OBSCENE PHONE CALL.

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The result is the BD-955, a RAM based DDL providing up to 6.4 seconds of delay.

Substitute the BD-955 for the tape machine you're now loading, monitoring and changing tapes on. The BD-955 will allow plenty of time for either the engineer, announcer — or both — to hit removable DUMP buttons.

The BD-955 cancels the objectionable program material; its rear-panel terminals allow automatic control of the phone and/or auxiliary equipment.

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Here's where the BD-955 really shows its stuff — and makes the switch to Eventide obscenity deletion as much a programming decision as a technical one —

When the DUMP button is hit, programming instantly returns to real-time. With no necessity to fill the air with "7 Second Announcements" or stand-by jingles. The show goes on. The BD-955 cancels the obscenity and automatically builds back to full delay time. Digitally: without wow or flutter and no need to stand by for rearming an obscenity loop. The program continues immediately — with sufficient time delay for the announcer to take the next call. No excuses necessary. Sound like magic? We've manipulated time like this for over five years.

When it's not being used for obscenity deletion, the BD-955 serves double-duty as a production tool. It allows front-panel selection of delays from 6.5 milliseconds up through the full delay available, for musical and segue effects — including vocal doubling and automatic double tracking (the audible illusion through

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Other significant features about the BD-955 Broadcast Delay Line:

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Industry Sees Improvements In Hardware and Performance As Benefits of AM Stereo

Expect FCC Action On Proposed Service Later In Summer

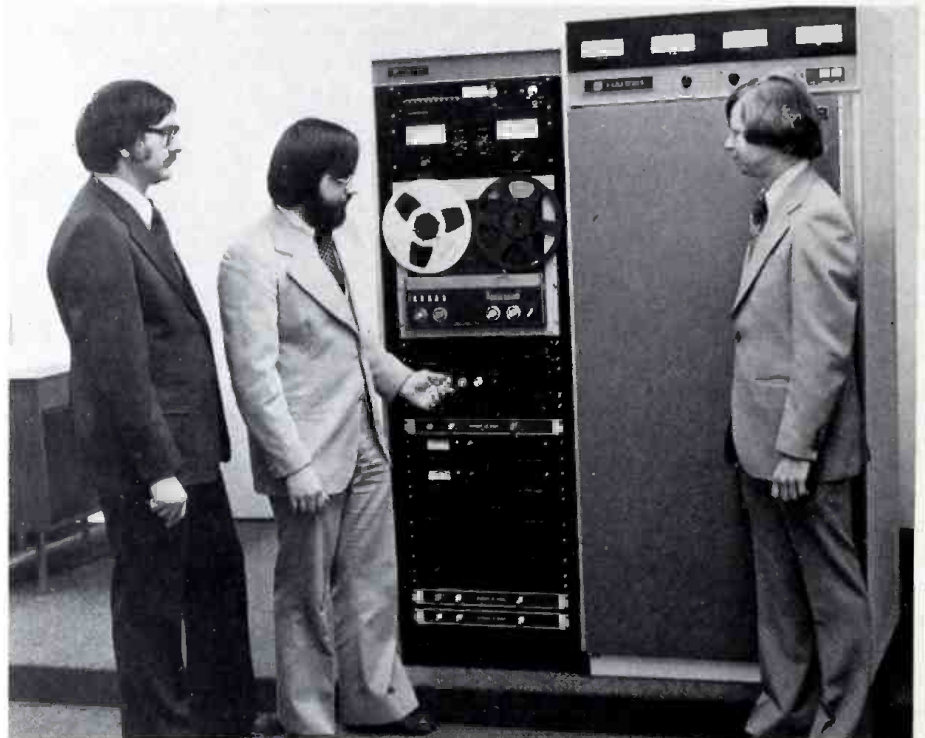
Phase, bandwidth and spectral density are some of the technical concerns which are often the first issues that come to mind when discussing obstacles confronting AM stereophonic broadcasts. Because the Federal Communications Commission (FCC) is giving petitions on behalf of AM stereo serious consideration, many persons in the industry are taking a long, hard look at AM transmitter and antenna compatibility with stereo. While several major AM broadcasters contacted by *BP&P* expressed an awareness of the impact that the proposed service would have on studio production and transmissions, many have said that the most significant technological impact could well come at the "other" end.

"We feel that we put out a quality signal but the receivers are not up to our standards of quality," said Winston Loyd, chief engineer at WABC in New York, expressing an opinion echoed by others. "The thing we look to here is an improved quality in receivers. With stereo, manufacturers will begin to put more effort in making the AM portion of receivers. We feel that this could be an important fall out of AM stereo."

Though receiver sales will not effect broadcasters directly, it is a good indication of the enormous impact the proposed service would have. Adding just a few dollars to the cost of each home and car receiver unit to accommodate AM stereo will mean millions. If large numbers of consumers decide to replace their existing receivers immediately should AM stereo become available, hundreds of millions would be at stake. This, of course, does not even include the cost of replacing or converting monaural broadcast equipment or the potential of additional advertising revenue that could be generated for AM stereo stations. A decision to implement the service could well influence the spending of upwards of a billion dollars annually.

FCC Action Expected

The FCC is reviewing proposals and is expected to take some action by the end of July or August. A final decision could come as early as the end of the year, though it will probably not be made until some time in 1979. The commission has received written



It doesn't look any different than a conventional transmitter, but the Harris unit is designed for AM stereo broadcasts. Five manufacturers have developed such prototypes and are petitioning the FCC to approve the new service. Officials from Harris Corporation are (from the left) Bob Welrath, Dave Hersberger and Cliff Leitch.

comments from over 90 sources, many of whom have submitted more than one set of comments. These documents add five volumes to the FCC's existing files on the subject.

In the period 1958 to 1960, Philco Corporation, RCA and Kahn Communications petitioned the FCC with AM stereo plans. These proposals were rejected in October 1961 for several reasons, according to Greg DePriest, staff engineer with the commission's Policy and Rules Division of the Broadcast Bureau. Technical problems, more than were confronting the then-proposed FM stereo, and a lack of interest for the service were major reasons cited. The petitioners were also told that more research was needed.

Currently, five manufacturers have submitted systems to the FCC for consideration. They are Belar Electronics

Laboratory, Inc., of Devon, Pennsylvania; Harris Corporation of Quincy, Illinois; Kahn Communications of Freeport, New York; Magnavox Corporation and Motorola, Inc. Kahn is one of the original petitioners and the Belar system is based on technology that was purchased from RCA, another early AM stereo proponent. Sansui had recently offered a system but withdrew it because the Japanese firm wanted to develop it further.

The systems now under consideration overcome most of the technical problems encountered in the past, say experts. "There is no reason AM stereo cannot be as good as FM," said one observer, summing up the opinion expressed by several experts. "It has the potential for better fidelity than FM stereo, but that wouldn't happen for several years because it needs further development."

Improved Reception, Range

In two areas it is believed that the proposed service would offer an immediate improvement over FM stereo. One is in car stereos. Signal propagation difficulties are encountered when FM stereo receivers in autos move past buildings, hills and other large obstructions. The pattern of the FM multiplex signal is shifted by such large objects creating phase problems commonly called the "picket fence" effect. Similar difficulties will not be encountered with AM stereo, according to engineers. Because AM transmissions are not limited to line-of-sight, the AM stereo signal would have greater range than FM transmissions. This is a second advantage the proposed service would have.

The one consideration that is of "paramount importance" in choosing a system is that it conforms with existing technical rules and complies with existing standards for out-of-band-emissions, according to FCC's DePriest. Another major factor will be a system's compatibility with existing monaural AM receivers. DePriest said that the commission will also examine performance in such areas as separation, signal-to-noise and range. The ability of a system to be integrated with existing transmission equipment economically will also be considered. The impact AM stereo would have on the continuing development of FM broadcasting was cited as another concern in a FCC notice issued a year ago.

FCC's Options

There are three courses of action that the FCC can take on current petitions:

- A Notice of Proposed Rule Making could be issued in which one or more systems is endorsed. A comment period would follow allowing interested parties to file petitions in support or objecting to any system under consideration. A final decision would follow.
- The FCC could ask for more information through a Notice of Inquiry. Such a request was made a year ago.
- AM stereo could be rejected outright or the commission could defer action indefinitely.

Regarding the final option, FCC's DePriest said, "It would be hard for us to do nothing. There has been a lot of interest in the comments."

Independent Committee Studies AM Stereo

Several broadcast organizations have formed an independent group — called the National AM Stereophonic Radio Committee — to investigate the proposed service. Its sponsors include the Electronics Industries Association, a section of the IEEE, the National Association of Broadcasters (NAB) and the National Radio Broadcasters Association (NRBA). Formed in September 1975, the AM stereo committee consists of about 100 members drawn from the broadcast community. A report of its findings was submitted to the FCC by the group, which consists of a

steering committee and four panels. Each aspect of the proposed service — system specifications, transmissions systems, receiving systems and field testing — was dealt with by a separate panel.

The Belar, Magnavox and Motorola systems were examined by the group in testing a year ago. The Harris system, reportedly, was not ready for testing at that time. Kahn chose not to participate in studies conducted by the AM stereo committee. Instead, the firm submitted results of its own testing directly to the FCC (the other four manufacturers have also made separate filings dealing with performance). No further study is planned by the AM stereo committee, according to Chris Payne, assistant to the vice president of engineering at the NAB, who supervised the group's field tests.

"I think that's as much as we intend to do," said Payne, referring to the group's report. "The ball is now in the court of the FCC. They've got mounds of information to sift through."

The AM stereo committee's report tells the FCC that the three systems studied perform satisfactorily, said Harold Kassens, chairman of the AM stereo committee. Kassens is a partner with the Washington consulting firm of A. D. Ring & Associates.

"What we established was that the three work fine," he explained. "The commission could approve any one of them."

Though no one can be sure what the FCC will decide, Kassens speculated that it would

endorse all five in a Notice of Proposed Rule Making "and say here are the five — what do you say? That way, the commission doesn't have to discover any flaws with a system. It will be left to the commentators to do that in their filings," he said.

He added that eventually, one system

'... we will
be ready
to go ...'

would have to be approved as a standard, instead of sanctioning more than one. "The commission has to," said Kassens. "Everybody can't buy a different receiver, which is what would happen if broadcasters were using different types of transmitters."

Some Broadcasters 'Ready To Go'

While the FCC is pondering petitions, many stations are preparing their facilities for stereo. At WABC in New York, Chief Engineer Loyd reports that stereo production consoles were purchased when the units were replaced a year-and-a-half ago.

"So we feel that when the ruling comes, other than the transmitter, we will be ready

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to go," he said. "Of course, there will be a lot of work with making new stereo carts and so forth, but basically, we'll be prepared."

Because engineers at the station also service WABC's stereophonic FM sister station, WPLJ, Loyd feels that engineering will present little difficulty during a transition.

Stereo production equipment is also being purchased at WGN in Chicago, station officials report. Robert Henley, vice president and general manager, said WGN will begin stereo broadcasts as soon as possible, if the FCC gives approval to the new service.

FM's Recent Gains Substantial

Henley believes that many AM broadcasters look to stereo as a way to combat inroads that FM has made into their share of the market. In 1970, FM had only 13 percent of the listeners in Chicago, Henley said. The figure has swelled to about 50 percent today. "There are a lot of stations licking wounds that are really looking forward to AM stereo," he said.

Whether AM stereo attracts a great deal of immediate attention depends on the price of stereo units. "Simplicity is the key to that question," Henley explained. He expects to see much publicity generated from stations that switch and the more economical stereo receivers are, the stronger the public's response will be.

Though planning to go stereo if the service is approved, WGN plans no programming changes. The station is talk oriented and has only a few blocks with

'... promotional efforts will be very heavy ...'

music emphasis. Henley said the change to stereo would be made to provide a better signal and better overall service for all the station's broadcasts.

The dilemma of whether to convert talk-oriented stations faces several Westinghouse Broadcasting outlets. Richard H. Harris, president of the Radio Station Group at Westinghouse, said that recent capital improvements have involved stereo production equipment. The four Westinghouse AM stations with music formats would convert to stereo, if the FCC approves the service. Harris added that it has not been decided if the group's remaining three with all-news formats would also do so. The feeling at Westinghouse is that it may not be necessary.

Harris feels that both broadcasters and the public would benefit from AM stereo. He predicts a flurry of activity, should AM stereo become a reality.

"I think that promotional efforts will be very heavy," he explained. "If you're the

leader in the market, you want to be the first to go stereo . . . It will cause a focusing of the attention of the advertiser and public back into radio. And that's very healthy for radio."

KRLD in Dallas, which has recently been acquired by the Metromedia chain, has an all-news midday format, "so we really don't know what we're going to do," said Rick Neace, operations manager. The station already has stereo control boards in its production facilities.

Neace believes the greatest positive influence of the proposed service would be to motivate manufacturers to improve receivers. Because the public is accustomed to monaural AM radio, he feels that public demand for receivers would not be particularly strong initially. Price of the units would be the major factor and he sees the best sales in receivers for cars.

"I don't think it will influence programming that much," he said. A major impact on broadcasters will be the rush to be the first stereo station in the market, he feels.

Mexican Station Publicizes AM Stereo

AM stereophonic broadcasting was promoted heavily at least once in recent history when XETRA in Tijuana, Mexico, commenced stereo service in the spring of 1970. Adjacent to the American border, XETRA sends a 50,000-watt directional signal on a north-south axis during their daytime pattern. Its stereo broadcasts were publicized in Southern California, where its signal reaches the San Diego and Los Angeles markets. Listeners used two conventional receivers to get the stereo effect — one tuned just below XETRA's 690 signal and the other tuned a bit higher.

The station ended stereo broadcasts almost a year later. "At that point, they decided to cease it because it lost its novelty," said Rich Tyson, current operations manager. XETRA's production, sales and marketing offices are located in San Diego while its taped, English-language broadcasts are aired from a transmitter and six antennas across the border.

Tyson said XETRA used a prototype Kahn system of tube design. Because two receivers were needed for stereo (no integrated units were available), a listener using a car radio was unable to get the separation. This and similar problems relating to the need to have an integrated receiver were other factors in the decision to discontinue stereo, said Tyson. He added that stereo "didn't necessarily enhance the mono signal, but it didn't hurt the mono signal either." (Several AM stereo broadcasts of short duration have been more recently made in the U. S. with FCC approval for experimental purposes.)

While there is much agreement that there would be a rush to be first in a market with stereo, at least one industry figure feels that smaller outlets will not join the anticipated stampede. Tom Rounds, president of radio syndicator Watermark, Inc., of Studio City, California, said that only the large stations

will be able to afford stereo broadcast equipment "because some of those guys out there are just now getting into cart machines. People tend to forget that."

Watermark's top 40 pop syndicated program has 950 clients and though its current offerings are monaural, Rounds said

'... how many pick-up trucks have stereo radios ...'

his equipment is compatible for stereo production. The syndicator plans to produce a science-fiction series shortly with stereo effects.

'Potential For Better Fidelity'

Looking at AM stereo as a technological advancement is another reason for implementing the proposed service, two officials from West Coast stations told BP&P. Eric Norberg, program director of KEX in Portland, Oregon, said that this is important because the public has become accustomed to stereo. He added that his station would begin stereo broadcasts immediately, pending FCC approval.

"There is no quality lost and it has the potential for greater fidelity," he said. He favors the proposed service because it would promote technological improvements, most importantly with receivers. He added that the strongest interest will be in automobile receivers. "Most people seem to prefer FM stereo so we think they'll get AM stereo immediately when it becomes available," he explained.

KEX and sister FM stereo station KQFM will be housed in the same building for the first time in October, when a new facility under construction is completed. Norberg said the new plant is geared for stereo.

"Any time you can make technological advancements in broadcasting," said Don Hofmann, program director of KSFO in San Francisco, "it's good for radio. I don't care if it's AM or FM."

Hofmann said AM stereo would provide better reception in the mountainous Bay Area and equalize competitive advantages FM stations have. The longer range of an AM stereo signal could also have a major impact on rural areas, he added. "I always say, why do country stations do well on AM but not on FM?" he said. "The answer, I think, is how many pick-up trucks have stereo radios."

Even if public or broadcaster interest isn't very strong at first, Hofmann feels that sales will be stimulated by heavy promotion. Manufacturers have too much at stake to let interest wane.

"Since the hardware people are so into planned obsolescence," he explained, "they will create a demand for AM stereo equipment."

Mono Channel 1 + Mono Channel 2 Does Not Equal Stereo

Need For Mono Compatibility Greatest Technical Obstacle Confronting AM Stereo

by Peter Butt
Consulting Editor

Implementation of the proposed AM stereo service would bring with it the problems that have been dealt with by the FM stereo broadcaster for years. Aside from the obvious requirement for two signal channels for all audio information, there are other requirements applying to the stereo audio signal system that have a significant impact on the broadcaster. In this article, BP&P examines some of the technical issues dealing with AM stereo.

□ □ □

The basis of the problems encountered by the stereo broadcaster is the requirement for monophonic compatibility of the stereo signal as received by the monophonic receiver. Most receivers in use by radio listeners are monophonic. The existence of

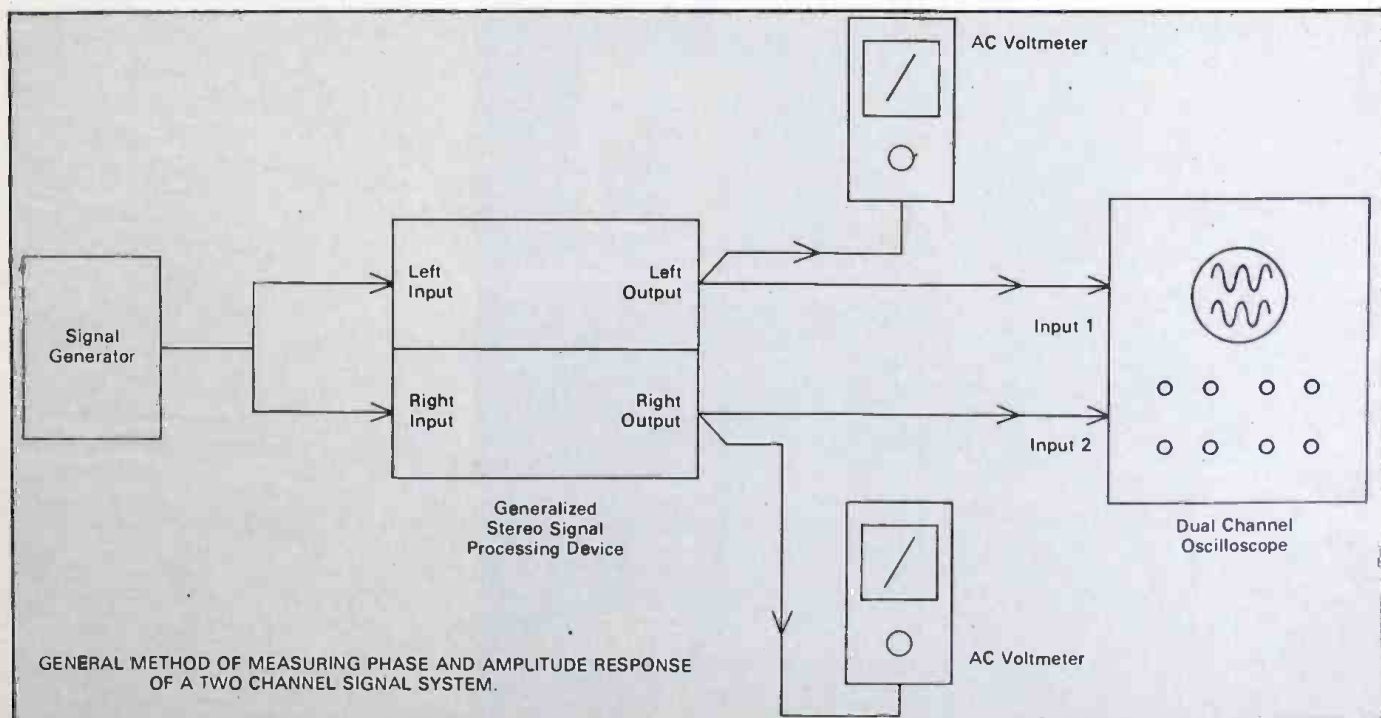
stereo information on the transmitted signal should not impair the reception of the mono signal if the mono listener is to be included in the stereo broadcaster's audience.

The approach for achieving monophonic compatibility for all proposed systems for AM stereo and, indeed, of the FM stereo transmission system now in use, is to transmit the left and right channel information added together in such a way as to present both stereo channels as a monophonic mix. While simple in basic approach, there are some "flies" in the proverbial ointment that make the actual practice a little more complicated than the theory.

Stereo transmissions of all proposed systems achieve their monophonic compatibility by transmitting the sum of left and right channel information in a way that is

accessible to monophonic receivers without the need for special demodulation. This is true of FM stereo as well. In addition to the L

A BP&P consulting editor for technical articles, author Peter Butt is a maintenance engineer at Filmways-Heider Recording in Hollywood. With experience in radio and television broadcasting, military communications and high speed tape duplication, he has a broad background from which he draws in his numerous writings. Butt also operates his own business as a consultant in the area of magnetic recording and professional audio systems. Active in professional workshops, he has lectured on the theory and practice of magnetic recording.

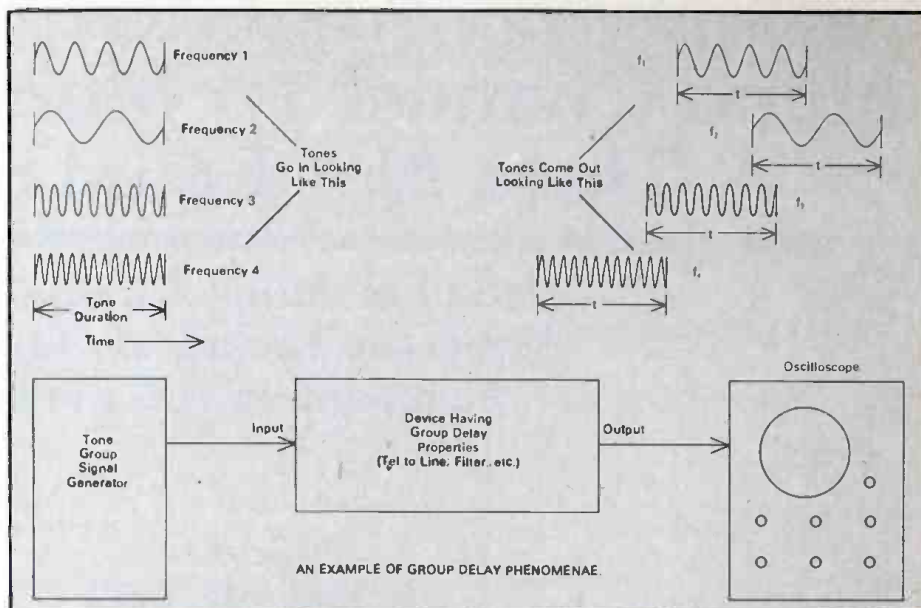


+ R signal, a difference between the two stereo channels is transmitted for use by the stereo receiver in separating the left and right channel information. Algebraically, we are considering the following situation:

$$L+R + L-R = 2L$$

$$L+R + (-1)(L-R) = 2R$$

Clearly, with relationships this simple and direct, there is just about nothing that could possibly go wrong. Right? Wrong. The above equations are really what is known as "vector" equations. They have the properties of both magnitude and phase. Phase is just a fancy nomenclature for the time relationship that all physical quantities have when their dynamic — or changing — characteristics are considered. In other words, we have to insure that the magnitude and polarity relationships of the voltage and current do represent the stereo audio signal and, in addition, preserve the time relationships that those voltages and currents had with each other at their origin. If this is not the case for both channels of the stereo signal, a station will have failed to achieve a reasonably accurate stereo transmission and, perhaps worse, it will have failed to construct the L + R mono combination of the stereo signal in such a way that the predominant mono listener receives a sonically pleasing combination of the two stereo channels. If the mono listener is not reasonably pleased with what he hears, he will probably tune-out.



As FM stereo broadcasters have known for a long time, interchannel phase errors are a cause of discontent to listener and broadcaster alike. Often their resolution lies in the correction of very subtle matters that are of no importance whatever for the case of the monophonic signal path. For the AM broadcaster who has had no prior experience with stereo outside of a casual living room exposure, the road to stereo will include some hazardous twists — and possibly a few hairpin turns.

It should be pointed out that it will be necessary to consider components along the audio path in respects that are in addition to their properties as monophonic path components. As a result, additional measurement capability is needed to detect whether these added criteria for stereo are being met in practice and, if not, then by what measure they miss the ideal of acceptable signal path components. It is presumed that the technical staff of the AMer converting to stereo will apprise themselves of the added instrumentation requirements and will place the appropriate bug-in-the-ear of management so that a creditable signal can result from the added investment of the stereo conversion. Informed maintenance is as much a part of station operations as is the on-air continuity.

The Phono Cartridge

The sermon portion of this article ended, it is time get down to the brass tacks of signal component stereo flow review. Proceeding in a logical order, our first consideration is the stereo phono pick-up cartridge that is probably responsible for the majority of air program. Because mono cartridges are not common in today's stereo-oriented market, it is fair to assume that most AM stations are now using a stereo model that has been connected with its left and right outputs in series to achieve a L + R mono combination at the cartridge shell. A check of the pre-amplified monophonic cartridge frequency response taken with the cartridge connected in that way may be very revealing indeed. This test may be performed by playing the laterally cut portion of a stereo test record while observing the preamplifier output with a wideband AC voltmeter. The response thus obtained should then be compared with the response obtained from the same portion of the test record with the left and right channels of the cartridge connected to the preamplifier input individually. If the combined L + R response does not match the response of the individual L and R

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outputs of the cartridge and/or if the L does not match the R response, there is a serious problem in the cartridge itself or perhaps in the pick-up arm system.

Phasing errors are most frequently observed at the higher frequencies and manifest themselves as a "swishyness" on the audio signal quality when monitored as a mono L + R combination. Unless both sides of the cartridge are very nearly identical electrically and magnetically, there will be amplitude and phase differences that will combine to generate a mono signal whose amplitude response exhibits peaks and nulls that result in the unpleasant high frequency characteristic. The solution to this problem is to select phono cartridges that exhibit identical phase and amplitude response in their left and right channel outputs. These pickups should then be reserved for all on-air and continuity production applications. If the signals aren't correct at the cartridge terminals, they won't get any better as they proceed toward the antenna.

The Phono Preamp

The next item of interest is the phono cartridge preamplifier. As with the phono cartridge itself, both channels of the stereo phono preamplifier should be verified to have very nearly the same amplitude and phase response. One way of checking for this is to drive both sides of the preamp with a common signal source and observe the output signals. A convenient device for doing this is the dual trace oscilloscope. If each output is fed to one of the dual inputs of the scope, the signals can be observed simultaneously with the instrument in the dual trace mode.

In many lower-priced instruments, the two input signals can be subtracted from one another and the difference observed as the resultant vertical trace deflection on the screen. Just about all scopes selling for \$1,000 or more have this feature and their channels are often matched in amplitude and phase response beyond 100 kHz. Any difference in observed amplitude response of the sum of the two outputs within the required pass-band *must* be isolated and corrected.

If the original mono audio channel of the station is to be retained and the conversion to stereo achieved by addition of another mono channel, it will be necessary to verify that the newly-acquired components of the second channel do, in fact, accurately duplicate the existing mono channel. The same test must be applied to two mono preamplifiers to be used with a given stereo cartridge and the two units must be made to match within the required band. If there is difference in age, manufacturer, and/or model between the two mono units, it may be cheaper to discard the original mono component in favor of a stereo unit that has been designed with mono compatibility of the two channels.

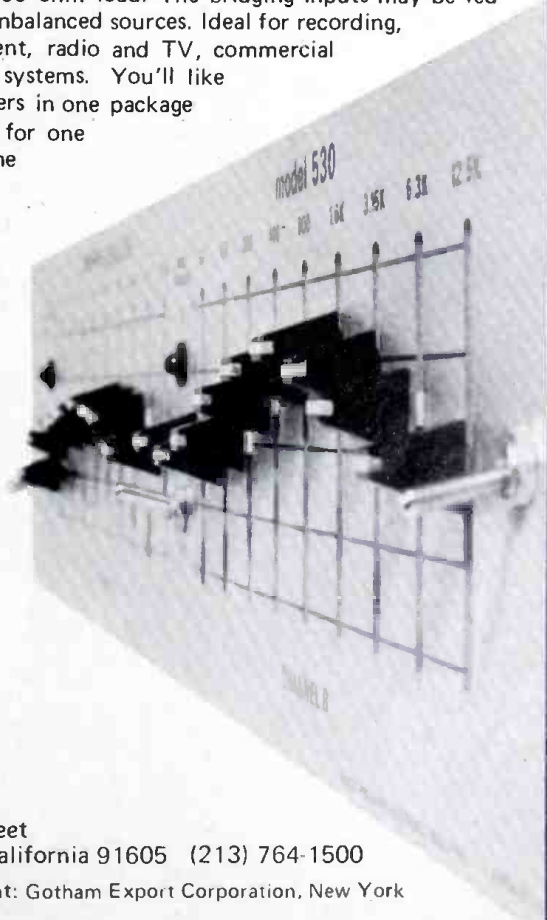
The matching of the left and right signal channels is likely to be affected by differences in the electrical properties of the phono cartridge cables themselves, so it is

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necessary that the length and cable type of the leads between the tone arm terminals and the preamplifier input ports are the same.

The reason for this is that many phono cartridges are highly sensitive to the interconnection cable used and length differences can cause a well-matched stereo cartridge to perform like a bad one.

All that has been said regarding the phono preamplifier applies equally to the signal paths within the broadcast console. How well a mono-to-stereo console conversion will serve is dependent upon the amount of modification necessary and how easily the additional hardware required can be accommodated within the console chassis. The ultimate test of the success of any conversion scheme is its final performance in application. If the existing console is a vacuum tube unit, as many still are, the likelihood of achieving a satisfactory match with solid-state electronics is a rather slim one.

It is not an insignificant matter that the console channel output impedances be equal to each other as well as fairly constant across the required audio bandwidth. Phase shift and output impedance measurements will verify this aspect of console performance. Similarly, the loading effects of the console on its various input signal sources will have to be checked to see that no unwanted interaction causing amplitude or phase shifts is present. For example, in transformer-isolated input ports, there is a possibility that the console input may react like a short circuit to the input device feeding that port if the console manufacturer has opted to install an inferior grade of transformer. Improperly designed input circuits can present differing loading conditions with different fader positions if they are not buffered properly. Cheaper production-type consoles may appear to be less of a bargain when their impact on studio system interfaces is examined, as opposed to their stand-alone specifications.

Cartridge Machines

Cartridge-type tape machines are another source of program signal that demands attention. They often prove to be a source of interchannel phase and amplitude errors that form the primary obstacle to a high degree of monophonic compatibility. Countless loop tape cartridges are

One Approach Is To Use Carts Just For Mono Signals

notorious for their inability to maintain tape path stability and repeatability. The small physical size of the cartridge makes accurate guiding of the tape as it crosses the recording and reproducing heads a matter

of chance rather than design.

The fact that the tape is constantly being withdrawn from the center of a rotating pack of tape is the main source of difficulty in maintaining constant tape tension. The tape itself, being lubricated by application of a graphite coating to its backing side, causes the frictional forces between the tape and capstan, the tape and pinch roller, and the pinch roller and capstan to be difficult to maintain in constant condition over any period of time. This is eased somewhat by the fact that all serious entries into the professional tape market over the past ten or more years have taken considerable trouble to equip their tapes with a roughened back coating for the purpose of enhancing the frictional conditions at the points mentioned in the interest of maintaining more accurate tape travel on reel-type machines.

Even with all these and other factors threatening the reliable performance of the endless-loop tape cartridge, such units remain one of the most important sources of program material for broadcasters in the United States as well as most of the rest of the world. Bad as these tape transport matters are for the mono broadcaster, they are multiplied in the case of stereo. The remedies for some of the most prominent defects have been overcome. However, the phase error problem is still the tough nut to crack as appearances seem to indicate.

One approach to poor stereo compatibility performance of the tape cartridge taken by some FM stereo stations is to simply use them only as monophonic signal sources. This avoids dealing with troublesome stereo carts entirely. Another is to record the cartridges to be played on the air as L + R sum signal on one track and as L - R difference signal on the other. The restoration to stereo L and R information is performed at the reproducing machine, at the sacrifice of stereo separation, and treated as ordinary stereo program from that point on in the audio chain. Regardless of what course is taken as to the problem of mono compatibility of tape cartridges, frequent maintenance of both recorder and reproducer machines is necessary. For those who like to learn the hard way, numerous worn tape cartridges that must be discarded will be the "teacher".

As far as the conversion of tape cart machines from mono to stereo is concerned, most machines require the addition of stereo heads and the additional electronics necessary for the second audio channel. Kits for this purpose are easily obtained from manufacturers. Installation should be a minimal problem as all cart machines of recent manufacture are of modular design.

Reel Tape Machines

Reel-type tape machines are fairly straightforward as they apply to stereo operation. Conversion to stereo requires the purchase and installation of the additional electronics and two-track head assembly for Ampex, Scully, 3M and MCI machines. Modularity, again, predominates

in these machines.

Users of Revox A77 and A700 machines as monophonic program sources will require no such conversion as the machines are not generally available as purely monophonic devices. In the event that they have been used with full-track mono head assemblies, the two-track heads required for stereo may be installed with little trouble.

Mono users of reel-type machines at 3¾ ips tape speeds will very likely find it necessary to switch to 7½ ips as their basic

Stereo Means 'Smaller Margins Of Error'

tape speed for stereo. The reason for this is that the phase shifts resulting from variations in tape path as it crosses the heads become less severe as the tape speed is increased. Mono compatibility is therefore enhanced as well as the high frequency capability of the tape system itself.

The demands upon the performance of the tape deck in stereo applications is such that maintenance personnel may have to re-adjust their philosophy toward mechanical aspects of tape deck performance. The requirement for a high degree of mono compatibility of the stereo signal transmitted by the station places a considerably greater burden upon the stability of the tape path, not only in the short term of seconds or milliseconds but over the longer term as a tape plays through its total length and tape tensions are changed as the tape is transferred from one reel to the other. The condition of the recording and reproducing heads, the tape guides, the rotating and stationary guiding surfaces, and the tape drive mechanism assume much greater importance. This is true because the phase relationship between signal channels must be preserved and held to smaller margins of error than they do where only the amplitude-frequency response of the system are of primary importance. Defects that go unnoticed in monophonic systems become untenable in a mono-compatible audio system. The demands of higher performance and maintenance standards will certainly mean a rise in the overhead cost of a broadcasting operation.

Limiters and Compressors

The problem of maintaining control of the signal maximum level remains with the stereo as well as the mono broadcaster. In the case of adoption of one of the AM stereo proposals using a phase-modulated or frequency-modulated carrier for the transmission of the L - R information, the system requirement that the negative carrier envelope modulation be held below 95 percent does not minimize the need for

very reliable control of audio modulation levels.

Stereo limiters and compressors are not merely a pair of mono units placed in the customary point — prior to the telephone line to the transmitter or feeding the input to the STL microwave link. Stereo compressors (and limiters) consist of two variable gain units that are tied together in such a way that their automatic gain control circuits interact so that the stereo channel which requires the most limiting or compressing action determines the gain reduction for both channels.

The reason for this is that if the two variable gain systems were allowed to act independently, the apparent stereo image as observed by the radio listener would tend to shift in the direction of the channel having the least limiting. The result is rather irritating to the critical listener. The mono listener may also be aware of a dynamic change of program mix balance if program content is radically different between the stereo channels.

All of the previous comments regarding the amplitude and phase behavior of the two sections of the stereo signal path apply to limiters and compressors as well. This general theme will be repeated, ad nauseum, in this presentation. In the case of limiters and compressors, however, there is the added requirement that the gain reduction function of the two signal channels retain the same amplitude and phase characteristics under conditions of gain reduction as they do when no gain reduction is in effect. Obviously, a gain reduction device should ideally reduce gain only and not do very much of anything else. As is the case with tape machines, the consequences of deviations from the ideal are likely to be more noticeable in stereo systems than they are in monophonic ones.

The Studio/Transmitter Link

Equalized telephone lines are one of the most difficult obstacles to a high degree of stereo/mono compatibility. Telephone lines of any length require some rather complicated and severe equalization techniques to achieve a flat frequency response beyond about 5 kHz. A necessary consequence of the radical equalizing involved is a non-uniform transmission time of a signal through the equalizer that varies with the frequency of the signal. This is what is referred to as "group delay". The name is derived from the fact that if a simultaneously generated set of tones of differing frequencies is transmitted through the equalizer, or, indeed, through the telephone line itself, they will emerge at the output at different times, rather than in the synchronous manner in which they were inserted. The effect of this sort of phenomenon on transient mono signals is bad enough, though we won't examine that side of the coin here. The problem in obtaining two telephone lines that exhibit identical phase (i.e. group delay) response is a considerably stickier wicket than merely settling for identical frequency response.

The greater the required bandwidth, the more difficult the problem becomes.

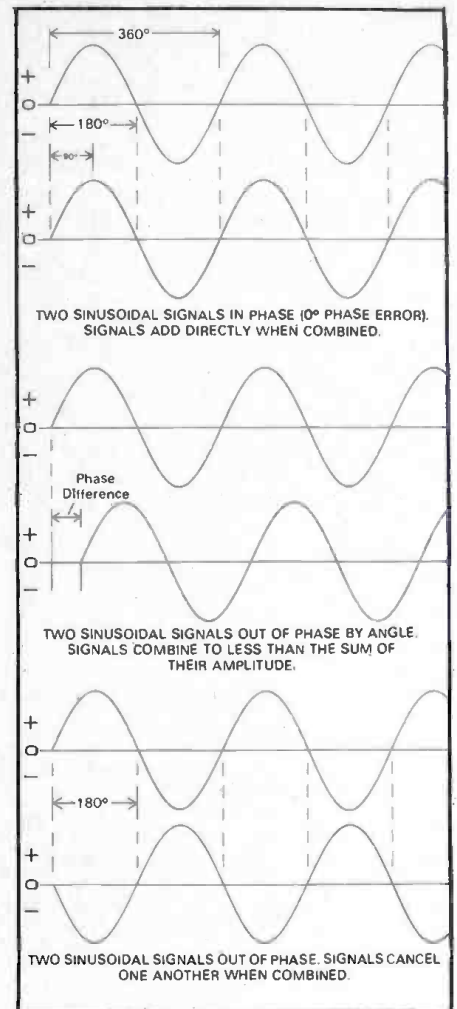
FM stereo broadcasters have generally moved to the use of microwave radio transmission systems for their studio/transmitter link requirements. The greater informational capacity of a microwave channel presents attractive possibilities for transmitter telemetering at moderate additional cost as well as the elimination of many of the headaches associated with land-line transmission.

The microwave system program channel phase and frequency response should be capable of optimization from the standpoint of the (again) phase and amplitude response of the two stereo signal channels. The multiplex systems incorporated in a microwave link system may also utilize some rather severe channel filters that may be worse than land lines for the same transmission distance contemplated. When shopping for alternatives to existing systems, remember the watchword — caveat emptor.

The Transmitter

The precise changes in transmitting equipment required by the shift to AM stereo are obviously going to be dictated by the requirements of the transmission system chosen, should the FCC approve the new service. Of the five systems proposed, four utilize modulation of the carrier itself to provide L - R difference information to the receiver. The requirement for compatibility with existing receiving equipment dictates that the L + R sum signal information be transmitted as modulation of the carrier envelope which is also the case for monophonic AM. The fifth proposal does not use the carrier frequency for the transmission of any modulation information, but quadrature modulates the sum and difference signals on the positive and negative envelopes of the amplitude modulated wave. The implications of these proposals is that some effort to broaden the bandwidth of the transmitting antenna system will likely be necessary for maximal utilization of an AM stereo transmitting system capability. All five systems do require the addition of a stereo exciter replacing the existing crystal-controlled transmitter oscillator to establish a station's carrier frequency and to permit modulation of the stereo signal complex. The substance of the proposals before the FCC indicates that all of the systems meet requirements of stereo compatibility and manufacturers have taken the necessary steps to insure that the requirement of mono compatibility will be met within the boundaries of their respective transmission systems. They have all assumed, as they are compelled to do by the nature of the given requirements for an acceptable system, that the stereo audio signals arriving at the transmitting system interface in a condition that will permit the monophonic compatibility to be maximized.

Stereo signal processing need not be a serious problem. The technology and practice necessary to achieve a high degree



of monophonic compatibility have been available for quite some time. The requirement for mono compatibility itself is the primary difference between the treatment of the stereo audio signal in the average consumer's system and its treatment by the broadcaster.

In the case of the living room stereo situation, the left and right signal channels are generally never combined to form their monophonic sum as there is no desire by the home system listener to do so. The two audio channels are created separately and maintained this way through their entire path from signal source to speakers or headphones. It is the broadcaster who *must* form the L + R monophonic summation signal as a condition necessary for the transmission of the monophonic signal for the benefit of monophonic listeners. If it were not for this condition, the problem of maintaining a very close match between the two stereo audio channels would amount of a matter of mere technical esoterica.

As long as the monophonic listener is a significant portion of the stereo broadcaster's listening audience, mono compatibility will be a factor no station will ignore, FCC regulations notwithstanding. The AM newcomers to the world of stereophonic sound will have to adapt to the technicalities peculiar to that medium as their FM brethren have before them. With any kind of care, the learning curve should be shorter.

A Profile of Television's Number One Religious Show



'Flowing with the spirit'
means carrying
that message

by Steve Ryan
with Hans Kanold
and Debbie Sharpe

Surrounded by members of the World Action Singers, evangelist Oral Roberts (foreground) and his son Richard acknowledge applause from the audience.

Oral Roberts and You averages over one-and-a-half million more viewers than its nearest Sunday-morning competitor making it the most popular religious program, according to Arbitron Syndicated Program Analysis. Since starting his TV ministry with production based primarily at NBC studios at Burbank, California, Oral Roberts has expanded his broadcast activities through contributions from viewers. Today, the program and four yearly prime-time specials that have worldwide distribution are produced from the Tulsa, Oklahoma university founded by and named after the evangelist.

□ □ □

The variety-show format of Oral Roberts specials and the evangelist's Sunday morning half-hour religious programs features a unique blend of contemporary, MOR and country music coupled with gospel music and a spiritual message or sermon. The specials are noted for appearances of well-known entertainers and sports personalities, who are booked to attract large viewing audiences. Lynn Anderson, Johnny Cash, Robert Goulet, Florence Henderson, the Lennon Sisters, Jerry Lewis, Puf n' Snuf, Charlie Pride and Dionne Warwick are some of the stars that have appeared on recent shows. The emphasis on entertainment makes it easier for specials to get prime-time slots in various

markets.

"By giving our program an entertainment format, we are able to place it on many stations that wouldn't carry a straight religious program in prime time," explained Assistant Producer Peggy George. "Obviously in prime time you have your largest viewing audience and, of course, this was Oral Roberts' concept from the very beginning. By using prominent show business personalities and mixing secular

Author Steve S. Ryan taught in telecommunications studies at Oral Roberts University from 1974-76. His set construction and lighting duties with religious programs gave him an inside look at production techniques there. He is leaving his post as assistant professor in the radio-TV department of Southern Illinois University to become an associate professor at Ithaca College in New York. He also served as an instructor at Eastern Kentucky University for a year. His broadcast experience includes producer and host responsibilities for cable TV shows in Tulsa, Oklahoma and Columbus, Ohio in addition to his numerous film credits. He has also authored several articles and written a book as a dissertation for his Ph.D. in educational communications at Ohio State University in 1974. An experienced TV engineer, he holds an FCC First Class Operator's License.

music with spiritual music, you find many people will tune in to be entertained who would not tune in to be inspired."

The evangelist's Sunday morning half-hour programs, "Oral Roberts and You", are more subdued as worship services geared to a somewhat different audience. Both types of productions, however, share a common origin.

When Oral Roberts began his TV ministry as it is known today, much of the work was done at NBC studios in Burbank. Over the years, taping has shifted to the Mabee Center — the combination TV production facility, concert hall and 11,500-seat basketball auditorium located on the campus of Oral Roberts University. 1975 marked the first year that an hour-long special was done at the Mabee Center staffed by a predominantly locally-trained crew.

The exodus from Hollywood studio production facilities is paralleled by a noticeable change in style and production methods. Rather than using the more filmic methods of multiple takes and editing in best shots, Oral Roberts productions have moved to a "live-tape" format stressing spontaneity and "liveness".

To do this, Oral Roberts' TV staff developed the unique production format which is under the supervision of TRACO, Inc., the evangelist's broadcast organization which oversees production and marketing of programs. Shows are recorded in real

time before an audience using multiple cameras and two-inch quad VTRs. Oral Roberts productions owns four RCA TK-44 Video Cameras, two TK-45s, two TK-76 mini-cams (used mainly for educational purposes by the university) and two Hitachi SK-80s as well as renting a Chapman Electric Dolly.

Any given special may employ up to six two-inch VTRs and six or seven cameras. The productions are shot in continuity and pause only when it is necessary to change reels on the VTRs or change elaborate sets. In order to maintain spontaneity, freshness, and "flowing with the spirit", there are no retakes even in complicated production numbers — except in the case of glaring mistakes. It is the job of the director, editor and audio operator to camouflage any minor errors.

The Oral Roberts production facilities at the university are considered to be one of the best in the Southwest United States. When the schedule permits, other syndicated shows such as the *Miss Teen-Age America Pageant*, the country and western music *Hank Thompson Show*, and commercials for Roy Clark as well as more ministry-oriented programs like the *Positive Thinking Rally* with Paul Harvey and Earl Nightengale have been produced at Oral Roberts production facilities.

The facilities are also used to develop educational TV productions for use at the university and for possible future syndication. The Associate Producer for Oral Roberts productions, Gerald Sholes, serves as Executive Producer for Oral Roberts University's Educational TV Productions. Sholes is also in charge of providing equipment, facilities and engineering support for telecommunications studios at the university. In addition to scheduling classes in which students have hands-on experience with equipment, Sholes works with telecommunications studies to provide internships and a variety of other TV production experiences to students. This fulfills Oral Roberts' desire to have students make up the bulk of production crews working in set construction, props, lighting, cue cards, audio, camera, educational TV production and other broadcast areas under the direction of the staff of professionals.

Because of the acoustic quality in Mabee Center, the first shows produced at the



A camera ramp separates the two sections of the audience in the Baby Mabee Center.

university were done in the auditorium itself. It was built so that baskets and scoreboard could be removed, a new floor laid down and a complete TV production facility set up in the middle of the building. A 4,500 square foot set complete with wrap-around cyc and scrim curtains, a complete set of battens and other production hardware can be installed.

Modular sets were designed to be moved in and set up rapidly, and then just as quickly struck and stored in specially-designed bays below the auditorium floor. But even with this arrangement, production had to be rushed when a special ran into scheduling conflicts during basketball season. Production crews had to get a complete set built and lit, the program produced, the set struck and basketball floor prepared in about a week. For these and other considerations a new addition to Mabee Center, "Baby Mabee", was erected in 1977 to provide a separate facility for set up. Baby Mabee is capable of accommodating approximately 3,500 square feet of stage area surrounded by a cyc pit and scrim.

One aspect of production is the staging of Oral Roberts' sermons or messages. The evangelist seldom limits himself to just facing cameras. He prefers having live feedback and interaction with an audience and will even use a swivel chair that enables him to turn and talk directly to different sections of his studio audience. Above the on-camera audience seats is a semi-circular camera ramp on which one or more cameras can operate. Above and behind

this ramp is additional seating for the audience. The upper area, however, is not lit to be part of the camera viewing area.

Set Designer Fred Luff, who has been with Oral Roberts productions for 10 years, designs sets that are consistent with the theme of the ministry and compatible with staging requirements for audience interaction.

"I have to keep in mind that basically the thrust of the outreach is a religious message of some kind and I always try to put that religious signature into all the shows in one way or another — for example, by using stained glass," Luff explained. "I have to be sure that the lighting can be accomplished without giving the lighting director an impossible chore. I have to plot for cameras as well and make sure that everything will flow. If you can't get a boom in the shot, if it doesn't come across as being live or if you can't get a TV camera into a shot, then you have no TV show."

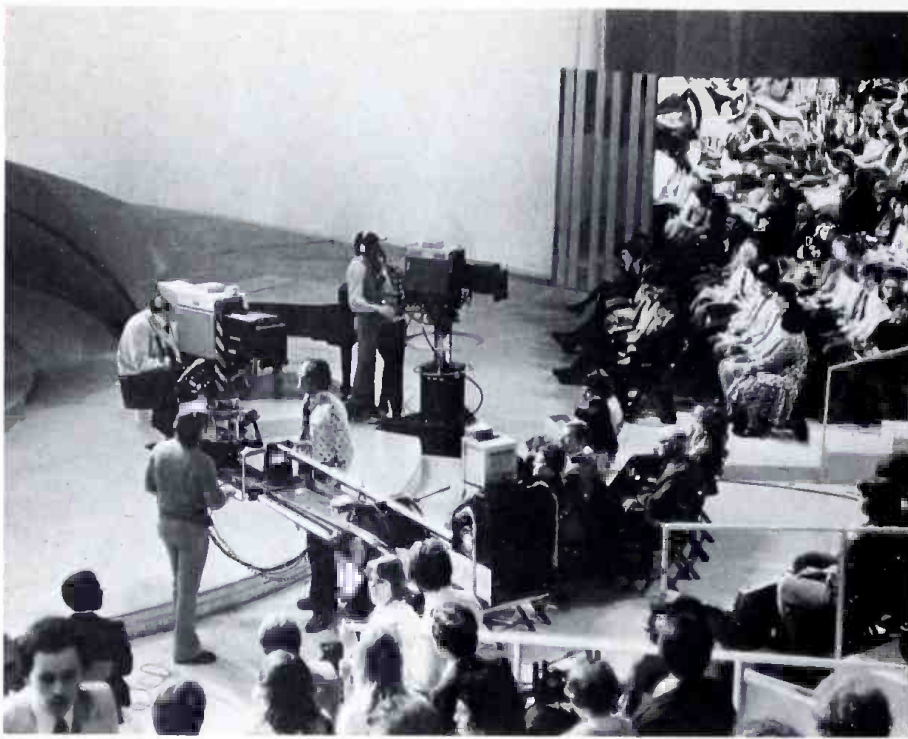
In the first row of the lighted-audience area there is a Yamaha PM-1000 independent stage mixer used primarily to control the levels of loudspeakers that are playing back pre-recorded songs and music. Live singing by Richard and Patti Roberts (son and daughter-in-law of the evangelist) or guests is also amplified through the mixer. In case of a feedback problem, the stage mixer can attenuate a particular mike or speaker permitting the main mixer and audio engineers to concentrate on the final sound being recorded on 16- or 24-track tape.

On the lighting grid, Mole-Richardson lights are used almost exclusively. The complete lighting system, that includes four 10 Ks, is capable of putting out 1,440,000 watts with 250,000 watts on the cyc alone. However, the set is usually lit from 150 to 200 foot candles. The battens are six feet apart with 105 pipes on winches. The lights are on a computerized board, the Autocue, made by Skirpan Lighting Control Corporation. The system employs a Sykes Compu/Corder 120 computer.

The lighting booth is located above the last row of audience seats. The Assistant Lighting Director has a CRT display showing the location of all the lights. With his light pen, he can turn on or off or dim



The 11,500-seat Mabee Center (left) is a basketball auditorium, concert hall and TV production facility at Oral Roberts University. Next to it is the TV production building, Baby Mabee Center.



An RCA TK-44 camera on a Chapman Electra Dolly shoots audience reaction and applause for use as cutaways.

each light or series of lights. Pre-programmed special lighting effects can also be executed through the computer. Lighting Director Lowrey Perry, who is seated behind the director in the control room, also has a CRT display on which he can monitor what his assistant is doing. At the same time, Perry is able to watch the same control monitors the director sees.

To hang and adjust lights, the lighting crew uses two Airlift hydraulic platforms that can be wheeled around and then raised to any light. The Airlift platforms take up very little space and are quite maneuverable.

Of the four specials produced annually, two center on seasonal themes of Christmas and Easter. At least one of the four is usually shot on location in various parts of the country using a helicopter outfitted with mobile video equipment. The production of one well-remembered studio special, "Christmas Is Love", was typical of an Oral Roberts presentation.

"As soon as we found out what Mr. Roberts planned to use as a sermon, we



The light pen controls lights from a cathode ray tube display.

began to develop the idea of Christmas as love and to create a dramatic antithesis for the love theme of Christmas," recalled Producer Ron Smith. "We decided to use a commercial-looking set [people buying gifts, concerned and anxious about worldly matters, and so forth] so that you could see the opposite in action. I suggested the song, "It's Beginning to Look a Lot Like Christmas", to set the stage for the Christmas-as-love theme in order to say ... this is what Christmas has become as opposed to what it should be."

Associate Producer Sholes recalled how scripts are written and stars selected.

"In developing a Christmas show, you obviously need input from the family, and by family, I mean the principles — Oral Roberts, Evelyn [wife of the evangelist], Richard and Patti — because it's their image that we're projecting," he said. "They provide input for a kind of general overview and direction they want to take for a Christmas show, an Easter show, or whatever. Then, within general parameters, you try to get stars, build a set that fits into what the principles would like to and take the direction they'd like to go."

Using stars is sometimes difficult, though, because many are booked up months in advance. This author worked on one special in which the scheduled star did not show up at the last minute. Fortunately, Jerry Lewis, a good friend of Oral Roberts who was director for the special, filled in. The program proved to be one of the best.

Though specials attract the most attention, much of the production centers on the half-hour Sunday morning shows and the once-grueling shooting schedule for such programs has been eased with the addition of new facilities. At one time, two of

the half-hour programs were recorded daily for four straight days. This arrangement, however, proved to be a strain on Oral Roberts. The evangelist had to give what amounted to eight sermons or messages in four days. But since Baby Mabee has been built, these shows are produced twice daily for only two consecutive days. The same set is used for each series of tapings with only minor set dressing variations to make each program appear different.

The World Action Singers (a chorus), director and camera operators usually rehearse and block their shots in the morning for the half-hour shows. The rehearsals are frequently taped and parts may be used in case of any serious errors in actual production. Two shows are then taped back-to-back in the late morning before an audience. The rest of the afternoon is spent rehearsing, blocking and lighting, for the next day's production.

Persons from in and around Tulsa are invited by mail to watch productions. It is regarded as an honor to be selected. Since tapings usually take place at a time when classes are not ordinarily meeting, there are also many Oral Roberts University students in the audience. Producer Smith and his assistants select some persons from the audience to watch from the set while the rest fill auditorium seats.

Before each taping there is a warm-up session for the audience. Producer Smith handles this chore getting the audience to relax and clap with enthusiasm. During this period, cameras record applause as cutaways to be edited in later.

Matt Connolly, director for most of Oral Roberts' recent productions, has a diverse background in TV directing, but says that working for the evangelist has been a unique experience. As in most other productions, the director frequently coordinates set design, lighting, camera, performance, music and other activities relating to the show. But Connolly often finds himself consulting many others in coordinating these functions.

"You will sit down with the producer and music director to try to understand what they want from the program, what the ministry needs from the program and then you've got to understand the audience," said Connolly. "Here at Oral Roberts University, the creative control has to remain with the association [TRACO] because they understand the ministry better than any one of us."

Even with the most elaborately designed and lit sets, Connolly may stick with a close up when editing, for example, rather than a wide-shot of Richard Roberts singing, "... because the message is in the face. What you look for in any scene you ever shoot is the message. We try to search for the spirit that is there with the music," he explained.

Since all cameras are "live" in a real sense for most productions, Chief Engineer and Video Shader Gridley Quihuis has much more responsibility than in other types of shows.

"Since we isolate the cameras, we don't

switch the show," he said. "We are probably one of the very few productions that do anything like this, especially on this large of a scale. It creates problems as far as my job controlling the video and other peoples' jobs because you are in constant turmoil over everything live."

He added, "All the angles are live. You can't fall back and fudge on having to, let's say, bring the brightness out on the camera a little later because you know that it's not going to be used. You have it up all the time... otherwise you create an editing problem later. There are already a lot of hours involved in editing."

Quihuis uses a matching switcher to fine adjust video levels for each camera. Watching a monitor, he will switch rapidly from camera to camera and adjust and match video levels for shots the director calls.

Many problems involved in post-production are handled by Director Connolly who is responsible for editing. During the actual taping, a black and white video camera and one-half inch video recorder will tape images off a camera's monitor. In between the top and bottom row of monitors, there is a digital time code display. This time code is used to identify frames for editing in post-production. Connolly uses the black and white video tape made from camera monitors to decide what particular frame he wishes to cut from one camera to another. On particularly difficult shows, Connolly says he sometimes spends 20 hours a day editing. But even with four different cameras to choose from, he occasionally finds that none will have a good shot.

"What do you do then?" he asked rhetorically. "You go to your own talents, the talents of electronics and the type of thing movies do with montages."

Once Connolly has made the creative editing decisions, Video Tape Engineer Jim Taylor loads up the master tapes of each camera on two-inch playback machines. Taylor enters the exact frame for an edit into the EECO TCE 100 computerized editing system, which then executes the instruction.

Oral Roberts productions owns two RCA TR-600 and four TR-70C two-inch video recorders. Additional two-inch machines are occasionally rented for specials. The switcher is a Computer Image Corporation Model 5300. A typical special takes 10 to 15 days to edit, though a good deal of overtime is frequently necessary to complete a show.

Oral Roberts productions also uses Bosch-Fernseh one-inch VTRs — two #400 table models and two #200 portables for educational TV tapings. According to Educational TV Executive Producer Sholes, the master quality of productions taped on the Bosch system is good and the quality of dubs remains high even after many generations.

Another post-production activity centers around music. The World Action Singers — students at the university who receive scholarships for their work on programs —

travel to Los Angeles regularly to record their singing numbers under the direction of Richard Roberts. These songs, sometimes accompanied by a full-scale orchestra, are then played back during the production



Director Matt Connolly reviews notes at Oral Roberts production facilities.

while the World Action Singers lip-sync the words and perform choreographic exercises under the direction of Andre Tayir.

Richard Roberts and his wife Patti, however, frequently sing live on programs. Shure SM61 microphones are usually used for their audio as well as for guest stars singing live. Oral Roberts uses an ECM50 lavelier microphone for his sermons.

The new audio room in Baby Mabee has a computerized mixing system using Quad-Eight Electronics automated board model QE-3624AR with 32 inputs and 24 tracks. This production mixer is computerized using the Compumix III system. While a particular segment is being mixed, the computer records the levels of the various pots at particular times. On playback, the computer uses a digital time code to "remember" levels used on a given music segment and sets the level automatically.

Once the audio for a given show has been recorded onto 24-track tape utilizing a 3M Mincom Series 79, Audio Engineer Lemoin Helmle does a mixdown by segments laying in reverberation, echo and other effects. This mixdown audio is then laid back onto the video tape segments. Using the audio as

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a guideline, the various video tape shots will then be edited together into sequences and complete segments. The different segments are then put together and cut for time while both video and audio fades, dissolves and other transitional devices are added.

Dubs are then duplicated from the master and sent to stations around the country. For one recent special, tapes were bicycled to 420 different stations in the U.S. and overseas. Most dubs are two-inch high band, with the remainder two-inch low band, one-inch tape and a few three-quarter inch cassettes. All the dubbing is done at Oral Roberts production facilities in Mabee Center. At times the tape machines are running 24 hours a day to get dubs out on time.

The Oral Roberts organization, TRACO, uses ARB and Neilson sweeps and coincidentals to determine how well shows are received. The surveys serve another purpose, as Assistant Producer George explained, "By studying the rating services, we can determine which station has the largest audience in the market, how far their signal reaches, and what their programming is so that we can study the competition and place our program in the best position."

According to Arbitron Syndicated Program Analysis, *Oral Roberts and You* was watched by 4,600,000 persons during a peak viewing period in February, 1977, more than the second most popular Sunday morning religious show, "Rex Humbard — World Outreach Ministry". Since Oral Roberts productions cannot buy time during a rating period for their specials, audience figures for these programs are based on coincidental surveys done by Arbitron in sample markets. Projections are calculated for all markets based on ratings and viewers per sets in the surveyed cities. Using these figures, it has been determined that 40 to 60 million viewers worldwide watch Oral Roberts specials.

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BP&P 29

When Network Folds, Chicago Station Reaches for 'Scalpol'

by JoAnn Roe

Format Facelift
Makes WKQX-FM
A Leader in Market

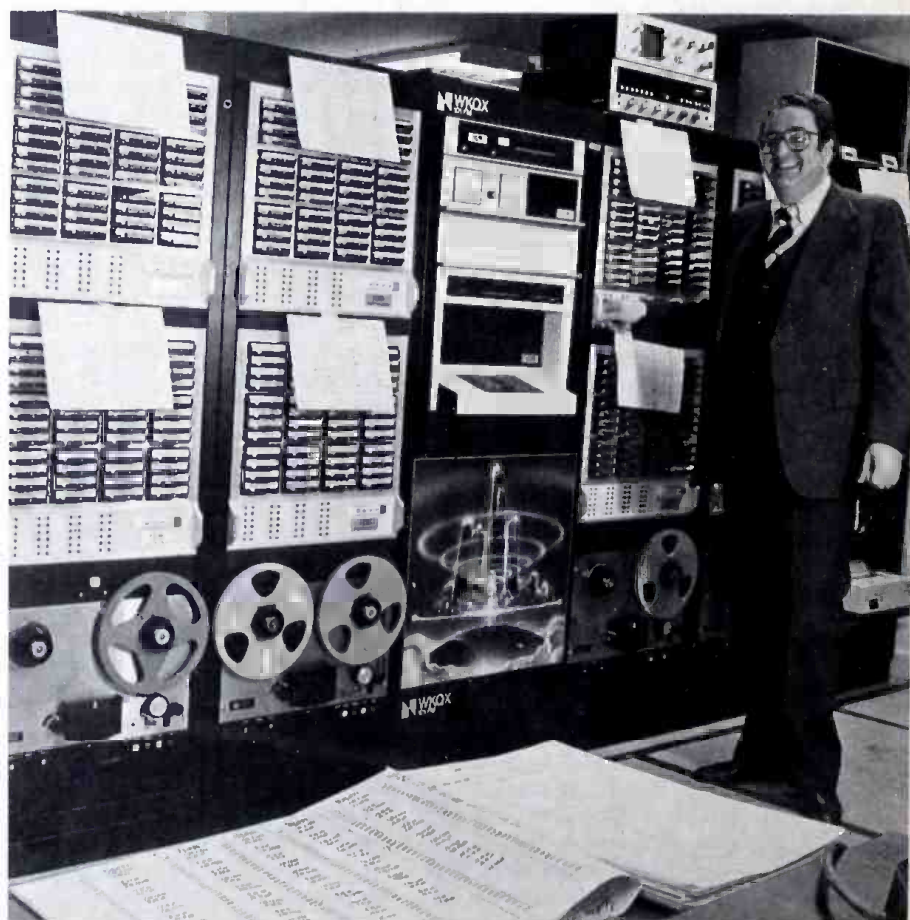
When NBC radio announced that it would be terminating its News and Information Service (NIS) in November 1976, participating stations were faced with maintaining an all-news format without the assistance of the network feed or else change format completely. The demise of the 24-hour, all-news service (which formally ceased operation in May 1977, about two years after its creation) proved to be a blessing in disguise for WNIS-FM in Chicago, an owned and operated NBC station. The outlet's decision to change format to album oriented rock marked a complete turnaround of the station's position in Chicago radio. Creative marketing and an emphasis on automation made the new format of the station (re-named WKQX-FM) a salable product.

□ □ □

Sometimes a band-aid is not enough because a problem requires major surgery. This was the case with Chicago FM station WNIS, now re-named WKQX, when a change of format catapulted it from obscurity to one of the leaders in Chicago radio. The dramatic turnaround, which was achieved in only one year, transformed the station from a financial loser in 1976 to a profit maker in 1977. All involved credit its success as a NBC team effort.

WNIS-FM, companion station to noted

Author JoAnn Roe is a free lance writer with more than 100 credits with publications and syndicates. Though she has written extensively in the communications and broadcast fields, her free lance work has touched on many diverse topics. In 1977, the National Federation of Press Women gave her the organization's National Feature Writer Award and she has received numerous other awards in her home state of Washington.



Music is taped on carts and the announcer's voice is recorded on reels at WKQX-FM. Bert Sherwood, general manager of the station, is pictured.

country music station WMAQ-AM, had pioneered an all-news effort on FM. The outlet made every effort to be on the spot for any fast-breaking Chicago event using street reporters and roving live mikes for some of its news coverage. The top staff assigned to the project gave it their "all", but the station was no match for the long-established AM news stations. Among the

factors that caused its accountants pain and suffering was the personnel required to keep the station running. In addition to the reporters, there were editors, announcers and board engineers for all live newscasts. This overhead simply could not be supported by revenues.

The turnaround came with the appearances of Bob Pittman, the young program-

ming wizz from NBC Pittsburgh who had been working with WMAQ-AM, and Charles Warner, General Manager of the Chicago facility (both are now with WNBC-AM, New York). Even though his background was chiefly in administration and sales, Warner was very aware of programming concepts and, as Pittman said, "He always wanted to know *why* we programmed as we did and then kept close track of the results." With this in mind, the two embarked on an intensive research effort, looking at a type of programming that would appeal to a younger market than the one listening to WNIS-FM. This would not be an easy change because it involved confronting veteran rock stations WDAI and WXRT on FM plus several AM stations.

Pittman did not believe in relying on trade polls, but rather liked "going to the people and finding out what they want." He felt also that record sales were not a reliable thermometer, because only a small percentage of listeners ever bought significant amounts of records. Further, since only a fraction of the audience ever calls a station with a request line, this too was not an indicator to rely on. To glean such information, then, the WKQX staff telephoned about 150 persons a week at various times of the day to find what selections were most desirable, most unpopular and what kinds of music they would like to hear if it were available.

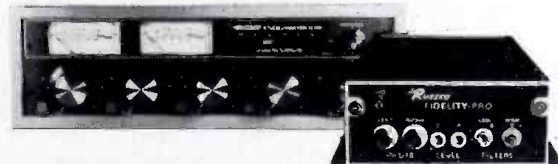
After analyzing the research data, WKQX decided to rely on the collective experience of its own top people as opposed to leasing a syndicated service. What Pittman and Warner wanted to achieve was a very flexible music list — one that would be responsive to day-by-day nuances of popularity. Clearly, reel-to-reel music would not be practical for this concept because of the frequent changes of music contemplated. Maintaining control of several thousand pieces of music, scheduling and executing such a format presented a formidable problem. It was up to John Bailie, the station's Chief Engineer, to formulate an answer. What kind of equipment would do this kind of job?

Not too many years ago music on cartridge was not considered practical because the quality of carts and playback units was deemed inadequate. By the early 1970s, though, cartridge quality had improved sharply and there were good cartridge playback devices on the market.

After much deliberation Bailie, in conjunction with engineering consultants for NBC, selected a series of 48-cartridge IGM Instacarts to handle the music playback. The decision was made partly because the unit already had a good track record for reliability, but chiefly because it afforded *instant* random access to any cartridge in the system. Adding a RAM control system, which could pre-record several days of programming, WKQX installed ten Instacarts. Thus the programmer — like a master of a vast pipe organ — could "play" any cartridge in the bank of 480

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cartridges available to him at any given moment. In the final configuration, Bailie decided prudence was the watchword and used only nine of the units, retaining the tenth as an immediate replacement for any that might malfunction.

In June 1977, Warner moved on to WNBC and Burt Sherwood came from Philadelphia to become general manager. Though he was familiar with Instacart having used it for commercials at Fort Wayne, Indiana previously, Sherwood admits he was startled. When he first was introduced to WKQX's new arrangement, he remarked, "But John, you've got it all backwards." With the music on cart and the voice tracks, IDs and commercials on reels, it truly was a departure from the usual setup.

The theory was that if the station was to be automated, then it would be all the way — even voice tracks. On-air personalities such as Bob Heyman, Harvey Wells, Mitch Michaels and Lorna Osmond were very much a part of the programming, but all their comments are placed on tape. Talent may select music for their own shows from a suggested master list that includes tight rotation control. Working with an engineer who monitors the sound and places the cue tones for switching, each personality then produces a six-hour show on tape. Often the show is cut only a short time prior to airing so that comments are entirely current. This is possible because a whole show — rehearsing remarks, cleaning up the fluffs and putting out a flawless performance — can be done in an hour's time. As one observer noted, "... because that's what it really is, a performance, just as television programs are taped performances."

One unique part of the WKQX format centers around advertising. No jingles are permitted. Commercials are part of the voice track, just as if the show as being broadcast from a live mike. Even station IDs are planned and not just tossed off lightly. Bill Hennes, current Program Manager, believes that the call letters must be sharp, clear and easily distinguished — not buried in a tirade of other conversation. Therefore, the IDs come right after a music selection or immediately before — the two times experts feel that the listeners' attention is keenest. In fact, the ID often comes in over the music as it is being faded.

Vital to the success of the total format is control every step of the way, according to General Manager Sherwood, starting with the transfer of music from record to cart. All aspects of engineering are covered in detail. Heads are scrupulously clean and properly aligned; the cartridges are checked before use for proper tracking. WKQX airs album-oriented rock using unplayed albums for its transfers to cart. Everything is played the way it's originally recorded, even the extra-long album cuts which are placed on one of the two ITC long-play single-cartridge machines included in the total automation system.

Pittman and his staff tackled the task of carting 1,500 pieces of music before the station went on the air with its AOR format. This music pool has been expanded to more than 3,000 selections. Naturally, the library is constantly changing as new rock songs gain popularity. The WKQX staff feels that maintaining such an extensive in-house list with equipment other than cartridge plus a master control system would be totally impractical.

The station's procedure for music selection has been integrated with the RAM system. Every day or few days, the program manager makes up his recommended music list, balancing it for proper rotation and frequency of play. He relies heavily on estimates of the WKQX staff of popularity

'But John, you've got it all backwards.'

and secondarily on charts and day part. The traffic log is prepared to cover the commercial load and a master log evolves. The final programming instructions are first entered onto a special cassette by an encoder, item by item, then fed to the RAM with a decoder. The interim step helps the program manager to check every sequence for error before it's entered into the master control system. There is little possibility for error and the programming takes only a few minutes.

News is handled in morning drive time by a live announcer, newsman Steve Thom, who has two five-minute "windows" to fill. The computer system gives control to Thom and a staff engineer for these newscasts.

Meanwhile, working from the master log, engineers load cartridges into the proper location on Instacart units so that when a program control calls for source 5, cartridge 28 (a song "Come Sail Away", by Styx) the selection will indeed be in that slot. An empty unit, like the proverbial lonesome Maytag serviceman, is kept as source number 10 — where it can easily be loaded and used if any source (one through nine) should malfunction. Problems are rare, though. The RAM switches smoothly from cart to voice track, back to cart, according to its schedule.

Chief engineer Bailie also demands tight control after the sound leaves cartridge playback units. The station uses an Optimod 8000 audio limiter and compressor to minimize the signal-to-noise ratio, monitoring the stereo phasing and producing the best stereo transmission possible.

WKQX launched its new AOR format by "giving away" its music when going on the air January 1, 1977. No commercials were

broadcast for two months — which competitors understandably viewed with consternation. In those first two months, Arbitron indicated that WKQX captured more of the adults 18-34 market than its two FM competitors.

Thus launched, the station added commercials in March but retained its listeners and moved into fifth place overall in Chicago stations of all types of programming, according to the March Mediastat. By the end of 1977, WKQX had surged ahead into the number one position for FM and number two for adults 18-34 in the entire Chicago area, second only to AM rock station WLS.

Sherwood points out that FM Chicago is dealing with persons sensitive to every piece of music — the 18-34 young adults which are the most attractive group to the advertisers — who are tired of blatant rock-and-roll and want to hear "laid back" jocks with commercials that are not too "borax" or trite.

"We reject commercials that we don't like," he said. "Those include the types of pitches that depress people or remind listeners of unpleasant problems — like acne creams, for instance. We try not to disturb our listeners' piece of mind and instead provide informational commercials with no hard-sell."

The station keeps its commercial load as light as possible — only eight per hour with one out of every four hours entirely commercial-free. There are no screaming announcers promoting an unending string of hyped-giveaways. But the combination of good ratings and verified direct responses has created a list of sponsors that include such "heavies" as Datsun, Wrigley gum and Schick. The demand for spots is so great that rates for the FM station are equal to AM prices. There are few cancellations; almost all WKQX's contracts are renewals.

While the station doesn't go in for contests often, there have been a few "measuring sticks", said Sales Manager Les Elias.

"We put together a giveaway where we offered a year's rent, mortgage payments up to \$5,000 or \$5,000 worth of furniture for sending name, address and phone number on a postcard or letter," he said. "We drew 107,500 entries in four weeks."

During a more modest promo, WKQX had an hourly drawing for a stereo set. Winners had to call the station within 60 minutes of having their name aired to get the prize. Names gleaned from the station's file (anyone who writes WKQX is entered on a computerized list) and those who corresponded during the contest were used. Every day and night the bags of mail came in. More than a half million pieces were received by the end of the contest.

Using the disastrous ratings of predecessor WNIS-FM for reference, the station has increased its audience 3,425 percent from 1976 to early 1978. By anyone's yardstick, the "surgery" involved in the format change indicates the "operation" was a success.

Making the Client/Announcer Sound Good

by Kit Hunt

A Crash Course for Dealing With the Advertiser Who Insists On Doing His Own Spots

It's three o'clock on Wednesday afternoon in the production department of radio station W***. Suddenly the door opens and Biff, a junior salesman, nervously enters the room. The production director looks up and lights a cigarette.

"I've got a prospective client . . . menswear," Biff says. "This guy could be a real money account. He's talking about a 30 minute spot package a week to start with and he wants to start Monday."

"That's swell, Biff," says the production director.

"But listen, there's a hitch . . ." continues Biff.

The production director twitches uncontrollably for a moment and lights a second cigarette.

"He wants to announce his own spot that he wrote himself and he wants a cancellation clause in the contract if his sales don't improve within two months," says the young salesman.

The production director quietly passes out and slips to the floor with a clumsy thud.

"Can we do it?" asks Biff with a pathetically hopeful look on his always eager face.

Now admittedly this little anecdote portrays a real nightmare. There's no question about it. This is an extreme case which leaves the production director with a real problem. Actually, he has several problems: One, the client wrote the copy. Two, the client wants to announce. Finally, the client wants to sound good and sell menswear . . . or else!

Variations on this theme are being heard all over the country. From Frank Perdue and Frank Borman in nationals to Bernie Frankel and Mrs. Potamkin in local New York-area TV commercials, more and more advertisers want to deliver their messages to the public themselves, on radio as well as TV. In fact, the trend toward amateur announced commercials has even become an issue for AFTRA. Professional announcers are, understandably enough, concerned at the phenomenon.

On the local level, radio stations can run into client/announcers with unintelligible foreign accents, clients who are barely



literate or who just sound that way and even clients who have such pronounced regionalisms in their speech that an out-of-towner would never understand them. On the other hand, they can have speech so correct that they sound as though someone is holding a gun to their heads. They often talk too fast or too slow.

If the client writes the copy, odds are very good that it will be too long, too short or maybe even the right length — but he will forget to put in his name, address and phone number. There is also the possibility that the

When an account executive wanted two Chinese Women to do a spot on their restaurant, author Kit Hunt — then continuity/production head at radio stations WHLI/WIOK in New York — had to turn them down. The pair barely spoke English. Recalls Hunt, "I was rather touched by our saleswoman's faith in my ability at the time." Hunt's experiences in making commercials with other client/announcers inspired her to write this light-hearted "primer" for broadcasters. She is currently a news reporter with WLIR in New York.

copy is golden, each word is a pearl, in the client's eyes.

Then there's the music. Never mind that this is an AOR station. The client has his heart set on Mantovani. Never mind that the station's quad beautiful music. The client wants Screamin' Jay Hawkins!

When Lightning Strikes

You laugh. You don't believe it's possible. It couldn't happen . . . not to you. But it could happen. And when it does happen, what you need are two aspirin, several cups of coffee for everyone involved, a lot of tact and a great deal of patience. You can come out of almost all of these situations on top. What you have to do is start out there.

Remember that the clients who want to do their own spots are, more than anything else, looking for approval. He or she has a lot of self confidence but it needs to be fed. They want to hear themselves on the radio. They want their friends and families to hear them on the radio. Most of all, they want tangible proof in the form of boosted sales that lots of people both heard and liked them. They think they're swell. They want everyone else to think so, too.

Fine. They want approval. Give it to

them. They want reassurance. Give it to them. Confer it upon them. You can do this if you start out with the attitude that you're the professional. You're like the golf pro. You know what you're doing and you enjoy your job of helping them. This frame of mind automatically gives you a slight upper hand in all future negotiations. It's leverage you're going to need.

So the client comes in on Thursday morning with a piece of paper in his hand. Right away, you notice that the copy fills the page in single-spaced, elite type with practically no margins. You sigh and negotiations begin.

"Mr. Quizbeetle," you start off. "Mr. Quizbeetle, we're never going to be able to get all this in. We've only got sixty seconds."

A Team Effort

When hospital nurses say "we", it's annoying. You're saying "we" so your client gets the idea that you're involved with him in making his commercial. Start right in on your program of reassurance and approval.

"You've got some nice lines here, though, that we'll want to keep. Except for its length, this looks pretty good.

If you can find even one literate sentence on the page, say something of this general nature. It'll put your client in a good mood. You're going to need that, too. You don't need to fawn; a casual word of praise will do. If the copy's got at least one good sales pitch you think might work, go with it.

If there's no angle or pitch at all, explain that all successful advertising campaigns have an angle. Come up with local examples and national examples with prestige. Use the Bormans and Perdues. Basically, what you have to do is re-write the client's commercial, cut more than half the copy and give the whole thing some spit 'n polish.

"I can talk fast . . ." suggests the client.

Here's your first big pitch. Personal versions will vary but it should go something like this:

"You know, Mr. Quizbeetle . . . Can I call you Lester? . . . You know, Les, advertising is a million dollar industry. Professional copywriters get thousands and thousands of dollars to write commercials. They don't get paid that much because it's easy. Writing a good commercial is hard work. You have to say a lot, using very little time and not many words."

It Isn't Easy

This is the Hard Word Theme. You're going to use it countless times with this one client alone. Commit it to memory. It will serve you well. Include personal anecdotes if you can. It makes the whole thing more interesting.

"Now, this is good for a first draft," you begin.

"It's my fourteenth draft," Mr. Quizbeetle informs you.

"Well, let's time it and see what happens," you suggest.

Your stop watch is inexorable and will prove your point for you.

"Ah-ha! Two minutes and fifty-three

seconds! We'll have to pare that down a little. It's nearly two minutes too long." If the client balks at this, show him your watch.

"Well, how come the commercial has to be sixty seconds on the button? Who gets hurt if it is a little long?" asks the client.

Here's your second big pitch. It's called

'Besides, the Program Director . . . will kill us . . .'

The Old Pro Theme. You'll use this one again and again, too.

"You want to sound professional, don't you?" you ask.

"Les," you continue, "a commercial is only as effective as the production techniques behind it. If you don't sound smooth, polished and professional on tape, you won't sound smooth, polished and professional on the air. Professional commercials run to exact times . . . 10 seconds, 30 seconds or 60 seconds, usually. Besides which, if the commercials run too long, the Federal Communications Commission can take away the station's license." (This is gross over-simplification that borders on an untruth, but your client probably doesn't know it.)

If none of this convinces him, fall back on somebody else's authority.

"Besides," you say, "the Program Director and the Sales Manager will kill us both if the spot's too long."

It will take some exhortation. It will certainly take long hours of painful selection and rejection of copy. You may have to get your PD or SM to back you up and refuse to permit a long spot on the air. You'll get the spot to the right length eventually. The point is to do it as nicely as possible. You want to keep all of this as pleasant as you can.

Ironing Out Rough Spots

Okay. So your client finally realizes that the copy needs work. Find out what he considers to be the most important points he wants to make. Remember to remind him that his address and phone number are going to take between 15 and 20 seconds at the end. Try to keep lists of sale items to a minimum. They're bad enough when a pro announces them, clients usually sound much worse doing lists than anything else.

Write sentences your client can say. Whenever possible, use his own words. He'll be more comfortable saying them and that's important to the sound. The best client-announced spots don't try to make the client sound like anything other than what he is. You're not going to be able to make him sound like Charlie Tuna. You're not going to make her sound like Allison Steele. Write lines of copy so there's a

chance your client will be able to deliver . . . no hard stuff. The less big words or foreign words you include, the safer you are.

Good. Let's say you now have a rough draft of some copy that you think might sell the product. Type it up on decent paper so it looks pretty for the client to read. Now you sit the client down behind the microphone, hand him the copy and turn on the mike . . . and die. The guy reads so slowly, you're thinking of inserting a verse of Masters of War in between each word. He reads word by word like a second grader.

"It's . . . Quizbeetle's Menswear . . . for the buy . . . of your . . . life," he says with all the enthusiasm of a sleeping English setter.

So begin by loosening the client up. A mike can be a strange thing to first time you step into a studio. Talk to him for awhile to relax him. Also, let him know that even though he may have problems, you are going to solve them. That's your job. You get paid for it and you like it. Most important, let him know that it's no wonder that he has problems. Go back to your Hard Work Theme.

"Les, announcing is hard. Nobody told you this stuff is easy. It isn't. Do you know how much money a top announcer makes? Well, it's up into the hundreds of thousands of dollars! Rumor has it that you can pay off your mortgage with what the Ford guy gets just for doing one year's spots. Those guys don't get that kind of money because just anybody can walk right in, sit down and sound like that. It takes training and experience."

Your client will understand that he lacks training and experience. Or, he may tell you he was in high school forensic league and won every debate between here and Timbuktu. Radio's different. Tell him so. Just keep right on going with your lecture until he realizes that what you say, goes. The guy probably needs it.

If you get a client/announcer who won't take direction, you're in serious difficulty. You could end up losing the account or giving away extra, free time. Neither of these will keep you in business. You're the director. Your client has to understand that. Put it nicely but make it plain!

Make the Client Smile

Now that you have Mr. Quizbeetle doing things your way . . . most of the time . . . the first thing you have to do is get him to smile while he's talking. Sometimes this is easy. Sometimes it's too easy. If the guy cracks up over every word, you're going to waste studio time and have a lot of editing to do. If that's the case, explain that you have to get out of the studio soon because of previous commitments so things have to settle down so everybody can get to work.

If you sound enough like a school teacher, this tactic will be just as effective as it was when your client was a kid. We can thank the American school system for conditioning our clients for us. From now on, you must be extremely patient. You must be willing to explain things several times. Repetition is a key to learning. What you're

doing is giving your client a kindergarten crash-course in announcing. It's the school teacher/golf pro method of teaching.

In addition to your attitude, you can make references to the broadcasting business to remind Mr. Quizbeetle that you're the pro. I don't know why this works. I just know that it often does and why argue with success?

If your client absolutely cannot bring himself to smile while he's talking, you have a number of recourses. Sometimes you have to run through all of them until you find one that works.

Try drawing little smile faces on the copy in the places where you want your client to sound his friendliest and most engaging. Sit directly in front of him and smile broadly all the way through his reading. Sometimes tactics like these will work. Sometimes they won't.

Crack a few jokes to see if you can loosen old Les up. Tell him about some industry goofs that involve famous national celebrities . . . the time so-and-so knocked over his mike in the middle of a newscast or something. If he's into puns, make a few. Ethnic jokes? Tell one that won't offend anyone in the room. You don't have to think it's funny; your client does.

Emphasize Importance of Smiling

Somewhere in the middle of all these yuks, you're probably going to have to explain why you want Lester Quizbeetle to smile while he's delivering his commercial. Just telling him it sounds better isn't enough. He wants to know why.

"Les, you know sales, right?"

Chances are, your client knows something about sales. He's in business, isn't he? He must market something . . . meanswear, insurance or air conditioning service. He wouldn't be advertising if he didn't want to sell something. So Les says yes, he knows sales.

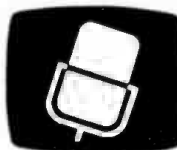
"When you walk up to someone in the store (showroom or office — pick one or make up your own) you smile at them, right?"

Very likely, your client will say yes to this, too. Very few people will admit to a surly personality, even if it's their most dominant trait. Besides that, you obviously expect him to answer in the affirmative.

"Sure, I smile," says Mr. Quizbeetle, "Our motto is 'Friendly service with a smile!'"

"That's why you have to sound friendly," you explain. "The smile makes all the difference. You really can hear a smile, you know."

This is where you give a little demonstration. Read the first line of the copy completely dead-pan. Then read it with a smile. If you're an announcer, so much the better. Even if you're not, Mr. Quizbeetle will hear the difference because there is one, a big one. The first step towards making your client sound friendly and intelligent is to get him to smile when he talks. It's going to take practice. He's not going to get it right off the bat. Even if he doesn't remember to smile every time, if he remembers to smile when he says his name, the name of his



BROADCAST PROGRAMMING & PRODUCTION

BOOKS BOOKS BOOKS

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store and any lines having to do with friendliness (like "Friendly service with a smile!") you're in business.

Good. You've got him smiling. Now your problems are down to his speech and his speed. You have, of course, been very careful to make the copy, if not grammatically correct, at least acceptable so your client doesn't sound illiterate. If there's a line he simply can't get out of his mouth without fumphering, change it. Find another way to say the same thing. If the man insists on saying "ain't" make it sound homey and sincere.

Most probably, you're not going to be able to break him of the accent he's had since birth. What you can do is see to it that he pronounces all the brand names, foreign words or big words correctly. That means you have to know. Look them up. Call the library. Sometimes somebody in the newsroom or music department will know.

Difficult words pop up in all kinds of places. Classical music records, restaurants, import clothing . . . all these categories are prone to foreign words. Find out how they're pronounced and teach your client. Nobody sounds dumber than a guy who gets on the air and mis-pronounces half the spot. Look out for china and crystal brand names, too; and last but not least, check all pharmaceutical brand and generic names.

If your client has a completely unintelligible foreign accent, the best thing to do is stave off the whole session if you find out about it ahead of time. You really aren't going to be able to do much for this person.

However, if the salesman neglected to mention the client's accent and you get stuck, explain very nicely that you don't think the commercial will be understandable because of the client's charming accent. You personally love it but you don't think it can be understood on the radio. If he insists on being in the spot himself or his money goes elsewhere, you have one last chance.

Let your client speak a few words in his own language *after* introducing himself in English. Then have an announcer read the rest of the copy. If your client won't buy this, ask to speak to your Sales Manager. Your SM may run the spot anyway because he wants the sale. Or he may do the smart thing and let the former client take his business elsewhere. If nobody can understand the commercial, it isn't going to sell a lot of goods anyway and the client won't renew if he isn't getting results. It's six of one, half dozen of the other.

But if an unintelligible spot does go on the air that people can't understand, rest assured that people will call. Have those calls routed through the Sales Manager so he gets a first-hand experience of what you were talking about.

Terrific. Your client smiles when he talks. He pronounces most of the words correctly. Now all that's left is to polish his delivery and get his reading speed right.

Know When To Quit

Where these things are concerned, you only have to remember three things. Be

patient. Keep all takes. And know when to stop. There comes a time, when the client has read the copy over and over again for an hour or so, when it just isn't going to get any better. That's when you stop because the next moment is the moment of desperation when both your tempers fly off the handle. You don't want that to happen. Remember, you want Mr. Quizbeetle to come back. The rest of the job can be done with a razor blade and a splicing block. Simply keep the best take of each line.

The secret to such sessions is making enough takes in an hour. Get your client on tape at least ten times, more if he's simply



awful. The more takes you have, the better your chances are of finding a good one.

Put the voice track together right there with the client listening, if you can. Sometimes production schedules are tight and don't allow for this. If you can possibly swing it, fit it in. It emphasizes the idea that everybody is pulling for your client. By now, he'd probably like to have that re-enforced. He's tired and he may be getting crabby.

Let Client Hear Final Tape

Now you have finished a voice track of Mr. Quizbeetle announcing his own commercial. Play it for him. Mr. Quizbeetle listens with a combination of pride and horror on his face. If you can, this is the time to send him home. When you play him the finished product, tomorrow morning, complete with music and sound effects, he'll be impressed and thrilled.

But if Mr. Quizbeetle evidences any interest in the music, or if he expresses any preferences, listen to him. You don't want to have to re-mix the whole commercial because the client hates the music. If Mr. Quizbeetle makes a terrible suggestion, play it under the voicer and explain why it's bad. It doesn't sound good with his voice quality. It will sound bad with the station format. It's too fast and makes him sound like he's speeding. It's too slow and makes him sound like he's melting. It's a vocal and using it under a voice track confuses people so they won't understand what your client is saying. Tell him. If he insists, you're stuck unless you have a Program Director who steadfastly refuses to permit Screamin' Jay Hawkins on his beautiful music station.

If you can keep your client away from everything but the voicer, you're best off. Remember that it's Lester Quizbeetle's commercial and his money, too. If you let a little thing like your musical taste stand between your station and the Quizbeetle

account, your sales department won't thank you.

Fond Farewell

Get Mr. Quizbeetle out of the studio as soon as possible but don't shove him out. Keep the client happy. That's why this job takes tact and patience. It's not all that difficult. Old Quizbeetle is doing this for fun, after all. He wants to have a good time.

Lester Quizbeetle will call every morning at 9:30:30 and every afternoon at 4:55:00 until you have finished his commercial. He may call more often than that. Tell him that you're working on it and that you want it to come out perfect. Tell him you really think it's going to be good once you get the music in. Boost him up while he's waiting so he doesn't get too nervous about the whole thing. Anticipation is good. Worry is bad.

At 9:00:30 A.M. on Friday, Lester Quizbeetle calls the production director at radio station W*** to ask if his commercial is ready yet. When can he hear it?

If you have the technical capability, play his commercial over the phone for him. Many of his objections can be smoothed away by telling him that the quality is really much better than he can hear over the phone. No, he doesn't sound hoarse.

Take this opportunity to praise your client once more. Tell Mr. Quizbeetle that you've never heard such a fine job done by an amateur before. Tell him that by the time he's done this a couple of more times, he'll be an old pro and won't need you anymore. Tell him that you've enjoyed working with him. Be professionally enthusiastic and very positive. In the words of our forefathers: "Leave him laughing!"

Send The Client A Copy

Offer to make a cassette for your client. Some of them expect it. Have Biff, the salesman who started all this, deliver the cassette with a note that essentially says that you love the spot and look forward to working with the client again. Sometimes you'll even mean it.

There is an astonishing number of articulate intelligent people out there who can do quite a credible job for themselves. There are also many Lester Quizbeetles who will give you an ulcer, if you let them. Don't. Keep your sense of humor.

Remember that if Mr. Quizbeetle had a good time making his commercial and if you've done an effective job of directing him, the commercial will work.

Sometimes, clients get to like making commercials so much that they come back month after month, even if the spots don't draw, which sounds ridiculous but there it is. Exasperating though they may be, the Lester Quizbeetles of this world want to think well of themselves, just like everybody else. If you help them, they'll think well of you. Before you know it, you'll have a steady customer, a bread-and-butter account who'll send you holiday greeting cards with pictures of his family on them. It's the bonus you get for making someone with a lisp, stutter and accent sound not half bad.

NEW PRODUCTS & SERVICES

EDCOR HEADPHONE AMP

Designed as a compact, reliable, low cost amplifier for driving headphones, the new EDCOR AP-10 offers 4 watts RMS on each side of 4 stereo channels into 4 ohms.

A simple rear-mounted toggle switch selects mono or stereo outputs. Frequency response is flat from 20 - 20,000 Hz. Individual and master gain controls allow complete control over the system.

EDCOR
3030 RED HILL AVENUE
COSTA MESA, CA 92626
(714) 556-2740

Want more details?
Circle No. 18 on Product Info. Card.

MICRO SEIKI TURNTABLES FROM TEAC

TEAC Corporation of America is showing a new line of seven Micro Seiki turntables, three of them featuring the exclusive MA-707 variable mass/dynamically balanced tonearm.

Top-of-the-line is the DQX-500, a direct-drive, quartz locked manual unit with the MA-707 tonearm and a suggested retail of \$500.00. The model has a separate power supply and quartz control, and comes with a tonearm dust cover.

Bill Cawfield, director of product development at TEAC, said the DQX-500 is a two-speed model with a die-cast 5.75 pound aluminum platter with wow and flutter of less than 0.02% and a Signal-to-Noise ratio of more than 62 dB.

The DQ-43, also featuring the unique new tonearm, is a direct-drive, quartz locked unit with automatic lift and shutoff, a 3.33-



pound aluminum platter, rosewood base and dust cover. Its suggested retail is \$450.00.

The direct-drive, servo-controlled DD-33, is similar to the DQ-43, but with a smaller, two-pound aluminum platter and a suggested retail of \$350.00.

Two other models — the MB-14, a belt-drive unit, and the DD-24, a direct-drive model — feature automatic lift, return and shutoff and a statically balanced tonearm. The MB-14 retails for \$125.00, and the DD-24 for \$200.00.

Cawfield said two additional models in the new Micro Seiki line are built without tonearms for the discriminating audiophile. The DQX-1000 is an improved version of Micro Seiki's famous DDX-1000 and carries a suggested list of \$700.00. It is quartz locked and has a separate power supply and quartz control. It features a 6.6-pound die-cast aluminum platter.

The DQL-120 has a massive, high-precision 10-pound zinc platter. It has a direct-drive, quartz locked motor and comes with a rosewood base and dust cover. Cawfield said the consumer can add tonearms and cartridges of his choosing. The model has a suggested retail of \$750.00.

All models are to be available for shipment by early summer.

TEAC CORPORATION OF AMERICA
7733 TELEGRAPH ROAD
MONTEBELLO, CA 90640
(213) 726-0303

Want more details?
Circle No. 19 on Product Info. Card.

STARTRIP PRODUCTIONS ANNOUNCES — "HOOKS"

Startrip Productions, Incorporated, an advertising production studio based in Orlando, Florida has announced a new custom music service for radio advertisers.

Marketed under the name "Hooks", the package offers full-sound concepts featuring lively rhythm beds and full horn and string sections. The music is written and arranged by former A&M and Columbia recording artist Michael Hurley, with lyrics by Patti Pool, and are recorded under the supervision of Startrip's Production Engineer, Bob Barnes. Music concepts are available on a national or regional basis and are priced by market size. Demo tapes and information are available.

STARTRIP PRODUCTIONS, INC.
2809 EDGEWATER DRIVE
ORLANDO, FL 32804
(305) 422-1549

Want more details?
Circle No. 20 on Product Info. Card.

NEW SHARP SPECIAL EFFECTS GENERATOR

Sharp Electronics Corporation has introduced a new special effects generator (XEG-3000) with a built-in color sync generator, and a unique phase shifter that adjusts phase without the use of electronic scopes. The suggested user net is \$2,900.

Three unique features of the XEG-3000 are: The built-in sync generator has a complete pulse distribution system that contains full provision for horizontal and color phasing for up to four cameras. Special circuits which permit complete system timing of the phase in a matter of

minutes, with the timing performed using the program color monitor only, the need for a vectorscope is eliminated. The dealer does not have to interface separate sync generator, phase shifter, timing and distribution amplifiers when designing and installing a color TV system since everything is contained in the system package. Even power supplies for intercom and tally light have been built in.

The special effects section has five video camera inputs, five monitor outputs, and two program and two preview outputs. It has monochrome or color external key input, and vertical interval switching.

There is a choice of automatic dissolve and wipe, or manual dissolve and wipe through a fader arm.

Effects available include vertical split, horizontal split, upper left corner, upper right corner, lower left corner and lower right corner.

Frequency response of the special effects generator is $\pm 1/2$ dB to 5 MHz with a differential gain of less than 2 percent, and a differential phase of less than 2 degrees. Crosstalk isolation is greater than 50 dB at 3.58 MHz.

Outputs in the sync generator section include four vertical drive, four indepen-



dently adjustable sync or horizontal drive, and four independently adjustable subcarrier.

Pulse outputs are 4 V peak-to-peak and the subcarrier 2 V peak-to-peak. A digital timer section offers a $1/4$ inch LED display and two modes: minutes/seconds or hours/minutes. By switching between modes, it is possible to time an event up to 24 hours, 59 minutes, 59 seconds.

The unit, which weighs ten pounds, is seven inches high, and ten inches deep. It's width is the standard 19" rack size.

SHARP ELECTRONICS CORP.
10 KEYSTONE PLACE
PARAMUS, NJ 07652

Want more details?
Circle No. 21 on Product Info. Card.

PROFESSIONAL PRODUCTION MIXER GAINING NEW FOUND POPULARITY IN BROADCAST

Manufactured in England by Allen and Heath, Limited, the Model S6/2 is a high quality production mixer, designed specifically for professional use by recording studios, broadcasting units and production companies. Until recently, however, in the United States it has been sold almost exclusively for use in fashionable discotheques throughout the country.

Now, VIF International is introducing the model S6/2 to the broadcast industry. It's

first formal presentation was at the 1978 NAB Convention in Las Vegas. The S6/2 offers the advantage of auto-start and auto-fade capabilities plus linear faders throughout for fast, economical production and total professional control. The unit is equipped with four stereo input channels (two phono and two line), two mono microphone channels, stereo main out, stereo headphone monitors, and remote switches for complete control over auxiliary equipment.

Other features include: Pan pot located on the microphone channels; trim pot on all



inputs; mode switch on the tape channels; LED run indicators; mute and "on-air" indicator on microphone channel 1; and peak reading meters with their own driver amplifier.

Now available from VIF International, the Allen and Heath Model S6/2 Production Mixer is priced at \$1,295.

VIF INTERNATIONAL
P. O. BOX 1555
MOUNTAIN VIEW, CA 94042
(408) 739-9740

Want more details?
Circle No. 22 on Product Info. Card.

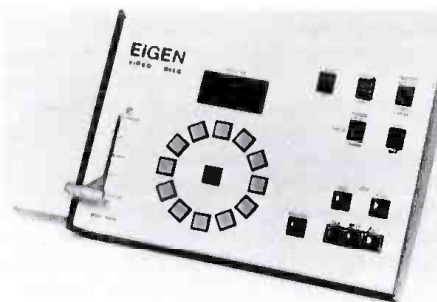
NEW SIGNAL SYSTEM ON EIGEN DISC

Chroma III, a component color signal system for Eigen Video slow-motion disc recorders, was introduced at NAB by the Grass Valley, California manufacturer.

With signal-to-noise of 46 dB in the luminance channel, 43 dB in chroma and differential phase and gain of 3 degrees, 3 percent, a substantial improvement has been achieved in color slo-mo recorders.

The 20-second NTSC slow-motion model with "J" control is priced at \$35,000; the 10-second version is \$25,000. The PAL/SECAM version is \$45,000. All models have Chroma III signal systems as well as digital time base correction, making them fully broadcastable. All earlier models of Eigen recorders can be updated to the Chroma III system.

All Chroma III versions include the versatile "J" control, with fast cuing and slide capability. In sports applications the "J" control allows both slo-mo and slide-show operation. The 12-sector fast-cue (2-4 second access time) allows "saving" a replay while recording subsequent action.



The NTSC version reportedly began shipping in April. The 50-cycle version will be field switchable between PAL and SECAM, and available in October.

Eigen disc recorders are based on a low-cost, flexible magnetic disc. With recorders priced from \$12,500 to \$35,000, Eigen Video has been a supplier of color slow-motion disc recorders for over two years.

EIGEN VIDEO
P. O. BOX 1027
GRASS VALLEY, CA 95945
(916) 273-1341

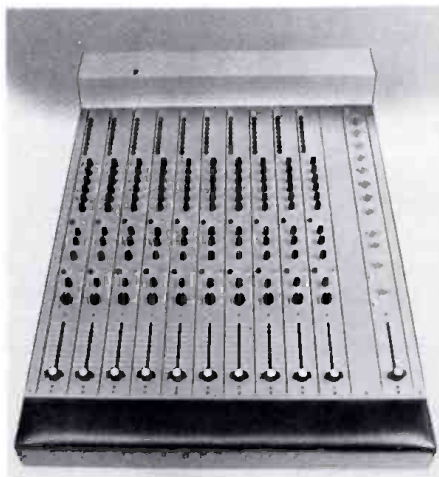
Want more details?
Circle No. 23 on Product Info. Card.

SP610 CONSOLE FROM SPECK ELECTRONICS

The SP610, from Speck Electronics, is another in their series of quality audio mixing consoles. A 10 input, 10/8 output, stereo out console, the SP610 is exclusively designed for the medium size production studio.

The console is completely modular with painting and silk screening to class A specifications. For easy and convenient wiring and patching, barrier strip connections are located on the rear of the console.

The input modules feature a 4½" conductive plastic slide fader, a 6 knob 3 band parametric equalization, 8TK assignment buttons, post echo sends, monitor send control, 2 cue sends, solo button which allows stereo panning when



engaged, a mike/line switch, a program/sync switch, and an attenuation switch of -10 or -20 dB.

The output section reportedly contains everything to do an efficient recording

session; from the stereo master fader to the 8 sub-master level controls. It also includes cue 1 and cue 2 level controls, each of which can be soloed, and 2 echo returns.

Specifications include: Mike input impedance 150 ohms balanced; line input impedance 10 kohms; signal-to-noise -72 dB; output level (normal) +4 dBm above 0 VU; maximum output level +20 dBm; headroom +16 dBm, equivalent input noise -127 dBm. Dimensions: width 25¼", depth 37", height, 7½" at rear.

Price: \$4,120.00 F. O. B. factory.

SPECK ELECTRONICS
740 GREENBUSH AVENUE
NORTH HOLLYWOOD, CA 91605
(213) 764-1200

Want more details?
Circle No. 24 on Product Info. Card.

UMC/BEUCART AUDIO CONSOLE

The introduction of a new audio console reportedly incorporating the most complete range of broadcaster-oriented features currently available has been announced by UMC Electronics Co., according to Charles F. Rockhill, Broadcast Sales Manager, Broadcast Products Division.

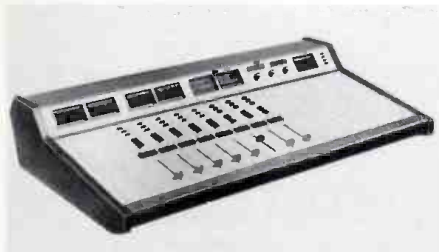
The new UMC/Beucart® audio consoles are eight to 16 channel, stereo units with top plug-in modules. Modules plug into the console's mother board with gold-on-gold connectors for better electrical contact and less corrosion. Each channel module has three selectable inputs allowing a maximum of 48 hard wired inputs for the console, such as mikes, cart machines, or reel-to-reel machines. Module cards include a high-low switch for impedance matching and a ±10 dB trim switch.

The console incorporates three fully metered matching stereo busses out (program, audition, and utility) plus a fully metered mono feed buss as standard. Four program sources can be fed simultaneously from these busses. The mono feed buss is capable of feeding program, audition, or utility channels and its own source of programming with programs from any of the individual channel modules. Any channel module is capable of feeding any program buss through the use of a series of four pushbutton selector switches.

Each module is provided with a Waters conductive plastic fader (attenuator) with 100 mm (4 inch) travel. In addition to the cue detent at the bottom of each attenuator, a momentary, cue buss access, select button on each channel provides the capability of auditioning upcoming program material without disturbing pre-set volume levels. On/off buttons are incorporated in each channel for noiseless DC switching. These buttons provide a remote start/stop for external equipment such as cart machines. Both start button and the appropriate VU meters light when the external equipment is activated. This function can also be controlled at the news desk or elsewhere by remoting channel on/off switches. The rear lighted VU meters are illuminated only when

a channel is in use.

In addition to standard external power supply and built-in cue amplifier, these audio consoles are offered with top mounted



instrument options: A crystal-controlled, real time, count up/count down, LED digital clock and outdoor LED digital temperature, humidity, or barometric pressure displays. Positive peak meters (PPM) or VU meters with PPM flashing LED's are also offered.

Packaging for UMC/Beaucart® consoles is both aesthetically pleasing and human engineered, with end boards and front arm rails of solid walnut. Designed for tabletop or console shelf mounting, the unit places all controls conveniently within the studio engineer's grasp.

**BROADCAST PRODUCTS DIV.
UMC ELECTRONICS COMPANY
460 SACKETT POINT ROAD
NORTH HAVEN, CT 06473
(203) 288-7731**

*Want more details?
Circle No. 25 on Product Info. Card.*

400 IMAGE SLIDE STATION FROM ARVIN/ECHO

Echo Science Corporation has introduced a new product — The SS-2 Slide Station. The unit was on display at this year's NAB Convention in Las Vegas.

This system enables the operator to present random access to instant on-air switching of 400 stored images with a preview capability, and eliminates the cost and time for processing 35 mm slides and frees up the live camera previously dedicated to graphics, such as chroma-key backgrounds, drop cards and still photos.

The SS-2 incorporates two Arvin/Echo



EFS-1A video Discassette® Recorder/Reproducers, with video switching, one remote control unit and one time base corrector.

The complete system is priced under \$50,000.00.

**ARVIN/ECHO
ECHO SCIENCE CORPORATION
485 E. MIDDLEFIELD ROAD
MOUNTAIN VIEW, CA 94043
(415) 961-7145**

*Want more details?
Circle No. 26 on Product Info. Card.*

MAGNASYNC/MOVIOLA NEW SERIES RECORDER/REPRODUCER

A new series of recorders and reproducers specifically designed for high-speed rock-and-roll applications are available from Magnasync/Moviola Corporation. The Series 4000 includes both a 35 mm and 16 mm magnetic film insert recorder/reproducer as well as magnetic film reproducers.

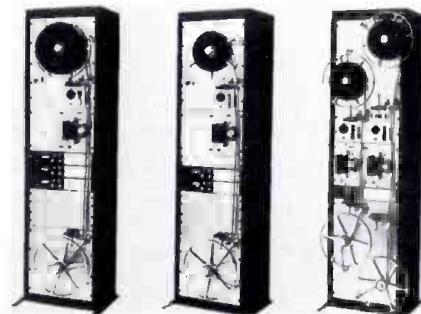
According to Sam Lane, vice president-marketing, all models of the Series 4000 feature an all-new CMOS electronic drive control system which enables the recording engineer to rock and roll at up to ten times sound speed.

The all solid-state systems incorporate Magnasync/Moviola's low-noise pickup record and playback electronics which overcome two major re-entry recording obstacles: noise, and insert timing during initial recording and post-recording. In the 16 mm reproducer, these electronics allow the recording engineer to make multiple dubs without sound degeneration and at considerable time savings, Lane stated.

The 16 mm and 35 mm insert recorder/reproducers feature erase and bias signals which are derived from a crystal-controlled square-wave generator. This eliminates noise contributed by even order harmonics,

jitter and unsymmetry in the bias and erase signals. The use of a precision ramp start control for these signals, coupled with the ability to set the precise in/out times for inserts and deletions, results in totally undetectable insertions and deletions of recorded speech, effects and music.

Other features of the Series 4000 include crystal-controlled sound speed front-panel switchable to 18, 24 and 25 fps; manual inching for precise sync point location; variable speed control through sprocket from less than one fps to ten times sound



speed, forward or reverse; automatic compliance arm lifters and motor-driven flywheel drivers; and front-panel switchable A/B wind mode and looping. All electronic components are arranged on plug-in cards allowing servicing of the entire unit without removal from the rack.

The Series 4000 systems are available in single- or multi-track configurations.

Complete specifications and prices are available on request.

**MAGNASYNC/MOVIOLA
5539 RIVERTON AVENUE
P. O. BOX 707
NORTH HOLLYWOOD, CA 91603
(213) 877-2791**

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BOOK REVIEW:

Case Studies In Broadcast Management by Howard W. Coleman. Communications Arts Books; Hastings House Publishers, Inc., New York, N. Y. Revised and enlarged edition 1978.

By presenting a series of authentic problems that are based on factual situations, author Howard W. Coleman aims to stimulate the minds of readers in his book, *Case Studies in Broadcast Management*, Hastings House Publishers, Inc. The dilemmas presented encourage discussion and formulation of solutions to "real world" problems in commercial radio and television operations. Being true-to-life, the book leads the reader to the conclusion that more than one solution exists for some problems.

The book is newly revised throughout and aimed to supplement Quaal and Brown's *Broadcast Management* (Second Edition, 1976).

The book is in three parts: *Case Study Problems* offers detailed exploration of broadcast areas in which problems are serious, and the solutions far-reaching and long-range in planning. They cover problems like radio audience development; station revenue and economy; programming, sales and promotion policies in new UHF stations; late evening news-weather-sports programming and a discussion of what it takes to fill a top station management position. *Case Study Profiles* outlines the kinds of problems that are mostly short-ranged and capable of a solution that does not commit long-range involvement or capital investment, either in people or equipment. Among the situations presented involve a potential lawsuit; the controversy of editorializing; cultural programming; and in-fighting among local media.

The third part, *Case Study Situations*, is a section added to this revised edition. This new section presents situation statements by which the reader is challenged to seek out and find the potential problem in the situations and devise the solutions.

Case Studies in Broadcast Management will be of value for those who aspire to apply efficient and creative managerial principles in an ever-changing industry.

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