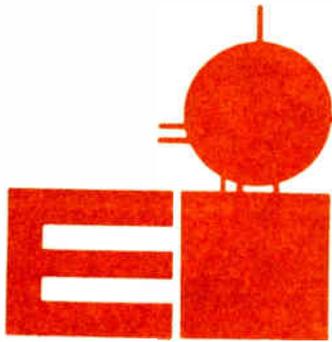


June 1987

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## Executive Committee Condemns Broadcast of Indecent Material

Washington, May 13--The National Association of Broadcasters' Executive Committee said NAB will ask the Federal Communications Commission to clarify its recent indecency ruling and issued a statement condemning the broadcast of indecent or obscene material.

NAB Board Chairman Ted L. Snider, president, KARN/KKYK, Little Rock, AR, said, "Not all broadcasters are fully aware yet of exactly what the new FCC guidelines for indecency entail. We think a clarification from the Commission may answer the questions many broadcasters still have."

The statement reads:

"Broadcasters have long expressed concern over attempts by the government to dictate the selection of programming material or prohibit the broadcast of specific types or kinds of programs. However, obscene and indecent programming is prohibited by the federal criminal code and may subject those who broadcast indecent or obscene language to a fine or imprisonment or both. While the recent ruling of the Federal Communications Commission concerning indecency may be overly broad and thus constitutionally

suspect (on First Amendment grounds), the fact remains that the broadcast of obscene and indecent material is generally prohibited by federal law.

"Indecency over the air has been and is of great concern to the National Association of Broadcasters and to the vast majority of American broadcasters. The number of stations involved in broadcasting material of this nature is infinitesimally small but the effect of their actions has caused unwarranted negative publicity for the entire broadcasting industry.

"This Association has condemned the broadcast of indecent or obscene material by broadcasters in the United States both by public policy statement and provisions in the prior NAB Code which was struck down by the government in 1982. We have advised our members time and time again that the broadcast of indecent material subjects them to sanctions by both the FCC and the federal courts. Without reference to the specific cases before the FCC, we again take this opportunity to condemn the broadcast of indecent material by United States broadcasters as contrary to the public interest and having no place in our system of free over-the-air broadcasting."

## The Perfect Compromise

Because cassette recorders enjoy worldwide popularity, also in the professional sector, the manufacturers of recorders, cassettes, and tape materials have continually enhanced their products. But there is also a less positive development, particularly with respect to standards. Excellent results can only be achieved in conjunction with correct calibration, but in practice this is a problematical task. One suitable solution is automatic calibration.

Some thoughts on this topic are outlined in the following report by a development engineer.

A vast number of compact cassette types are currently available. In addition to the established tape categories such as iron oxide, chromium dioxide, ferric chromium and metal (corresponding to the IEC classification, I to IV), a finer differentiation is required within the individual categories, particularly in the case of IEC II. De facto there are two types, i.e. tapes with chromium dioxide content, and the Japanese chromium substitute tapes. Another aspect that stands in the way of long-term standardization is the fact that practically all manufacturers seek to optimize their price/performance ratio and there for continually adapt their tape batches to their latest technological advances, frequently only in minor details, but sometimes major specifications are affected. Sometimes also marketing considerations play a decisive role. In one instant an excellent tape was

(cont. to pg. 3)

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# Editor's Notebook

The AM Improvement "Special Issue" of Common Point seems to have been well received by those I have talked to. Many thanks to the writers and contributors for their fine efforts. It would be nice if every AM station, large or small, would get behind this effort to bring AM Broadcasters back on a par with FM in the nation's markets.

Starting this issue, we are running a series of articles that will be of special interest to your General Manager and Sales Manager... "The Bottom Line." Of course, I am not discounting your engineers as readers of it either, as I am sure most of you realize how important the bottom line of a financial report is to your engineering budget and the general health of the entire station.

Starting with next month's Common Point we will be having a classified ad section that you can use to sell or buy used equipment, towers, programming products, teletypes, office machines, and anything a radio or TV station would like to list. These ads will be no charge until such time as the volume gets so high that it become costly to handle it (if that ever happens). If it does then we will put some normal charge on each ad. Just write your ad on the Common Point return order form and don't forget your telephone number.

Trips to Dallas and Anniston, Alabama lately seem to have been too much for my wife Betty, who spent about 10 days in the hospital trying to regain her health. At the same time my daughter, PFC Melodie Stroebel was at the U.S. Army Hospital at Fort Sam Houston, TX with pneumonia. Glad everything is finally back to normal.

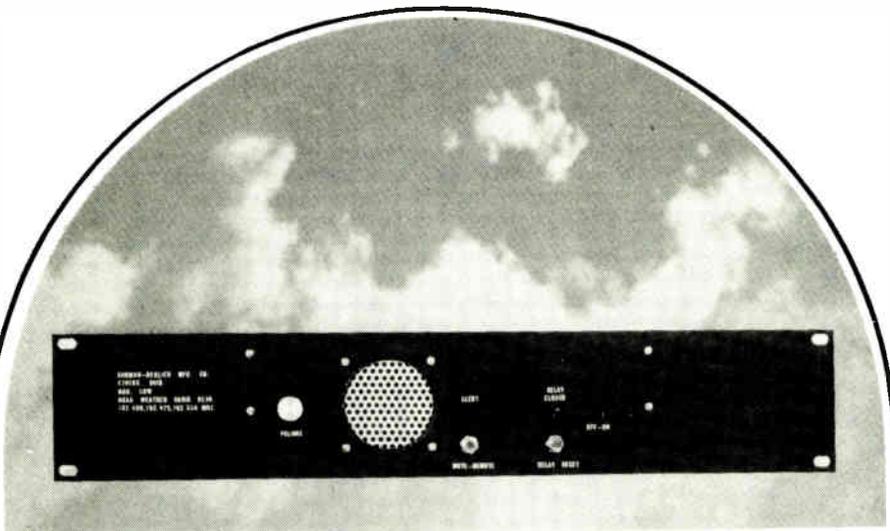
Getting back to "The Bottom Line" series for a moment, I have been requested by a number of stations to send them complete information on a Sportsbooster Association promotion. I did at WAUN, Kewaunee and WOMT, Manitowoc, so I decided there may be more stations interested in that promotion for next fall's sports season and decided to do a complete story on it for Common Point. So for my friends Bert Peterson, Dwight Carver, and others...it's all in this issue!

Happy Father's Day to all you dear ole Dads this month too!

*Bob Stroebel,  
Common Point Editor*

## COMMON POINT

Metz .....4  
Bragg .....12  
Talkback .....14



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# Perfect Compromise

(cont. from pg. 1)



“sacrificed” to the general trend of tape characteristics simply to avoid being considered as an outsider with respect to competitive products.

The IEC recommendations with their target specifications have contributed little to standardization since the proposed parameters are far below from the technically achievable today. In the meantime the trend now even goes so far that IEC attempts to adapt one of its reference tapes to today’s average of the corresponding category. But all of this contributes to the fact that the buyer will in the foreseeable future not be able to work with any specific tape quality. A consequence of this odious situation was the successful introduction of auxiliary circuits in the form of calibration computers in cassette decks. This now also explains why such circuits are absent even in high-quality reel-to-reel recorders: there simply is no requirement for such a device because the differences between tape types are lower, the change extends over much greater time spans, and in addition the consequences from different parameters are far less dramatic at the speeds such tapes are processed. In following this trend, Studer Revox decided to equip its cassette recorders with a calibration computer.

## Manual Calibration

Let us first examine how a cassette recorder is calibrated manually. We assume that all mechanical adjustments have been performed correctly. The reproduction parameters are standardized and basically require no adaptation to the various tape types (except for the equalization). For nonprofessional units the record level, treble equalization, and the bias in the recording branch are specifically

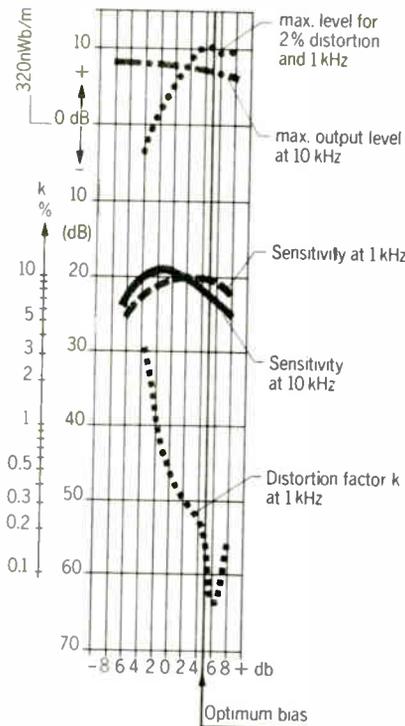
adjusted to the type of tape to be processed. The alignment of the bias is the most difficult operation. I represents a compromise between harmonic distortion at low frequencies and maximum recording level at high frequencies. Fig.1 illustrates the crucial parameters for iron oxide tape applicable to a reel-to-reel recorder and the chromium dioxide cassette tape. In contrast to the reel-to-reel recorder where the optimum bias practically coincides

with minimal distortion, the optimal setting for tape cassettes has shifted far to the left of this point because of the low tape speed. In practice, the bias is aligned at 10kHz because the treble sensitivity is frequency-dependent. This value can vary more or less, depending on the tape type.

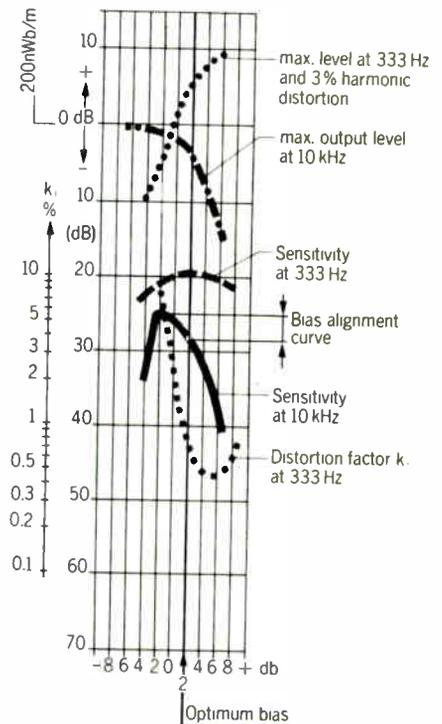
## Calibration Concept automatic/manual

Automatic calibration has the following inherent disadvantages over manual calibration: the tape type is initially unknown to the calibration electronics, i.e. no previously stored parameters can be taken into consideration. The computer must be able to cope with as many tape types as possible and with only a few interpolation frequencies. And how shall a local drop-out on the tape be interpreted? Based on extended observations, the human brain is very well able to ignore a transient error and to substitute a fluctuating value for an averaged one, or to ultimately resort to other measures such as using a different tape segment or to clean the heads. However, since there is no one correct value for the bias but a compromise must be found, it is not surprising that automatic calibration

(cont. to pg. 4)



Reel-to-reel tape, track width 6.25 mm (1/4")  
Tape speed: 15 ips  
Tape type: ferric oxide  
Gap width: 7 μm  
Equalization: 35 μs



Cassette tape, track width 0.6 mm  
Tape speed 4.75 cm/s  
Tape type: chromium dioxide  
Gap width: 4 μm  
Equalization: 70 μs

Fig. 1

# MEMO FROM METZ



by  
David L. Metz

## “MODERN STUDIO REMOTE CONTROL” Part IV

By David L. Metz

When I first tried controlling a cassette deck with the circuit shown last month, I ran into an interesting problem. Simply, the darn thing wouldn't work! A little thinking and fiddling showed the problem.

The cassette decks designer wanted to make sure you didn't punch any buttons by mistake. So they designed the software so the button had to be pressed down for a certain amount of time before the machine would recognize the button closing as a valid command. My first circuit didn't hold the “button” down long enough!

Now this is kinda like the contact bounce problem we discussed in PART ONE. Only instead of holding our finger on the button till the circuit settles down, we have to do the holding electronically.

What's needed is a simple timing circuit that will hold the CD4066B analog gate closed for a predetermined amount of time. Well, good old Don Lancaster and his CMOS Cookbook came to the rescue again.

The half monostable is just the answer. These simple accurate timing circuits can be built with just one section of a CMOS Schmitt trigger inverter one resistor and one capacitor. Fig. 1 shows the four possible configurations of inputs and outputs for the monostables.

The I.C. used is the CD40106B or the 74C14N. Both have the same pin out and ratings. The capacitor must be a high quality type such as a mylar or polystyrene. For long time dur-

(cont. to pg. 5)

## Perfect Compromise

(cont. from pg. 3)

processes in equipment from different manufacturers produce different results. Let us briefly examine the three most frequently employed principles:

**1. Constant bias:** Level and treble equalization adjustable (optimal for tapes that conform to IEC specifications, problematic with more exotic tapes).

**2. Constant treble equalization:** Level and bias adjustable (produces good results for most tape types).

**3. Vary bias until maximum sensitivity at a frequency of approx. 1 kHz is attained:**

Level and treble equalization are also adjustable. (Calibration is difficult, particularly for tapes with many drop-outs. Does not produce an optimized working point for all tape types).

The B215 cassette recorder employs version 2 with an additional frequency response correction at around 4 kHz. This permits a nearly flat frequency response in the presence range where there are more pronounced differences between chromium substitute tapes and true chromium tapes.

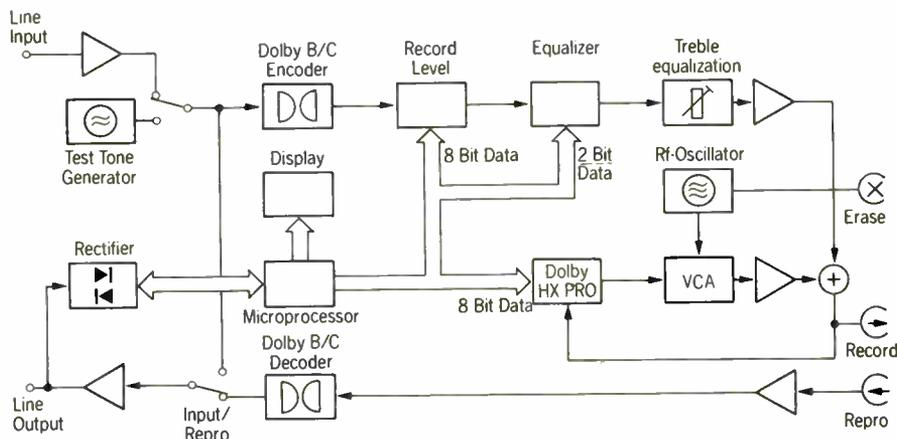


Fig. 2

### B215 equipment design

Fig. 2 contains an audio block diagram. The following circuit components have been added or laid out differently to accommodate automatic calibration:

- Test generator switchable to 3 different frequencies
- Recording level, equalizer, and bias must be controllable via the processor
- Measuring device with processor communication

Since in the B215 all functions are controlled by the processor, it made sense to use the output metering circuitry also for calibration, however, its sensitivity is now greater

and the measuring characteristics are changed.

This principle results in lower influence by component tolerances and in fewer alignment elements. The recording is not made with fixed level, as is usually the case, i.e. the recording level is varied until a certain threshold in the reproduce path is attained. In the B215 the test tone is first measured without tape and the recording level is subsequently varied until the same value is attained with tape.

### Time requirement vs quality of the result

A calibration process should not strain the user's patience, i.e. it certainly should not exceed 30 seconds. Based on the level adjustment, we can make a quick preliminary calculation which should point out that for proper calibration a considerable amount of time is needed. For 8 bits (= resolution of our level controller), the computation effort should not become too high; 8 measurements are necessary for each channel. Each time the value is changed, 100 ms are required before the tape is transported from the

recording head to the reproduce head (head gap). With a 70 ms integration time constant of the rectifier, some 300 ms are required until the value is stable. For 8 measurements the straight waiting time thus exceeds 3 seconds.

At higher frequencies and for accurate results this time becomes even longer since a recording and a measurement cannot be performed simultaneously because of the strong cross talk from the recording head into the reproduce head. With a calibration time of 25 seconds the B215 cassette recorder is not one of the speediest, but this time should by all means be sacrificed for the sake of a good result.

(cont. to pg. 6)

# MEMO FROM METZ

ations, be very careful in your selection of electrolytic capacitors. I've found some so leaky that they would never charge up, so the monostable would never time out!

Because the I.C. is a high input impedance device, the value of resistance can be quite high. In this example, Fig. 2, for .1 second delay  $R = 1$  megaohm and  $C = .1$  MF.

The circuit in Fig. 2 is part of a controller for our skimmer we'll build. When NOR gate A4 goes high, C1 charges to  $V_{cc}$  driving inverter B3's output low. This low is re-

inverted back to a high by inverter B4. B4 drives the START switch section of the CD4066B on triggering the cassette deck to begin recording.

Resistor R1 immediately begins to discharge C1. When C1's voltage drops to 2/3's of  $V_{cc}$ , the output of B3 switches from low to high, B4's output goes low and the START signal ceases. Due to the timing function, the cassette deck received a precise .1 second signal!

The stop signal is the reverse. When A4 goes low again, C2 is discharged, B2 goes high, a STOP pulse

is sent to the cassette deck.

This useful little circuit can be configured many different ways. I've used it to control cart decks directly without any interface, and reel to reel decks by means of relays. If you have a sloppy input to it, you may want to condition the input signal with another section of the hex inverter. Remember there's six inverters in a package, so they're cheap to use.

Save this circuit, next month, I'll connect it to a timer and you'll have a skimmer!

\*\*\*\*\*

FIG. 1

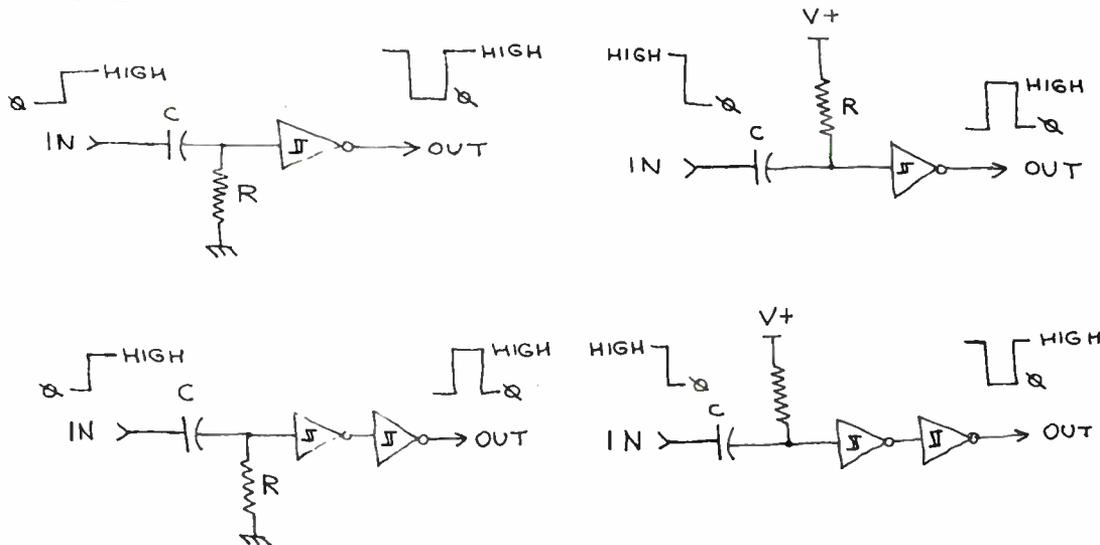
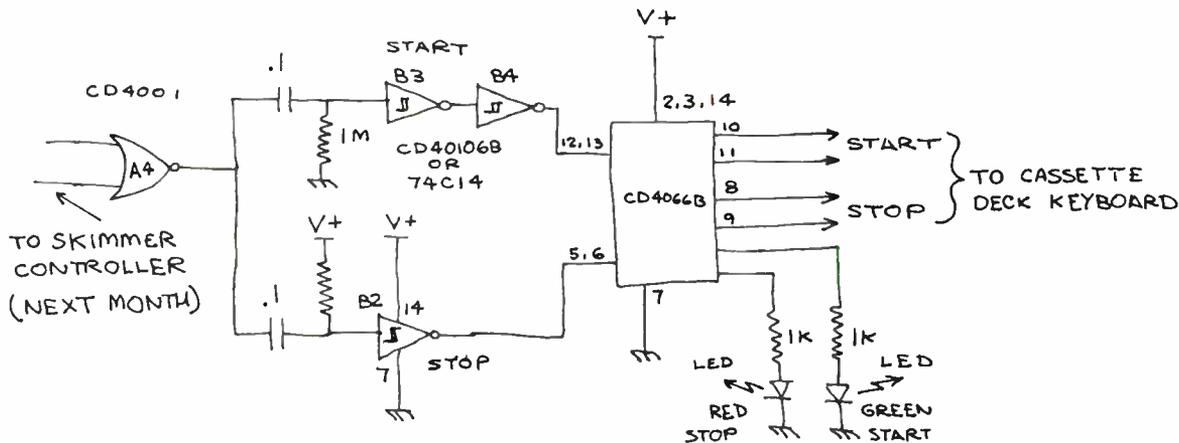


FIG. 2



## Perfect Compromise

(cont. from pg. 4)

### Calibration Procedure

On the B215, calibration is performed in the following steps:

- Storing the current tape counter reading
- Coarse adjustment of the bias (with a test tone frequency of 17 kHz)
- Level adjustment (at 400 Hz)
- Bias fine-adjustment (17 kHz)
- Equalizer alignment (at 14 kHz)
- Rewinding the tape to the starting position

## Public Does Not Complain To FCC About Interference To Broadcast Signals

Washington, My13--No one complains to the Federal Communications Commission (FCC) when they hear static or interference on the radio stations they listen to, even when this interference is man-made, according to a nationwide random sample survey conducted for the National Association of Broadcasters.

In several recent proceedings, the FCC has stated its belief that

interference to broadcast reception is not a problem where there is an absence of complaints from the public.

In the sample 60.4 percent said yes to the question "Do you ever hear any kind of static or interference on the the AM station or stations you listen to?", compared to 38.4 percent who said no.

The respondents specifically were asked what actions they took when they heard interference on AM radio. But not one single person surveyed said they complain to the FCC. Only 3.4% even contact the radio station involved. The actions that they do take are:

Action	% Respondents*
Fine tune the station	76.5
Keep listening	73.0
Change to another station	60.8
Fix static myself	33.8
Turn radio off	37.2
Have radio checked	5.5
Contact station	3.4
Contact FCC	0.0
Other	9.6

\*Totals to more than 100% because multiple responses were permitted.

"Clearly the FCC is not basing its actions on reliable information where it concludes that there is no static or interference problems solely because it receives so few complaints," said NAB Radio Board Chairman Bev E. Brown, owner/manager, KGAS, Carthage, TX.

He added, "This survey documents that there is a real interference problem, even if the FCC has not recognized it. We are greatly encouraged that even when AM listeners experience interference, nearly three-quarters keep listening to their stations. But, the fact is that the public has no concept of how to complain to the FCC and no feeling that complaints will help resolve interference problems. The point is, the Commission must establish standards to prevent interference from occurring, rather than await degradation of broadcasting that is suddenly recognized by emerging complaints."

According to the survey, the public believes that more than two-thirds of the causes of AM interference problems are man-made. When asked "What do you think causes static or interference on the AM station(s) you listen to?" they answered:

Type of Interference	% Respondents*
Man-made	
Power lines	11.6
Another radio station	9.6
Automobile	5.8
Home electrical appliance	5.8
Tall buildings	4.4
Mountains	4.4
Airplanes	2.7
Other man-made	23.8
Natural Causes	
Weather	16.4
Other natural causes	4.0
Don't Know	10.2

\*Multiple responses permitted.

The nationwide telephone survey conducted by Market Facts, Inc. of Chicago, IL for NAB used a random sample of 1,000 persons of which 48.4 percent had listened to AM radio in the preceding month. The margin for error attributable to sampling is, plus or minus, 5.7%.

## NAB Survey: AM Interference Complaints

A new survey conducted for NAB indicates that listeners are confronted with major AM interference problems, despite FCC attitude to the contrary. FCC has stated in recent proceedings its belief that interference to AM broadcast reception is not a problem where there is an absence of public complaints to FCC. However, according to national random sample

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- 8 channel** ..... list price \$3995.00

## NAB Survey

(cont. from pg. 6)

survey, public does not complain to Commission when they hear interference or static on stations, even when interference is man-made. National sample asked: "Do you ever hear any kind of static or interference on the AM station or stations you listen to?" Yes (60.4%) No (38.4%). When respondents were specifically asked what actions they took, not one complained to FCC. Only 3.4% said they ever contact the station involved. Among actions respondents do take: Fine tune station (76.5%); keep listening (73%); switch stations (60.8%); turn radio off (37.2%).

NAB Radio Board Chairman Bev Brown, KGAS, Carthage, TX, said "clearly the FCC is not basing its actions on reliable information where it concludes that there is no static or interference problems solely because it receives so few complaints. This survey documents that there is a real interference problem, even if the FCC has not recognized it." Brown said it's good news that nearly 75% of AM listeners who experience interference keep listening to the affected stations. But he said the public has no concept of how to complain to the FCC. "The point is, the FCC must establish standards to prevent interference from occurring, rather than await degradation of broadcasting that is suddenly recognized by emerging complaints."

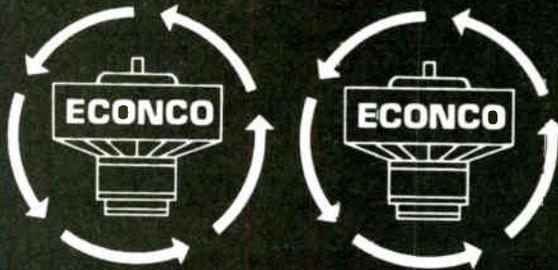
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## FCC to Review Cross-Interests Policy

FCC Thursday started review of cross-interest policy which prohibits individuals from having meaningful cross-interests (such as broadcaster owning one station in a market and being GM at another in same market). NAB, as part of its AM Improvement Comments (Aug. '86), questioned usefulness of policy and recommended it be modified, if not eliminated. Cross-interest policy--usually handled on ad hoc basis--is 35 years old. NAB will file FCC Comments once FCC deadline has been established.

In other FCC action Thursday, Commission denied petition for reconsideration of its recent 'underbrush' proceeding which eliminated FCC policies on fraudulent billing, network clipping and combination ad rates.

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## The Bottom Line

*This is the first of a series of articles dealing with subjects not directly connected to engineering. Although sound engineering practice is one of the most important influences on the profitability of a radio station, basic management, operations and sales bear heavily on expenses and revenues which eventually determine "The Bottom Line".*

If you are a full-time engineer for a radio or television station, this article will probably be of no interest to you as it is not going to help you solve problems or plan systems. But if you are in management or you wear the many hats of a summer radio operation possibly overlapping managing, sales and engineering, here is a plan to make play-by-play sports broadcasting profitable without taking income away from regular spot sales.

Ten years ago when I was the General Manager, Chief Engineer and Sales Manager for a station in the Green Bay ADI, we were looking for a simple way to make coverage of local high school sports pay off without sacrificing other station

revenues. After attending a sales seminar in Minneapolis/St. Paul, I put together the Northeastern Wisconsin Sportsboosters Association... a method to sponsor sports broadcasts in the same way that newspapers use signature ads to sponsor their annual Football Kick-Off Section each fall.

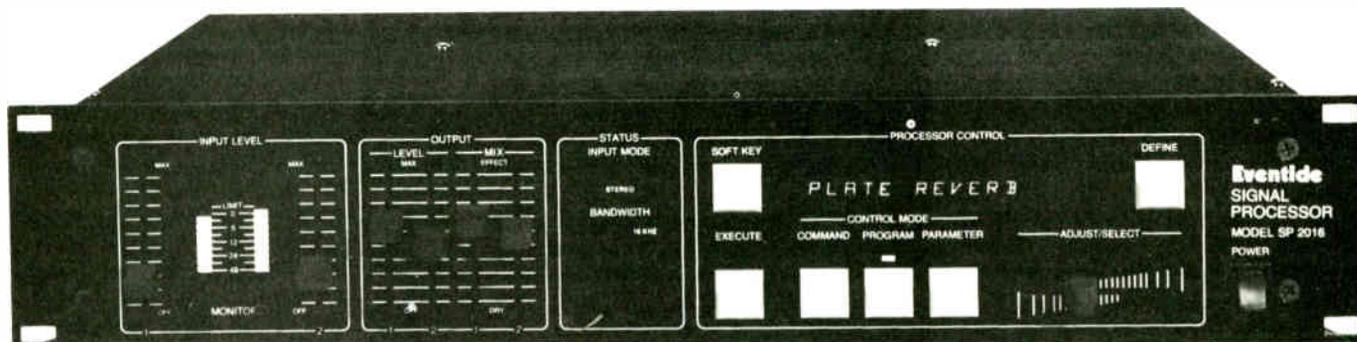
Instead of selling :15, :30 or :60 ads to sponsors at a premium cost which usually dries-up ad money for regular cost-effective advertising on your station, your sales staff sells Sportsbooster Memberships to every sized account in your area from very large to very, very small. Each membership has a monthly membership fee and runs for a twelve-month period and is non-cancellable during its term. Set the membership fee based on the size of your market... \$10 to \$15 per month for a small market, \$20 to \$25 for a medium market, etc.

Each membership entitles the Sportsbooster to have a name, location and product mention on every game the station does throughout the year. In addition each Sportsbooster is entitled to a shorter "name-and-location" or "name-and-product" mention every other day

outside of sporting events during the regular broadcast day. An account can buy more than one membership and often do, but it is a good idea to limit it to 3 or 4 maximum or else you risk domination by one of two sponsors who think this is 'cheap advertising!' If account takes two memberships, for example, he would get two name, location and product mentions in each game and one name-and-location message each day of the year.

As far as copy is concerned, each account is entitled to one copy change per year, but most will not even take advantage of it. This solves that rush for a new copy before each week's game. Since ads used on the game and the ads used during the regular broadcast day are different, two different sets of carts are used. During the game itself, the play-by-play announcer always leads into the Sportsbooster commercial the same way every time with the score last. Example: With 5:12 remaining in the first-quarter of action, Central 16, West 12." The studio operator uses the score as the cue and hits the next Sportsbooster cart which is :30 long and begins with, "The Northeastern Wisconsin Sportsboosters Associa-

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tion is proud to support high school athletics in our area. Members include..." Then seven sponsor mentions, 18 to 20 words each, are run. Two carts can be aired back-to-back if operator cues past the carted intro above on the second cart. If you have 105 memberships for example, they would go on 15 carts that would run during every game you air.

#### COPY

Sportsbooster spots off the game would be shorter mentions of 10 to 12 words each allowing 10 sponsors per :30 cart CM and each cart would be run every other day. If a member bought two memberships, he would show up twice on both series of carts...three memberships--three times, and so on. Here are the actual formats used for the two sets of cartridges.

For use during game--:30 SPOT:

"The \_\_\_\_\_ Sportsbooster Association is proud to support high school athletics in our area. Members include: \_\_\_\_\_"

(List 7 names, location and product mentions)

For use outside of game--:30 SPOT:

"All the exciting high school sports

action heard on (call letters) is brought to you by the \_\_\_\_\_ Sportsbooster Association. Members include: \_\_\_\_\_

(List 10 name-and-location or name-and-product mentions)

#### LOGGING SPOTS

Logging Sportsbooster spots is no special problem either. You assign each of the carts a number, type a list of which sponsors are on each numbered-cart, and simply attach a copy of the master list to each daily log. Presto! Your logging is complete and LEGAL. Billboards at the beginning and end of games say, "Brought to you by the \_\_\_\_\_ Sportsbooster Association."

#### NAMING YOUR ASSOCIATION

Any kind of a name can be used such as the Fox Valley Sportsbooster Association, or the Central Illinois Sportsbooster Association, or the Oshkosh Sportsbooster Association, or even the WXYZ Sportsbooster Assn. However, if you use your call letters, you lose the effect of seeming to be non-commercial or quasi-benevolent organization interested in area youth.

#### MEMBERSHIP CERTIFICATES

When we started ours an WAUN, we brought in former Milwaukee Buck All-Pro NBA Guard Oscar Robertson to be the figurehead "Chairman" of the Sportsbooster Association, and we handed out a 9" by 12" certificate of membership with his signature on it to each member in frames to be hung on their office wall. In fact, we prepared them ahead of time to take with us when we called on the customer and used it to help close the sale!

The certificate read as follows:

NORTHEASTERN WISCONSIN  
SPORTSBOOSTER  
ASSOCIATION  
1979-1980

This is to certify that the below named is a member in good standing in the Northeastern Wisconsin Sportsbooster Association.

This Association is dedicated to the encouragement of young people to engage in sports activities of all kinds towards a betterment of character and body.

Oscar Robertson, Chairman \_\_\_\_\_ Date \_\_\_\_\_

(cont. to pg. 10)

**SUZANNE CIANI, CIANI MUSICA—Electronic Music Producer and Composer**

"It's invaluable to me as both a reverb and a delay. It is absolutely amazing and I'm totally in love with it."

**KEN NORDINE JR, THE KEN NORDINE GROOP—Legendary Commercial Producer**

"The 2016 is awesome...the potential is unlimited. It sounds great. We use it more than anything else in the studio except possibly our Eventide H949 Harmonizer."

**JACK DOUGLAS, INDEPENDENT RECORD PRODUCER—Produced Double Fantasy  
And Many Other Superhits**

"The SP2016 has created a whole new world of ambient sound. It's about as impressive as a 1928 viewing of Star Wars."

## The Bottom Line

(cont. from pg. 9)

### BOOSTER CONTRACT

We signed up the Sportsboosters in the following contract:

### SPORTSBOOSTER ASSOCIATION AGREEMENT

The (*name*) Sportsbooster Assn. hereinafter referred to as the "Association", hereby extends membership to

hereinafter referred to as "Member", for a monthly fee of \$\_\_\_\_\_.

This agreement is non-cancellable and runs for one-year from date of signing.

Member in good standing will be entitled to one (1) name, location and product mention during each and every high school sports play-by-play broadcast aired on (*station*). In addition, member will be entitled to one (1) name-and-location or name-and-product mention (Member's choice) every other day throughout the year during the regular broadcast day.

Member is entitled to one copy change during the membership year. At the end of one year, membership shall be continued at the same monthly rate on a month-to-month basis and can be cancelled by either the Association or Member upon thirty-day written notice.

We, the undersigned, agree to the

terms of this membership.

Member signature

Business

Address

City, State, Zip

Accepted for Association

Signature, Title (not necessarily chairman)

By the way, we found that a number of sponsors wanted to place regular :30 commercials on some or all the games and we also found that we could still do this at a premium sports rate we used before... and still run the Sportsbooster carts!

### POTENTIAL

To figure out the potential of untapped dollars in your market that a Sportsbooster Association approach can uncover, do a little research using your local telephone book or books. Count the number of manufacturing plants, labor unions, non-charitable associations, fraternal organizations and clubs, taverns and restaurants. Multiply this number by \$10 or \$15 each. It will be quite a figure. Then add to those potential members possibly hundreds of mom's and pop's businesses out there who

have never been on the air before, but could afford \$10 per month for a Sportsbooster membership. In analyzing Manitowoc, Wisconsin a couple years ago, (population 35,000), we came up with 576 organizations, taverns and restaurants which at only \$10 per month would be a potential \$5,760 per month!

### KICK-OFF

You may want to kick-off your program by having a breakfast meeting with all the coaches and principals in the area to unveil the plan and turn them into promoters of your new Sportsbooster Association. It would be a fairly small investment for what could be a large return. If your wondering how taverns could be involved in sponsoring high school sports, remember that the Sportsboosters Association is the actual sponsor. Just don't feature any alcohol or tobacco in your copy and try to stay away from using the word "bar" in the ads. Most taverns serve sandwiches, so always feature them as a supper club if you can.

Well, there is the idea. I hope you can use it in some form or another and I hope it works as well for you as it did for us on three different stations! If you have any questions, feel free to call me on our tollfree numbers: Out of WI 800-558-0222 or WI 800-445-0222. Good Luck!

# The Studio Timer.

The TM-1 is the versatile studio broadcast timer.

Five bright, 5/8" high LED's display time up to 9:59:59. Front panel push-buttons allow operator control of all timer functions.

Rear panel, barrier strip connectors allow complete remote control plus provide six machine reset functions.



Make any production or air studio more productive with the TM-1 studio timer from Radio Systems.

### Specifications:

**Displays:** Five, seven segment, 5/8" high LED's

**Time base:** Line

**Rate:** One second increments

**Count:** Up-time

Contact your favorite dealer or call...

800-445-0222

OUT-OF-STATE  
800-558-0222

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## FCC Seeking Class III Daytimer Nighttime Operations

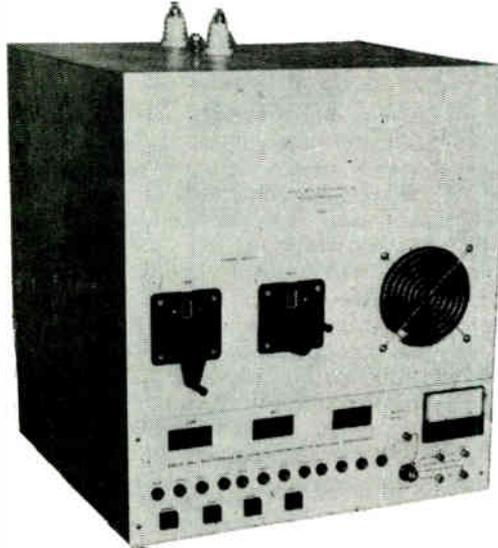
Following Petition from NAB and Association for Broadcast Engineering Standards and resolution the previous week from NAB Daytime Broadcasters Radio Committee, FCC Wednesday proposed granting nighttime authority to Class II daytimers. NAB/ABES Petition asked that Class III daytimers be allowed to operate throughout the night at the "second hour post-sunset" power levels already assigned most Class III daytimers by FCC. Commission's new preceeding also would seek Comments on whether certain daytimers operating on domestic clear channels should be granted nighttime authority, though at reduced power, to meet current interference protection standards.

FCC said proposal is designed to benefit listeners "especially in rural areas where a daytime-only station provides the only local broadcast service. It would also enhance the ability of daytime-only stations to compete more effectively in the marketplace." FCC also proposed permanently discontinuing licensing of new daytimers in order to make most efficient use of limited resources remaining for new and improved AM service.

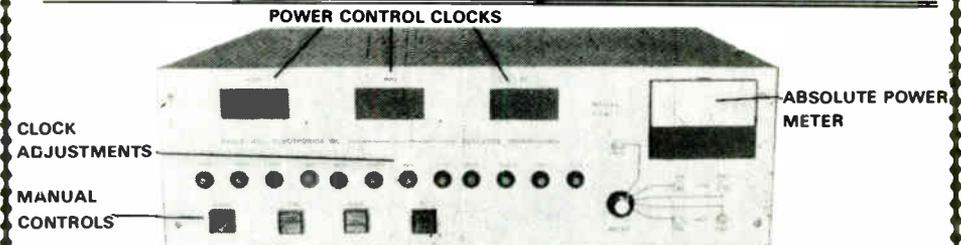
## FCC Call Letter Proposal Widely Opposed

NAB, broadcasters--including local stations and three major commercial networks, Gannett, and Group W--and Arbitron universally opposed FCC's recent proposal to further deregulate broadcast call letter rules. FCC Comment Reply deadline was last Monday, May 4. FCC, on its own motion, had proposed elimination of W/East and K/West geographic restrictions and to permit stations owned by different parties to share identical call signs, even in same market with consent. (For example, AM and FM stations not jointly owned could hold identical calls.) NAB submitted April 17 Comments to FCC saying proposal would lead to widespread confusion and allow stations to trade on goodwill of other stations (NAB TODAY, April 20). Most common sentiment from proposal critics was, "If it ain't broke, don't fix it." In wake of widespread opposition to FCC proposal, Commission could be less inclined to pursue issue.

# Eagle Hill PSA Adaptor



- Normal Transmitter Readings  
- No Internal Changes Needed
- Normal Monitor Readings Plus FCC Required Readings for Absolute Power
- Operate With Authorized Power As Low As One Watt
- FCC Authorized And Field Proven For Over A Year
- Adds Up To 150 Hours "Prime" Time Each Year



- |              |  |
|--------------|--|
| <b>PSA-1</b> | Contains control unit and power divider. Capable of three-level (day-psr-pss) power control with completely automatic clock operation for Pre-sunrise/ Post-sunset powers to 1000 watts. Clocks are adjusted monthly for local Sunrise-Sunset times. Local and remote control can override clocks at any time without losing clock settings. Clocks can be disabled locally without losing remote/local control. Clock and current operating mode is not lost in event of power failure ..... <b>\$3,995</b> |
| <b>PSA-2</b> | Contains control unit and power divider. Same as PSA-1 except no clock operation, controls are set up to work manually or through remote control with no additional relays needed ..... <b>\$2,995</b>   |
| <b>PSA-3</b> | Contains power divider only. Single manual cutback to power levels less than available on transmitter. Can be set up to work through remote control with addition of latching relays. Includes RF Detector for sampling power output. Requires local manual control and metering panel. <b>\$1,695</b>   |
| <b>PSA-4</b> | Contains power divider only. Same as PSA-3 except two power cutback levels ..... <b>\$1,945</b>  |
| <b>PSA-5</b> | Contains control and power dividers. For stations with power of 2500/ 5000 watts. Includes PSA-1 with additional load type power divider with control. Not needed if transmitter cuts back to 1000 watts or less ..... <b>\$4,495</b>  |

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**800-445-0222**

# The Roaring Twenties

By Bill Bragg

Lots of progress in the field of communications was made during the 1920's. Lots of valuable lessons were learned too. First, the valuable lessons.

In 1926, a Hillside, NJ, radio fan was not able to erect an antenna for his receiver, so he decided to use a set of nearby railroad tracks. The reception was great, but each time the set was turned on it caused the alarm bells to sound at the the railroad crossings. The system was not in use long, we are told. Photographers who used flash powder learned to be careful when working around broadcast stations. The radiated energy often times caused the powder to explode. Mouse traps became necessary equipment in broadcast stations in the 1920's too. A mouse in Sheffield, England stopped a live program when he entered a microphone and began chewing on the coil, and over in Daventry, England another mouse got stuck between the main condenser plates of the transmitter. The mouse was reportedly electrocuted, and the station was off the air for 12 minutes.

A Pennsylvania telegraph operator mystified radio experts, when he reported receiving radio programs over the telephone. The experts soon learned not to believe everything they heard, after the operator admitted to secretly connecting a receiver to the phone lines. And from our "believe it or not" department, a 50 watt transmitter was installed in a train that was a half mile long. A "trolley-like" device was attached to each end of the train in such a way that it rode the powerlines, which ran parallel to the tracks. Wave-lengths of 100 to 140 meters were used, and the engineer and conductor were able to communicate with either voice or code. We don't know how long the system was in use, but we are told that voice transmissions were quite noisy when the train was in motion.

As far as progress is concerned; the first football game was broadcast in 1921, and later the same year, the first World Series was broadcast. A transmitter was installed for the first time in a automobile on May 6th, 1922, and the call letters were 2CNJ. And finally, the off-track crooks and swindlers had to change their ways, when a Maryland station began broadcasting horseracing "tips" for the first time in 1923.

*Editor's note: Bill Bragg is Founder/ Director of THE NATIONAL*

*BROADCAST MUSEUM, INC., a non-profit tax-exempt organization. The Museum will re-open in early 1986, and is not accepting donations of cash and broadcast related artifacts. For more information, please write or call THE NATIONAL BROADCAST MUSEUM, 2001 Plymouth Rock, Richardson, TX 75081, (214) 556-1234.*

## AM Broadcasters Enthusiastic About NRSC Standard

AM broadcasters throughout the country began receiving special NAB packet of information last week on how to implement NRSC voluntary standard to technically enhance station audio quality (NAB TODAY, May 4). Randy Davis, new owner of WLAQ-- a 24-hr. 1,000 watt station in Rome, GA--said he's already instructed his chief engineer to order modification kit for WLAQ's main audio processor. "Anything that makes us sound better is good news for AM broadcasters," Davis said.

The veteran broadcaster, who's worked at his station for 14 years and managed it for 8, said he runs lots of sports play-by-play, mainly at night, and is second in Rome market (4 AMs, 2 FM's) with country music format, with an FM no. 1. "But we're in close proximity to the Atlanta market and our listeners are able to pull in those stations if they want to. We have no interference problems at 1410 on the dial, although I understand the new standard will alleviate interference for others, and help the industry remain competitive. I think all AM broadcasters would grab on to this new technology."

Davis plans to implement voluntary standard as soon as possible and promote new quality on-air and through other promotional means. NRSC-capable receivers should be on market late next fall; car manufacturers should begin equipping many models with NRSC-enhanced radios by mid-1988. Next improvement Davis plans after NRSC is up and going? Am stereo, of course.

## AM PROTECTOR - ENHANCER

**\$469<sup>00</sup>**

**NEW**



### Features

- Meets NRSC recommendations
- Can be used with existing station's limiter
- Front panel, switchable audio pre-emphasis circuit  
Built in 10 khz filter with attenuation consistent
- with NRSC specs
- 10 dbm head room
- Audio distortion less than 0.1%
- Switchable monitor de-emphasis circuit



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# NEW!!

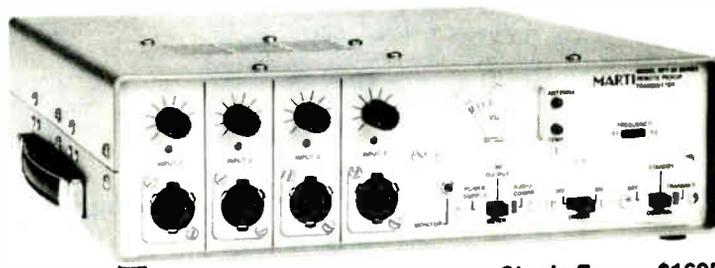
# MARTI

MODEL RPT-30

## REMOTE PICKUP BROADCAST TRANSMITTER

### RPT-30 FEATURES

- ★ 20% more output power, 52% smaller, 40% lighter.
- ★ Subaudible encoder.
- ★ FM compressor-limiter.
- ★ Illuminated VU meter.
- ★ Dual-frequency capability.
- ★ Four balanced microphone mixing inputs, one switchable to balanced line level.
- ★ Flashing LEDs indicate antenna VSWR problems and over-temperature conditions.
- ★ FCC approved.
- ★ Continuous duty-broadcast quality.



Single Freq. \$1695  
Dual Freq. \$1725

### SPECIFICATIONS

- Frequency Range and Maximum Power Output** ..... 140-180 MHz - 45 Watts  
 200-260 MHz - 40 Watts  
 280-340 MHz - 35 Watts  
 400-480 MHz - 30 Watts
- RF Connector** ..... SO-239
- Operating Temp. Range** ..... -10° C to +45° C
- Modulation (Specify)** ..... 10F3 (± 1.5 KHz Deviation)  
 25F3 (± 4 KHz Deviation)  
 50F3 (± 8 KHz Deviation)
- Channels (Frequencies)** ..... Two frequencies selected by switch. Freq. separation 1.1% max.
- Frequency Stability** ..... Mobile .0005% Base .00025% (above 400 MHz)
- Spurious Emission** ..... Meets FCC Requirements
- Audio Inputs** ..... Four Balanced microphone (150 ohm) inputs (XLR3) with mixing controls. One input switchable to balanced line level at mic. No 4 input and "D" connector on rear.
- Modulation Control** ..... Broadcast quality Compressor/Limiter built in.
- Encoding** ..... Subaudible tone (27 Hz.) encoder built in.
- Metering/Indicators** ..... Illuminated meter indicates audio compression, relative RF output, relative supply voltage. Flashing LED's indicate "Antenna" (VSWR) and high "temp."
- Controls** ..... (4) input level, meter sw., encode sw., power sw., frequency sw., monitor jack.
- Power Requirements** ..... 110-125 V. 50-60 Hz. (220 V. 50 Hz. available on special order) DC operation on 11-13.5 V negative ground.
- Accessory Connector** ..... 9 pin "D" connector for DC power, remote control, encode, line level input.
- Weight** ..... 12.4 lbs. net, 16 lbs. shipping wt.
- Dimensions** ..... 11.5 in. wide x 3.5 in. high x 13.3 in. deep

**5% Discount until June 30th on ALL Marti Equipment Plus 4% Discount for cash-with-order.**

The MODEL RPT-30 is a light, compact, but powerful transmitter designed for remote pickup broadcast service. It will operate in **continuous duty** while providing **broadcast quality** audio when used with the MARTI CR-10 or AR-10 receivers. Operating from internal regulated power supply or external 11 to 13.5V. DC (negative ground) power, the RPT-30 delivers high performance in mobile, portable or fixed station applications. The RPT-30 is designed to operate with other Marti equipment to function in mobile repeaters, fixed automatic repeaters, base stations and transmitter to studio links (TSL). Four balanced inputs with mixing are provided. Input number four may be switched to balanced line level if desired. Other advanced features include a high performance FM compressor/limiter, subaudible encoder, dual frequency operation, illuminated meter, warning lights for antenna VSWR and temperature.

### RPT-30 ACCESSORIES

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Part Number	Description	Price
Crystal	Factory installed with original order - second frequency of DF	\$30.00
MCD-70C	Microphone with 3-pin XLR-3 plug, 14' cord	\$80.00
MCD-70D	Microphone with 3-pin XLR-3 plug, 9' coil cord	\$80.00
TR-3	Antenna relay for RPT 30 for 2-way operation	\$35.00
700-251	Mobile mounting kit for RPT-30, 4 mtg. fasteners with DC power plug, fuse & cable	\$48.60
586-073	12' microphone cable for push-to-talk control of 700-251 mobile kit (requires MCD-70B mic.)	\$18.00
586-074	DC power plug, fuse, cable for RPT-30	\$19.50
585-037-1	Fixed repeat cable, CR-10 to RPT-30	\$27.50
585-037-2	Mobile repeat cable, AR-10 to RPT-30	\$27.50
700-253	Rack mounting kit for RPT-30	\$19.50

System Specifications				
Type Emission	Receiver Model No.	System Freq. Response ±1.5 DB	Dist. %	S/N Ratio DB*
25F3	AR-10/150, CR-10/150	50-7,500	2	50
50F3	AR-10/450, CR-10/450	50-10,500	2	53
25F3	AR-10/450, CR-10/450	50-7,500	2	50
10F3	AR-10/450, CR-10/450	50-3,000	2	40
50F3	AR-10/450, CR-10/450	50-15,000	2	55

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IN WIS. 800-445-0222

OUT OF STATE 800-558-0222

## Otari Corporation Introduces New Product Line — Otaritech

Belmont, CA, May 1987--Otari Corporation announced today the creation of a new product line that will bear the OTARITECH brand name. This new line will target the broadcast and recording markets.

John Carey, Marketing Director of Otari Corporation, stated "With the addition of OTARITECH, we now have the ability to bring products more rapidly to the market. We have added the flexibility to sell products that are developed independent of Otari, but represent the same quality as Otari's products."

The first of the OTARITECH line, available in August, is the TC-50 Center Channel Time-Code/FM Processor. The manufacturer claims that the TC-50 provides an inexpensive method for center-track time-code to be added to an audio tape machine. It will retrofit Otari MX-5050 2-tracks, such as the B, BII, MKII-2 or any other 4 head position tape recorders. The TC-50 allows the use of 1/4" tape 2-track machines to be synchronized to a video tape or film machine with stereo audio, eliminating the need to purchase a 1/2", 4-track machine which was the standard for this application previously.

Three tape speeds are time-compensated for coincident time-code and audio track recording and reproduction. Front panel LEDs indicate time-code level at the input and output, plus FM pilot signal demodulated output compatible with Nagrasync (tm) is also included.

The TC-50 weighs less than five pounds, and measures 1-3/4(H) x 17(W) x 7(D) inches. Installation instructions and supplies are provided with each TC-50.

\*\*\*\*\*

## ATSC Plans HDTV Broadcast Tests

Washington DC, April 15--The Advanced Television Systems Committee (ATSC) has announced plans for a series of tests in the UHF and SHF bands of terrestrial systems capable of delivering high definition television to the consumer. ATSC has established a technical specialist group to study spectrum availability, conduct field tests and recommend

suitable systems for delivering HDTV signals to the consumer via terrestrial broadcast, cable and satellite.

The tests, scheduled to begin this fall, will study propagation characteristics such as reflection, shadowing, and rain attenuation in the selected bands and how they can affect signals carrying wideband video and audio information. Test sites will include a variety of urban, suburban, and rural environments. The group is asking HDTV researchers to provide information about the signal characteristics of their proposed systems as an aid to designing these tests.

With predictions that HDTV products will reach the U.S. consumer market in three to five years, the television industry is concerned that standards must be developed which will serve the needs of all media and, ultimately, the public.

ATSC is an industry-wide committee which includes U.S. terrestrial and satellite broadcasters, cable television, program producers and distributors, and manufacturers of both professional and consumer equipment. Anyone interested in participating in this work should contact the Advanced Television Systems Committee at 1771 N. Street, NW, Washington, DC, 20036. Telephone 202-429-5345.

\*\*\*\*\*

## Stations Nationwide Adopting NRSC Standard

The following Am stations have already converted to the new voluntary NRSC Standard: KBRT, Los Angeles; KSRO, Santa Rosa, CA; KVEN, Ventura, CA; WNNR, Hamden/New Haven, CT; WSB, Atlanta; WGIA, Blackshear, GA; WVLD, Vladosta, GA; WROK, Rockford, IL; WJDY, Salisbury, MD; WARA, Attleboro, MA; WDSM, Duluth, MN; KUGT, Jackson, MO; WMCA, NYC; WCBQ, Oxford, NC; KPBC, Dallas/Ft. Worth; WGNS, Murfreesboro, TN; KLOG, Kelso, WA; WRDB, Reedsburg, WI... For more information, call NRSC Hotline: (800) NAB-NRSC.

# TALKBACK

MURPHYSBORO, IL— There is nothing technically wrong with AM radio that cannot be solved by better receivers, mono or stereo, and better talent.

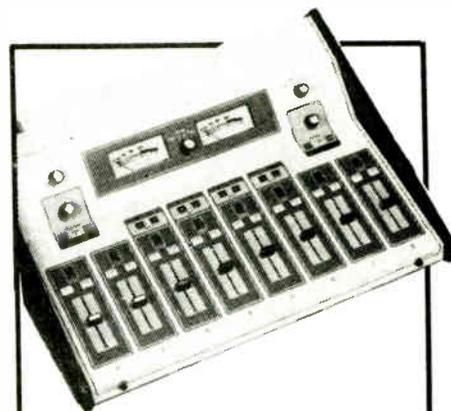
VINCENNES, IN— Series on remote control interface (and like) are great. More!!

KLAMATH FALLS, OR— Just read the January issue and enjoyed it. Send more!

LINCOLN, NE — Always look forward to "Persons" anecdotes.

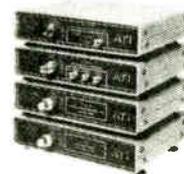
GRAND ISLAND, NE — Thanks again for your fine publication.

CLYDE, OH — Enjoy reading and using the help from all of the articles, especially on Copper strap at transmitter site, now we'll see how well it's going to work if more needs to be done. Thanks.



## Vanguard Series™ Broadcast Audio Consoles

Audio Processors  
Modular  
Distribution  
Amplifiers



Dual Mike,  
Line, & Power  
Amplifiers  
Rack Mounting

# Alabama to Perform at Radio '87 Convention

Washington, May 11--Two-time Grammy award winner Alabama will entertain at the National Association of Broadcasters' Radio '87 convention's closing dinner September 12. The concert will be sponsored by Broadcast Music Inc. The Management, Programming, Sales and Engineering Convention will be held September 9-12 at the convention center, Anaheim, CA.

In addition to the group's Grammys for their songs "Mountain Music" and "The Closer You Get," Alabama was the first band to win the Country Music Association's Entertainer of the Year award and they won it for three consecutive years.

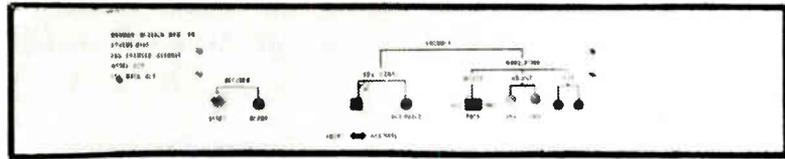
In 1980 the four young men were playing for tips at a beachside bar in Myrtle Beach, SC. Today they have matured into what *People* magazine's Reader's Poll called "America's Favorite Group."

Their albums and singles sell in the millions and their recordings consistently reach the top of the charts.

Among their many recognitions are the Academy of Country Music's Vocal Group of the Year, Cash Box's

Vocal Group of the Year, Billboard's Top Album Artists, and Radio & Records' Performers of the Year.

## EBS EQUIPMENT



	Price
Model CEB Encoder-Decoder .....	\$475
Model CE Encoder Only .....	\$330
Model CE with Stereo Option .....	\$360
Model CD Decoder Only (REQUIRED FOR LPTV) .....	\$280
Receiver can be supplied to drive Decoder .....	\$100
<ul style="list-style-type: none"> <li>• Encoder FCC Type Accepted • Decoder FCC Certified •</li> <li>• Exceeds FCC Specifications •</li> </ul>	

All interconnections to the EBS equipment are made through a barrier terminal block. No special connectors necessary. In stock—available for immediate delivery.

**GORMAN REDLICH MFG. CO.**

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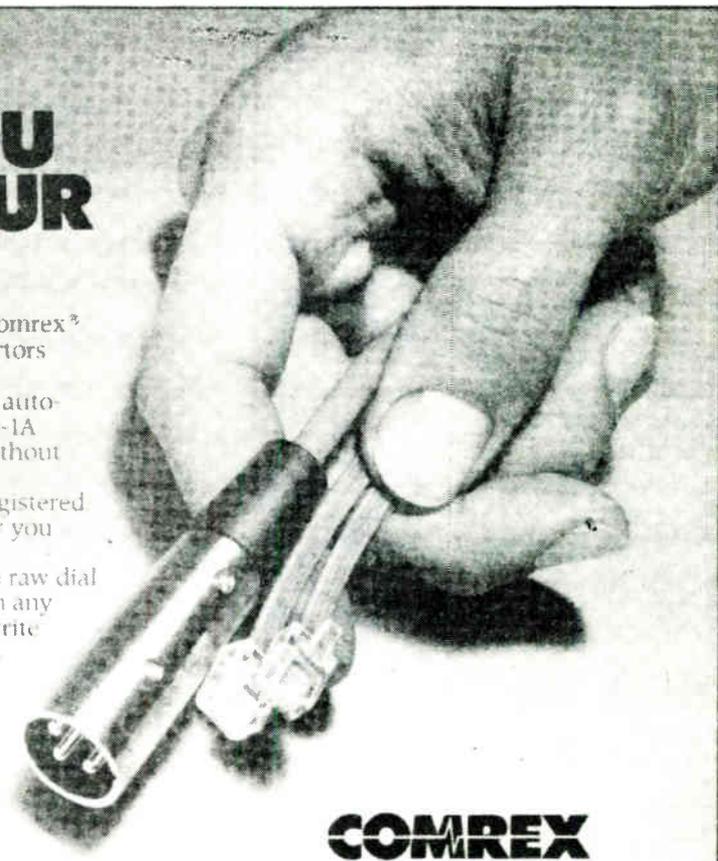
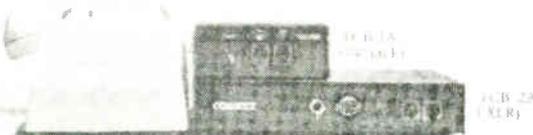
## HERE'S ALL YOU NEED TO USE OUR COUPLERS

It's easy to put your audio on the phone with Comrex<sup>®</sup> broadcast couplers. Just plug in the standard connectors and you're ready to go.

Two models are available. The Comrex TCB-2A auto-answer coupler makes "listen lines" a snap. The TCB-1A manual coupler lets you send or receive program without interfering with normal phone use.

Built specifically for broadcast, both are FCC registered. And both provide clean audio and the dependability you expect from Comrex.

Comrex also makes frequency extenders to turn raw dial lines into broadcast quality. For more information on any Comrex product, call toll-free 1-800-237-1776. Or write Comrex Corporation, 65 Nonset Path, Acton, MA 01720. Tel. (617) 263-1800 TWX 710-347-1049.



**COMREX**

# 10 years from now, it'll still be the standard.

The undisputed standard for broadcast cassette decks has always been the Tascam 122B.

But that standard has just been surpassed.

Presenting the 3-head Tascam 122MKII. Its leadership is founded upon features such as Tascam's Cobalt Amorphous tape head technology. Plus a choice of built-in Dolby systems: not just B and C, but also HX-Pro, for virtually perfect high-end frequency response.

More than any comparable deck, it maintains constant tape speed and tension, thanks to a tape handling system that includes Tascam's Hysteresis Tension Servo Control.

And when it comes to handling, the 122MKII is the complete professional tool, with cue and review functions (manual cue), balanced SLR +4dBm inputs and outputs, and rack-mountability.

Call or write for more information about the 122MKII. Get it now, and use it for decades.

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Dolby HX-Pro, Dolby B, and Dolby C are trademarks of Dolby Laboratories Licensing Corp.

## TASCAM



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