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COMMON POINT®

A MONTHLY NEWSLETTER FOR BROADCASTERS

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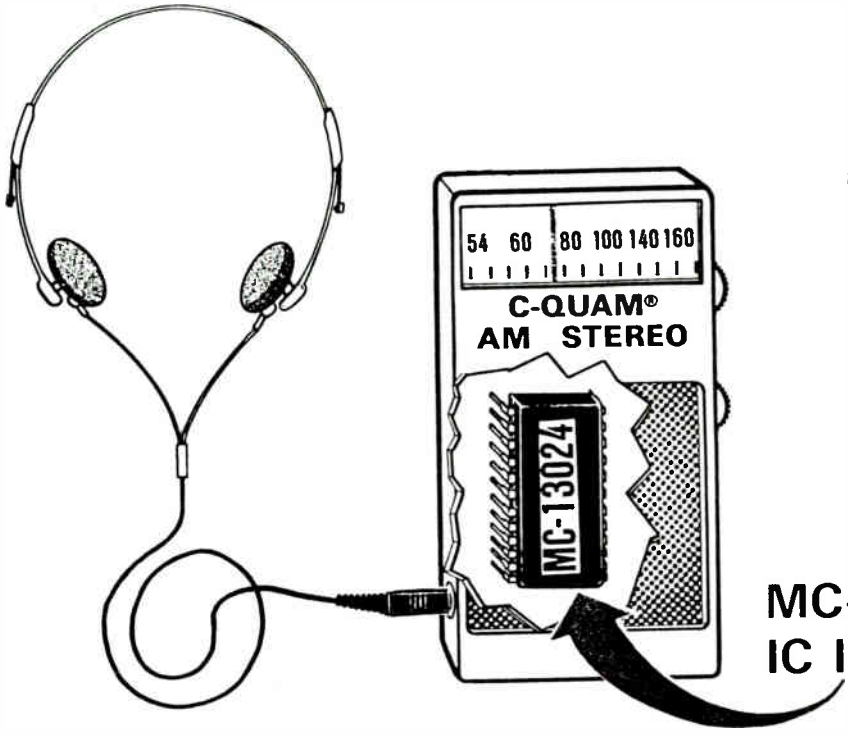


COMING SOON!

MC-13024 IC INSIDE!

The MC-13024 Personal Portable C-Quam IC is on Target

In late September, it was confirmed that a new integrated circuit was born at Motorola's semiconductor facility in Phoenix, Arizona. The new MC-13024 is destined to play a major role in expanding the consumer awareness of AM stereo. The reason is that this IC can be used by radio manufacturers to produce a very promotable personal protable ("Walkman" type) C-QUAM AM stereo radio. Amazingly, this new IC provides most all of the essential active circuitry needed to provide a complete personal portable AM stereo radio!!

The IC will operate on two small batteries and is designed for very low current consumption, as low as 5 mA. It incorporates all the functions of an AM stereo tuner including RF, IF, C-QUAM AM stereo decoding, an audio matrix and the provision to accomodate NRSC de-emphasis. It is expected to be easy for the designer to create a product from the IC because it only needs an antenna, an audio amphifier, some resistors, capacitors, coils, battery and headphones and...viola!...C-QUAM AM stereo! Motorola expects multi-millions of these radios to be produced in many countries of the world. This translates into many types of receivers, a wide availability, and at a low cost.

Motorola design engineers, Chuck Marik and Larry Ecklund spent years designing and developing the breadboard of this revolutionary new IC. Reducing the breadboard to an actual integrated circuit also required the assistance of many engineers at Motorola's semiconductor sector.

After the first samples of the actual integrated circuit became available, a C-QUAM receiver was constructed and tested at the Motorola modulation laboratory located on the campus of Motorola's headquarters in Schaumburg, Illinois. High quality AM stereo was heard loud and clear on the C-QUAM stations in the Chicago area.

Exhaustive laboratory testing of the IC is being conducted worldwide. Based on the preliminary testing how-

(cont. to pg. 3)

Editor's Notebook

The cover story on this month Common Point should give am radio a shot of adrenelin it is an inexpensive I.C. that will make stereo (am) as much more competive item and will also do a thing or two for NRSC standards as well.

We here at EI Inc. have been filling alot of your orders for Eagle Hill PSA-PSS adaptors. With this gismo you don't have to change transmitters to lower power for night time use, recently granted to many AM stations up to 3 power reductions automatically each day.

Don't forget to make use of Common Point classifieds on the back page, they are free!

Bob Strobel
Editor

*****

NAB Advisory...Register Use of RF Equipment for Political Conventions

Engineers...Planning on remote set-ups at this summer's political conventions? Take note: If you will be using wireless mics, RPU, ICR, EGN or microwave, you must coordinate their usage with '88 Politcal Convention RF Coordinating Committee. Frequency application forms and operational guidelines are available from Martin Meany, who chairs RF committee, c/o NBC Engineering, Rm. 1600-W, 30 Rockefeller Ctr., New York, NY 10112, (212) 664, 3354. You Must register with committee in order to operate broadcast auxiliary equipment. And, sooner the better.

*****

COMMON POINT READINGS

Persons 6
Metz 14

(cont'd from page 1)

ever, it looks like receiver' manufacturers can expect delivery of the first samples together with applications notes and receiver design recommendations by the end of 1987.

Highly promotable, battery-operated portable C-QUAM AM stereo receivers have been requested by many broadcasters as one way to effectively improve consumer awareness of AM stereo. These receivers will provide an opportunity to introduce the younger audience to the new AM radio, with high quality AM stereo! Just like any other currently popular personal portable product, these C-QUAM units will be used while jogging, at the beach, while riding a bike or virtually anywhere that AM radio can be received. It fits today's lifestyles.

Not only does a personal portable C-QUAM AM stereo receiver fit the on-the-move lifestyle of people in the U.S., but it also fits an extremely large market in underdeveloped countries. In many lesser developed and highly populated countries of the world, AM radio continues to be the most widely used method of mass communications. Today, hundreds of millions of people rely on the wide coverage provided by high powered medium frequency (AM) radio. Most of these people do not own automobiles and get their information via battery operated radios. Because it may be many years before FM broadcasting will reach these people, the most cost effective means of updating the broadcasting service in these countries is to install stereo on the present AM stations. With the near future availability of a variety of portable C-QUAM AM stereo receivers, all can economically enjoy the advantages of stereo reception.

*****

Major Industry Groups Gather for NAB Futures Retreat This Week

NAB Exec Committee, communications industry leaders and NAB senior staff will take part in NAB Futures Retreat in Washington this week (Feb. 9-10). It's part of long-range activities designed to help NAB plan industry strategy for the '90s and beyond. Discussions and presentations will target future scenarios and options for radio, advanced television, satellite communications, fiber optics, cable, VCR, home video, home audio, and other industry issues. Overall theme of retreat is "many Roads Home: The New Electronic Pathways." Participants also include ABC, NBC, INTV, NAPTS, MST, RAB, TvB, TIO and TOC. Luncheon speaker will be media entrepreneur John Parikhal, CEO of Joint Communications Corp., Toronto. He'll speak on "Seven Critical Trends in Radio's Future." Guest speakers also will include: Paul Bortz of Browne, Bortz and Coddington; Donald Jansky of Jansky, Barmat Telecommunications: Patrick White of Bell Communications Research; Irving Kahn of Choice Cable, Inc.; and NAB's Eddie Fritts, John Abel and Rick Ducey. Retreat is part of planned series of NAB ventures over next few years aimed at continually assessing broadcast industry's technological and societal roles in communications breakthroughs.

*****

NAB Says: Wipe Out AM Interference, Suspend New AM Licensing

FCC should adopt new rules which will eliminate AM interference and enhance AM technical quality. Therefore, it should temporarily suspend new AM licensing and major AM change applications -- that's gist of NAB comments last week for FCC's Notice of Inquiry on AM technical assignment criteria. NAB called on Commission to "take swift and responsible action to improve the quality on -- and reduce the interference on-- the AM broadcast band." NAB challenged FCC's premise that providing greater opportunities for both new AMs and existing station expansions is healthy for listening public: "Indeed, it is this long-standing FCC approach that has been the primary cause of the technical and economic demise of the AM band."

NAB's urgent call for a freeze on new and major change applications was reinforced with personal letter from NAB Pres. Eddie Fritts to FCC Chairman Dennis Patrick on day comments were submitted to FCC, Feb. 1: "While we are on the path toward genuine AM improvement, there seems to be no communications policy sense in putting new AM stations on the air, or making changes to existing AM stations, under the same rules and policies that clearly have led to the current problems on the band." Also, as part of FCC's overall approach towards enhanced AM service, NAB urged Commission to incorporate NRSC's transmission standards into new FCC rules.

*****

Tom Brokaw

To Address Convention TV Luncheon

Washington, Jan. 14 -- Tom Brokaw, anchor of "NBC Nightly News with Tom Brokaw," will address the April 10 television luncheon during the National Association of Broadcasters' annual convention April 9-12 at the Las Vegas Convention Center.

As managing editor and anchor on NBC News' early evening newscast, Brokaw is responsible for the editorial content and the presentation. He has been sole anchor since September 5, 1983, having previously shared the desk with Roger Mudd.

Last November he aired an exclusive interview with Soviet General Secretary Mikhail Gorbachev, and in December moderated the first national presidential debates with candidates from both parties.

He played a major role in the network's coverage of the 1976, 1980 and 1984 political seasons, reported in major documentaries and carried out special overseas assignments. In 1976 and '80 he was a member of NBC News' team of floor reporters for both political conventions. In 1984 he anchored all of NBC News' Decision '84 primary coverage, the Democratic and Republican conventions and election night. He also moderated a live debate between Democratic presidential aspirants Walter Mondale, Gary Hart and Jesse Jackson. He was the first network anchor to report live from Beirut while Americans aboard a hijacked TWA flight were held hostage.

From 1973-1976, as NBC News' White House correspondent, Brokaw covered every important White House story and all Watergate developments. Before joining NBC News, he was anchor of the late evening newscast on KNBC, Los Angeles, CA (1966-1973). In 1965, he anchored the late evening news on WSB-TV, Atlanta, GA. After graduating from the University of South Dakota, he began his journalism career in 1962 at KMTV, Omaha, NE.

A member of the board of trustees of his alma mater, Brokaw has received honorary degrees from that university, Syracuse University and Washington University in St. Louis and Hofstra University. He also is a member of the board of trustees of the Norton Simon Museum and is an advisor to The Asia Society.

NAB serves a membership of more than 5,000 radio and 940 television stations, including all the major networks.

*****

Rich Little

To Address Convention Radio Lunch

Washington, Jan. 13. --Comedian/impressionist Rich Little will address the April 11 radio luncheon during the National Association of Broadcasters' annual convention April 9-12 at the Las Vegas Convention Center.

Little has gained international recognition as one of the most diversely gifted and popular performers in the entertainment business. His talents extend beyond his extraordinary comedic impressions. He also is a singer, writer and a skilled actor who has starred in numerous roles. His portrayals of personalities in show business, politics and even some fictional characters, range from President Reagan to Kermit the Frog.

One of the most unusual assignments he has undertaken has been dubbing the voices for stars who, because of illness, sudden emergency or unavailability, are unable to complete their film or TV roles. He has impersonated Tony Curtis, David Niven, Peter Sellers and Stacy Keach. He also has produced a number of taped telephone celebrity answer machine messages called "phonies," and an electronic version of charades for the home video entertainment industry.

In addition to being a concert artist in high demand, Little stars regularly in such entertainment capitals as Las Vegas, Atlantic City, Reno and Lake Tahoe. He also appears frequently with leading symphony orchestras in performances of Prokofiev's symphonic fairy tale, "Peter and the Wolf." In different voices, he explains the instruments of the orchestra as they represent characters in the story.

Born and raised in Ottawa, Canada, he began doing impressions as a school youngster, responding to his teacher's questions in their own voices. Teaming with a friend, he earned his first payment as an impressionist at the age of 17. They won a talent contest on a Canadian TV show and went on to appear on variety programs throughout Canada. Little later went solo, becoming a successful disc jockey and talk-show host in Ottawa.

******

"YOUR ORDER'S ON THE WAY!"

Benefits of Advertising Underscored in New NAB Study

NAB study on economic effects of advertising concludes that advertising is a "subtle, but highly effective adjunct to competition, tending to bring more vigorous rivalry, lower prices, improved products and more informed consumer choices." Study finds that while advertising was once viewed as threat to competition and tool for distorting consumer choices, a new "Advertising as information" school of analysis emphasizes the opposite effects. Study -- conducted for NAB Research & Planning by Prof. John Calfee of College of Business & Management, University of Maryland -- indicates that advertising is being increasingly viewed by government, scholars and others as a force for improved market performance. NAB Research & Planning (202) 429-5380.

*****

How Much Did You Give in PSA Time? Would You Believe $375 Million?

Radio public service airtime was valued in megabucks in '86, latest year reported on by Ad Council. For council PSAs alone, local stations provided $356.5 million in free time; radio nets allocated an additional $18.8 million in airtime. Total, from Ad Council radio PSAs only: $375.3 million.

*****

'87 Sees Radio Revenue Increases; Retailers 'Computing' Radio

Local radio advertising grew 2.2% in October '87 compared with same month in '86, while on year-to-date basis, radio revenues increased just under 6% in '87 over first 10 months of '86. Figures, compiled by Radio Advertising Bureau, are based on 89 markets participating in special composite billing pool. Markets represent about 54% of U.S. population...Also, according to '87 market study by microcomputer industry —more than 53% of nation's computer retailers use radio to generate sales leads, based on '87 market study.

*****

PERSONS' POST SCRIPTS

by Mark Persons

I am sold on Live Assist. By live assist, we mean the use of reel to reeL as a medium for storing and playing music in a radio studio. Today formats are available to satisfy any taste from Boch to rock with a dozen kinds of country in between. I've been sold on live assist since 1976 when I built my first such system.

The advantages of using tape live assit as opposed to records are as follows:

1. Management has tight control over the music format.
2. No more flying turntables, cue burn, record scratches, turntable rumble, or music started at the wrong speed.
3. The announcer does not play his favorite song at the same time each day even if it never made it to the top one hundred.
4. Distributors of music formats usually send updated "Current" reels with new music weekly.
5. No music director is needed at the station along with expensive long distance phone bills to get the music your competition already has.
6. Tape music formats are put together by top programming professionals. Audience ratings of their customer stations prove it.

All this great reel to reel music programming isn't free however. Plan on speeding $200 to $800 per month for the service.

Assume your station has decided to live assist. What hardware is required for the job? The average format calls for four reel to reel tape decks. You'll need two racks to put them in and a device with logic for control. Plan on spending about $9,000 for the hardware.

Let's take a closer look at the controller. We built a number of such units that have proven to be a nearly ideal interface between man and machine. Shown here is the Programmer 3A. It is a fourth generation box with the logic well thought out.

There is a stereo audio level control for each of the four decks. Audio is summed and sent either to a regular input on the studio console or to the program mix bus of the console. Opto-isolators are inserted in the audio path of each deck to turn off the audio when that deck is not running. This avoids summing hum and hiss from each deck raising the noise floor of your audio system. Each level control has a cue detent position that sends audio to the cue bus of the studio console for cueing tapes. There are "Play" lights to indicate which deck is running and "Cue" lights that come on as 25 Hz cue tones are detected at the end of each song on the tapes. A minutes and seconds count-up digital timer has been included. For operator convenience, a "Next Play" memory is built in to remember which tape deck is to be started next. These buttons are located across the bottom front of the Programmer 3A. The "Common Next Play" button is in the center and slightly closer to the operator. It is used to start the selected next play deck.

An operational sequence might go like this: A song is being played on deck number two. It's the second one from the left on the Programmer 3A and its associated "Play" light is on. The announcer checks his music sheet and sees that deck number four should be played next. He touches the far right (number 4) next play button. It lights as does the center "Common Next Play Start" button. The Programmer 3A is now armed and ready. When the song on deck number two is in its last few seconds of playing, a 25Hz burst lights the #2 cue light. The announcer, seeing this, can open his microphone and start talking with confidence that the timing is right and that the music is indeed ending right now. This is especially helpful when the annoucner is playing new music or really old music with an ending that he is unfamiliar with. Getting back to what we are saying, the announcer reads his commercials, the weather, time, temp, and then is ready for more music. He touches the "Common Next Play Start" button and deck #4 starts. The digital timer resets to zero and starts counting up. The announcer's music sheet says he has eighteen seconds to ad lib over the instrumental intro of this song. He does and then stops talking when the timer says 0:18 precisely when the vocal portion of the music starts. The listener hears clean and tight programming. The timer continues to count up telling how much of the song has been played. The announcer checks his music list and touches the "Next Play Button" for the upcoming music deck. The Programmer 3A remembers and stands ready. If the annoucner is busy on the phone or with other matters he can flip a small toggle switch to "Auto". When a 25 Hz cue tone is received from the deck that is playing, it automatically starts the next deck in a perfect sequay identical to that of automation.

An auto-sequence option for the Programmer 3A makes it possible to automatically play all sources in a fixed 1-2-3-4-1-2-3-4 sequence until interrupted by an operator. Some music formats call for just three reel to reel source decks. In that case, the auto-sequence can be wired to do 1-2-3-1-2-3 etc. Some stations put a cart deck in on the fourth input and let the Programmer 3A play a commercial or promo after every third song. A dual-mode auto sequence option allows two different music rotations at the flip of a switch.

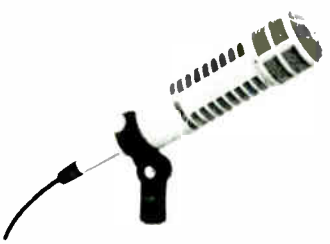
Initial announcer reaction to live assist is usually poor. Air personalities will say "I'm being replaced by a machine...How can I bec creative if I can't play my own music?" However, after a few days of using it they reverse their position and say "It gives me more time to be creative and it's the best thing that ever happened to this station."

(cont. to pg. 10)

YOUR HEADQUARTERS FOR ELECTRO-VOICE PROFESSIONAL MICROPHONES

RE18
Shock-mounted
Variable-D® Cardioid
$204.00

RE20
Variable-D®
Cardioid $360.00

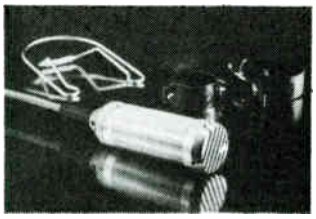


644
SOUND SPOT®
DUEL-Z
DYNAMIC
$188.00

RE15
VARIABLE-D®
SUPER-CARDIOD
$189.00

RE50
Omnidirectional
Noiseless, Hand-held
$108.00

RE55
Omnidirectional $179.00



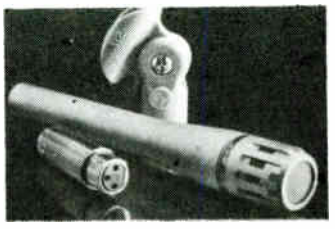
RE85
Noiseless Lavalier
$109.00

635A
Omnidirectional
$74.00

PROFESSIONAL CONDENSER MICROPHONE SYSTEMS

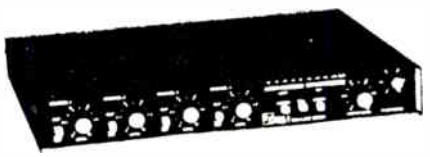
CO15P
Omnidirectional System
$219.00

CS15P
Single-D Cardioid System
$190.00



658L
CARDIOD DYNAMIC
WITH SWITCH
$47.69

PROFISSIONAL
MICROPHONE
MIXER
$374.00



Features
- 4 mic or line inputs
- Phantom power
- Peak Limiter
- AC/DC power
- Headphone amplifier
- 1 khz tone oscillator
- balanced inputs/outputs

10% OFF With 3 Mikes Or More

ELECTRONIC INDUSTRIES INC.

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AM STEREO EXCITERS
Delta
Motorola

ALIGNMENT TAPES
Fidelpac
Nortronics
STL

AMPLIFIERS
Line/Distribution
- ATI
- Audio-Metrics
- Conex
- LPB
- Micro-Trak
- Radio Systems
- Ramko
- Russco
- Shure
- Tellabs

Power Amplifiers
- Bogen
- Crown
- Micro-Trak
- Ramko
- Russco
- Soundcraftsman
- Symetrix
- Urei

ANTENNAS
Annixter-Mark
Bogner
Celwave
ERI
Jampro
LBA
Scala

AUDIO CONSOLES
Arrakis
ATI
Audio Technica
Autogram
Broadcast Electronics
Electro Voice/Tapco
Howe
LPB
Micro-Trak
Radio Systems
Ramko
Russco
Sennheiser
Shafer
Shure
Soundcraft
Tapecaster
Tascam
TOA
Urei

AUDIO PROCESSORS
Audisar
Sescom
Stancor

AUDIO PROCESSORS (Cont.)
Aphex
ATI
Broadcast Electronics
CRL
DBX
Dorrough
Energy-Onix
Eventide
Inovonics
JBL/Urei
LPB
Marti
Modulation Sciences
Orban Optimod
Ramko
Symetrix
Texar
Urei
Valley People

AUDIO TRANSFORMERS
Audisar
Bogen
Electro-Voice
Sescom
Sennheiser
Shure
Stancor

AUTOMATION SYSTEMS
Broadcast Electronics
SMC

C-D PLAYERS
Audio Metrics
Studer-Revox
Technics

CLOCKS & TIMERS
Audio-Metrics
Beaverronics
Broadcast Electronics
ESE
M. W. Persons & Assoc.
Seth-Thomas

EQUIPMENT RACKS
Bud
Hammond
Soundalier

CASSETTE RECORDERS
Sanyo
Sony
Tascam/Tea
Technics
Marantz
Nakamichi

EBS EQUIPMENT
Gorman-Redlich
TFT

FM TRANSLATORS
Robert Jones by Tepco

FM EXCITERS & STEREO GENERATORS
Aphex
Broadcast Electronics
Modulation Sciences
Optimod
TFT

HEADPHONES
AKG
Astrolite
Koss
R-Columbia
Sennheiser
Shure
Telex

JACK PANELS & PATCH CORDS
ADC
Gentner
Switchcraft
Symetrix
Tascam
Trimm

MICROPHONES
AKG
Astatic
Audio Technica
Crown
Electro Voice
Numark
Sennheiser
Shure
Sony
Technics
Turner/Telex

MICROPHONES-WIRELESS
H. M. E.
Nady
Shure
Telex
Vega

MICROPHONE STANDS & ARMS
AKG
Atlas
Atus
Audio-Metrics
Electro Voice
Luxo
Shure

MONITORS
Belar
Delta
Gorman-Redlick
Inovonics
Potomac
TFT

BROADCAST LINE CARD (Cont.)

MONITOR SPEAKERS
ALC
Audisar
Bose
Electro Voice
Fostex
JBL
Proton
Quam
Technics
TOA

RECORDING TAPE
Ampex
Audiopak
Fidelipac
3M

RELAYS & CONTACTORS
Amperite
Midland-Ross
Potter-Brumfield
Sigma
SSAC
Stancor

REMOTE PICKUP EQUIP.
Celwave (Antennas)
GLB (Preselectors)
Marti
Scala (Antennas)

REMOTE CONTROL
Advanced Micro Dynamics
Delta
Gentner
Marti
Potomac
Symetrix
TFT

SCA EQUIPMENT
Anixter-Mark
Broadcast Electronics
CRL
Fairchild
Marti
McMartin
Microdyne
Modulation Sciences
Scientific Atlanta
Wegener

STUDIO FURNITURE
A-Line
Fidelipac
LPB
Micro-Trak
Omni-Mount
PAS
Radio Systems

STUDIO-TRANSMITTER LINK
Marti
Scala (Antennas)
TFT

SURGE PROTECTORS
Dale
Eagle Hill

TAPE CARTRIDGE MACHINES
Audi-Cord
Broadcast Electronics
Dynamax
Key Cart
Otari
Ramko
Tapecaster

TAPE ERASERS & ACCESSORIES
Broadcast Electronics
Editall
Fidelipac
Garner
Nortronics (Heads)
R.B. Annis

TAPE RECORDERS & PLAYERS
Fostex
Otari
Revox
Studer
Tascam/Teac
Tape-A-Thon
Technics

TELEPHONE INTERFACES
Audio-Metrics
Comrex
Elgin
ESE
Gentner
Russco
Symetrix
Telex
Tellabs
Zercom

TEST EQUIPMENT
Autogram
B & K
Coaxial Dynamics
Digi-Max
Electro Impulse
Fidelipac
Fluke
Potomac
Sennheiser
Simpson
Tektronix
Xedit

TONE ARMS
Audio-Metrics
Audio Technica
Broadcast Electronics
LPB
Micro-Trak
Russco
Technics

TOWERS & ACCESSORIES
Duro-Test (Beacons)
Fortworth
Kintronics
Micro-Trak (controls)
Pi-Rod
Rohn
SSAC (flashers)

TUBES & TRANSISTERS
Amperex
Econco
Eimac
General Electric
National
NTE
Phillips
RCA
(and All Major Brands)

TURNTABLES
Broadcast Electronics
Numark
ORK
Rek-O-Kut
Russco
Technics

TURNTABLE CARTRIDGES & STYLI
AKG
Audio Technica
Pickering
Shure
Stanton
Technics

TURNTABLE PREAMPS
ATI
Audio-Metrics
Broadcast Electronics
Micro-Trak
Radio Systems
Ramko
Russco
Shure
Stanton

TRANSMISSION LINE & CABLE
Andrew
Belden
Cablewave

TRANSMITTERS-AM
CCA
LPB

TRANSMITTERS-FM
Broadcast Electronics
CCA
Energy-Onix
Q.E.I.

WEATHER RADAR & EQUIPMENT
Gorman-Redlich
Rodco
Si-Tex (Radar)
Taylor (Instruments)

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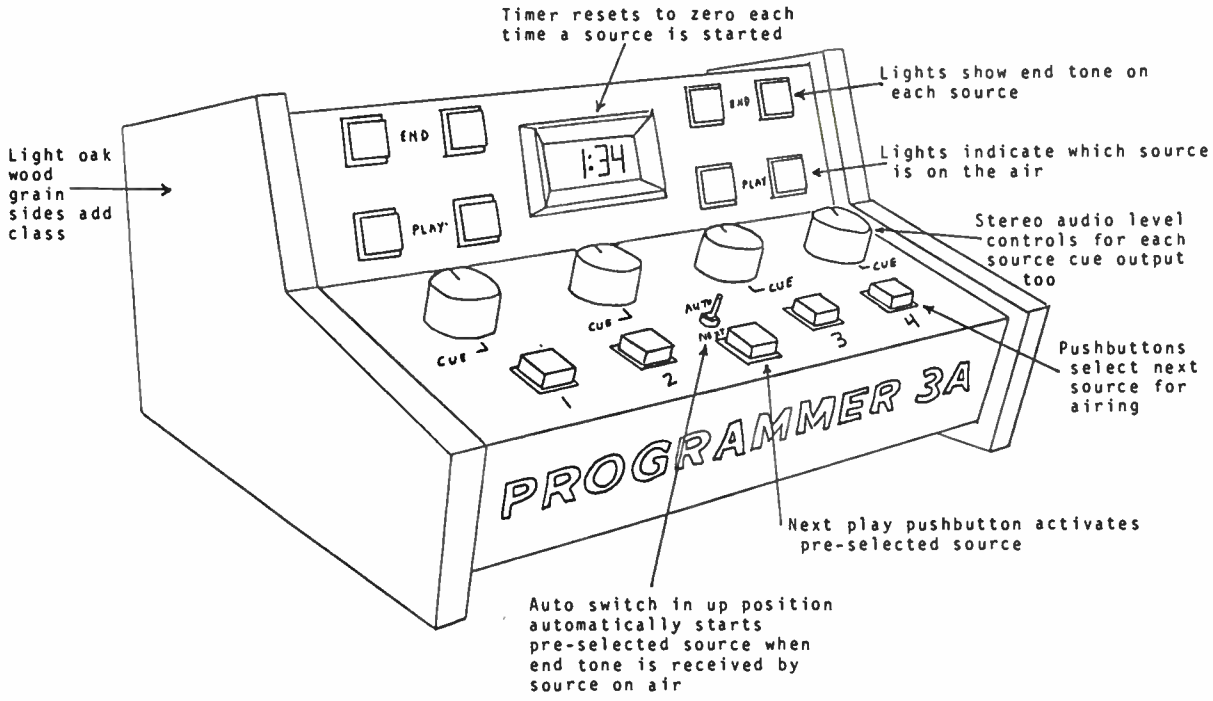
PROGRAMMER 3A LIVE ASSIST CONTROLLER



CCIR Director Richard Kirby To Address Engineering Lunch

WASHINGTON, Jan. 13 -- Richard Kirby, director of the International Radio Consultative Committee (CCIR), Geneva, Switzerland, will be the luncheon speaker at the National Association of Broadcasters' Broadcast Engineering Conference April 9. The conference will be held in conjunction with NAB's annual convention April 9-12 at the Las Vegas Convention Center.

Prior to being elected to the CCIR post in 1974, Kirby was director of the Institute for Telecommunications Sciences, U.S. Department of Commerce, Boulder, CO, and associate director in the Department's Office of Telecommunications. From 1965 to 1968 he was head of the Institute's Ionospheric Telecommunications Laboratory. He was with the National Bureau of Standards (NBS) as head of the Radio Systems Division from 1959 to 1965. Previously, he was an NBS physicist and research engineer, contributing to the development of communication systems using scatter propagation.

Earlier communication activities included broadcast engineering, telegraphy and military radiocommunications. He has contributed to CCIR since 1953, participating actively in several study groups, special panels and the preparation of handbooks.

Kirby is a fellow of the Institute of Electrical and Electronics Engineers (IEEE) and in 1981 received the IEEE Award in International Communications. He was chairman of the IEEE Communication Technology Group during its conversion to become the present IEEE Communication Society. He served as its first vice president, International, and as first chairman of the International Communications Conference Board of Directors.

He is a recipient of the Outstanding Achievement Award, the University of Minnesota's highest award. He received the Gold Medal of the U.S. Department of Commerce twice for contributions to radio research and telecommunications.

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C-Quam AM Stereo Promotional Radios

Broadcasters may be interested in the availability of the new portable C-QUAM AM stereo receivers which are expected to be manufactured using the new MC-13024 IC. Motorola personnel will be communicating with a number of receiver manufacturers in the Far East to promote the use of the new IC's and to assist engineers with incorporating them in their designs. It is planned to discuss the manufacturing of personal portable receivers with many companies in Japan, Taiwan, Korea and Hong Kong.

Your station might be interested in encouraging the marketing of portable C-Quam AM Stereo receivers. If you desire, write us a letter on your letterhead expressing your interest. We will be happy to convey this information to the appropriate receiver manufacturers. Write your letter to: Chris Payne, Motorola Inc., Suite 300, 1776 K Street, N.W., Washington D.C. 20006.

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NAB Radio Board Acts on Interference, AM Enhancement

KOHALA COAST, Hawaii, Jan. 21. -- The National Association of Broadcasters Radio Board of Directors passed resolutions on station allocations and interference consequences, AM enhancement and FM translators, and acted on a number of other issues at its semi-annual meeting being held this week.

On interference, the board adopted the following radio allocations policy: "NAB supports rules and policies, as well as industry initiatives, that will increase effective signal-to-noise ratios produced by existing radio stations, where these developments would be consistent with reasoned technical standards designed to insure the technical integrity of the radio bands and which would avoid degradation of existing radio service areas, day and night." This resolution will govern NAB's participation in FCC radio allocations proceedings and its advocacy of related industry efforts.

Following a comprehensive discussion, the board passed a sense of the board resolution, saying that NAB's Radio Executive Committee should take whatever actions are necessary, including spending up to $500,000, if warranted, to enhance the AM industry. The resolution recognized the efforts of NAB's Radio Executive Committee, the Science and Technology and Legal Departments, the AM Improvement Committee and the NAB/Radio Advertising Bureau's Radio Futures Committee.

Noting that FM translator service abuse now poses a severe threat to the economic viability and technical quality of the FM band, the board again urged the FCC to begin an immediate proceeding to review translators, including financial and technical aspects. The board expressed serious concern over recent abuses of the FM translator service, in particular, the exploitation of the FCC's rules and technical standards. (Translators rebroadcast to areas which could receive few, if any, conventional radio stations.)

The board asked the Commission to enforce its existing rules pending resolution of the proceeding and said it "strongly opposes any expansion of the current translator rules leading to the creation of a low-power radio service or in any other way which would undermine the local boardcast service now provided by full-power FM stations."

The board accepted the recommendation of NAB's FM Transmission Subcommittee that the Association suggest to the FCC that Class A FM stations be allowed to upgrade their power from 3 kw to 6 kw, provided that the station meets certain mileage separation minimums. It also directed the staff to appoint a new committee mileage separation minimums. It also directed the staff to appoint a new committee of engineers for the sole purpose of examining the possibilities of upgrading Class A FM stations to 6 kw which do not meet the above requirements. The committee will meet within a few weeks and its work will be completed before NAB's filing with the Commission.

The board also instructed the staff to take advantage of any opportunity this year for the introduction of a radio-only license renewal reform bill in Congress. It also agreed to form a task force to develop ways to raise the funds needed to settle the All-Industry Music Licensing Committee's debt and to help reorganize and restaff the committee.

NAB serves a membership of more than 5,000 radio and 940 television stations, including all the major networks.

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Mark S. Fowler Named Recipient of Distinguished Service Award

KOHALA COAST, Hawaii, Jan. 20 --Former Federal Communications Commission Chairman Mark S. Fowler, now with the Washington, DC, communications law firm Latham & Watkins, has been named recipient of the National Assoication of Broadcasters' 1988 Distinguished Service Award -- the industry's highest honor.

NAB Joint Board Chairman Wallace Jorgenson, president, Jefferson-Pilot Communications Co., Charlotte, NC, said, "Mark Fowler was an activist chairman with a passionate commitment to deregulation. Under his leadership the Commission removed from the books a multitude of unnecessary and troublesome broadcast regulation. As a result, the broadcaster's life has been enormouly simplified and improved. We owe him our unending gratitude."

The presentation will be made at Saturday's opening session of NAB's annual convention. The convention will be held April 9-12 at the Las Vegas Convention Center.

The award, established in 1953, is presented to a person who has made "a significant and lasting contribution to the American system of broadcasting by virtue of a singular achievement or continuing service for or on behalf of the industry."

The selection was made by NAB's Executive Committee during the Association's semi-annual Board of Directors meeting.

At age 17, Fowler became a part-time radio announcer at WABR, Winter Park, FL. From August 1959 to September 1963, while attending the University of Florida, he worked part-time as announcer of WDVH, Gainesville. In 1963, he interrupted his education to work as a full-time announcer at stations WKEE-AM/FM, Huntington WV, and from 1964 to 1965 as an announcer and full-time sales representative at WMEG, Melbourne, Fl. He then returned to the U of F to continue his education and his announcer job, eventually working as program director and sales representative as well.

He graduated with a Bachelor of Arts degree in 1966, and from the University of Florida College of Law in 1969.

In January 1970, he joined the Washington law firm of Smith & Pepper as an associate. In 1975 he formed the firm of Fowler & Meyers, P.C. and continued to practice until 1981.

During 1975-76, Fowler represented then Governor Ronald Reagon and the Citizens for Reagan Committee as communications counsel, a post he held again with the Reagan for President and Reagan/Bush committees. From November 1980 to January 1981, he was co-administrator of the Reagan Transition Team for Justice and Independent Agencies. He subsequently was named FCC Chairman, took office on May 18, 1981, and served until April 1987, longer than any previous chairman.

He has authored a number of articles on telecommunications, and has served on numerous committees including vice chairman of the Administrative Conference of the United States, a member of the Council for Independent Regulatory Agencies and a member of the White House Domestic Policy Council Working Group on Privatization.

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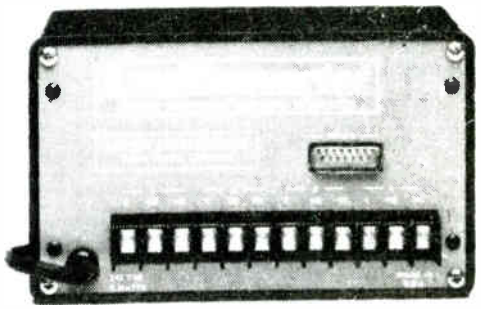
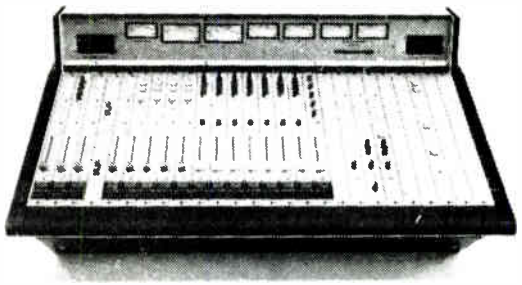


Logiconverter

Henry Engineering's Logiconverter is a remote control interface unit that creates compatible, isolated control circuits between a console and all outboard studio equipment.

It isolates the control circuitry, converts the control signals to those most appropriate for the device being controlled and provides a 'stop' output where none was available from the console.

Up to four devices can be controlled.

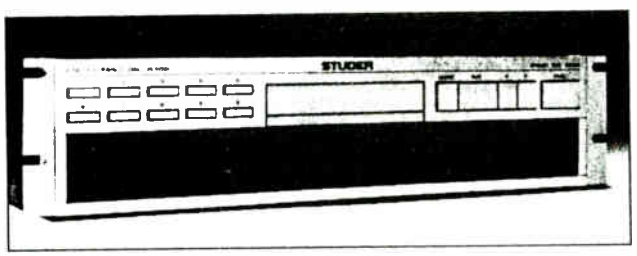


Compact console

JBL's Soundcraft SAC 2000 is a compact console suited for radio post production mixing and editing.

Opto-isolated Universal Logic Interfaces eliminate the problem of interfacing with cart machines, two-tracks and turntables which use different standards.

Cart machines are managed by an automatic sequencer which will "jump" a non-ready or dislodged cart, and can always be overridden by the broadcaster.



Second-Generation CD Player

STUDER REVOX—The A727 professional compact disc player is the first officially released poroduct in the CDS series, a development of the Studer and Philips joint-venture company. The A727 is also the only second-generation professional compact disc player on the market. The compact unit is adaptable for tabletop of 19-inch rack use. It has a robust die-cast chassis and the latest Philips 16-bit digital audio chip set combined with special Studer audio electronics.

Features include multiple manual cueing modes as well as Autocue mode; a self-illuminated multifunction display panel, including track and disc time and time-remaining modes, along with proportional graphic displays; a standard AES/EBU digital output plus analog-balanced XLR outputs, as well as unbalanced fixed and variable level outputs; and BNC clock input and output jacks for varispeed and synchronized operation.

Broadcast consoles

JBL—THe UREI 1650, 1680, and 1690 series broadcast consoles are on-the-air boards priced for small-market stations. These consoles offer a choice of five, eight, or 12 mixers as well as a choice of attenuator types. Although customization is available to fit individual station requirements, each board is ready to operate as supplied from the factory. Features include + 24dBm output into 600-ohm load; better than 90dB signal-to-noise ratio; built-in monitor, headphone, and cue amplifiers; and built-in cueing loudspeaker.

MEMO FROM METZ

by
David L. Metz

Building A Cart Machine, Part II

Our somewhat old fashioned (but simple) solid state cart machine continues this month. I'll show you how to build a cue detector and a little "Mickey Mouse" logic.

The cue amplifier circuit starts off as a duplicate of the program audio section of last month. From there on out, things get a little more complicated as you need more gain then the LM382 can provide.

After the cue gain control I added a simple one transistor audio stage. The small values of coupling capacitors were chosen to deliberately limit its audio response. Remember it only has to amplify at 1 KHZ!

R6 sets the 'Q' of the tuned circuit L1, Cx that filters out all other audio but the 1 KHZ cue tone signal. I used a surplus 100 millihenery toroid for L1. A surplus 88 mH telephone loading coil will work as well. The value of Cx that resonates L1 at KHZ will have to be found experimentally.

You'll need a good digital frequency counter that can operate at audio frequencies, a variable audio oscillator and a scope or DC voltmeter to tune the audio filter.

Tune the circuit by placing a voltmeter across point * to ground. Inject some audio into the top of the cue gain pot and sweep the audio frequency till you see a peak on your volt meter. Set the audio level so the amplifier is not clipping. If the resonate peak is below 1 KHZ, lower the total value of capacitance. If it's above 1 KHZ, add capacitance.

Start with about .15 MF for Cx. Make Cx up out of smaller values of capacitors in parallel. Use good quality mylars or polyester caps. Start with a .1 Mf, then a .05, then .005 etc. When you get close to 1 KHZ, try adding smaller and smaller values till you get the resonate point perfect.

Diodes D1 & D2 rectify the 1 KHZ cue tone into DC. Any common silicon small signal diode will work here. The network of C1, R1 & R2 filters the ripple from the detected audio. From here, the cue tone signal goes to the cart machine solenoid relay.

The additional circuit in the dashed box is the cue tone and stops, often there will be considerable cue tone still on the cart in the machine. That is, the cue has not played all the way through.

If you start the machine, it will detect the tone still present and stop almost instantly! Point B' is connected to the cart machines run lamp (details next issue). When the cart starts, 24 volts DC charges C2 through R3. This time constant provides the needed time delay. After the delay period, Q2 is biased on. This in turn bias Q3 off, allowing the cue circuit to operate.

When Q3 is conducting, it drains the detected cue signal voltage from point A' preventing it from reaching the solenoid relay circuit.

Next month we'll build the cart machines controls, solenoid relay circuit and power supply.

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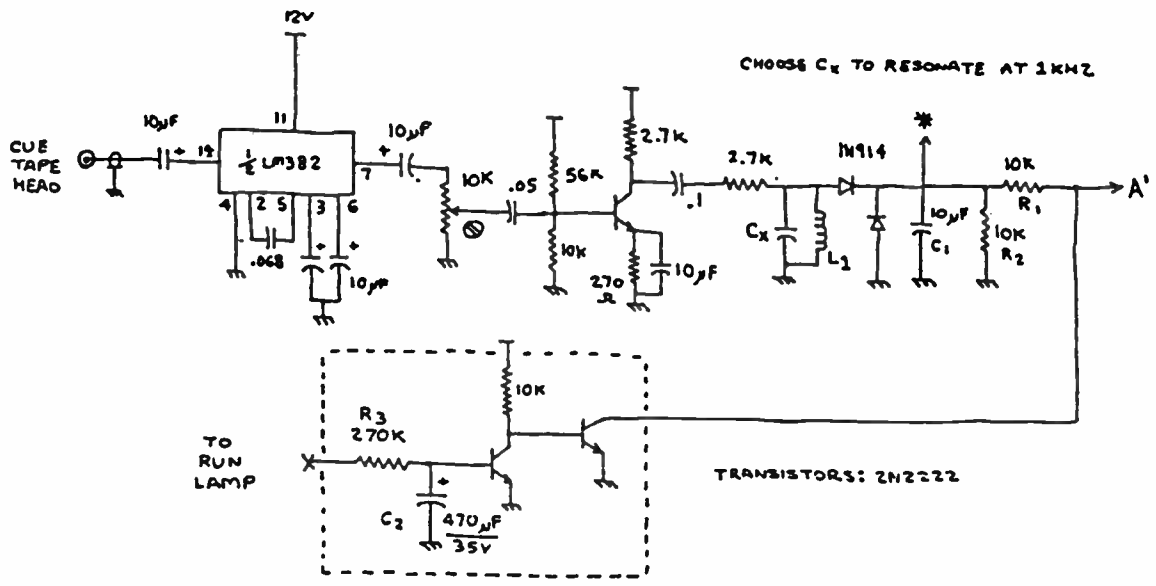
METZMEMO.31 CART MACHINE PART II



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Midwest Data Exchange-1200 or 300 Baud 24 hours, MDX Manitowoc is ONI INF 24 hours per day and offers a message base for the exchange of information pertaining to the Broadcast industry, reprints from Common Point Want Ads, Buy, sell or trade items. Free software for broadcast engineers. Everyone is welcome! Call 414-684-5361.

Tellabs 4425 Dual Repeat Coil Card, New, $44.00. Call E.I. 800-558-0222.

STL Azimuth & Level Set Test Cart, 12,500 Hz, NAB format, stereo, Audiopak A-2 cart, new, $15.00. Call E.I. 800-558-0222.

Bud RC-7758 casters, extra-heavy-duty type for Bud Series 60, 2000, and Concorde cabinet racks, ball bearing 3¼" wheels of hard tread composition, 200 lbs. load rating, 4-hole mtg. $6.00 each. Call E.I. 800-558-0222. (6 left).

Broadcast Electronics 5302 3-deck momo playback with cue tones, new, $3150 Call E.I. 800-558-0222.

75 KVA stand-by Generator, gasoline powered $5,000.00 Paul Zap, St. Marys College, St. Marys, Kansas (913) 437-2471.

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KQAM 1410 KEYN 103.7

2829 Salina, Wichita, Kansas 67204 (316) 838-7744

Auditronics, 110 A. Console 14 in. 2 out 6 faders w/power supply & patch panel good condition (1 left)

Zerocom, MAXI-TEL remote board, excellent condition (1 left).

Motorola, T74 FM Mobile Transceiver, good condition (1 left).

Genave, GMT2400 Transceiver, good condition (1 left).

General Electric, Prog-line tranceivers, various condition (5 left).

CRL, Sep-400B Audio Processors, excellent condition (2 left).

DBX, 165 Compressor, excellent condition (2 left).

Valley People, DYNA-MITE Microphone processor, excellent condition (1 left).

CBS, Volumax audio processor, good condition (1 left).

CBS, Audimax audio processor, fair (mono) condition (1 left).

Collins, 26J-3 Compressors, good condition (2 left).

Harris, Critereon80Cart, excellent condition (1 left).

Gates, Critereon 80 playback cart decks (mono), good condition (2 left).

Wollensak, T1500 Tape Recorder, good condition (1 left).

Gates (B-7), Turntables, good condition (2 left).

Pioneer, CT-F505 Cassette-Deck, poor condition (1 left).

Northstar, Advantage Computer w/2 disk drives, good condition (1 left).

Star Micronics, Delta-10 printer, excellent condition (1 left).

Qume, Sprint-5 tractor feed printer, good condition (1 left).

Hewlett-Packard, 200 BR Audio Generator, good condition (1 left).

B & W, Distortion meter, good condition (1 left).

Nems-Clarke, 108-E Pahse monitor, good condition (1 left).

Collins, 542-1 Frequency Monitor, good condition (1 left).

Hickok, 800 Tube Tester, excellent condition (1 left).

Various, 6½ foot equipment racks, excellent condition (2 left).

Yamaha, Road speakers, poor condition, (2 left).

Ricoh, 301-P adding machine, good condition (1 left).

IBM, typewriter, poor condition (1 left).

Code-A-Phone, 180 Answering Machine, poor condition (2 left).

Manufacturer unknown, push lawnmower, poor condition (1 left).

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FOR SALE: IGM Ram Automation System/4K memory, mono Instacart, mono Go-cart, three ITC 750 Reel to Reel stereo decks, IGM encoder/decoder (you supply printer and keyboard, two spare source cards, extender cards, all manuals, $9500.00 You pay shipping. Unit out of service on 1/15/88. Works fine, looks fine. Or sell Instracart $6,000.00 Go-cart $2,000. ITC 750's $850 each. IGM Ram unit $3,000.00 Call 503-267-2121 for more info.

WANTED TO SELL: Class A FM-AM Daytimer 3 acres 2,800 sq. ft. residence & studio combo, 750 sq. ft. transmitter building, equipment in excellent condition-Retiring-$350,000 neg. J-P Robillard 1803 N. 1st East St. Haynesville, LA 71038 call 318-624-0105 day or night.

WANTED TO SELL: Mosley TRC 15 remote control. In service in excellent condition, Wendell Wilson KNCK Concordia, Kansas 66901 call 913-243-1414.

FOR SALE: 980' Zone A solid Leg Tower on ground with GUI system, also continental ERI 12 bar CP antenna on 93.1 MHZ. Phone Lennie Dupree 318-445-1234.

WANTED TO SELL: 425 + ft Andrew 3-1/8 inch coax, with connectors top & bottom, plus pressure inlet. 90 hangers and tower leg standoffs. No burns, very good cond. New in '81. (ran 22K in) Respond to: T. Vaubel, KEZT-FM P.O. Box 1647, Ames, IA 50010. (515) 232-0104.

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WICHITA, KN
Keep up the good work.

WINDSOR, CO
Enjoyed the article on CO to cart.

PRESCOTT, AZ
Enjoy the newsletter.

CLYDE, OH
Fantastic as always--Keep up the good job.

NBC Radio Will Increase News Feeds, Resources, Newscasts

NBC Radio net will provide expanded package of news programming to affiliates starting Leap Day, Feb. 29. NBC will increase daily service to three newscasts per hour -- 5 min. at top, :30 headlines at 25 min. past hour and one-minute update at 5 min. before hour. According to newtwork VP/GM Craig Simon, net also will provide 23 news/sports feeds daily, featuring voicers, on-sceners and actualities.

Additional resource package--"NBC Radio Network Toolbox" -- will provide background cuts, sound effects, historical cuts, promos, etc., to be fed each Monday.

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Track System:	2-track, 2-channel stereo
Heads:	1 erase 1 record 2 playback
Reel Size (Max):	10½"
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Motors:	1 FG servo DC capstan 2 DC slotless reel
Wow & Flutter (WRMS):	7½ ips: 0.03% 15 ips: 0.02%
Frequency Response (overall):	7½ ips: 40 Hz – 33 kHz 15 ips: 40 Hz – 40 kHz
Signal/Noise Ratio (overall):	dbx out: 66 dB dbx in: 100 dB
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