



A CANADIAN STANDARD FOR AM STEREO?

In *Technitopics* (page 6), Sandy Day reviews the problems involved in the development of AM Stereo.

These problems are the subject of a conference (March 8-9) in Windsor, Ontario—a commendable initiative by the Canadian Association of Broadcasters, which has invited participation by receiver and equipment manufacturers, as well as broadcast and government representatives.

It may well be that Canada will play a significant role in arriving at an AM Stereo standard, perhaps for all of North America. Certainly, the Canadian approach is shaping up much differently from the U.S. 'marketplace' approach of the FCC. (One recent effort towards compatibility was aborted recently when Harris tried lowering its pilot tone from 55 Hz to 25 Hz—the same as the Motorola system—but concluded the change was not advantageous.)

Here, the CAB, Department of Communications and CRTC have all endorsed the concept of a *single* AMS standard, to be established as soon as possible. With DOC and CRTC approval, AM stations are being allowed to carry out tests until March 1, 1984—one condition being that they warn listeners of the risk in buying receivers for any one system before the official decision is made.

The concept of AM Stereo seems to be gaining acceptance and could become a very positive factor in the future of AM broadcasting. A few Canadian stations have already conducted experiments—notably the Moffat group (Kahn) and CKLW Windsor (Harris). Now is the time for others to contribute towards the establishment of technical standards for this country.

We'll look forward to another of Sandy Day's informative and authoritative reports in his next *Technitopics*.

THE BASICS: A NEW COLUMN FOR BT

Bruce Dingwall is no stranger to readers of *Broadcast Technology*. As publicity chairman for the Central Canada Broadcast Engineers for the past year, he's been writing the regular *CCBE Engineering Newsletter* in BT.

Now that Bob Burger of CHML has taken over that task—(welcome, Bob, you're off to an excellent start in your first column)—we're happy to tell you that Bruce will continue in these pages with his own column, *The Basics*. Here's how he describes it:

"The genesis for this column came one day when I was showing Ian Sharp, who has become my assistant at CFRB, one of

the finer points about measuring Class C control lines. I started reflecting to him about how I learned many of these things over the years by trial and error, or from my peers in the business at a big station. And that got me to thinking how much I wished someone had had a column of *The Basics* when I was starting.

"I did have people like Ron Turnpenny, Les Henwood and Bob Burger to call on. But how about the guy who has no one to ask?

"And so that's the idea. *The Basics*: There's a good way, and there's the *better* and/or *right* way. Hopefully, each column will present some worthwhile point for the man in the small station, or the beginner."

We're sure that—with the participation of our readers—Bruce Dingwall and *The Basics* will provide a useful exchange of practical experience in sound engineering.

ANDY McDERMOTT

The Canadian broadcast advertising industry lost one of its favorite people with the sudden passing of Andy McDermott on February 5th.

Andy's many activities in the industry and in the community at large are well-known.

A native of Regina, he became a pioneer in the station rep business, and after serving in the RCAF during the war, established two firms. Radio & Television Sales was a joint venture with the Tietolmans, whose CKVL Verdun, originally a small, bilingual daytime station, became a remarkable success story, in which Andy was very much involved. His own firm, McDermott Broadcast Sales, specialized in representing U.S. stations; then, when R&TS closed, it was re-organized and expanded, with Andy remaining active as its chairman.

He was a founding member of the Broadcast Executives Society, whose newsletter featured his newsy and enjoyable Amblings with Andy column. He was also a former president of the Advertising & Sales Club of Toronto, a member of the board of Ryerson Polytechnical Institute, and a pillar of the Canadian Association of Broadcast Representatives and Toronto Press Club—among others.

Andy seemed to know everyone in the business, and everything about it. Despite his busy schedule, he was always cheerful and had time to help and to share his enjoyment of life with those around him. A man of principle, he could be outspoken, but never unkind.

Jacque and I join Andy's many friends in extending sincere sympathy to his wife, Betty, and the family—son Paul, of CKLW Windsor, two daughters, and ten grandchildren.

Doug Loney



HIGH NOON FOR AM STEREO

AM radio broadcasters have been in the front ranks of those suffering through the present economic slump. Yet, within a year, Canada could be off and running with AM stereo and could also start to implement new AM stations in a number of attractive markets after finalization of our stereo standards and of the USA/Canada bilateral agreement. Both developments are seen as antidotes to the present malaise.

The AM stereo questions are really system problems, which require an understanding between broadcast, audio processor and receiver interests. Inevitably, the addition of phase modulation to the AM carrier enriches sideband energy, and AM stereo systems require such information. The "sound" created by AM broadcasters typically enhances high-frequency content to add crispness in the receiver which, by broadcasters' standards, is woefully inadequate in high frequency response. But the FCC rule which limits sideband energy puts a lid on the degree to which normal AM stations can pre-emphasize high frequency audio. This rule, while not applicable in Canada, is effectively a North American constraint, for the Canadian market, by its size, is precluded from "going it alone" with unique Canadian designs. Canadians will have some leeway beyond the FCC rule, but not to the extent of spreading AM sidebands all over the dial.

We get conflicting reports as to whether stations who have experimented with the various stereo systems have been able to retain reasonable bandwidth (along with the usual pre-emphasis for the stereo broadcasts so that the station "sound" is retained in stereo while still meeting the FCC sideband limitations. If successful, the reproduction on the present generation of monophonic receivers should be acceptable, but how will this sound reproduce on the new-generation AM stereo receiver? Will the stereo receiver have bandwidth increased to the extent that the reproduction is now too good at the high end? Do we need a compromise as to the degree of pre-emphasis? Do we need an industry standard?

The industry is faced with a problem of compatibility, that of retaining the elusive "sound" so important in competition between AM stations, while still obtaining quality on AM stereo receivers which will compete with the excellent sound quality available on FM stereo. It will be difficult to satisfy both requirements. If AM broadcasters can put aside their inter-AM-station competitive instincts to a degree sufficient to effectively standardize AM pre-emphasis characteristics, then there is hope that AM stations will be in a position to stop, if not reverse the trend to FM listening.

Traditionally, our industry, when faced with a systems problem of this sort, has formed an all-industry committee to bring forth a consensus. In the USA, the National AM Stereophonic Radio Committee (NAMSRC) studied the systems submitted to it (Belar, Motorola and Magnavox), and produced a report in December 1977, followed by a supplementary report in March 1978. Since that time, the National Radio Systems Committee

(NRSC) has addressed this and other related problems. But with the FCC "marketplace" decision, United States interests, fearing anti-trust litigation at any sign of industry collaboration, have dropped this "hot potato", and even NAB has felt powerless to act to bring the industry to consensus.

In Canada, our Department of Communications has responded to industry advice in avoiding a "marketplace" approach, and has authorized only experimental operation for the next year. The DOC has charged the Radio Broadcasting Committee of the Canadian Radio Technical Planning Board (CRTPB) with obtaining industry consensus and coming up with recommendations for a single standard by March 1984. The CRTC has announced general agreement with the policy, at the same time requiring broadcasters of AM stereo programs to warn the public against investing in the unique system receiver required for the system being broadcast because of possible obsolescence when the final system choice is made.

The Canadian Association of Broadcasters decided that support for the CRTPB committee was vital and that a conference should be held as soon as possible in the hope of finding common agreement between broadcasters, and receiver and processor manufacturers as to the system parameters to be adopted. But the Canadian receiver industry is virtually extinct, and the focus of attention is on the U.S. manufacturers of automobile radios and on Japan. The conference, slated for March 8 and 9 will be held in Windsor, Ontario, convenient to the Detroit automobile interests. It is hoped that the venue in another country will reduce the reluctance of U.S. interests to discuss the problems.

Understandably, manufacturers are reluctant to disclose their specific intentions to competitors. The Delco Division of General Motors, after careful assessment of the three systems submitted for their test programs, have shown commendable leadership in announcing their internal decision. Perhaps others are preparing to do the same. However, even if only the Delco choice is considered as a system, there still remain questions as to what the broadcaster should do in audio processing and pre-emphasis, and what the ideal stereo receiver bandwidth should be. And there still remains the question of how stereo will reproduce the station "sound" on the millions of present monophonic receivers.

The industry has some tough questions to address, and the CAB March conference will, hopefully, provide some guidance. Perhaps Canada can help "big brother" make up his mind, not only in March, but in subsequent activities as the AM Stereo story unfolds.

Sandy Day is Vice President of Engineering Services for the Canadian Association of Broadcasters. Readers' comments or questions may be addressed c/o CAB, Box 627, Station B, Ottawa K1P 5S2.

appointments

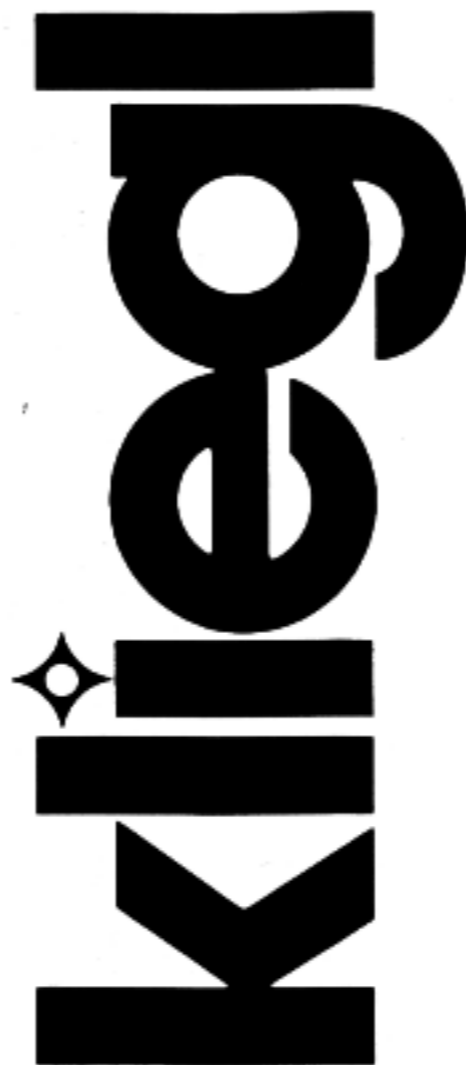
- ABC—**Frederick Pierce** elected president and chief executive officer, succeeding **Elton Rule**, now corporate vice-chairman; **Leonard Goldenson** remains chairman.
- CFCN Calgary—**Don Thomas** moves from CFCO Chatham to replace **Norm Haines** as g.m.
- CFTR Toronto—**Eric G. (Sandy) Sanderson** named p.d. A native of Toronto, he's been with WABC New York, WLS-FM Chicago and ABC-FM. **Bob Saint** becomes assistant p.d. and music director.
- CHYM/CKGL-FM Kitchener—**Jim Webb** promoted to g.m., **Bill Leeson** becomes sales manager.
- CITY-TV Toronto—new v.p./g.m. is **Dennis Fitzgerald**, formerly with All-Canada, CTV, and *Goodlife* magazine.
- CKSL London, Ont.—**Gord Hume**, g.m., named a vice-president of London Broadcasters Ltd.
- Cablenet Limited—**Fred T. Klinkhammer**, formerly of CITY-TV, named president and c.e.o., effective March 1st. Cablenet, based in Downsview (Toronto), owns and operates 10 cable systems in Canada.
- Gould Marketing (Otar) —**Robert L. Olivier** named western Canada rep.
- Kliegl Bros. Lighting Inc.—**Susan Ujzdowski** elected treasurer.
- NRBA—**Thomas McCoy**, formerly of Golden West Broadcasters in Los Angeles, named senior v.p.
- TVOntario—**Donald Duprey** is new g.m. of French Educational Services, succeeding **Leopold Lacroix**. Duprey's 17 years in production includes NFB, International Cinemedia Centre and, most recently, presidency of MLV Media Ltd.
- White Radio Ltd.—**Ozzie Osechowsky** appointed sales manager, communications group.

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CFIX-CHPR PURCHASER PROPOSES 50W FMs

An application to purchase CFIX Cornwall and CHPR Hawkesbury, Ontario, was scheduled to be considered by the CRTC at the March 1st public hearing in Hull, Quebec. The applicant, Radio Cornwall-Hawkesbury Inc., is also seeking licenses for low-power (50 watt) FM stations in both towns. The former licensee of the AM stations, Les Communications Franco Ltée, declared bankruptcy in August, 1981, and a previous buyer was rejected by the CRTC mid-1982.

TVO FEED NOW ANIK C3

The entire TVOntario network has converted to satellite feed, following its switch from Anik B to Anik C3 on January 10. The educational network's full schedule (16 hours daily) is now picked up by one-metre dishes at its transmitters throughout the province, including low power rebroadcasters in 13 northern communities, and 20 northern cable TV systems. TVO says its hybrid mode on Anik C3 is a unique development of

direct broadcast satellite (DBS) communications, in that satellite is used both as a fixed service to feed conventional transmitters and as a broadcast satellite to feed cable head ends.

PHIL STONE ON CKO

Veteran broadcaster and writer Phil Stone, whose *Phil Stone Report* and *Broadcast Beat* are regular features of *Broadcast Technology*, has added a weekly program on CKO to his many activities.

Meet Your Neighbour will promote understanding of different cultures through interviews with knowledgeable personalities. The 15-minute show is heard twice each Saturday, at 10:15 a.m. and 6:45 p.m. (eastern time) on the 7-station news network.

OTTAWA SIMULCAST

CHRO-TV (Pembroke) and CHEZ-FM provided the Ottawa area with a TV/FM stereo simulcast of the recent "last tour" concert of the "Who" group. Two earth stations supplied by saTel Consultants Ltd. were used to pick up the Anik B


signals—an 8-foot dish for video and monaural sound, and a 12-foot dish for stereo sound. Recorded by saTel for delayed release, the program was one of the few simulcasts of the "Who" concert presented in North America.

CKOI-FM ON CRTC CARPET

Radio Futura's CKOI-FM Verdun (Montreal) will be under close CRTC scrutiny for the next few months to make sure that it lives up to programming commitments. The CRTC, saying it remains seriously concerned about CKOI's "persistent non-compliance" with its Promise of Performance, deferred action on licence renewal.

BCTV's WEBSTER HONORED

Vancouver's bombastic broadcaster Jack Webster is one of five men who will receive honorary degrees from Simon Fraser University on June 4th, in recognition of professional excellence. Webster, 64, came from Scotland in 1947 and was with the Vancouver Sun and CJOR Radio before joining BCTV. A cham-




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pion of the underdog, with a gruff manner and sharp tongue, Webster is considered one of Canada's top investigative reporters.

CBLFT CUTS COSTS

Faced with a deficit of \$100,000, the Ontario French-language service of the CBC has laid off six employees. The cut-back has reduced the Toronto production *Ce Soir* from 60 to 30 minutes daily, Monday through Friday.

U.S. DIGITAL "FIRST"

Two Pittsburgh radio stations became the first in the United States to receive network programming via digitally-encoded satellite transmission on January 17th. WTKN and WWSW-FM switched their ABC feeds from land lines to SATCOM 1, using a \$16,000 2.8-meter earth station installation. ABC Radio is investing over \$10 million in new studio facilities to improve the quality of network originations, and will transmit on nineteen 15 kHz audio channels to deliver its six network formats in four time zones. By early 1984, 650 affiliates will be receiving the service. With CBS, NBC and RKO radio networks also planning to switch to digital satellite transmissions, a total of over 3,000 U.S. stations will be employing the new technology by mid-1984.

CITY DRAMA SERIES

CITY-TV has announced it will produce three 30-minute television dramas, based on scripts submitted to the station in a contest called *Toronto Trilogy*.

Aspiring writers have the chance to write a teleplay that in some way reflects contemporary life in Toronto. Three winners will be selected and they will receive a fee of \$4,000, but more importantly, will see their scripts come to life on CITY. The benefits to writers are obvious, says CITY-TV president Moses Znaimer, adding, "*Toronto Trilogy* has the potential of being useful to the future development of made-in-Canada drama."

Toronto Trilogy will be tied in with the city's sesquicentennial (150th birthday) celebration. The production of the three teleplays is expected to cost \$100,000 per segment—a significant investment—which Znaimer justifies as an extension of CITY's commitment to experimental television with a local flavor.

BROADCAST TECHNOLOGY

RENEWAL OPPOSED

The Consumers Association of Canada has filed its opposition to the licence renewal of CHSJ-TV Saint John, N.B., scheduled for a CRTC hearing in Fredericton on February 15th. Last July, the federal cabinet directed the CRTC to deny renewals or new licences to owners of daily newspapers in the same market, unless some overriding public consideration exists. The CAC claims that cross-media control cannot be justified in the case of the Irving family, which controls the morning and evening newspapers in Saint John, as well as CHSJ and CHSJ-TV.

CJRT-FM CONCERTS

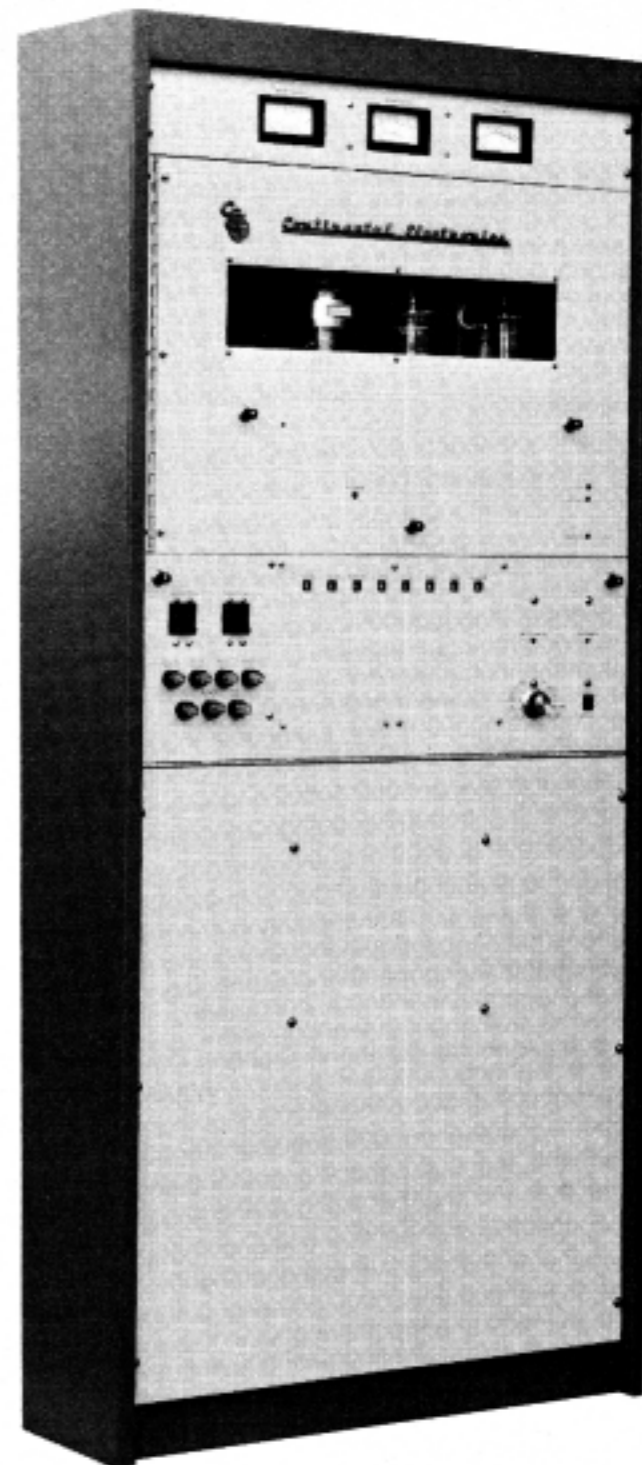
CJRT-FM Toronto has announced the 1983-84 *Festival* series of six live concerts of classical music. It will be the eighth year for the series; its second year in Massey Hall. The concerts, which feature outstanding artists performing with the CJRT Orchestra conducted by music director Paul Robinson, are recorded for later broadcast.

CFCF BUILDING VANDALIZED

An estimated \$10,000 damage was caused to the CFCF building in Montreal by an apparently mentally-disturbed intruder. The man gained access to the building on Sunday, February 6, and, proclaiming himself to be "mayor of the world", went on a rampage which he said was to promote the cause of world peace.

CKFM DIGITAL TEST

CKFM Toronto reports "astounding" listener response to a broadcast of digital audio. The initial test took place on December 13 on the Carl Banas show, which has a strong following of hi-fi enthusiasts. In what is believed to have been the first broadcast of digital by a commercial station in the Toronto area, digital audio discs were played for about 90 minutes. The test was arranged by Mel Hinde of Sony, who provided the player for interfacing with CKFM's console and several of the 4-inch DADs, which contain one hour per side. Listeners commented on the exceptional separation and clarity of individual instruments in the recordings, some of which were produced from digital masters. Bruce Dingwall of the CFRB/CKFM engineering staff, who participated in the broadcast, shares in the enthusiasm, predicting "fairly rapid" development for digital audio.



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UHF Transmitting Facilities Design, Part I

by David L. George and John F. Hiatt

UHF FACILITIES

Abstract—Many factors influence the design of an effective UHF-television transmitting plant. Site and antenna selection, and their optimization, are particularly critical, while the design of the plant itself has a significant influence on the overall reliability of the system. Several factors relating to the design of an effective transmitting plant are discussed and suggestions offered to minimize installation difficulties and improve operational characteristics.

I. INTRODUCTION

How effective any UHF transmitter plant is in providing effective coverage of a particular service area is keyed to the decisions and compromises which must be made during the early planning of the facilities. These determinations are critical to the success of the station and its growth in an ever increasingly competitive marketplace.

Our company, Imagineering Limited, has designed and implemented several

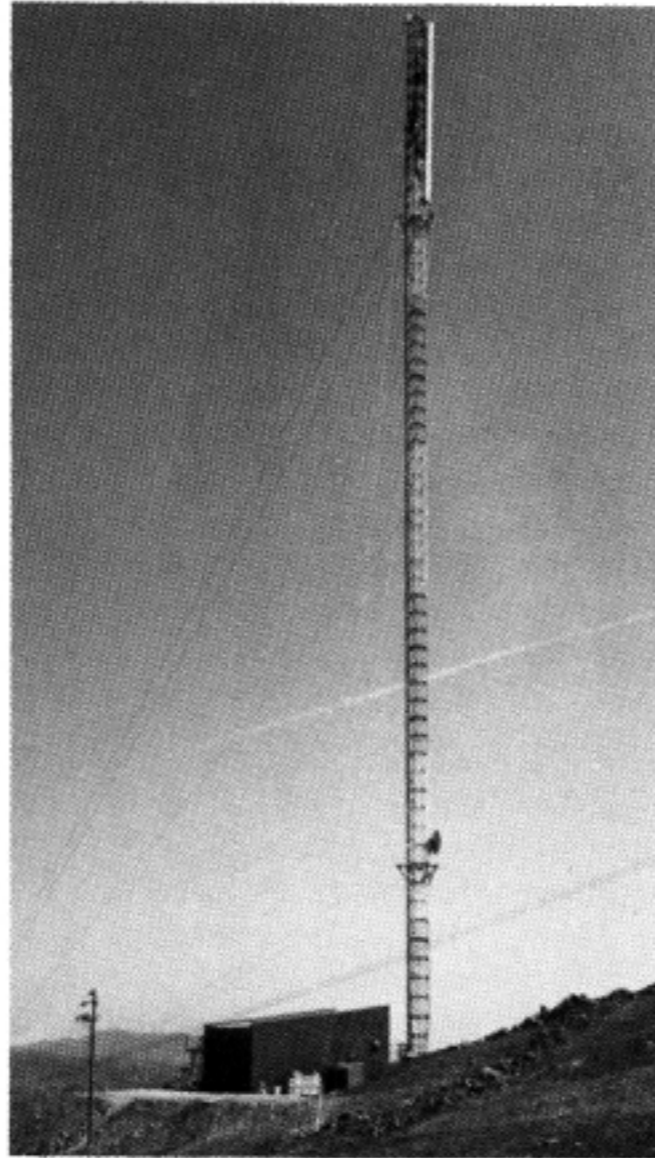


Fig. 1. Mountaintop location of a full-power UHF installation.

UHF-TV transmitting plants in North America. These plants have provided the required coverage and met or exceeded expected parameters. These successes can be attributed to the careful planning that went into the plants prior to implementation and the adherence to certain basic guidelines, some of which are discussed herein.

II. SITING

The siting of a UHF transmitter plant can be rewarding, as well as frustrating. Site selection is usually a delicate balance of many parameters over which the design engineer has very little control. The desire to seek any natural height to optimize the Effective Height Above Average Terrain (EHAAT) of the station, without having to resort to an excessively high tower, must be tempered by such factors as the location of the station in relation to the service area, radiation limitations to be provided to other stations, access, availability of primary power and its reliability, as well as the environmental conditions in the immediate area which will affect the transmitter plant design.

III. ANTENNA SELECTION

In these days of ever-increasing energy

costs, the investment in a high-gain antenna can yield a considerable return in lower power bills, as the station's desired effective radiated power (ERP) can be achieved with a lower power transmitter. However, when high-gain antennas are used, they demand that much more attention be paid to such factors as null-fill and beam-tilt to provide consistent coverage within the service area. Combinations of electrical and mechanical beam-tilt can be used to advantage, if the coverage area, or the topography, is asymmetrical. Higher gain antennas put more stringent requirements on the supporting tower in that more rigid structures are required to ensure that the gain of the antenna and the coverage aperture are maintained under varying environmental conditions. As the tower height increases, these demands cause the tower cost to increase at a more than linear rate.

If the coverage area is such as to permit a directional antenna, azimuth patterns can be tailored to optimize service. Such shaping is usually limited to the displacement of radiators on, or relative to, tower faces, or to a number of standard patterns available by utilizing any of a number of slotted antennas.

Armed with accurate information, the transmitter engineer can decide upon a combination of parameters that will allow a reasonably even distribution of radiated energy from close-in to several miles from the transmitter site. As vertical angles decrease, and distances to the viewer increase, a properly shaped vertical pattern will give a corresponding increase in radiated power out to the radio horizon. The design engineer should be prepared to spend a good deal of time considering the most appropriate use of horizontal radiation pattern, vertical gain, null-fill, electrical and mechanical beam-tilt, location, orientation, and height, if he is to maximize the potential of the particular station or allocation.

IV. TOWERS

Towers can be classified as either self-supporting or guyed structures. While self-supporting towers are popular in Europe, they are not used to any great extent in North America. Cost is the principal deterrent to self-supporting towers in North America and, unless the tower has to be located in an area where real estate costs are inordinately high, a self-supporting tower cannot generally be justified. As a result of the continued use

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UHF Facilities

in Europe of self-supporting structures, the European tower designers appear to have an edge over their North American counterparts in self-supporting tower design, with regard to both costs and aesthetics.

Guyed towers are usually triangular in cross section, although some square-section towers are used to produce a more uniform omnidirectional pattern with radiators located on all four faces.

North American tower manufacturers generally produce all-welded towers having face dimensions up to about 4 ft. For sizes greater than this, shipping costs usually dictate bolted structures which are field assembled. The length of individual sections is determined not only by shipping considerations but also by the field-lifting capabilities of the equipment used to erect the tower. The trend for some time has been to use solid members only in the construction of towers, in order to eliminate the problems of internal corrosion which is encountered in tubular sections. Heavy, hot-dip galvanizing is used almost exclusively for external protection of the tower steel.

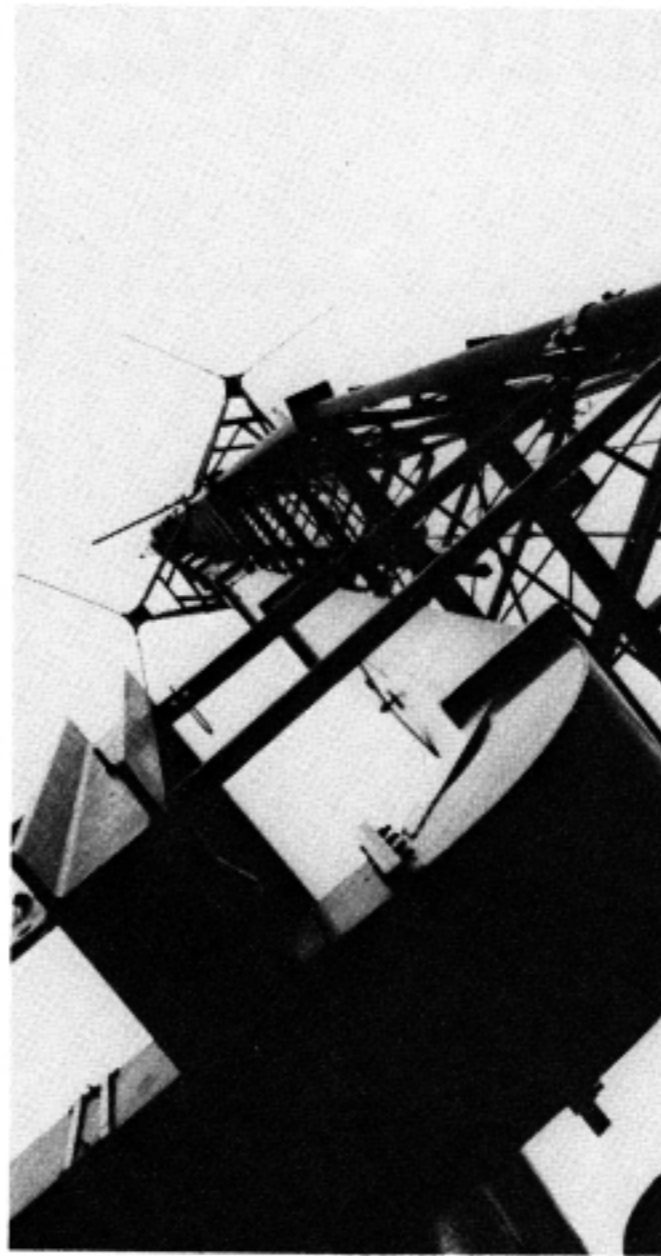


Fig. 2. Section of waveguide feed to antenna, showing size in relation to 5-ft. tower face.

Guying is usually provided by single guys using guy-strand or bridge-strand multistranded cable. Dual guying is used at levels where the vertical and torsional deflections must be small. Guying with nonmetallic guys is being used more and more in applications for AM towers and for TV and FM towers which support circularly polarized antennas and where the guying must be in the aperture of the antenna. Kevlar fiber made into ropes under the trade name of Phillystran, and other names, is commercially available in rope sizes suitable for small and medium guyed towers. Conventional steel sockets, as used on steel cable, are also used with Kevlar ropes using epoxy resin fillers. Using this system, socket efficiencies of up to 75 percent are achieved, thus requiring somewhat larger rope sizes than with the equivalent steel guys. Kevlar rope guys are considerably more expensive than metallic guys; however, the Kevlar guys are light and easily installed. In addition to cost, there are additional drawbacks to Kevlar guys, which include greater elongation and settling time than metal guys. Notwithstanding the drawbacks of Kevlar rope guys, they currently represent one of the best solutions for guying towers when the guys must be in the aperture of the antenna.

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by Bob Burger

My first official duty as writer of this *Newsletter* is to report to you on the CCBE executive change-over meeting held mid-January in Toronto.

This meeting had a two-fold purpose: to review the past convention (*Perspectives 83*), and to usher in the new executive for the coming year. After reviewing all of the convention committee reports, it was felt that the Engineering section of the convention went very well. The attendance was about average in spite of the economy, the papers were well-attended and the exhibitors were quite happy. There were a few problems with the management side, but this was to be expected since it was the first time such a large gathering, involving three groups (CCBE, CCBA and CAB), was ever held. Much was learned by everyone which should help to provide us with a bigger and better event this year. The

joint convention experiment will again take place this year at the Sheraton Centre in Toronto, October 23-25.

Your hard-working 1983 Executive consists of the following people:
Past President: Jeff Guy, CJBK/CJBX
President: Paul Firminger, CHYM/CKLG
Vice-President: Trevor Joyce, CHIN
Sec-Treas: Bruce Dingwall, CFRB
Exhibits Chairman: Bill Onn, CKEY
Papers Chairman: Jim Mercer, CHCH-TV
Publicity Chairman: Bob Burger, CHML

Safety Committee

Warren Parker of CKTB/CJQR St. Catharines has agreed to continue on as head of the CCBE safety committee. Any tips or ideas you have to make the workplace safer for all of us would be most appreciated. Send your tips or ideas along to me and I will forward them to Warren. Speaking of safety tips, the CCBE's annual safety award for the most appropriate safety idea was won this year by Bill Post of CKSL London.

Industry News

Now for some news from our industry:

- There seems to be a new upsurge in vandalism at transmitter sites. Paul Firminger reports an attempt to break into the CHYM Kitchener site; some one did break into the CHIN Toronto transmitter building and shut the master off on the main transmitter; and at our CHML site, persons unknown took a chainsaw to the roof of a storage garage at the south end of the property.
 - Larry Smith of CJOY/CKLA Guelph has just completed an interesting project, rebuilding and updating his AM site to include his FM transmitter. (See article in this issue of BT).
 - Bill Post has finished installing his new 10 kw transmitter at CKSL.
 - Jim Mercer of CHCH-TV Hamilton tells me their new multi-million dollar studios are progressing right on schedule, with completion date set for September 1983.
 - Dave Snodgrass of CKWW/CJOM Windsor tells me they have moved their AM and FM studios to 300 Cabana Rd. East. This is just a temporary move, but it relieves them of many problems they had at the old building. (There is a very long and involved story that goes along with this move—much too long for this newsletter—but I'm sure Dave would be willing to tell you). The new phone number is (519) 966-7000. I must congratulate Dave for being able to move a complete AM radio station, without any preplanning, in just four days and not lose any air time.
 - As I am sure you all are aware, Applied Electronics is now the official representative for all Harris Broadcast products in this country. We wish Bob Norton and the boys much good luck.
 - Vernon Collins of Continental Electronics reports business has been pretty good—in fact so good they are six weeks behind in delivery of 50 kw transmitters.
 - Terry Brown is now with Delta-Benco-Cascade Ltd., in their broadcast sales division, which sells TV and cable equipment.
 - This year's WABE is scheduled for May 17 to 19 at the Hotel Saskatchewan in Regina.
- That's all I have for now—if you have any Engineering news you would like included in this newsletter, please feel free to contact me at CHML Hamilton, (416) 549-2411, or write c/o ML Radio Ltd., 848 Main St. E., Hamilton, Ont. L8M 1M1.

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A PERSPECTIVE ON TRANSMITTER CONTROLS

by Clive Eastwood

A survey by the Bureau of Broadcast Measurement asked: "If the station you were listening to went off the air, how long would you leave your radio without trying to retune it?"

The response to this survey shows opinions as to what people think they would do; it is not a survey of actual conditions:

- in the first minute of off-air, you may lose 36% of your audience;
- at the end of two minutes, 50% of your normal audience may have tuned out;
- 77% would be gone at the end of 5 minutes;
- about 18% would hang in there for 10 minutes or longer.

From this, it is obvious that the sooner you get back on the air after a fault, the less damage is done to your BBM ratings. When a person "tunes out" they may be unhappy with the stations they do find and tune back to you 5 minutes later, or half an hour later, and that's not too bad. But sometimes they become aware of a station with some music or humor that just happens to catch their fancy, so they may settle down and listen. They may stay there forever, and that is where the real problem is.

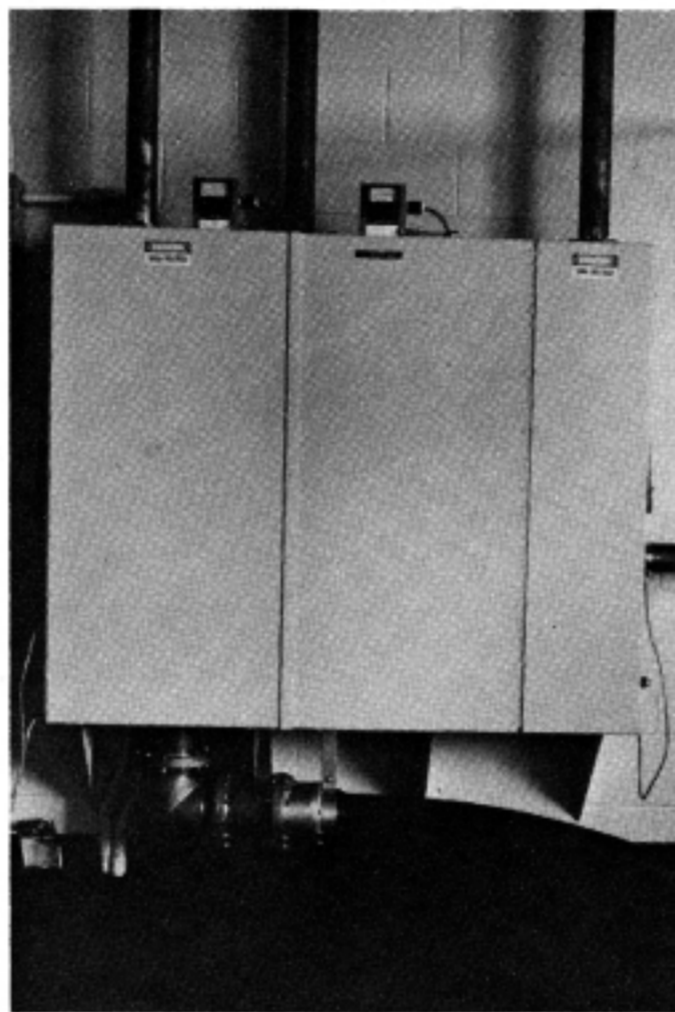
Last year at this conference, Neil East gave a talk entitled Don't Call Us, We'll Call You. He described design techniques that increased the reliability of transmitter plants with the objective that he would go to the transmitter on an emergency basis. He emphasized the importance of *simplicity*, of having *few common points* and of *one good system* rather than two poor ones.

He did not review the "man/machine" interface", which we refer to as the Remote Control System, and which I will discuss later in this paper.

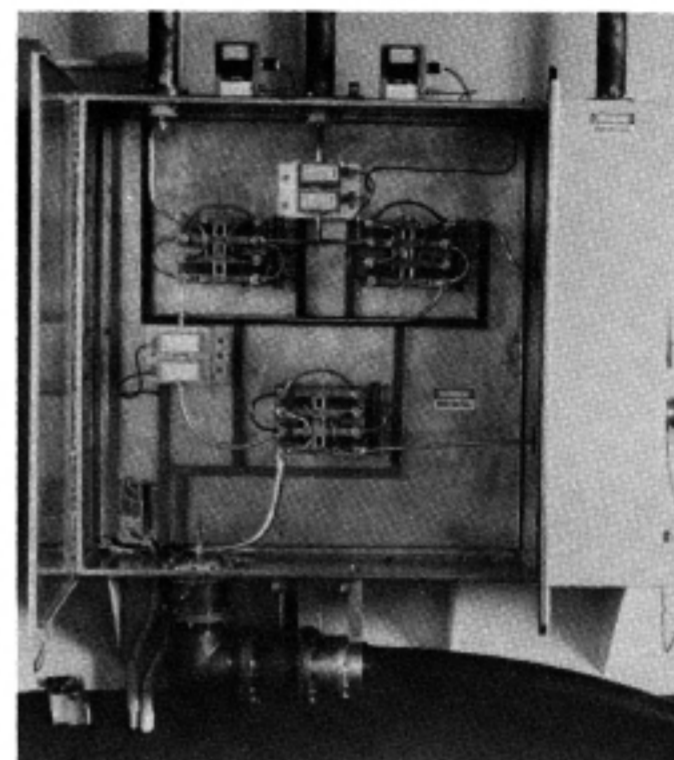
Preventive Maintenance

Neil's thoughts on the importance of

preventive maintenance are true, but many of us do not do it. Why? One reason is that when we have to deal with equipment at a *common point location*, we *cannot* do preventive maintenance. A typical common point is the contactor that switches either transmitter to the antenna. How do you work on this?

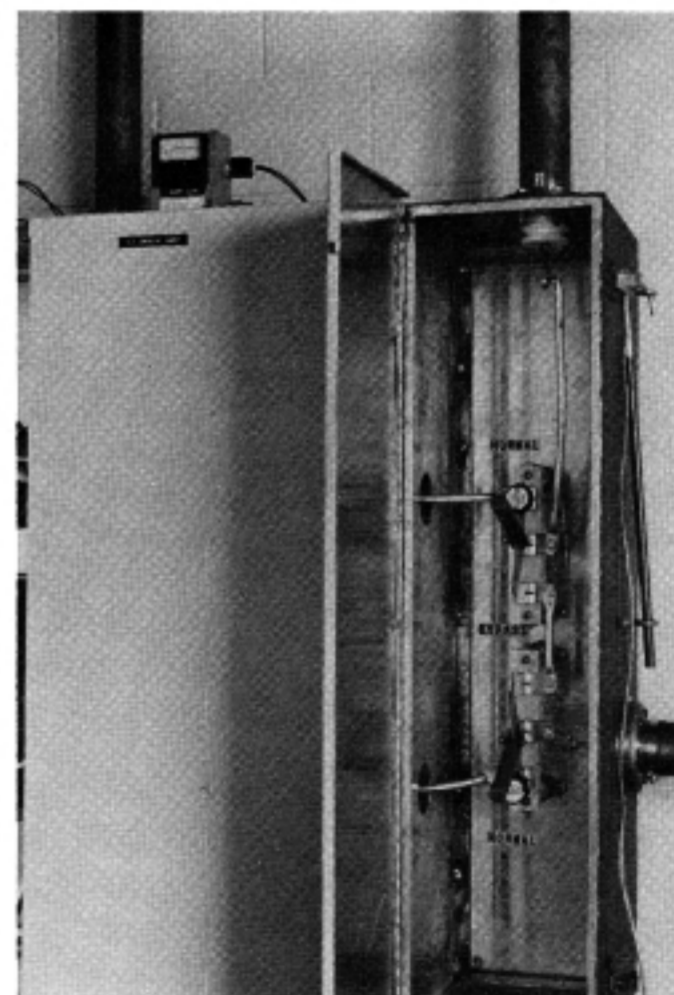


This photo shows our RF switching cabinet, with a pair of doors at the left, and a small single door at the right. At the top are the coaxial feeds from both transmitters and the coaxial cable to the dummy load. The 4 1/2" coax going underground to the directional antenna system exits at the bottom. (This is a four-tower array. A fifth tower supports the STL receiving antenna, and is also used as a non-directional source. There is also a feeder to the non-directional network.)



Two contactors switch one of the transmitters to the antenna, the other to the dummy load. Another contactor switches the antenna feed to either the normal arrays for Day and Night, or to the non-directional tower.

Manual Switch Box



Here you see our secret weapon: the smaller part of the box, which contains two 125-ampere manual transfer switches. With the handles away from each other, the circuits are normal. But when the switches are operated (handles near each other), transmitter 2 *directly* feeds the non-directional tower network. To use this manual box, transmitter #1 is put on the air to the directional antenna, and

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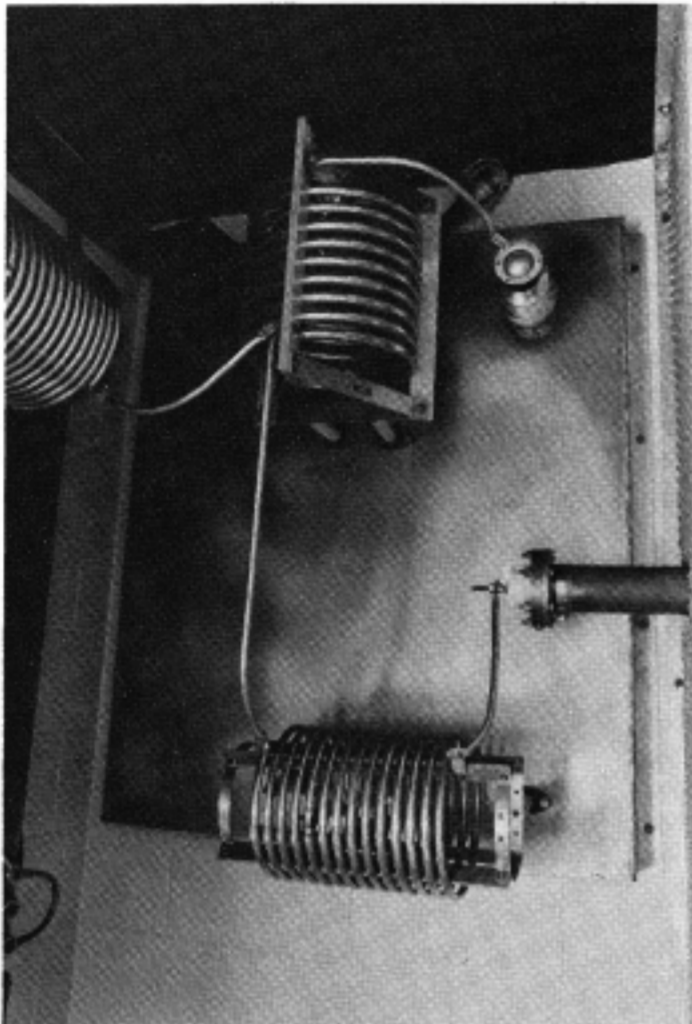
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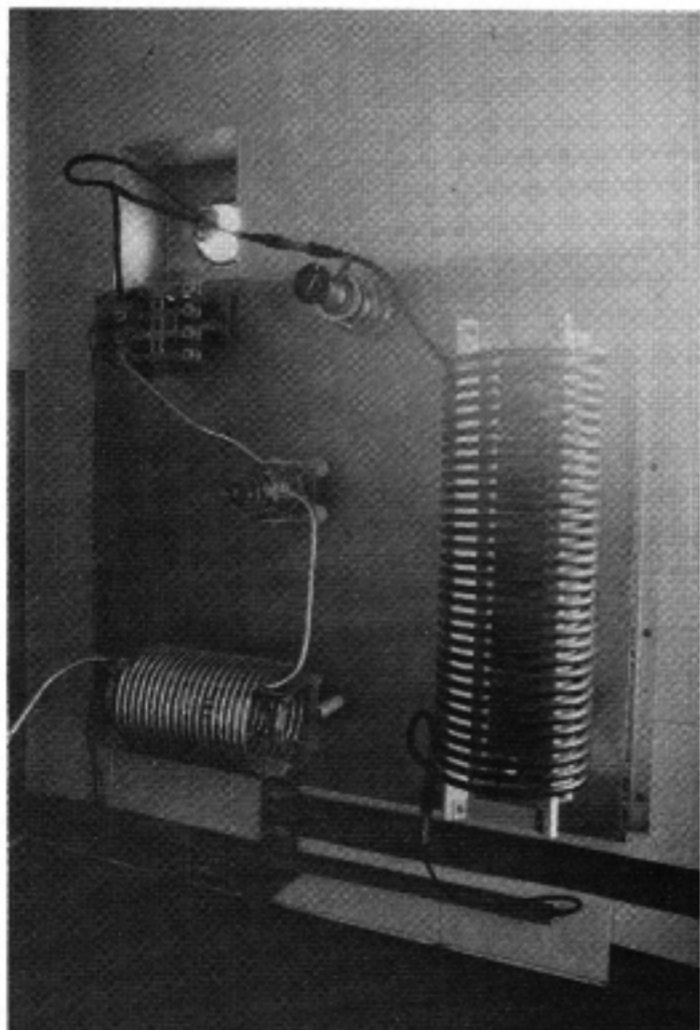
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the two manual switches can be operated. Then, transmitter 1 is switched off, the antenna is switched to non-directional, and transmitter 2 is turned on.

Having done this, the small door may be closed and the large ones opened. The ground clamps can be placed on the two right-hand buses, and the three RF transfer contactors in the main switchbox can be inspected, repaired or lubricated with safety.



The non-directional network is fed from our "secret-weapon" box through 3 feet of coax to the series input arm of a tee-section.



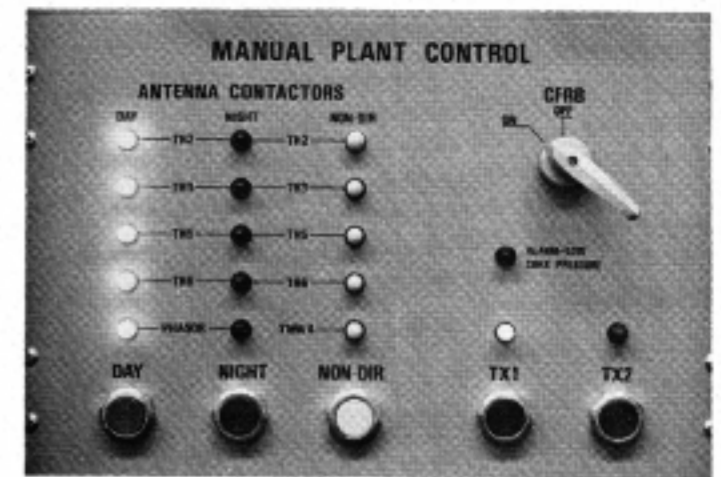
The output arm connects to the bowl leading through the wall to the tower

BROADCAST TECHNOLOGY

which is adjacent to the transmitter building. Thus there is no transmission line to fail, nor is spare line required out to the main power-split tuning house.

This tower mounts the receiving antenna for our 450 MHz studio-to-transmitter link enabling it to reach over some nearby apartments. The 450 MHz feed is taken off the tower without shorting it out at 1 MHz by using a coil wound off the coax line with the outer conductor grounded at the bottom end and with the top end feeding through the hollow, tower feed-in and so up to the receiving antenna; a variable capacitor across the coil is tuned for parallel resonance.

Manual Plant Control



We have a set of manually-operated switches, including a gun-handle switch, to turn plate voltage off and on, plus 5 pushbuttons to select TX1 or TX2, and

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Day or Night or non-directional arrays. These pushbuttons operate magnetically latching pilot relays, which in turn energize one coil or the other of the mechanically latched antenna or transmitter contactors. With this arrangement power is required *only to make a change* in the system, not to maintain it. Thus, the 230-volt 3-phase feed to the tuning houses can be opened for maintenance or alteration without affecting on-air operation. (This circuit breaker has the euphonious title of *Tower Power Breaker*.)

For unattended operation, which is the normal condition, it is unreasonable to have the studio operator change patterns by remote control by taking it through three commands of plates-off, change pattern, and plates-on. So stations normally have a plant control system to sequence these functions at the push of one button. As you know, antenna systems are custom-designed; also, different transmitter manufacturers have different approaches: the net result is that most plant control systems have been custom-made for each particular transmitter plant.

Our earlier plant control systems were based on relay logic with timers. These can be a pain-in-the-neck to design, build and de-bug; there usually are a few sneak circuits that do more than you expect them to do when you come to test it. This also means that after they are in service it can be risky and difficult to modify their logic program when alterations are required. And nowadays they are expensive to have built—so expensive that we found it to be about the same as the cost of an industrial controller with relay-ladder input logic, so we purchased a Struthers-Dunn Director 4001 (Bruce Dingwall described CFRB's application of this microprocessor-controlled unit at the 1981 CCBE conference). We have found it to be reliable. As well, we have been able to modify the program, test it, and put the new program in service in *a matter of hours*.

At this point I would like to discuss diesel generating sets and transfer switches. In order to give your listeners that warm security-blanket feeling that you're always there, it is desirable to have a diesel that starts and takes load quickly. We have found that they can do this in 5 to 8 seconds. A common specification for a diesel set for broadcasting purposes is a maximum time

from cold start to full load of 10 seconds.

Having such a set is great as long as it is reliable, so you must schedule maintenance on the unit *and* on the transfer switch. But then you find that that switch is one of the "common points" that Neil referred to; to keep you on air it must always operate, whether it's on hydro or on diesel. In the past we have twice run into a problem with transfer switches which ended up requiring that the whole transmitter plant be shut down for several hours to tighten up bolts at the back of the panel, bolts which were factory installed and normally inaccessible during operation. To make these problems manageable, (that is, to have short off-air times), we have installed a transfer switch with an integral manual bypass switch for the building services such as blowers, racks, etc. This turned out to be a cost effective method because it fitted in neatly with the fire control system in the building, and it enables us to reduce the cost of our hydro energy bills.

With regard to the fire control system, each transmitter room has 4 sensors; 2 for temperature-rate-of-rise and 2 for products-of-combustion. If one kind of sensor trips we get a warning; if both kinds of sensors trip we get the alarm and in addition the breakers feeding a transfer switch are tripped out so that there is no power in the room and all dampers in and out of that room automatically close thus, without air and without electricity to sustain arcs, we expect that any fire will cause minimum damage. Halon can be added in the future but has not been installed for cost reasons.

With respect to savings on hydro energy, we now always use the diesel set to power the second transmitter whenever it is tested, thus we reduce our peak demand by 100kW which at \$3.00/kW amounts to \$300.00 a month, or \$3,600 per year. Offsetting this, it costs about \$30 a month for diesel fuel for 2 hours a month. With energy costs continuing to go up, we have a long term benefit that more than repays the cost of the extra transfer switches. In addition we have the ability to service, maintain, and repair one transfer switch while the other is carrying the other transmitter on the air.

The Human Element

Now let us look at the "man-machine" in-

terface. Assuming that the diesel-set has a 10-second start time, then the next longest time-bottleneck that a broadcaster has is the reaction time of the announcer/operator. Now of course you know that he is well-trained in what to do when a transmitter goes off. You know that because you trained him yourself; he has all the instructions etched into his memory. That is, they were there until the alarm bell goes, his speaker and his headphones go dead and the red light flashes on. He or she jumps up to reach the remote control panel but with legs around the chair, trips, loses his balance, grabs the console and inadvertently knocks off the console's output key.

You can see the setup now. Typically the operator will try every button on the remote control panel. In fact, when it's all over he will probably tell you how he carefully pushed each button in turn, and was so surprised that none of them cured the problem! You and I know that what he probably did was to start the diesel, shut off the filaments of the standby transmitter and route the main transmitter to the dummy load, and of course *none* of these will put the plant back on the air.

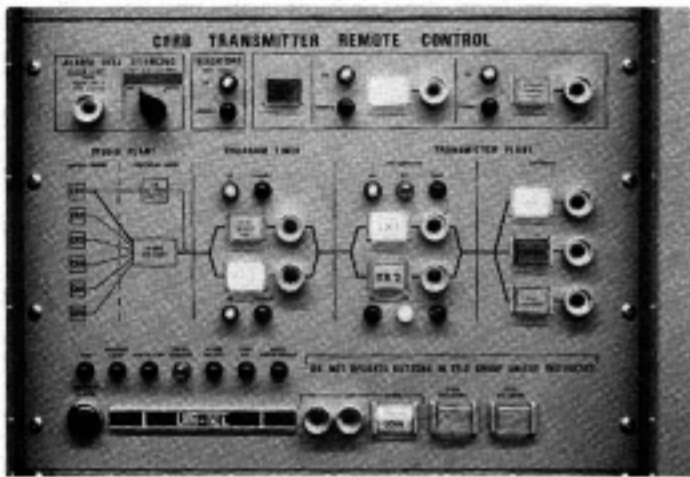
When the operator finally gets advice and brings the transmitter on again he says "Thank God that bell stopped". But then it takes a while to realize he can't get anything to feed the transmitter from the console. Another phone call suggests he turn the output key on, and then it's clear sailing.

Now, what can be done to help the announcer/operator by improving the man/machine interface of the remote control system? These people have a problem. Dick Cupke of Purdue University, who runs the NAB Engineering Management courses, warns us that we must keep in mind the characteristics and the background of the person we are talking to. In this case the lights and pushbuttons on a remote control panel are designed to "talk" to or inform the announcer or operator. How do we arrange for it to talk clearly to him?

- One device is to arrange the panel to show a signal flow from left to right.
- Lettering should be large with simple, consistent wording.
- Indicator lamps should have significant color coding.
- A combined pushbutton-and-lamp can be confusing; in most cases it is better to

A CCBE PAPER

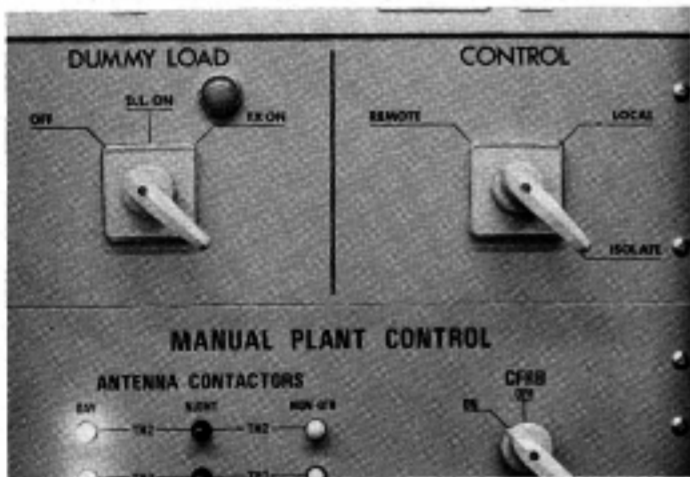
have a control pushbutton look like a pushbutton and not look like an indicator.



In this panel the signal flow is from the studios (on the left), through the two studio-to-transmitter link routes, (one Bell and one microwave), then to the choice of two transmitters, and then to the choice of antennas.

- White lights show the "selected" component.
- A green light shows something is working okay.
- An amber light shows that something is not on, but has not failed.
- A red lamp indicates a problem. In addition any red lamp, when it comes on, will cause the acoustic alarm to sound because it is something you want to bring to their attention. There is an "alarm silence" button to reset the acoustic alarm.

One last thing: when writing instructions on the operation of the panel the same words or abbreviations as are marked on the panel should be used in the instructions. Users can become confused when it says TX1 on a pushbutton that you describe as Transmitter #1. For a similar purpose we use a duplicate of the studio panel for local control at our transmitter plant; then, when talking to somebody at the studio we have the identical wording, colors, and locations in front of us; no one has to depend on their memory.



This photo shows two gunhandle switches on a panel above the manual control panel at the transmitter plant. The one on the left is a conventional switch for the dummy load to bring on its blower, and then turn on the spare transmitter. The switch on the right, when operated to its left position permits "Remote Control" operation; in the cen-

tre position it permits "Local Control" from the transmitter plant only; the right hand position is labelled "Isolate". In this position all connections between the solid state output relays of the Industrial Controller are interrupted wherever they normally connect to the pilot relays for transmitter selection and for antenna selection. In addition, where a closed circuit is normally provided by the Industrial Controller, a maintained circuit is added to keep the transmitter on air. In this position the antennas and transmitters can be switched only by means of the Manual Panel. But while in Isolate, then the whole Remote Control and Plant Control system can be checked as a unit right from the studio up to the connections to the transmitters. This enables troubleshooting and maintenance to be done without going off air. It also provides a manual backup for these systems in case of any serious malfunction.

Planning for Reliability

Let me tell you of one serious malfunction that I heard of at an FM station in Chicago. This was at least 10 years ago when new plants were being installed in the John Hancock Building. This station was very proud of a super system they had developed with three 10 kW transmitters, any two of which could be operated in parallel. Also the three exciters could be switched so any one could feed the two amplifiers that were on air. This was great because it gave wonderful redundancy. Normally one transmitter would be available for testing on the dummy load while the other two were on air. Even if two of them went down they could still stay on the air at half power.

However, one day their large, single, 24V power supply that powered the logic relays for the system failed, with some damage to the control system. The control system was so complex that it took about 5 hours for the station's chief engineer and his technicians to undo the wires, add clip leads and get one transmitter on the air by itself.

This is where planning for reliability is always a challenge and where, as Neil East has said, the fewer common points, the greater your reliability.

One last example of how you think you have all the answers and it turns out that you have missed one obscure but significant point.

In our plant, we did what designers typically do and that is to use a Sola voltage regulating transformer to feed all the racks. These transformers are particularly good for removing glitches from a power line which can affect a

microprocessor, or which can cause clicks in audio equipment. It operates within a half cycle due to its saturable magnetic core structure. In our case, each rack has a plug-mold strip and each strip is fed through one of the 15 amp breakers in the panel at the output of the Sola.

A few days before we were going to cut over from the old plant to the new, we had a faulty plug-mold in the monitoring rack. We had expected that this breaker would trip out, clear itself, and not affect the rest of the racks—but it did not work this way. These transformers are inherently self-protecting, so that when you put a dead short across its output, the transformer saturates and limits the output current to about 17 amps; so it took 2 minutes of this current to finally trip the 15-ampere breaker feeding the monitor rack before the voltage came back up to restore the program and control racks.

As a result of this experience we put indicating fuses in the side of that breaker panel, with one fuse fed from each breaker through to its respective rack; then with 2, 3 or 5-amp fuses they would blow quickly and not interrupt the other racks. This now seems to be a good approach. (I think we were lucky to have the faulty plug-mold to show us this problem before we were on air. It turned out that it wasn't "Plug-mold" but some copy of it, and we replaced these strips with new strips made by the "Plug-mold" people.)

It is always an interesting challenge to design new plants. They can never be perfect, but proper planning can avoid the gross problems. To help us, we reviewed our building design and layout with Gus Sondemeyer of Stan Davis' organization. At the time, Gus had designed and built more than 35 transmitter plants; with this background he was able to point out problems we were heading into, and gave us valuable suggestions.

A totally new plant is usually the most appealing way to go as it may appear to be the easy way, but this is not necessarily so. Oftentimes the re-design and rebuilding of one portion of an existing plant can be cost-effective. Such re-design will usually provide a more provocative challenge for you, because you know the problems, especially what limitations there are to staying *on-air*.

Clive Eastwood is vice-president, engineering, of CFRB Limited, Toronto. This paper was presented at the 1982 conference of the Central Canada Broadcasters Association, Engineering section (CCBE).

by **Phil Stone**

Water under the bridge: much has transpired since we turned in our previous column for BT ... we were truly saddened by the death of **George Murray**, who for many years was a giant in the broadcasting scene in Canada. We worked many shows with George in days gone by, and he was always a warm, friendly, co-operative professional ... **Albert W. Trueman**, author of *A Second View of Things: A Memoir*, published by McClelland & Stewart, is the father of Global TV's new chief, **Peter Trueman**. A.W. has had a distinguished University career: president of Manitoba and New Brunswick; chancellor of Western Ontario ... CBC got about \$9,000 for each 30-second spot on its Grey Cup TV coverage (total of 54 spots or over \$480,000), while CTV charged around \$5,000—getting less because Grey Cup was part of a total season package ... Belatedly caught up with the news that, after 37 years, **Paul Hanover** is no longer CHML Hamilton morning man: his post was taken over by **Mike Marshall**, **Norm Marshall's** son, and Paul is involved in community/public relations for 'ML ... **Suzanne Perry** is working with the federal cabinet's communications committee ... Labatt's bought exclusive Canadian TV rights to the 1986 World Cup Soccer matches and major European championships for the next four years. Rights include closed-circuit and pay-TV ...

There are now 883 members in the CAB Quarter/Half Century Club. In 1982, there were 12 new 50-year members, for a total

of 79, and 69 new 25-year members ... **Ralph Mellanby**, executive producer of *Hockey Night in Canada*, will be loaned to ABC for the 1984 Olympic Games. International acclaim isn't new to Ralph, who has won Emmys for his previous coverage of Olympics ... Congratulations to CHFI Toronto on its *Celebrity Radiothon*, which attracted many major figures and brought in much-needed funds for the Canadian Opera Company; one of the co-hosts was **Paul Fisher**, whom we trained at Humber College ... **Stu Brandy's** Brandy Media Sales is repping CKO in Ottawa ... Southam moved its office, including *TV Times*, to the Renaissance Plaza at 150 Bloor Street West, Toronto ... **Robbie Dunn**, formerly with Selkirk, became v.p. and g.m. of NL Broadcasting in Kamloops ... That colorful character, **Paul Rimstead**, is now doing a phone-out show on CJCL Toronto in the late evening ... **Ray Corelli**, who worked the news beat at Global and CBC (including *Sunday Morning*), has now left the post of communications director for Ontario's social services ministry after seven months to go to Vancouver for CBC-TV to handle current affairs. His wife, **Felicity**, resigned as communications advisor to the Toronto Board of Education to join him ... **Ralph Snelgrove** has a new career as an alderman in Barrie ... Reminder that the Canadian Television Commercial Festival will be April 27 at O'Keefe Centre, its 20th anniversary ... RBC president **Brian Minton** reports the annual Radio Day is being shelved this year to concentrate, with BES, on the 1983 Canadian Radio Commercial Awards ... Former RBC pres. **Lou Tameanko**, who had joined RAB in New York, back in Toronto, apparently unhappy with Gotham living ... **Sandra Radick** of the Radio Bureau is to become Mrs. **Duff Roman** in April ... **Peter Emerson** now sales mgr. at CKAR/CKQT Oshawa ... **Bob Pickens** of CBC Winnipeg chosen broadcaster of the year by the Sports Federation of Canada ...

CBC's **Vic Rauter** will free-lance as the voice of the Intercountry League this summer on CJMR Mississauga, handling the Toronto Maple Leaf baseball games ... Sportscaster **Vin Scully** (Los Angeles Dodgers) is said to have signed a multi-year contract with NBC that will bring his income to \$1 million a year ... And it's rumored that **Tony Kubek** will be relegated to color man on NBC's back-up games for its Saturday afternoon baseball ... Toronto is being described as the largest and most concentrated pay-TV market in North America, with a potential 1.26 million subscribers ... **Rosalie Gower** was appointed a full-time CRTC commissioner for four years, while **Sally Merchant** of Saskatchewan will serve part-time for five years ... Remember **Gale Gordon** of *Our Miss Brooks*, *Fibber McGee & Molly*, and the *Lucy* shows? One of his main activities these days is appearing in plays at the Stage West theatre in Edmonton ... Although **David Adams** officially retired from BBM, he is still active with the rating service as a consultant ... *The station manager got a new job that required he move from the Maritimes to B.C. The night before the family left, his little daughter was saying her very last prayer in her old home: "Dear God, bless my mommy, daddy, grandma and grandpa. And now, dear God, I'll have to say goodbye. We're moving to Vancouver. Amen."*

Our syndicated radio program, Arts in Ontario, which had been on CFMO-FM Ottawa for over seven years, is now on CKO-FM there ... For us, a major happening was the resignation of **Don Insley**, who had been v.p. of the Radio division of Standard Broadcasting; he's a true radio veteran, whom we trust will

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continue to be part of the broadcasting scene ... By the time you read this, **Valerie Pringle** will have given birth to her first child. Until she returns, **John Stall**, one of our very first Humber students, is handling her CFRB program ... The new theme music for **Bill Anderson's Big Country** was composed and arranged by **Darrel Scott** of the Merceys, and recorded at United Media. Distributed by St. Clair Productions, the show is aired on 75 stations across Canada ... Changes at CKEY Toronto: p.d. **Jim Kidd**, who hadn't been on-air for some eight years, took over one of **Pat Murray's** talk shows, and a 90-minute talk show featuring a psychologist was added; colorful Ottawa journalist **Charlie Lynch** does *Soap Box*, and commentator **Tom Gould** left at the expiration of his NewsRadio contract ... Standard Broadcasting has been negotiating to acquire a 55% interest in a cable system to be constructed in the San Fernando Valley area of Los Angeles. Apparently Cablecasting Inc. of Toronto, which indirectly holds the franchise, needs cash to build the system, and the deal offers Standard an attractive tax write-off ... And in Ottawa, Bushnell Communications, a division of Standard, has offered to buy all the shares of Skyline Cablevision and Cablevision Converters; it already owns 44% and would pay out \$11 million for the remainder.

At the annual meeting of Baton Broadcasting, **John Bassett** said the demise of the CBC "would be a very tragic happening for broadcasting in this country." Of pay-TV, he said "we're not trembling in our boots" ... ABC News seems to favor Canadian newsmen: with **Peter Jennings** and **Mike McCourt** already in major positions, ABC promoted **John Mackenzie**, formerly of CTV, to head their new bureau in New England ... Sad story about **David Green**, a newsman at CKWS-TV Kingston, who collapsed and died in the station's hallway at age 30. His wife is expecting their first child. He worked for ATV in the Maritimes before joining CKWS-TV ... If you could turn back the clock about 40 years, what would **Ralph Snelgrove** and **Harvey Dobbs** be doing? They'd be running the Grenville School, training young people for radio, with Harvey as teacher and Ralph as technician ... And **Allan McFee**, as a young man, was quite a sculler: good enough to have rowed with the Argonaut eight in the Henley Regatta ... Colorful ex-Argo coach **Leo Cahill** will return, along with **Ron Lancaster**, to handle CFL commentary on CBC next season ... The 12.5% federal import duty on color TV sets has been extended through 1985 ... Social note: **Anne Christine Wright**, executive producer of national radio syndication for CBC, married **Mark Starowicz**, executive producer for The Journal for CBC-TV.

The death of comedian **Jack Pearl** (*The Happy Gang*) at age 86 reminds one of his radio heydays and his byword: "Vas you dere, Sharlie?" It was Pearl who once said, "the business of being funny is nothing to laugh at" ... Canadian Sports network named **Frank Selke** executive v.p., **Roger Mallyou** v.p., business affairs ... All going well, the CKO-FM network should by now be carrying a new show we developed, that sets out to overcome the misunderstandings that so often exist between the many races, colors and creeds in Canada. Each week, a person of different ethnic origin will be interviewed. We are indebted to CKO president **Hap Parnaby** and executive editor **Howard English** for giving the go-ahead to do a show about a subject in which we very strongly believe: knowledge and understanding of our fellow man. →

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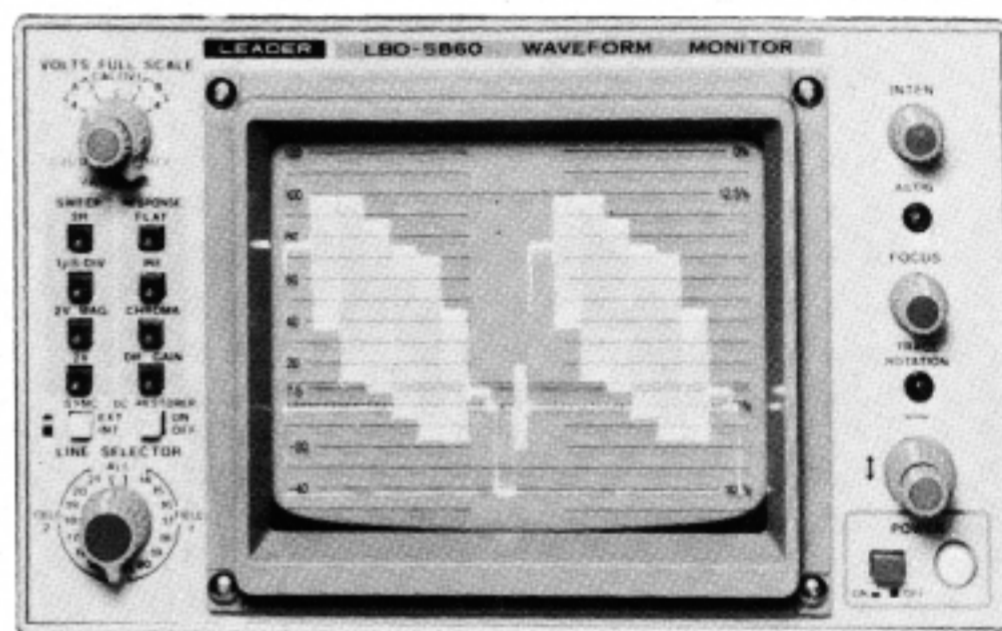
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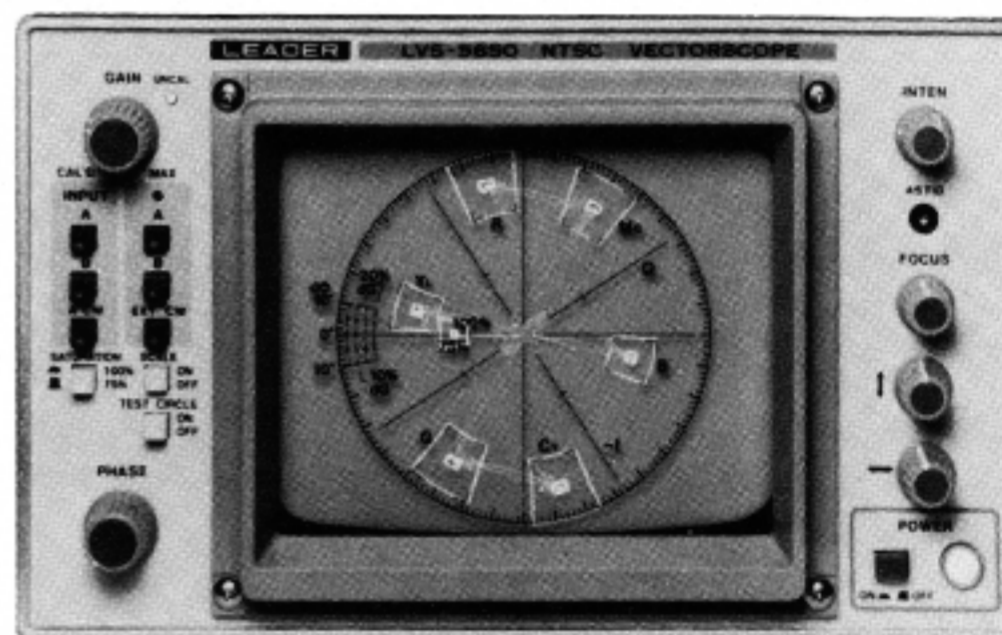
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CKAY Duncan: "Live from Nepal"

Dear Phil,

Reading *Broadcast Beat* is like attending a CAB convention ... After reading your column, I really feel plugged-in to what's happening in the industry. Needless to say, I enjoy reading it and look forward to each issue.

The November/December cover story was of particular significance to us at CKAY because Lake Cowichan, where Teleglobe is located, is only 12 miles from Duncan (20 kilometers, as Ottawa insists). Most of the Teleglobe employees in Nepal were from Lake Cowichan, and there was tremendous local interest in the climb.

We made arrangements for them to phone us from Nepal during our open line programs and went live on the air with them. It was exciting as hell, as only radio can be while history is being made. We originated six one-hour shows from Nepal. The highlight was an unscheduled call the morning the climbers reached the peak. Of course, they were so excited they just had to call and tell someone, so we went right on the air with them for 40 minutes. Phil, it was the most exciting 40 minutes of live radio you will ever hear. We spoke with everybody, including Mike Shot, who is pictured in the article, the Shirpa guides co-ordinator, who was so excited he closed his remarks with, "I'm so excited I just want to go out and get drunk." The call came in at 9:20 a.m. We rebroadcast the program at 6:00 p.m.

So, Phil, reading your column, then reading the cover story, brought back many good memories of old friends, and six exciting radio events.

Dick Drew,
president,
CKAY Radio,
Duncan, B.C.

The sudden passing of **Andy McDermott** was a shock to all of those who knew him. About to celebrate his 75th birthday, Andy passed away suddenly after a heart attack. On a personal basis, I had known him almost from the day I got into radio, and his counsel and advice to this then neophyte was most valuable. Our condolences go to his widow, Betty, his son Paul, who is on the sales staff at CKLW, and his two daughters.

Not long after Jacquie and I, in our respective BT columns in the Jan/Feb issue, had remarked on how well **Jean Caine** was looking, she suffered a devastating car accident. Apparently her pelvic bone was separated, and I understand she has suffered a great deal of pain and discomfort, but is now coming along well ... **Tasha Sims** left Q-107 to pursue an acting career ... **Bob Trimbee** was made g.m. at Broadcast News ... **Ernie Steele** advises that the CAB's *Broadcasting Strategy for the Future* is available from CAB, Box 627, Station B, Ottawa K1P 5S2 ... You can't keep a good man down: **Elwood Glover** is back doing his CKO and CING-FM programs, after a quadruple by-pass operation ... **Doug Thompson**, a former colleague and one of our top producers, is writing a Beatles special to be

hosted by **Ringo Starr** for NBC Radio. There will be 26 one-hour shows starting in June and to be handled in Canada by Telemedia Broadcast Services ... The colorful and controversial U.S. TV weather forecaster, **Tex Antoine**, died at the age of 60 ... A note from **Corky Rawson** at CKTB/CJQR-FM St. Catharines tells us **Tom Gauthier**, from CJAD, is now general sales manager ... Get your registration in soon if you're planning to attend the CCTA convention in Calgary, May 16-19 ... **Robert Cezar**, who poured new money into MTV, is now president, with **David Ernest** chief financial officer; **Harry MacDonald** is director of sales, **Ed Ginglo** retail s.m., **Will Hawking** national s.m. **Paul Iannuzzi** is v.p. and chief operating officer ... If you think Montreal or Toronto has the world's worst drivers, **Dan Iannuzzi** can testify it's hard to beat Rome; driving in the Eternal City, Dan was rear-ended and suffered, among other injuries, a broken collarbone ... Agincourt Productions now at 821 Queen St. East in Toronto ... At ML Radio in Hamilton, **Bob Hooper** is now v.p., operations, and **John McCann** general s.m. ... From CKSL London, **Jim Hennigar** left to join CKO Toronto and **Rich Greven** went to CKY Winnipeg as morning man ... Speaking of 'SL, at the Conestoga awards dinner—a truly class affair, thanks to **Gary Parkhill—Gord Hume**, now a v.p. at CKSL, gave me a brochure detailing CKSL's growing prominence in the London area ... Standard Broadcasting lost two major figures in **Phil McKellar** and **Paul Reid**. Phil's passing at 58 was both sad and tragic, in view of the recent controversy that surrounded him; Paul, 55, whom I met 'way back in Peterborough, his home town, was long a legend at CJAD Montreal ... At Newsradio, **Eric Rothschild** was named g.m., and reporter **Kathy Lynas** returned to the Ottawa bureau from CKEY ... The Juno Awards will be held on April 5th and carried, as always, by CBC-TV ...

An NRBA survey of 1,060 stations revealed that nearly 300 wanted to get into AM stereo "as soon as possible". On that ratio, it could mean some 1,200 AM stations in the U.S. are anxious to add stereo ... It's reported that the Swiss government's monopoly on broadcasting may end and that by 1984 there will be between 20-30 private stations on the air in that country ... For 27 years, **Harry Adaskin** was head of the University of British Columbia department of music, after a distinguished career with the Hart House Quartet and scores of appearances on CBC. As a sequel to his 1977 memoirs, *A Fiddler's World*, he has now published *A Fiddler's Choice*, published by November House ... Our congratulations to old pal **Duff Roman** for an excellent CHUM Report which takes a hard, incisive, revealing look at the upsurge in FM radio ... The death of **Freeman Gosden** at age 83 brings back memories of bygone radio days: Gosden played Amos (also Lightning) in the legendary *Amos 'n' Andy* series ... After giving a man a thorough examination, the doctor said to his wife: "To tell you the truth, I don't like the looks of your husband." She said, "Neither do I, but he's good to the children."

Bob Elsdon of CFPL-TV London was elected president of the Television Bureau ... The McCann-Erickson media bulletin predicts that pay-TV will be in 10-20% of Canadian homes by the end of this year ... The Radio Bureau of Canada has signed a multi-year contract with Telmar Communications for on-line media data to provide an improved base of numbers to sell radio ... Global TV has exclusive rights in Ontario to broadcast games of the new United States Football League; they'll go Monday nights for 16 weeks ... Named v.p. for national sales at

Tele-Capital Ltd. are **Robert Lauzon** (TV) and **Robert de la Durantaye** (radio) ... **Worthington Minter**, who passed away at 82, was a former manager of CBS-TV, better known as the creator of *The Ed Sullivan Show*, *Studio One* and *The Play of the Week* ... Interesting comment by **Stan Buda**, senior v.p. of Ted Bates Advertising: tomorrow's TV commercials will rely less on words, more on pictures, living up to TV's primary status as a visual medium ... At Humber College, **Larry Holmes**, a driving force in founding the Radio course, is now Dean of College Relations; in charge of the division under which the Radio course operates is Dean **Carl Eriksen** ... **Bob Holiday** has replaced **Les Sole** as p.d. of CJCL, adding this post to his role as operations manager.

We were sorrowed by the passing of CBC's **Bob Leitch**, a victim of cancer at 56; of recent years he was best known as the news voice of *Metro Morning* ... And **Dora Greene**, Lorne's mother, died in Ottawa, aged 90 ... BBM hopes to find out this spring how many Canadians have video recorders and, later, how they use them ... **Susan Ormiston** of CBLT's *Fraser's Edge* got her start in the newsroom, the first woman to work there, of CFQC Saskatoon ... **Don Holtby** of CFRA/CFMO became g.m. of the Ottawa Rough Riders ... **Terry Strain**, president of CJCA Edmonton was elected chairman of BBM; **Gary Miles** of CKRC/CKWG-FM Winnipeg continues as chairman of member liaison ... Pay-radio could be with us next year according to a CP story; **Stewart Searle**, a Winnipeg businessman has the rights in Canada ... Rogers Cable opened a retail outlet in Toronto; there are many in the U.S., even the drive-in kind ...

The industry lost a major figure when **John Larke** passed away at the age of 54. Vice-president of CHYM/CKGL-FM Kitchener, John was a member of a distinguished broadcasting family, which includes his brother **Stan**, who followed this writer as head of the Radio course at Humber ... In a CP story, **Douglas Muggerridge**, managing director of BBC External Services, says 80% of the world's population does not have access to free media. BBC broadcasts in 37 languages to over 100 million—the largest worldwide listenership of any international broadcaster ... By June you should be seeing the world's smallest TV set: made in Japan, it has a 2.7-inch liquid crystal display screen (B&W), weighs but 12.35 ounces, and will likely sell for about \$250 ... Retailers now account for about 70% of radio advertising in Canada ... Both CHUM Ltd. and Standard Broadcasting have optimistic views of broadcasting's future; **Al Waters** told CHUM's annual meeting that the industry is basically healthy and that radio and free TV are habits for Canadians that will not be replaced by pay-TV ... Veteran broadcaster **Rai Purdy**, now 73 and living in Vancouver, was interviewed while in Toronto and had some salient questions of his own: "Anybody who says he knows what's going to happen in the next five years doesn't know what he's talking about. If the satellites work out, will we need TV stations? Will we need networks? And how can any of that be regulated? It's the most complex, iffy situation I've encountered in any business."

Items for *Broadcast Beat* should be sent directly to **Phil Stone** at 2350 Bridletowne Circle, #1601, Scarborough, Ontario M1W 3E6.

BROADCAST TECHNOLOGY

A Visit to CJSB Ottawa

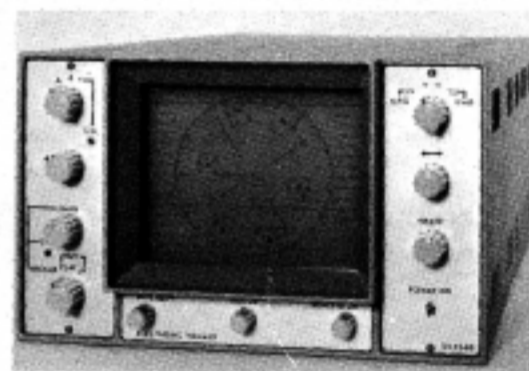
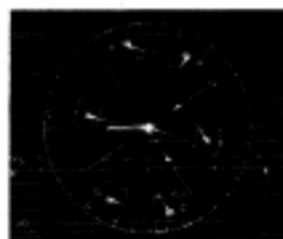
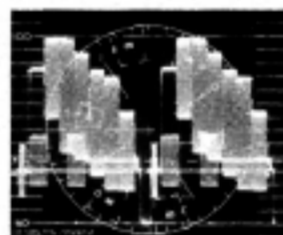
While in Ottawa recently, I accepted **Sid Margles** kind invitation to tour CJSB/540 Radio. The Standard Broadcasting station went on the air last August 31, and its plant is adjacent to that of CJOH-TV.

The spacious, two-storey building conveys a feeling of strength and stability. Everything in the way of equipment is state-of-the-art, and one gets an immediate sense of functionalism. Sid, an old newsman before becoming CJSB v.p. and g.m., has equipped the newsroom with three CP wires, two UP, Canada News Wire and Standard Broadcast News, with all the attendant voicers.

With an appealing musical sound and great attention to information, discussion and surveillance, CJSB is a colorful and contributory radio centre with, indeed, something for everyone—fitting for the nation's capital.

We had a chance to chat with sports director **Ron Andrews** of NHL fame (statistician and p.r. director before joining CJSB), and if there is a happier man, I haven't met him. Says a lot for the kind of leader Sid Margles is—and also for Standard, which always and everywhere it has roots is a class operation. As Sid put it, "You never get a second chance to make a first impression."

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CBC RADIO'S ALL-FM PLAN VETOED, AM STATIONS MUST BE RETAINED

The CRTC has told the Canadian Broadcasting Corporation that it must make substantial changes to its long range radio plan, which proposed that all CBC radio services operate on the FM band.

It has also required the CBC to retain its AM stations, with the exception of those with poor nighttime coverage. And wherever possible, CBC FM stations will be confined to the 88-92 MHz educational/non-commercial band.

The CBC's plans, as outlined in the documents, *FM Frequency Reservation and CBC Coverage Planning*—August, 1980, and *Long Range Radio Plan*—revised 10 February, 1982, were considered by the CRTC at a public hearing on April 28, 1982.

Four Networks to Remain

The concept of four networks has been endorsed by the CRTC, i.e., a basic, monophonic service (primarily on AM) and an FM stereo service, in both English and French.

The Canadian Association of Broadcasters (CAB) had argued that if the CBC were to operate solely on FM it should be required to combine its two services into one FM stereo network for each language. However, the CRTC states that it has already licensed the two complimentary networks and they are to be retained and extended.

AM for Basic Network

The Commission rejects the view that AM is on the decline: "The CBC basic service should remain essentially an AM service and be provided on the AM band wherever possible." It notes that FM broadcasting has "its own set of problems and limitations"—shadowing, reflections and multipath distortion, as well as receiver overload and interference problems—and that the CBC radio audience on AM is still twice that of FM.

Improved AM receivers are also anticipated as a result of the forthcoming introduction of AM Stereo and extension of the AM band.

In the CRTC's view, most of the CBC's 40 AM stations provide reliable service over large urban areas; a shift to FM would require many scarce FM channels, while achieving no significant improvement in service. However, some merit is seen in using FM to replace AMs having poor night coverage, in which case the AM frequencies would be made available to other applicants "at an early date".

88-92 MHz for CBC

The CBC itself proposes to use, wherever possible, FM frequencies in the non-commercial, education sub-band, i.e. from channels 201 (88.1) to 220 (91.9). The CRTC endorses this policy and goes further: the Commission says it can find nothing in DOC documents to support the CBC's claim that educational frequencies must be reserved for educational authorities; therefore, commercial channels should be used by the CBC only where suitable channels between 201-220 are not available. Moreover, existing CBC FM stations should be moved to the non-commercial band wherever possible.

Technical Standards

For network planning purposes, the CBC developed its own criteria for signal levels, with those for stereo much higher than for mono. Interveners at the public hearing charged that these technical standards resulted in large coverage overlaps and waste of FM channels; also, higher standards for stereo are not the practice in North America and are not justified. It was suggested that low power FM transmitters would be sufficient to fill in any coverage gaps.

The CRTC appears to share these views and states the following guidelines for CBC FM stations, to minimize coverage

- overlaps, based on the DOC definition of the 3mV/m and 0.5mV/m contours of stations on the same network should be minimal;
- the 3mV/m contour of one station should not overlap the 0.5mV/m contour of another;
- an FM 0.5V/m contour should not overlap the Night Interference Free contour of an AM station with night service limitation;
- stereo signal level should not exceed that specified for mono.

A feasibility study is to explore the use of fewer channels to achieve the CBC's coverage objective, in consultation with the DOC.

Five-year Reviews of Plan

The CBC is to submit a revised long-range radio plan which, rather than reserving frequencies for up to 20 to 30 years, will be subject to review by the CRTC every five years, as the industry and its technology evolve.

The Commission states that it will take into account the revised CBC plan when considering all FM applications. Any applicant seeking a channel in the CBC plan will have to show why his proposal should take precedence over the CBC.

The revised plan will be expected to reserve only those channels needed for extension of the **basic** service and possible replacement of AM stations having poor night coverage. "Reservation" of FM channels would simply show the number and class of channels required at each location. And AM frequencies, if available, are to be used by the CBC for its basic service, even where FM channels have been reserved. As for the **stereo** service, the revised plan is to merely "identify" (not reserve) channels for future expansion.

FM Allotment Plan

Finally, the CRTC urges the CBC to conform to the FM Allotment Plan, completed in August, 1981, "within a reasonable time". This involves changing the frequencies of 24 CBC FM stations, plus the move of the Drummondville station to Trois-Rivières, and work has begun in a few cases. However, the Commission notes that until the changes are completed, the development of other FM services in large areas surrounding these stations must be delayed.

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Circle #151 on Reader Service Card

HEARINGS

- April 19:** Winnipeg, MB
North Star Inn
- May 3:** St. John's, NF
Holiday Inn
- May 17:** Vancouver, BC
Hotel Georgia
- May 31:** Edmonton, AB
Hotel MacDonald
- June 7:** Hull, PQ
Conference Centre
- June 14:** Hull, PQ
Conference Centre

(Subject to re-scheduling; those planning to attend should verify date and location.)

DECISIONS

AM Radio

- The frequency of 660 kHz has been designated for a new station to be established in Calgary by Rawlco Communications Ltd. (formerly Family Radio Ltd.), headed by Gordon Rawlinson, president of CJME/CIZL-FM Regina. The original application, approved Nov. 24/81, proposed 1380 kHz—pre-empted by the prior approval of CJCY Medicine Hat on 1390.
- Transfers approved:* CHUM Ltd. purchase of the CJYQ group in Newfoundland (6 AM stations, plus an FM licensed for St. John's to be on-air by this fall); Radio Mont-Laurier Ltée acquisition of CKML-CJLR; purchase of CKLY Lindsay by Philip Beswick.

FM Radio

HALIFAX FM FOR CFDR

A new FM station has been approved for the Halifax area, licensed to Patterson Broadcasters Ltd. (CFDR Dartmouth). It will operate 24 hours a day with a progressive rock format on 104.3 MHz, 100 kw ERP. A competing application by Haldar Media Ltd. was denied.

Other FM approvals;

- CBC rebroadcaster—Thunder Bay, ON—235 kw on 101.7, ex-CBL L'Annonciation, PQ—4.6 kw on 88.3, ex-CBF St-Jovite, PQ—835 w on 95.5, ex-CBF Amherst/Springhill, NS—750 w on 105.5, ex-CBF Deer Lake, NF—642.6 w on 96.3, ex-CBY Coaticook (PQ) FM Inc., 710 w on 104.5. Ste-Thérèse, PQ, community station, 50 w on 103.1.
- CFMK-FM Kingston, ON, power increase from 2.7 to 50 kw.

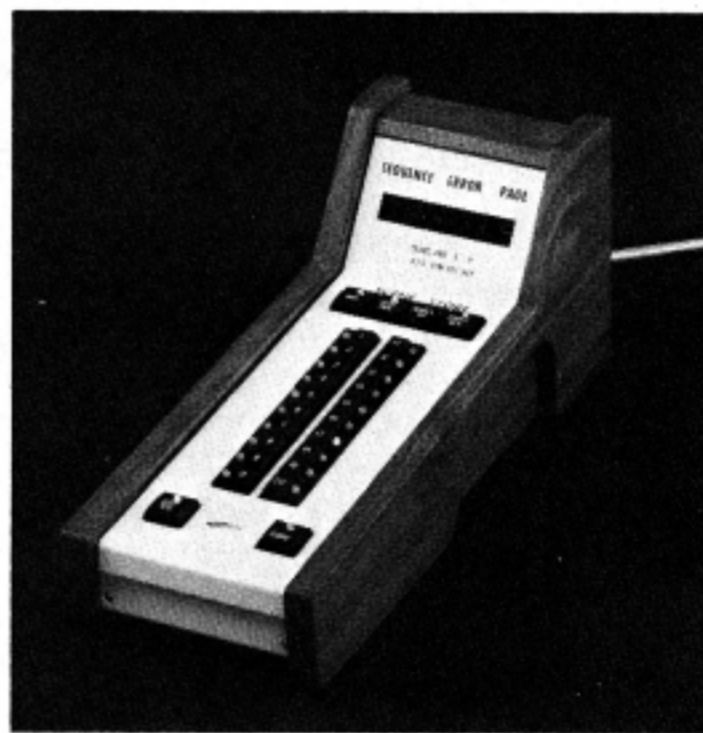
- CJBC-5-FM Peterborough, ON, power decrease 31 to 9.5 kw.
- CBA-FM and CBAF-FM Moncton, NB, power decrease from 95 to 77 kw.
- CIOI-FM Prince George, BC, change of parameters from 7.1 kw ERP on 101.2 at Pilot Mountain, to 900 watts on 100.5 at Connaught Hill.
- CBYH-FM Harrison Hot Springs, BC, change of frequency from 96.7 to 92.5.

Television

- TVOntario—20 low-power transmitters approved for locations in Northern Ontario. (TVO is also applying for rebroadcasters at Huntsville, 24.9 kw on ch. 13, and Penetang, 60 kw on ch. 51; decisions pending).

- CBC rebroadcaster approved: Nipigon, ON—2,300w, channel 16 Maniwaki, PQ—1,392 w, ch. 15 Thetford Mines, PQ—1,140 w, ch. 21 Daysland, AB—100 w, ch. 40 Forestburg, Ab—28,460 w, ch. 52 Lake Cowichan, BC—100 w, ch. 17.
- Power increase: CBVT Quebec City, from 173 to 252 kw.
- Power decrease: CKRS-TV Jonquière, from 208 to 137.3 kw, and CIVV-TV Chicoutimi, from 143.7 to 141.8 kw, both at new Mt. Valin site; CHAN-TV Vancouver, from 164 to 97.5 kw, at new Mt. Seymour site.
- Amended application: CBC rebroadcaster at Ste-Adèle, PQ, amendment from channel 21 to 54 approved (power 1,260 w, ex-CBMT Montreal).

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ABC, NBC Favor Kahn AM Stereo

In a recent article on developments in AM Stereo, *Billboard*, the entertainment weekly, comments:

“Kahn Communications, which wasn’t even included in the well-publicized Delco tests, may already have the market sewn up, in the eyes of some observers. NBC and ABC, for example, think the Kahn system is best; John Hidle, ABC vice president for radio technical operations, offers, ‘I suspect a very large percentage of the country could now listen to the Kahn system.’

“Kahn, with 26 stations broadcasting via the Kahn-Hazeltine system, mostly in major markets, is ahead in that race now.”

Circle #31 on Reader Service Card