

# BROADCAST

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1979

# EQUIPMENT

# TODAY



CHUM TORONTO UPDATES STUDIO FACILITIES

NAB '79 DALLAS

CCTA '79 TORONTO

LIGHTING WITH LASERS

TV IN COSTA RICA

VIDEO OPERATED RELAY



Headquarters building of CHUM Limited at 1331 Yonge Street in mid-town Toronto houses CHUM and CHUM-FM.

## CHUM UPDATES STUDIO FACILITIES

On-air production facilities at CHUM and CHUM-FM in Toronto have been undergoing substantial renovation and up-dating during the past year. The project, carried out under the supervision of George Jones, supervisor of engineering for the CHUM Group, and Burrell Hadden, chief engineer for CHUM and CHUM-FM, has put to pasture equipment that has served the station for as long as 20 years or more.

Those years have seen remarkable changes at 1050!

CHUM began its existence as a 1 kilowatt daytimer in the fall of 1945—becoming the city's fifth radio station, and the first new station of the post-war era. The studios were on the top floor of the Hermant Building on Dundas Square, and the transmitter site, later moved to the Toronto Islands, was south-east of Don Mills Road and Lawrence Avenue East—long since overtaken by urban sprawl. Highlights of CHUM's limited dawn-to-dusk schedule included a popular weekly report from the city's mayor, and two daily live musical programs: a breakfast routine with such personalities as Monty Hall and Larry Mann (on their way to greater fame), and a noon-hour country and western effort known as *The Danforth Radio Show*. (Alas, lean years and a militant Musicians' Union soon brought an end to the live musical shows . . .)

During its early hey-days, CHUM, still owned by Jack Part, erected an impressive new one-storey building at 225 Mutual Street, incorporating many of the latest developments in studio design. This location, however, was sold to RCA Studios, and the failing radio station settled for less imposing quarters at 250 Adelaide Street West. It was losing \$3,500 a month when purchased by Allan Waters on December 11, 1954.

The new owner realized that CHUM had to achieve two vital

*Note the "trees" motif in wall decoration carried through control room and studio; rooms at CHUM are designed to be relatively "dead" acoustically, giving an impression of quiet similar to that experienced in a forest. The decoration is found to contribute to the "cool" surroundings for on-air personnel, and provides a pleasant ambience in which to work.*



On-air AM master control room is equipped with new McCurdy SS8600 console. Bob Pinkney is at controls. Room is equipped with PSB Beta speakers, made in Canada. Tape seen in background is daily logging machine.

objectives if it was to survive: full time operation and an audience-attracting format. Within 2½ years, on May 27, 1957, Waters succeeded in putting CHUM on 24-hour operation, and introduced a well-researched Hit Parade format to Canada. He hasn't looked back since!

During much of the past 22 years, CHUM has been second in audience only to CFRB, a station that has dominated the local radio scene since 1927. Co-incidentally, the two stations seem destined to be neighbors: on the dial (1010 and 1050); at their transmitter sites (Clarkson); and in their studio locations (near Yonge & St. Clair).

CHUM moved to 1331 Yonge Street in April of 1959, occupying a two-storey building previously owned by Ginn Publishing. Here, CHUM-FM went on the air September 15, 1963, with a unique Fine Arts format—another first for Canada. Unfortunately, the format attracted only a relatively small audience (it peaked at 52,000) and the progressive-contemporary format was introduced in July, 1968.

Meanwhile, the AM station increased power to 50 kw with the location of the transmitter at Clarkson, west of Toronto, in August, 1964. It was the culmination of a determined search by CHUM, in the face of repeated assessments that 50 kw on 1050 "couldn't be done".

Over the years, CHUM Limited has expanded its interests across Canada to become one of the nation's largest broadcasting companies. Its broadcast holdings now include the Atlantic Television System (ATV), comprising CJCH-TV Halifax, CJC-TV Sydney, N.S., CKCW-TV Moncton and CKLT-TV Saint John, N.B.; CJCH/C-100 Halifax; CFRA/CFMO-FM Ottawa; CKPT/CKQM-FM Peterborough; CKVR-TV Barrie; CFRW/CHIQ-FM Winnipeg and C-FUN Vancouver. Its most recent acquisition is a major interest in CITY-TV Toronto, and decisions are awaited on applications for AM and FM in Edmonton and FM in Vancouver.

It's an impressive record for the little daytimer that was "on the ropes" in 1954. You've come a long way, chum!



Announcer John Majhor at work in studio, equipped with turret controls for monitoring either off-air or direct. Note digital thermometer and clock. Microphone is Neumann U-87, speaker is PSB Avantié.

## RALLY VS. OVER-REGULATION

U.S. broadcasters were scheduled to descend on Washington, D.C., on February 28 to lobby for a reversal of the trend to increased regulation. The Community Broadcasters Association, Daytime Broadcasters Association, NAB, NRBA and RTNDA joined forces to organize the all-industry effort, asserting that broadcast licenses are "probably more burdened than any other business." Members were to be briefed over breakfast, then spend the morning visiting senators and congressmen, by appointment, followed by a luncheon with FCC officials.

Immediate action to deregulate radio is the prime objective of the broadcasters. Noting that the FCC imposes 30 million man-hours a year in paperwork on stations, NAB president Vince Wasilewski has predicted that once radio is allowed to function in a "free and open marketplace", it will become evident that television should be accorded the same deregulation. Specifically, NAB seeks an end to rules on program percentages, commercial limits and ascertainment procedures; it claims that marketplace competition has already reduced commercial content, and that broadcasters could better define the needs of their own communities and how they are meeting them.

## FULLTIME FOR DAYTIMERS?

NAB Radio Board has adopted a resolution which urges unlimited operation for all broadcast stations, including existing daytime AM stations. It claims this goal can be accomplished "without significantly diminishing service by other classes of stations", and calls on the FCC to appoint an advisory committee to study the question.

## ENGINEERING LAB GETS OK

The establishment of an engineering laboratory at NAB headquarters has now been approved. Supervised by George Bartlett, it will be used to develop solutions to engineering problems facing the broadcast industry and to evaluate the many innovations proposed in FCC actions and filings.

## STL FREQUENCIES NEEDED

NAB has asked the FCC to return 947-952 MHz to broadcasters. The frequencies are now assigned to land mobile use. Noting that Moseley Associates has petitioned the FCC to permit aural STL and intercity relays to operate in unassigned UHF TV channels, when 947-952 MHz frequencies are not available, NAB said other solutions should be considered first. It added that, if AM stereo is authorized this year, as anticipated, "the demand for dual high quality STL channels will explode". Also, stations require STL facilities to provide service in emergencies, when lines may be out.

# NAB Notes

## ROLE FOR TV TRANSLATORS

TV translators are the most efficient means of providing a true diversity of programming to all viewers and should play a greater role in U.S. telecommunications, according to NAB. The association says that low power stations do not appear to be a viable means of extending services to underserved areas.

## DONATIONS REQUESTED

NAB member stations have been asked to donate equipment no longer being used to

aid stations in less developed areas, initially the Caribbean. Jim Hulbert, at NAB headquarters, 1771 N Street, N.W., Washington, D.C. 20036, is in charge of the program.

## APPOINTMENTS

Appointments at NAB include Richard Wyckoff, promoted to legislative counsel, Government Relations department; and Robert B. Mitchell, vice-president for membership. The Association's membership now includes 4,615 radio and 562 television stations.

# NRBA

## FCC MAY LIMIT 1-A AMs

NRBA reports that the FCC proposal to limit the coverage range of 25 class 1-A clear-channel stations could open the way for up to 120 new stations. Some 80 to 100 new unlimited stations could be added on the 25 1-A channels, plus about 25 on adjacent channels. Under the proposal, the clear-channel stations would have their broadcast area protected only within a certain radius—either within the 750-mile radius of their sky waves, or within the 150-mile radius of their ground waves. Comments on the proposal, FCC Docket 78-863, are due April 9, 1979.

## EXPANSION OF AM BAND

NRBA estimates that 700 new AM stations could be added with the expansion of the AM band upwards to 1860 kHz. The proposal will be considered at World Administrative Radio Conference (WARC) which begins in Geneva in September.

## STUDY OF 9 kHz SPACING

The technical effects of 9 kHz spacing will be studied by an NRBA committee. The Association says it neither opposes nor supports 9 kHz—that the "marketplace" should determine its usefulness—however, further study is needed to determine if it would lead to "deteriorization" of service. NRBA adds that it "ardently opposes reductions in FM band spacing", which would preclude future quad broadcasting.

## RF RADIATION HAZARD?

According to NRBA, a U.S. government

report has concluded that the RF bombardment by the Soviets of the U.S. embassy in Moscow produced no ill effects on the occupants.

## AM STEREO DELAY

The FCC deadline for comments on AM Stereo was extended to February 27 at the request of Motorola and Harris Corp.

## RADIO DE-REGULATION

NRBA, as a radio-only organization, was the prime mover of the Rally Against Over-Regulation (see NAB). The Association has long campaigned for less regulation of radio, "given the highly competitive situation in the radio industry". FCC Commissioner Tyrone Brown has given some support to this view. NRBA, however, cautions that *deregulation* is the objective, not *reregulation*, a piecemeal reduction or changing of rules which "may undermine the impetus for complete deregulation". NRBA president Jim Gabbert emphasizes that the U.S. Congress must be persuaded to act, as the FCC does not have the authority to completely deregulate radio.

## 1979 CONVENTION

The Washington Hilton will be the site of NRBA's 1979 convention, scheduled for October 6-8. Abe Voron is convention coordinator and may be contacted at NRBA, Suite 500, 1705 De Sales Street, NW, Washington, D.C. 20036, telephone (202) 466-2030. A 10-member exhibitors committee has also been established to assist in the planning of all future NRBA conventions.

# CCBA NEWSLETTER

by Warren Parker

## '79 CONVENTION PLANS

The CCBA Convention, Christmas and New Year's resolutions are well behind us—so far behind, that we are now into the Spring Convention season, with NAB here and WABE fast approaching!

As your CCBA Engineering executive has found out, the '79 convention lies in the not too distant future. On January 19, we held our official changeover meeting, when it's customary to bring in the new members of the executive. It was impossible to believe that almost three months had gone by since the '78 convention.

This year, the first for our new constitution, should flow smoothly as all of last year's executive agreed to remain, and we lost no time in bringing our new member, secretary-treasurer **Larry Cameron** of CKWS Kingston, up-to-date on the CCBA's objectives for the next couple of years.

Everyone was in agreement that last year's convention was a good one, and to repeat the success early planning is needed.

Ladies' Day will be bigger and better this year, so if you didn't bring your wife along last year, or if she was not aware of our Ladies' Day program, your first warning is now rendered!

The '79 CCBA will again be held at the Royal York Hotel, October 28-30, and it should be another winner.

## EDUCATIONAL PROGRAM

An educational program will again be presented at CCBA '79. The last two years have emphasized digital—and before I go any further, thanks and congratulations are extended to **Wayne Gedlaman** of SAIT, Calgary, for another exceptional Digital Seminar.

The question has been raised of this year's session: should we go back to the basics, go forward to microprocessors, or learn something other than digital? Your comments certainly would be appreciated.

**Austin Reeve**, our president, takes his new title seriously and intends to extend CCBA's educational program in as many ways as possible. This need was pointed out in an article in the last issue of BET (*Around & About, Jan/Feb, page 22*) and is becoming more and more important.

CCBA, not being a Canada-wide association, has to seek the aid of other associations for educational standards, and while the process continues, we are doing what we can. For example, CCBA has endorsed the Broadcast Technician Course of Conestoga College, Kitchener, Ontario, which is

due to start in September, 1980; and the association is represented at the ongoing discussions headed by OACETT regarding certification standards.

## AROUND CENTRAL CANADA

What's been happening around the Central Canada area? Well, what hasn't happened! It seems that as soon as the winter weather hit, things began to happen . . .

An opening at CFRB Toronto was more than **Bruce Dingwall** could refuse. He writes: "Bruce Dingwall, colorful engineer of CJJ Radio in Hamilton, is moving on to bigger things. Bruce will join **Clive Eastwood's** staff at CFRB/CKFM . . . the only thing is—is CFRB ready for Bruce?"

Well, it has been some time now. We hear all is going well at CFRB, but what of CJJ? **David Swallow** of CING in neighboring Burlington took the job of engineer at CJJ, and with the ownership change at CJRN Niagara Falls, **Gary Hooper** becomes director of engineering for both CJRN and CJJ. Gary is now waiting for results of two FM applications for Hamilton and Niagara Falls so he can have four stations to run. (Trying to outdo his brother Brian at Orillia!) Meanwhile, **Blair Harley** is in charge of technical matters at CING.

Incidentally, new FM applications are abounding—three for Hamilton and two for Niagara Falls (*see Directions in this issue for details*).

Another ownership change—at CKLB/CKQS Oshawa—has changed **Bill Marchand's** title from vice-president to consulting engineer for the company.

Other news of the Toronto area includes a new multilingual television station, CFMT-TV, due on the air January, 1980.

CKAN, the new 10 kw station in Newmarket, is cruising along well with **John Evans** as engineering captain. He says he is waiting for the ice to thaw and an early spring construction start.

CHSC St. Catharines is moving ahead quite nicely—this spring we'll see a new forest of towers growing in the peninsula.

## EXPANSION AT CJOY/CKLA

Whenever I plead for news items, no one responds as well as those who have had the job of CCBA Newsletter editor. I can always count on **Larry Smith** of Guelph for some news. He reports:

"The 3600 square foot addition for CKLA-FM is coming along nicely. We are currently three weeks ahead of schedule—how's that for a change! We are moving our FM operation into its own section, with 1800 sq. ft. for studios and control rooms

and the same amount of space on the lower floor for sales, accounting and engineering. This move will allow CJOY to expand into the space currently occupied by CKLA in the existing building, with a re-organized record library and a second production control room.

"We are now doing remotes on CKLA with a new remote unit we built recently. Our FM station is automated and for eight hours a day we normally use the 'auto-live' approach. With this remote unit and some DTMF tones on the TCC, the announcer can start and stop the unit and add a special event, from the remote point. The only problem with this system is to decide who to talk to on the talk-back!"

## READY FOR STEREO?

**Ed Buterbaugh** of CKLW Windsor has been burning the midnight oil for the last few months getting set for AM stereo. He is one of us who firmly believes the new trend is just a step away. As a matter of fact, he is trying to help stereo along by getting authority to broadcast a series of stereo programs. It's nice to see a Canadian station in on the testing and experimenting of AM stereo and I hope Ed will keep us posted on his discoveries and new developments.

**Gene Hinz** of CFCO Chatham told me recently that his new McCurdy consoles were almost ready for installation. I understand he will have a complete new audio lineup in his studios all ready for stereo. We will look forward to seeing some pictures of your new layout, Gene.

What's the rest of Central Canada doing?

Well, I hear CFRA/CFMO Ottawa added a fourth Audiotronics console to their studio plant, but the rest of the eastern Ontario area has been quite quiet.

Next issue, I hope to have some news from the north and I'd like to hear from you. If you're not busy changing or adding to transmitter or studio plants, then you should have time to let us know what you would like to learn at the next CCBA convention.

Thanks to all who took the time to pass along news items from their stations. Keep the info coming and I'll try to get it put together for the May/June Newsletter.

**Warren Parker**  
610/CKTB  
Box 610  
St. Catharines, Ontario L2R 6X7



*Exterior of proposed building for CHIN Multicultural Radio—Guy Rao, architect.*

When Johnny Lombardi bought a former Loblaw's supermarket across the street from CHIN Radio in Toronto, he hoped it would be the future site of his television station.

Fate and the CRTC have decreed otherwise. However, the indomitable Lombardi has devised another plan, which will turn the location into a modern new people-oriented community centre, housing CHIN AM-FM, as well as television production facilities.

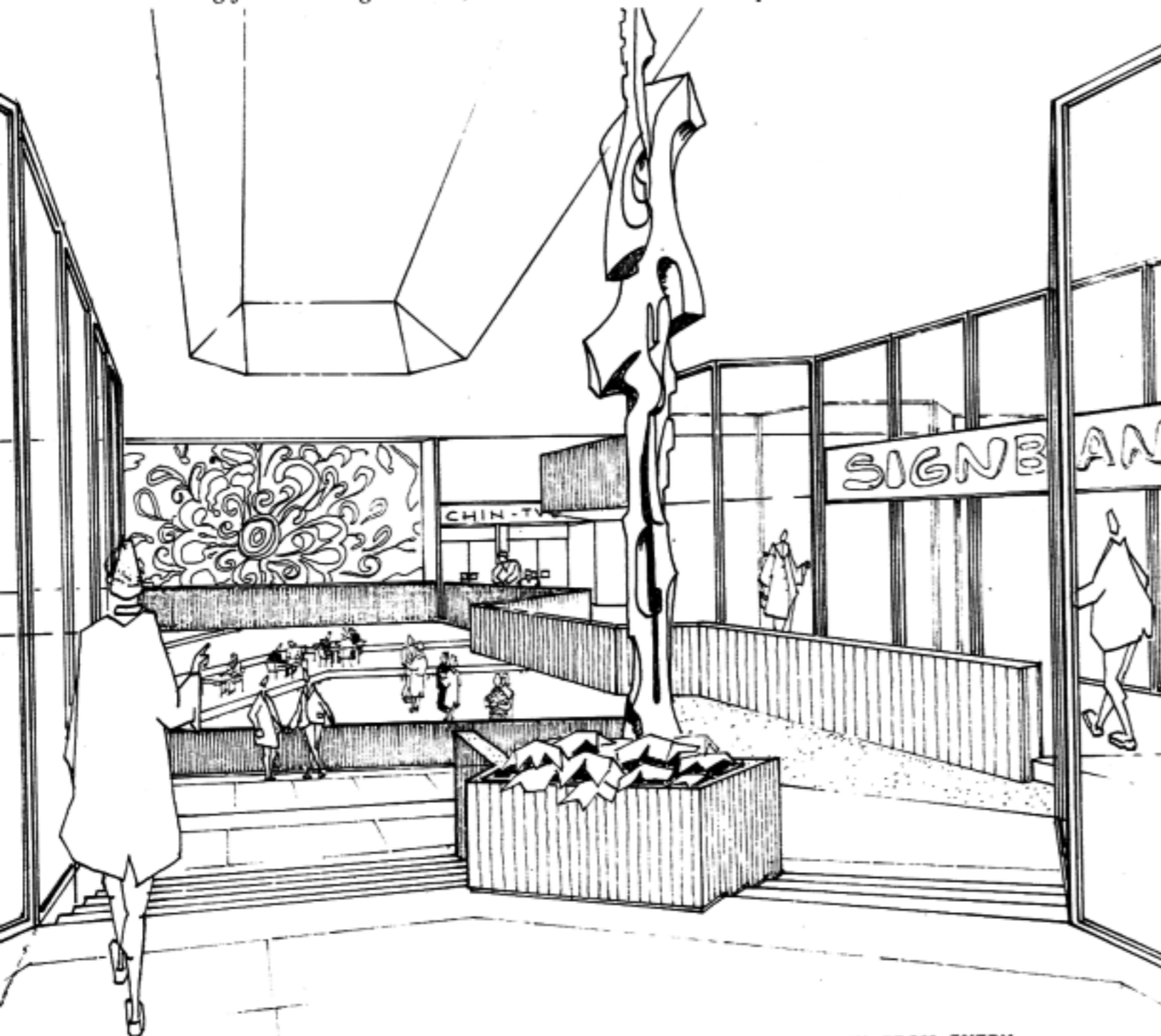
The concept comes from two residents of the area, Johnny Lombardi himself and architect Guy Rao, of Guy Rao and Associates. The area is College Street West—an old part of the city, populated 50% by Italians, with the other 50% a mixture of Anglo-Saxons, Portuguese and Latin Americans. As in many areas of Toronto, older buildings are being renovated, however architect Rao also believes that the street needs the regeneration that comes with totally new structures.

The modern exterior of CHIN's new 80' x 184' building will be of reflective glass—a mirror of its surroundings. Passers-by will be attracted by a multi-

**Focal point of multicultural community—**

## **NEW BUILDING PLANNED FOR CHIN**

*Entering from College Street, visitors will come into open atrium or court.*



**VIEW FROM ENTRY**

*Radio studio corridor would be equipped with sound locks to identify and separate studios from non-production areas.*

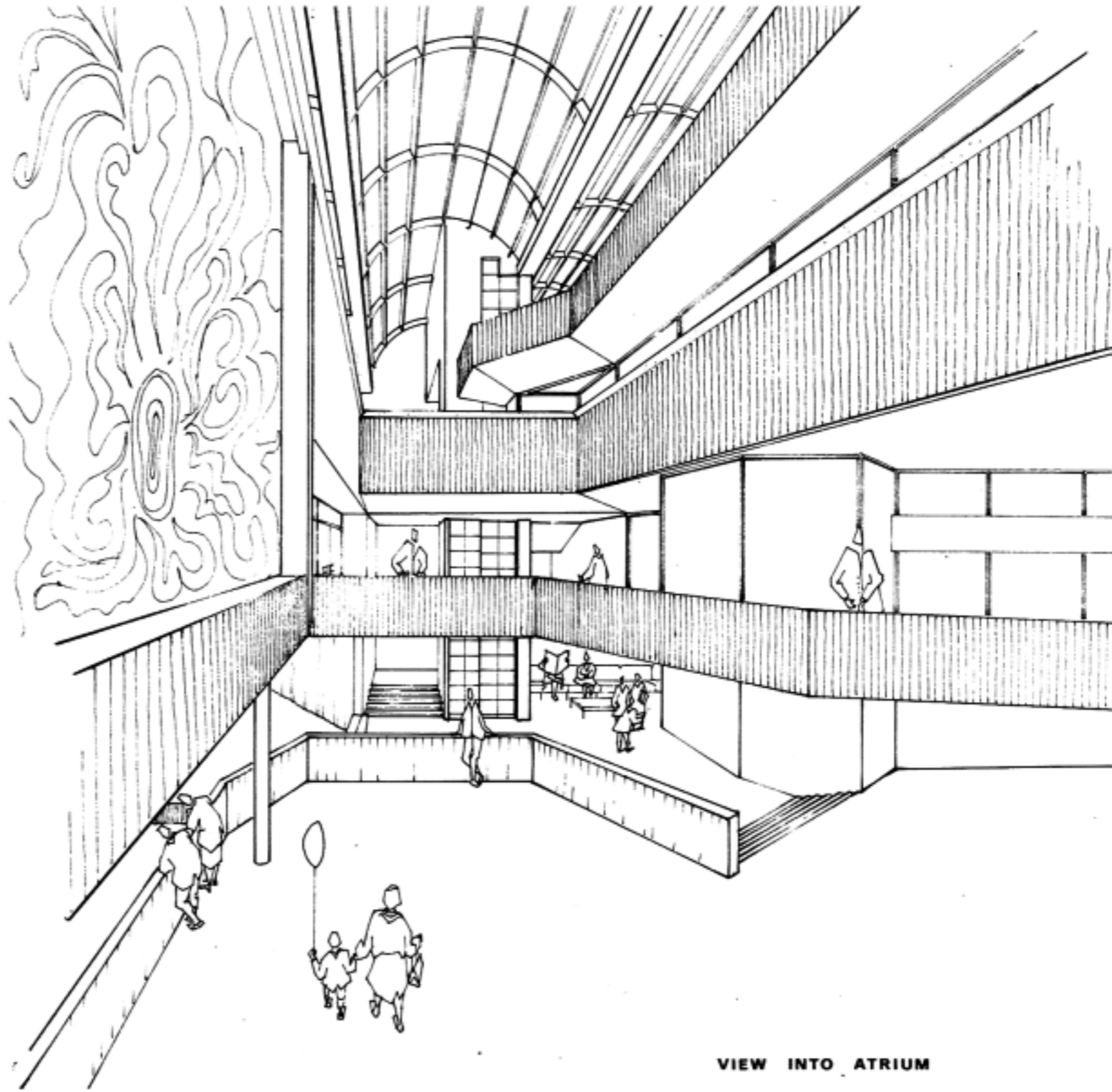


image screen, using rear projection, which will portray the multicultural world of CHIN. The entrance will lead to an inner atrium or court in the centre of the building; here, in a bright, cheerful open space well lit by overhead skylights, visitors will be able to linger over coffee at a sidewalk cafe, or browse in a series of boutiques and stalls featuring items from around the world. A large photographic mural with warm scenes portraying people of many nations will carry out the multicultural theme.

On the lower level will be a community hall for musical and theatrical performances, live broadcasts, exhibitions and banquets. Designed to be a versatile meeting place for the community, it may be an intimate cabaret-style theatre, or, opened up to the atrium, a spacious hall for receptions, shows or exhibitions.

On the second level will be television production studios and rental offices, while CHIN's studios and offices will occupy the third level. Complete control of public access to production areas will be provided.

Architect Guy Rao's concept combines the state-of-the-art requirements of today's broadcast industry with some of the attributes of yesterday's "village square". The new building will provide not only a modern broadcast facility, but an exciting new focal point for the multicultural community, of which Johnny Lombardy is so much a part.



VIEW INTO ATRIUM

Overhead skylights will brighten upper levels as well as open area below, with its sidewalk cafe.

# Introducing the TCU-1!

A very affordable, highly reliable digital Time Control Unit for broadcasters.

The TCU-1 is the newest digital time control unit from PWH Electronics.

Designed to provide precision timing and control operations for broadcasters seeking reliability, flexibility and expandability at a moderate price, the TCU-1 incorporates many important features in a standard size, rack mountable frame with easy access hinged front panel.

Features include two time bases with automatic switching, power supply backup, and a time event generator for controlling up to

four time events every 24 hours. In addition, options are available to increase capacity to six events per day, to allow multiple switching of each event every day, and to program activations on seven day cycles.

The TCU-1 is completely compatible with other PWH units. It can be used as a master clock for driving any number of Cenchron

remote slave readouts, and it provides a parallel 24 bit BCD real time output for interfacing.

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BROADCAST EQUIPMENT TODAY 23



Modern studio building of CJTN Trenton.

## TRENTON TAKES TO THE AIR

Radio station CJTN Trenton, Ontario, went on the air on January 22nd.

The station is owned by Quinte Broadcasting Company Limited, which also operates CJBQ/CIGL-FM Belleville and CJNH Bancroft, Ont. Quinte's newest facility was approved by the CRTC on June 5th, following a public hearing in Toronto in January, 1978.

CJBQ has operated studios and offices in Trenton for 28 years, and its representative in Trenton for the past 25 years, **Ted Snider**, is now manager of CJTN. Other staff members are: **Bob Rowbotham**, sales manager; **Don Smith**, program director; **Patsy Trudeau**, traffic; **Margo Griffis**,

continuity; **Monika Deagan**, music programmer and librarian; **Bud Hunter** and **Brian McNamara**, announcers; **Bruce McCullough** and **John Spitters**, news; **Eva Palidwar**, secretary/receptionist; and **Mike Coffey**, technician. National sales representatives are P.M. Radio Limited of Toronto and Montreal.

**Frank C. Murray**, general manager of Quinte Broadcasting, says that CJTN will provide 12½ hours of local programming daily, the balance being broadcast from CJBQ. Included in the station's schedule are live broadcasts of the Trenton Town Council meetings, and a weekly program from the Canadian Forces Base, Trenton,

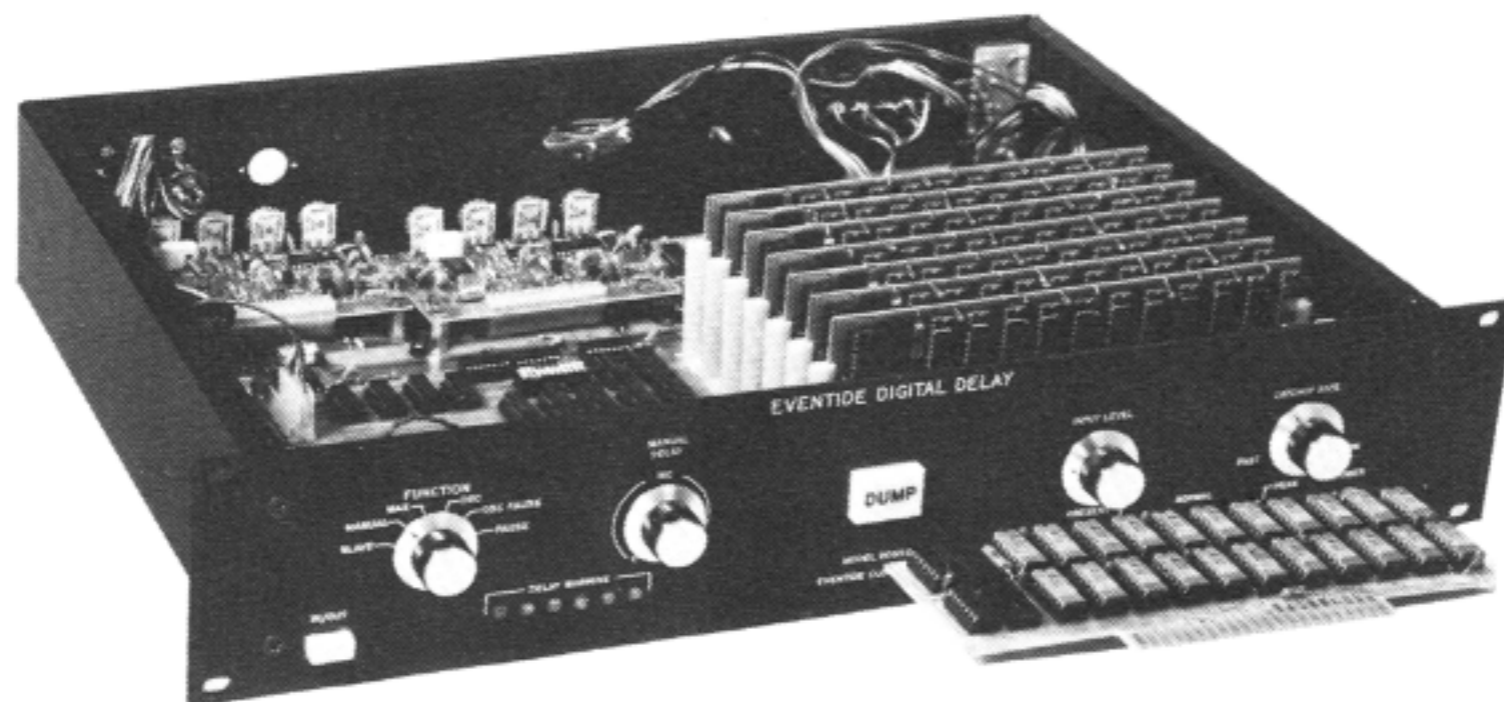
where CJTN has a remote studio. The format is basically MOR— "leaning slightly to Country and Folk".

CJTN operates at 1270 kHz with 1,000 watts. The transmitter is CCA, the audio consoles are from Ward-Beck Systems, and the three-tower array was built by LeBlanc & Royle. The entire technical package was organized and arranged by Caldwell Equipment Limited of Toronto. The station's modern studios and offices are located at 31 Quinte Street, Trenton, Ontario, K8V 3S7—telephone (613) 392-1270.



CJTN manager is Ted Snider.

## EVENTIDE BD955 BROADCAST DIGITAL DELAY LINE



Designed specifically for the broadcast industry, the BD955 digital delay line offers delay up to 6.4 seconds.

Primarily intended for use in the policing of live shows, it incorporates two unique features:

A DUMP button, which cancels the objectionable program material, and if desired cuts off the caller; and

An exclusive CATCH-UP mode, which allows the program to continue in real time, and the delay to increase at a variable rate to its preset maximum.

The BD955 may also be used as a production tool, to create "doubling" or a number of special effects.



6 BANIGAN DRIVE TORONTO ONTARIO M4H 1E9 PHONE 421-9080

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# happenings



*Pierre Duhaime of Tele-Capitale Ltd. signs contract for installation of parallel 17.5 kw transmitters at CFCM-TV Quebec City. Expected to be in operation by June, this will be the third Pye TVT transmitter installation supplied by Philips Electronics Ltd to Tele-Capitale, which recently established new stations at Rimouski and Sept-Iles, Quebec. Observing the signing are Raymond Quesnel (left) of Philips, Montreal, and Tele-Capitale's vice-president of engineering, Gerard Fortin.*

## CONESTOGA COURSE TO BEGIN NEXT YEAR

A new one-year program, Broadcast Systems Technician, has received final approval and is planned to commence in September, 1980, at Conestoga College, Kitchener.

The program was first announced by the chairman of Conestoga's Technology Division, **David J. Putt**, in a talk given at the 1977 CCBA convention. Further details were given in BET, July/August, 1978, page 104.

Entrance requirements will be graduation from a standard two-year Electronic

Technician program, or equivalent. Additional information may be obtained from Mr. Putt at Conestoga College, 299 Doon Valley Drive, Kitchener, Ontario N2G 4M4.

## DIGITAL CONSERVES SPECTRUM

A \$2.5 million project, funded chiefly by the federal Department of Communications, has provided the Vancouver police department with a mobile radio data system, the first of its kind in Canada. Ten cruisers are equipped with keyboards and small display screens, giving access to data on stolen cars, wanted persons, etc., free-

ing voice channels for more urgent messages. DOC points out that such digital transmission systems also conserve radio frequency spectrum, and should relieve some of the demand to use UHF television channels for mobile communications.

## MAC '79 ON DIGITAL

*Digital Technology: Impact on Recorded Sound* is the topic for the 1979 Midwest Acoustics Conference. **Dr. Thomas Stockham** is among the speakers for the one-day seminar, which takes place Saturday, May 12, at Northwestern University, Chicago. For further information, contact **William R. Bevan**, Shure Brothers Inc., 222 Hartrey Avenue, Evanston, Illinois 60204, telephone (312) 866-2364.

## WABE CALL FOR PAPERS

The Western Association of Broadcasters Engineering Section will be holding its 29th annual conference at the Macdonald Hotel in Edmonton May 8, 9, 10, 1979. Plans for the technical sessions are now under way and papers are being sought. Topics are equipment and techniques of interest to broadcast engineers in radio or television. Persons interested in presenting a paper should write to the papers chairman, **Ted Wadson** of CFRN AM-FM-TV, 18520 Stony Plain Road, Edmonton, Alberta T5P 4C2 or telephone (403) 484-3311.

• **CFMT-TV**—"Canada's First Multilingual Television" station—has leased the former Loblaw building at the south-east corner of Bathurst Street and Lakeshore Boulevard for its studios and offices. The site is now owned by *Harborfront*, the federal government complex that is the scene of many of Toronto's multicultural events.

• **Ray Carnovale**, for 4½ years, transmission engineer for the Ontario Educational Communications Authority is now chief engineer at CFTO-TV Toronto.

• **Walter Labucki** tells us that CJCH Radio, Halifax, has purchased a custom McCurdy stereo console with 24 inputs/4 outputs. The board has many built-in features, and capabilities to expand for future needs. Purchases include two turntable packages, racks & housings and are part of a total up-grading of the main on-air control room.

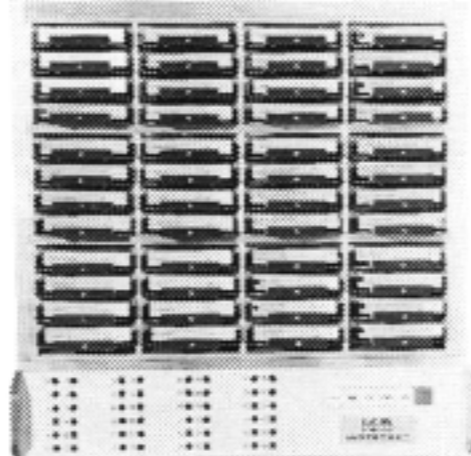
• **Bill Evanov** has moved to CING-FM Burlington, Ontario, from CHIN Toronto.

• With costs escalating, many equipment manufacturers are taking a closer look at their participation in exhibits: RCA opted out of last fall's IBC in London; and Philips will not be at the 1979 Montreux show, which takes place just five weeks after NAB. Two years ago, 80 personnel from the world-wide Philips organization attended Montreux.

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# Shortwave's Global Reach—part II

by George Jacobs

*In the November/December, 1978 issue of BROADCAST EQUIPMENT TODAY, Part I of this article described the unique worldwide services provided by shortwave, the extensive involvement of the United States in this form of broadcasting, and the current expansion of s/w facilities by numerous countries around the globe.*

*Part II, which follows, discusses propaganda and jamming on shortwave, technical problems affecting the medium, with a closing observation on the role of broadcast satellites.*

*The article is an edited version of a talk given at last year's NAB convention by George Jacobs, who is director of engineering for the U.S. Board for International Broadcasting.*

## PROPAGANDA?

Shortwave broadcasting presents some rather unique political problems. Shortwave signals, reflected worldwide from the ionosphere, reach listeners directly and instantaneously. They do not require the prior consent or agreement of the recipient

country, and are, therefore, a true expression of the free exchange of information. This principle is one of the freedoms contained in the Universal Declaration of Human Rights, and it is embodied in the first amendment of our Constitution. The free exchange of information is an established facet of American life.

Shortwave broadcasts, unlike all the other media of communications; books, newspapers, magazines, motion pictures, radio and television program exchanges, cannot be stopped at frontiers, refused an entrance visa, confiscated, delayed, screened, or censored.

On the other hand, shortwave broadcasts never intrude. They must always enter the listener's home as an invited guest, to be admitted or rejected by the simple flick of a switch or the turn of a dial.

For these reasons, the shortwave broadcasting bands have become a market place for ideas and information, an area for ideological and political argument, for point and counterpoint, a vehicle for entertainment and information, a channel for the dissemination of a wide variety of serious and popular cultural programs to suit all tastes.

Notice that I did not mention propaganda. Propaganda is a difficult word to define. If you like what is said, it is entertainment or information; if you don't like it, it's propaganda. It's all a point of view.

In an open society, the free exchange of information is something that we live with day in and day out, and often take for granted. But in countries with closed societies, shortwave broadcasting offers listeners perhaps their only open window through which they may glimpse the outside world.

## JAMMING

Some countries try to slam this window shut by jamming reception of shortwave broadcasts.

Jamming is the intentional interference with a broadcast, usually in the form of irritating noises and sounds, to make reception extremely difficult or to block it entirely. Although jamming violates the Convention of the International Telecommunication Union as well as the Helsinki Accords that exist between the west and the east, it is being done at the present time by the Soviet Union, the People's Republic of China, Czechoslovakia, Poland and Bulgaria. Recent press reports claim that Chile is also jamming certain foreign broadcasts in this hemisphere.

Jamming is not an easy task technically, nor is it inexpensive. For example, the So-

viet Union employs a sophisticated nationwide jamming system of 2000 transmitters and a complex interconnection network. They spend more money and technical manpower jamming Soviet language broadcasts from Radio Liberty, the Voice of Israel, Radio Tirana and Radio Peking, than it costs to transmit these broadcasts!

Recently, John Gronouski, Chairman of the Board for International Broadcasting suggested as a "civilized alternative" to jamming, the application of the well known American media principle of the "right to reply". The BIB, with Radio Free Europe and Radio Liberty, are prepared seriously to consider procedures for making airtime available for responses by the Soviet Union and Eastern European countries to specific complaints which are found to have merit. So far, there have been no takers.

## TECHNICAL PROBLEMS

I have yet to mention some of the rather unique technical problems that face shortwave broadcasting.

As mentioned earlier, shortwave broadcasting is possible because of the ionosphere—that electrified region in the earth's atmosphere that reflects shortwave signals near and far.

The ionosphere is believed to be formed primarily from ultraviolet radiation emitted by the sun. The amount of radiation illuminating the ionosphere varies hourly, seasonally and geographically depending upon the angular relationship between the sun and the earth. In addition, there is a year-to-year variation in the ionosphere, over an approximate 11-year cycle.

For reasons not yet fully understood, this 11-year cycle seems to result from the number of spots that appear on the face of the sun. These sunspots, as they are called, are believed to be caused by violent, gaseous eruptions taking place deep under the surface of the sun. During phases of the 11-year cycle when there are few spots, the ionosphere is relatively weak and shortwave reception conditions are at their poorest. During the years when the sun's face is covered with a large number of spots, the ionosphere is much stronger, a shortwave reception improves considerably.

The shortwave broadcast engineer must take all of these variations into consideration when deciding what frequencies and antenna patterns to use for providing the strongest, most reliable signal to the designated reception area. Unlike an AM or FM station, which remains on its assigned frequency throughout an entire transmission

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period, shortwave stations use different frequencies during the day, night and transition hours; summer, winter and equinox frequencies, and different frequencies year-to-year, in order to make the most effective use of the changing reflective characteristics of the ionosphere.

Shortwave antenna systems have to be designed to more tightly match changing propagation conditions than do medium wave or VHF systems. Their radiation patterns must be more flexible and adjustable in order to cover reception areas that might vary in distance from a few hundred miles to half way around the world.

At times shortwave engineering may seem like a mind-boggling assignment, but thanks to a great deal of research data collected over the past 50 years concerning the ionosphere and solar activity, the efficient computer programs to handle this data, the task is considerably eased.

Another task of considerable difficulty facing the shortwave engineer is the selection of an interference-free frequency in bands where there are often two or three stations competing for each frequency. This often tests an engineer's ability as a diplomat and negotiator, because it requires close coordination and cooperation with other countries, and the ability to work out satisfactory sharing arrangements. It is hoped, that the United States, as the world's largest international broadcaster, will lead the World Administrative Radio Conference of the ITU, to be held in 1979, towards the allocation of sufficient space for shortwave broadcasting, so that the present overcrowded conditions can be alleviated.

The penetration of jamming signals presents another unique technical challenge to the shortwave broadcast engineer. Jamming systems are never fool-proof. There are holes in the so-called electronic curtain, and the shortwave engineer can often determine whether they are and how best to get through. It's not easy by any means, and it often turns into a cat and mouse chase, but it is being done. For example, Radio Liberty claims to reach 2.1 million Soviet listeners during a typical day with its broadcasts, despite intense jamming.

#### BROADCAST SATELLITES

There are many who believe that direct broadcasting satellites hold the promise of extending international broadcasting into the realm of television, and may even eventually replace shortwave broadcasting.

While several experimental broadcast

satellites have been developed and demonstrated on a limited basis, a practical system capable of reception on more-or-less ordinary home equipment is considered to be several years away. Even when it becomes technically practical, the groundwork has already been laid internationally, over the very strong objections of the

United States, to confine reception within the borders of the transmitting country, unless the prior consent of the recipient country is obtained. The use of direct broadcast satellites for the international transmission of radio and television programs may well have been stifled even before it was born.

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# directions

A review of current policies and decisions of the Canadian Radio-Television and Telecommunications Commission.

## HEARINGS AND APPLICATIONS

### FEB. 6—HAMILTON, ONT. (Royal Connaught Hotel)

#### FIVE SEEK FM FOR HAMILTON-NIAGARA

- **Hamilton 102.9 MHz:** Armadale Communications Ltd. (CKOC), 40 kw; CJJD Radio Ltd., 8.5 kw; Patrick J. Hurley, on behalf of a company to be incorporated, 14 kw. (Hurley, previously with Standard Broadcasting, set up his own syndication company last fall.)
- **Niagara Falls, Ont.—91.7:** CJRN 710 Inc., 50 kw. CJRN and CJJD Hamilton are now both controlled by Keith Dancy.
- **104.9:** Dominic Morabito, on behalf of a company to be incorporated, for a multilingual station, 50 kw.

### FEB. 13—HALIFAX, N.S. (Chateau Halifax)

#### MACLEAN-HUNTER BIDS FOR CHNS AM-FM-SW

- Maclean-Hunter Ltd., for purchase of Maritime Broadcasting Co. (CHNS, CHFX-FM and CHNX short wave, Halifax).
- CBC, for a French FM station at **Sydney, N.S.**, 50 kw on 91.5 MHz, to re-broadcast CBAF Moncton, N.B. and to transmit CBI Sydney to a proposed FM re-broadcaster at Bay St. Lawrence, N.S., using SCMO.
- Neil H. MacMullen, manager of CKCL Truro, N.S., representing a company to be incorporated, for purchase (100%) of Evangeline Broadcasting Co. Ltd., from W. A. Bishop and other shareholders. Evangeline owns CKEN and CKWM-FM Kentville, CKDY Digby, CFAB Windsor and CKAD Middleton, N.S.

### FEB. 13—LONDON, ONT. (Holiday Inn)

- CBC, for a French FM station at Leamington, Ont. (1 kw on 103.1 MHz) to re-broadcast CBEF Windsor.

- University of Western Ontario Students' Council, London, for a carrier current operation, 20 watts on 610 kHz.

### FEB. 20—KITCHENER, ONT. (Holiday Inn)

- There are two applicants for FM stations on 92.7 MHz, 50 kw: Middlesex Broadcasters Ltd. (CJBK), at London; and Richard C. Wellwood and Neil V. Sinclair, on behalf of a company to be incorporated, at Stratford, Ont.
- Halton Cable Systems Ltd., Georgetown, Ont., for transfer of control to Triangle Colour Lab Ltd.

### FEB. 20—HULL, QUE. (Auberge de la Chaudière)

The renewal of the CTV Television Network, postponed from November 28, will be considered at this hearing.

### FEB. 28—PETERBORO (Holiday Inn)

- **Belleville, Ont.**—CBC, for 94.3 MHz, 50 kw (English).
- **Brockville, Ont.**—Warner A. Bischoff, representing a company to be incorporated, for 103.7 MHz, 50 kw.
- **Huntsville, Ont.**—John Christensen and Cyril Fry (representing a company to be incorporated), for 99.5 MHz, 100 kw.
- **Peterborough, Ont.**—CBC, for 103.9 MHz, 50 kw (English).
- **Smiths Falls, Ont.**—Rideau Broadcasting Ltd. (CJET AM-FM) for transfer of effective control.

### MAR. 6—TORONTO (Constellation Hotel)

#### “REDEFINED ROLE” FOR TELEVISION STATIONS

The Toronto hearing will consider new Promises of Performance for TV stations in the area. Two years ago, the CRTC called on each station to define its audience and submit new programming commitments. Included are CBLT, CFTO, CITY and Global, in Toronto, CKVR Barrie, CHCH Hamilton and CKCO Kitchener.

Other applications:

- Richardson Broadcasting (Sarnia) Ltd., for purchase of **CHOK Sarnia** from Radio IWC Ltd. Richardson Broadcasting and CJBK London are both owned by Rick Richardson's Bruce Communications Ltd.
- J. Allan Slight, for purchase of additional shares of **Radio IWC Ltd.** resulting in a new company, wholly owned by Slight, which would continue to hold the licences of CFGM Richmond Hill and CILQ-FM Toronto.
- Brock University Students Union, St. Catharines, for a carrier current operation, 640 kHz, 20 watts.
- University of Guelph, for a new FM station, 93.3 MHz, 50 watts.
- Hewpex Sports Network, for an 18-station radio network to carry Toronto Blue Jays baseball games.
- Northgate Cable TV Ltd., Hamilton, for transfer (100%) to John S. Levy.
- Chetwynd Films Ltd., for a 12-station TV network to carry the "Cash for Life" Lottery series.

### MAR. 6—RICHMOND, B.C. (Hyatt Regency Hotel)

Two applications for AM radio stations in the Vancouver suburb of Richmond were scheduled for consideration, after having been withdrawn from a hearing last fall: South Fraser Broadcasting Ltd., for 940 kHz, 2.5 kw; and Gulf Broadcasting Inc., for 1260 kHz, 10 kw.

#### Rebroadcasters:

- Oliver, B.C.—1490 kHz, 1 kw day/250 watts night, for CKOO Osoyoos (Okanagan Radio);
- Boston Bar—98.9 MHz, 91 watts, for CKGO Hope (Fraser Valley Broadcasters);
- Harrison Hot Springs—95.1 MHz, 90 watts, for CBU Vancouver (CBC);
- Invermere—99.7 MHz, 1 watt, for CJAY-FM Calgary (by Invermere District TV Co. Ltd.);
- Logan Lake—92.9 MHz, 135 watts, for CBU (CBC);
- Lumby—90.5 MHz, 135 watts, for CBU (CBC);
- Vavenby—Channel 13, 10 watts, to carry CFJC-TV Kamloops (by Vavenby Community Club).

Other applications:

- Fraser Valley Broadcasters, for a change of transmitter site at CHWK (Chilliwack) and transfer of 22.6% interest from Dennis Barkman to other shareholders.
- Skeena Broadcasters, for improved cable TV facilities at Terrace, Prince Rupert and Kitimat, B.C.

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**MAR. 13—EDMONTON**  
(Holiday Inn)

Applications scheduled include the transfer of control of Goose Lake Broadcasting (CKKR Rosetown, Sask.) to Ronald Hykaway, Dennis W. Williams and James Blundell.

**MAR. 27—SAULT STE. MARIE**  
(Ramada Inn)

Applications for rebroadcasters:

- **Fawcett Broadcasting Ltd.**, for AM stations at Ear Falls (1490) and Hudson (1450), both 40 watts; Red Lake (1340) and Sioux Lookout (1400), both 50 watts; and FM at Red Lake (170 watts, 99.5 MHz). All would rebroadcast CKDR Dryden, Ont.
- **CBC**, for French FM and TV stations at Geraldton (6.42 kw on 93.7, 2.3 kw on ch. 7) and Manitouwadge, Ontario (142.8 watts on 96.9, 9.8 kw on ch. 15).
- **CBC**, for English TV at Temagami, Ont. (14.2 kw on ch. 15) ex-CHNB-TV North Bay.
- Also scheduled: transfer of control of Gilder Broadcasting Ltd. (CFNY and CHAS-FM Sault Ste. Marie, Ont.) to R. Hilderley (66%) and G. Penny, (34%).

**MAR. 27—MONTREAL**  
(Holiday Inn, 420 Sherbrooke W.)

Applications to be heard include:

- Radio Maisonneuve, for a community FM station in Montreal, 10 watts on 99.9 MHz.
- Télévision Inter Rives, for a rebroadcaster of CIMT-TV Rivière-du-Loup at Trois-Pistoles, Que., 10 watts on ch. 8.
- Jean Malo, on behalf of a company to be incorporated, and Télécable Videotron, both for a new cable TV service in the Joliette area.
- Frank R. Peters, on behalf of a company to be incorporated, and Télécable Videotron, both for a new cable TV service in the Dorion-Vaudreuil area.
- National Cablevision Ltd., Montreal, to acquire Télé-Cable de Québec Inc., Québec City.
- **CBC**, for a change of frequency at CBMI-FM Baie Comeau (to 93.7) and Thetford Mines (from 90.1 to 103.3 MHz).
- Cable systems in the Rouyn-Noranda area, for addition of the new TVA affiliate and FM stations CHLM Lithium Mines, CIRC Rouyn-Noranda.
- Club Social La Grande, for new stations at Camp Goelette (FM and TV) and Camp Duplantier II (TV), and changes at several existing facilities serving Hydro Camps in the James Bay area.
- Télésag Inc., Chicoutimi, for transfer of shares to Société Genibec Inc. (100%).
- Télémedia Communications Ltée, for addition of 12 AM stations to its radio network.

**DECISIONS**

*Radio*

**OBJECTION OVERRULED**

The CRTC has ruled that live sports coverage is compatible with the all-news format of CKO Radio. The decision follows a complaint lodged by CKFH Toronto, which CKO outbid for the Toronto Maple Leaf hockey games. The all-news network also carries NFL football and harness racing.

The Commission stated that live sports coverage "does not constitute a substantial change" in CKO's Promise of Performance, and reiterated that the FM policy is not intended to "freeze" formats in every particular.

With regard to operations at London, Ontario, where CKO is now feeding a reduced amount of local interest programming from Toronto, the CRTC reminded the licensee that service is to be fully implemented by the fall of 1979.

**NEW FMs LICENSED**

Location	MHz	Watts	Feed
Hay River, N.W.T.	107.3	32	local
Port Clements, B.C.	102.9	90	CFPR
Queen Charlotte, B.C.	104.9	90	CFPR
Rivière St-Paul, Que.	103.1	35	CBGA
Rivière St-Paul, Que.	104.3	36	CBM

Also licensed are 1-watt FM stations in 23 communities in northern Ontario, to the Wa-Wa-Ta Native Communications Society.

**Other approvals:**

- Power increases for CJBV Vancouver, to 50 kw; CBKQ-FM Dawson Creek, B.C., to 1.1 kw on 89.7 MHz, and CKRL-MF Quebec City, to 1.43 kw, both with change of antenna site.
- Transfer of CKLB and CKQS-FM Oshawa to George H. Grant. German and Italian programming on CKQS is to be retained for at least a year; licensee is to "improve substantially the quality of local community services on both stations".

• Disaffiliation from CBC:

Location	Station	Replaced by
Vernon, B.C.	CJIB	CBYV-FM
Kingston, Ont.	CKWS	CBCK-FM
Sarnia, Ont.	CHOK	CBEG-FM
Charlottetown, P.E.I.	CFCY	CBC-FM

*Television*

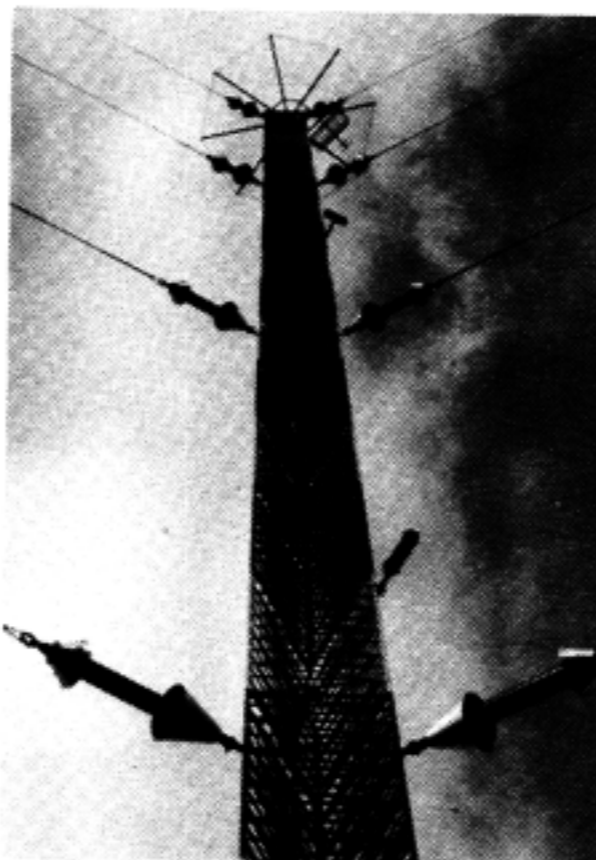
**MULTILINGUAL TELEVISION GETS CH. 47 IN TORONTO**

Early in 1977, Multilingual Television (Toronto) Ltd., headed by Don Iannuzzi, applied for a Toronto TV licence. —>



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Two years and two hearings later, the company has its licence and is working towards a December deadline to put CFMT-TV, Channel 47, on the air.

Denied were two competing applications: one by Leon Kossar, a driving force behind Toronto's annual multicultural festival, *Caravan*; the other by Heritage Broadcasters Ltd., led by Johnny Lombardi, president of CHIN Radio and a colorful entrepreneur and impresario, known as the "unofficial mayor" of Toronto's Italian community.

In the decision, and an accompanying document on *Multilingual Television Broadcasting*, the CRTC laid down its requirements;

- Not less than 60% of programming, both overall (6 am-midnight) and prime time (6 pm-midnight), must be in languages other than English and French. Dubbed versions of commercial U.S. shows do not qualify.
- The other 40% is not to be entirely in English, nor is it to include programs created for the commercial U.S. market.
- The usual Canadian Content requirements for TV will apply (60% overall, 50% prime time).
- Programs produced outside of Canada which have lip-sync audio done in Canada, will qualify as 25% Canadian.

Multicultural TV, which already is producing some 35 hours a week in 12 languages for existing stations, is to have an advisory council with broad representation

from the various ethnic groups, as well as a vice-president of community relations.

Iannuzzi, 44, was born in Montreal and is the former publisher of *Corriere Canadese*, a newspaper founded by his family in Toronto, which grew to become the largest Italian daily outside of Italy.

In its decision, the CRTC did not immediately rule on the carriage of CFMT-TV on cable systems. Cable subscribers with only the basic 12-channel service would stand to lose one of the Buffalo U.S. network stations, if priority is given to CFMT.

When the subject was raised at the September, 1977, hearing, one CRTC commissioner commented that he wouldn't be able to "look at himself in the mirror" if he voted for the station, but against giving it priority on cable TV.

However, observers believe that the explosive issue will be shelved by the CRTC, probably until after the federal election expected in the spring of this year.

### THIRD HFX. TV DENIED

The CHUM Limited subsidiary, Atlantic Television System, operator of CJCH-TV Halifax, has been turned down in its bid for a third English station in that city.

The CRTC was not satisfied that proposals for local and regional programming, and particularly for educational programming, were sufficiently developed.

Nor did the CRTC consider it desirable

to jeopardize existing radio and TV services by licensing another station; with a "don't call us, we'll call you" touch, the Commission said it would call for applications, if and when it determines that another station would be viable.

Meanwhile, four new rebroadcasting facilities were approved for ATV in Nova Scotia:

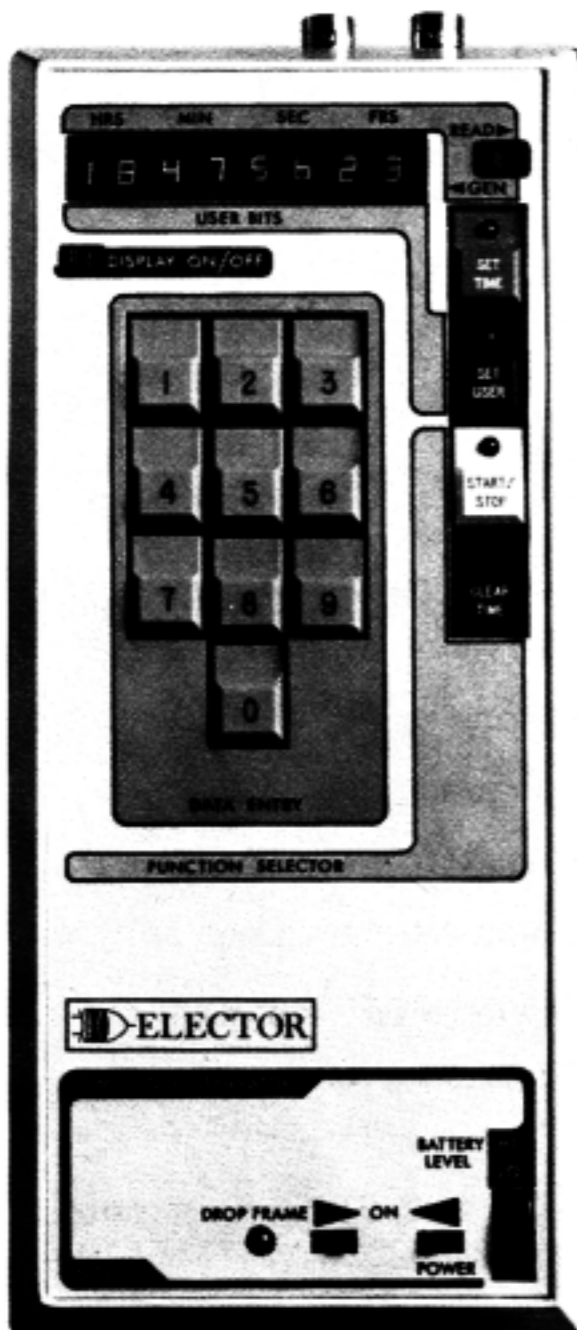
Location	Channel	Watts	Feed
Port Hawkesbury	3	5,600	CJCB-TV
Truro	12	8.4	CJCH-TV
Valley	12	8.4	CJCH-TV
Yarmouth	40	12,000	CJCH-TV

(formerly 5 watts on channel 13)

**Also denied:** A request by Newfoundland Broadcasting (CJON-TV St. John's) to reduce Canadian content to 45% overall and 35% prime time. The CRTC stated that this was not an appropriate solution to the licensee's problems and that it would undertake a major analysis of the Newfoundland TV market, including the feasibility of further extending CTV service to unserved areas.

### CBC Rebroadcaster approved:

Location	Channel	Watts	Feed
Ferryland, Nfld.	4	8.9	CBNT
Petty Harbour, Nfld.	13	8.9	CBNT
La Tabatière, Que.	10	62	CBMT
Rivière St-Paul, Que.	11	23	CBMT



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In renewing the licence of CFCM-TV Quebec City only to the end of 1980, the CRTC called for a new Promise of Performance to be submitted within six months.

Despite CRTC demands in previous renewals that the station increase production, there has been a steady decline from 46 hours per week (1969-70) to 26 (1978-79), "without any appreciable improvement in quality". The Commission calls for quality programs using local talent, and a greater contribution to TVA network programming, particularly of news and public affairs. It describes CFCM as "among the most lucrative private television stations in Canada."

On the positive side, the licensee extended TVA service to Rimouski and Sept-Iles, and intends to improve its production facilities. It is to join with other TVA affiliates to provide network service to Gaspé, Chaleur Bay and northeastern New Brunswick.

The CRTC also expressed concern that the board of Télé-Capitale, the licensee, does not adequately reflect the ownership of the company, that it lacks broadcasting experience, and that the president considers himself to be an "administrator . . . rather than a broadcaster".

### ROGERS GRANTED CONTROL OF CDN. CABLESYSTEMS

The CRTC has approved the purchase by E. S. Rogers of approximately 50% of Canadian Cablesystems Ltd. (CCS).

The decision appears to be based on a number of commitments proposed by Rogers:

- "rationalization" of cable boundaries in Metro Toronto through the transfer of 60,000 Rogers subscribers and 5,000 CCS subscribers to other cable operators;
- establishment of a studio in the Borough of East York;
- community programs of Metro-wide interest, provided by a consortium of Toronto licensees;
- 1% of gross annual revenue for acquisition of Canadian programming;
- free promotion for Canadian program services on Rogers' radio stations;
- further development of a children's channel;
- development of multicultural and French educational channels;
- participation in a cable consortium to rent time on ANIK-A for House of Commons coverage and reruns of Canadian programs;
- 1% of gross revenues for R & D, increasing to 2% by 1980.

### Other transfers approved:

- The system licensed to John S. MacAlpine at Digby-Cornwallis, N.S., to Charles V. Keating.
- West Coast Cablevision, Burnaby, B.C., to John McKay (83.3%).
- Western Cablevision, New Westminster—Surrey, B.C., 45% to Premier Cablevision. The three members of the McDonald family who retain 55% control must vote as a bloc and must give first refusal to each other in the sale of any further shares. Both Premier and Western are expected to allot at least 2% of annual gross revenues to R & D by 1980.

### Other cable decisions:

- Island Cablevision of Charlottetown, P.E.I.—approval to microwave CFBC-FM Saint John, N.B.
- City Cablevision, Fredericton, N.B.—denied carriage of WDHP-FM Presque Isle, Maine, as station is soliciting Canadian advertising.
- Northern Television, Whitehorse, Y.T.—permitted to continue advertising on local origination channels.
- Mid-Valley Cablevision—to establish studios at headend in Aylesford, N.S.

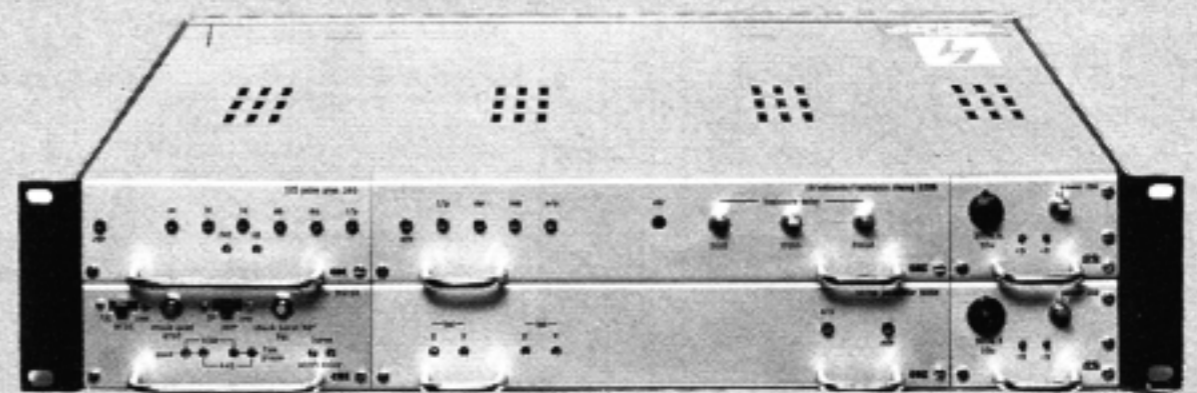
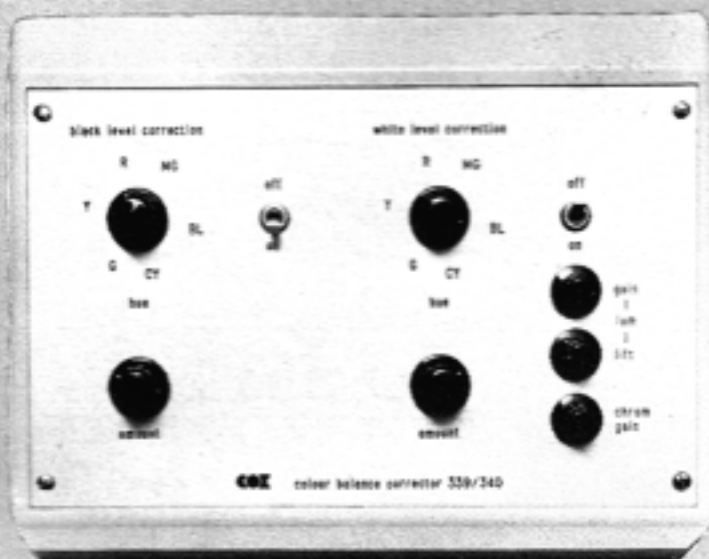
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The logo for CFTO 9 TV is mounted on the brick wall of the studio building. It features the call letters 'CFTO' in blue, a large multi-colored '9' in a circle, and the letters 'TV' in blue. The entire logo is three-dimensional and appears to be floating slightly from the wall.

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