

BROADCAST SATELLITES—Part 1

Broadcasting by satellite requires spectrum space and orbit positions.

Broadcasters may be squeezed out—unless they plan their future now.

The Canadian Association of Broadcasters has launched its own satellite program with an urgent message for broadcasters. The message: become involved on the future of broadcasting by satellite—before it ceases to be a possibility.

In coming months, whenever broadcasters meet in Canada they will find that their agenda includes information about satellites.

The program began on November 24th with a briefing in Toronto for key broadcasters from across the nation. Its importance was summed up by CAB Technical Committee chairman Stuart Mackay, who said the industry must retain its "option on the future".

The briefing—described by CAB president Dr. Pierre Camu as an "intensive and very special presentation"—was addressed by CAB consulting engineer A.G. "Sandy" Day, Dr. Chris A. Siocos, chief consulting engineer of the Canadian Broadcasting Corporation, and Ralph Zeitoun of the Planning and Development branch, Canadian Radio-television and Telecommunications Commission.

(A summary of the remarks by Dr. Siocos and Mr. Zeitoun will appear in the March/April issue of BROADCAST EQUIPMENT TODAY.)

CAB consultant Sandy Day told the broadcasters that unless they make their voice heard, "we won't have broadcast space" in the satellite spectrum. There are forces, he warned, that oppose and could prevent broadcasting from retaining its options.

He recalled that the FM and UHF-TV bands had remained dormant for years before being developed. Yet today, at least 200 more FM channel allocations are needed to meet broadcasting requirements, and already the UHF band is saturated in heavily populated areas such as southwestern Ontario.

The pressure of other demands for spectrum space means that broadcasters cannot afford the luxury of waiting until they are ready to make use of satellite technology. The industry, said Day, must ask itself today where it is going in the future.

WARC Will Decide

Why the urgency?

The World Administrative Radio Conference (WARC) on satellite broadcasting is being held in Geneva this month (January) for the planning of the broadcasting satellite service in the 12 GHz band.

Following this, in 1979, a general WARC will consider all spectrum allocations. This 1979 conference will freeze the potential uses of all bands for an interval of

up to 25 years.

As of November 24, little provision had been made for input from private broadcasting in the Canadian delegation. Its makeup was to include representatives from External Affairs, the Department of Communications, the Canadian Radio-television and Telecommunications Commission (CRTC), the Canadian Broadcasting Corporation and Telesat.

While U.S. broadcast interests have shown no interest in direct-to-home satellite broadcasting—despite the tremendous impact it could have on the industry—the CAB has taken a strong stand in favor of it. Canada wants to ensure that broadcast satellites can be accommodated in the future. This option might be lost if we follow the U.S. approach—a kind of "evolutionary process" which attempts to juggle spec-

BROADCASTING SATELLITE BANDS (below 50 GHz)

FREQUENCIES	BANDWIDTH MHz	SHARED WITH (Region 2)	COMMENTS
620-790 MHz	170	Broadcasting (UHF-TV)	Unsuitable in N. America because of UHF-TV. Not available for individual reception.
2500-2690 MHz	190	Bottom 50 MHz for radar (Canada); fixed, mobile, fixed-satellite.	Unsuitable. Power limits prevent individual reception; heavy sharing in terrestrial services.
11.7-12.2 GHz	500	Fixed-satellite.	Only band useable permitting individual reception.
41.0-43.0 GHz	2000	none	Exclusive, but only for future development.
Total bandwidth available:		2,860 MHz	
Total bandwidth useable today:		860 MHz for community reception	
		—but only 500 MHz for individual reception	

FIXED-SATELLITE (Space to Earth) BANDS (below 50 GHz)

FREQUENCIES	BANDWIDTH MHz	SHARED WITH (Region 2)	COMMENTS
2500-2535 MHz	35	Fixed, mobile, b'cast satellite.	
3400-4200 MHz	800	Fixed, mobile, radiolocation.	Band used by Anik.
7250-7750 MHz	500	Fixed, mobile, meteorological satellite.	
10.95-11.2 GHz	250	Fixed, mobile.	*Conflicts with digital band.
11.45-11.7 GHz	250	Fixed, mobile.	*Conflicts with digital band.
11.7-12.2 GHz	500	Broadcasting—satellite.	High power permitted.
17.7-19.7 GHz	2000	Fixed, mobile.	Power limited by present technology.
19.7-21.2 GHz	1500	None	Exclusive, but power limited by present technology.
40.0-41.0 GHz	1000	None	For future development.
Total bandwidth available:		6,835 MHz	
Total bandwidth useable today:		2,335 MHz	
* Carriers want 10.7-11.7 and 12.2-13.25 GHz for wide-band digital terrestrial service.			

trum and orbit space as needs arise.

Unless spectrum and orbit positions are reserved for broadcasting, broadcasters could find themselves completely dependent on the common carriers and the government for future use of satellites.

Day noted that Telesat, which was intended to be owned in three equal segments by the public, the federal government and the common carriers, has fallen squarely into the camp of the common carriers. Rates charged by Telesat are based on "what we would pay on the ground" and are "three times what they should be"—thus protecting the common carriers from effective competition from satellite technology. Telesat, he added, has applied for membership in the Trans-Canada Telephone System, the umbrella organization for Canada's telephone companies.

Fixed vs Broadcast

Common carriers use *fixed* satellites. These provide point-to-point communications and because they are of low power, require expensive, large-dish earth receivers.

Broadcast satellites, because they are more powerful—and therefore more costly—make possible small, inexpensive earth receivers, which would cost as little as \$200, for use by small communities or even individual homes.

A basic problem, said Day, is that the United States is thinking in terms of a service that could include broadcast, but is basically fixed.

The accompanying charts show the frequencies allotted for Fixed and Broadcast satellites and the services sharing them in Region 2. (There are three world regions—Region 2 is North and South America.) Among the proposals from Canada is a call for a Region 2 conference no later than 1981.

Broadcast satellites, obviously, offer great potential for television transmission. However, they also can deliver high quality audio and provide excellent reception not only directly into individual homes, but for distribution of both TV and audio programming via cable.

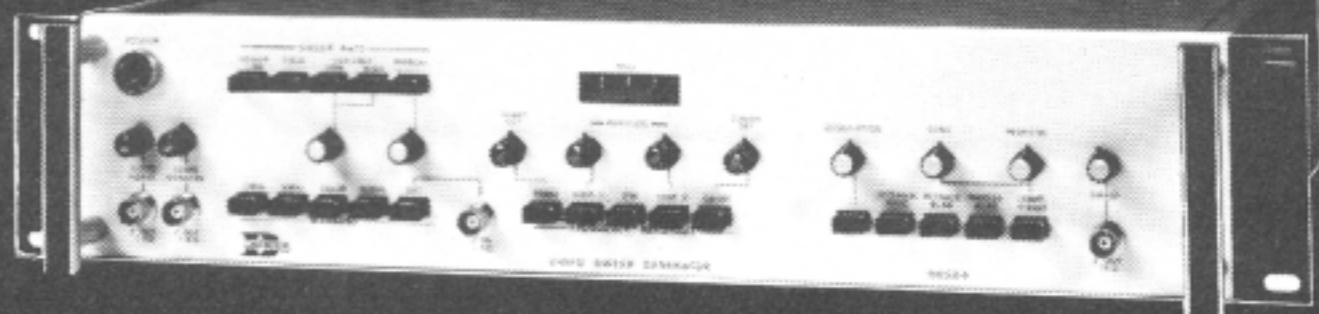
Services provided by the use of broadcast satellites could include:

- Distribution of national networks on a regional or time-zone basis.
- Expansion of regional networks, such as TVA or Global to completely cover present regions and/or additional regions.
- Replacement of costly rebroadcasters. (BCTV now has built 100 of them, and, says president Ray Peters, "we don't want any more." OECA in Ontario is planning 33 terrestrial stations at a cost of \$500,000 each.)

Broadcast satellites, Day concluded, could be "so much more efficient" and private broadcasters must consider how they could share their use with other broadcasters.

The industry, he said, must show definite interest if it is to influence the important decisions about to be made. "If we don't make a lot of noise, we won't have broadcast space."

designed for television...

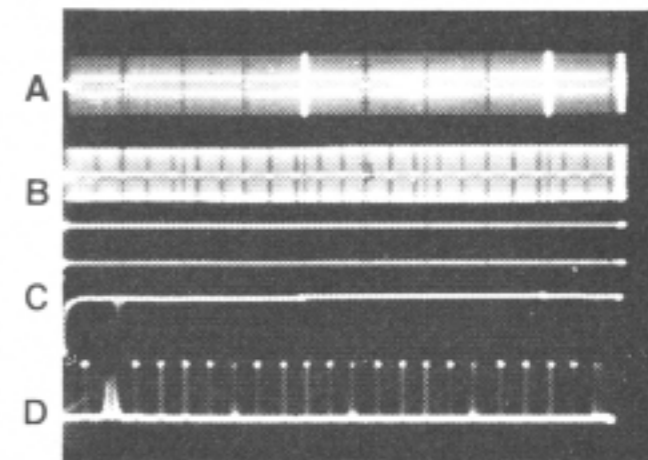


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 C. Detected non-comp. sweep, variable stop markers at 7.5 and 17.5MHz.
 D. Marker pulses output, 1MHz intervals (5MHz intervals evident).

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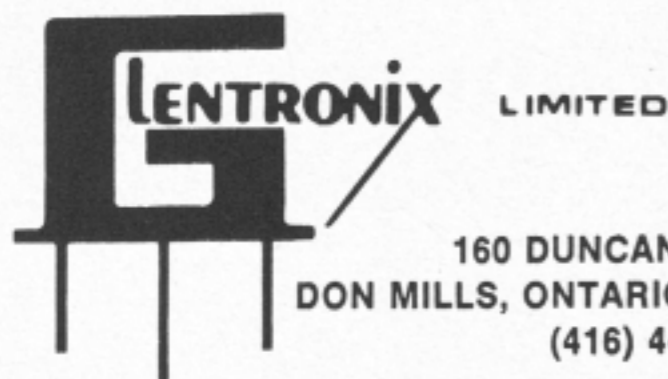
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NEW STUDIOS FOR CJJD:

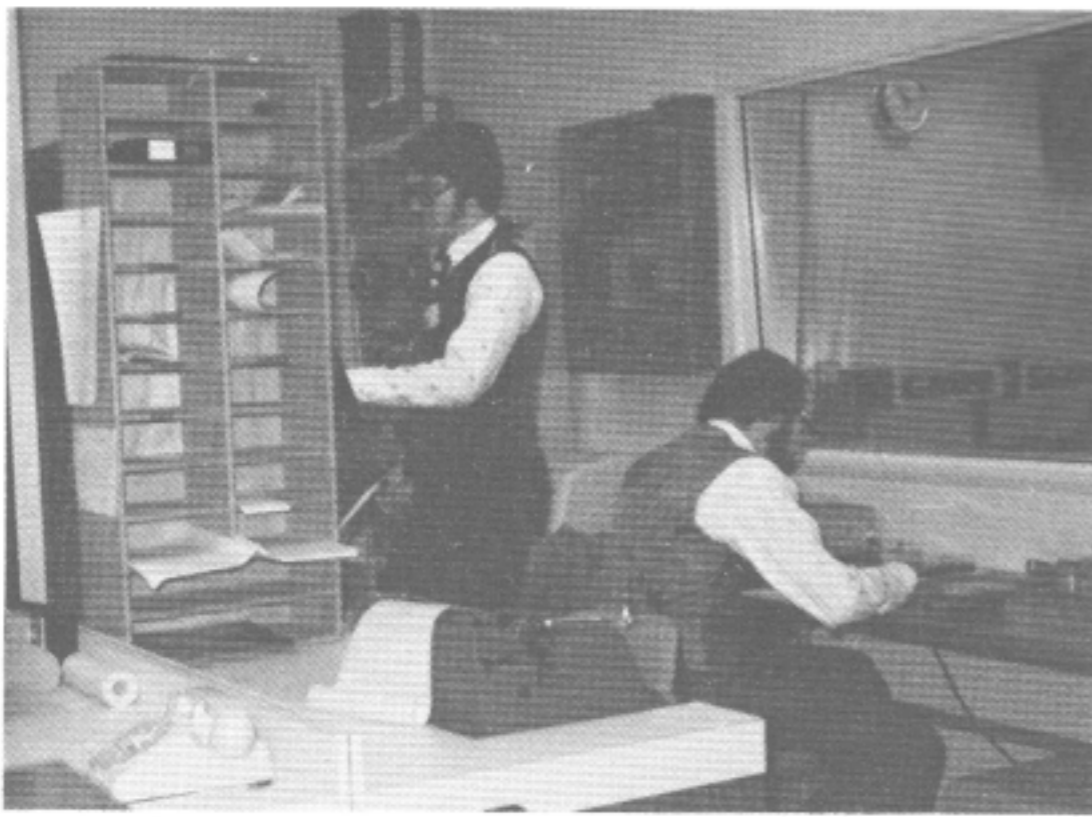
New studios for Hamilton's CJJD Radio—formerly CHAM—were officially opened November 25, 1976. The facilities are located in Jackson Square, which, with adjacent Hamilton Place, forms the heart of the city's re-developed centre core. Over 400 guests visited the station and attended a reception at Hamilton Place to mark the occasion.

The studios were designed by Rogers Broadcasting vice-president of engineering Ron Turnpenny. Station manager Bob Irvine and his staff planned the colorful decor, which carries through with CJJD's programming theme: "Gold and Great".

The design uses the "open space" concept to take full advantage of an irregular shape of approximately 3,200 square feet and, says Turnpenny, is "oriented to the job to be done". An example of effective use of the open concept to give spaciousness to a compact area is the library, where all records are filed out of sight in low-profile cabinets.

The control room, with a large window overlooking the square, is CJJD's action centre. All announcing is normally done from the control room, encouraging informal rapport between news and traffic reporters, show hosts and guests. The sophisticated design, centred around the customized McCurdy console, is intended to eliminate the traditional dependency of announcers on headphones and provide a better appreciation of the station's on-air sound. Other noteworthy features are the extensive rack space provided for cassettes, and the equally well-equipped production facilities, adjacent to the control room.





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Photos: 1. Air personalities Paul Burke and John Caines at reception desk. 2. Ted and Loretta Rogers inspect control room with Gord Hume, marketing director for Rogers Radio Broadcasting Ltd. 3. A glimpse of CJJD's busy newsroom. 4. Station engineer Bruce Dingwall keeps an eye on his new equipment while host J.J. Clarke operates on the evening drive show. 5. Station manager Bob Irvine welcomes guests to reception at Hamilton Place.

THINKING

E.N.G.?

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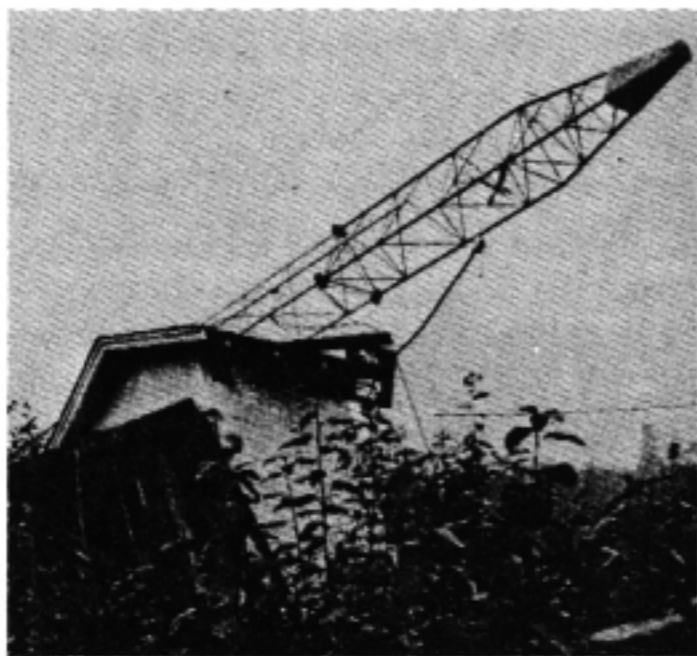
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BROADCAST EQUIPMENT TODAY 11

happenings



• Broadcast people in general and engineers in particular are disturbed by the kind of vandalism that occurred at CJJC Langley, B.C. Chief engineer **Dave Glasstetter** reports that on October 4, just before midnight, vandals used bolt cutters to cut through one set of guy wires, toppling two of CJJC's six towers. The station automatically dropped from 10 kw to the 1 kw standby, on the four remaining towers. The station went off the air for two hours from 3-5 am while the standby was matched to one of the towers to give an omni pattern with 1 kw. Later the same day, one of the

remaining towers was shunt loaded to give a directional pattern and the main tx returned with 4 kw output. This was all done with DOC sanction and by the end of October CJJC was restored to normal operation with new towers. "Happenings of this sort are rare", says Dave, "and I hope will become more rare"!

• NAB put up the "sold out" sign weeks ago, and is expecting 188 associate members to exhibit at this year's Washington convention. That's six more than in 1976. It will all happen March 27-30 at three hotels—The Washington Hilton, Shoreham Americana and Sheraton Park.

• **Paul Hunter** of CHIN AM-FM Toronto is now wearing a second hat as president of a firm which will produce the master clock systems formerly manufactured in Detroit under the name Synchron. Paul's CCBA paper on the topic will appear in the March/April issue of BROADCAST EQUIPMENT TODAY, along with full details. Sales will continue to be handled by **Applied Electronics Ltd.**

• Part of the fibreglass radome on the CN

Tower in Toronto has now been replaced by EMI and Sky-Hook. Seals between the casing panels had been damaged last April by horizontal lightning at about the 1700-ft. level. **Ray Tattershall** reports that 10 panels and seals were replaced over a two-week period in November, with work being done between 1-10 am to minimize interference. Cost: about \$35,000.

• Our thanks to **Peter Warth**, video systems manager, for passing on the word that Ryerson's Radio/TV arts studios have been rejuvenated. TV control rooms and radio studios were renovated and new TV equipment, replacing B&W, includes two Philips LDK25 color cameras, an Ampex AVR2 and a Ross RVS16-6 production switcher. With Ryerson enlisting the cooperation of Toronto stations to provide students with practical experience, course chairman **Robert Gardner** and director of engineering **Kurt Mayer** believe the new facilities at the school will help to provide similar professional surroundings.

• The National Religious Broadcasters are holding their 34th annual convention at the Washington Hilton Hotel, Washington, D.C., January 23-26.

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• The 1976 awards of the Society of Motion Picture and Television Engineers included honors for a number of Canadians: **Gerald G. Graham**, who retired in 1975 as director of planning and research for the National Film Board, received the John Grierson International Technical Award. Graham worked under Grierson, the first commissioner of the NFB, and was in charge of technical operations for more than 20 years. The CBC's **Maurice French** was cited for "outstanding service" to SMPTE in connection with Toronto section conferences; and **Hellmut Berger**, director of engineering for Baton Broadcasting, Inc., Toronto, and **Leonard A. Green**, chief of sound and projection at NFB, were named Fellow Members of the Society.

• A new videodisc player/changer was demonstrated for the first time in the U.S.A. at the first International Videodisc Programming Conference held in New York in November. Produced by AEG-Telefunken, it permits over two hours of programs, but on discs of only 10 minutes duration each. (RCA's offers 30 minutes on each of two sides; Philips/MCA's 30 minutes on one side only.) Known as TeD, the player has

been licensed to four Japanese manufacturers and single-disc players, costing under \$300, are expected to be on the U.S. market by the end of the year.

• Engineer **Bart Bartholomew** retired recently from CFTO-TV Toronto. Bart, whose experience goes back to 1942 with CKCL (now CKEY) Toronto, played a major role in CFTO's initial installation 16 years ago, as well as the station's move to the CN Tower.

• M.S.C. Electronics have been appointed Canadian representatives for Multitronics, Inc. of Columbia, Md., whose products include RF inductors and RF contactors.

• SMPTE's 11th Winter Television Conference at the St. Francis Hotel in San Francisco will feature one day, January 28, on "Beyond ENG"—the use of high-quality portable video equipment for applications other than news, such as commercials and programs. The second day, January 29, features "Digital Video". Registration is \$40 for members, \$50 for non-members, for both days, available from SMPTE at 862 Scarsdale Ave., Scarsdale, N.Y. 10583

Letters

I received the November-December issue of BROADCAST EQUIPMENT TODAY and was delighted with the most considerate coverage of the Armstrong Awards Dinner in San Francisco. It was extremely kind of you to devote such extensive coverage (complete with photograph) of the Awards Presentation to Bing and myself.

I always look forward to BROADCAST EQUIPMENT TODAY, and find it a source of very valuable information concerning the trade and the people within the business.

Gord Atkinson,
Station Manager,
CFMO-FM Ottawa, Ont.

AM: BACK TO SQUARE ONE?

Your article *AM Needs New Rules* in the September/October issue of BET needs a reply to regain some semblance of rational thought after reading what our good friend, Sruki 'Houdini' Switzer has said. He is like so many modern day innovators full of half-baked ideas or just 'down a quart'.

His main contention is that the use of 9 kHz spaced AM channels in place of the existing 10 kHz spacings would yield 12 brand new and shining AM channels. Well, well, well. That's really like saying: let's start on square one, take all AM stations

off the air, not for a synchronous power increase, but to devise a new AM allocation plan now that we know where the population has shifted in the past 30 or more years. With real estate values and tower prices having sky-rocketed over the years, this would be the very thing to do, of course!

Without having tried a computer program to accommodate a rearrangement of channels, I strongly suspect that not a single channel can be 'dropped' in where Sruki might need it without cutting the entire medium frequency band loose from its precarious moorings.

By the way, synchronously driven transmitters have given the Europeans and the British a whole pile of trouble, if Sruki had gone to the trouble of finding out at first hand. Perhaps the most serious problems occur with reception in car radios.

On the question of bandwidth, there is more reason to split the FM channels he is supposed to be using, but then there may not be many receivers around yet which would output with such watered-down channels.

Which is the rail-road, the real CNR on rails or the 'new' CNR on FM—just wondering, you know!

Peter Cahn, Eng.,
Consulting Engineer,
Montreal, Que.

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BROADCAST EQUIPMENT TODAY 31

NAEB

The 52nd annual convention of the National Association of Educational Broadcasters was held October 24-27th, at the Conrad Hilton Hotel, Chicago.

Although the convention was well attended by delegates from across the U.S., the exhibits were very poorly attended. Indeed, the exhibit area appeared to be peopled only by exhibitors who wandered around aimlessly, looking at their colleagues' exhibits—which they had all seen before anyway!

This very poor attendance prompted the exhibitors to call a meeting with the NAEB organizers with a view to closing down the exhibit area. This meeting resulted in the exhibitors agreeing to stay and the NAEB agreeing to make announcements encouraging delegates to visit the exhibit area. This did not appear to have any effect and on Tuesday evening the exhibitors closed the show an hour early.

A second exhibitors' meeting proposed that the exhibits close at 10 am rather than at noon on Wednesday, the final day of the

Expansion of CFTM-TV 10 Montreal

Maurice Doucet, director of engineering, reports construction of Studios G & H is going ahead at full speed, now that construction workers are back at work.

Studio G is claimed to be the largest electronic and film production sound stage in Canada. Designed and equipped for large scale productions such as TV spectaculars or feature-length films, its dimensions are 115' x 94' and 32' in height.

Studio H, mainly for commercial production, will be 83' x 55' and 15' in height.

Télé-Métropole, which claims to be North America's largest privately-owned television station, employs over 650 people and produces some 70 hours of original programs weekly.

Will let you have technical details of the new additions in a later issue. . . .

New Production Company

Tri-Chroma Productions, a newly formed company in Toronto, at 18 MacPherson Avenue, is getting its new mini-mobile ready for production.

Company president Lawrence Sokoloff advises that the first unit will be entirely transportable in a station wagon. The equipment comprises two color cameras, one black and white graphics camera and the new TRI PPCI portable production console, exhibited recently at the CCBA by Noresco. The console incorporates small color monitors, audio mixing, video switching and effects and color background generator. The vehicle will also be equipped with Tri-Sun and SMPTE time coding equipment. Post-production editing facilities include the TRI-EA-3 editing system. Wave-form and vectorscope displays used in the vehicle are the System Video 1202 and 1205 units.

show. At the same time it was pointed out to NAEB that the majority of the exhibitors felt the organizers were to blame for the situation, because the only free time for delegates to visit the exhibit area was a 75-minute period on Monday.

Many exhibitors stated they would have second thoughts about exhibiting at the NAEB scheduled for Washington in 1977. They would have to be fully convinced that improvements would be made, and would want to see details of the program before committing their companies to the considerable expense involved. Attendance would also depend on the participation of a number of the larger companies such as Ampex, RCA, IVC, Sony and Hitachi—all noticeably absent this year.

Comments would indicate that the 1977 NAEB will be a bust unless a joint conference is held with some other organization such as NAB.

Regarding the exhibits—there didn't appear to be any new products not already seen at either CCBA or the recent SMPTE convention, which by all accounts was an excellent show.

Tri-Chroma also plan to have a large full-broadcast, three color mobile available early in 1977.

Promotion

Tom Holden of CBC engineering headquarters in Montreal takes up his new appointment as assistant director of engineering, English Services Division, on January 4, 1977. Tom will be located in Toronto, where he will be assisting Peter Robertson, director of engineering, ESD. Good luck, Tom!

Is it true?

That CBC EHQ has contingency plans to locate in Kingston if Quebec secedes? If it is, EHQ's yachting fraternity will probably be pleased. . . . I hear that Pat and Don are already scouting for berths there and Mike is looking for another island to buy.

Overheard at CCBA

Two students at the Skyline in Ottawa during CCBA: 1. "What do Company X actually sell?" 2. "I don't know, but they run a bloody good pub!"

Last Word:

CJOH-TV Ottawa has ordered four EMI 2005 cameras for delivery in January, 1977.



Reporter/photographer Maurice Evans is vice-president of Electro & Optical Systems Ltd.

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BROADCAST EQUIPMENT TODAY 37

directions

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

DEADLINE JAN. 14 FOR WARC INPUT

The CRTC has invited submissions from the broadcasting community on the future use of the UHF-TV spectrum.

These will assist the Commission in assessing future requirements for television in Canada, in preparation for the 1979 World Administrative Radio Conference (WARC) in Geneva. The 406-960 MHz band is allocated primarily to UHF broadcasting on channels 14-83 (470-890 MHz), but other services such as land mobile are requesting a larger share of the spectrum. (See article, *The Land Mobile Stampede*, page 7, BET, September/October, 1976.)

The deadline for comments has been extended from December 1 to January 14, 1977.

CKCK-TV TO BE SOLD

Subject to CRTC approval, television station CKCK-TV Regina will be sold by Armadale Communications Ltd. to Regina

businessman Frederick W. Hill. Hill, who is president of the McCallum Hill Group of companies, anticipates no changes in the operations of the station.

Michael Sifton, president of Armadale, said he was selling the television station because of "constant criticism in political circles of the combined ownership of the *Leader-Post* (Regina's only daily newspaper), CKCK Radio and CKCK-TV, and the potential threat of enforced divestiture in the future".

The Sifton interests, which also own the Saskatoon *Star-Pheonix* and radio stations in Manitoba and Ontario, will retain ownership of CKCK Radio.

AM: BEDFORD DENIED FORESTVILLE OK'd

- A rebroadcaster for CHLC Hauterive, Que., has been licensed to Radio Côte-Nord Inc. It will operate on 620 kHz with 1 kw day and night.
- The application of R. M. Norrie, representing a company to be incorporated, for an AM station at Bedford-Sackville, N.S.,

(10 kw on 790 kHz), has been denied. The CRTC ruled that the Halifax area would be adequately served by the six existing radio stations and two recently-licensed FM outlets, and that the proposed programming did not offer a "significant alternative".

INTER-CITÉ TV REVOKED

The television licences granted on April 4, 1974, to Télé Inter-Cité Québec Ltée for stations in Montreal and Quebec City have been revoked.

The two-year effort to launch a third French TV network ended September 13, 1976, when the licences were returned to the CRTC by the company, which cited economic circumstances as the reason for its inability to proceed.

Soon after being licensed, Inter-Cité was given an additional year to put the stations on the air. When difficulties in financing persisted, Civitas Corporation (Radiomutuel group) applied to take over the licences, but the CRTC denied the applications as fundamentally different from the original concept.

HEARINGS

NOV. 16 — OTTAWA

Applications heard at the November hearing in Ottawa included:

- CKCU-FM Ottawa (Carleton University Students' Assoc.)—power increase from 4.1 to 12 kw, with change of antenna site and increase of EHAAT from 251 to 852 ft. Approved Nov. 19.
- Club Social La Grande—French language TV and FM rebroadcasters at four communities: Eastmain, Lac Boyd, Petite Opinaca and Duplinter, Quebec.
- J. Conrad Lavigne Ltd., Timmins—power increases for TV rebroadcasters at Chapleau, Kapuskasing and Hearst, Ont.
- CKVR Channel 3 Ltd., Barrie—change from channel 5 to 6, with reduction in power and new antenna site for TV rebroadcaster at Haliburton, Ont.
- Cambrian Broadcasting Ltd., Sudbury—origination of a separate half-hour weekday newscast from Sudbury for the Timmins area, without separate commercials.

Networks

The following networks were requested:

- CFTM-TV Montreal and eight other French language TV stations, for the program *La Corne d'abondance*.

- CFCF Montreal and CKBY-FM Ottawa, for 62 games of the *Canadiens* during the current season.
- CHAN-TV Vancouver, CFAC-TV Calgary, and CJOC-TV Lethbridge, for 16 Vancouver *Canucks* Wednesday evening hockey games.
- CFAC-TV Calgary, CJOC Lethbridge, CITY Edmonton and CKND-TV Winnipeg, for 12 home games of the Calgary *Cowboys*, and 12 home games of the Winnipeg *Jets* during the current season.

Cable Television

Numerous changes were requested resulting from the establishment of a microwave network to provide distant signals to northern Ontario:

- **Northern Microwave Ltd.** would provide signals to the cable systems at Barrie, Orillia, Parry Sound, Gravenhurst, Bracebridge and Huntsville. The company has proposed a head-end at Foymount, Ont., to receive the Global network's Bancroft transmitter and CFVO-TV Hull, Que.
- **Cable North Microwave Ltd.** would become the licensee of the cable network now licensed to Northern Cable Services Ltd., which retains ownership. It also seeks to add the cable systems at Haileybury, New Liskeard, Kapuskasing, Hearst, Smooth Rock Falls, Espanola, Elliot Lake and Blind River, Ont.
- Complementary applications were filed by the individual cable systems involved, and in most cases rate increases were requested to cover the microwave costs.

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DEC. 7—TORONTO

NEW OWNERS BID FOR CITY-TV, CHOV-TV, CFTJ.

Control of broadcast and cable properties highlighted the Toronto hearing of the CRTC.

- Multiple Access Limited would acquire 45% of CITY-TV Toronto. Multiple owns the CFCF AM-FM-TV group in Montreal.
- A plan to rescue troubled CHOV-TV Pembroke, Ont., has been presented by J. Conrad Lavigne Ltd. of Timmins. Lavigne would move the transmitter site to Foy-mount, Ont., and establish a studio in Ottawa, with main studios continuing at Pembroke. CHOV-TV would continue to be a CBC affiliate, while receiving some programs from the Timmins and Sudbury stations of Lavigne's northern Ontario network, Mid-Canada TV.
- Applicants to purchase CFTJ Radio in Cambridge (Galt), Ont., from John V. Evans are F.T. and K.M. Metcalf, W. and N. Slatter, N.A. Stillman, W.D. Dawkins and L.D. Smith.

- Russell Hilderly, program director of CKCY, applied on behalf of a company to be incorporated to acquire CJIC AM-FM Sault Ste. Marie, Ont., from Huron Broadcasting Ltd. (See "Directions", Sept/Oct., 1976, page 44.)

- A new radio station at Walkerton-Hanover, Ont., was proposed by C.L. Chambers, representing a company to be incorporated. It would operate with 10 kw day and night on 1360 kHz. Located about 30 miles south of Owen Sound, the two neighboring towns each have a population of about 5,000.

- CHML Hamilton seeks a power increase from 5 to 50 kw day and night, with a change of antenna site from Stoney Creek to 12 miles northwest of Hamilton.

- Glendon College, Toronto, requests a carrier current operation with 25 watts on 820 kHz.

Applications by the **Canadian Broadcasting Corporation** included:

- New English language FM stations at Windsor, Ont. (100 kw on 89.9 MHz), Fredericton/Saint John, N.B. (100 kw on 105.1), Port Hope Simpson, Nfld. (83 watts on 105.1) and Chateh, Alta. (122 watts on 103.5)

- New television rebroadcasters at Sarnia, Ont. (39.7 kw on channel 68—French), Big Trout Lake, Ont. (5 watts, ch. 13), Chateh, Alta. (151 watts, ch. 5), St. Vincents, Nfld. (4,537 watts, ch. 7), and 5

watt outlets at Lochaber, Goshen, Aspen, Country Harbour and Sherbrooke, N.S.

- Power changes for CBFOT-3 Driftwood, Ont., from 10 to 1,220 watts and CBWAT Kenora, Ont., from 9,300 to 8,000 watts.

- Change of program source for CBEO Rolphton, Ont., from CBL Toronto to CBO Ottawa.

Cable applications included:

- York Cablevision, Toronto—addition of CKTB-FM St. Catharines and CING-FM Burlington, Ont.

- Maclean-Hunter, St. Catharines, Ont.—addition of "Newscable" on channel C.

- Cablecasting Ltd., St. Thomas, Ont.—addition of augmented (converter) service to carry seven U.S. stations; changes in fees.

- Maclean-Hunter, Thunder Bay, Ont.—changes in service area, addition of CICA-TV Toronto via Northern Microwave, other changes in distribution of stations.

- Fee changes for cable systems in Kincardine, Hamilton, Fergus and Fort Frances, Ont.

DEC. 14—QUEBEC

Applications scheduled for the Quebec City hearing of the CRTC starting December 14 included:

- A power increase from 10 to 50 kw, with change of antenna site, for CBJ Chicoutimi.



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- Transfer of 61.2% control of CKRV Drummondville, Que. (Radio des Plaines Ltée), involving five new shareholders.
- Expansion of the Radiomutuel network to CKPB Bagotville, CFGT Alma, CHVD Dolbeau, CJMD Chibougamau and CFED Chapais.
- A new AM station at Gaspé (5,000 watts, 1150 kHz) which would rebroadcast in part CHNC New Carlisle.
- A new FM station at Gaspé (79 watts, 103.1 MHz) with a rebroadcaster at Rivière-au-Renard (58 watts, 97.9 MHz), by Radio Gaspésie Inc.
- An FM rebroadcaster for CBV Quebec at La Malbaie (805 watts, 92.9 MHz).
- An FM outlet for CJFP Rivière-du-Loup (8,380 watts, 107.1 MHz).
- FM and TV rebroadcasters for Camp LG4, Laforge and Brisay, in the James Bay area, by Club Social La Grande.
- A CBC English TV rebroadcaster at Trois-Rivières (11,600 watts ERP on ch. 16).
- Change in program source for CJBR-TV-1 Edmundston, N.B., from Rimouski to Rivière-du-Loup.
- The addition of a news channel and—until the Microbec microwave network is in operation—a feature film channel for Telesag Inc. of Chicoutimi.
- New cable TV systems for St-Camille (competing applications by Marcel Parent and Langevin Telecable Enr., both of Ste-Justine) and St-Cyprien (Marcel Parent).
- Changes of ownership for the cable systems in Weedon (from Gilles Drolet to Paul Leblanc) and Baie-Comeau, Que. (from Isidore Beaudoin to Cablovision Baie-Comeau Inc).
- Extension of service areas for Video Dery Ltée, Ville de la Baie; Tele-Cable de Quebec Inc., Quebec City; and Beauce Video Ltée, St-Georges de Beauce, which also seeks an additional antenna site.
- A number of systems also requested rate increases.

JAN. 25—VANCOUVER
(Postponed from November 8, 1976.)

M-H CABLE BIDS FOR TWO B.C. SYSTEMS

The following items are scheduled for the public hearing commencing January 25, 1977, at the Four Seasons Hotel in Vancouver, B.C.:

- Maclean-Hunter Cable TV Ltd. of Toronto, for control of Western Cablevision Ltd., Surrey, and M.S.A. Cablevision Ltd., Abbotsford, B.C.
- Transfer of 100% ownership of Youbou (B.C.) Television Ltd. to Lake Video Service Ltd.
- Rate increases for cable systems in a number of B.C. communities.

FEB. 1—REGINA

Application scheduled for the hearing to commence February 1 at the Regina Inn include the following:

- The Canadian Broadcasting Corporation, for FM (1.56 kw on 102.5 MHz—English, 1.56 kw on 103.5 MHz—French) and TV (2.37 kw on channel 31—French) at Red Deer, Alta. The CBC also requests FM at Edmonton, 100 kw on 93.3, for the English FM stereo network, and FM rebroadcasters at Fox Lake and Jean D'Or, Alta. for the English AM network.
- Yellowhead Broadcasting (CRJY Edson) seeks 50-watt AM rebroadcasters at Hinton (1230 kHz), Grande Cache (1230), and Whitecourt, Alta. (1400).

MARCH 1—RIMOUSKI

The CRTC has scheduled a special hearing at the Civic Centre, Rimouski, Que., to consider important changes for the area:

- CJBR AM-FM-TV Rimouski and CJBM Causapsca are to be purchased by the CBC from Telemedia Communications. Pioneer stations in the lower St. Lawrence, CJBR was established in 1938; CJBR-FM in 1947 and CJBR-TV in 1954.
- Télé-Capitale Ltée, operators of CFCM-TV Quebec, have applied for TV rebroadcasters at Rimouski (142,000 watts ERP, channel 11) and Sept-Iles (3,800 watts ERP, ch. 11). The stations would carry TVA, with some local programming from Rimouski.
- The CBC is seeking to increase power at CBGAT-1 Mont-Climont from 343 watts on ch. 11 to 708 watts on ch. 13, changing the program source from Matane to a proposed station at St-Adelme.
- Applications for new radio stations include Roch Demers, representing the Telemedia interests, for AM stations at Rimouski and Amqui; Andre Lecomte, former manager of CJBR, for an AM station at Rimouski; La Voix Laurentienne Ltée for AM at Rimouski with FM at Mont-Joli; and Benoit Santerre for AM at Mont-Joli. A deadline of January 10 was set for any further applications for radio services in the area.

MAR. 29—MONTREAL
Agenda to be announced.

MAY 3—VANCOUVER

The CRTC has extended 50 licences, mostly for TV rebroadcasters in the interior of B.C., from March 31 to Sept. 30, 1977. Renewals of these licences will be heard at the May 3 hearing in Vancouver. Remainder of agenda to be announced.

JUNE 7—OTTAWA

At Government Centre; agenda to be announced.

DECISIONS

SAULT APPROVED

The Commission has approved the applications of Huron Broadcasting Ltd. for changes in broadcast facilities in Sault Ste. Marie, Ont. (See *Ownership Shakeup*, page 44, Sept/Oct. BET.) The approval was conditional on Huron agreeing to provide CTV service no later than Sept. 1, 1978. The CRTC is also concerned that "virtually the entire purchase price is being raised by means of debt issues rather than equity" and points out that in any future application for a rate increase, these debt requirements will not necessarily be considered relevant to the cable system. Similarly, funds for future capital expenditures must come from the shareholders rather than cable rate increases. The Commission also warned Huron that it must meet its commitments to provide better TV news and public affairs programming, wiring of the cable service area and development of a community channel. CJWA Wawa is to become a full affiliate of the CBC with separate programming from Wawa.

AM Radio

- A power increase for CBV Quebec has been approved, from 5 to 50 kw, day and night, with change of antenna site.
- The CJOR Vancouver network for Jack Webster's daily talk show has been increased from CKIQ Kelowna, CHNL Kamloops and CJCI Prince George, to add CKEK Cranbrook, CJAT Trail and CFEK Fernie.

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FM Radio

NFLD. FM NET OK'd

Nine FM outlets have been approved for Newfoundland Broadcasting Co. Ltd. (CJON). The company agreed to alter channels for five of the stations to make better use of frequencies, and the final assignments, which permits SCMO, are as follows:

Location	ERP kw	MHz
St. John's	100.	93.9
Argentia	3.65	100.3
Marystown	31.33	96.3
Bonavista	28.58	92.1
Gander	4.	99.9
Rattling Brook	3.43	95.9
Corner Brook	30.6	92.3
Stephenville	4.27	98.5
Red Rocks	1.12	96.9

The Corner Brook licence includes the condition that no advertising be solicited in that area, and the network is to provide high quality mosaic and foreground programming, with music that is substantially different from contemporary or "Top 40" AM formats.

TWO FOR QUEBEC

Two new FM stations have been approved in Quebec:

• **Ste-Adele**—50 kw on 99.5 MHz, licensed to Colette Chabot, on behalf of a company to be incorporated. The station is to serve the Laurentians area with specialized programming "based on a background philosophy involving the concepts of leisure, vacation and relaxation".

• **Trois-Rivières**—28.8 kw on 93.9 MHz, licensed to Louis Martel, representing a company to be incorporated. Described as unique in programming, organization and financing, the station will be educational with information and programming, including credit courses, from educational institutions in the region. A non-profit organization, the station will be built by the Trois-Rivières CEGEP (community college) and financed by the sale of air time to the various educational organizations. In licensing 93.9, the CRTC noted that other frequencies were available for a planned CBC English FM outlet at Trois-Rivières.

THREE FOR LONDON

The applications of the CBC and Radio Fanshawe Inc. for FM stations at London, Ont. have been approved—at least in principle.

The CBC's English station is to operate with 100 kw on 93.5. It will carry the AM network service replacing CFPL-AM. The CRTC notes that a CBC station must also be established to provide the English FM

stereo network service to London.

CBC French (22.5 kw) and Fanshawe College (3 kw) stations have also been approved, but the frequencies, to be determined, must be co-ordinated with the all-news station licensed for London. Fanshawe was advised to consult with DOC on the use of a Class A channel.

Other FM decisions:

• Transfer of 100% ownership of CFMC-FM Saskatoon to Gerald Fraser and N.M. Rudniski. The new licensees have already made improvements and plan to build a new production facility and further upgrade the station technically.

• CKUA AM/FM and the FM network of the Alberta Educational Communications Corp. renewed for two years only. The CRTC is concerned that the provincial Act establishing AECC contains "a potential for lessening the independence of the Corporation" and wishes to assess, on a continuing basis, its eligibility to hold licences. The programming of CKUA AM/FM also must be "educational" and "distinctly different" from other broadcasting services.

• The frequency assigned to Lytton, B.C., is 102.3 MHz.

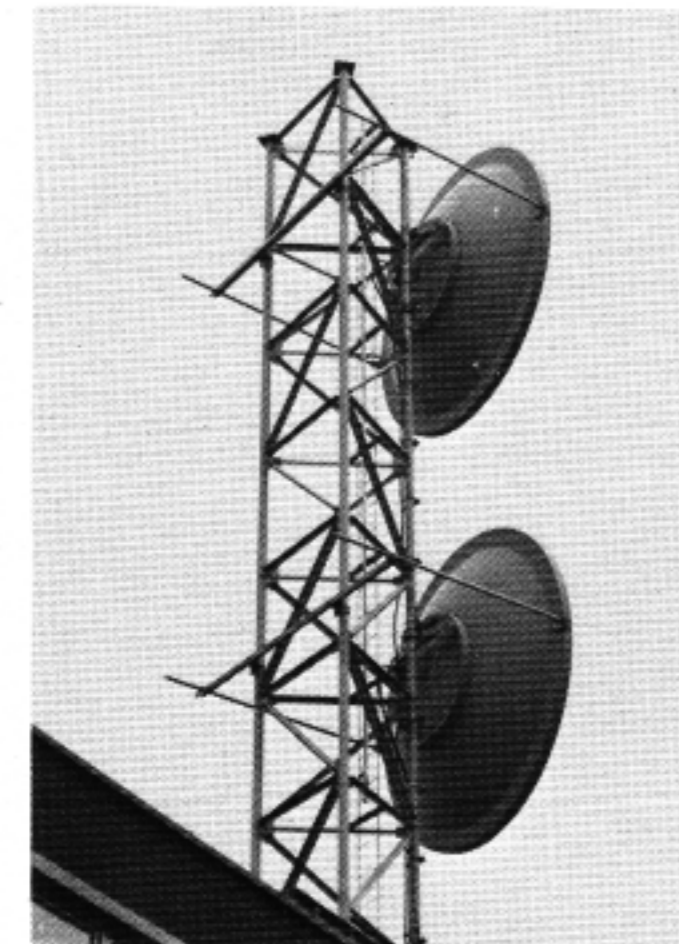
• The CRTC has denied a request for a relaxation of restrictions on sponsored programs in the licence of CHUT-FM Chicoutimi/Chambord, Que., a co-operative community station. It also expressed concern that the station was straying from its original objectives.

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**CHANNEL 10 FOR
CBC VICTORIA**

The long-disputed channel 10 has finally been assigned to the CBC for a station in Victoria, B.C. It will operate with 160,000 watts ERP (video), and is expected to be in operation in the fall of 1978. CHEK-TV will then become a CTV affiliate.

Also approved are a dozen low power TV rebroadcasters, and a power increase for the rebroadcaster at Campbell River, to provide CBC service throughout Vancouver Island. The CRTC therefore suggests that CHEK-TV rebroadcasters change their programming to CHAN-TV Vancouver (CTV), reverting to CHEK-TV when it joins CTV.

CBC Victoria is to provide at least 7 hours and 10 minutes weekly of local news, public affairs and community programs.

The Commission says that the Victoria station will help to overcome reception problems unique to the area, making full CBC service available. As CBUT Vancouver and the new station will largely duplicate programming, cable systems may apply to carry only one.

Channel 10 is the last VHF channel available for the Vancouver-Victoria area and its use has long been debated by various factions, including the CBC, private broadcasters and educational interests.

NEW BRUNSWICK TV

Low power rebroadcasters for New Brunswick Broadcasting at Boiestown and Coaktown have been approved. They will carry CHSJ-TV Saint John, a CBC affiliate.

CTV service will be extended by rebroadcasters at Blackville, Chatham, Boiestown and Doaktown, licensed to ATV (CKCW-TV Moncton). ATV is also permitted to change the affiliation of its Campbellton, Upsalquitch and Newcastle rebroadcasters from CBC to CTV as soon as CHSJ-TV rebroadcasters at Campbellton and Newcastle/Chatham are operational.

Numerous cable systems have restored U.S. stations to their FM service, following the Commission's announcement of September 23, 1976. (See BET, Nov/Dec, page 38—"CRTC Backs Off Ban".) Applications to re-instate the U.S. stations have been given prompt approval, with the proviso that distribution is to terminate immediately upon written notice to that effect from the Commission. Meanwhile, comments were to have been submitted by December 1st on the CRTC's re-evaluation of the question.

While the U.S. stations are going back on cable, a number of systems have been denied permission to carry certain Canadian stations, under the terms of the CRTC's July 19, 1976 Public Announcement.

Other cable decisions:

- Compagnie de Télévision de Sept-Iles Ltée may acquire the cable system in Port-Cartier, Que. The community channel is to be programmed from Port-Cartier, rather than Sept-Iles, as proposed by the applicant. Reception of CJBR-TV Rimouski via the Microbec network is deferred.

- Country Cable Ltd. may acquire the cable system at Wingham, Ont. The parties concerned were rapped for making an agreement which transferred effective control prior to CRTC approval. The new licensee is expected to provide community programming and extend the service area.
- Increased service areas were approved for Calgary Cable TV, Télévision Communautaire de Brompton Inc., and Treeford Ltd., while rate increases have also been approved for a number of systems.

- The licence of Victoria Cablevision Ltd. has been extended to March 31, 1977, pending a renewal hearing. A court challenge by Capital Cable Cooperative, which has prevented the renewal from being heard since last spring, has now been rejected by the Supreme Court of Canada.

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MSC newsletter

FML system selected by Grand River Cable

How do you distribute a high quality signal to widely spaced head ends of cable systems without undue signal loss and degradation or an unacceptable signal-to-noise ratio?

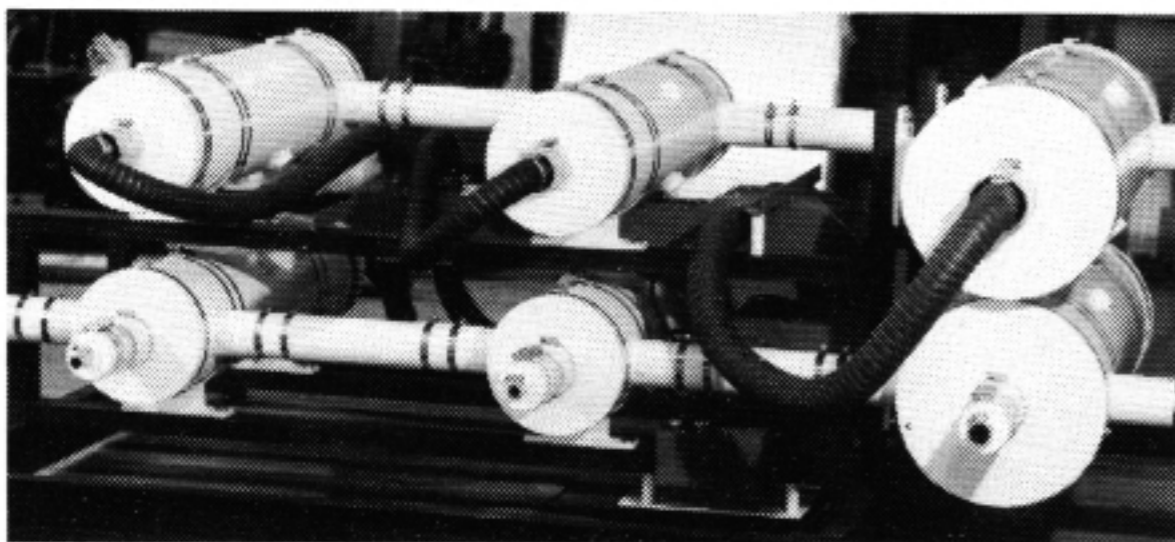
Grand River Cable TV Ltd. has solved this problem by selecting a Microwave Associates FML system due to be installed early in 1977.

Grand River provides cable TV to a large area of South Western Ontario, in the Kitchener, Waterloo, Cambridge, and Stratford areas. To provide total coverage, a number of head ends are required, located at distances of up to 20 miles or

more from the central core. The FML system, being supplied by MSC Electronics Ltd., was selected as the only method which could economically provide the signal quality desired.

In addition to a superior signal-to-noise ratio, the all solid state FML system features high reliability and exceptional flexibility. Because all input signals are demodulated to base band video, prior to modulation at VHF frequencies for insertion in the cable, channel assignments can be quickly and easily changed as required.

Write 200 on reply card



FM transmitters use single antenna

A number of Shively combiners have been supplied recently by MSC Electronics, for use where two or more FM transmitters share the same antenna. The unit shown is similar to one now in operation at CBC Halifax, and is capable of handling 25 KW input per channel.

Other power handling capacities are also available.

Features of the Shively combiners include a low insertion loss of only 0.2 dB in each channel, and a high isolation between channels of greater than 50 dB.

Write 201 on reply card



Paul Hunter, vice-president and director of engineering at CHIN-FM adjusts station's AEL transmitters located at the 1200-foot level of Toronto's CN Tower.

CHIN installs AEL

When CHIN-FM moved to Toronto's CN Tower last spring, it switched from monaural to stereo, and installed two AEL transmitters in a "HOT STANDBY" configuration.

The selection of AEL was a carefully considered decision, according to CHIN vice-president and director of engineering Paul Hunter. AEL could deliver the new exciter design CHIN wanted on time for the move to the CN Tower, and AEL also developed a hot standby configuration expressly for CHIN.

Either of the 2.5 KW AEL transmitters can operate as the main or the alternate transmitter. The switching system is fully automatic

and actually seeks out the best system components, switches them to the "on-air" position, and signals this information back to the studio operator.

Switching is automatic at three levels: input to the exciter (program material arrives at the tower by two totally separate routes); exciter output; and transmitter output. Standby exciter switch-in is instantaneous upon loss of exciter output, while the antenna is automatically switched to the alternate transmitter if RF output fails for more than 5 seconds.

CHIN specializes in multicultural programming to Toronto's ethnic communities.

Write 202 on reply card

CBC orders FM antennas

As part of the CBC's Accelerated Coverage Plan, an order has been placed with MSC Electronics for 21 Shively antennas, followed by a subsequent order for

four additional antennas. Models covered by these orders include types 6810, 6811, 6812, 6813 and 6010, in varying configurations. *Write 203 on reply card*