



# the canadian amateur

November 1975

Number 9

## Police Radio goes Data

The RCMP and DOC have let contracts for the development of a mobile digital data system to provide police cars with direct fingertip access to the Canadian Police Information Centre in Ottawa.

CPiC is a nationwide computer police information system and the new mobile units will minimize the necessity of police dispatchers acting as middlemen for inquiries to CPiC from patrol cars.

Identity checks, stolen cars and wanted persons can be quickly verified by this mobile data system, thus freeing radio time for emergency voice communications and conserving radio spectrum requirements.

## Family Memberships!

The CARF Board of Directors has approved the inclusion of Family Memberships for your national Federation.

When two or more members of the same family and household become members of CARF, they shall be entitled to pay the reduced fees for this class of membership. The first member of the family shall pay the normal fee for membership (\$5.00) and each additional family member shall be at the reduced rate of \$1.00 per year. Family members will be entitled to all rights and privileges of the

Continued on Page 3

## Amateurs beat Bermuda Triangle Hex

After a three day storm ordeal at sea off the coast of Florida in the fabled Bermuda Triangle, during which their 30 foot sailing craft was battered by 18 foot waves, the exhausted three-man Canadian crew of the Kluane utilized Dave McNaughton's on-board Amateur station VE0MCM to call for assistance on 75 metre phone.

WA4CFX answered their distress call and with the co-operation of the FCC and the US Coast Guard stations, the USCG cutter Reliance took the three Canadians off of the small craft on Nov. 1, put a relief crew aboard and brought the Kluane safely to port.

The three occupants of the sloop were Mr. McNaughton of Whitehorse, and Colin Stock and Pierre Asselin of Montreal.

Once again the value of Amateur equipment aboard ships was proved.

Amateur equipment also formed part of the equipment aboard the 30-foot Nordic Mist which recently sailed from Copenhagen to Kingston, Ontario. Don Beatty VE3BGB of Kingston kept daily schedules with Canadian Amateurs during the 28-day Atlantic crossing to New York.

Another sailing vessel, the 100-foot Grand Bank vessel Norma and Gladys, is sailing around the world with a Newfoundland crew and VE4MO, Allan

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Dave McNaughton, left, called for assistance from an on-board station VE0MCM. Right is Colin Stock.

# the canadian amateur



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All correspondence is welcomed and should be addressed to the Editor, The Canadian Amateur, Canadian Amateur Radio Federation, Inc. P. O. Box 356, Kingston, Ontario.

For CARF National QSL Bureau services, write to: PO Box 66, Islington, Ont. M9A 4X1.

Managing Editor: Steve Campbell

Associate Editor: Doug. Burrill, VE3CDC

Art Editor: Stan Hill VE3DQ

Technical Editor: H.T. Edworthy, VE3CLG

Assistant Technical Editor: Brian Pass, VE3BGP

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- New Brunswick Amateur Radio Association
- Radio Society of Ontario, Inc.
- Amateur Radio League of Alberta
- Amateur Radio League of Manitoba
- Saskatchewan Amateur Radio League
- British Columbia Amateur Radio Association

## From the Front Office

The Canadian Amateur convention circuit is now closed for another year. Officials of your National Federation attended most of the major conventions and many of the regional Hamfests. All CARF officials attending have noted that there is a great deal of interest in the present state of the Federation and of our future role in Amateur radio. And, judging from the new memberships obtained, many Amateurs are convinced that CARF's Aims and Objectives are right for the Canadian scene.

By-Law No. 2 was approved in May 1975 granting voting rights and other privileges to the individual Amateur members with advance notice given of this change in organization in February. Since April, CARF individual membership has increased by a national average of 61.5 per cent. The greatest percentage increase has come from Newfoundland (128%), Quebec (125%), Alberta (79%), New Brunswick (65%) and Ontario (63%).

Many comments have been received with memberships and with renewals with several dealing with our publication, The Canadian Amateur. Many would like to see more articles about special activities of clubs and individual Amateurs; more technical content, especially of simple home-brew projects; many complained about late arrival of copies. The Editor and his staff are working hard to increase content and will be doing everything possible to get issues into circulation by the first of each month so that all areas of our country will receive copies during the month of issue.

A note re Membership Certificates: New Certificates for Associate and Full Members have been printed and will be forwarded as soon as we receive final approval of By-Law No. 2 from the Minister of Consumer and Corporate Affairs. The original application was returned with a request for some minor changes in wording. This has now been effected and final approval should be received shortly.

The October issue of The Canadian Amateur contained the official notice of a call for nomination of Regional Directors for the 1976 Board. A gentle reminder that, if you or your club have not yet given these nominations much thought, the time is NOW. Applications will close on Dec. 31, 1975. Remember that the candidates chosen by election in early 1976 will be the Amateurs responsible for the control and direction of activity and policy of your national Federation for their term of office.

From talks with Amateurs across our country, most have definite ideas for enlarging our scope of operations and have serious concern regarding the possible future of Amateur radio.

Now is the time to either stand for position on the CARF Board or to gather support for the candidate of your choice.

# SHORT-CIRCUITS



"POOR SAM HAS TO CLIMB HIS SUPER-TOWER AT NIGHT:-- HE'S AFRAID THE NEIGHBOURS WILL SHOOT HIM OFF IN DAYLIGHT."

## Letters to the Editor

Dear Sirs,

Re: Mr. Andrews' Proposal

I can only say that I heartily concur with the proposed (VHF Experimenter) licence.

The availability of such a licence would encourage teachers and schools to promote students entering Amateur Radio as a part of their training, or at least as an aid in their training.

Good idea -- no harm done to any existing hams.

Frank Nansor VE7IQ  
963 Belmont, North Vancouver.

## Family Memberships

Continued from Page One

class of membership they would normally have, except that they shall not receive a personal copy of The Canadian Amateur.

All family groups who wish to change from individual to Family memberships may now do so by application to the Federation. Membership shall be extended to compensate for the change effected.

## Notice to our readers.

Due to the nation-wide postal strike, all issues of The Canadian Amateur completed during that period will be mailed simultaneously when the strike breaks.

## Dutch Treat for CB

According to HR Report, published by Ham Radio, the Netherlands government has abolished its 27 MHz Citizen's Band after finding it impractical to clean it up.

Legitimate business users were advised to seek business band frequencies and former CB 'hobbyists' are to be offered a no-code Amateur licence with an elementary written exam permitting operation on six channels in the two-metre Amateur band.

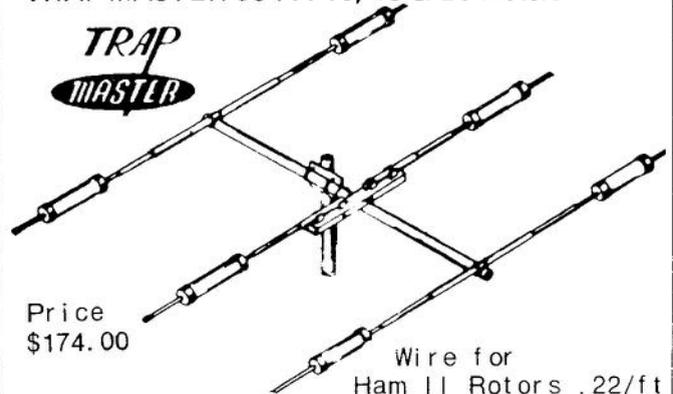
## Bermuda Triangle

Continued from Page One

Hooper of Winnipeg scheduled to board her in San Francisco in December. Allan is a graduate of Red River College's commercial operator's course.

A word of interest to those contemplating ocean voyages on small craft from Don Beatty: buy an ELT transmitter as part of the safety equipment. These relatively cheap (\$150) emergency locator transmitters operate on the VHF aircraft emergency frequencies 121.5 and 243 MHz and were primarily designed to assist in the location of downed aircraft. When activated in an emergency situation, they emit a distinctive audio note on the continually monitored emergency frequency which alerts all aircraft within range and assists air-sea rescue efforts by providing a homing signal.

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Canadian Repeater Advisory  
Group

A new repeater, VE7KAM, Kamloops, is on 146.25--146.85; Lloydminster, originally VE5FN, is now VE5RI, on 146.46--147.06; Regina now has two repeaters, VE5KE 146.46--147.06 and VE5SS 146.28--146.88. Proposed are Jansen, 146.16--146.76; Last Mountain, 146.25--146.85; Melville, 146.28--146.88; Prince Albert, 146.46--147.06 and Weyburn, 146.22--146.82 (all in Saskatchewan).

In the Maritimes, Yarmouth, VE1YAR, went to 146.01--146.61 in September. Saint John VE1TWO on Mount Champlain west of the city, is scheduled to be on the air on 146.10--146.70 in December.

Ontario changes are VE3MGB, Midland is now operating on 147.78--147.18 (a new station) and the repeater listed in the May issue as Barrie, VE3BOR on 146.25--146.85 does not appear to be on the air; a station near Orillia (Maple Hill) uses that pair. In the Toronto area, VE3MHZ appears on 146.28--146.88 and an RTTY repeater, VE3TTY is on 146.10--146.70. The Riverside Heights station VE3SVR is now re-located on the Morrisburg water tower, adding to the coverage on the 401 highway corridor from Windsor to Quebec. The Ottawa scene is being added to with a proposed RTTY repeater on 147.90--147.30 with a simplex channel on 147.57. £ with a simplex channel on 147.57. VE3DRC, the DOC's Communication Research Centre amateur station is adding a repeater on 147.96--147.36. Across the river in the twin city of Hull, VE2CSO (Club Sansfiliste Outaouis) is about to go on 146.10--146.70.

In Quebec, Jonquiere now has a UHF station, VE2EFB on 444.0--449.0; St. Jean, VE2CVR is in operation on 147.84--147.24; Three Rivers has a second station, VE2QU on 147.90--147.30 and Laval also has a second repeater, VE2AU on 146.31--146.91. With the proliferation of repeaters in Quebec, the work of the Greater Montreal Repeater Council in frequency allocation deserves honorable mention. A council is proposed for the Chicoutimi area where a number of machines have appeared in the last two years.

With the appearance of RTTY (radio teletype) repeaters and their relative incompatibility with FM phone, it may be time to think of a Canadian standard pair for teletype in Canada. The Texas plan in the US has indicated 146.70 as the national RTTY calling channel, and one known RTTY repeater in Canada, VE3TTY, is using 146.10--146.70 MHz as a repeater pair; however, with three FM phone repeaters already using these frequencies, it appears that a national RTTY channel 146.10--146.70 may not be possible. The proposed Ottawa RTTY repeater is using the high in - low out 147.90--147.30 pair and it may be a good idea to relocate a national RTTY calling channel to that end of the band. The Ottawa group has also indicated that they will be

using 147.57 as their RTTY direct channel. (All frequencies were cleared through the area repeater council).

Comments on these frequencies for RTTY use are welcomed by this column and are of special interest to VE3ARS, the CARF VHF Advisory Committee Chairman, who is also heading up the Ottawa TTY group.

## New Cdn. Div. ARRL Director appointed



Ron Hesler, VE1SH, of Sackville, N.B. has been acclaimed as the Canadian Director ARRL and will take this office in 1976.

Ron was born in Montreal in 1921, is now retired after many years as a business executive, saw service in WWII as a Lieutenant (RCA) and Captain (RCME), and is married to Donna, VE1YX. His hobbies include flying (private pilots licence), photography, audio recording and boating (member Royal St. Lawrence Yacht Club).

Ron brings a wealth of experience in Amateur radio to his new position. He was licenced in 1937, (VE1KS), was a District Manager of CAROA, Co-founder and Secretary of VE1RPT, a repeater in Moncton, NB, President Sackville ARC and Vice-Director, Cdn Div ARRL. He is a life member of ARRL and QCWA and belongs to the Moncton area ARC, NBARA, NSARA, NS VHF Ass'n, R.S.O., the Montreal ARC, Toronto FMCS, Saint John ARA, and CARF. He holds DXCC, WAS, WAC, and CQ World Wide DX Awards, and has held Assistant Director, SEC and PAM positions with the ARRL.

## Regional Director appointed

G.C. (Gary) Brooks, formerly Director of the Telecommunications Engineering Branch of DOC head office in Ottawa, has been appointed Regional Director of the Western Region in Winnipeg.

# Recommendations for discussion by IARU

Allocation of space in the full radio frequency spectrum will be considered at the 1979 ITU conference. The Amateur service will be competing with many powerful organizations and national interests for these frequencies and will not only seek to retain those frequencies now allotted to the Amateur service, but will press for additional spectrum space.

Frequency bands allocated to the Amateur service are presently shared, in some cases, with other services and in others are allocated on an exclusive basis. Allocation varies for the three ITU regions. (Canada is in Region II)

A recent IARU Region I Conference proposed that the following points be approved as part of the world wide plan for the expansion of Amateur frequencies in the H.F. spectrum:

1. Obtain an Amateur exclusive segment in band 1800-2000 kHz;
2. Obtain an exclusive Amateur segment in band 3500-3800 kHz;
3. Expand 7000-7100 to 7000-7200 kHz Amateur exclusive;
4. Eliminate sharing with fixed services in band 14,250-14,350 kHz;
5. Establish new Amateur bands --  
10,100-10,600 kHz (now allotted to fixed services),  
18,100-18,600 kHz (now allotted to fixed services),  
24,000-24,500 kHz (now allotted to the fixed and land-mobile services).

The spectrum space for Amateur service use above 30 MHz was also discussed. It was noted that the

operational range using these frequencies was mainly quasi-optical and little co-ordinated; world-wide policies were necessary. But with greater usage of Space Communications, the position is now radically different. Secondly, world trade has stimulated the need for standardization, e.g. 2 metre FM equipment including auto-repeaters. Consideration must also be given to harmonically related bands of frequencies, 144x3 (432 MHz); 144x8 (1152 MHz); 1152x2 (2304 MHz); etc.

The only bands allotted to the Amateur satellite services are 144-146 MHz; 435-438 MHz; and 24.-24.05 GHz. Additional bands around 1296 MHz and 2304 MHz could profitably be used in this service. Unexpected problems have been encountered in some countries concerning frequencies used for the up-link (ground to satellite) communications. Some authorities have forbidden up-link communications on other than those frequencies allotted for the Amateur satellite service even when such frequencies are within the band allotted for normal Amateur use. An agreement is therefore necessary to either permit the use of 'normal' Amateur frequencies for the up-link in all countries or to have additional up-link frequencies designated for use by the Amateur Satellite service.

## Olympics Certificate available to Amateurs

A certificate to honor the 1976 Summer Olympics will be awarded to licenced Amateurs who comply with the following requirements:

Canadian Amateurs must work 10 Montreal Island stations. (Montreal ISLAND Amateurs must work 20 Montreal ISLAND stations - VHF/UHF repeater contacts disallowed)

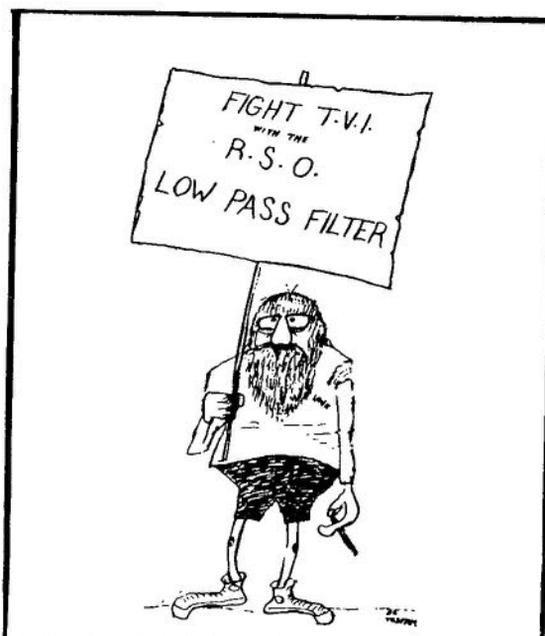
Foreign Amateurs must work 5 Montreal Island stations.

Contacts must be made between Aug. 1, 1975 and July 31, 1976. ANY MODE.

Send \$1.00 or five IRC's and a copy of your log containing: Date, time, station worked and operator, mode, frequency, received signal report, sent signal report. No QSL's required.

Send applications to:

Secretary, Westminster Amateur Radio School,  
Box 323,  
Montreal Int'l Airport, A.M.F.  
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# canadian capsule comment

## Amateur Radio and the Electronics Industry

Westside Radio Club - VE3EQF

Each year the Electronics magazine publishes its forecast for the growth within the electronics industry, with figures for the past few years and projections. Under communications, the figures below are in millions of dollars and represent the value of goods shipped from the USA based factories (factory price) for a particular year.

	Total	Amateur	CB
1972	1,743.7	11.2	9.9
1973	2,068.2	11.5	10.5
1974	2,380.5	11.9	11.5
1977	3,076.0	13.0	15.0

The figures were much higher than what I had thought possible. Over 11 million dollars is spent each year by Amateurs on their hobby ... I would have assumed that more money would have been spent on CB stuff than Amateur gear due to the cost of Amateur equipment over CB rigs. CB equipment is almost exclusively transceivers, whereas a lot

of Amateurs use separate receivers and transmitters which ups the price per station. It also reflects what we all know, that Amateurs are buying their rigs and not building them. Heathkit sales would be included in the figures but come under assembly, not building.

## Maple Leaf Award

The Amateur Club of the Listowel District Secondary School has announced a new Canadian Award which is available to all radio amateurs and short wave listeners around the world.

The Maple Leaf Award consists of two parts, an attractive flag parchment diploma, suitable for display in anyone's radio shack and a Canadian Maple Leaf flag lapel pin suitable for wearing.

The Maple Leaf Award is for working or hearing and confirming Canadian amateur radio prefixes as authorized by the DOC for Canada.

QSLs must be in your possession. A GCR (Certified List) must accompany your application. QSLs should not be sent unless specifically requested.

Class III, 15 different Canadian prefixes; Class II, 25 different Canadian prefixes; Class I, 30 or more different Canadian prefixes.

- Built-in Antenna Relay
- 160, 80, or 40M Plug-in Coil
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- Clean Output - "T" Network
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**SPECIFICATIONS**

- 15 Watts Input
- Full Break-in Keying
- Optional - Built-in Keyer
- Optional - Built-in Sidetone
- 4 Transistors, 2 Zeners and 7 Diodes

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- Power On/Off
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- Key Jack
- Crystal Jack
- Tune Meter

**REAR PANEL**

- Coil Socket
- Antenna Jack (RCA)
- Receiver Antenna Jack (RCA)
- Power Cord

**PACKAGING**

- Color: Biene Case, Black Cover
- Size: 2 3/4" x 5 1/8" x 8 1/4"
- Shipping: 4 lbs.

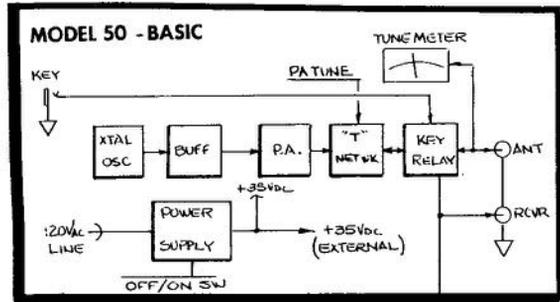
<b>MODEL 50K - BASIC KIT</b> .....	\$59.95
ADD-ON OPTIONS: Sidetone (200-21K)	8.95
Keyer (200-22K)	22.95
<b>MODEL 50W - BASIC WIRED</b> .....	\$70.95
Model 50WS (with sidetone)	84.95
Model 50WK (with keyer)	99.95
Model 50WSK (with sidetone and keyer)	109.95
Model 11AK (paddle, kit)	13.75
Model 11AW (paddle, wired)	17.75

**CW TRANSMITTER • MODEL 50**

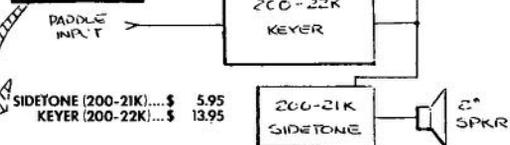
The Model 50 CW Transmitter is the perfect rig for beginner and old timer alike. It has plenty of power to maintain contact throughout a QSO, is small in size, and is very economical to operate.

The basic transmitter includes a built-in 115V ac power supply, built-in antenna changeover relay, and full break-in keying capability. Provisions are also made for internal mounting of an optional Sidetone Generator and speaker and an optional Electronic Keyer similar to the very popular Model 10. Operational voltages are obtained from the transmitter power supply. Bandswitching is accomplished by changing crystal and plug-in coil.

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A special plaque award will be issued free of charge to any radio amateur who works and confirms 50 or more different Canadian prefixes.

All contacts for all classes must be made after Jan. 1, 1965, the year in which the Maple Leaf became our country's official flag.

Application, GCR, and 10 International Reply Coupons or \$1.50 or equivalent in any foreign currency should be sent to the awards custodian: Mr. Garry V. Hammond, Geography Department, LDSS, 155 Maitland Ave. S., Listowel, Ontario, N4W 2M4.

## RSO Convention

The largest convention held in Canada in 1975, the Radio Society of Ontario Convention, drew close to 1000 Amateurs and XYLs to the Skyline Hotel in Ottawa on Oct. 3, 4 and 5.

Bill Choat VE3CO was the recipient of the Amateur of the Year award, granted mainly for his outstanding work with the CNIB ARC.

Among the other prize winners, Bill Bushell VE3-DXY, The Canadian Amateur's Capsule Comment editor, walked off with one of the major prizes, a microwave oven. Bill's XYL now thinks that conventions are wonderful.

At the convention's Friday night Octoberfest, those who sat close to the Oom-pah-pah band discovered what the term 'shredded eardrums' used by spark operators means. Close to 800 attended the Saturday night banquet.

The forums were also well attended, with many boasting SRO space. Amateurs also took the opportunity throughout the convention to tour through the DOC and AMSAT exhibits, as well as equipment demonstrations offered by a number of manufacturing and distributing firms.

In the hospitality rooms on the 16th floor, many Amateurs talked with officials from various Amateur organizations including CARF.



Amateurs at the RSO Convention study a display on slow-scan television.

## Clara News

The first convention in the history of the Canadian Ladies' Amateur Radio Association was held in Calgary in conjunction with the ARRL Convention, Aug. 1, 2 and 3.

YL members attended from VE3, VE4, VE5, VE6, and VE8. Besides participating in the regular Convention activities, an executive meeting was held, one of the few in-person meetings held in the club's history. A luncheon on Saturday was attended by 50 members, and a number of prizes donated by YLs and YL clubs were given away. A highlight of the convention was the eyelash QSOs had by the YLs.

## What your five bucks does for you

To run your national organization effectively, it takes a lot of money. The Federation's budget for this year will run to more than \$10,000.

With this revenue, which comes from membership fees, the sale of QSL cards, Regulations Handbooks and the 25 cents per head given to the national organization by the member provincial societies, the Federation finances an annual general meeting, the publication of The Canadian Amateur, publicity expenses at conventions, and the administration expenses such as postage, stationary and office equipment.

The main expense of administration is in the financing of the Annual Meeting. This meeting necessitates the payment of travel and other legitimate expenses incurred by the Board of Directors in attending, but this is the only way to provide a truly democratic basis of operation for a national organization. In 1975, a Special meeting of the Board was called in March to discuss and approve

By-Law No. 2 which restructured the Federation and granted voting rights and other privileges to individual Amateur members.

Another major financial undertaking was the publication of the special May issue of The Canadian Amateur which was circulated to every licenced Amateur in Canada. This special effort was made to acquaint every Amateur with the change in organization and with the Aims and Objectives of the national Federation.

The main business office of the Federation is in Kingston, Ontario and is staffed by a dozen or more volunteers, backed up in the nation's capital by five committee chairmen and the vice-president working with DOC and other departments.

What has your Federation done and what is it doing for Amateur radio in Canada? Here is a list of some of its projects and activities:

-Published a Handbook for operating an Amateur



# simply a great transceiver **YAESU**

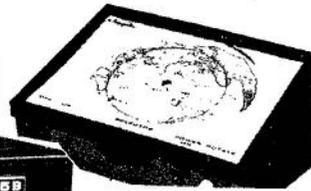
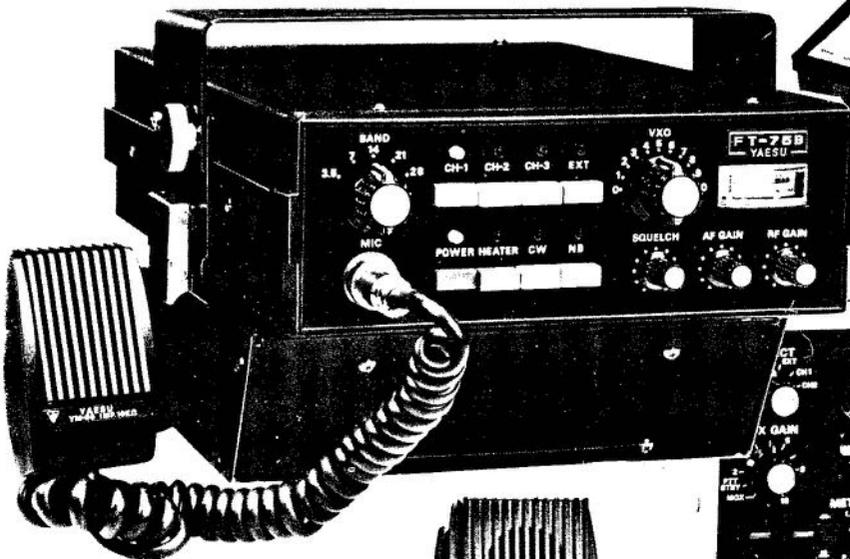
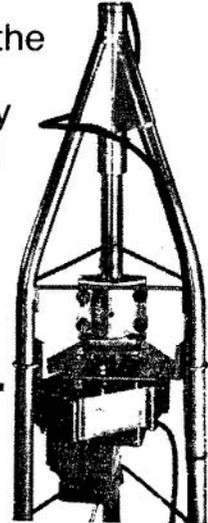


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station in accordance with Canadian rules and regulations.

- Established and operates an out-going QSL Bureau for CARF members (Box 66, Islington, Ont.)

- Established the CARF News Service which is distributed to provincial bulletins and other editors ...FREE. Included is a procedure for getting hot news on nationwide networks within hours and broadcasting it on the CARF bulletin stations, VE7VCA, VE3VCA and VE2VCA ... the "Voice of the Canadian Amateur".

- Maintains day-to-day personal liaison with DOC HQ in Ottawa and fast work in clearing up problems.

- As necessary, it has taken nationwide polls on changes to regulations proposed by Amateurs or the DOC. (75 metre phone expansion and third class of certificate, for example.)

- Publishes the only national periodical for Can-Amateurs, The Canadian Amateur.

- Suggested the establishment of, and sponsors the Canadian Repeater Advisory Group; prepares, publishes and distributes the CRAG bulletin and the Canadian Repeater Directory.

- At the request of the DOC, is currently codifying all of the Regulations and those parts of the Radio Act pertaining to the Amateur Experimental Service. The result will be that, for the first time, Canadian Amateurs will have a legal reference such as is available to their US brothers in their FCC Rules, Chapter 97.

- Takes immediate action by the many CARF officials in Canada's capital on an announcement of legislation or government decrees which affect Amateurs. An example is the fast action by CARF officials in the matter of the Privacy of Conversation Act. If taken literally, it was possible to use it to force Amateurs to register receivers with the RCMP, and to charge many of them with "eavesdropping" under the Act. Within a matter of hours, the Federation officials had a letter from the RCMP freeing Amateurs of the registration clause.

- A formal protest was made to the Minister of Communications about the sudden increase in station licence fees and a continuing dialogue with the Minister to reduce the present fee.

- Maintains personal liaison with the FCC Amateur and Citizen's Band officials in order to determine the effect of US rules on Canadian operations. For example, technical briefs prepared by the Federation and its consultants were instrumental in preventing the loss of parts of the international Amateur bands to the US CB Emergency Medical Service.

- Has asked the DOC to consider reduced licence fees for pensioners.

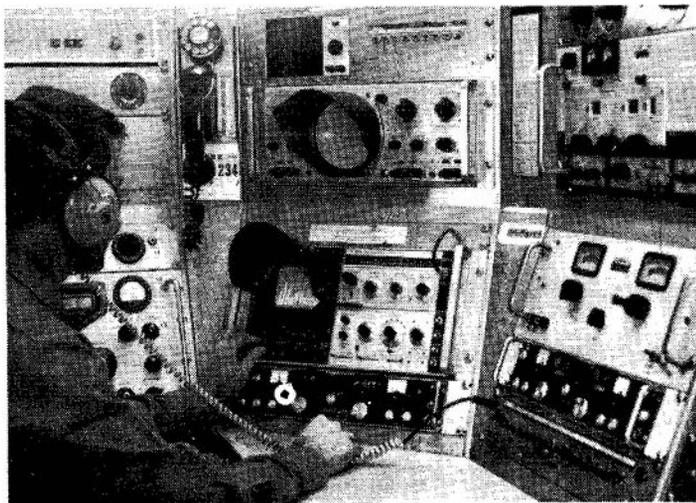
- Sits on the Canadian Radio Technical Planning Board's committee on interference, the Canadian Standards Association interference committee, the ITU CCIR Study Group 2 on Amateur frequencies and satellites and has an input to the federal government's preparatory committee for the 1979 conference.

- Is publishing a study Handbook to assist interested people in obtaining their Amateur Certificate

of Proficiency. This brand-new approach to the Amateur "ticket" is based on the new examinations which DOC has come up with this year.

Amateur radio is a hobby which is vulnerable to pressures and interference from outside sources. You have seen what an all-Canadian national organization can do for you ... now what can you do for it, while at the same time doing something for yourself to protect your hobby? The answer is --- persuade your Amateur friends to support the Federation by becoming a full voting Member for \$5.00 per year. This will also bring them 10 issues of The Canadian Amateur.

## The Radio Spectrum



The following are extracts from the DOC color illustrated booklet, The Spectrum. For a free copy, write to: Distribution Clerk, Information Services, Department of Communications, Ottawa, Ont. K1A 0C8. This booklet would be of use and interest in schools, in introductory electronic classes, and to community college Amateur radio classes.

Due to the length of this article, it will be concluded in the December issue of TCA.

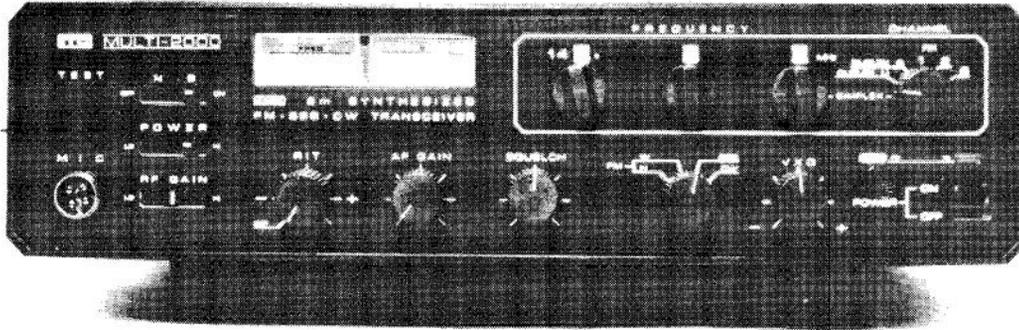
Although the radio spectrum ranges up to 3 THz (1,000 Gigahertz) technological and economic factors limit its useful availability to the lower end. An international conference in Washington in 1927 allocated bands only as high as 30 MHz. Since then, the march of technology, hand-in-hand with growing demand for more and more radio communications, has been pushing that limit steadily higher. It went to 60 MHz in 1932; 200 MHz in 1938; 10.5 GHz in 1947; 40 GHz in 1959; and 275 GHz in 1971.

The spectrum is arbitrarily divided into a number of frequency regions, each possessing more or less peculiar characteristics that determine type of usage. Low and very low frequencies--up to 300 kHz--are particularly suited to such uses as communications with submarines. Domestic and international broadcasting is found in the medium and high frequency areas (up to 30 MHz), which enable most other long distance communications between earth

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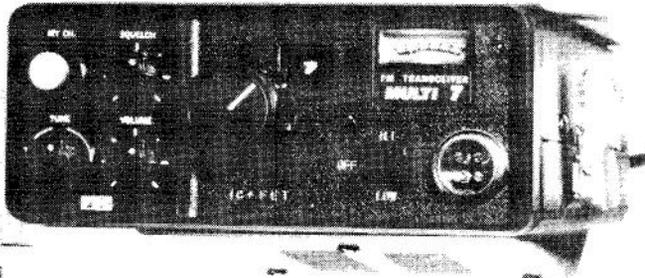
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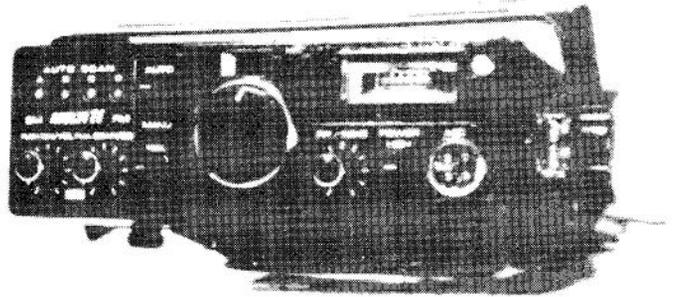
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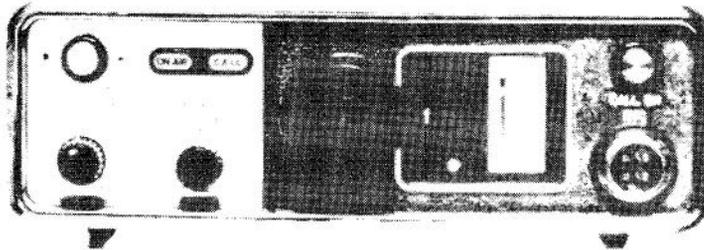
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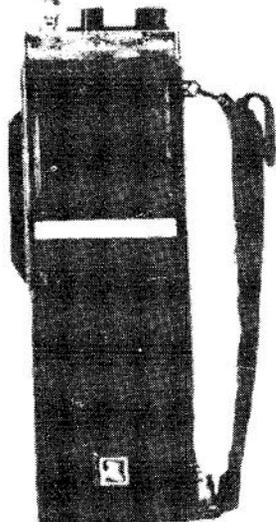


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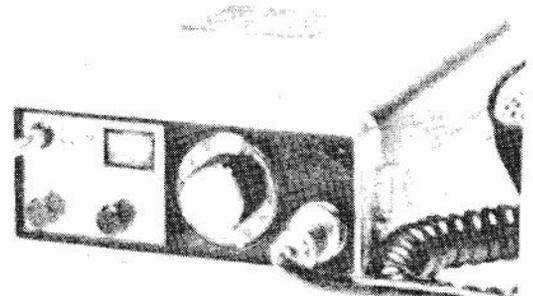


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stations. As signals above 30 MHz increase in frequency, they are progressively impeded, blocked or reflected by buildings and other surface objects and attenuated by the atmosphere. All TV and FM broadcasting and most urban mobile services are found in the Very High (30 to 300 MHz) and Ultra High (300 MHz to 3 GHz) frequency regions.

Above 1 GHz, the necessity for line of sight transmission reduces the possible applications of radio. Signals at about 30 MHz and above are not normally reflected by the ionosphere and are thus reliable for only essentially local communications, except by satellite or microwave repeaters employing line of sight paths, or when transmitting antennas are atop extremely high buildings of hills.

Frequencies with these characteristics can simultaneously convey huge amounts of information, because relatively highpowered transmitters operating on the same channels can be situated comparatively close together without interfering with each other.

It should now be apparent why the distance to be covered by a radio link is such an important factor governing frequency selection--a fact that partially explains why there are more stations in some portions of the spectrum than in others. A radio station's bandwidth is mostly determined by the amount or complexity of information to be conveyed instantaneously.

Consider two opposite extremes of information complexity--the simple Morse Code transmission and the TV signal. The Morse signal carries no sound or other external information. The color TV receiver, on the other hand, demands a steady stream of sound, picture, color and movement. While the High Frequency Spectrum (3 to 30 MHz) affords space for thousands of simultaneous Morse, voice and data transmissions, its equivalent width is consumed by fewer than five color TV signals--each one gobbling up as much bandwidth as 600 AM radio stations.

Canada's radio users demonstrate the unique suitability of radio for mobile communications or links spanning great or inhospitable distances. Canadians have tripled their demands on the spectrum during the last decade. There were 98,670 radio licences in force in 1963. Today there are well over 315,000.

Our biggest user groups include the General Radio Service (which provides ordinary citizens with inexpensive, low power communications), taxis, building and other construction trades, air transport, Amateurs, ships and electrical power systems, truck transport, police and other federal, provincial and municipal services.

The Department of Communications created by Parliament in 1969, has a broad mandate to foster the best possible telecommunications services of all kinds and help see that they are made available to--or for the benefit of--as many Canadians as possible.

The Radio Act, from which the department derives its spectrum managing authority, empowers the minister of communications to issue radio licences, to which he may attach conditions considered appropriate for the orderly development and operation of radio. All non-broadcast transmitting equipment installed or operated in Canada must be either licenced or exempted from licencing under the act. Broadcast transmitters must be certificated. No one is considered to have an automatic right to either obtain or keep a licence, nor any proprietary rights over frequencies he is authorized to use.

Spectrum managers must base their plans on the most reliable (yet still fallible) indicators of probable future demand for radio services, by locality, region and type of use. They must then take into account foreseeable new technology likely to be available to help meet that demand within existing frequency allocations. If this process points to re-allocation, it must be considered in the light of the probable socio-economic consequences of available alternatives.

A major constraint is the embedded nature of user and manufacturer investment in radio equipment. Re-allocation must not be so sudden or so rapid as to unreasonably reduce the useful life or equipment. It is a measure of the success of Canadian and international planning so far that no major or disruptive re-allocations have been or are likely to become necessary in this country in the foreseeable future. We should be able to meet demands by opening up unused bands and making more efficient use of existing ones.

## Concluded next issue

(Shown approx. 1/2 size)



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## BANNED COUNTRIES LIST

Iraq, Khmer Republic\*\*, Libya, Pakistan, Somalia, Turkey, Viet-Nam\*, Peoples Democratic Republic of Yemen.

\* - Stations XV5AA, XV5AB and XV5AC were authorized to exchange communications with Amateurs of other countries by the former Saigon regime.

\*\* - Station XU1AA has been authorized to exchange communications with Amateurs of other countries.

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Note: All Commonwealth countries are eligible for reciprocal Amateur operating privileges unless evidence that a country does not grant reciprocal operating privileges to Canadian Amateurs.

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