

Second Class Mail Registration
Number 5073

TCA



DECEMBER 1984

The Canadian Amateur
Radio Magazine
La Revue des Radio
Amateurs Canadiens



Niagara Bicentennial

Plus News & Views on the Canadian Amateur Scene

*Future Amateur Toyler Stirpert is intrigued
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See story on Page 26!*

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The Canadian Amateur Radio Federation, Inc. is incorporated and operates under a federal charter, with the following objectives:

1. To act as a coordinating body of Amateur radio organizations in Canada;
2. To act as a liaison agency between its members and other Amateur organizations in Canada and other countries;
3. To act as a liaison and advisory agency between its members and the Department of Communications;
4. To promote the interests of Amateur radio operators through a program of technical and general education in Amateur matters.

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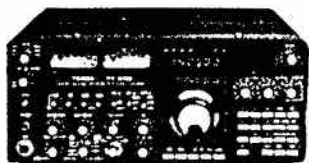
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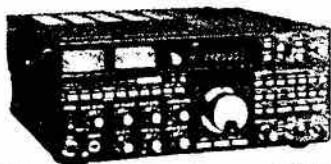
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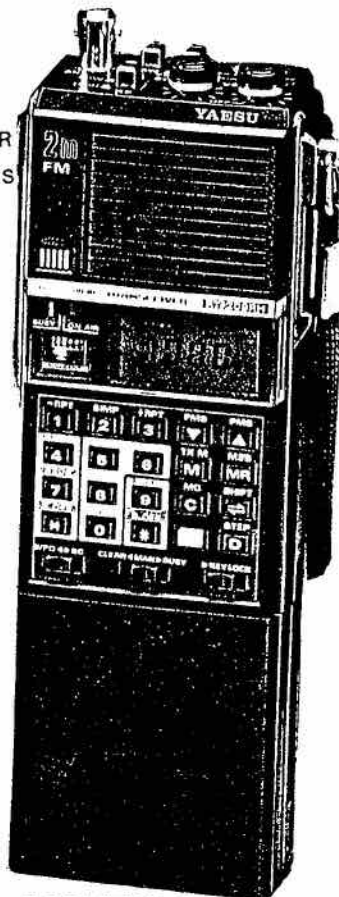
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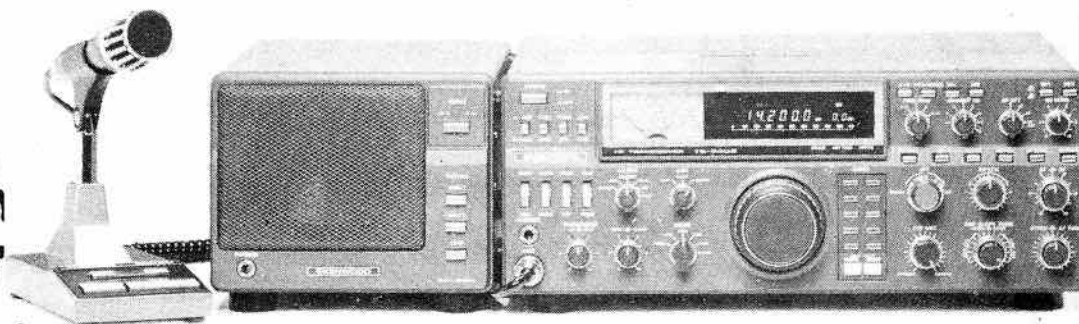
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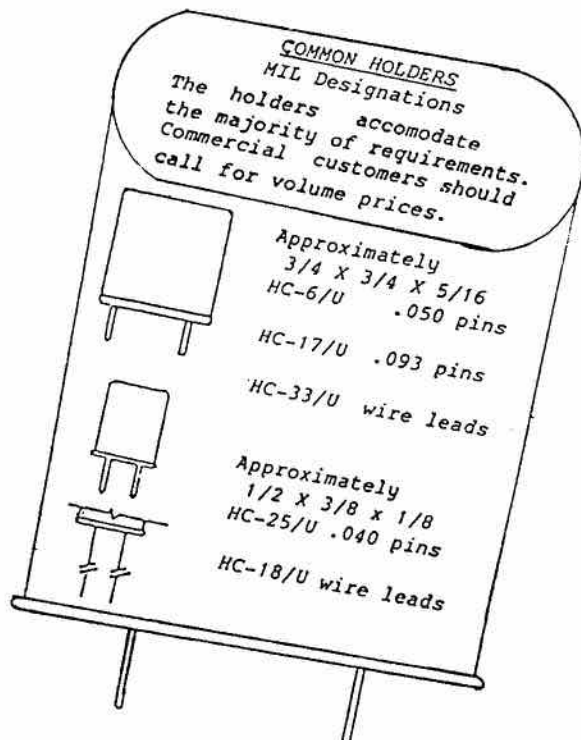
	<u>HC6/U</u>	<u>HC25/U</u>
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Amateur bands	8.00	8.00
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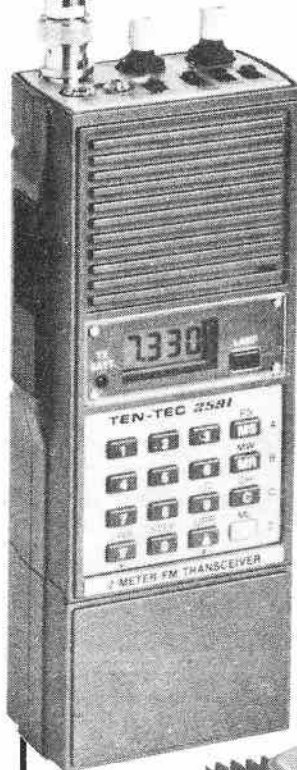


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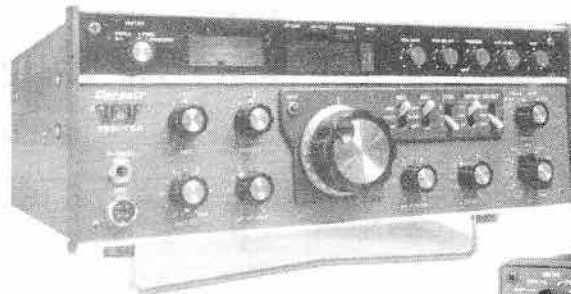


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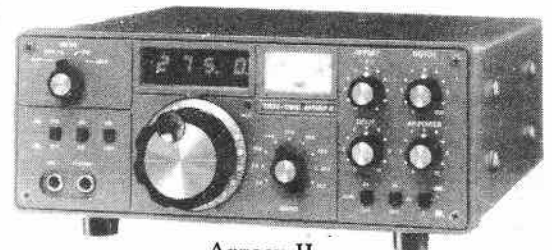
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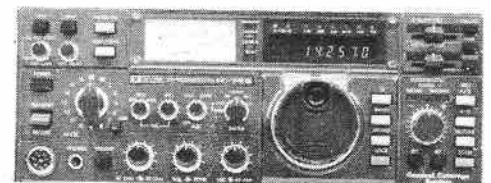
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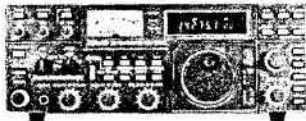
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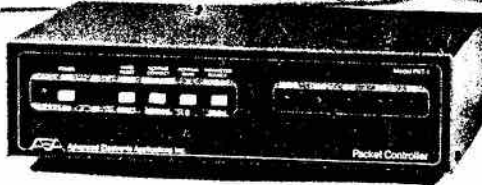
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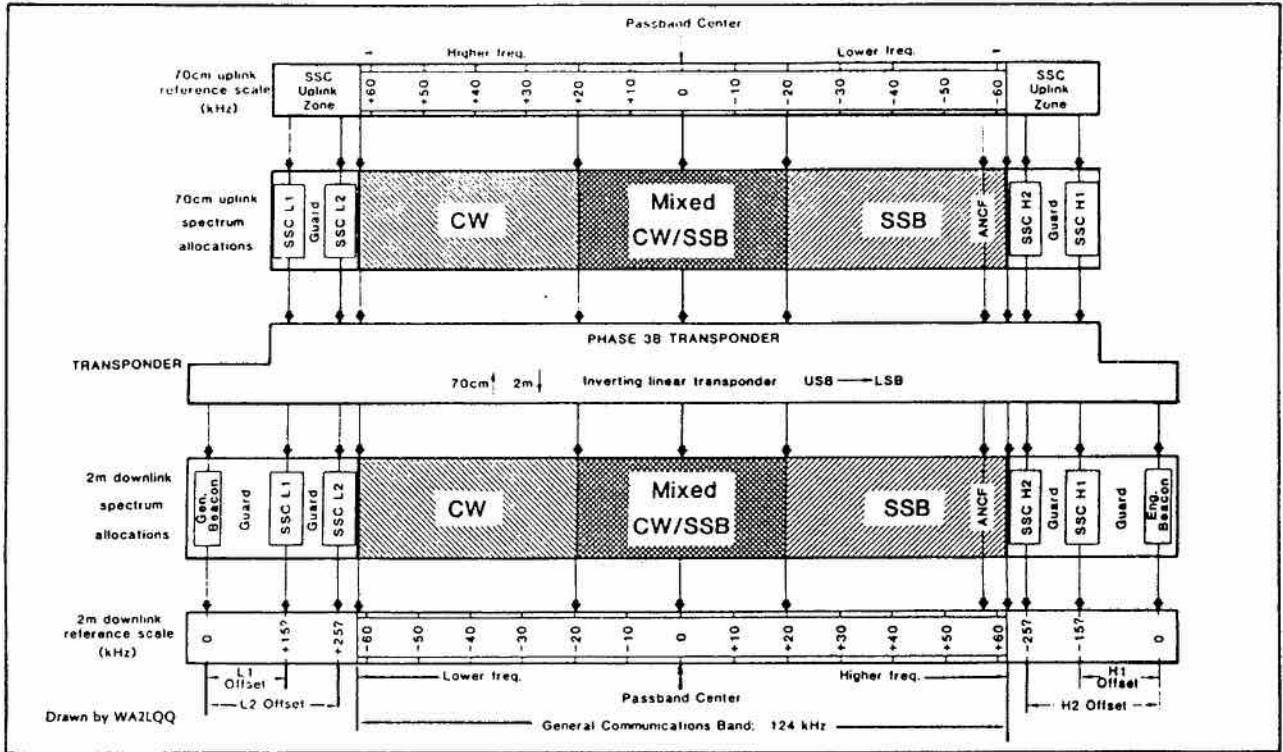
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OSCAR 10 Band Plan Chart

INFORMATION NET SCHEDULE			
NET NAME	DAY/TIME (UTC)	FREQ. (MHz)	NOTES
AMSAT Espanol	Sunday 1900	14.180	
AMSAT International	unday 1800	21.280	
AMSAT International	Sunday 1900	14.282	
AMSAT European 20m	Saturday 1000	14.280	
AMSAT UK 80m	Sunday	3.780	.1015 Local Time Sunday
AMSAT Asia/Pacific	Sunday 1100	14.305	
AMSAT South Pacific	Saturday 2200	28.878	
AMSAT South Africa	Sunday 0900	14.280	
AMSAT South Africa	Sunday 0900	7.080	
SEASAT	Sunday 1300	7.280	
East Coast 75m	Wednesday	3.850	2100 Local Time Tuesday
Mid-American 75m	Wednesday	3.850	2100 Local Time Tuesday
West Coast 75m	Wednesday	3.850	2000 Local Time Tuesday
Australian AMSAT	Sunday 1000	3.680	
New Zealand V.U.S.	Wednesday 0800	3.850	
VHF NETS			
New York City 2m	Wednesday	144.400	2200 Local Time Tuesday
AMSAT Goddard	Wednesday	146.835	2100 Local Time Tuesday
Los Angeles 2m	Wednesday	144.144	2000 Local Time Tuesday
Los Angeles 2m	Daily	144.144	0730 Local Time Tuesday
AMSAT South Africa	Sunday 0900	145.650	
AMSAT UK 2m	Sunday	144.280	1930 Local Time Sunday

Mode B Frequency Guide

Exclusive of Doppler shift.

Uplink		Downlink	
		145.987	Beacon, Engineering
435.025	Scheduled Use	145.972	SSC H1
435.035	Scheduled Use	145.965	SSC H2
435.038		145.962	Upper Limit
.040		.960	
.045		.955	
.050		.950	
.055		.945	
.060		.940	
.065		.935	
.070		.930	
.075		.925	
.080		.920	
.085		.915	
.090		.910	
.095		.905	
435.100	Center Band	145.900	
.105		.895	
.110		.890	
.115		.885	
.120		.880	
.125		.875	
.130		.870	
.135		.865	
.140		.860	
.145		.855	
.150		.850	
.155		.845	
.160		.840	
.162		145.838	Lower Limit
435.165	Scheduled Use	145.835	SSC L2
435.175	Scheduled Use	145.825	SSC L1
		145.810	Beacon, General

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- DIABLO™
- XEROX MEMORY WRITER™

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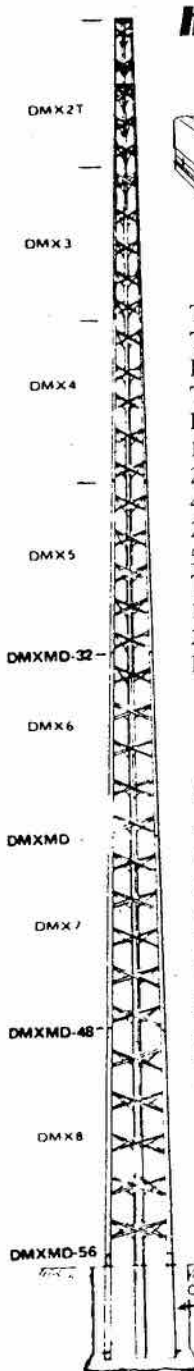
DMX-HD-32 \$395.00
DMX-HD-40 \$519.00

DMX-HD-48 \$579.00
DMX-MD-40 \$439.00

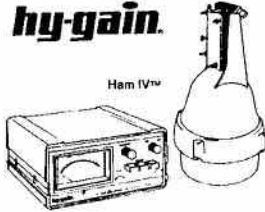
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DMX-MD-56 \$629.00

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- RV-8C 80 mtr. conv. \$79.00
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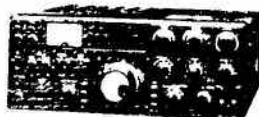
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TS-830S



TS-930S

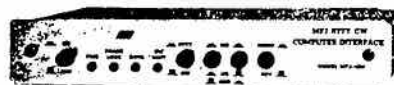


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Season's Greetings

FROM

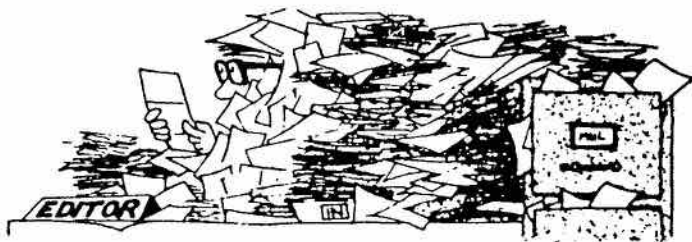


THE CANADIAN AMATEUR
RADIO FEDERATION

AND THE STAFF OF



LETTERS



TCA UNITES US

Just a short note of appreciation to thank you for publishing my article on "B.C.'s Two Metre Repeaters" in the September issue of TCA. It was my first attempt at writing for publication and I naturally feel quite elated at hitting the cover. One of the most important roles TCA must take is to unite Canada's Amateur community in a fraternal way. I believe TCA is doing this by publishing news and articles from all regions of our great country. News of DOC happenings and agenda is vital too: Amateurs can keep abreast of pending legislation to be able to influence the course government may take toward a healthy growth of this important service.

I sincerely believe TCA could have greater influence if it is offered for sale at radio supply outlets across the country. Admittedly, every Canadian Amateur should support CARF. However, many remain indifferent until they are exposed to TCA and the wealth of information it provides on Amateur radio news and happenings across the country. Marketing TCA at supply outlets provides the vital opportunity for this to happen. It should also give TCA's advertisers greater exposure and marketing potential.

Once again, many thanks and keep us the good work!

J.F. Hopwood VE7AHB
North Vancouver, B.C.

CABLE TVI

Once in a while we read some kind of story about a ham helping in a special way or conducting some experiment which is worth while

mentioning, but here is what I saw lately.

TV reception loud and clear

We purchased a television set two years ago. We lived in a high-rise apartment, some five floors higher than our present apartment.

There were no problems with the television reception at the other place.

Earlier this year our television set began picking up interference from a radio station.

Sometimes the radio interference was louder than the television program.

We called the cable people but they said the radio station simply had too powerful a signal.

Many neighbors have the same complaint.

What do we do now?

(I hope you appreciate our problem as we own a television set which cost \$1,500 and it can't blank out radio interference.)

**Ann Harry
Longueuil**

The Montreal district office of the federal Department of Communications got into the picture, but the radio station had resolved the frequency problem and the television reception in the area was eventually improved enough to cut out the radio signals.

Any similar local complaints can be directed to the Spectrum Control Supervisor, Interference Division, Montreal District Office, Complexe Guy Favreau, East Tower, 12th floor, 200 Dorchester Blvd. W., Montreal H2Z 1X4. Telephone: 283-5683.

It does not mean that a ham was responsible for this one, but just in case it was you'll agree with me that this kind of story we can certainly do without. I would like to remind fellow hams to be as helpful as possible when confronted with a QRM problem, if you could explain to your neighbours what you do, maybe it would help to solve the problem in a friendly manner.

Here is my story:

In late June 1984 a DOC Inspector contacted me about a complaint from one of my

neighbours, which was the first time I received a complaint at this QTH since I moved in (July '83). I gave the inspector more information than he required on my operations and I invited him over to check my station. On July 3rd he showed up and verified, tested, and had me operate that station for over an hour. The end result was a clean bill of health and he informed the neighbour that the interference was not from me.

Was I happy, indeed I was since I know I had taken almost every possible precaution to prevent such headaches.

So please, everyone, keep it clean and I'm sure we'll all enjoy a very nice hobby with no bad news.

Zareh Amadouney VE2DWH
Dollard des Ormeaux, Que.
See Page 20, this issue.

CHECK YOUR LABEL AGAIN

Congratulations on the October 1984 issue of TCA. Mine came today, October 3.

One puzzling item in the last issue was a note that the expiry date for CARF membership was noted on the mailing label. Both that issue and this one show nothing more than the name and address. Maybe previous issue also, but I cannot vouch for that as I pass mine along. No big deal, but interesting. Best of success and 73.

Fred Noble VE3BAJ.

Not printed on our usual computer, Fred. Back to normal soon— Editor.

GO TO!

Here's a little hint for your readers interested in home computers. I call it The EAR and

Continued on next page ▷



PECK Method.

If you have ever tried to type a program into your home computer from a magazine article and been frustrated at the time and amount of errors incurred, especially if you do not touch type, try this method.

Place a sheet of paper under the first line of the program covering the remainder. Switch your regular audio tape recorder to record and read the line to your tape recorder at the speed you can type. Repeat for the remainder of the program lines. Now play it back and type the program into your computer as you listen. If there is an error in your program, then type LIST, rewind your tape recorder and compare your typed program to what is

coming out of your tape recorder's speaker.

Overall, this is a very fast and efficient method of loading and verifying programs and, to the best of my knowledge, this method has not been published and is an original idea. Happy HAMUTING.

Rob VE7CFK (ex 3ACY)
Vancouver, B.C.

THE FINAL COURTESY

I can hear him, he's at it again, on 14.145 MHz this time. I'll just bet there is going to be a lot of disappointed DXCC collectors out there in Amateur Radio land. The call noted this time around is CY9SPI (St. Paul Island). QSL via VE3FXT.

I would like to know when George VE3FXT is going to get around to sending my QSL card when he was 3D2HE (Fiji), also QSL via VE3FXT. A S.A.S.E. was sent to him but I presume that he chose to ignore it. I would like to refer you to the DX column by D.W. Griffith VE3KKB, TCA April 1984, page 35.

Seems that VE3KKB's "hope that his" (VE3FXT) "record is better than it has been in the past" was all for naught.

By-the-way, TNX to 3D2DX, Doug VE5RA, for the QSL card from Fiji, received many moons ago.

Del VE3LFW
Chatham, Ont. △

Working together in Ottawa

Amateur Radio & EMO

CARF News Service

In June of 1980 the Ottawa-Carleton Emergency Measures Organization met with local Amateur radio operators in the National Capital area and the result was the formation of what is now known as the Emergency Measures Organization- Amateur Radio Group (EMO-ARG).

The EMO-ARG consists of licensed Amateur radio operators who have registered with Ottawa-Carleton EMO to provide back-up radiocommunications during an emergency or disaster within the Regional Municipality.

The Group is under the direction of a volunteer Emergency Planning Officer— Communications (EPO-C), an Amateur radio operator, and he in turn reports to the Co-ordinator, Ottawa-Carleton EMO.

This unique arrangement provides benefits for both sides; on the one hand, the EMO Co-ordinator has at his disposal more than 100 who may be called upon if

required; on the other hand, the Amateur radio operators, through EMO, have an enthusiastic supporter with direct contact to local government officials at the Regional and Municipal level.

EMO provides each operator registered with it with an official ID/Pass that permits access to otherwise restricted areas in the event of an emergency. In addition, operators are provided with a suitably marked hardhat and a reflective vest for ease of identification.

EMO Headquarters is presently equipped with two-metre facilities and is in the process of installing HF equipment into a new Headquarters presently under construction. Plans are also in the works for a new fully-equipped mobile headquarters to be used at the scene of emergencies.

Since its inception, the EMO-ARG has participated in several major exercises and many minor, but important, exercises involving

representatives from all local police, fire, and other agencies. Near completion is a comprehensive plan that will outline, in considerable detail, actions to be taken by operators upon being called out.

All of this was put to the test during Pope John Paul's visit to Ottawa, when the organizers realized that their plans for communications at the mass site were totally inadequate. Under the auspices of the Ottawa-Carleton EMO, about 100 Amateurs were organized to meet the administration, medical, and some of the security needs, using mainly 2-metre handheld equipment on simplex frequencies and local repeaters.

Through this unique form of co-operation between Amateur radio operators and Ottawa-Carleton EMO, the citizens of the Regional Municipality are well served and the members of the EMO-ARG are proud of their record of service to their community. △



DOC DOINGS

Strange Signals

To Ralph Cameron VE3BBM
Dear Sir:

This has reference to your letter of 6 September 1984, whereby you express concern over usual emissions heard in the 80 metre amateur radio band.

In this regard I wish to bring to your attention the fact that this portion of the radio frequency spectrum is, in some regions, shared with other services. For example, according to the frequency allocation plan of the International Telecommunications Union, the band 3,500 to 3,750 KHz is also allocated to fixed and mobile services on a primary basis in Honduras, Mexico, Peru and Venezuela.

I would also like to point out than an interesting article entitled "Strange Signals in the Ham

Bands" appeared in the August 1984 issue of "The Ontario Amateur". This article deals with strange signals heard in the H.F. amateur bands, including the type of emissions referred to in your letter.

It would appear that this type of activity is on the increase, and as indicated in "The Ontario Amateur", is probably the result of WARC-79.

Should you have any other queries concerning this matter please do not hesitate to contact this office.

Yours truly,
M. McLarty
Supervisor
Spectrum Control
Department of
Communications

EXAM DATES

The 1985 examination dates are Feb. 13, April 17, June 19 and Oct. 16. Applications for these examinations should be in by Jan. 16, March 20, May 22, and Sept. 18. Good luck!

FCC PROPOSES to allocate half the 160 metre band, 1900 to 2000 kHz, to non-government radiolocation because of an anticipated expansion of the AM broadcast band. ARRL has filed a motion to hold the proposal in abeyance pending the resolution of an ARRL resolution to study the MF band needs of non-government radiolocation stations.

FAST OPTICAL SWITCH

A newly discovered optoelectronic effect could enable a new class of high-speed optical modulator to encode laser beams for light-wave communications. The device works by an electrically triggered change in the optical absorption of gallium arsenide. Researchers at Bell Labs (Holmdel, N.J.) have recently found that this effect can be dramatically intensified by sandwiching gallium arsenide between two layers of gallium aluminum arsenide to form a 'quantum well.' This closely resembles the structure of the diode lasers that serve in most fiber-optic communications; the similarity should make it easier to integrate the modulator and a laser onto one chip, says Bell Labs physicist Thomas H. Wood. Such a monolithic device would reduce light leakage, making the system more efficient. A 1-micron-thick active layer of GaAs provides 2:1 contrast between 'on' and 'off' states. The short interaction region affords fast action; an experimental device switches a laser beam on and off at over 1 GHz, and Wood expects a quantum-well modulator to surpass the existing record of 17 GHz, increasing the amount of data that can flow over a fiber-optic link. Δ
from High Technology

No more Licence Fees?

The Canadian Owners' and Pilots' Association sent a brief of great interest to Amateurs to the DOC recently. The Association suggested that the Department eliminate the requirement for the annual renewal of radio licences for aircraft, Amateur, GRS, land mobile, and several other types of licence.

Instead of an annual fee, the Association suggests an initiation fee of \$25, a one-time payment, after which the licence would be in continuous effect.

The Association believes that the licence fees charged today pay for little more than the record-keeping, the mailing of notices, and the processing of the returns. The Department, then, would not lose income by the change, but would

save time and motion in an era of stringent fiscal policy.

The West Indian Amateur Radio Club of Dorval, Quebec, approves of COPA's move. "It is our feeling," says Don VE2DWG of WIARC, "that this proposal deserves some publicity within the Canadian Amateur ranks, with the object of inspiring some expressions of support for the idea from other groups of radio users."

TCA believes the proposal merits serious discussion too. The January 1984 TCA will carry a story on the proposal, and, naturally, will welcome correspondence dealing with it. If COPA's calculations are correct, the elimination of the annual fee should not affect the Department's ability to police the spectrum efficiently. Δ



CRTC tells Cable op **CLEAN UP!**

As a result of interventions by Vancouver and area Amateurs, the CRTC, in a decision dated Sept. 16, said that it expected the cable company in Vancouver to tackle the problem of cable TV frequencies radiating from its system interfering with the Amateur Service. The results of the February hearing, while not as definitive as the CRTC decision in the Halifax case (in which the offending channel 18 (E) was to be removed from service if the QRM to Amateurs was not resolved; see page 11, February 1983 TCA for the Halifax decision), it outlined a series of steps and set time limits for the Company to take them to resolve the interference to local Amateur stations. Here is an excerpt from the decision:

"At a Public Hearing in Vancouver on 14 February 1984, the Commission considered applications by Premier Cable-systems Limited (Premier), which is controlled by Rogers Cable T.V. Limited (Rogers) and, in turn Canadian Cablesystems Limited (CCL), for the renewal of the licences..."

"Interventions were also presented at the hearing on behalf of amateur radio operators in the Vancouver area, alleging what widespread and persistent interference problems have been experienced from the licensee's use of channel E and from signal leakage throughout the system. In its response, the licensee indicated that it has undertaken a series of measures to eliminate signal leakage, including a major plant rebuild which should be completed by December 1985; an ongoing drop replacement program; continuous signal leakage audit and repair; and prompt response to complaints. The Commission also acknowledges the licensee's commitment to continue to work closely with the Department of Communications toward the resolution of these technical problems, and to cooperate with the amateur radio organizations in this regard. Accordingly, the licensee is expected to meet with representatives of the amateur radio groups, and to submit a progress report to the Commission within two months, with a subsequent status report within six months of the date of this decision."

"Lors d'une audience publique tenue à Vancouver le 14 février 1984, le Conseil a étudié des demandes de la Premier Cable-systems Limited (la Premier), qui est contrôlée par la Rogers Cable TV Limited (la Rogers) et, par l'entremise de cette dernière, par la Canadian Cablesystems Limited (la CCL), aux fins du renouvellement des licences..."

"Des interventions ont été également présentées à l'audience au nom exploitants de radio amateurs de la région de Vancouver, selon lesquels l'utilisation du canal E par la titulaire et les fuites de signal dans tout le système causent des problèmes persistants et répandus d'interférence. Dans sa réponse, la titulaire a indiqué qu'elle avait pris un ensemble de mesures afin d'éliminer la fuite de signal, notamment un important programme de réaménagement des installations qui devrait être terminé en décembre 1985; un programme permanent de remplacement des prises; des efforts continus de vérification et de correction des fuites de signal et une réponse rapide aux plaintes. Le Conseil prend également note de l'engagement de la titulaire de continuer à travailler en étroite collaboration avec le ministère des Communications à la solution de ces problèmes techniques et à coopérer avec les organisations de radio amateurs à cet égard. Par conséquent, on s'attend à ce que la titulaire rencontre les représentants des groupes de radios amateurs et

présente au Conseil un rapport d'étape dans les deux mois qui suivent, puis dans les six mois de la date de la présente décision." Δ

Amateur Brief

The thrust of the B.C. Frequency Modulation Association's presentation was that the question of levels radiation escaping from leaky cable plant was not a point of argument but rather that the harmful interference caused by leaks was the real issue. This QRM, which in one case interfered with the formal Amateur emergency frequency, is illegal under the laws of Canada and the level at which it exists is immaterial.

"The Licensee has undertaken... measures to eliminate signal leakage."

At one point in the verbal presentation, the question was put to the Commission that, in view of the continued illegal interference by the company and the seeming lack of any enforcement... which would certainly be taken against any Amateur who was creating harmful interference—was there in this country in this matter, one law for the Amateur Service and another for the cable companies? The CRTC, it was claimed, should not license a cable company which by creating illegal interference, was in effect flouting the laws of Canada.

from TCA, May 1984



"You guys were just great!"

Toronto Marathon

By Peter West VE3MAS

"We couldn't have done it without your help. You guys were just great!"

That statement, made by one of the officials of the Miller High Life Toronto Marathon, summed up the Amateur radio participation on race day, Sept. 30.

It was a hectic day. It began for the 26 Amateurs at 6:30 a.m., at the startline located at the foot of Yonge Street on Queen's Quay. As officials scurried about setting up banners and registering runners, the Amateur radio operators headed out for their assignments along the 26 mile route snaking through the streets of Toronto.

As the 8 a.m. gun sounded starting the race, Jim Shields VE3HCS, held his microphone open so that official time keepers, listening in to their communicator's radios, could synchronize their watches with the official time.

With the sound of the gun, 5,000 runners began the trek through Toronto which would take some just a few minutes more than two hours and would take others over five hours. To keep the waiting spectators at the finish line located at Varsity Stadium informed of what was happening on the course, Dan Bereskin VE3QM/bicycle mobile, gave some colour commentary via 70 cm. to his son Ken VE3IPV. Ken piped his dad's breathless accounts (breathless in both content and delivery) into the public address system at the stadium. So successful was this activity that perhaps next year Dan will consider sending back pictures via Amateur TV?

Race officials had their hands full with administrative problems such as finding missing volunteers, locating late runners, rescuing a

wheelchair athlete whose chair wasn't up to the rigors of the course, opening closed water hydrants, and a dozen other situations, all of which were solved, thanks in part to Amateur radio.

Finally, after two hours and 12 minutes the first runner crossed the finish line. The winner of the day

was obviously Amateur radio, thanks to the dedication and expertise of the following: VE3GFN, LNI, QB, IYQ, MKD, HCS, FXK, DQJ, HI, HAH, AKL, LNN, NSP, LLR, FXQ, NLE, NIO, ODR, HWJ, IPN, KWX, QM, IPV, KZI, MAS and SWL Mary Roy. △

Tunable Hybrid Chips

Solid-state components that combine an integrated circuit and its associated capacitive and resistive elements on a ceramic base to form a tuned circuit have been used for some time in high-priced military and space radio receivers. Now Panasonic (Secaucus, N.J.) has adapted this technology to consumer radio products. The new hybrid chips, known as radio high-density circuits (RHCs), consist of a silicon integrated circuit laminated to capacitive and resistive matrix networks. This three-layer sandwich structure, less than a centimeter square and 3 mm thick, is hermetically sealed to protect it from heat and humidity.

So far, Panasonic has incorporated RHC technology in four new consumer products, including a credit-card-sized AM/FM stereo radio just over 1/8 inch thick in which RMC chips serve as the FM and AM tuning circuits, the preamplifier, and the FM stereo multiplexer. Potential applications of RHCs include TVs, car stereos, and other products that require tuned circuits. Panasonic claims that because of RHCs' small size and the reduced number and length of leads between

components, the hybrid chips are superior to conventional discrete-component tuners in miniaturization, reliability and performance.

From *High Technology*

SIXTEEN OPERATORS helped during the Pope's visit to Moncton. Communications were maintained full time between the mass site, Beausejour hotel, private residences, and the EMO headquarters in Moncton.

Moncton ARC's newsletter

MONCTON area ARC has set up a 'senior branch' authorized to purchase equipment and promote activities for seniors and other members of the club. Funds may be available from the 'New Horizons' funds.

Moncton ARC's newsletter

EVERY YEAR, Lakehead Amateurs assist with communications in the Heart of Thunder Bay run. This year the manpower included John Gow and John Jr. (no calls available), Ed KRP, Gary NNR, Bill XJ, and Gary HJS. The organizers of this race are always very thankful for the Lakehead club's help.

from Lakehead ARC's Hi-Q





YL NEWS & VIEWS

By Cathy Hrischenko VE3GJH

YL Friendship is the golden thread that ties the heart of the whole world together!

Merry Christmas and Joyeux Noël Happy Chanukah

Over the years I've been asking DX YL's and Canadian YL's from other countries the way they celebrated Christmas in their homeland. Since 'tis the season, I thought this would be a good time to pass along the various customs.

First of all, contrary to the common misconception that Xmas is an abbreviation for Christmas, it is truly a real word and not a short form for Christmas. It seems the use of 'X' to stand for Christmas began in the early days of Christianity when persecution drove the believers underground, so to speak, in Rome. (Literally! They lived in catacombs there... Ed.) The cult was forced to take on the aspects of a secret society. 'X' was considered a reverent sign because it was a reminder of the cross on which Christ was crucified. So, you see, you're not taking the Christ out of Christmas when you use Xmas.

In Czechoslovakia, OK-land, eggshell ornaments are decorated in pretty colours to look like fish. Also angels who accompanied St. Nicholas. Pinwheels representing snowflakes and twinkling stars are hung from the ceiling with thread.

In Germany, DL-land, the tree features the bearded face and peaked cap of Father Thor, representing St. Nicholas as a bishop and Kriss Kringle, the golden-faced angel. On Christmas Eve German parents set up and decorate a tree with cookies such as pfefferminze and springerle, apples,

candies and marzipan in various shapes and some baubles. Both tree and gifts are unseen by the children until after supper. The typical supper might be pork or roast goose, sweet and sour cabbage and dumplings. A decorated gingerbread house is most popular.

In Finland, OH-land, the traditional food would include roast leg of pork with lingonberry, a tart berry, potatoes with a cream sauce and quite often a baked rice dish.

PA-land or the Netherlands—the tree has its branches decorated with sugar bells, Kerstkransjes (I hope I've gotten that correct) to take off and eat. Also chocolate cookies in the form of St. Nicholas. Small candles were set among the branches as well as small apples and Christmas balls. They leave shoes to be filled with gifts. I was also told that if the children were bad they were left coal in the shoes instead of gifts.

In Italy, I-land, they use the Praesepto (Manger scene) instead of a tree. There is a ceppo, which is a pyramid-like triangle structure made of light wood. Several tiers of cardboard or thin shelves are supported by the framework. It is decorated with coloured paper, gilt pine cones and little flags. Small candles are fastened to the sides. A star or small doll is hung from the apex of the triangular sides. The shelves above the lower crib scene hold small gifts.

In Mexico, XE-land, they use the nativity scene which they call Pesebra. Sometimes they have a Christmas tree. They usually start decorating on Dec. 16. The traditional 'Pinata' is hung by a long rope from the ceiling. It is filled with

candy, nuts, fruits and small gifts. The children are blindfolded and turned around and are given three chances to break the Pinata with a stick. The goodies are shared by all present.

South Africa, ZS-land, celebrates the holiday much like we do except it is their summer season and quite often it will be rainy. Many have turkey and all the usual trimmings, and quite often it will be eaten poolside. Mince pies are the vogue to sip with tea. They have a Father Christmas and in Johannesburg they have a decorated Christmas bus that goes all around the area. Christmas cards are strung around the living room walls (they call it the lounge). It is a family day with singing of carols and the tree.

In Luxembourg, LX-land, Christmas is very similar to ours as far as giving gifts and putting them under the tree. For the kids, St. Nicholas day is celebrated Dec. 6 and it's Santa Klaus day when the kids get their gifts. The boys and girls put a shoe close to the door or window before going to bed. If you were good you would find a gift in the shoe in the morning. If you were bad, you would find a wooden stick. Lea LZ1TL said when she was a little girl she would leave some 'fraredos' (potatoes or peelings) near the door for St. Nicholas's small animal.

In Greece, SV-land, the gifts are not given until New Year, the day of St. Basil, who is the Greek counterpart of St. Nicholas.

In Denmark, OZ-land, there is no Santa Claus but the children wait for a visit from Jule-Nissen, a jolly and helpful elf. After their meal, gifts are exchanged and the sipping of gløgg is enjoyed.



In Wales, GW-land, it is a cross between our customs and English. The kids hang up their Christmas stocking. May VE1AMB tells me as a wee girl she remembers only the well-to-do, or those who had a farm with trees, were lucky enough to have a real Christmas tree. Sometimes they would tie a hoop to the ceiling and hang gifts from it. They would go to the woods and pick fresh mistletoe and holly. The week before Christmas they would go out carolling to make money to buy gifts. One of her fondest memories was about a week or so before Christmas they would make cakes and on a certain day they would put them in a cart and take them to the bakery to have them baked. She said, "the aroma was fantastic".

Some countries and religions such as the Ukrainians and the other Greeks celebrate Christmas on a different date due to the use of the Julian calendar. In our house we can have two Christmas days and each can be celebrated in their own way.

In the old Ukrainian way of celebrating Christmas Eve, the children would watch for the twinkle of the evening star on Christmas eve. That gave the sign to start Vecheria (Holy supper). The ceremonial meal is meatless, consisting of 12 dishes representing the 12 disciples. After the food the family might sing carols. Often at midnight they will attend church to hear the story of Christ.

Maybe this Christmas you would like to add one of these new customs to your celebrations.

We wish you and yours a Happy Holiday and a Merry Christmas.

73/33/88/as they case may be. Δ
Cathy VE3GJH

A PORT COLBORNE, Ontario, man was recently sentenced to a \$250 fine or 10 days in jail for operating GRS (CB, that is) equipment without a licence.

Free QSL Service

The CARF Outgoing QSL Service will forward your QSL cards to anywhere in the world. This service is **free to CARF members**.

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Do not staple.

4. Address your package as shown in the diagram.
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News Briefs

DOC REVIEW

The long-awaited DOC review of the Amateur Service will probably not be made public until the first of the year. It is anticipated that a simpler access to the Amateur ranks and de-regulation of rules regulating the various modes of transmission will be among the proposals which will be up for public comment.

FCC ALLOCATION

In a move affecting Canadian Amateurs, the FCC is considering allocating some or all of the 220 MHz band to commercial users. In Region 2, the 220 band is shared

with other services. Canadian Amateurs lost the 420 to 430 meg slice of the 450 band some time ago to other services and the FCC now proposes to restrict U.S. Amateur operations in that section located near the international border.

EXAMS TO BE REVIEWED

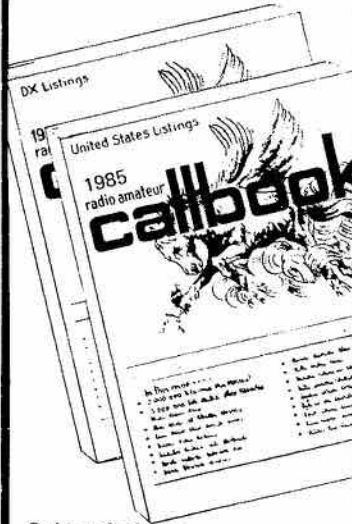
The bank of questions used by DOC for the exams will be up for review by the Department and Amateur organizations early in the new year. Clubs, individuals and teachers are urged to let CARF know their comments as soon as possible.



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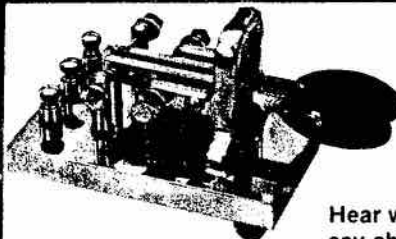
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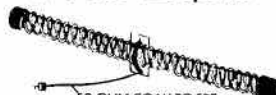
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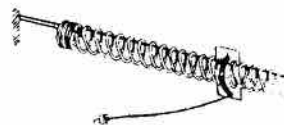
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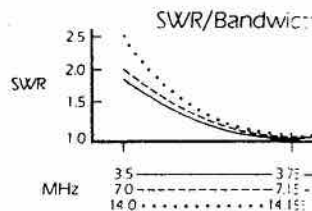


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keyer with dot-dash memory, 600-Hz CW filter, noise blanker, AF speech processor and 25-kHz marker generator. All at no extra charge.

The FT-757GX's high-performance general coverage receiver lets you listen from 500 kHz up to 30 MHz. The transmitter covers 10 to 160 meters, including the new VVARC bands. Dual VFOs and single-split VFO/memory swap make split-frequency operation easier than ever before.

Use the 8 memories to store your favorite frequencies on any of the bands. Then touch a button to jump to any programmed frequency without worrying about a bandswitch.

For base-station use, the space-saving FP-757GX flatpack power supply shown in the photo is ideal. With this supply, the rig delivers

100 watts output on sideband, FM and CW.

In addition, a massive heatsink permits continuous RTTY operation at full power output for up to 30 minutes. Full power for long periods does require the use of the FP-757HD heavy-duty supply.

To the right of the transceiver is the FC-757AT, a fully-automatic antenna tuner designed especially for the FT-757GX. This optional tuner stores in its memory the antenna selection and matching network settings for each band. When you tune that band again, the tuner automatically recalls the matching network settings and chooses the proper antenna.

With an optional interface unit, you can control VFO frequency and memory functions via your personal computer.

The FT-900. The cleanest signal on the air. We know that the quality of the signal you put out is a reflection on you.

So when we designed the FT-900, we took clean output seriously. So seriously in fact, that you won't find a cleaner transmitter on the market.

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You can set and forget about 50% of the front panel controls. Store your favorite frequencies and operating mode independently

in each of the 12 memory channels. Review the contents of any memory location, without disturbing the QSO in progress, by using the checking function.

Going from one programmed frequency to another is simple and fast. Just touch a button to recall any channel.

You'll find the FT-900 tolerant of imperfect antennas. There's essentially no power turn-down with an SWR of 2:1 and just 25% turn-down at 3:1.

There's lots of flexibility built into the triple-conversion receiver. For one thing, there are separate front ends for ham and general coverage reception. So ham band operation is not compromised.

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Niagara Bicentennial

Cover photograph by VE3FOI

Ontario celebrated its 200th anniversary in 1984. This was an excellent time to help the local community leaders in the celebration. Many Amateur clubs have done vital public service work in their respective areas. Well, the Niagara Peninsula ARC is no

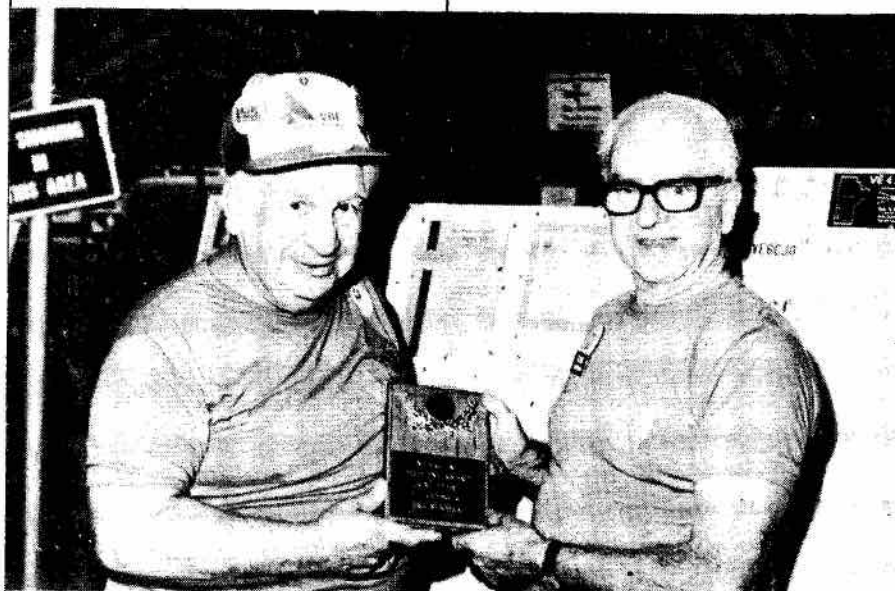
exception, so it was natural to follow up on our city's request. The Mayor of St. Catharines, Ontario, appointed Dave Digweed VE3FOI to St. Catharines Bicentennial Committee to assist in the planning of two way communications for many of the activities.

After many committee meetings, Niagara Peninsula ARC took responsibility for communications during the visit of the Tall Ships to Niagara and the special Weekend of Aug. 4,5, 6 (a weekend in the Burgoyne Woods) where the public could come and visit the many attractions with a Bicentennial flavour.

The NPARC involvement was twofold: to supply VHF point to point communication on 147.540 MHz simplex; and to allow the use of the autopatch on VE3NRS repeater. The success of the plan followed the fine organization of Dave VE3FOI as overseer and the co-operation of the members of NPARC. President Peter VE3DSW, along with Mike VE3KOZ, organized the various check points (Main Entrance, Bicentennial Office, Niagara Regional Police Van), and the numerous walkers needed to patrol the Park area. Also working alongside of them were members of the CNCB citizen band group (four of these have signed up for Amateur radio classes).

The opening ceremonies were held at 11 a.m. one Saturday. To co-

Continued on Page 28 ▷



Left, above: Eric VE3ISD is presented with the NPARC FEEDLINE award for best article in the club's bulletin by Pete VE3DSW. Presentation made during the Bicentennial weekend.

Left: Number- precedence- station or origin- check- Al VE3AGE takes down a radiogram. 75 messages were relayed to all parts of North America.





Above: Hey, look, what's he doin'? Left to right: Pete 3DSW, Mario 3GMA and Chuck VE3OCF at the CW station VY3VM (that's the Centennial call). The Morse attracted a lot of attention from the public. All photographs by VE3LWW. Right: Niagara Peninsula ARC's President VE3DSW is all set to go in St. Catharines. Ontario Wintario grants have paid for 2-metre handhelds and part of the VE3NRS repeater system, attributable to the community relations of NPARC. Below: How these visitors do ask questions! Mario VE3GMA explains procedures to two visitors.





"The electron goes round and around and it comes out here." Eric VE3ISD explains the fine art of Amateur radio public service communications to Bill Stevenson, Bicentennial chairman for St. Catharines.

ordinate a flypast of the St. Catharines Flying Club, Dennis VE3OIF/am was in communication via 2 metres with the main control station VE3VM operated by VE3KOZ.

The VHF group, 16 strong, did the radio communications for the Grand Parade under the controller, Fred Cross VE3DVI. The parade went off without any serious problems. The Bicentennial Committee supplied bright green tee-shirts to all the NPARC members to help promote Amateur radio and have them more easily identified by other people.

NPARC promoted the Amateur Radio Service via a complete HF/VHF station set up. Amateur radio radiograms were available to the general public and the traffic was relayed over the ONTARS VE3RPT (Open line net) and via VE3WV to other NTS networks.

Bob VE3KYA operated his computer on RTTY and along with Eric VE3ISD, Chuck VE3OCF operated CW—quite an eye catcher for the visiting public. The autopatch on VE3NRS was also very interesting for the visitors and, as there weren't any phone lines available to the local police

department and other organizations, it was a very popular function.

The deputy Premier of Ontario, the Hon. Robert Welch, and the Mayor of St. Catharines, Roy Adams, passed greetings over the VHF network and 40 metre SSB to all Amateurs for their fine public services. The NPARC supplied a total of 35 operators for this weekend of fine co-operation and public service. △

IMAGINARY FRIENDS?

If the junior op takes an interest in the noises coming out of the shack, consider a record of 10 children's songs, two of which are on the themes of Morse code and radio, as a Christmas present. Bert VE3BVH produces the record 'Imaginary Friends II,' and it is available at \$9.98 + tax + \$2.00 shipping and handling from Sleet Publishing, R.R. 3, Site 2, Box 14, Sudbury, Ontario.

GLENN VE5GG has asked the Saskatchewan government to put repeater locations on road maps. With a bit of luck this may be done in 1985 or 86. An idea worth copying.

From Saskatchewan ARL's QSO.

Canada Contest

The Canadian Amateur Radio Federation is pleased to announce the Canada Contest 1984, 0000Z to 2400Z 30 December, 1984.

Valid Contacts: This contest is open to all Amateurs. Everybody works everybody on the 160, 80, 40, 20, 15, 10, 6 and 2 metre bands in both CW and Phone. The same station may be worked twice on each band, but no crossmode contacts are allowed.

Categories: Single operator, all band; single op, single band; all bands, Amateur Certificate; all band, QRP; single band, QRP. (QRP defined as 5 watts DC output or less); Multi-single.

Exchange: RST and serial number. VE1 stations should also send their province.

Points: 10 points for each contact with a station in Canada. VE0 counts as Canada. 4 points for contacts with stations in other countries. 20 bonus points may be claimed for each contact with a CARF official station, using the TCA or VCA suffix. (ie. VO1VCA, VE7TCA)

Multipliers: Total of Canadian Provinces and Territories worked on each band on each mode, for a total of 24 possible multipliers.

Score: Final score is QSO points times multiplier.

Suggested Frequencies: 1810, 1840, 3525, 3770, 7025, 7070, 14025, 14150, 21025, 21250, 28025, 28500, 50040, 50110, 144090, 146520 kHz. We suggest Phone during even hours, CW during odd hours, Z. (Some of these phone frequencies may run into a bit of a problem with the recent American phone band expansions.)

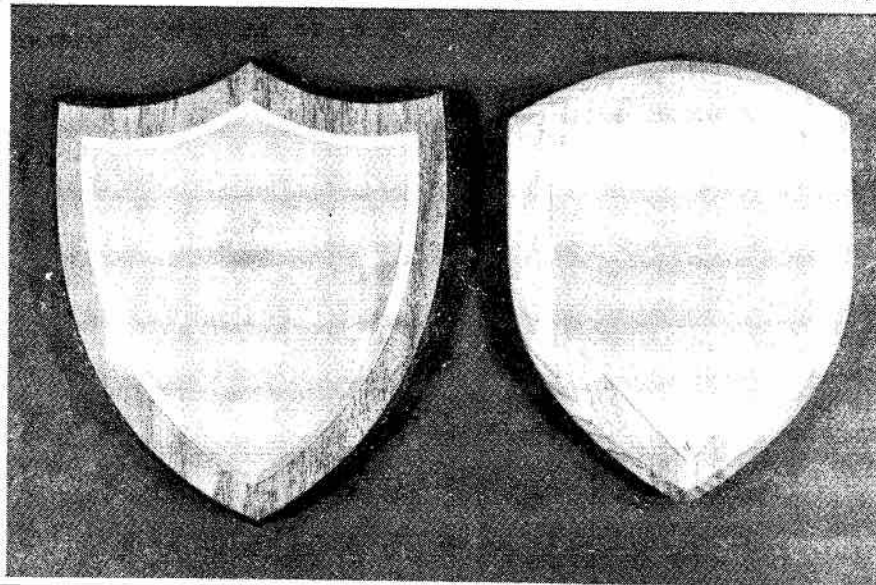
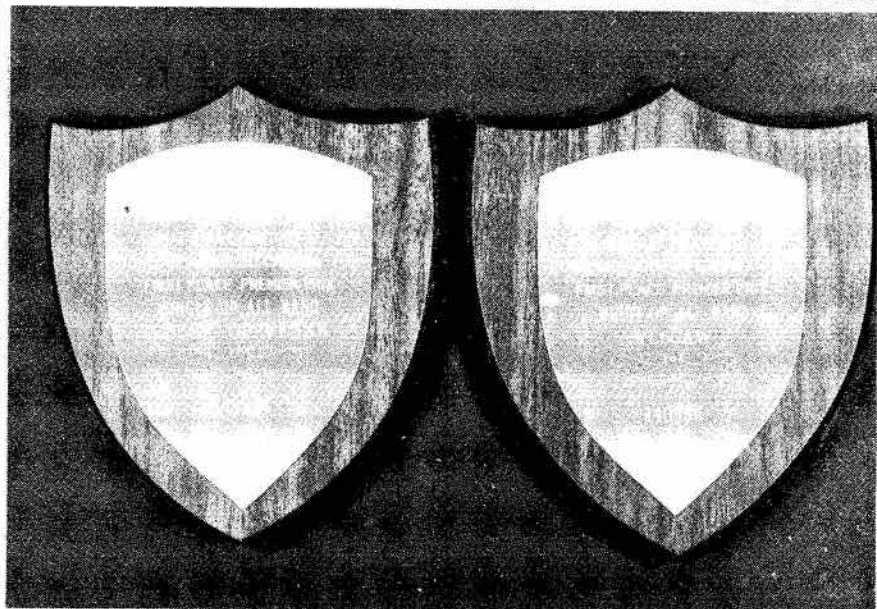
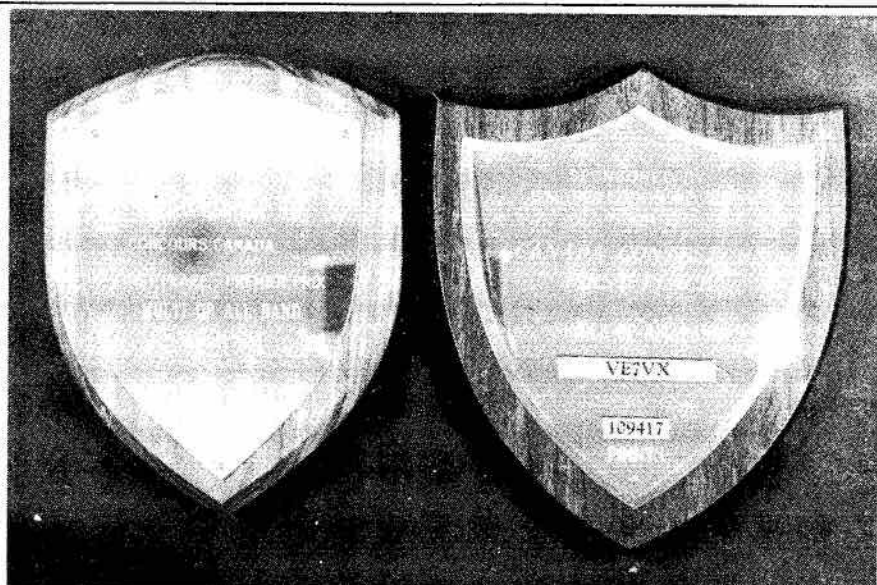


Entries: A valid log must contain log sheets, dupe sheets, and a summary sheet showing claimed QSOs, QSO points, multipliers and score calculation. Summary and multiplier checksheets are available for an SASE. Entries should be mailed within one month of the contest, with your comments, photos, etc. to CARF Contest, c/o Norm Waltho VE6VW, General Delivery, 9714 94th St., Morinville, Alta. T0G 1P0.

Awards: Certificates will be awarded to top-scoring entries in each class in each province, territory, USA call area and DXCC country. Second and third place certificates where scores warrant. Additionally, the following trophies will be awarded: Single op, all bands— CARF Trophy; Single op, all bands, Amateur— C.M. Peterson Co. Ltd. Trophy; Single op, single band— TCA Editor Trophy; Multi op, all bands— Glenwood Trading Co. Ltd. Trophy.

Results: will appear in a future issue of TCA. Non-members of CARF may include an SASE with their entry for a copy of the results.

Right: The trophies presented to winners of the Canada Day and Canada Contests.



THERE'S A spray-on RFI shielding material now. Its trade mark is COBALOY p-212, and it is available from Graham Magnetic Incorporated, Shielding Products Group, 1300 Summit, Suite 500, Fort Worth, Texas, TX 76102. The material, sprayed on 2 mil thick, gives 75 dB of shielding at 100 MHz.

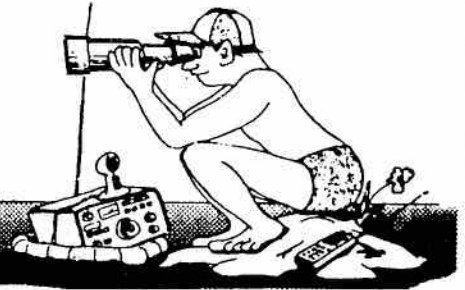
PETERBOROUGH ARC members helped in a search for a lost man, and with their assistance he was found. The club has received letters of appreciation from the Police Department and the man's daughter.

From the PARC newsletter



DX

D.W. Griffith, VE3KKB



Just when I had myself convinced that under *certain* circumstances there was a place in the world for 'List-type' operations, I had that illusion shattered.

The case in point involved the recent (or perhaps on-going) San Felix expedition, CE0AA. Because of the language limitations of the two Chilean operators, I felt that getting on a list, controlled by Spanish speaking stations, for SSB contacts, seemed like a reasonable enough idea. I worked CW0AA on 40 and 80 metres without any trouble, and finally made it down to the shack early enough to get on the 20 M list. That particular evening, the operation was delayed due to unforeseen heavy commercial (Navy) traffic on the island, and the CW0 was not due to come up for about 2½ hours, ie. around 0130 GMT.

About 1 hour and 15 minutes before 'show time,' I heard a W5 break in to one of the control stations, and tell him that there was an OX3 about 1 KHz lower in the band, and suggested that the Greenland station be asked to QSY because he was interfering with the "CE0's Frequency." Fortunately, the 7-land control station had enough common sense to tell the W5 that: (a) by the time that San Felix came on the frequency, OX would probably have lost propagation, and therefore would not present a problem; (b) that it was a little premature to do anything anyway; and (c) if and when the time came for the CE0 to show on frequency, and the OX was still causing some grief on 14.235, THEN was the time to either ask

the OX to join in the 'FUN' (??), or to PLEASE QSY. Where do some people get the idea that a station 'owns' a frequency, and can realistically expect it to be kept free of traffic for literally hours at a time? For Pete's sake! The stupidity of the W5 was countered somewhat by the good sense of the W7, but I was still left with a sour taste in my mouth. Lists may have their place, but there is no, repeat NO, place for these 'HF policemen,' or more accurately, Amateur radio vigilantes.

In an article entitled 'DX Forecaster,' which appeared in the August 1982 issue of *Ham Radio*, a method for guesstimating the conditions on the Amateur high frequency bands was described. This 'Quality Factor' is a number between 0 and 9, which depends on three variables; day number, 10.7 cm solar flux, and A index. An equation for determining QF appeared in the August 1984 *Ham Radio* article 'DXing by Computer' written by Van Brollini NS6N and Walter Buchanan. This equation, which appeared on page 91, would not have worked in any computer, and anyone who tried to use it would soon have found that there was a bracket missing. Further, anyone trying to use this with an Apple would have discovered that there was a syntax error (Ln does not exist in Applesoft, instead substitute Log). The equation (corrected) appears below:

$$Q = 1.0857 \times \text{Log}(\text{Flux}) \times (1.0 - 0.2625 \times \text{Cos}(8.642 \text{ E-3} \times \text{Daynum}) \times \text{Cos}(8.642 \text{ E-3} \times \text{Daynum})) \times \exp(-0.01 \times \text{gflux}) + 0.82$$

Where Q is the Quality Factor (0 to 9); Daynum is the day number (Jan. 1 is day 1 and Dec. 31 is day 365); gflux is the A Index (Obtained from WWV); Flux is the 10.7 cm solar flux (Again obtained from WWV at 18 min after the hour).

To obtain the quality factor, one simply calculates the day number, and then listens to WWV at 18 minutes past the hour, and obtains the flux and A index, and then plugs them into the formula. For example, on day number 265, corresponding to Sept. 21, 1984, if we use an A index of 14 and a solar flux of 73, the quality factor is 4.8. I was somewhat intrigued by this factor, and thought that if I kept records over a period of years, then for a given QF, I would have a pretty fair indication of what the HF bands would be like. To this end, I wrote a small program in basic for my Apple, around the above equation, and I have reproduced it below. If anyone wants to give it a go, be my guest. I have also included a sample of the hard copy format which is available.

Here it is, the end of the 1984, and I finally worked ZA— on 160 metres no less. If that was the main course, then 3Y, FO0 (Clipperton), VK0 (Heard), not to mention a real XZ, were stimulating appetizers. The kicker is that I did not use an antenna, amplifier, or for that matter, even a rig. Your DX scribe has finally blown his finals, you think! Well, if I were to give a hint and let slip that it was while under the influence of a doctor that I worked all this glorious DX, I'm sure that it would confirm in your



minds that I was operating from a club station at one of the Royal Ontario Hospitals. Ahhh! Not so! The doctor in question was AEA's answer to divorce— Amateur radio style— "Dr. DX". This opiate of the ham world has to be the most addictive little gem since heroin hit the streets (worse— as there is not even the promise of an 'electronic' methadone clinic to help kick the habit).

"Dr. DX" is a CW contest/DX simulator, designed to interface with Commodore's C-64 micro-computer, and emulates the CQ WW DX CW contest. Without going into a great deal of detail (I'll save that for a review), let me say that at times, one forgets that it is only a simulator. I keep mine in the

shack, and very often the radio will be on in the background (usually I fire the doctor up only if the bands seem to be in bad shape). About 10 days after the 'doctor' made his first house call (bad joke— sorry!), I was running a mixed pile-up of Europeans, W's, and JA's, when another strong station appeared just below my frequency. With a few loud 'expletive deleted' choice phrases, I reached for the VFO on my rig, and returned, but to no effect. Then it dawned on me that I was using the "Dr. DX", and not my HF rig.

It is unnerving to hear a VU2 calling 'CQ Test', and give him a VU2CNY de VE3KKB K, and have him come back VE3KKB 5NN 22 K, just like in the real

contest. If you want some real excitement, find a clear frequency and call CQ. If you happen to be on a band (selectable) with good propagation at that time (adjustable), from your QTH (programmable)— Duck!! The stations will start calling hot and heavy. Your code must be good, and you must send the station's callsign plus the report correctly, otherwise the station will send a '?' in response. If you were calling CQ, and the above VU2 called you, the correct response would be: VU2CNY 5NN T4 K (with the 'K' being optional). Assuming you sent the correct code, back would come 569 (or whatever report is sent) 22 K (often followed by a TU or GL, etc.). You find yourself responding in kind with a TU before sending your next QRZ.

Using the 200 watt position, and on 20 metres, I have achieved rates of 182 contacts/hour. What a marvelous way to keep one's CW contest proficiency up to snuff.

If high speed running of stations is not for you, then that well known game of 'hunt and pounce' can be played. There is lots of DX in the computer, at least one of each DXCC country, and the numbers are weighted to be representative of the world's Amateur population, so expect to hear few A51's, but lots of JA's, W/K's, and stations from the various Soviet Republic.

I can recommend this educational/training/fun device to anyone who truly enjoys CW.

To everyone, best wishes for a very Merry Christmas, and a Happy and Prosperous New Year.

Thanks to Brian VE3CRF, Dave VE2ZP, CQ Magazine, Long Skip, DX Report, West Link Report, QRZ DX and off-the-air reports for most of the material appearing here.

Bits & Pieces

V4A, St. Kitts/Nevis— Effective Sept. 19, 1984, the new prefix block assigned to this Caribbean nation is V4A-V4Z. This date is the first

Continued on next page ▶

```

1 HOME
2 PRINT TAB( 5) "*****"
3 PRINT TAB( 5) " "
4 PRINT TAB( 5) " QUALITY FACTOR CALCULATION "
5 PRINT TAB( 5) " "
6 PRINT TAB( 5) " BY "
7 PRINT TAB( 5) " DOUGLAS W. GRIFFITH, VE3KKB "
8 PRINT TAB( 5) "*****"
9 GOSUB 2000
10 LET A = GFLUX
20 LET D = DAYNUM
30 LET F = SOLARFLUX
35 HOME
40 PRINT TAB( 5) "INPUT GFLUX (A INDEX)": PRINT : PRINT : INPUT A
45 HOME
50 PRINT : PRINT TAB( 5) "INPUT DAY NUMBER (DAYNUM)": PRINT : INPUT D
55 HOME
60 PRINT : PRINT TAB( 5) "INPUT 10.7 CM SOLAR FLUX (FROM WWV)": PRINT : INPUT F
70 Q = 1.0857 * LOG (F) * (1.0 - 0.2625 * COS (8.642E - 3 * D * COS (8.642E -
3 * D))) * EXP ( - 0.01 * A) + 0.82
75 HOME
76 VTAB (12):
80 PRINT TAB( 4) "THE QUALITY FACTOR IS " : PRINT Q : GOSUB 2000 : HOME
85 PRINT : PRINT : PRINT
87 PRINT TAB( 7) "DO YOU WANT HARD COPY? (Y/N)": PRINT : PRINT : INPUT H$
88 IF H$ = "Y" THEN GOSUB 1000
89 HOME :
90 PRINT TAB( 7) "DO YOU WANT ANOTHER CALCULATION? (Y/N)": PRINT : PRINT : INPU
T A$
100 IF A$ = "N" THEN END
110 GOTO 35
120 END
1000 D$ = CHR$( 4) : PRINT D$ : "PR#1"
1005 PRINT TAB( 2) "A INDEX": TAB( 17) "DAY NUMBER": TAB( 32) "SOLAR FLUX": TAB
( 16) "QUALITY FACTOR"
1006 PRINT TAB( 2) "-----": TAB( 17) "-----": TAB( 32) "-----": TAB
( 16) "-----"
1010 PRINT : PRINT TAB( 5) A : TAB( 20) D : TAB( 35) F : TAB( 57) Q
1012 PRINT "-----"
1015 PRINT : PRINT
1020 PRINT D$ : "PR#0"
1030 RETURN
2000 FOR T = 1 TO 3000
2500 NEXT T
3000 RETURN
5000 FOR T = 1 TO 2000 : NEXT T : RETURN

```

A INDEX	DAY NUMBER	SOLAR FLUX	QUALITY FACTOR
14	265	73	4.80387839

A INDEX	DAY NUMBER	SOLAR FLUX	QUALITY FACTOR
20	265	74	4.5837731



anniversary of their independence from Great Britain. Non-resident operators are expected to use their home calls, followed by /V4A.

SV9, Crete— SVOAC/SV9 was to have become active around mid-September. QSL via WB4GP.

D6, Comoros— Bill D68WB, keeps skeds Mon. and Fri. at 1600 GMT on 14.200 MHz with a station in S. Africa. He will often respond to calls following his sked. QSL to BP 540, Moroni, Grand Comore, Republic of Comore VIA France.

A51PN, Bhutan— Pradhman is apparently QRT due to rig problems, and the fact that he has moved and has no antennas at his new QTH. (Too bad Brian!)

BV, Taiwan— Exams held in September should result in 10-20 new Amateurs from eight BV call areas within the next year. Two major DXpeditions have been planned before the end of 1984. If BV has prove elusive for you up to this point, your day to howl may be just around the corner.

BY, China— BY's show up with Robin DU9RG on Mon/Tues/Wed/Sat/Sun for a list opn between 1100-1430 Z on 14.155 or 14.180 MHz. Some activity has been reported around 1030 Z on 3795 KHz. Currently active are BY1PK and BY1QH, BY4AA, BY4RA, BY5RA and BY8AA.

HV2VO, Vatican City— Edmund is often on 14.175 from 18-2100 Z. QSL via I0GPY.

TA1MN, Turkey— Mustafa is often near 14.045 at 0000 Z. QSL with 4 IRC's to Box 33, Istanbul.

S21, Bangladesh— Apparently the Aug. 3/4 opn. by JH8YDY/S21 was unauthorized, and therefore does not count for DXCC.

XU1SS, Kampuchea— Still QRV on Sundays, with VS6CT on 14.245 at 1200 Z in a list operation. QSL to JA1HQG.

TU1BS, Ivory Coast— Listen around 1400Z on 21.254 and at 1300Z on 21.230 MHz. QSL to Box 811, Yamoussoukro.

6W1CC, Senegal— Brad on 21.355 MHz at 2030 Z. QSL to BP

2075, Dakar.

A22SC, Botswana— Try 21.026 at 1840Z; 14.034 at 2110 Z. QSL to P.O. Box 416, Gaborone.

A51PN, Bhutan— Pradhan has been reported again, checking into the SEANet on 14.320 MHz at 1000 Z. JH1WXH is supposed to be in Bhutan waiting for a licence. A51TY has also been reported to be QRV. (It's now or never Brian).

A61AA, United Arab Emirates— G3LCS should be QRV by now. His new employer is a member of the Royal Family, and holds the above call, and Dennis hopes to be able to use it.

FT8XA, Kerguelen Is.— F6EUX is scheduled to arrive in late November, and hopes to be QRV as soon as possible, mainly on CW. QSL to F6FYD. (Note the new prefix.)

J5WAD, Guinea-Bissau— UB5WAD should be there for another 10-11 months, and has been worked at 2315 Z on 14.236 MHz. Val hopes to be QRV on all bands, SSB and CW. QSL to UA4PW (via Box 88).

T52JL, Somalia— OH2JL is scheduled to return to Somalia on Oct. 25, 1984 for 6 weeks. He will be active whenever time allows. He will have an FT707, and a TH2MK3 2 element tribander for the high bands, and will use dipoles on the low bands. QSL to his OH CBA, or via the OH buro.

TR8JYC, Gabon— Try 2030 Z on 21.010. TR8JRD likes 14.007 MHz around 0030 Z. QSL to Box 2127, Libreville.

VQ9, Chagos— VQ9SK, and VQ9DX have both been active. Try 14.260 around 2010 Z, and 14.235 MHz at 1830 Z.

V44KG, St. Kitts-Nevis— Try 3.785 MHz around 0100 Z. QSL to Box 20, St. Kitts. Also, V44KF around 7.085 MHz after 0000 Z.

VE3FXT, 100 Countries— George Collins says that he plans to be on from some 100 plus countries before the end of 1985. These will apparently include some 33 prior to Christmas this year. If you do work him from various and sundry parts of the globe, try QSLing via VE3DPB (and try & try & try...).

Heard Around the Bands

Time (GMT)	Frequency	Callsign	QSL
1554	14.188	JY9WR	
1515	14.153	A71BJ	
1841	14.145	A92DY	WBLU
1845	14.145	A92DQ	K2IJJL
1847	14.145	A92DT	Buro
1832	21.335	5R8AL	WA4VDE
1907	21.260	FH8CB	BOX 50, MAYOTTE
1938	14.143	FH4AA	BOX 4, MAYOTTE
2059	14.159	3B8DL	I6PQP
2300	7.068	3X4EX	
0226	3.792	G4FIL	
0300	7.008	F8BWK	
0305	7.005	FH4AA	

The following have been noted on RTTY

Time	Frequency	Callsign
1600	14.083	VQ9DX
1400	14.090	OD5JL
1600	14.084	A4XJW
1730	14.088-096	5B4NG (850 Hz Shift)
1800	14.080-085	TR8JLD
1530	21.093	OY5NS
1600	14.097	9H1EY
1800	14.080	9H4C
0800	14.081	BY5RA
1200	7.086	ZL3MA



As you may have gathered, QSLing is NOT one of George's stronger points!

VE1CHG/4U, Syria— VE1CHG is with the Peace Keeping force in the Golan Heights, and has been reported on 14.170 MHz around 1715 Z. QSL via the VE1 buro, or direct to: J.H. Jackson, Box 336-Site 1, Camp Debert, Nova Scotia, B0M 1G0.

3X4EX, Rep. of Guinea— This station has been worked on 3.787 MHz at 0430/0640 Z; 7.086 at 0400 Z; 14.024 at 2210 Z; and 21.300 at 1300 Z. QSL to N4CID.

3Y0AA, Peter I Island— JA1MIN, JF1IST and JR1HHL are reported to have a licence good for Jan. 1-Mar. 1 for both 1985 and 1986. This would be the first operation from here since the DXAC accepted it into the DXCC fold, and means from the time of the operation on, it will count for

DXCC (Yes Victoria! There still are 'New' countries out there!).

4K1GAG, South Shetland Is.— This station often on 3.603 MHz from around 0400 Z, listening up. Also, try 7.083 at 0330 Z, and 14.185 at 2330 Z. The operator says that he will not be on 10/15 metres, but will be on CW, and maybe 160M. QSL via UQ2OC.

7P8CL, Lesotho— Len has returned to Africa after a visit to Sweden, and keeps a regular sked with his manager SM5DGA on 20M/CW. He will be active on all bands, both CW/SSB, and hopes to be on RTTY soon (first RTTY from 7P8). Anyone wishing to make a sked with him for RTTY may write direct to Len Hognert, Box 301, Maseru 100, Lesotho. QSL to SM5DGA.

• If you are looking for Caribbean stations on 40 metres, then try the YV1BAD Net on 7.164 MHz from

1045-1115 GMT daily. The likes of J73, J88, J6L, 9Y4, 6Y5, etc. are always checking in.

• The West Coast DX Net has renewed operation on 3787, at 0300 Z daily. The group also meets on 3806 at 0100Z to pass DX information.

• The International 40 Metre DX Net meets each Saturday, and Sunday on 7230 KHz at 0500Z. Net control stations include KF9W, W4OUE, KA0IQR and KX6L.

• For those who still need Crozet, get a move on, as both FB8WJ and FB8WK are scheduled to leave the island sometime this month.

That's it for this month. Don't forget the CQ WW DX CW Contest at the end of November. Thanks to Long Skip, DX Report, QRZ DX, West Link Report, CQ and QST for much of the material appearing here. See you in the pile-ups. △

QSL Information

CALLSIGN	QSL Via	CALLSIGN	QSL Via	CALLSIGN	QSL Via	CALLSIGN	QSL Via	CALLSIGN	QSL Via	CALLSIGN	QSL Via
3D2BD	ZL2BD	A4XKC	KA1XN	F00DCW	W6AM	JT0DJT	1BYGZ	SV9/SV0AC	W4G6CP	VS6DD	K4CIA
3D2FR	NE4S	A71BK	G4HNP	F00FB	W7AM	JW0EB	LA5NM	SV9/W0PU	W4T0DB	VU2YDU	K4YT
3D6AJ	WB3CQN	A92DQ	K2IJL	F00GAD	KB2HZ	JW6BAA	LA7JD	SV9/W4MAT	W4MAT	XJ3SAS	VE3FOI
3D6AL	3D6AT	A92DY	W8LU	F00GM	W8LU	K6ZXE	W8LVDA	LA5NM	T30AY	W6LED	XT2EB
3D6AN	WK4Y	A92NH	W8LU	F00KI	KA6LAF	JY3ZH	DJ9ZB	T30RN	JH1RANZ	XX9DX	VS6DX
3D6ER	W5RBO	AHBA	K6DDV	F00SIW	W6MT	JY4MB	W44HNL	T31AT	G4GED	YB0AFA	WA70GU
3V8AI	INCRZY	AHBB	NE4S	F00BJP	F1BBB	Y9YCL	G3MUL	T32AB	N7YL	YB0ARA	K6DLV
3V8FS	INCRZY	AP2ZA	W6NLF	F00BP	F66XB	KC6DX	K57L	T32AF	KH6UR	YB2ARH	K2ROR
3X4EX	N4CID	AX9ITU	W6NLF	FP0HMT	AA6D	KC6HA	K6EDV	T77C	T77C	YB5ASD	W4BBP
4K1GAG	UQ2OC	BV0AA	DH2BH	FP0HXD	WA4BXQ	KG4AW	KA4TAY	TABCN	NBCC	YK/DE0AJK	OE8AJK
4N2E	YU3HAM	BV0AB	JH6SOR	FR7BP	W0AX	KG4DX	KB2CPV	TE5DX	T12CF	Y1F1F	VE3JDD
4N7W	YU7JDE	C30BAN	F6BII	FY9IS	FY7AN	KH0AC	K7ZA	TF/KC2TU	K2SDD	Y1N1G	VE3JDD
4S7EF	JE2RDD	C30LAC	EA5AQX	GB0GHT	N2DAN	W4FLA	W4FLA	TF/KD5YG	W5S0D	YN4RC	WB8SR
4S7NMR	KZBY	C30LAZ	EA3DDP	GB2MT	G4LOS	KH4/WH6D	KH6VR	TF/OV1MJ	HB9CJX	Y22NFJ	YU2NFJ
4T8CP	N4CQ	C30LBO	EA5AQX	EA5AQX	G3SAGA	PA-BURO	KH6JEB	TF/W3TB	W3IVG	ZD7CW	N4CID
4U91TU	W1RR	C30LDD	EA5AQX	EA5AQX	F9JS	H44SH	AD1S	TF3CW	K1RH	ZD8RC	W3HNC
5H30H	SM0EAI	C31BD	F9JS	H44SH	AD1S	ZS6BCR	KH9/AH3AA	T69HH	N5HH	ZD8TH	ZD8AR
5H30J	5Z4DP	C31LBL	EA3DDP	HSAYB	H5AYB	DL8BG	LX/DJ4FU	T69VT	W3HNC	ZD9BU	ZS1RP
5H30M	VE7QM	C31AP	EA3BNX	H80/DL8GB	DL8BG	LX/DL3RC	DL8BYR	T69XH0	J4A4FGD	ZD9BV	W4FRU
5N3RTF	DK2IF	C6N/DJQSB	DJ0SB	HB9NL	HB9NL	LX/DL4QJ	DL8BYR	T12BEV	W4ZD	ZF2GE	WA4WTG
5T5RD	F61IA	CE0GSL	WB3CQN	HCB/W0MLY	W0MLY	LX/DL4KI	DL8BYR	T15EWL	AG1K	ZK1XC	PA3BFM
5T5RY	F6NIA	CE0ZIA	KA1ILA	HH2VP	W1FJ	LX/DL8KAW	DL8BYR	TJ1QS	F6DZU	ZK1XD	PA3BFM
5W1EJ	W0NP	CE3DNP	WB6W0D	HH5JS	KC8JH	LX/DL8YR	DL8BYR	TK/F0IRK	DJ2EY	ZK1XG	VK2WU
5X5BB	DL2BB	CN8AD	F8JL	HI3EMS	N28JX	LX/DP4KA	DL8BYR	TK/F66XB	F66XB	ZK2IK	ZK2NU
5X5BJ	DL2BB	CN8CC	F6FNU	HI8/K2QA	K8DHK	LX/PA3CPG	PA3CPG	TK5VN	FC9VN	ZL8AIX	NS6GL
5X5GK	JA1BK	CN8EL	W2PD	HK0BKX	WB4QFH	L24KTS	L24KTS	TN8EE	F6ECX	ZL7AMO	ZL1AM0
5Z4DE	W4PKM	CO2HQ	XE1XF	HK0HEU	HK0FBF	NH2/KD7P	N7RD	TR8DR	W2FD	ZL70Y	VK3DWW
5Z4DR	YU3TU	CO2KK	KESKK	HK7UL	HL0Y	DA4/KD4HE	W2M0Q	TU2NA	K2IBW	ZS3E	WB8FS
5Z4ED	JH6FMU	CS1GRA	CT1AQF	HL0Y	JJ2PRT	DA6EL	KC8JH	TU72	AK3F	ZS4PB	N7RO
5Z4MX	SM3CXS	CT2CB	N2DUR	HL1CG	BURO	OD5FB	WA20AU	TU7I	AK3F	ZS6JR	KA7DBN
6W1NQ	DL1HH	CTX7B	W01JN	HL9AH	N5CAH	OH0/K5KG	K5TU	T22XN	DK2XN	ZV2BW	FT2EW
6W2EX	F6HRI	CY0SAB	VE1CBK	HL9IA	K0LST	OH0/YV5SAM	OH2BAD	T26CY	NEUS		
6Y5IC	KE3A	DU1/G4DUW	G-BURO	HL9RC	KC0LG	OH0AP	OH1PA	T26FIC	F6CRS		
8J11TU	JA1RL	DU2/KK7K	W87NDB	HP1XEK	DL1HH	OX/1K0CAK	I03AJ	U1NV	U21NWD		
8D7KM	JE3MXQ	DU6/KD7DU	W7HP1	HS4AMS	W7PHO	OX3GH	W42TTI	U2ANM	UC1AWH		
9G1CI	LA40	DU6/N7ET	N7ET	HV2VO	I0GPY	OX3LV	W3HNC	U2H	UC1AWB		
9H1EL	LA2TD	DU7XK	BURO	HZ1AB	K8PYD	OX5RJ	W41FSV	U9Z	UA9YEW		
9J2B0	W6ORD	EA9/K6EID	K6EID	IA1/11YXN	I1YXN	OY7A	LA9PCA	UC1AWC	UK2ARC		
9M2HB	N4FFN	EJ0/E12VSV	DK7JR	IA5/11DFS	I1FNX	DY8R	W01IM	V2A/KA2DIV	WB40SN		
9M6MO	K02A	EL2AV	N6FL	ID7UDB	I8UDB	P29KY	JRIEMT	V3Z	KE5K		
9Q5MA	K1VSK	ELBE	GM4LDU	IF9/14ALU	I4ALU	PJ4/DF3GX	DF3GX	V85HG	V85HG		
9V1VM	W80TEC	EN4L	UA4LM	IL7/I2DMK	I2MOP	PJ4CR	WB2LCH	V85MS	N200		
9V4GX	W7PHO	F80WJ	W4FRU	IM0IGV	I50MVE	PJ7/K2KTT	K2KTT	VE0MAR	VE2F0U		
9X5WP	WB6VKD	FC/F0AHY	DL4FF	IY4FGM	I4IKW	PP2ZD	W4BAA	VK9LL	W6REC		
9Y4VU	W3EVM	FG0HAS	F2VX	I29A	W7PHO	PUB/PY4WAS	PY4WAS	VK9ZA	VK6YL		
A22/ZS6BUX	ZS6BUX	FG01IK	K2KTT	J2BDX	F1CFD	R0K	UK01AA	VP2M1X	W01JN		
A22ME	AK1E	FG7BP	KA3DSW	J37AH	W2GHK	RJ6R	U3BJJ	VP9/K1EFI	K1EFI		
A24DM	AK1E	FM4DJ	W5JLU	J73D	W2QB	SU/KA4SBE	WB1GGD	VQ9AC	VQ9AC		
A3SSA	JM1MGP	FM7/FY7YE	W5JLU	J8/K7RLS	K7RLS	SV1QL	DIRECT	VQ9AD	N6MMB		
A4XJV	W8RKT	FM7CD	F5VU	J8BAQ	W2M1G	SV9/DF4RD	DF2RB	VQ9BC	W6WUH		
A4XJW	N4WF	FM7WD	W3HNC	JT0APE	UK3ABO	SV9/KA0CYR	WB4TDB	VR6TC	W6HS		



Microwaves

By Michael Ross VE2DUB
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Apt. 1401
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Last month we reviewed the Canadian microwave band allocations and suggested that more people should start using these frequencies. A review of the ham ads however, provides little encouragement to the average Amateur above 1296 MHz. One notable exception is the popular 10 GHz Microwave Associates Gunnplexer.

A completely assembled and ready to run transceiver, the TRIOGA, as well as the circuit board and Gunnplexer alone are available from Advanced Receiver Research, Box 1242, Burlington CT 06013 U.S.A.

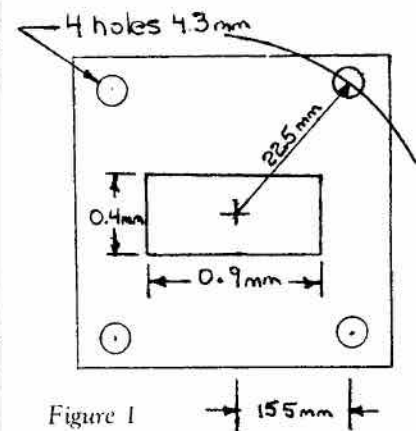
The transceiver board coupled with a few parts, a cabinet and a couple of hours assembly will produce a functional replica of the commercial transceiver, at a fraction of the cost. Get together with a friend and put together your own system. (This ensures there will be someone to talk to when you're done.)

The ARR RXMR30VD transceiver board is described in the instruction sheet as 'an assembled, tested and completely aligned 3 x 6 inch 30 MHz FM receiver, with diode switched IF filters, dual polarity AFC system, Gunn diode regulator and modules for phone and CW.'

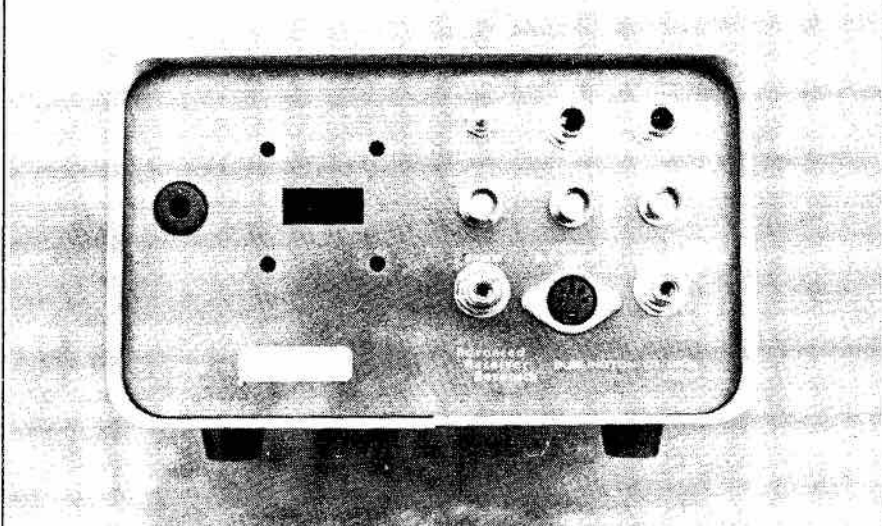
What all this means is a complete transceiver without the box and external controls. Why 30 MHz when we are supposed to be on 10 GHz? The 30 MHz receiver is used as the intermediate frequency during the full duplex operation on frequencies 30 MHz apart in the 10 GHz band, typically 10250 and 10280 GHz. (See X-Pro, June 1984 TCA Pg.33 for a description of the Gunnplexer.)

Parts required for the completion of the transceiver are as follows:

- 1- Cabinet approx. 8x8x4
- 1- 10 turn 10 K potentiometer
- 3- 10 K potentiometers
- 1- 2500 ohm potentiometer
- 3- 1/2 inch knob
- 3- 1/4 inch phono jacks
- 1- 10 uF 15 V polarized capacitor
- 3- mini toggle switches 2 position
- 1- mini toggle switch 2 position, center off
- 1- 0 - 1 mA meter
- 1- 0 - 300 uA meter
- 4- 1/2 inch spacers, nuts, bolts (to mount board)



Front of commercial transceiver.



Interior of TRIOGA



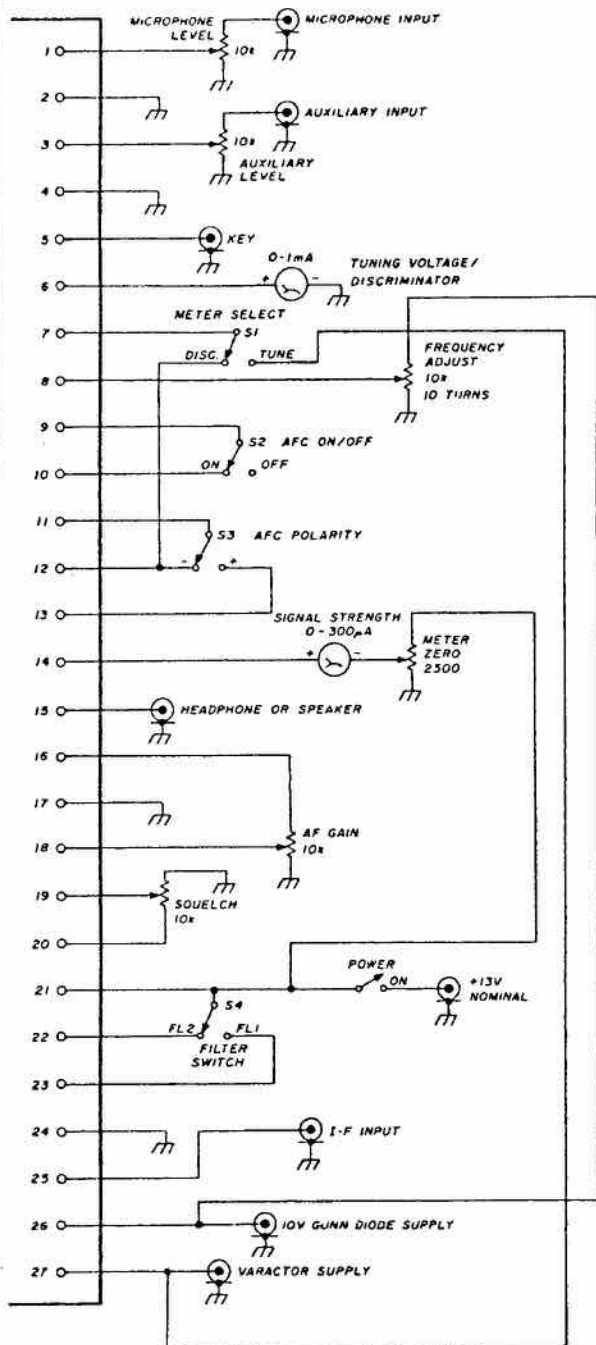
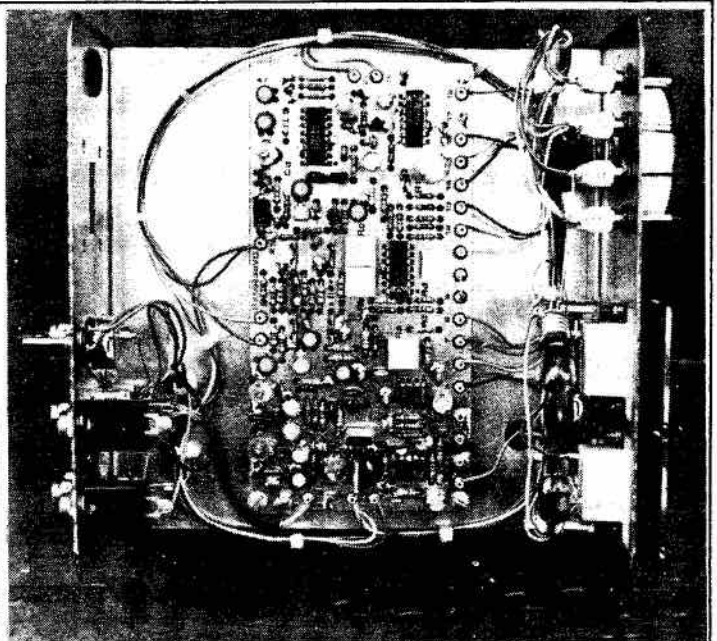


Figure 2

Note — S2 and S3 may be condensed into a single switch -spdt with center off. This switch should be installed for S3. S2 should be eliminated and board pins 9 and 10 connected together.



Back of TR10GA showing hole for Gunnplexer.

- 1- ¼ inch nut (tripod mount)
- 2- binding posts (for 12 V supply)
- 1- approx 3 feet RG-174 coax
- 1- 12 Volt Battery
- 1- Microphone and ¼ inch phono plug
- 1- Telegraph Key and ¼ inch phono plug
- 1- Headphones and ¼ inch phono plug
- 1- length of hookup wire

Refer to photographs for parts placement. Mark and drill holes for pots, jacks, board, binding posts and meters. Cut preliminary hole for Gunnplexer in rear panel with nibbler tool and file to exact dimensions as in figure 1. Use extreme care. Mount all controls on cabinet and follow wiring diagram in Figure 2. Use the shielded RG-174 for the microphone and headphone connections to minimize RF pickup and for the three leads to the Gunnplexer. Δ

SOCIAL CALENDAR

Niagara Peninsula ARC holds it Big Event No. 7 on Feb. 2. This is a fleamarket, Hamfest and dinner dance, and is held at the UAW hall, Bunting Road, St. Catharines.



New Canadian 10 GHz Record

On Sunday, Aug. 5, 1984 a new Canadian DX record of 100 miles was set between VE2DUB/2 on Mount Saint Hilaire and VE2AF/2 on Mount Megantic on the 10 GHz band. The contact was made during the UHF contest and provided an additional grid square multiplier (FN45) for VE2DUB/2 in the single band 10 GHz operation. Other contacts with VE2DUB/2 included VE2DWG/2 and VE2UM/2 at St. Joseph du Lac, just west of Montreal in Grid FN25, a distance of 40 miles and VE2BAB/2 on Mount Royal over a 21 mile path.

Conditions had been good over the previous few days with several

temperature inversions noted on the two metre band. The hot, hazy, humid weather must have been some advantage in completing what was calculated to be a non-optical path (see figure 10). It was not so advantageous for the two hams hiking up Mt. St. Hilaire. Harvey Weinber VE2BQQ who provided transportation and assistance in carrying up the equipment, fared better than I on the way up. Eric Boll VE2AF, on the other hand, enjoyed a leisurely ride to the top of Megantic thanks to a paved road to the observatory on the peak. This was almost compensated for by the over three hour drive he had to make to get back to Montreal.

When both stations were at the top, initial communication was established through a two metre repeater on Mount Megantic. With dishes carefully aligned and frequencies properly adjusted on the ARR transceivers to the prearranged settings, one dish and frequency was left alone, while the other was changed in small increments. The rewards of careful planning of beam headings and frequency calibration were self-evident as the first weak signals were received. Minor adjustments brought signals up to full scale as screams of joy echoed through the valleys, startling many of the onlookers not plugged in to our

Left: VE2AF/2 with observatory in background.

Below: VE2DUB/2 making final adjustments.



headset.

Other News

Don Jarvis VE2DWG while on vacation in Saskatchewan completed what may be on the first

GHz contact in the province. A local Amateur was contacted over a distance of several hundreds yards using equipment provided by Don. Keith Ballinger, formerly

VE2AQU now VE3 living in Ottawa, takes with him much 10 GHz experience. Montreal's loss is Ottawa's gain for potential micro-wave enthusiasts. Δ

AMSAT NEWS

by Gordon Wightman VE5XU
Regina, Saskatchewan
S4T 1M4

It seems logical when starting a new column to commence at the beginning. With this in mind, our remarks will be directed to satellite beginners or those who have the curiosity and desire but uncertainty about getting started.

Available for most 2M equipped stations are the Russian Series of RS satellites, originally six in all, RS3 to RS8. One might rightfully assume RS stands for Russian satellite but, in fact, in the U.S.S.R., Amateur radio is dubbed a sport and thus we have Radio Sport. In the past month the very reliable RS6 with an excellent transponder fell silent. Remaining are RS5, RS7 and RS8. The former two were originally used in the robot mode. With the departure of RS6, RS5 will be found transponding and useable more frequently. Likewise

RS7. Both also are used as bulletin stations and for the broadcast of orbital data to U.S.S.R. Amateurs. RS8 remains as a continuous useable transponder. Don't be surprised if some days you don't hear any: especially Wednesdays UTC. If a changeover occurs, it happens not at the beginning of a normal UTC day but rather at 2100 UTC or Moscow midnight local time.

AMSAT refers to these low altitude birds as Phase II Mode A (2M to 20M) as compared to Phase III high elliptical satellites either Mode B or Mode L, such as Oscar 10.

The easiest route to use is CW, since rapid doppler shift can quickly render SSB difficult to understand. FM is a no-no. Don't worry about the lack of circular

polarization on your 2M antenna or inability to elevate the beam. In fact, if you can run a bit of power say up to 25-75W then using omnidirectional antennas on both 2 and 10 will eliminate the aiming factor. Just fire away when you first hear signals or know the transponder is activated. On CW look around 29.420 for RS5 and 29.470 on RS7 or RS8. SSB is generally about 20 KHz higher. And how do you know if the transponder is on even when no one is on? On beacon telemetry any group beginning with the letter K followed by a number other than zero indicates the transponder is activated. K0 denoting off.

For more action, check both RS5 and RS7 on their robot frequencies. When utilized, CQ's

Continued on next page \blacktriangleright

SATELLITE OPERATING INFORMATION

SATELLITE	UPLINK (MHz)	DOWNLINK (MHz)	BEACONS (MHz)	PERIOD (Minutes)	INCREMENT (Degrees W)	INCLINATION Degrees	ALTITUDE (km)
RS5	145.910-950	29.410-450	29.452	119.544	30.0155	82.959	1671.5
Robot	145.826	29.331	29.331				
RS7	145.960-146.0	29.460-500	29.501	119.1962	29.9258	82.956	1661.5
Robot	145.835	29.341	29.341				
RS8	145.960-146.0	29.460-500	29.461 29.502	119.7625	30.0678	82.950	1675.3



are sent about every minute. Use the same frequency and you should hear yourself if all is working normally. A call to the robot must follow this format only RS5 (or RS7) DE VE5XYZ AR. Don't tack on a "K" or send either call more than once. Sometimes it will respond QRM QRN QRS QRQ or RPT which indicates you are being at least partially heard. A typical response to a successful call

produces "VE5XYZ DE RS5 QSO NR 848 VE5XYZ DE RS5 QSO NR 848 OP ROBOT TU FR QSO 73 SK". The number series runs from 001 to 999 then back. Each transmission gives you two opportunities to hear your QSO number. Hundreds of QSO's have been made at this station while testing antennas or just plain having an ego trip. It's difficult—try it.

Amateur Nets

Social nets

ONTARS (Ontario Amateur Radio System)

0700-1800 daily 3.755

TP (Transprovincial)

1000 7.055

CJ (Chicken Junction)

1000 3.790

Minnie Net

0845 3.733

Oatmeal Net

0630 3.780

Snowbird

0930 14.152

Kirby Breakfast Club

0530 3.575

Sanderson Hour

2030-2300 3.783

Laurentian Net

1845 3.755 winter
7.070 from
end of April

Northwest Net

2000 3.750

ARES (Amateur Radio Emergency Service), prov. Amateur Radio emergency reps.

1600 Sundays 14.130

Trans-Canada Net

1400 Sat. & Sun. 14.140

COMSONT (Communications Ontario)

1000 daily 7.074

Emergency preparedness moves to 7.055 in emergency. Directed net.

Traffic Nets

Ontario Phone Net

1900 daily 3.770 directed

ECN (Eastern Canada Net)

1945 Summer 7.040

Ontario Southern Net

1600 daily 7.045 CW

1900 - 3.667 CW

2200 - 3.667 CW

from Peterboro ARC Newsletter

This year's Jasper/Banff road race found 35 Calgary ARA members and several other Amateurs at the microphone, supplying the communications. VE6's Tony MX, Ron AEZ, Pat CPT and Jack CEJ drew special mention in CARA's newsletter, Key Klix.

NETS

NAME	DAY/TIME UTC	FREQ.
AMSAT INT'L	SUNDAY 1800 1900	21280 14282
EAST COAST 75M	WEDNESDAY 0200	3855
MID-AMERICA 75M	WEDNESDAY 0300	3855
WEST COAST 75M	WEDNESDAY 0400	3855

(1) Write to ARRL and request their package of information about AMSAT and the satellite program. If you are a member, ARRL will supply monthly orbital information if a supply of SASE's are forwarded.

(2) Purchase the Oscarlocator package from ARRL for \$9.50 U.S. This plus the 1985 Project Oscar Calendar will supply all the information you required for RS and also useful Oscar 10 data. Price \$10.00 U.S. to Project Oscar Inc., P.O. Box 1136, Los Altos, Ca., 94022. We highly recommend these two items.

If you're still with us, and eager to go, then by all means check into any AMSAT net and you will get plenty of answers to your questions. AMSAT membership is not a requirement. For queries we especially recommend the end of the Sunday 20M net at 2000 UTC on 14280/14282 depending on weekend contest QRM. Also the Tues. local or Wed. UTC 75M three transcontinental nets welcome check-ins and field

queries. A newcomers net has recently started on about 3855 every Thurs. at 0100 UTC by KA9LCF.

For satellite orbital times and direction from your area. If the information is not available to you from a local or nearby satellite user, then monitor W1AW or utilize one of the methods shown with the tables.

Next month, details on the AMSAT organization and hints for Oscar 10 operation. With your help this column will eventually blossom with news and pictures of happy, contented satellite users. And for you DXers there's lots of challenges we will talk about later. Yes ragchewers, it's possible to talk for almost literally hours with your normally skip zone neighborhood province and Timbuctoo in a three way. Experimenters can analyze at least five different methods of antenna polarization plus downlink signal path anomalies. The sky is the limit! Why some of you might even get hooked just like the rest of us joyful buffs. Δ



Satellite News from AMSAT Quebec

Ariane Report

• The first flight of ESA's Ariane 3 was an unqualified success. Lifting off from its Kourou pad on Aug. 4, the new version of Ariane successfully deposited ECS-2 and Telecom 1A into the proper geostationary transfer orbits. It was the tenth launch of the Ariane vehicle and the first to use two strap-on solid fuel boosters. Addition of the boosters and other propulsion system improvements have raised the payload to transfer ellipse capability to 2585 kg (5,687 lb) for a single payload, or two satellites each weighing 1195 kg (2,629 lb.). AMSAT's Phase IIIC payload may ride an Ariane 4, a further growth from the Ariane 3.

OSCAR 10 Information

• Jack Somers WA6VGS, Deputy Chief Area Coordinator, is making 'OSCAR Information' sheets available for hamfests and conventions. Showing the bandplan and frequency charts, the handouts are FREE for the asking and are available in reasonable quantities (100, 200, 300, ??) upon request. Also enclosed is an informative sheet on how to use the AMSAT QSL bureau. The cost of the charts is absorbed by Henry Radio to which AMSAT is grateful! Write: Jack Somers WA6VGS, c/o Henry Radio, 2050 Bundy Dr., Los Angeles, CA 90025.

Gateway Operation on AO-10

• The first gateway operation in the New York metropolitan area was accomplished on Aug. 18 at 0100 UTC. KC2ZF organized a group in Staten Island using a 220 MHz repeater. Thirty miles north, WA2LQQ operated a gateway to AO-10, Mode B, using the repeater's autopatch capability. More than a dozen satellite contacts were made in short order. The highlight was a FB QSO with an HG in Budapest.

New Voice Processing Technique On AO-10

Amateur Radio turned another major corner recently with the first test of a new voice processing technique on AO-10. The test was performed Aug. 24 under the first phase of a three phase program, Project Companion.

Amplitude Comperander Side-Band (ACSB) is a technique which offers strong potential for impressive improvements in intelligibility of voice signals under less than ideal conditions.

ACSB is an improvement of amplitude compression techniques in use for years. Two stages of compression and the injection of a low-level pilot tone at the transmitter distinguish modern ACSB from earlier techniques, however. At the receiver, two stages of decom-

pression expand the dynamic range of the audio. The pilot tone provides two very important functions. First, its amplitude at the receivers is a gauge to the amount of expansion required to restore the signal to the original. Second, the pilot tone functions as an AFC post to correct for doppler shift. In the Aug. 24 test, W4RI reported the SSB signals were perfectly tuned and locked thanks to the AFC effect. Moreover, Rinaldo adds, the fast attack/release of the expander did much to alleviate the effects of spin modulation. ACSB can be received on an unmodified, regular SSB receiver but to realize the advantages of the new technique, an ACSB-modified receiver is required. Δ

From *Atlantic Satellite Report*
No. 85, Sept. 3, 1984.

OSCAR 10

Interim operating schedule put into effect

The new AO-10 operating schedule went into effect on Sept. 3 when DJ4ZC at Marburg loaded the new software to the spacecraft. The new schedule affects the Mode B and Mode L operating regimes. Similarly, it revises dramatically the program of events on the various beacons.

The new transponder schedule

Mean Anomaly Start	Minutes Past Perigee	Mean Anomaly End (Inclusive)	Minutes Past Perigee (Inclusive)	Transponder Operating Mode	Episode Duration (Minutes)
32	87.5	99	270.7	B	183.2
100	270.7	116	317.2	L	46.5
117	317.2	189	516.8	B	199.6
190	516.8	255	699.5	Off	182.7
0	0	31	87.5	Off	87.5

The above schedule is for Monday through Saturday. On UTC Sundays, Mode B will replace

is being described as an interim measure designed to provide adequate safety margins while providing good service continuity to the user community. The interim operating schedule was required to compensate for a significant series of eclipses occurring each orbit throughout September and October.

Mode L such that Mode B will run continuously from 32 through 189.

Δ



Bulletin 54/0984

Oscar 10

Jack Somers WA6VGS en collaboration avec Henry Radio a récemment produit un feuillet d'information comportant les fréquences d'opération ainsi que le plan et la répartition des modes d'opération dans le transpondeur en mode B.

Des exemplaires gratuits de ce dépliant peuvent être obtenus en quantité raisonnable (quelques centaines) en écrivant à l'adresse suivante: WA6VGS, c/o Henry Radio, 2050 Bundy Dr., Los Angeles, CA 90025.

ACSB

"Amplitude Compandered Sideband" c'est le nom d'un nouveau procédé d'émission qui a récemment été utilisé sur OSCAR 10. Cette technique qui permet de recevoir un signal se situant dans de très mauvaises conditions de réception, consiste en une amélioration du procédé de compression en amplitude utilisé depuis plusieurs années.

Navette Spatiale

Owen Garriott W5LFL, bien connu pour avoir été le premier radioamateur dans l'espace, participera à un nouveau vol lors de la mission 51-H prévue pour novembre 1985.

Porte Ouverte

C'est le nom que l'on pourrait donner aux récents échanges qui ont eut lieu par OSCAR 10 au moyen d'appareils portatifs opérant sur la bande des deux mètres. Il s'agit de fait de relier une station répéteur au satellite. Cette idée ouvre ainsi la porte à de communications à très longue portée avec de simples équipements.

Satellites Meteorologiques

NOAA-8 est devenu inopérant et sera remplacé par NOAA-6. NOAA-7 fonctionne correctement. NOAA-9 sera mis en orbite le 23 octobre 1984. METEOR-2-7 est toujours actif sur 137.3 MHz et METEOR 2-8 sur 137.85 MHz. Δ le 27 09 84.

Bulletin 53/0984

OSCAR 10

Depuis le 3 septembre OSCAR 10 fonctionne selon un nouvel horaire de balise et transpondeur, cet horaire est le suivant:

balise:

minutes après l'heure	mode
145.810 MHz	
00-04	CW
05-14	PSK
15-19	RTTY
20-29	PSK
30-34	CW
35-44	PSK
45-49	RTTY
50-59	PSK

en mode L cet horaire est le même excepté pour le CW qui est remplacé par du RTTY. Le CW est envoyé à 13 mpm, le RTTY est standard à 170 Hz à 50 baud et le PSK est à 400 baud ASCII.

Beacon Transmissions

The new Beacon schedule is as follows:

Minutes

Past Hour	Beacon Mode
00-04	CW*
05-14	PSK
15-19	RTTY
20-29	PSK
30-34	CW*
35-44	PSK
45-49	RTTY
50-59	PSK

This is the Mode B Beacon (145.810 MHz) schedule. When Mode L is on (MA 100-116), the schedule will be the same except RTTY will be substituted for CW where denoted by "*". The Mode L Beacon is heard most often on the Engineering Beacon frequency, 436.04 MHz. CW is sent at about 13 wpm. RTTY is standard 170 Hz shift FSK at 50 baud. PSK is 400 baud ASCII.

From Amateur Satellite Report
No. 86, Sept. 17, 1984

Bulletin 53/0984

Transpondeur	Minutes
Mean Anomaly	après périgée
32-99	87.5-270.7
100-116	270.7-317.2
117-189	317.2-516.8
190-255	516.8-699.5
0-31	0-87.5

Cet horaire constitue une mesure transitoire pour maintenir suffisamment d'énergie dans les batteries pendant la période d'éclipses que traverse le satellite. Le point culminant de cette période sera atteint le 21 septembre alors que le satellite ne sera plus illuminé pendant 1.2 heures à chaque orbite. L'horaire ainsi déterminé est valide du lundi au samedi et le dimanche, à UTC, le mode B remplacera le mode L.

Durée	Mode
183.2	B
46.5	L
199.6	B
182.7	OFF
87.5	OFF

ARIANE

Le 4 août dernier avait lieu le lancement d'une nouvelle version d'ARIANE. Cette version no 3 qui utilisait un nouveau type de propulseur, a placé avec succès les satellites ECS-2 et Telecom en orbite géostationnaire. Rappelons que la phase III-C d'AMSAT bénéficiera probablement d'un lancement sur la version 4 d'ARIANE en 1986.

25/09/84



TECHNICAL

Section Editor
Ed Hartlin

SECTION



A Canned Dummy

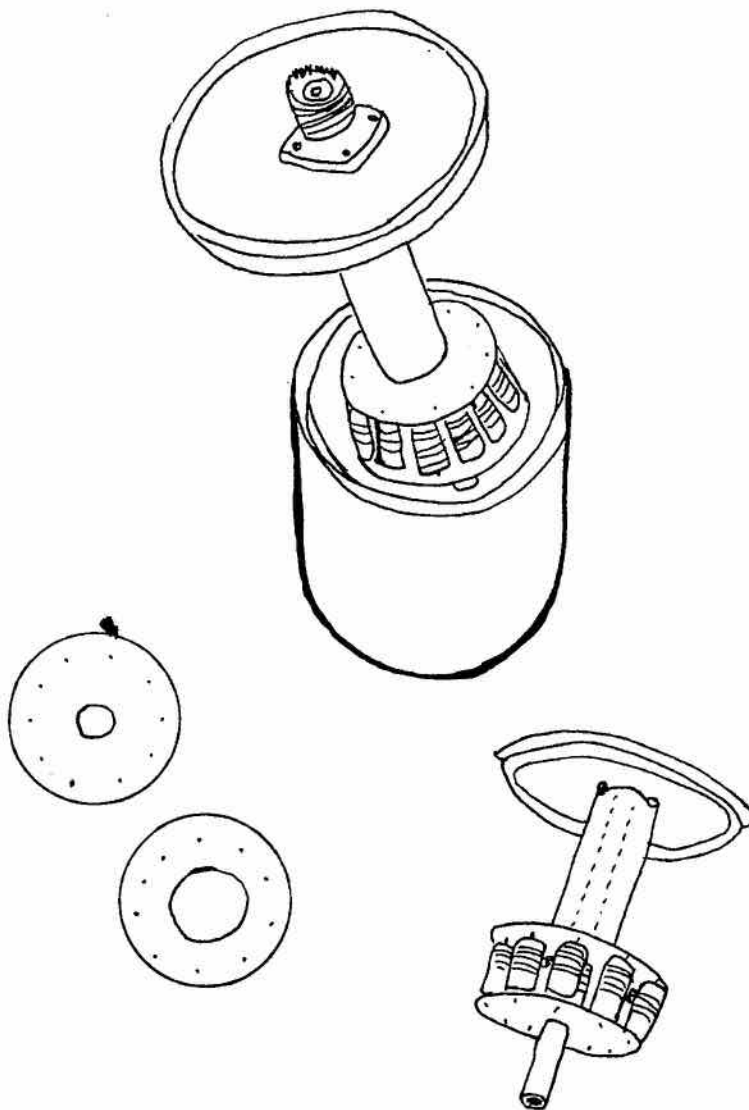
By Moe Lynn VE6BLY
10644-146 Street
Edmonton, Alta.
T5N 3A7

Here is something of a novel version of an old friend we can make quite cheaply in these times of economy. The original idea combined a wattmeter and comes from an article by R. Galgano in *Electronics Illustrated* quite a few years ago.

This dummy load uses ten 510 ohm 2 watt resistors mounted so they are in parallel, on two discs of copper sheeting. You can use an ohm meter after assembly and find they are as near 50 ohms as to be quite acceptable for tuning purposes a long way up into the VHF bands.

The drawing in Fig. 1 shows a quart can as salvaged from varnish or paint but also available new off the shelf (here in Edmonton they are 75¢). This idea serves a two-fold purpose in that it can be used while full of air for low power everyday tuning or filled with oil for higher power or heavier use. Voltesso 35 transformer oil sells for about \$1 per litre in a 20 litre pail and even cheaper in a 200 litre drum (FOB Edmonton). My suggestion is to gather up all the materials ahead of time and get together as a club to buy your Voltesso 35.

Continued on next page ▶



Materials

1 paint can with lid (at least 1 litre capacity)

1 S0239 connector with 4 bolts, washers & nuts

1 copper tube .5 cm inside diameter by 12 cm long

1 copper tube 2 cm inside diameter by 7 cm long

2 copper discs 5.5 diameter by 1 mm thick

10 resistors 510 ohm 2 watt carbon

Scribe a circle on each copper disc about 4 mm in from the outside edge and drill ten evenly spaced holes around these circles for the resistors.

Another suggestion at this point would be to clean both copper discs with steel wool and the copper tubes at their solder points. As well, just take a minute and clean the axial leads of the resistors before soldering to save overheating them.

Mount the S0239 connector to the center of the paint can lid.

Solder the small copper tube to the center conductor of the S0239.

Solder the large copper tube to the proper disc.

Solder the ten resistors to the disc with the large copper tube.

Enlarge the holes on the second disc so the resistors will fit more readily, as they are quite rigid since being soldered to one disc.

The axial leads on the resistors should be trimmed to about 6 mm long at end before soldering.

Solder the resistors in place after you slide the assembly on to the small copper tube that was soldered to the center conductor of the S0239. This keeps the disc from being soldered off center. You may have to enlarge the hole so the small tube will slide on easier but the solder will fill up the excess space.

Solder the large tube to the nuts that are holding the S0239 bolts so there is a space between the tube and the can lid. This gap allows the oil to circulate if it gets very hot.

Cut off the small tubing that extends below the resistor assembly so that it does not touch the bottom of the can when the lid is on. Δ

Amateur Design of Printed Circuit Boards

by John Iliffe VE3CES

Where many reproducible copies of a circuit are required, or where low production costs are a factor, the construction method of choice has, for many years, been the printed circuit board. Amateur projects generally don't have these constraints however, being usually one-off and the labour content is a labour of love. Why then should an Amateur project use a printed circuit board with all the attendant fuss, nasty chemicals, smell, and not a little expense?

This article and succeeding ones in the series will attempt to explore the Amateur need for printed circuit technology, describe the various methods by which circuit boards are made, give helpful hints based on the author's experience, and attempt to indicate the limits of the practical construction by an Amateur Experimenter. The techniques described are all based on the author's prior projects; there may exist easier or better ways to do things but these methods have worked and I can vouch for their reliability. During the next few months you will learn, I hope, not only about electronics experimenting, but chemical reactions and photography, and a bit about drafting and graphic arts.

Before we look at the design and construction of printed circuit boards, let's look at a few places where they are not appropriate.

The very smallest circuits, perhaps up to three or four transistors and a dozen passive components can best be built on a short terminal strip or if a heat-sink mounted transistor is involved, on the leads of the transistor.

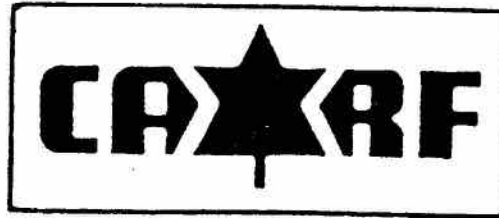
Projects using a few DIP type IC's and a relatively large volume of passive components, but few leads interconnected by wires, can be built on either perfboard or on a prototyping circuit board. Perfboard is a punched phenolic material with patterns of holes punched in it. These boards are available in a variety of patterns; the kind most useful to me is of holes on a rectangular pattern of rows and columns spaced .1 inch, which allows DIP IC's to rest in the holes and $\frac{1}{4}$ watt resist leads to fit through and be soldered on the lower side. Holes must be drilled bigger or reamed for most capacitor leads.

Prototyping circuit boards tend to be relatively expensive, certainly more so than making your own for many purposes, but offer the advantage of allowing components to be soldered to the board and the pattern of lands on many boards provides a ready supply of multi-terminal connections. One of the most useful of this type of board is the 22/22 pin board edge connector type, sold by Radio Shack and others with either two or three power supply rails. The power supply rails run between the legs of the IC patterns and connect all patterns to a common point. Each pin on the IC pattern has four or five holes in a group attached to it for connection purposes. As with other experimenter boards, these come in many copper patterns so be sure what you need before you spend your money. These boards are about as close as you can get to a custom P.C. board, easily.

Continued next issue



ATTENTION



MEMBERS NOMINATIONS

Nomination Deadline Now January 15!

The call for nominations for CARF Regional Directors for 1985-1986 was published in the November issue of *TCA* but due to circulation problems it may be late in reaching some CARF members. **The deadline for nominations has therefore been changed to January 15, 1985.**

All six positions of Regional Directors become vacant June 1985. Each nomination must have five full CARF names and addresses on the nomination letter, as well as the candidate's signature, that he or she accepts the nomination.

Nominations and supporting documentation must be sent to the SECRETARY, CARF Inc., Box 356, Kingston, Ont. K7L 4W2 by registered mail and must be postmarked no later than January 15 1985. Resumes and photos must also be sent to the same address by registered mail and must be postmarked no later than January 15, 1985 if they are to appear in the March 1985 issue of *TCA*. CARF membership is divided in to five Regions:

ATLANTIC— The Atlantic provinces: New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland (including Labrador).

QUEBEC— The province of Quebec.

ONTARIO— The province of Ontario.

MID-WEST— The provinces of Manitoba, Alberta and Saskatchewan and the Northwest Territory.

PACIFIC— The province of British Columbia and the Yukon Territory.

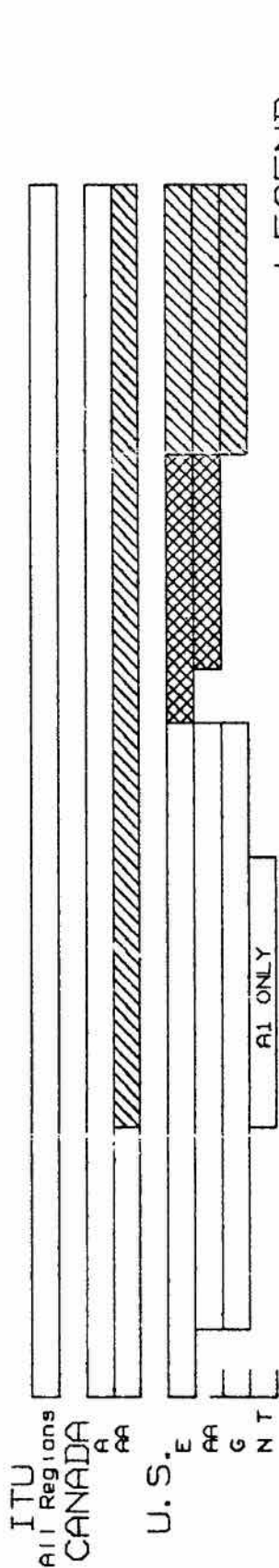
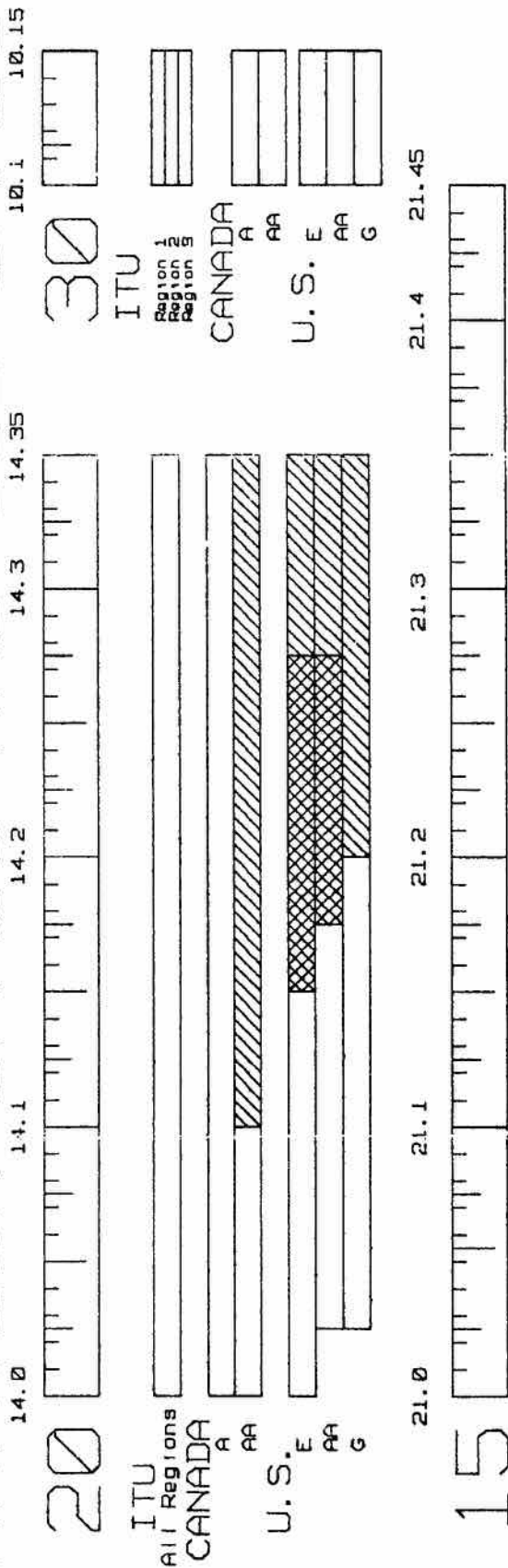
Each Region, with the exception of Ontario, has one Regional Director. Because of its large Amateur population, Ontario has two Regional Directors. This division gives fairly equitable representative voting power to each Regional Director on the CARF Board of Directors.

In those Regions where an election will be called, ballots will subsequently be mailed to voting members.

Doug Burrill
Vice-President Special Projects



AMATEUR BANDS AND SUB-BANDS



LEGEND

- A CDN AMATEUR CLASS
- AA CDN & U.S. ADVANCED
- E U.S. EXTRA CLASS
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- N U.S. NOVICE CLASS
- T U.S. TECHNICIAN CLASS
- ☐ A1 & F1
- ▨ A1 F1 PHONE
- ▩ A1, F1, PHONE, SSTU
- ** CDN SSTU Considered Phone

*
 x CDN and U.S. AA Classes are not the same
 [A1]
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As of Sept. 1 some U.S. classes have expanded frequency allocations. To update this chart, see page 30 of October TCA.

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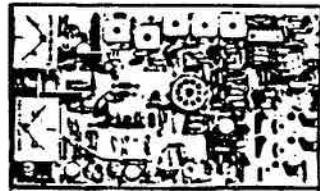
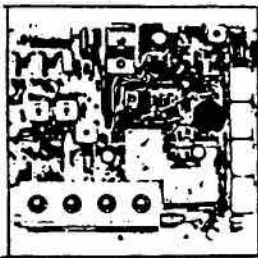
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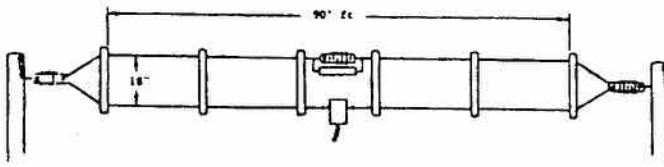
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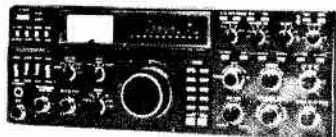
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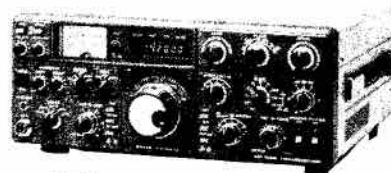
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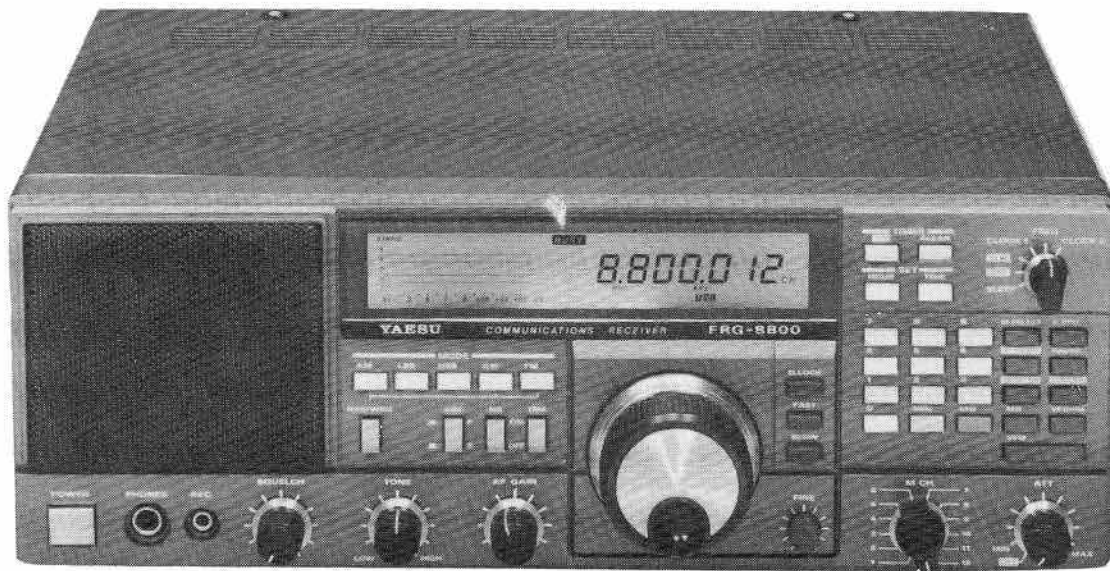
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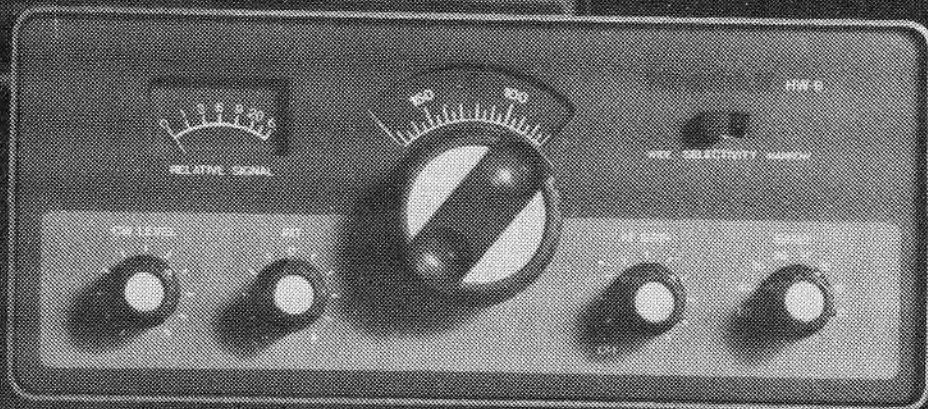
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