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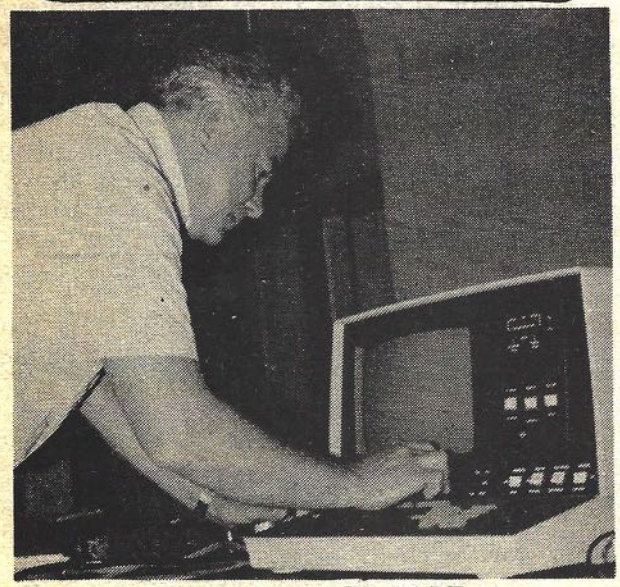
CARF the canadian amateur

July/August 1978 No. 7



Fred Towner, VE2DNW, CARF vice-president, adjusts the video display at the Ottawa end. In response to requests to "Let's hear it", the audio transmission which ends up on the screen was played back to a receptive audience ... something like "BLEEEEEP" and you had a 200 character message!

AMSAT Canada to fly fixed bird

A group of Canadian Amateurs have re-organized AMSAT Canada with the aim of flying the first geo-stationary Amateur satellite. In a fixed position, it will "illuminate" (or be workable over) a large part of the Western Hemisphere.

The new organization is being incorporated under the name Radio Amateur Satellite Association of Canada, and will be known as AMSAT Canada for short. The officers and directors are aerospace oriented Amateurs in the Ottawa area who have been working steadily over the past few months to design the equipment which, according to AMSAT

Continued on Page 3

Packet Radio comes to town

The demonstration of "packet radio" at the Ottawa ARC meeting on May 31 played to a full house. Using a telephone pair from a computer in Montreal to the input of an Ottawa two-metre repeater, the output of which was picked up in the National Research Council lecture theatre, computerized traffic was passed between the two stations.

Dr. John deMercado, Director-General of the DOC Regulatory Service spoke to the club and also presented a second demo of packet radio, right within the room, using experimental gear on 470 MHz which the DOC and Carleton University are using for "packet radio" studies.

Further story on Page 3

CARF the canadian amateur

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Editor:
VE3CDC Doug Burrill

Publisher:
Steve Campbell

Slow speed net

A slow speed CW net, sponsored by the London, Ont. ARC will start on Monday, Sept. 18, 1978. The net is open to all and will operate on 3675 kHz at 7:30 p.m. (Eastern Time) Monday to Friday. Central station speed will be 10 wpm.

For further information please contact: Dick Reiber VE3IBV, 417 Regal Dr. London, Ont. N5Y 1J8.

from the Front Office...

Bill Wilson VE3NR, President

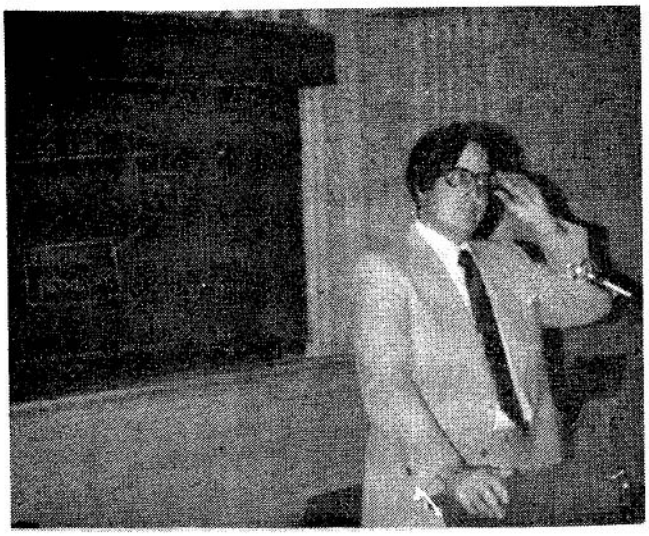
When I was asked to let my name stand in nomination as president of CARF I asked myself, "Why should I work for CARF?" After some thought it became clear that CARF is the Canadian radio Amateurs' own national association: it is owned, controlled and managed by Canadians. CARF is fully dedicated to the Canadian Amateur and to the belief that Canadian Amateurs are best able to determine their own course and their own needs free of any foreign influence or control. After the Symposium last November there can be no doubt about the capabilities and competence of Canadian Amateurs. Of course this puts CARF in a unique position when it comes to dealing with government. CARF has a role to play in this respect and can do it well.

Then, too, in these swiftly changing times Canadian Amateurs need to be abreast of Canadian and international radio developments if they are to react effectively to competition for the spectrum from other users of radio and Government action. CARF brings the needed information to them through "The Canadian Amateur" and to Canadian Amateur radio clubs and associations, through its periodic CARF "News Service", for inclusion in club publications and net bulletins.

The other more tangible benefits of membership in CARF are well known. More about CARF will be said at a later date and about relations with the Canadian Division of ARRL too, which is being looked into now.

Judging by the three huge files full of briefs and comments received on the DOC "Experimenter" certificate proposal, preparatory to revising the working paper, there is no doubt again that Amateur radio at the grass roots level in Canada is active and sound. The correspondence received gave a good basis for the CARF brief.

Preparation for the National Symposium in Calgary is next. While all this goes on, our tasks related to WARC '79 work carries on, including a supplementary submission on our concern at the possible loss of part of the 75 metre band.



Packet From Page 1

John deMercado tells the Ottawa club what it's all about on the "packet radio" scene. The briefs and comments on the DOC's proposal for the "experimenter" certificate have been studied by the Department in detail and it is understood that many changes have been made, reflecting the wishes of Amateurs set out in the more than two hundred briefs and comments received by DOC and CARF. Full details were not available at press time but unconfirmed reports are that the objectionable features like the exclusive use of 220 for "packet radio" have been eliminated.

AMSAT From Page 1

president (and CARF past president) John Henry VE2DNM, will be launched from the NASA Space Shuttle vehicle in the early 1980s.

Plans are being considered to have it operate on modes J and M from its 22,300 mile altitude. Up frequency being looked at is 1296 MHz, with 435 MHz down. Its fixed position will permit the use of fixed antennas over both of the Americas.

Other officers of the new space age Amateur association are vice president Bill Barrie VE3AAS, treasurer Howie Krakower VE3JDZ and secretary Henry McGee VE3ACF. Directors are Dick Bonnycastle VE3FUA, Murray Gold VE3 KHG and George Roach VE3BNO.

Membership will be $11.00 per year. Life memberships will be available and it is believed that donations will be tax deductible. The address is: AMSAT Canada, Box 7306, Vanier, Ont. K1L 8E4.

Sun power rig

A west coast repeater, VE7RAC, Port Alberni is Canada's first solar powered machine. In a very difficult to reach site on Mt. Arrowsmith, the 147.84-147.24 rig runs for about six months at a time before the batteries, charged by sunlight, need attention.

New CARF President

The CARF Board of Directors met in Ottawa on May 27 and 28 and elected Bill Wilson VE3NR president for the 1978/79 term. John Henry VE2DNM accepted the new post of immediate past president and is now actively involved in a Canadian organization set up to build a geostationary Amateur satellite.

The new president recently retired from DOC where, among other senior positions, Bill held that of Director of Telecommunications and latterly was engaged in special projects for the Assistant Deputy Minister.

Fred Towner VE2DNW remains as vice-president, along with Joan Powell VE3FVO as secretary and Bernie Burdsall VE3NB as treasurer, and Art Blick VE3AHU as General Manager.

The Board also approved changes in Group and Affiliate membership, the creation of CARF bulletin stations and a new financial arrangement for affiliated clubs which gives rebates for new members obtained by them. Policy and action on many other matters were discussed and acted on during the two whole-day sessions. A full report will be carried in the next issue rather than this one, due to pressure of time and events.

CRAG Canadian Repeater Advisory Group

VE3DWL Hugh Lines

Lots of news this month, starting with Alberta. The proposed repeater for Calgary on 16/76 is proposed no longer and should be deleted from your listings. VE6RPT (Calgary) now has an autopatch and the frequencies for VE6RYC (Calgary) are 146.25/146.85. In Red Deer, VE6QE is now changed to 146.40/147.00.

New repeaters are proposed for 3 Hills (146.22/146.82), Swan Hills (146.22/146.82), Andrew (146.04/146.64) and Medicine Hat (146.25/146.85). No call signs as yet. A new Edmonton machine is VE6MC on 146.25/146.85 with autopatch and in Hardisty, a new one is VE6WW proposed on 146.16/146.76.

The proposed Swan Hills repeater on 147.22/147.82 will be located in Edmonton for the duration of the Commonwealth games.

In Ontario, VE3STP in Renfrew (46/06) is going solid state with an improved control system. VE2CRA, Ottawa/Hull, will soon be outputting on 223.94 as well as 146.94 with a 146.34 input. A new proposed repeater for Curran is VE3JLX on 146.19/146.79.

In Quebec, from VE2NL we are advised that the new Sept Isles repeater (146.19/146.79) should be listed as VE2RRU vice VE2ERU. Jacques VE2DML passes on the following info from Trois Rivieres: VE2CRT should read VE2CTR and is on 146.46/147.06. Also, both VE2CTR and VE2QW have autopatch facilities, and this winter the club plans to computerize VE2CTR.

QUEBEC
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LOCATION	CALL	NOTES	INPUT	OUTPUT
ALMA	VE2KCA	A	146.67	146.67
ALMA	VE2RCM	P	146.25	146.85
AMOS	VE2KZ		146.16	146.76
AMQUI	VE2KH		146.28	146.88
ASSUMPTION	VE2RBB		147.81	147.21
BAIE COMEAU	VE2PM		146.10	146.70
CARLETON	VE2 ?	P	146.22	146.82
CHICOUTIMI	VE2ES		146.28	146.88
CHICOUTIMI	VE2IU	A	146.16	146.76
CHICOUTIMI	VE2RCC		147.72	147.12
DOLBEAU	VE2EFA	A 9	146.10	146.70
DRUMMONDVILLE	VE2 ?		146.25	146.85
DRUMMONDVILLE	VE2RDV		147.69	147.09
FRANKLIN CTR	VE2RBV		147.81	147.21
GASPE	VE2 ?	P	146.28	146.88
GRAND FOND	VE2GTT		146.10	147.00
GRANBY	VE2RTA		147.78	147.18
HEREFORD	VE2RDN		147.96	147.36
HULL/OTTAWA	VE2CKA		146.34	146.94
HULL/OTTAWA	VE2CSU		146.10	146.70
HULL/OTTAWA	VE3UGV		146.61	52.525
HULL/OTTAWA	VE3JGP		52.760	52.525
HULL/OTTAWA	VE2KRT	A	147.90	147.30
HULL/OTTAWA	VE3OCN	3	146.25	146.85
HULL/OTTAWA	VE3UEA	A	146.67	146.67
HULL/OTTAWA	VE3UKA		146.28	146.88
HULL/OTTAWA	VE3UXN		147.72	147.12
HULL/OTTAWA	VE3TEL		146.43	147.03
HULL/OTTAWA	VE3TWU		147.90	147.30
HULL/OTTAWA	VE2CHA		443.35	448.85
JOLIETTE	VE2KMA		146.43	147.03
JUNQUIERE	VE2LFU		444.00	449.00
JUNQUIERE	VE2VP	9	146.22	146.82
LA TUQUE	VE2EH	9	146.19	146.79
LAC ST JEAN	VE2SM		146.34	146.94
LAVAL	VE2KVS		146.25	146.85
MONT LAURIER	VE2RKC		146.37	146.97
MONT LOGAN	VE2AL		146.10	146.70
MONTREAL	VE2DO		146.46	147.06
MONTREAL	VE2CGL		146.37	146.97
MONTREAL	VE2QN		146.16	146.76
MONTREAL	VE2ECM	A	146.04	146.64
MONTREAL	VE2MH		222.90	224.50
MONTREAL	VE2MKL	A	147.72	147.12
MONTREAL	VE2PY		146.28	146.88
MONTREAL	VE2KEU		147.87	147.27
MONTREAL	VE2KFP		146.28	146.88
MONTREA	VE2KKU		146.04	146.64
MONTREAL	VE2AX	A	146.40	147.00
MONTREAL	VE2KM		146.40	224.60
MONTREAL	VE2KM		444.00	449.00
MONTREAL	VE2VY		147.96	147.36
MONTREAL	VE2VS		146.25	146.85
MONTREAL	VE2AX		146.10	146.70
MONT JOLI	VE2KAU	1	146.13	146.73
MOUNT CARMEL	VE2 ?	P	NOT	KNOWN
MT ORFORD	VE2TA		146.19	146.79
MT ST JOSEPH	VE2IN		146.22	146.82
MT TREMBLANT	VE2MT		146.13	146.73
NORANDA	VE2ZS		146.16	146.76
PARC DES LAURENTIDES	VE2ZS	1	146.28	146.88
PERCE	VE2 ?	P	146.19	146.79
PLESSISVILLE	VE2CRP		146.13	146.73
PORT ALFRED	VE2IG	P	146.43	147.03
QUEBEC CITY	VE2ASU		146.10	146.70
QUEBEC CITY	VE2UO	A	146.28	146.88
QUEBEC CITY	VE2QM		146.34	146.94
QUEBEC	VE2RAU	5	146.25	146.85
QUEBEC	VE2RCO		147.78	147.18
QUEBEC CITY	VE2SRC	A	147.72	147.12
QUEBEC CITY	VE2UA	1	146.22	146.82
QUEBEC CITY	VE2VZ	A	146.46	147.06
QUEBEC CITY	VE2VD		146.16	146.76
RIMOUSKI	VE2WM		146.34	146.94
RIPON	VE2RBA		147.93	147.33
RIVIERE DU LOUP	VE2DU		146.19	146.79
RIVIERE DU LOUP	VE2NY	1	147.66	147.06
SEPT ISLES	VE2RSI		146.34	146.94
SHERBROOKE	VE2FX		147.93	147.33
SHERBROOKE	VE2RAL		146.31	146.91
SHERBROOKE	VE2RSH		147.72	147.12
SHERBROOKE	VE2SS		146.25	146.85
SOREL TRACY	VE2 ?		146.61	146.61
ST JEAN	VE2KVH		147.84	147.24
ST JEROME	VE2KMP		146.16	146.76
ST ROSE	VE2AU		146.31	146.91
TROIS RIVIERES	VE2AT		146.07	146.67
TROIS RIVIERES	VE2CTR	A	146.46	146.06
TROIS RIVIERES	VE2QW	A	147.90	147.30
VICTORIAVILLE	VE2KDF		147.75	147.15
SEPT ISLES	VE2RRU		146.19	146.79

NOTES
A = AUTOPATCH
P = PROPOSED
1 = LINKED
2 = TEMP CALL
3 = RTTY/FAX
9 = LINKED

On the East Coast, Ron VE1AHC in Charlottetown advises that VE1AHC (in Charlottetown) no longer has a 146.10 input; it is on 146.40/147.00 only. It is linked with VE1SPR in Springhill N.S. on 443.3/448.3 and now has autopatch facilities.

In Sydney N.S., a new rig is VE1CBI on 146.01/146.61 operated by the Sydney ARC.

Keep the updates and changes coming in as you travel about during the summer. If any of you are in Ottawa, be sure and say hello on VE2CRA (34/94).

Keep your licence handy

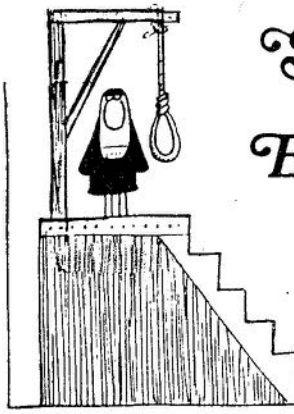
'Smokey' has something for the operators of unlicensed stations. In discussions with officers at DOC HQ, it has been revealed that another step has been taken in the continuing battle to control the growth of unlicensed (mainly GRS) radio stations. A trial program has been developed in conjunction with the RCMP for the detection of unlicensed radio stations.

Whenever during the course of other duties an RCMP officer comes across a radio transmitter or receiver for which a licence is required and the owner or operator cannot produce one, a warning 'ticket' is issued on the spot. This document instructs the owner of the equipment to produce an appropriate radio licence (or an application) within seven days or face prosecution. A copy of the 'ticket' is forwarded to the DOC for follow-up action.

If, after the seven days, the DOC finds that the equipment is still unlicensed, the 'ticket' could be used as evidence that due warning had been given should prosecution action be instituted. A successful action could result in a fine of up to $2500 or 12 months imprisonment as well as forfeiture of the equipment.

In view of these new procedures, you would be wise to have a copy of your licence with each unit of your mobile or portable equipment (as required by the Regulations). A photostat of your station licence slipped inside, or glued to, the unit may be a good idea.

VE3ZS



Social Events

August 6 -- Montreal ARC Hamfest at St. Lambert Arena. Commercial displays, flea market, DOC and CARF speakers.

August 5-6 -- Second annual Lake Superior Region Ham Meet at Trowbridge Falls Park, Thunder Bay. Sponsored by Lakehead ARC, Box 2571 Thunder Bay, Ont.

August 18-20 -- Saskatchewan ARL Hamfest at Regina University. According to Regina operator Glen Gorham, VE5GG, Dr. John deMercado of DOC is expected as is the perennial Lou McCoy of the American Radio Relay League.

October 13-15 -- Radio Society of Ontario convention sponsored by the London ARC. Contact VE3LON/3, the LARC station, and get a special QSL card and $1.00 off your registration. If you register before September 15 with the committee you can also book a room at the Holiday Inn, the convention location, and save substantially. The $42.00 single room rate will be offered for $30.00 with double occupancy for $3.50 extra.

Registration for RSO members is $8.00, for non-members $9.00. Ladies' Program is $4.00 plus an optional $2.00 for the bus tour. The Friday night bash is free to registrants. The Ladies' Luncheon on Saturday is $5.00. Banquet and dance rates on Saturday are $15.00 for singles and $25.00 per couple. (Registrants only.)

Along with the Saturday technical and organizational forums there will be a flea market on the Sunday. For registration and other information send to: London Amateur Radio Club Inc., Attention: Convention Tickets, Box 82, Station B, London, Ont. N6A 4V3.

Amateur Radio Week

CARF is suggesting a week, Sept. 24 to 30, for promoting Amateur Radio across Canada, which hopefully will become an annual event. This particular week has been chosen as it closes with the National Symposium on Amateur Radio to be held this year in Calgary.

At this time of the year, too, many people are looking for something 'different' in the way of a hobby or learning exercise. For some, Amateur Radio may be the answer.

Our objective is to educate the Canadian public concerning Amateur Radio. We will, on a national basis, ask radio stations and the press services for assistance. Material will be sent out from CARF to these sources.

Anything that individual Amateurs or clubs can do on a local level is, of course, a great asset. Possibly a knowledgeable and articulate person could be interviewed on a radio or TV program by appraoching the station. Interesting happenings in your area might be brought to the attention of the local newspaper. Make sure they realize it's Amateur Radio (not CB!). Booths and displays in shopping centres or libraries at this time would add to the value of the campaign.

The Radio Society of Ontario publishes an excellent public information brochure, 'Talk to the World'. It may be obtained in Quantity at a nominal cost from RSO, Box 334, Sta 'U', Toronto, Ont. M8Z 5P7.

PACKET RADIO

A first for Canada

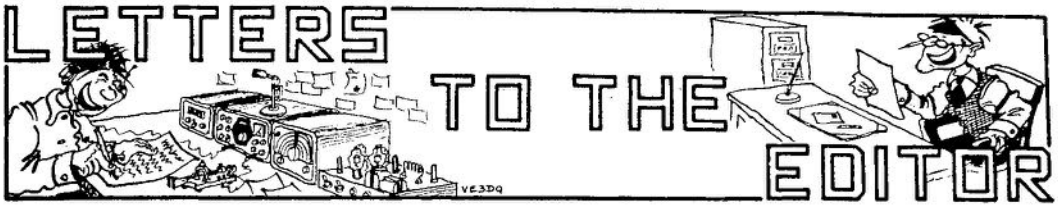
The first Amateur "packet radio" transmission took place in Montreal before a record and enthusiastic turnout of the Montreal club and visitors from other clubs in the city, on May 31.

Organized by the Montreal ARC and CARF, the meeting heard the DOC's Director-General of Telecommunications Regulatory Service, Dr. John de-Mercado, expand on the idea of this new method of Amateur communication and experimentation. A message in digital form was transmitted to a "smart" repeater which sorted out the digitized address, transmitted the message and acknowledged receipt of it.

Further meetings with Dr. deMercado in attendance were held in June in Vancouver under BCARA auspices and in Ottawa by the Ottawa ARC.

The Montreal ARC is sponsoring a one-day hamfest on August 6 in the St. Lambert Arena and it is planned to have DOC officials there with the latest word on where we go from here on "packet radio" and the "Experimenter" certificate proposal.

- Local Amateurs provided safety communications for the annual 'Great Canadian Canoe Race' near Long Island, Ont. late in June. Earlier this year, CARF officials did the same for the annual Jock River white-water canoe race.



Acknowledgement

Thanks to the following for letters with helpful words and news snippets: VE6CFK with words on two metre operation, VE3HPR with story ideas, VE1 ASW with a report on Amateur participation in an EMO exercise simulating a disaster at Halifax airport, and VO1 CW (now there's a call!).

Emergencies

Ken Hogan, president of the Sept-Iles (Que.) ARC has sent us a copy of procedures being adopted by his Club to cover the possible requirement for its services for emergency communications.

He writes: "These procedures will form a series of lectures to be given at our Club meetings next fall. Although, there is really nothing startling or new in the procedures, I do believe a comprehensive compilation of information of this nature, properly disseminated, will result in an effective operation if and when the need arises.

In general, our Club's policy has been to ensure that we had a good product to offer before we tried to sell it. Therefore, to date we have not pushed liaison with Municipal authorities and others to any extent. However, now that the Club organization appears to be shaping up, we will pursue the latter phase more vigorously. We have contacted the Mayor and the City Council and the Chief of Police and provided them preliminary copies of our procedures and they seem genuinely interested. We do not necessarily envision a frequent contact between our Club and various served agencies, but rather, we wish to ensure that they know we exist, understand what we can provide and have sufficient confidence in our ability to call upon us if required."

Ken has asked that in the event long-haul emergency circuits are required for northeastern Quebec and Labrador, the following frequencies should be monitored and used: 3.765, 7.025 and 14.140 MHz (plus or minus QRM) for both CW and phone.

Alphabets

I would like to suggest to Amateurs that they use the international phonetic alphabet instead of different words to save time and confusion. City names are especially confusing and should be avoided, especially when working DX.

Romain Ducharme VE2EGR

More CUT-ing up

(In our May issue, Henry Traue VE7 BYP commented on the various designations used for time, such as GMT, UMT. Here is an interesting comment on that letter.)

For setting skeds, making log entries, etc. no one in the radio field disagrees with the abbreviation Z after the numbers (but few people know what to put if the time is NOT being expressed in UT).

I asked a prestigious federal government department, but they said "We still use GMT". I know that is years out of date but, after all, the hertz became a world standard in the 1930's but did not come into use here until a few years ago.

For the kind of accuracy we are interested in, probably UT is the proper abbreviation. Mean solar rotation (UT0), corrected for periodic variations (UT1), and corrected for irregular variations (UT2), are for time nuts.

Although the WWV voice announcement says 'coordinated universal time', they write it in their literature 'UTC', so they aren't really CUT-ing, they are 'coordinated universal time-ing' -- but UTC-ing!

The reference scale is the National Bureau of Standards Coordinated Time Scale, abbreviated UTC(NBS). I suppose this is following along a consistent path of 'UT' followed by the suffix 0, 1, 2 and C, a precedent established by Wellington ("Spurs, cavalry, for the use of") although, to be fully consistent, this should then be "Time, universal, coordinated" or TUC. 'TUC' may have been vetoed by the United Kingdom when Ernie Bevin was Foreign Minister there, because he was previously secretary of the Trades Union Congress!

I would bet a lunch on the following:
For radio purposes - Z
Textual expression - Coordinated Universal Time, or Universal Time
Abbreviation - UTC, or UT (latter preferred)

If you want something more authoritative, I could find out for you from Study Group 7 of the International Consultative Radio Committee (abbreviated CE7/CCIR).

73 Bob Eldridge VE7BS

Code of Ethnics

With respect to the May 1978 issue of The Canadian Amateur, 'CARF Code of Ethnics', I believe I have a solution to the problem of colour discrimination.

I propose the use of state of the art technology as applied in digital computers. Simply: 0 or 1, yes or no, on or off, black or white, without any other possibility. Or, to put it another way, to bring the CADS (Club of Advertisers who Discriminate) into line, either print the advertisements in black or print them in white.

Donald R. Boyle VE7DTH

(Thanks, Don. We've passed this to the Inhuman Rights Commission ... Ed.)

Bermuda

As past president of the Long Bay ARC, I would like to bring you up-to-date on the Amateur radio activities here in Bermuda.

The recently completed Amateur radio licensing course sponsored by our club resulted in 15 new Amateurs, of these 7 were Canadian servicemen stationed in Bermuda. We can be heard on 20 or 15 metres. Our club call is VP9CB.

There are two repeaters on the island (34-94 and 16-76), and for anyone who may be planning a vacation here, reciprocal operating privileges may be obtained by writing Ted Pitman at the Dept't of Communications, Hamilton, Bermuda.

As you can see, Amateur radio here in Bermuda is alive and well ... and growing. Our club receives the CARF Newsletter, and believe me it is well and thoroughly read by all club members. I for one find it very informative in keeping me up to date on the Amateur activities at home.

I will be returning to Canada shortly and my new residence will be at CFB Kingston.

73 Les Lindstrom VP9IQ
ex: VE1LL, VO1GQ, VE7DRL

DX en Francais

Yvan Paquette VE2ID writes that he is a "member of CARF and I want to congratulate you on 'The Canadian Amateur'. With news from coast to coast, information from DOC, technical reports etc., 'The Canadian Amateur' is representative of the friendship and cooperation between Amateurs".

"As a writer of the Amateur section in "L'ONDE", a French language shortwave listeners' magazine, I would like to translate articles that will interest shortwave listeners (like DOC proposals, special call letters, etc.).

"This publication is sent to members of Club Ondes Courtes du Quebec, a non-profit organization with 180 members from all over the world.

"I have included information on this DX Club for publication..."

Yvan describes the club:

"Club Ondes-Courtes du Quebec" (COCQ) is the only French language organization of listeners in North America. The Club membership is approaching 200, including some personalities like Claude Morin, Quebec provincial Minister of Inter-Governmental Affairs, who is an active DXer.

With President Guy Marcotte, the Club started in 1974 under the name 'Club Ondes-courtes Candiac'. They publish a 40-page bulletin (L'ONDE) for members and for some international broadcasters each month. Containing information on DX programs and schedules from numerous stations, L'ONDE is the equivalent of 'The Canadian Amateur' for Canadian and European listeners. They want to promote friendship between DXers from all over the world and to popularize the reception of radio stations in Quebec. Club dues are $12.50 first class to the U.S. and Canada, and $15.50 airmail delivery to foreign countries. (Yvan's address is 7025 Cannes, Apt. 7, St. Leonard, Que. H1S 2P9.)

Calgary to host Symposium

Due to the success of the 1977 National Amateur Radio Symposium, the Canadian Amateur Radio Federation was encouraged by the Department of Communications to convene the Symposiums on an annual basis.

CARF's intent is to have a provincial Amateur organization, either directly or through a provincial club, host each Symposium in a different area of Canada each year.

For 1978, the Amateur Radio League of Alberta has been selected as the provincial organization with the Calgary Amateur Radio Association functioning as hosts for the event, to be held on the weekend of Sept. 30-Oct. 1 at the Highlander Motor Hotel, Calgary.

The basic theme for the 1978 Symposium will be: 'Modernizing the Canadian Amateur Regulations'. Four Workshop sessions will be held: 'Regulations', 'Frequency Allocations and Plans', 'Certificates and Examinations' and 'Digital-Computer Communications'.

On the Saturday, workshop sessions will follow the opening addresses at 0900 hrs and will finish at 1700 hrs. Plans call for a plenary session on Sunday, for general discussion on the Workshop topics and any other related items.

There will be a banquet on Saturday evening, with a 'get-together' function on Friday.

Each representative attending will be given a Symposium package detailing the topics to be discussed. National and special interest Amateur organizations are encouraged to contribute publicity material to the package. Between 100 and 125 invited representatives are expected.

Room rates in the Hotel are $26.50 per night, single or double occupancy. The banquet is $8.50 per plate. A buffet lunch will be served on the Saturday and Sunday. Further details can be obtained from the National Amateur Radio Symposium Committee, 5359 Dalhurst Cres. N.W., Calgary, Alta T3A 1P6.

Suggestions for items relating to the general theme are most welcome. Please send them, with any relevant background material, to CARF, Box 356, Kingston, Ont. K7L 4W2 so they can be placed on the agenda and background material given to the Workshop Moderators.

Clubs and other organizations across Canada have already been notified of the Symposium and closing date for suggestions is Sept. 1, 1978. Any representative attending may raise questions and make suggestions during the Symposium.

Any organization wishing to send a representative should inform CARF as soon as possible together with the choice of Workshop session that your representative(s) wishes to attend (first, second, third choice).

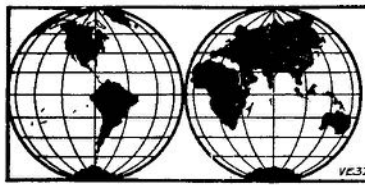
Naughty, naughty!

A Peterborough man was fined $250, or 25 days in jail, in provincial court here for using profane and obscene language on the General Radio Service band.

He was also placed on probation for nine months and restricted from operation of a GRS radio during that period of time.

Following complaints to the DOC Department of Communications from other users of the GRS band, inspectors from the Toronto district office used direction-finding techniques to home in one the offender.

(And what about the CBC and other radio and TV stations which need the old mouthwash made out of soap, on numerous occasions!)



INTERNATIONAL NEWS

-- Y1BGD, billing itself as a Baghdad station is being heard. DOC is checking to see if the Iraqi government has lifted its self-imposed status as a 'forbidden' country.

-- A recent visitor to Ottawa, returning from Europe, stated that there is a move afoot in Region 1 of the ITU to latch on to the Amateur band from 3500 to 3615 kHz for other services. What with the DOC proposal to knock off 3800 to 4000 kHz for other services and the FCC in the U.S. talking of relieving us of 3850 to 4000 kHz, the prospect for good old 80 metres could be rather grim in the post-1979 era.

-- Further interesting news from Washington is that the FCC now has petitions for no-code licences and 2 kW input at the low end of two metres and between 431 and 433 MHz.

-- Further to the fuss about sub-allocations appearing in other publications, the American Radio Relay League, in a move which could make Canadian Amateurs unhappy, requested the FCC to extend the novice allocation from 3675 to 3750 kHz. The reaction of the ARRL's Canadian division is not known.

-- Peter Hurd K4NSS, who has been secretary of the FCC WARC Advisory Committee for Amateur Radio, visited with CARF WARC Working Group officials during a recent short visit to Ottawa. New secretary is WB9WWM, Henry Ruh.

-- Card collectors will be interested to know that a special event station, GB3TCF, will reply with special QSL cards through RSGB QSL Bureau. The station is to publicize the Town and Country Festival of arts and hobbies in Coventry, England. The station will operate between 0800 and 2000 hrs GMT. Frequencies are: all day on 160 metres, 0800-1000 GMT on 20, 15 and 10, 1000-1500 GMT on 80 or 40 metres and 1500-2000 GMT back on 20, 15 or 10.

-- The Russian "woodpecker" which has so chewed up the HF spectrum has now completed its tests, officials of the Central Radio Club told N4IA during a recent Moscow visit. (Tx HR Report for this and some of the above items.)

Special calls ... again!

Special call fans will be happy to know that the issuing of odd-ball Canadian prefixes is still flourishing despite another possible hoo-haw over the latest one which left out the Yukon.

DOC announced that to commemorate the 75th anniversary of Canadian military communications (remember heliograph?) Amateur licences in the active and reserve forces and armed forces club stations plus former members of what used to be the Army, Navy and Air Force who hold Amateur licences, may use the prefix CF for VE and CY for VO, effective from July 1 to December 31, 1978. There is no provision made for a special prefix for eligible Amateurs who reside in the new call district of VY1 in the Yukon Territory.

To make the card collectors even happier, Palmerston Ontario and District Radio Club members snaffled the prefix CH instead of VE for celebration of the Harriston centennial. This was effective May 1, but no termination date is given by informant VE3GCO.

Another myth bites the dust

By Peter Ruderman VE1PZ

Here is the promised follow-up note on mysterious heart attacks and the USSR backscatter radar ('The Woodpecker') on the Finnish border.

It had been speculated that the 'epidemic' of heart attacks in Northern Karelia had something to do with the powerful Soviet over-the-horizon radar just across the border. (See March 1978 issue).

At the meeting of the Canadian Public Health Association and World Federation of Public Health Associations in Halifax in late May, I had an opportunity to hear a paper on the subject by Dr. Pekka Puska, a reputed Finnish epidemiologist, and to discuss the matter with him afterwards. He discounts the radar and emphasizes fat in the diet.

His explanation is that the Karelian Isthmus was once all Finnish, and when part of it was ceded to the USSR, the ones who found themselves in Russia were the same ethnic stock as those left in Finland, and still spoke Finnish, which led to a good many informal contacts and exchanges of information. On the Russian side of the border, they are poorer and their diet has more porridge in it and less meat and fat. On the Finnish side, they really like to slap thick chunks of butter on their bread, and eat lots of sausage which is 50% meat and 50% fat. The ones on the Russian side live closer to the radar but do not have as many heart attacks as their better-fed soul brothers in Finland.

The 5-year pilot public health project that ended in 1977 was somewhat successful, though not completely, and there is still some mystery involved. The mystery, however, would seem to relate more to diet and other predisposing factors (stress, smoking, blood pressure) than to radar.

Now we'll have to wait until the similar equipment in Moscow, Maine, goes on the air and see what develops!

1978
FRIENDLY
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QSO PARTY

Start: 22:00 UTC Sat. Oct. 14, 1978.
Ends: 02:00 UTC Mon. Oct. 16, 1978.

This will be the fifth Manitoba QSO Party sponsored by the Amateur Radio Clubs of Manitoba.

Stations may be worked once on each band and mode. VE4 to VE4 and 2 metre simplex contacts will be permitted. VE4 mobiles and portables may be worked each time they change municipalities. CW to CW contacts will count 3 points, while CW to SSB contacts will count 1 point per contact. Each band worked counts as a multiplier, and VE4 mobile and portables count each municipality that they operate from as a multiplier of one.

Exchange:
Name / QTH (municipality) / and RST

Scoring: VE4s multiply the number of QSOs times the number of states, provinces and DX countries worked, times the number of bands used. VE4 mobile and portable stations multiply this total times the number of municipalities they worked from. All others multiply the number of QSOs times the number of municipalities, local government districts, Provincial Parks and Forest Reserves (Max 134) times the number of bands used. Note: 3 pts. per CW-CW QSO.

Frequencies: 1810, 3770, 3895, 7190, 7230, 14190, 14290, 21245, 21395, 28590 for SSB, 3705, 7105, 14060, 21105, 28105 for CW.

Certificates: will be issued for high score in each province, state and country. Plaques for high score VE4 and out of province station. Additional plaques will be issued if warranted.

Mailing deadline: Nov. 13, 1978.

Send signed declaration and log data to Doug Bowles VE4QZ, 1104 - 1st St., Brandon, Manitoba, Canada R7A 2Y4.

news briefs

- The Lakehead ARC in Thunder Bay recently assisted in two lost persons searches on the same day, early in May. Three men were reported missing 90 miles north of the city and the Lakehead Search and Rescue Unit had two choppers involved in the rescue operation. VE3 EEW at the search base provided communications on 80 metres to VE3EFZ and VE3HTM in Thunder Bay. The three were found safe after a four day search.

Nearer home, on the day the first search came to a happy conclusion, the boys again went into action, along with VE3HFS, this time on two metres to assist in the search for two children who were reported lost in the bush. The kids, however, managed to walk out safely themselves. (Tx VE3AYZ)

- The Department of National Defense announced that Col. D.P. (Dan) Harrison, 42, of Vancouver will succeed Brig-Gen. R.N. Senior as head of Canadian Forces Communications Command.

- The 'Ex-G Radio Club' for Amateurs born in the United Kingdom and domociled abroad has a Canadian chapter and Les Sadler VE4DE writes to let Amateurs born in Britain (or their parents) know that they are eligible for membership in the Canadian chapter. They have a net on 14.155 MHz at 16.30 GMT during the summer and at 17.30 GMT during the winter. Write to Les at 504 Sumach St., Winnipeg, Man. R3K 1K9.

- Dutch adventurer Willi de Roos, who made the treacherous Arctic Northwest Passage last summer, is making preparations for a voyage to Chile, where he will make plans for a voyage to Antarctica in his 42 ft. ketch 'Williwaw'.

Readers will remember Willi's station VK9XR which kept in touch with Amateurs in Canada and Belgium before and during his epic voyage, which ended in Vancouver last fall.

- Time, tide and machete-wielding natives defeated the combined efforts of the Victoria, B.C. Quest Star Society and the U.S. Army to salvage the $125,000 schooner bought by the B.C. Government as part of the Captain Cook bicentennial and which was wrecked off the west coast of Panama. The Society eventually learned of the disaster through a yacht equipped with Amateur radio, and a Panamanian Amateur who raised a Haitian operator who in turn contacted a Toronto station. The owner of the latter station telephoned the Society with the bad news. The crew was safe although the vessel, hard aground, was stripped by the local Indian population who swarmed aboard it.

East Coast to get zapped?

With the rumoured good news that the Russian "woodpecker" is off the air (or is it?) comes the bad news that the U.S. Air Force is putting on the air a very long range radar in the 420-450 MHz band.

A direct quote from HR Report reads: "The system (PAVE PAWS) has an average ERP of about a billion watts, and one estimate says that when it's aimed at the moon the reflected signal would illuminate an entire hemisphere with a 10-20 microvolt signal. The main beam could burn up a receiver front end 10 miles away."

First site is Cape Cod, Mass. with a second in California. This radar has the potential for screwing up the Amateur satellite program and other stations on the 420-450 MHz band. The potential for zapping life forms as well as radio communications has environmentalists up in arms.

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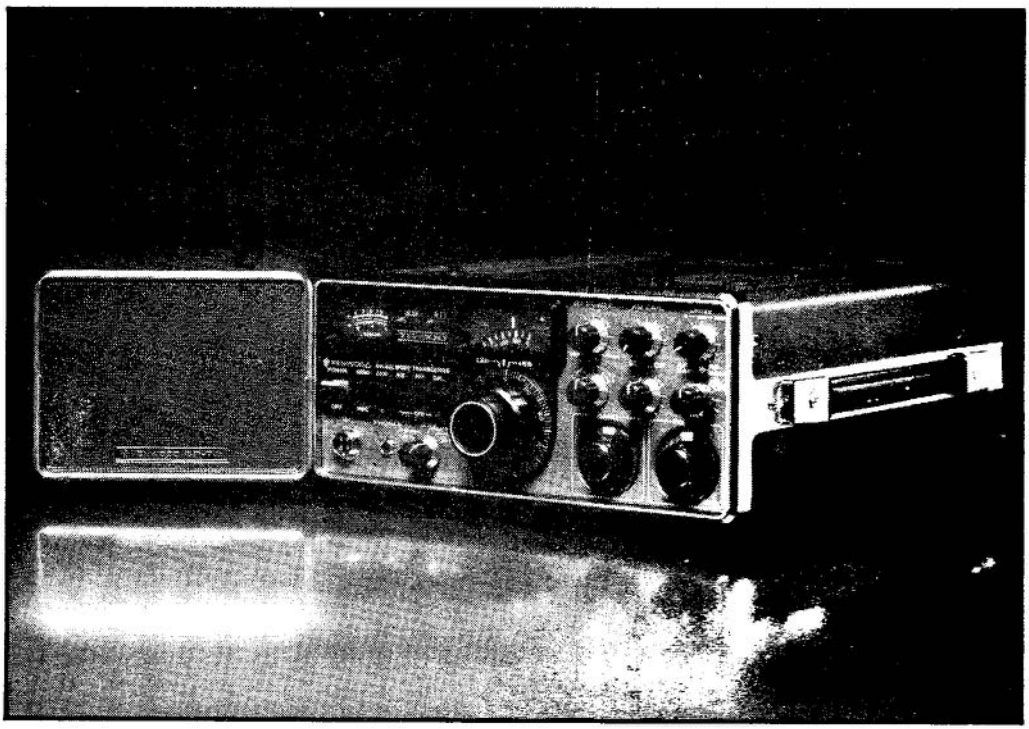

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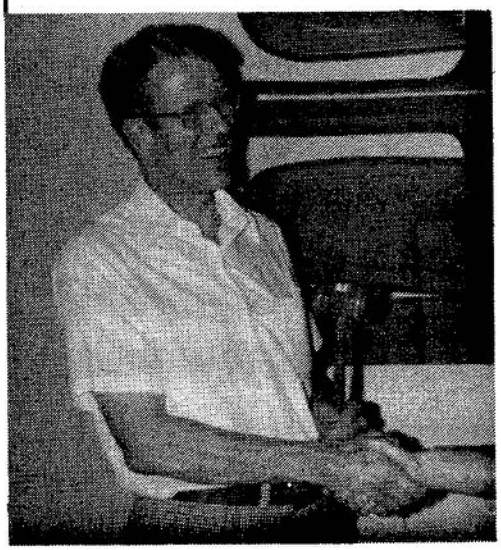
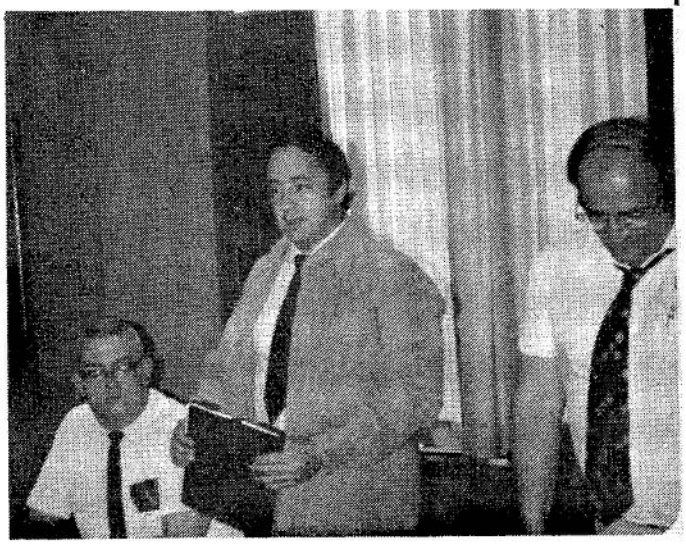
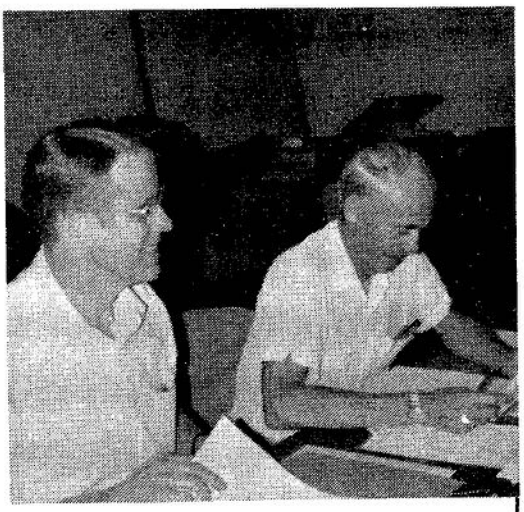
CARF Annual Meeting







Clockwise from above left: 1. Bill Wilson VE3NR accepts the gavel of office from outgoing president John Henry VE2DNM. 2. Bob Rouleau VE2PY, president of the Montreal club (centre) and an active proponent of "packet radio" attended the annual meeting. At left is Frank Merritt VE7AFJ, chairman of the CARF Communications Committee, and on the right is Jacques Orsali of the Montreal Club. 3. New president Bill Wilson VE3NR and your editor Doug Burrill VE3CDC. 4. CARF 1977/78 officers start off the meeting. Left to right, Vice-president Fred Towner VE2DNW; President John Henry VE2DNM; and Secretary Joan Powell VE3FVO.

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Regs Committee Report

(This report was presented at the CARF annual general meeting on May 27.)

Major events within the purview of the Regulations Committee during the past years have concerned:

WARC '79 -- To take care of the continuing study of this very important development of concern to Amateur Radio, a committee has been established under the chairmanship of Bud Punchard VE3UD. Extensive work has been undertaken and much accomplished in the development of the Canadian Amateur position in respect to our desires and hopes for frequency allocations to be decided at the World Administrative Radio Conference of the ITU at Geneva in the fall of 1979.

Two major submissions have been prepared and submitted to the DOC commenting upon their first and second draft proposals. In addition, a paper on the benefits of a strong Amateur Experimental Service has been prepared and presented to the DOC. This paper has now been accepted by the ITU for presentation to all member states prior to the Conference.

Close liaison has been maintained on all related matters with the DOC, including attendance at DOC briefings for spectrum users. The FCC in Washington has been kept aware of our proposals and has reciprocated, to the extent that CARF has been invited to have a representative attend the FCC Advisory Committee on Amateur Radio meeting to be held in June.

Antenna Rights -- The sub-committee originally set up to enquire into the problems being experienced by Amateurs through restrictions being imposed by sub-division and condominium by-laws has now become a full-fledged committee in order to better handle these matters. The Antenna Rights Committee is under the chairmanship of Al Law VE3LAW.

Packet Radio -- DOC Notice No. DGTR-001-78 announced the DOC proposal for the re-assignment of our 220-225 MHz band to a new communication system designated 'Packet Radio'. In order to adequately investigate and evaluate this proposal, a working group under the chairmanship of Bill Wilson VE3NR has been established.

Meetings have been held with Amateurs from the Montreal and Ottawa areas who are well versed not only in radio techniques but also in computer operations.

A letter has been developed and dispatched to Amateur organizations across the country with suggestions for the preparation of comments to the DOC. CARF is now preparing comments for presentation to the DOC prior to the extended deadline of July 1, 1978.

CARF Radio Regulations Handbook -- This publication was up-dated to reflect changes in the General Radio Regulations. The changes were published in the March 1978 issue of 'The Canadian Amateur'.

CARF Radio Operator's Handbook -- Drafts of various chapters of this new CARF publication have been reviewed for accuracy relative to Canadian legislation.

Besides the above items, the usual close liaison has been maintained with the DOC on matters concerning the Amateur Experimental Service.

A.P. Stark VE3ZS, Chairman

No exams until October

The DOC is implementing a new policy concerning theory exams and they will be held on a periodic basis, probably four or five times a year. The new exams will not be ready for some time and hence there will be no examinations held until October.

The code test will be available at any time, however, and if passed credit for it will be valid for one year. Information was scanty at press time but it is hoped that full details will be available for our next issue.

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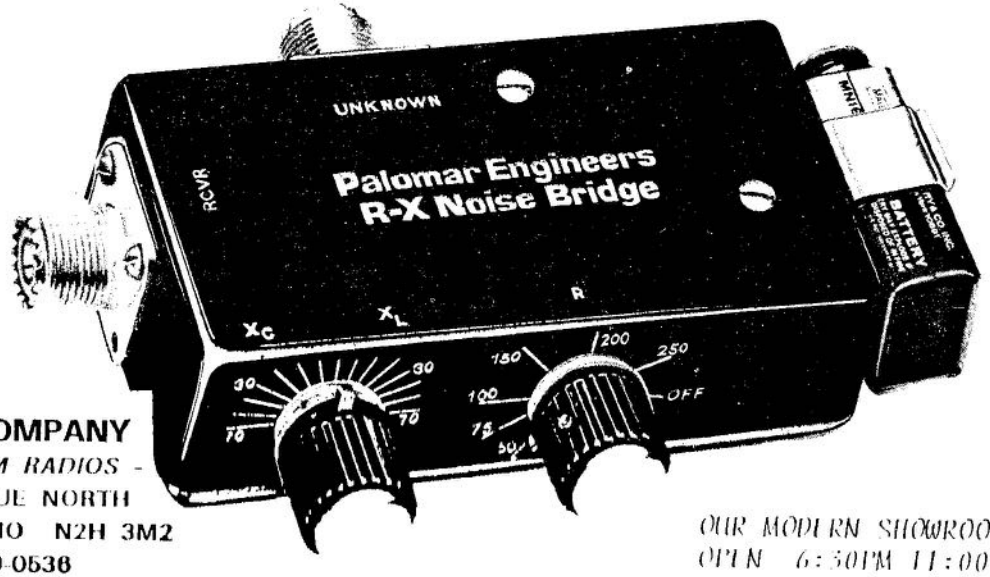

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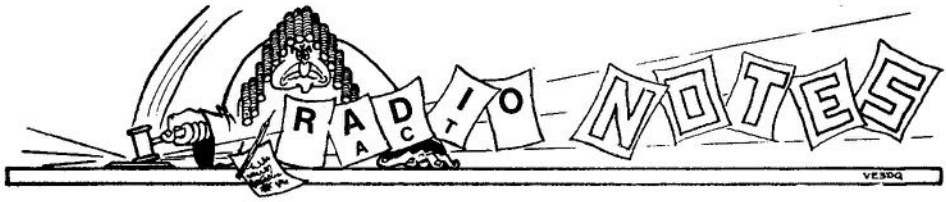

Four Regina CB operators were hit with fines totalling $700 or six months in jail, following conviction in a provincial court on charges arising from a series of RCMP-aided raids by DOC last February.

Equipment worth $3,000 including illegally modified GRS (CB) radios, linear amplifiers and Amateur gear were seized.

* * * * * * *

A Burlington, Ont., man was convicted of owning unlicensed radio gear and was put over for sentencing and the hearing of another charge.

In Cranbrook, B.C., three GRS (CB) set owners had their equipment seized after ignoring RCMP warnings to obtain licences and prosecution under the Radio Act is expected.

* * * * * * *

D.J.Belbas, 20, of Winnipeg was fined $500 or two months in jail, in April. He was convicted for deliberately causing interference on Amateur nets by jamming with music, unmodulated carriers and other forms of interference.

Direction-finding fixes by DOC and local Amateurs aided in his conviction.

(Keep up the good work, gents!)

Salvaged Parts: Applications to Antennas

W.J. Karle VE2ECW

Those of us who make our own antennas have a need for insulators and conductors of various sorts. A good collection of salvaged parts can be a help to the antenna builder.

Let's consider antenna conductors as a first example. Depending on the frequency and type of antenna design, one needs different kinds of conductors. Simple wire antennas, such as the centre-fed dipole, the folded dipole, and the end-fed Hertz, are fashioned from wire of various dimensions. The longer antennas and/or those with only two supporting points use fairly heavy wire of about 10, 12, or 14 gauge. Usually, one wants to use hard drawn, Copperweld, or stranded copper wire.

These wire thicknesses and compositions are hard to find when one is "scrounging" for materials. The familiar wiring used in residential electrical work can be used. The cable consists of three wires, two of which are plastic insulated and the third is bare. The wire can be removed from the cable by slitting it along its length. The wire is soft drawn copper. You can make it into hard drawn by attaching one end to a solid object. Attach the other end to an automobile's bumper. Put the car into gear and begin stretching the wire by applying a smooth and even pull. This trick has worked well for me but the greatest length that I have stretched without breakage has been only about 50 feet.

A source of stranded copper wire is lamp cord. While it consists of two parallel stranded wires, the plastic insulated variety can be easily pulled apart. Leave the insulation on the wire except where you have to make a connection. You can drape the wire over tree limbs, around the room, and so on. This antenna wire is quite useful during portable operations because of its ease of use.

Amateurs like copper wire because of its low resistivity and its ease of soldering. On the other hand, aluminum wire is a good conductor of radio frequency energy. A new product by Multicore named Alu-Sol 45D facilitates making an aluminum bond. Aluminum wire can be purchased as aluminum clothes line. You can also find it around some building sites.

When you don't need strength in the conductor, a thinner wire can be used. The enterprising parts salvager knows

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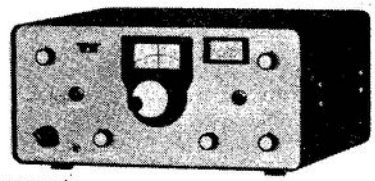

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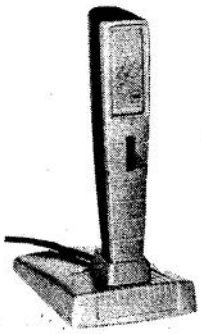

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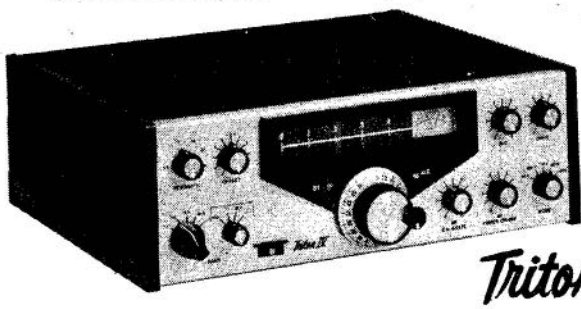

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that a deflection yoke in a television receiver consists of several hundred feet of 24 or 26 gauge soft drawn copper wire. Under load this wire tends to get longer. As you know, this increase in length lowers the resonant frequency of a half wave antenna. Thus, the wire must be supported at several points. The very thinness of the wire means that it has low mechanical strength. For this reason, too, it needs suitable support.

Most of the foregoing applies to the construction of wire beam antennas, both fixed and rotary. What of those rotary antennas made from aluminum tubing? I admittedly do not have a good source of aluminum tubing other than a visit to the local hardware store. It has been pointed out to me, however, that building sites and electrical contractors might yield scrap electrical conduit. Perhaps one of you has an idea for a source of free or inexpensive aluminum tubing.

As you move higher in frequency, not only do antenna elements become physically smaller, but also new shapes come into play. Welding rods, aluminum rods and tubes, stiff copper or aluminum wires are used for elements in parasitic beams. These materials are easily obtainable. Even more readily available is metallic window screening which can be used to fashion reflective surfaces for plane, corner, and parabolic reflectors. The ubiquitous tin can serves as a cavity trap and as a horn radiator at UHF and microwave frequencies. There is even one story making the rounds of a group of English microwave enthusiasts who have used garbage can lids in their antenna experiments!

As for antenna insulators, plexiglass

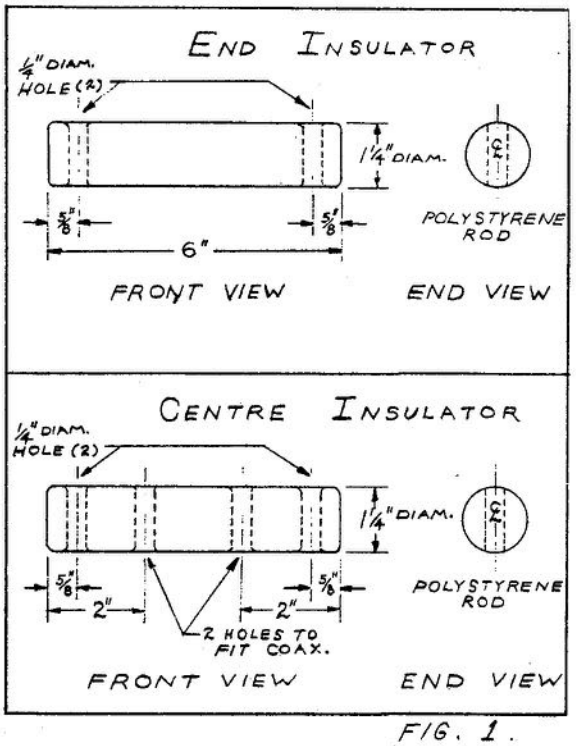
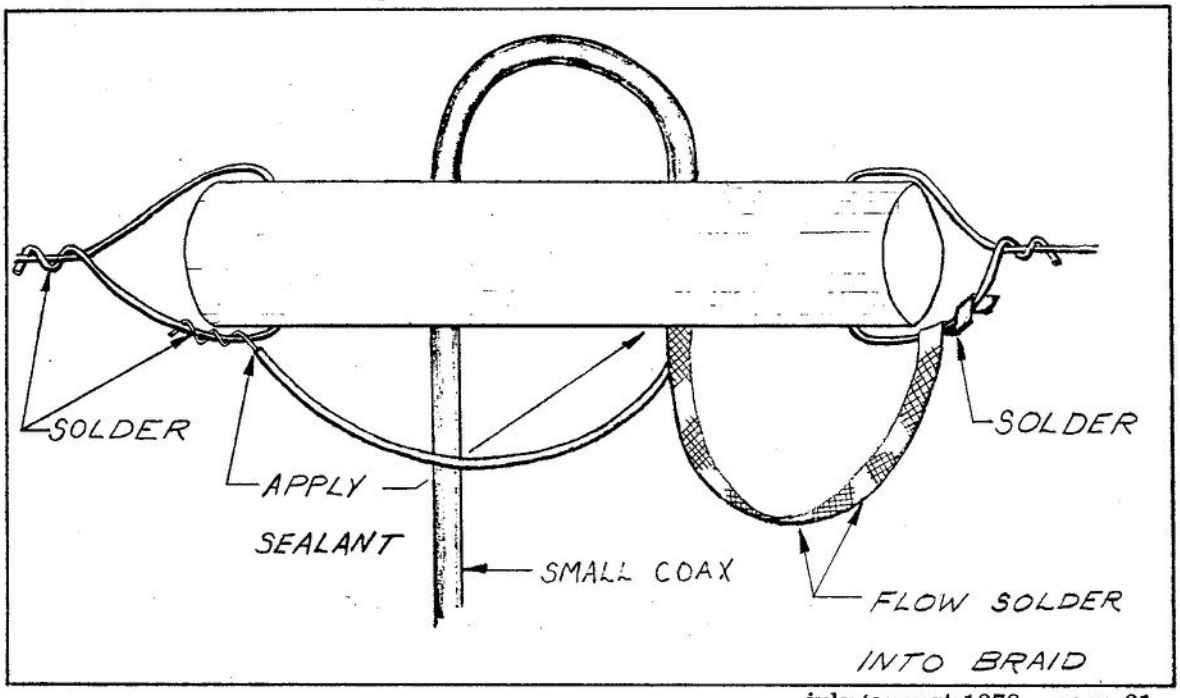


FIG. 1.

Fig. 1 ↑ Fig. 2 ↑



scraps can be made into fairly good ones. It takes a little work with a saw and a hand drill but the cost will turn out to be much less than those available from your local electronic parts emporium.

Figures 1 and 2 show the end and centre insulators which I have made for my 40 meter and 20 meter dipoles. The end insulators are long because a long leakage path between the wire termination and the supporting halyard is desirable. The ends of a resonant half wave antenna, you will recall, are high voltage points. hence the length of the insulators. The length of the leakage path could be increased by cutting several parallel grooves around the circumference of the insulator.

When cutting and drilling Plexiglass, certain techniques should be followed. Use a saw blade which is suited for such work; other blades tend to bind. Drill holes well away from any edge. I generally position a hole one and one half to two hole diameters away from any edge. In the case of these insulators, I also counter-sunk the hole on both sides so that the wire and halyard rubbed on a rounded rather than a sharp edge. It is a good idea to smooth all edges with fine emery paper. Finally, try to keep the Plexiglass surface as smooth and unmarred as is possible. Smooth surfaces discourage the collection of dirt.

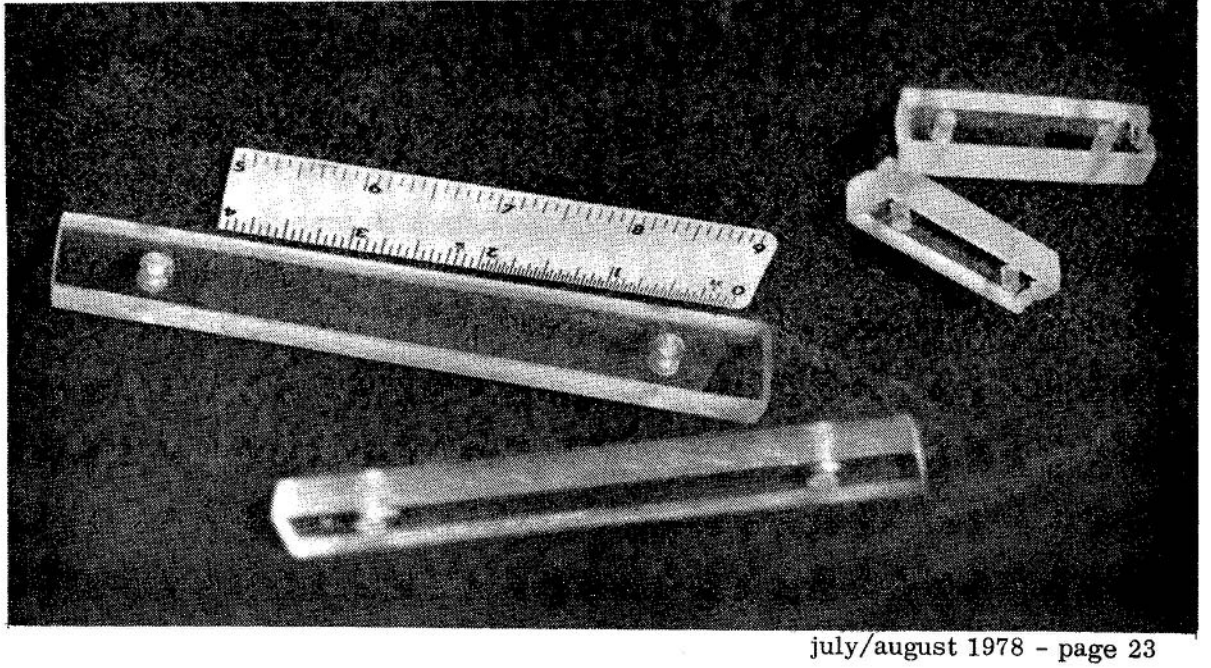
A centre insulator (Fig. 2) must meet three objectives: It must provide a means for secure attachment of the antenna wires and the transmission line. It must support the transmission line so that stress is not placed on the attachment points, and it should provide some means of waterproofing the transmission line.

In Fig. 2 the antenna wires loop through the ample and smooth holes before being soldered. The centre conductor and the braid of the coaxial cable are soldered to the wires at the loops. At these points, flexing is minimal. The first objective has been met.

Note how the transmission line passes through the body of the insulator and then passes through again. This method transfers the weight of the cable to the insulator rather than to the attachment points. It does it without the use of clamps or layers of electrical tape. The second objective has been achieved.

The third objective, waterproofing, is a difficult one to satisfy. The techniques shown here have proven successful after three years of continuous exposure to the elements. Note that the braid has been separated from the centre conductor and then flattened. A little solder has been flowed into the braid at a few points. This procedure seems to prevent the braid from acting like a wick which would draw moisture into the cable. The braid and centre conductor are formed into gentle loops thus making natural water drips which further discourage the collection of moisture. Finally, silicon rubber sealer is used on the end of the

Figure 3



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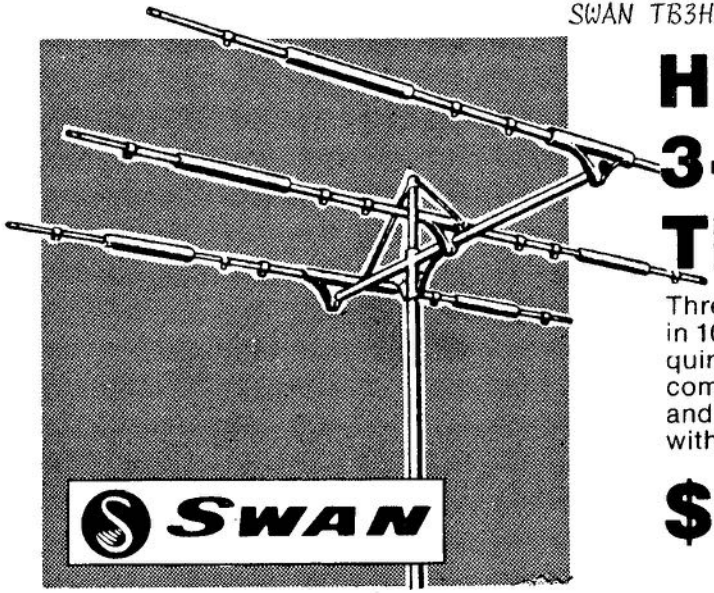

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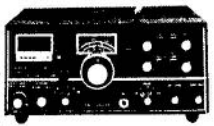

750 CW —

If you're ready for 700 loud-talking watts, you're ready for the new 750CW.

- 700 watts P.E.P. input on SSB
- 400 watts DC input on CW
- CW audio filter selectable 80 or 100 Hz.
- CW sidetone monitor with adjustable pitch and volume control
- 80 through 10 meters, USB, LSB, CW
- Selectable 25 or 100 KHz crystal calibrator
- Standard 5.5 Mhz, 2.7 Hz bandwidth crystal filter or optional accessory 16 pole filter available with 140 Db ultimate rejection.

Accessories
- VX-2 Vox
- MK-II Linear amplifier
- DD-76 Digital Dial

The 750CW is a CW man's dream come true. What's more there's a long list of accessories you can add later for increased performance.

350A —

- 300 watts P.E.P. input SSB
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- CW audio filter 80 and 100 Hz selectable
- Built in 117 VAC power supply and speaker. (220 VAC power supply available on special request)

Accessories
- VX-2 Vox
- 14A DC Converter
- 1200X linear amplifier

- Crystal Calibrator (350A only)

350D —

- Same basic features as 350A except added feature of
- 6 Digit LED frequency display with readout to 100 Hz

Both the 350A and the 350D are compatible with the same line of Swan accessories that has built a reputation for reliability and performance that's second to none, including linear amplifiers to boost your power to the legal limit.

So they're perfect for novices or anyone else because you can build capability as you need it.

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SWAN PSU-3 ps/spkr	239.00
SWAN 350A (int.p.s.)	849.0
SWAN 350D " "	995.00
SWAN #45 80-10Meters mobile antennas	165.00

centre conductor's dielectric and at the point where the braid and centre conductor exit from the cable jacket. An application of plastic electrical tape at the same points will work but the silicon caulk seems to make a tighter seal.

Plexiglass strips make suitable spacing insulators. An example is shown on the left of Figure 3 along with some light-weight end insulators. One can also make open wire spacers by drilling under-sized holes in Teflon rod and then forcing the wires through. Friction alone will keep the insulator in position.

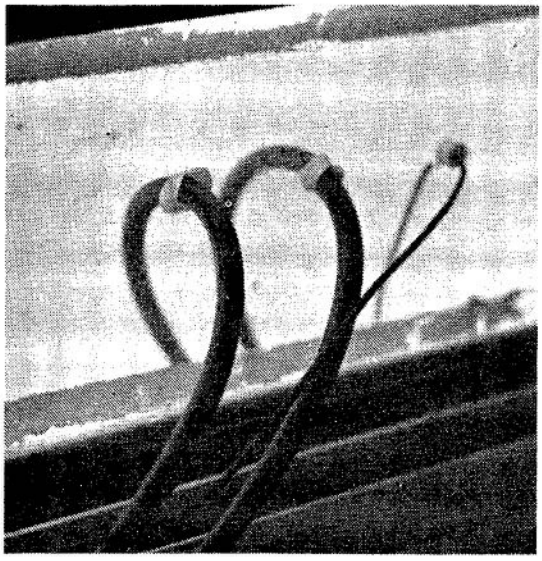

Figure 4

How can you bring your transmission lines into the station? Figure 4 shows one solution. A thick plastic panel is fitted between the raised storm window and the sill of an aluminum window frame. During the summer months the panel fits between the screen and the sill. The panel is easy to make and, because it is transparent, it does not attract attention or deface the house. You should cut the vertical size so that the storm window and screen locks will be engaged when the panel is in place. If this is not possible, then you should arrange some locking scheme such as passing a set of screws through the window slider channel and the frame. A similar panel is used between the inside window and its sill.

Before ending this short commentary on the application of salvaged materials to antenna work, let's consider one last item. Those of us who stretch wire antennas between trees are faced with relieving strain when the trees move in the wind. At this location, the spring used on one end of each of the antennas is a storm door spring ... salvaged, of course!

- Classified ads —

Single insertion is $1.00 (minimum charge) for 10 words and $1.00 for each additional 10 words. To renew, send copy and payment again. Deadline is first of month preceding publication.

Put your membership number and call (not counted), if any, at the end of your ad. Print or type your ad and include your address with postal code. If using a phone number, include the area code. CARF and The Canadian Amateur accept no responsibility or liability for content or matters arising from ads.

Send to CARF, Inc., Box 356, Kingston, Ont. K7L 4W2.

FOR SALE: 144-148 MHz 16 element YAGI with balun 17 dBI 21 foot boom. $100 or best offer. R. Lunan, Box 371, RR 1 Hudson, Q uebec J0P 1H0. 514-458-5948.

FOR SALE: Complete, all solid state 2 meter repeater. Contact Gord VE3EYW, 15 Grandmont, Sault Ste. Marie, Ont. P6B 3W1.

FOR SALE: Heathkit Q-multiplier with manual. $18 postpaid. Glenn McMichael VE3CGU, Box 231, Goderick N7A 3Z2.

FOR SALE: HW101, Power supply, SWR meter, mic., speaker, manual. $400.00 R. Spurrell VE3 IBQ, RR 3 Hanover, Ont. N4N 3B9. 519-364-3629.

FOR SALE: Collins KWM2A with AC power supply and speaker. Mint condition, serviced by Collins. Spare relays and tubes. Best offer. Roly, P.O. Box 194, Bridgeworth, Ont. K0L 1H0. Tel: (705) 292-7312.

WANTED: Photos, news clippings, stories concerning Amateur activities related to the Canadian Armed Forces; also info on the old Air Force Amateur Radio System (AFARS). Capt. Ron Gebhardt VE1VE/3, 7 Rigel Rd., Ottawa, Ont. K1K 0A1.

FOR SALE OR TRADE: Stoddard Field Strength Meter Model NM20B c/w carrying cases, AC PSU, cables, tripod. Marconi CH-25, 4 channel SSB transceiver suitable for commercial licensing c/w auto antenna, tuner. Trade for KWM2A, Atlas 350. S.T. Chisholm VE4AI, 551 Bruce Ave., Winnipeg, Man. R3J 0W3.

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The Barlow-Wadley XCR-30 is so sensitive, so stable, it can take you anywhere in the world and retain drift-free contact.

Acclaimed by technical experts for its outstanding performance, the Barlow-Wadley is uniquely designed to give superlatively clear and unjumbled reception of the full short-wave spectrum — from 0,5 to 30 MHz.

It offers a completely new concept in radio design — top performance communications receiver facilities and yet completely portable, weighing only 4 kg — where professional performance and portability are the criteria, you will find the Barlow Wadley — on ships, in embassies, with radio enthusiasts and the military. Also an ideal radio for the man in the street who prefers that little bit extra.

Easy tuning and maximum signal separation

The secret of the Barlow-Wadley's performance is its loop circuitry and crystal control which has an uncanny ability to find — and then to hold — the most elusive stations.

Yet, tuning couldn't be easier.

One dial puts you roughly on target. A second dial homes in with pin-point accuracy to bring out the programme you seek.

Then a separate knob fine-tunes the antenna to give you the strongest possible reception.
And all the while a meter tells you when you're spot-on.
The Barlow-Wadley has a flip-up log-card holder so you can jot down important frequencies.
It works on six batteries. Or, with an adaptor, from the mains.

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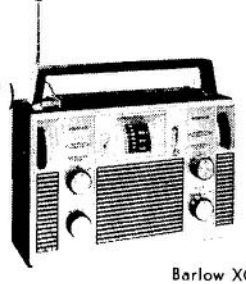

Barlow XCR-30

WSI THANKS THE HAMS IN MONTREAL (VE2QC??) WHO DIRECTED Monsieur YVES DAVID WHO WAS WANDERING AROUND FOR ONE FULL YEAR FOR A BARLOW WADLEY SOURCE!! THANKS FELLOWS!

Shortwave Listening

PRINTED CIRCUIT BOARD

Etching made easier

Ferric Chloride is the most common type of solution used for etching printed circuit boards. Here a few tips on using it wisely as an etchant.

Etching time can be greatly decreased if the etchant is preheated before use. The exact temperature is not too important but an elevated temperature in the range of 100 - 135 degrees F is sufficient. The etchant should not be over heated as objectional fumes will be emitted. Some experimenting will be necessary to get the best temperature.

Regardless of the container you use, etching can further be speeded up through frequent stirring of the solution with a non-corroding instrument such as a plastic rod.

Many project builders tend to go through a bottle of etchant quickly and discover after only a few uses that the etchant has lost much of its etching power on a p.c. board. The solution at this stage is saturated with copper and naturally has a hard time dissolving anymore. Don't throw the etchant out. Heating as previously mentioned helps here as well. The heated etchant can more easily dissolve copper at higher temperatures as most solutions will. This in itself will extend the life of the etchant a fair amount. After using the heated etchant, place it in a refrigerator and let it cool completely. The dissolved copper will actually settle out at the bottom. One can then strain or remove the copper chunks from the etchant and the solution is ready to be reused. This method is called the heat and cool technique.

I have used the same etchant for almost two years now on many projects and the etchant appears to have almost indefinite life. Incidently, I use a microwave oven for heating the etchant but any other safe method can be used as well.

I found out the above points by pure experimentation as many Amateurs still do. Depending on your particular situation, some experimentation will naturally be necessary to optimise the whole method. Happy etching to all . .

DOC NEWS

- Goodbye to coax? DOC and the Manitoba Government Telephone System is trying out a fibre optics transmission system in a small town, Elie, Manitoba. It will bring telephone service, cable TV, FM radio and two-way computer signals to allow for such services as 'teleshopping' or information retrieval. This major project has as one of its aims the stimulation of a new and promising technology in which Canada is taking a lead ... fibre optics.

- An agreement between DOC and the Manitoba government has made it possible for Manitoba residents to obtain information about both the federal and provincial governments by dialling one phone number. The "Citizens' Inquiry Service" will provide the public with the telephone number, location and name of a government official who can provide information on various subjects.

New policy for affiliation

During the recent Board of Directors meeting, it was approved that the previous requirement of 5 CARF members for affiliation be deleted. There are few, if any, clubs in Canada that do not now have the required CARF membership and it is added work for the club executive to determine and list these members.

All that is now required is a letter from the club executive requesting Affiliate status with the national society and your club will immediately start to receive the benefits of club affiliation.

Affiliate clubs receive copies of the CARF News Service bulletins and News Releases, and free use of the CARF Out-going QSL Service for the club station. In addition, Affiliate clubs will now receive a rebate of $1.00 for all new CARF members whose application comes through the club. There are about 14,000 Canadian Amateurs who are not yet members of the national society, so your club can receive a substantial amount of revenue by holding a CARF Membership drive!

Note that CARF is the Canadian Amateur's own organization. It is controlled, managed and fully financed by Canadians. CARF is fully dedicated to the Canadian Amateur and to the belief that Canadian Amateurs are best able to determine their own needs, free of any foreign influence, control or support. This puts CARF in a unique position when it comes to dealing with the Government and Amateur affairs in this country.

Let your fingers do the talking

The expensively researched teletype like machine developed by Bell Northern Research for the deaf to hook on their phone lines which we described in our last issue has been trumped in a way by three Toronto men.

Without government grants (they were cold-shouldered by both the feds and by Bell Canada) S.L. Wassenaar, Dr. William Wassenaar and Anton Hart are currently testing their invention which uses the ordinary touchtone phone to produce letters of the alphabet on a 16 character video readout.

Acoustically coupled to any touchtone phone, one can spell out words by using the letters on the buttons. By touching the star, zero or the hash mark on the bottom row one can, for example, select the "A", "B" or "C" on the "1" button. Those using the system rapidly caught on to using the old CW trick of abbreviations.

The unit, about the size of a cigar box, can be run on AC or batteries and carried about and coupled to any touchtone phone. Its advantage over the currently used surplus teletypes is its small size, portability and it will probably sell for about $300 less than the Bell Northern machine.

EMI Committees active

The constant problem of radio interference and its increase as new gadgets come on the market is receiving more intensive attention from two official agencies.

CARF EMI Committee chairman Barc Dowden, VE3TT, (who also heads the Tariff Committee) has attended a series of meetings held recently by both the Canadian Radio Techanical Planning Board and the Canadian Standards Association committees dealing with the subject of "electromagnetic compatibility" ... that is, good old radio frequency interference.

The chief interest of Amateurs in this problem is to push for standards and controls applying to the rejection of unwanted radio signals by home entertainment equipment.

1 Skyridge Rd., West Hill, Ont. M1E 4N7
Udo Franz, VE3FFA (416) 284 7388

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TYPE-2 2m FM PLL SYNTHESIZED MOBILE TRANSCEIVER

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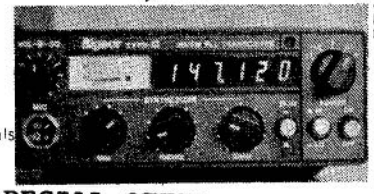

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- **143-149 MHz, continuous coverage.**
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- **Two oddball split choices.**
- **OSCAR 10 meter receiver** Synchronized with 2 meter OSCAR transmission.
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- Carrying handle.

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We carry-Nye Viking-Swan-Icom-Cushcraft-FDK-Bird Watt Meters-Mosley-Vibroplex-Larsen-Hygain-Yeasu-Antenna Specialists-KLM-Telex-Sigma-JMR-Shure-CDE-Delhi Towers-KDK-Bearcat-Amphonel coax connectors-Roton cable 8448-and much more give us a call....73, Udo VE3FFA

CARF at tariff hearing

CARF Tariff Committee chairman Barc Dowden, VE3TT attended a public hearing of the Tariff Board in Ottawa in May. Although the subject under discussion was not Amateur equipment and the tariffs on it, Barc went along to see how the Board functioned and will have a brief ready when it hears the cases to be made for reduction in the tariffs on "hobby" equipment.

The hearing was considering "collectibles" and the tariffs on such items as antique guns, aircraft and cars. Barc seized the opportunity to note that there is a widespread interest in collecting antique radio and telecommunication equipment and showed the Board a very old Morse key, made in Canada and reputed to have been used by Marconi. He made the case that if items fifty years old in other fields may be eligible for designation as a duty-free collectible then because of the relative newness of radio the key could be compared to a thousand year old item of another kind.

He offered to sit down with government representatives and help to define or codify antique radio equipment in order to make things simpler for Customs officers and collectors.

The Board will be holding hearings in various centres later this year on the subject of hobby equipment and at that time the CARF committee will present a brief requesting duty batement on imported Amateur radio equipment.

CARF brief on Experimenter Certificate

After reviewing and studying the more than 200 briefs, letters and comments it received on the proposal by DOC to introduce the new code-free "Experimenter" certificate and to promote the technology of "packet radio", your Federation submitted its brief on behalf of its members and those who sent their comments to it. The following is the summary appearing at the end of the brief.

The Federation wishes to make it clear that its purpose in submitting this brief is not to forestall change but to encourage it. The decisions taken in this matter are the most important decisions Amateurs have faced in recent years and will have the effect of shaping the future of Amateur Radio for years to come. These decisions must therefore be taken democratically with full realization of their effects on our hobby.

The Federation welcomes the Departments expression of interest in promoting new avenues of experimentation for Canadian Amateurs. We believe this proposal can be improved in a number of ways and that these improvements will serve the Department's wishes to an even greater degree.

These changes can be summarized as follows:

1) Advanced Amateurs, on endorsement by a Radio Inspector, should be authorized to use all modes of emission permitted to the experimenter.

2) Pulse mode emissions in the 144-148 MHz band should not be permitted.

3) This new class of Amateur operator should be permitted to use all Amateur frequency assignments above 144.0 MHz.

4) Range of knowledge required for this new certificate should be in accordance with that recommended at the CARF National Symposium, and that two paths be permitted for entry into this class of certificate, one being a major knowledge of computer techniques and the other being a major knowledge of radio engineering. Both paths would require the entrant to have a limited knowledge of the other technology.

5) "Experimenters" wishing to use H.F. should only have to pass a code test.

6) The restriction of packet radio to the 220 MHz band should be lifted.

7) Protocols and hierarchy of packet radio systems should be determined by Amateurs doing the experimenting rather than being imposed by the Department.

8) Regulations governing packet radio should be abandoned in favour of flexible guidelines which could be reviewed periodically.

9) The band plan proposed herein

should be adopted rather than limiting the 220-225 MHz band to packet radio as proposed. This band plan to be flexible to allow changes as required.

10) Restriction of packet length to 500 characters should be dropped in favour of allowing Amateurs to experiment with systems with a wide a range as possible.

11) The 15 watt ERP limitation should be revised to also cover digital/pulse emissions.

12) The method of identification to be modified and standardized to facilitate machine-machine communications.

13) As packet radio lends itself readily to "bootlegging" the Department should be prepared to develop its capability for sound enforcement action against illegal operations using this technique.

CONCLUSION

The Canadian Amateur Radio Federation Inc. welcomes the Department's interest in Amateur affairs, and feels that the proposed Experimenter Certificate and the packet radio proposal will be of great benefit to Canadian Amateur radio. In order to realize the full benefit from these proposals, however, the proposal should be free as practical from restrictions.

Further, we feel that by eliminating the restrictions highlighted in this brief, we will encourage a larger number of computer and electronic technologists to join the ranks of Radio Amateurs.

The address of the CARF QSL Bureau is Box 66, Islington, Ont. M9A 4X1. Sort cards alphabetically by country prefix, call (and for Canadian cards, by the number of the VE district) and send to the Bureau along with a stamped, self-addressed envelope with membership number in lower left corner of both envelopes.

U.S.WARC '79 Proposals

CARF at FCC meeting

(Bud Punchard, VE3UD, chairman of the CARF WARC '79 Working Group, attended the FCC Advisory Committee on Amateur Radio meeting in Washington, on June 5. Here is his view of the event.)

The U.S. Federal Communication Committee's ACAR met to discuss Amateur comments on the FCC's 8th Notice of Inquiry, which outlines the U.S. draft proposals for frequency allocations to Amateurs and other radio spectrum users and which in finalized form will be the U.S. position at the World Administrative Radio Conference in 1979.

The meeting was attended by about 30 people representing various groups including AMSAT, Department of Defense, ARRL and IARU while CARF was represented by myself. All present but two were Amateurs.

The meeting, chaired by John B. Johnston, head of the FCC Personal Radio Division, outlined the status of ARAC preparations. He said that the U.S. expects to have its final proposed allocations ready by September 1978. Comments on the 8th NOI were to be in FCC by June 30.

Dick Baldwin, W1RU, editor of QST Magazine, gave an overview of international preparations related to Amateur radio, noting that Amateurs are better prepared for this Conference than heretofore. Some countries have not yet begun to prepare for WARC so their attitude toward Amateur Radio is not known. He said that some 104 national Amateur societies which are members of the International Amateur Radio Union support the same basic Amateur allocation table. ARRL, however, has only received proposals from nine of the IARU members so far*.

The FCC has visited thirty or forty countries out of a total of 154 member countries of the International Telecom-

---

*(IARU does not recognize CARF as a national society. Ed.)

- 100% solid state SSB/CW Transceiver
- Full coverage of 10 – 160 meter bands
- 350 watts P.E.P. or CW input
- Digital Dial Frequency Readout (optional)
- Plug-in auxiliary VFO or crystal oscillator (optional)

THE ATLAS 350-XL

Atlas 350-XL
Model DD6-XL Digital Dial Readout
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munications Union, to discuss the allocation of the whole spectrum. The IARU is attempting to determine theposition of the respective governments of its members. Out of 57 countries already reviewed, many have not yet made known their proposals, so it is too early to measure the support which Amateurs will get at WARC next year.

An illustrated presentation was given by W2AZQ, Carl Lundgren, on proposals for an Amateur allocation in the 160-190 kHz band, which holds special interest for ultra low power experimenters. He described successful experimental work already accomplished by Amateurs with powers of 1 milliwatt ERP and efficiencies of about 1% at distances of 200 miles! There appears to be no valid reason why Amateurs cannot co-exist with other services in this band when using power levels of 100 mw ERP.

Because power companies use power line carrier systems for control of their distribution grids, they are afraid of interference from Amateurs jeopardizing the integrity of these networks. The FCC does not want to be responsible for blackouts and have already opposed allocations for high power broadcasting in this band. If interference from very low power Amateur equipment is a reality, then the power companies are indeed in a precarious position with other forms of interference! The ACAR will continue to press for a 100 mw ERP allocation between 160-190 kHz but would prefer a 100 kHz band.

The FCC is proposing 1800-1860 kHz shared, 1860-1900 kHz exclusive and 1900-2000 kHz shared for Amateurs. The ACAR concluded that this is not satisfactory and will continue to request 100 kHz exclusive in this band.

The 100 kHz bands proposed at 10, 18 and 25 MHz are too narrow and not acceptable.

It was agreed that giving up 50 kHz between 3950 and 4000 kHz, in the 75 metre band, for broadcasting in return for new HF bands was also unacceptable because of propagation differences.

The lowering of the 40 metre band to 6950-7250 kHz for exclusive Amateur use, is acceptable if the broadcasters can be moved out but this is unlikely and impractical.

The FCC proposal in footnote 205B of the ITU allocations to specify the top 10 kHz in each HF Amateur band for "disaster and relief" use was rejected as unnecessary.

Footnote 302A, specifying Amateur Satellite frequencies, was examined briefly with the conclusion that AMSAT would review all satellite frequency proposals carefully with the possibility in view of requesting "up" and "down" linke frequencies in particular bands to minimize interference.

The FCC's final position will not be known until about September 1978 when their proposed allocation table will be firmed up.

Equipment Review

"R-X Noise Bridge"
Palomar Engineers Box 455, Escondido, California, 92025

The CARF Toytester benefactor of the month is Ernie, VE3GNU. Ernie loaned us his Palomar Engineers R-X Noise Bridge. This little gadget allows a person to find out reasonably accurately and quickly what the complex impedance of an antenna system (or RF load) is, without putting an appreciable signal on the air.

First of all, let's look at the name of the device; "R-X" Noise Bridge". It is a "Bridge" because to measure the unknown impedance of the device under test (which is connected to the port connector labelled "Unknown") you adjust an "R" and "X" control until you get a null as indicated by your receiver tuned to the frequency at which you want to know the impedance of the unknown or load. The receiver is connected to the other port on the bridge labelled "Receiver".

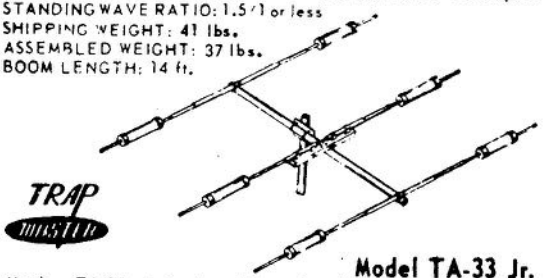
The R and X are the Resistance and Reactance (Inductive or Capacitive) components of the load. You should remember that question on the old Amateur exam where you are given the values of a resistance and reactance in series and are asked to calculate the magnitude of the impedance: the bridge gives you the

MOSLEY ANTENNAS

Model TA-33 for 10, 15, and 20 meters

The Mosley TA-33 three element beam provides outstanding 10, 15, and 20 meter performance. Exceptionally broadband – gives excellent results over full Ham bandwidth. Exclusive Mosley trap design offers resonant frequency stability under all weather conditions. Element center sections are of double thickness, aluminum to reduce sag. Boom requires no bracing. Heavy duty universal mounting plate fits masts up to 1½ inch O.D. Antenna handles full KW AM/CW or 2 KW P.E.P. SSB input. Feed with one coax line, RG-8/U recommended. The TA-33 may also be used on 40 meters with TA-40 KR conversion. Complete with Hdw.

FORWARD GAIN: Up to 8 db. TURNING RADIUS: 15.5 ft.
FRONT-TO-BACK: 20 db. or better WIND LOAD: 114 pounds.
MAX. ELEMENT LENGTH: 28 ft. WIND SURFACE : 5.7sq. ft.
STANDING WAVE RATIO: 1.5/1 or less
SHIPPING WEIGHT: 41 lbs.
ASSEMBLED WEIGHT: 37 lbs.
BOOM LENGTH: 14 ft.



Model TA-33 Jr.

Mosley TA-33 Jr. has quality and performance found in the TA-33. Rated to 300 watts AM and CW, - 1000 watts P.E.P. on SSB. Complete with Hdw. The Junior may be converted to MP-33 with higher power rating with MPK-3 Kit. Shipping weight 28 lbs. Assembled weight 20 lbs.

TA-33 JR.	$195.00
TA-33	259.00
CL-33	295.00
CL-36	360.00
TA 33 JR Pwr, Kit	66.00
RV4C 40-10 mtr vertical	85.00
RV8C 80 mtr conversion	55.00
P12 2 mtr ground plane	35.50
MY-144-9 el 2 mtr yagi	54.50
MM-144 mobile antenna	31.50

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ATB-34 4 el 10-15-20 mtr beam	329.95
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Rotor wire	.22 ft.
RG8U	.25 ft.
RG8U foam	.28 ft.
RG-213 50 ohm	.39 ft.

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Value	$880.00

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KENWOOD RADIOS

TS-520S	999.00
TS-820S	1379.00
TR-7200A	285.00
TR-2200A	329.00
TR-7400A	579.00
TR-7500	429.00

All antenna orders over $450, you can deduct 5% or have shipment sent prepaid anywhere in Canada except VE8 land and Labrador.

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VE3BPM

resistance and reactance values separately. The R value is read directly from a scale that goes up to 250 ohms, calibrated at 25, 50, 75, 100, 150, 200, and 250 ohms. The X value is obtained by taking the X reading from the scale, marked plus and minus 70 (pf) in increments of 10, corresponding to XC and XL, and using the reading to look up a value for X on the reactance chart included in the Operator's Manual. The number thus obtained must now be divided by the Receiver frequency in MHz to arrive at the value for X at that frequency. This is because reactance varies with frequency, and to allow one chart to be usable for all frequencies, it is "normalized" or gives the reactance value at one MHz.

Concluding our dissection of the device's name, we come to the word "Noise". The reason it is useful from one MHz to 100 MHz is because it uses a wideband noise generator to give a source of RF energy across the band. Just think of the size and cost of a signal generator using an oscillator to do this! Instead, your receiver looks at a narrow portion of this wideband spectrum and lets you know when you have adjusted the R and X controls such that R equals the resistive component of the unknown, and similarly for the X control and component.

The useful range of the Noise Bridge is from zero to 250 ohms resistive and for reactance values up to the reactance of a 70 pf capacitor at the test frequency. You can calculate that yourself for a band of interest.

Because the "detector" used is your receiver, the power required on a given frequency is extremely low -- much lower than that from a Grid-Dip Oscillator (or solid-state equivalent), and at least 60 db less than that radiated when using a VSWR bridge to tune an antenna.

The suggested uses for the Noise Bridge are antenna resonating (all kinds) finding resonant frequencies of tuned circuits, measuring values of unknown inductors and capacitors, and pruning transmission lines to integral multiples of quarter or half wavelengths.

In conclusion, the Palomar R-X Noise Bridge is a handy device for measuring the approximate values of R and X components of RF impedances at frequencies between one and 100 MHz. It requires a receiver capable of being tuned to the frequency of interest, but for Amateur use that's no problem because you already have that receiver. Operation is extremely simple: connect the unknown and receiver to their respective SO-239 connector on the Bridge, snap in a standard nine-volt battery, turn on the Bridge snap in a standard nine-volt battery, turn on the Bridge and you will hear a loud rush of noise in the reciever. Adjust the R and X controls for a null in the noise and read off R and X as above. If you are an antenna experimenter, you need one of these: and it costs less than the parts required to build the impedance bridge in the ARRL Handbook.

WARC 1979 Report

Comments on the Canadian Interdepartmental Committee for WARC'79 second draft proposal for the Canadian position at Geneva were due on June 1. CARF's Working Group submitted the following comments on the frequency allocations proposed by the CIC for the Amateur bands.

The CARF Working Group on WARC '79 has carefully examined the Second Draft Proposal dated 11 February 1978 as they affect the Amateur band allocations. The rapid increase in the number of Amateur licences will force more activity on the upper HF and the VHF bands. This could be beneficial but will not compensate for the loss of present activities because of the difference in propagation characteristics.

The present world total of Amateurs is now estimated at about one million (there are 300,000 in Japan alone). By 1982 there should be well over 1.2 million and by 2000 more than two million. Any lowering of standards for licensing would increase these figures considerably.

Spot density checks made in Ottawa on weekdays in early 1978 produced the following data. The smoothed sunspot number was 46 and the propagation forecast was fair to good;

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HAMTRADERS INC.

BAND	WIDTH	TIME (GMT)	NUMBER OF SIGNALS HEARD	AVERAGE SPACING
3.5-4.0 MHz	500 kHz	2315-2400 0115-0145	286 258	1748) 1937) 1842 Hz
7.0-7.3 MHz	300 kHz	0155-0215	134	2238 Hz
14.0-14.35 MHz	350 kHz	2115-2140 1815-1845	241 274	1450) 1277) 1363 Hz
21.0-21.45 MHz	450 kHz	1630-1655	144	3125 Hz
28.0-29.70	1700 1Hz	2100-2130	133	12760 Hz

Weekend densities are higher than these figures. Note that 7.0-7.3 MHz is relatively unpopular because of high incidence of international broadcasting stations on this partially shared band. Many of these stations are operating on frequencies not allocated to the broadcasting service.

Detailed comments on the proposed Amateur allocations are:

BAND	ORIGINAL CARF PROPOSAL	CIC 2nd DRAFT PROPOSAL
0 - 10 kHz	0 - 10 kHz shared	Not allocated

Allocation to Amateurs on a shared basis would greatly spur development of this band. Because, however, it is unallocated it is assumed that anyone is free to use it, subject, of course, to intereference limitations.

160 - 200 kHZ	10 kHz slot	No Amateur allocation

Notwithstanding the fact that no specific Amateur allocation is being proposed at this time, it is understood that consideration will be given to Amateurs applying for licensing in the band between 10 and 535 KHz on a case by case basis at specific locations with elapsed time and power limits under Note 115 of the General Rules for Assignment and use of Frequencies.

1800 - 2000 kHz Shared	1800 - 2000 kHz Exclusive	1800 - 1900 Exclusive

If only a portion of 1800 - 2000 KHz can be allocated on an exclusive basis, then the remainder of the band should be allocated to Amateurs on a shared basis.

Since the RADIODETERMINATION services do not require all of the 1800 - 2000 KHz band, the Federation recommend the following

1800 - 1900 KHz AMATEUR

1900 - 2000 KHz RADIODETERMINATION
Amateur

3500 - 4000 kHz Exclusive Amateur in Canada - shared elsewhere	3500 - 4000 kHz Exclusive Amateur Worldwide	3500 - 3800 kHz AMATEUR exclusive 3800 - 3900 kHz FIXED, MOBILE 3900 - 4000 kHz BROADCASTING

Because of propagation characteristics, the important and useful activities for which this band is used for distances up to 300 miles could not be transferred to other bands such as those proposed for 7 MHz or 10 MHz

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AN AMERICAN COMMUNICATIONS CORPORATION

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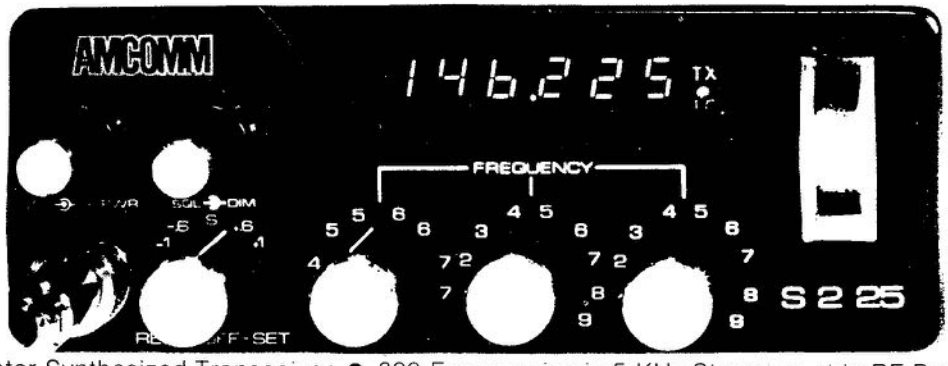

2 Meter Synthesized Transceiver ● 800 Frequencies in 5 KHz Steps ● Variable RF Power 2-25 Watts ● 6 Digit LED Frequency Display Exceptional Transmit Audio ● Optional Plug-in Touch Tone Encoder.

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or to the VHF bands. This means that many of the hundreds of organized nets now in operation in this band, involving thousands of stations, would not be able to operate at all due to excessive interference problems.

Reducing the 3500-4000 kHz band to 3/5 of its present width and doubling the number of stations attempting to use it will result in an average spacing of about (1800 / 2) 3/5 = 540 Hz between stations. With the best filters available this spacing is unworkable.

Amateurs cannot help but question the rationale for allocation of 100 kHz between 3900 and 4000 kHz for broadcasting in Canada. The Federation finds no justification for the allocation of this 200 kHz to other services. It should be noted that Amateur experience has shown that the propagation characteristics of this band are not consistent with fulfilling the stated purpose of providing a "northern" broadcast service, over a large part of the year.

BAND	ORIGINAL CARF PROPOSAL	CIC 2nd DRAFT PROPOSAL
7000 - 7300 kHz	7000 - 7100 kHz exclusive worldwide 7100 - 7325 kHz exclusive Reg 2	6900 - 7100 exclusive AMATEUR

The present band is almost unuseable at night due to broadcast interference. An exclusive band away from such interference is imperative. It should be pointed out, however, that there are at present many "intruders" between 7000-7100 kHz which is now allocated exclusively to Amateurs, worldwide. Unless this situation can be cleared up the proposed allocation would leave Amateurs with only 6900-7000 kHz exclusive. Considering the enormous number of stations wishing to use the band and the projected increase in population, interference could make it almost unuseable. Reducing a 300 kHz wide band to 2/3 of its present width and doubling the number of stations attempting to use it in an average spacing of (2238 / 2) 2/3) = 719 Hz between stations. With the best filters available this spacing is unworkable.

An exclusive band at 7 MHz is essential because propagation characteristics make sharing very difficult. However, if there must be some sharing in part of that band, then sharing with Fixed services is preferable to sharing with Broadcasting services. The following allocation may be acceptable to Amateurs:

6800 - 6900 kHz	FIXED, Amateur
6900 - 7100 kHz	AMATEUR

10,000 kHz	10100-10400 kHz exclusive AMATEUR worldwide	10100-10300 kHz exclusive AMATEUR:Satellite worldwide

This is a new Amateur allocation which would be most welcome. It fills a much needed gap between the 7 and 14 MHz bands. It would be most important for emergency communication work when the MUF drops below 14 MHz and would partially compensate for loss of bandwidth at 7 MHz. It is recognized that Amateurs on this band could interfere with receivers using 10.7 MHz IF amplifiers. It is proposed to set up a series of tests to determine the level of interference which could be caused from Amateur transmitters operating at maximum permitted power levels into beam antennas removed by 400 kHz from the 10.7 kHz IF amplifier.

The reliability of radio paths between Vancouver and Toronto, Vancouver and St. John's Nfld, and Toronto and Tokyo have been studied for the bands 7, 14, and 21 MHz.

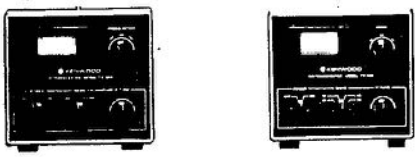
The increase in reliability with the addition of a band at 10 MHz is shown on page 6 of CCIR Doc B/CAN 7 Rev 3, 24 April 1978. Reliability is specifically significant when international disaster communications are being handled.

KENWOOD

TS-820S

The TS-820S is a 1.8 to 29.7 MHz SSB, CW, RTTY transceiver backed by our many years of successful experience and "know-how", as well as the most advanced electronic technology. The signal circuits of both the transmitter and receiver sections are quite simplified with the employment of a single conversion system for linearity. This transceiver also employs phase lock loop (PLL) circuitry. PLL technology allows accurate frequency derivation without introducing spurious signals. The TS-820S provides many outstanding features such as RF Processor, RF NFB, Mono-scale Dial, Digital Readout, RF Monitor, Noise Blanker, and IF Shift.

TV-502S TV-506

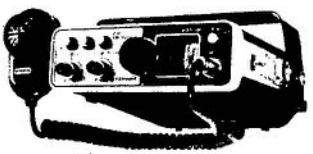


The TV-502S (TV-506) is a 2 meter (6 meter) band transverter for use with the TS-520S or TS-820 series. The working frequency range is from 144.0 to 145.7 MHz (50.0 to 54.0 MHz).

TR-7200A

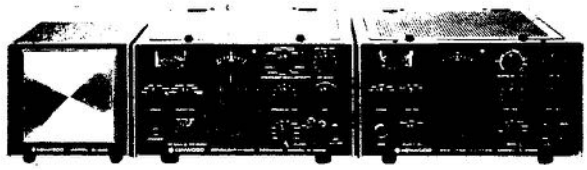
The TR-7200A FM transceiver is designed for use in the 2 meter band. The unique design of the TR-7200A permits utilization as a mobile station or a fixed station. The TR-7200A offers high quality and superb performance after many years of improving VHF design techniques. The transceiver is capable of F3 emission on 22 crystal-controlled channels.

TR-7010



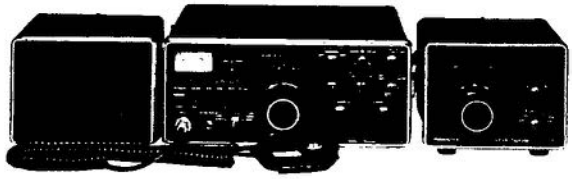
The TR-7010 transceiver uses only such types of signals as SSB and CW to demonstrate its capability of how far it can reach on 144 MHz. This transceiver has 40 channels plus 8 auxiliary ones as it employs a frequency synthesizer which provides 40 channels from 144.100 to 144.295 MHz at 5 kHz intervals. With a built-in VXO circuit, the TR-7010 continuously covers the full range from 144.100 to 144.295 MHz like a transceiver with a built-in VFO. The TR-7010 transceiver feature a high-performance noise blanker, threshold type RF gain control, and amplifier type AGC circuit for superb performance on 144 MHz.

599D SERIES



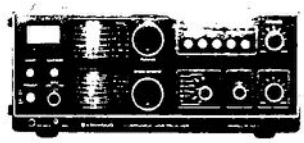
The 599D series are the most versatile pair on the air.
The R-599D is the most complete receiver ever offered. It is entirely solid-state, superbly reliable, compact, and features a handsome look. It covers the full amateur band, 10 through 160 meters, CW, LSB, USB, AM and FM.
The T-599D is solid-state with the exception of only three tubes, has built-in power supply and full metering. It operates CW, LSB, USB and AM and, of course, is a perfect match to the R-599D receiver.

TS-700S



The TS-700S is the all-mode solid state transceiver that provides you with versatility plus over the entire 2 meter band. It's feature-packed design puts you on SSB, FM, CW, and AM. The AC and DC power supplies are built in which allows you to operate the TS-700S just about anywhere. Equipped with a VFO that enables continuous tuning from 144—148 MHz, the TS-700S comes complete with built-in digital frequency readout, receiver preamplifier, VOX, sidetone, and microphone.

R-300



The R-300 is a communications type radio receiver. You can enjoy listening to foreign broadcasts or amateur radio transmissions from around the world and collecting QSL or verification cards.

TR-3200

The TR-3200 is a portable FM transceiver designed for use in the 70 CM amateur radio band. It is small and light weight, and is equipped with 12 crystal-controlled channels for transmission and reception on F3.

Write for Catalogue Sheets c/c J. H. Williams VE3XY

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Because of propagation characteristics on 7-30 MHz sharing with other services is not practical and should be avoided where possible.

14000-14350 kHz exclusive AMATEUR worldwide	14000-14500 kHz exclusive AMATEUR worldwide	No mention

Maintaining the band at its present width of 350 KHz and doubling the number of stations attempting to use it will result in an average spacing of (1363/2) 1 = 656 Hz which is not satisfactory. Therefore the Federation recommends that as a minimum, the present width of this band be maintained or expanded.

21000-21450 KHz exclusive AMATEUR worldwide	21000-21450 exclusive AMATEUR worldwide	No mention
28000-29700 kHz exclusive AMATEUR worldwide	28000-29700 kHz exclusive AMATEUR worldwide	no mention
50-54 MHz shared	50-54 MHz shared	no mention
144-146 MHz exclusive AMATEUR worldwide	144-146 MHz exclusive AMATEUR worldwide	no mention
146-148 MHz exclusive AMATEUR Region 2 & 3	146-148 MHz exclusive AMATEUR worldwide	no mention

No mention was made of these bands in the CIC 2nd Draft Proposal. Presumably the CIC position is to maintain the present allocation. The Federation is in full agreement and commends the CIC for proposing that the status quo be maintained.

BAND	ORIGINAL CARF PROPOSAL	CIC 2nd DRAFT PROPOSAL
18000 kHz	18100-18500 kHz	No Amateur allocation

Contrary to the comment on page 9 of the second draft proposals, CARF did recommend allocation of this band and regrets that its recommendation was not accepted. However, should this Amateur proposal receive strong support from other administrations at WARC '79. the Federation requests the Canadian delegation to reconsider and support this proposal.

24000 kHz	---	24000-24500 kHz

Although in its original brief, the Federation did not support others who recommended this new band because it believed Amateurs had asked for many other concessions, the addition of this band in the proposal is most welcome. It would help to relieve crowding on the 14, 21 and 28 MHz bands at times of high sunspot activity.

220-225 MHz shared	220-223 MHz shared 223-225 MHz exclusive worldwide	220-225 MHz AMATEUR primary & shared in Region 2 (222-223 MHz Satellite)

There appears to be conflict between the CIC Second Draft Proposals for this band and the DOC proposal to use the entire band for "packet radio". (Canada Gazette Part 1 March 18, 1978) Amateurs generally look positively toward the introduction of new communication techniques and systems. In this case they welcome a new technique but are particularly concerned about the proposed use of the entire band for "packet radio" to the exclusion of other modes and activities, including Amateur Satellite. CIC are proposing

222-223 MHz for Amateur satellite which would require international agreement before it could become effective in Canada. The Federation agrees with this CIC proposed satellite sub band allocation, but not with the use of packet radio over the whole 220-225 MHz band.

420-450 MHz shared	420-430 MHz shared 430-450 MHz exclusive	430-450 MHz shared (435-438 MHz; Satellite)

The CIC proposal will almost rule out the use of fast scan Amateur TV repeaters on this band. Because they can only operate above or below the satellite segment, they would cause intolerable interference with all other transmission modes and other Amateur services already well-established and active on this band. This will force FSTV to higher bands where equipment problems are more difficult. This could, of course be beneficial to experimentation in the long run.

902-MHz	-----	902-928 MHz shared

This new band would be a welcome addition. The potential interference problems due to sharing are unknown at this time but perhaps FSTV repeaters could be used here to advantage before other Amateur systems are established.

BAND	CARF PROPOSAL	CIC 2nd DRAFT PROPOSAL
1215-1300 MHz	1215-1275 MHz shared 1275-1290 MHz excluxive 1290-1300 MHz Amateur sat.	1215-1300 MHz shared 1290-1300 MHz amateur sat

It is known that high power pulse equipments operate over a large portion of this band. While any 10 MHz segment for Amateur satellite operations would be acceptable, an allocation between 1250-1260 MHz would offer better protection. It is essential to co-ordinate with the U.S. Proposals for Amateur satellite operations. The Federation will agree to any 10 MHz Amateur satellite allocation in this band which is agreed upon between AMSAT and the FCC and will co-ordinate the use of these frequencies in Amateur satellite work presently underway in Canada.

The Federation wishes to emphasize that slot allocations for Amateur satellite operations in the higher bands* must be coordinated on an international basis. Provided the recommended slot widths are maintained, the Federation will accept allocations in any part of the respective bands as co-ordinated internationally for Amateur satellite operations.

* The details on these, from the 2300 MHz band up to the 240 GHz band are omitted to save space. They may be had from CARF, on request.

Proposed Modification to Article 41 RR 1563

The Morse code is an international language which permits easy communication between Amateurs who could not otherwise communicate for lack of a common language.

To enable all Amateurs to communicate with all other Amateurs, regardless of nationality, it is essential that the Morse code requirement be maintained on an international basis. Therefore the Morse code requirement should be an international agreement rather than a national prerogative.

Note that RR 1570 is not relevant to the Amateur service, but it does not preclude the existence of a similar regulation, such as RR 1563, applied to the Amateur service.

If the intent of this proposal can be construed as designed to permit Canada to implement the original DOC 1976 proposal to initiate an "Amateur Experimenter" Certificate with no code requirement and which permitted the holder to operate on all Amateur bands, then the change appears to be redundant in view of the "no-code" Amateur Experimenter Certificate proposed in the Canada Gazette for March 18, 1978 (DGTR-001 78) which permits the holder to operate on frequencies above 144 MHz.

The Federation recommends that Article 41 RR 1563 be maintained as at present.

As a further service to the membership, CARF is now offering T-Shirts and Sweatshirts imprinted with the CARF Logo at a most reasonable cost!

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T-SHIRTS: Denim colour with Navy trim at collar and sleeve with logo in dark Navy Blue. 50/50% cotton/polyester - only $5.00 per shirt including Ont. Sales Tax and third class postage in Ontario (First Class delivery to other provinces).

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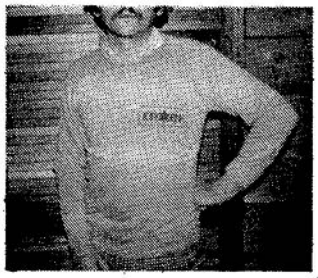
SWEATSHIRTS: Dark Navy Blue with White Logos. 50/50% polyester fleece with round neck and raglan sleeves. Only $10 per shirt (Tax and delivery as above)



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All Members receive Membership Certificates plus FREE QSL Service; Full and Associate Members also receive The Canadian Amateur.

Send me the following:

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- ☐ Advanced Amateur Certificate Study Guide $4.00 ____
- ☐ Instructors Package $2.50 ____
- ☐ Instructors - 35mm slides $5.00 ____
- CARF Logos 6 x 2½" 4/$1.00
  - ☐ Adhesive sticker ____
  - ☐ Window Decal ____
- ☐ CARF Name Badge $2.50 ____

(Print Name and Call desired)

Money Order or Cheque Total: ____

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MY CALL _____ FAMILY CALL(S) _____

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CANADAWARD

The Canadian Amateur Radio Federation Inc. is pleased to announce the following awards available to all Radio Amateurs, worldwide.

CANADAWARD -- A colourful certificate will be issued to any Amateur who confirms two-way QSO's with all Canadian Provinces and Territories. All Separate awards are issued for each band on which the applicant qualifies. (12 cards per band - see list below) A Mode endorsement is available if all QSO's are made on the same mode (CW, SSB, RTTY, SSTV). Contacts made after 1 July 1977 only will count for this award. Submit the 12 cards with One Dollar ($1.00) Canadian or US funds or 10 IRC's plus sufficient funds for return postage. CARF members need send only funds for return postage.

5 Band CANADAWARD -- A special plaque will be issued to any Amateur who confirms two-way QSO's with all Canadian Provinces and Territories on each of five separate bands. (total of 60 cards - 12 cards per band - see list below) Contacts made after 1 July 1977 only will count for this award. Submit the 60 cards with Seven Dollars ($7.00) Canadian or US funds or 70 IRC's plus sufficient funds for return postage. All CARF awards are FREE to CARF members. CARF members need send only funds for return postage.

6 Band CANADAWARD, 7 Band CANADAWARD, etc. -- Special endorsements to the basic 5 Band CANADAWARD will be issued to any Amateur who confirms two-way QSO's with all Canadian Provinces and Territories on more than 5 Bands. Submit the additional cards with sufficient funds for return postage.

LIST OF CANADIAN PROVINCES AND TERRITORIES

VO1/VO2 Newfoundland/Labrador
VE1 Prince Edward Island
VE1 Nova Scotia
VE1 New Brunswick
VE2 Quebec
VE3 Ontario
VE4 Manitoba
VE5 Saskatchewan
VE6 Alberta
VE7 British Columbia
VE8 Yukon Territory
VE8 Northwest Territories

NOTE -- VO2, Labrador, is part of the Province of Newfoundland and counts for Newfoundland.

All Amateur bands may be used. Each distinct satellite mode (432in/144out, 144in/29out, 144in/432out, etc.) will count as a separate band.

Mail all applications for the CANADAWARDs to: P.O.Box 76752, Vancouver, B.C., Canada, V5R 5S7.

QSL Cards

This handsome QSL card is offered to CARF members at a special price of $12.75 postpaid per 200 card lot (Ontario residents add 7% Sales Tax).

The standard design will be printed with your name, call and address, (in place of the CARF address), as shown -- Printed in blue ink on buff card stock with the outline map in silver. The 3 1/2 x 5 1/2" cards are printed on one side only. A plain reverse side gives lots of space for comments and the address.

Other card designs are available in larger lots and slightly higher prices. Send 25¢ in coin or stamps for a sample sheet and order form. (French texts are available.)

Send orders to CARF, Box 356, Kingston, Ont. K7L 4W2.

Outgoing and incoming QSL card service is FREE to all CARF members! Your cards will be sent FREE to other countries and to provincial QSL Bureaux in Canada.

Sort your cards alphabetically by country and call and send to CARF QSL BUREAU, Box 66, Islington, Ont. M9A 4X1, along with a stamped self-addressed envelope (5"x7" preferred) with your membership number in the lower left hand corner of both envelopes.

BANNED COUNTRIES LIST

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

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

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

THIRD PARTY TRAFFIC AGREEMENTS

Bolivia, Chile, Columbia, Costa Rica, Dominican Republic, Guyana, Honduras, El Salvador, Israel, Nicaragua, Peru, Trinidad, Tobago, U.S.A. (Territories and Possessions), Guatemala, Uruguay, Venezuela.

RECIPROCAL LICENCING AGREEMENTS

Belgium, Brazil, Columbia, Dominica, Dominican Republic, France Ecuador, Federal Republic of Germany, Guatemala, Israel, Peru, Luxemburg, Netherlands, Norway, Nicaragua, Poland, Portugal, Republic of Panama, Senegal Switzerland, U.S.A., Uruguay, Venezuela, Denmark, Iceland and Finland.

Note: all Commonwealth countries are eligible for reciprocal operating privileges to Canadian Amateurs.

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