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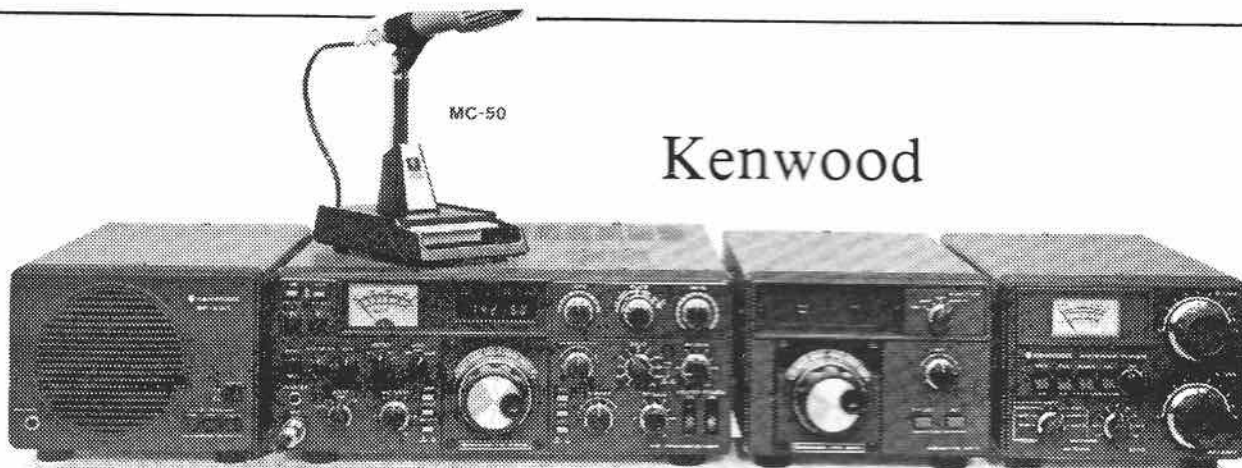
OCTOBER  
1982

# TCA



The Canadian Amateur Radio Magazine





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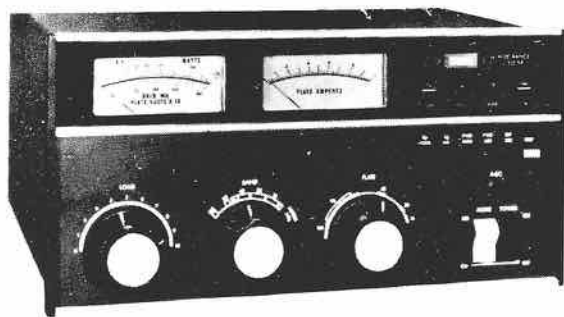
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OCTOBER, 1982

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Unsolicited articles, reviews, features, criticisms and essays are welcomed. Manuscripts should be legible and include the contributor's name and address. A signed article expresses the view of the author and not necessarily that of C.A.R.F. Publications Limited.

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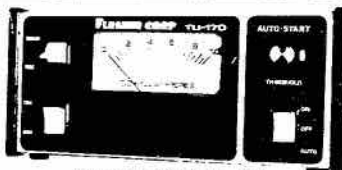
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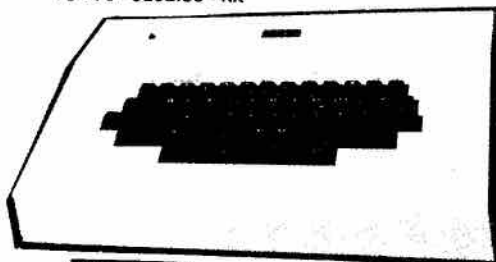
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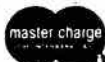
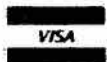
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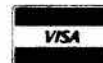


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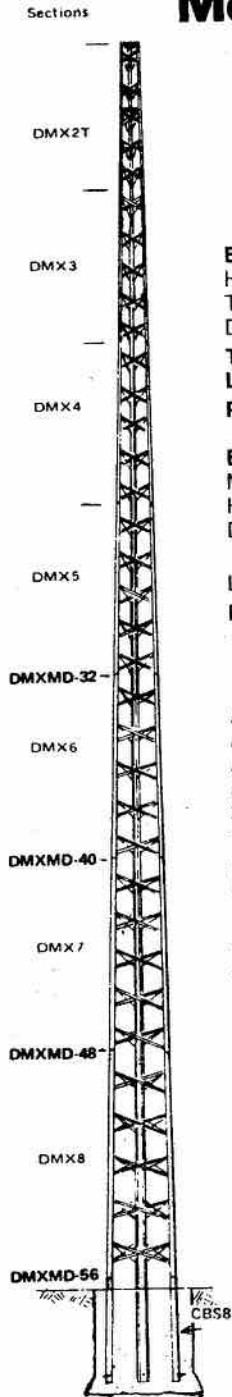
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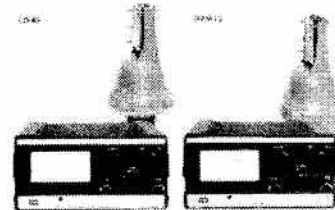
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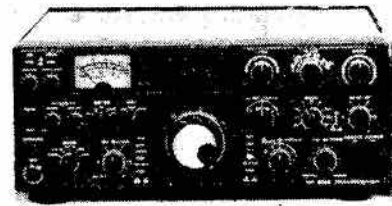
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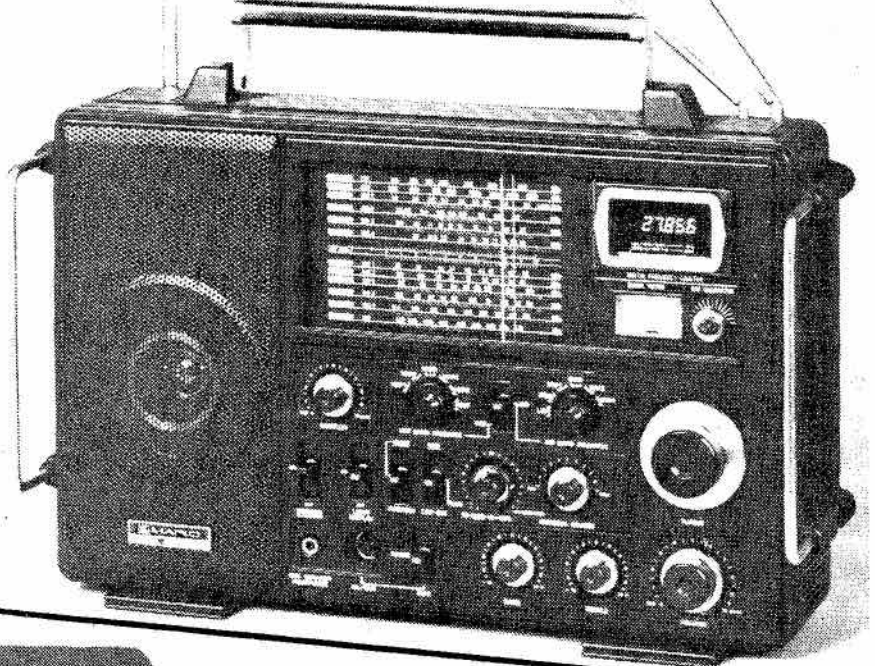
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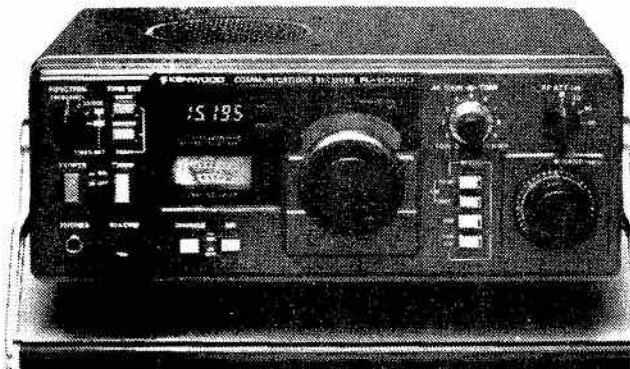
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# CALL FOR NOMINATIONS

By terms of the current By-Law, the Federation hereby requests its members to submit nominations for the positions of REGIONAL DIRECTORS.

The membership of CARF is divided into 5 Regions:

1. ATLANTIC — the Atlantic provinces
2. QUEBEC — province of Quebec
3. ONTARIO — province of Ontario
4. MID-WEST — provinces of Manitoba, Saskatchewan and Alberta, North-West Territory
5. PACIFIC — province of British Columbia and Yukon Territory

Each Region, with the exception of Ontario, has 1 Regional Director with Ontario, because of its large Amateur population, having 2 Regional Directors. This division gives fairly equitable representative voting powers to each Regional Director.

A valid nomination contains the name, call and postal address of the Full member nominated (who must reside in the Region for which nominated) plus a statement, signed by the nominee, that he, or she, is willing to serve in the position if elected. The signatures of 5 Full members of the Region are also required on the nomination with the completed letter forwarded to the Secretary, CARF, P.O. Box 356, KINGSTON, ONT. K7L 4W2 before 31 Dec 1982. A photograph and resume of the nominee is welcomed for publicity in TCA, etc.

The Regional Director plays a most important role in your national Federation as together they form the Board of Directors which is responsible for the formulation of policy, for overall management of CARF affairs and activities and for the selection of the Officers and members of the National Executive that are responsible to the Board for the conduct of day-to-day affairs.

D. Goodwin, VE2ZP  
Secretary.

# From the Editor

VE3 ARS

The circumstances that determine whether or not any particular situation is or is not an emergency vary considerably depending on many factors. The most important factor, in terms of action taken, depends entirely on who is participating in the situation, and how the outcome will affect them. A person must use an incredible amount of self restraint in order that he or she may be able to view the whole thing more objectively than is usually possible. Many times the situation is not as bad as it seems. Having called the emergency, he or she is then obligated to inform all who may have been attracted by the call, that the emergency was a false alarm, or that it had been taken care of. We all have the responsibility to ensure that in a declared emergency there are no "loose ends". The reputation of our Amateur Radio Service has always been held in high regard by municipal, provincial and federal authorities because we have held to this principal. It seems a shame to spoil our record.

What follows is a report by Art Stark, VE3ZS, CARF, DOC liason, on an incident that occurred in Ottawa last fall.

## False distress call by Amateur Radio Station VE3HKT

At approximately 1905 EDT several Amateur stations in the Montreal area heard a signal on the Montreal repeater (VE2RM) - "This is VE3HKT MAYDAY". Replies to this call were not answered and nothing further was heard of the station declaring the distress.

Upon determining that the call VE3HKT was assigned to Al King of 5 Elmsley Crescent Nepean, Ontario, a call was relayed to the Ottawa repeater (VE2CRA) for assistance. This call was made by VE3EYV in Hawksbury at approximately 1930 EDT who requested that Ottawa police be advised of the situation.

This relayed call for assistance

was first acknowledged by VE3JSI, who being mobile at the time was unable to take direct action, but alerted VE3JRF.

In the meantime VE3HCA acknowledged the call from VE3EYV and telephoned the police in Ottawa.

At approximately 2005 EDT, VE3HRC received a telephone call from VE3KHT who had heard the initial request from VE3EYV, and realizing that VE3HRC was a neighbour, suggested he visit the King residence in an effort to clarify the situation.

Upon arriving at the King residence, VE3HRC found Sgt. Arnott of the Nepean Police Department investigating the situation as the result of information apparently received from VE3HCA. The house was locked with a light burning in the kitchen. All appeared to be in order, and it was concluded that members of the King family were temporarily absent.

Sgt. Arnott returned to VE3HRC's home and further information was requested from VE2DYA in Montreal who had heard the original call from VE3HKT. VE2DYA confirmed that only one call - "This is VE3HKT MAYDAY" - had been heard and that he had not been able to establish communications.

In the meantime it had been established from neighbours that King had left earlier in the day for Cornwall to pick up a new car. At this time the Ontario Provincial Police had been brought into the picture and an alarm had been sent to all area police departments.

At approximately 1105 EDT it was noted that King had returned home. Upon enquiry by VE3HRC, King stated that while driving in the vicinity of Winchester he had suffered a headlight failure on his car, and that as he was having difficulty in making radio contact with any station he called "MAYDAY" to attract attention. King did not appear to understand the seriousness of employing the distress signal, nor did he express

any concern with the results of his rash and heedless actions. He was requested to immediately inform both the Nepean Police and the Ontario Provincial Police of his safe return and to explain the situation. It is not known if he complied.

The following is a partial list of Amateurs known to have actively involved in the incident.

VE2ALE Vaudreuil, P.Q.  
VE2BMQ Howick, P.Q.  
VE2DYA Ormstown, P.Q.  
VE2AQU St. Laurent, P.Q.  
VE3BMW Nepean, Ont.  
VE3EYV Hawksbury, Ont.  
VE3HCA Oxford Mills, Ont.  
VE3HKT Nepean, Ont.  
VE3HRC Nepean, Ont.  
VE3JRF Ottawa, Ont.  
VE3JSI Ottawa, Ont.  
VE3KHT Gloucester, Ont.  
VE3ZS Nepean, Ont.

There were doubtless many others monitoring the communications.

In his submission to DOC, which included this report, Art goes on to say:

"After careful analysis of the known facts it is considered that a serious misuse of the distress signal was involved. In fact from the information to hand, the distress signal was deliberately used when no distress situation, as defined by # 6771/1391 of the ITU Radio Regulations, existed. It is maintained that the incident should be treated as a false distress call and appropriate action taken."

"The Canadian Amateur Radio Federation is very seriously concerned over this grave misuse of the distress signal and the lack of concern for his action on the part of the operator responsible. It is believed that the Department should take severe action under the provisions of Section 14 of the Radio Operators Certificate Regulations, if not under Section 9 (2) of the Radio Act. Should the Department fail to take adequate action they will no doubt suffer serious loss of credibility and faith

on the part of the Amateur fraternity as well as being derelict in our country's commitments to the International Radio Union."

At the last two symposiums, I have been asked as editor of TCA, to include a list of DOC prosecutions for violations of the radio act. The feeling was that these incidents and the resulting DOC action would help to reduce the amount of nonsense that we inflict upon the radio spectrum. It was also agreed that the names of the offending parties should be mentioned. To all of this I heartily agreed. However, no information on prosecutions has passed my way.

If both DOC and Radio Amateurs want prosecutions to be publicized, why are incidents like this last one not acted on? In the past, CARF has gone to great lengths to follow up on reported incidents of violations of the radio act, only to be met with a serious lack of action on the part of DOC. This question was put to a representative of DOC at the Scarborough symposium. His response was that it was too costly to pursue an infraction that was lacking in documented and verifiable evidence. "A good defence lawyer could rip to shreds most of the evidence obtained on infractions occurring on the Amateur bands. It is not financially feasible for us to pursue these matters with the available manpower and facilities at our disposal. If, however, a case warrants our action, you can be sure that we would act on it."

I do know that the infraction, mentioned by VE3ZS, was ever acted on. It has now lost most of the impact it might have had if it had been acted on promptly. Let us not place the blame on DOC for not acting. The blame can be placed squarely on our own shoulders. Why?

Who teaches newcomers how to become Amateur Radio operators? Who maintains the standards that are set for our service? Who helps the newcomers to become better operators as they gain more experience on the air? Finally, who pays attention to

the proper way of operating? The answer to the first three questions are the same. We do. The answer to the last question I leave up to you to answer, and if you do so honestly, you will see where the problem lies.

The part that distresses me most is contained in one sentence taken from Art's report; He "... did not appear to understand the seriousness of employing the distress signal, nor did he express any concern with the results of his rash and heedless actions."

That scares me!

---

Rowland, VE3AML submitted this article, prior to the Winnipeg Symposium. I have included it here for general reference purposes. We must continue to consider all emergencies as being real. It takes only one mistake to show the general public that we are not as good as we say we are.

## Wanted for TCA:

News items, pictures, original stories and technical articles. Make pocket money by writing for The Canadian Amateur!

Technical articles are especially welcome. We can use simple construction projects, antennas, hints and kinks, explanations of the theory and practice of modern Amateur operations and equipment.

Photos should be glossy black and white prints, although we can use colour prints. Written material should be typed, double-spaced. Legible handwriting is acceptable. Finished artwork and drawings will add to the value, but sketches and rough drawings are acceptable.

Send **Technical material** to: **Technical Editor**, CARF Inc., Box 356, Kingston, Ont. K7L 4W2. Send **all other material** to **Editor**, TCA, P.O. Box 2610, Station D, Ottawa. K1P 5W7

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## Critique on recent distress calls on the amateur bands

With the apparent increase in bogus incidents occurring on the Amateur bands, proper directives are necessary to be promulgated to all amateurs.

It is suggested the subject be covered in paragraph form in the Radio Regulations and be known by Amateur and Class A Amateurs.

An Amateur hearing a distress call should endeavour to contact the station and if successful, ascertain;

1. THE NATURE OF THE EMERGENCY.
2. POSITION. LATITUDE, LONGITUDE, AND LAST KNOWN POSITION AND COURSE.
3. SIZE, TYPE, COLOUR OF SHIP, PEOPLE ON BOARD AND WHAT IS WRONG.
4. ASK FOR THE TRANSMITTER TO BE KEYED EVERY 5 MINUTES WITH SERIES OF DASHES.

If you cannot copy the station,

properly give over to another one who can copy 100%

At this stage, the operator in contact with the distress should contact by telephone, the Canadian Department of National Defense the Rescue Centre — 613-392-2811, Extension 3870 or 3875. This number can be reached collect.

Give your FULL name and address, Call-sign and your telephone number.

Get only information as requested by your Coast Guard Authority.

Do not make a judgement on the authenticity of the operation, over the air.

Get other stations to use alternative frequencies for enquiries.

This problem could be discussed at the Winnipeg Symposium.

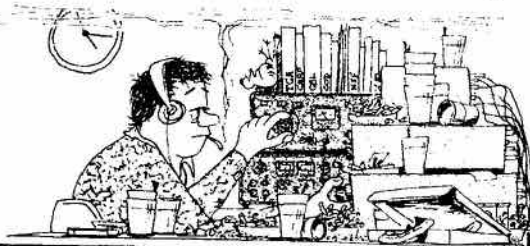
Some of the above was obtained from the Canadian Coast Guard Ottawa.

Rowland VE3 AML

# CONTEST

by Dave Goodwin, VE2ZP,  
4 Victoria Place,  
Aylmer, Quebec  
J9H 2J3

## SCENE



### Contests Calendar

October 2-3 VK/ZL Oceania SSB  
9-10 VK/ZL/Oceania CW  
10 RSGB 21.28 MHz SSB  
16-17 CLARA AC DC  
16-18 CARTG RTTY  
17 RSGB 21 MHz CW  
30-31 CQ WW DX SSB  
November 6-7 ARRL SS CW  
13-14 European DX RTTY  
20-21 ARRL SS SSB  
27-28 CQ WW DX CW  
December 4-5 ARRL 160m  
11-12 ARRL 15m

### 19 CARF Canada Contest

The results of the CQ WW DX SSB 1981 were presented in September CQ and are presented below. I remember conditions being very good on all bands except 160 metres, and a few Canadian records were broken. The new Canadian records table is presented below. Overall, only two Canadian entrants made it into the top ranks. VO2CW placed no. 5 worldwide on 14 MHz, and set a new Canadian record in the process, beating VE7IG's 2 year old record by almost 100k. Rick's station was operated by the well-known K6LPL. VE3MFA placed no. 3 on 1.8 MHz, but because of the poor conditions on that band, came quite far from the 6 year old record of VE3BMV. VE3BMV, on 21 MHz, nudged the Canadian mark up to 1.13 Meg, beating VE7CML's 1979 record by less than 20k. Other scores of note are VE7WJ, operated by WA6VEF, rolling up an impressive 3.3 Meg, coming quite close to the Canadian single op all band record, and VE1DXA, with almost 6.1 Meg, coming very close to the CZ6ZT Multi-single record.

The level of Multi-single competition in this contest is nothing short of fantastic. There were 14 MS entries from this country this time 'round, involving some 60 operators. All of the single

operator entries combined equal only 46 operators. There was more close competition among the Multi-singles than in any other class.

As well, there were a few VEs among some of the DX multi-op efforts. In the CQ WW DX SSB, there are 3 trophies for Canadian entrants. The VE7KB Single op., single band trophy went to first place VE3BMV. As VE1DXA won the MS trophy last year, the second place entrant, VE3PCA, wins it, and with a quite competitive score 5.1 Meg. As VE7WJ was not operated by a Canadian resident, the single op all band trophy went to Garry, VE3GCO with a most respectable 2.1 Meg score. Although these trophies went to second-place scores, the level of competition was such that these scores were very competitive, and could have conceivably been first place scores. Congratulations to all.

The oldest records on the table are for 7, 3.5 and 1.8 MHz entrants from 1975-76. As we head into the minimum, there should be some movement on these, particularly VE3EDC's 7 MHz record, which is slightly less than Jim's earlier 3.5 MHz record. There were no serious challenges against these records this year. In the coming few years we may see attacks on the 7 and 1.8 MHz records, which seem the most likely ones to be updated. As for the high bands, Single op all bands, and the Multi-op classes, these records may stay put until the next sunspot cycle. The QRP mark is still quite low, and it could be moved up to a more respectable level almost anytime. As we head into the years of low sunspot activity, the low bands are going to rise in importance, and we may see as much competition there as on the high bands in the last few years. For the all banders, 10 and

15 will not yield the QSOs to JA or Europe that they have, and will be of little use as other than a multiplier resource. 20 will be more reliable than it has been in recent years, and due to lower levels of D-layer absorption, 40 and 80 will be useful for many more hours of the day. Considering how antennas have improved on 40 and 80 over the past few years, with more 2, 3 and 4 element yagis up now than was ever dreamed about in 1976, the capabilities of these bands for DX work will finally be exploited to their full potential. This shift should be gradual over the next few years, with one or two good years left in 10 and 15 metres before 160 metre scores make 10 metre scores look small.

Enough of the future, for the present, those who are interested in Contesting will be glad to know that Garry Hammond is producing a book for Contesters. Entitled "CQ Contest" Garry has compiled rules, official entry and log sheets for most of the world's major and not-so-major contests. For Canadians, the cost is \$8 postpaid, and Garry describes the book like this:

"The **CQ Contest** Amateur radio operating book consists of more than 100 pages in an 8½ x 11" gestefax, three ring format. Complete rules; official scoring, entry and log sheets are provided. Helpful maps, checklists, operating aids, suggestions, statistical tables and more are included to save you time and money and get you ready for a successful contest operation."

If Garry's book is anything like his awards book, it will be very useful indeed. There is nothing more frustrating than knowing you have official forms for a contest, and not being able to find them. With this useful book, you should have all you need right at your fingertips. While I have not seen

the book, it sounds like a worthwhile investment for any con- tester. It will be available 1 Oc- tober, and is available from Garry Hammond, VE3GCO, 5 McLaren Ave., Listowell, Ont., N4W 3K1.

The results of the Canada Con- test were published in July/August TCA, with only two typos that I noticed. VE2MUV/2 was, in fact VE3MUV/2. The VE1ASK referred to in the multiplier headers table shows be VE1ASJ. Apologies are extended, and now with the editorial board of TCA pro- ofreading each issue, these mistakes should disappear. As well, in this column, last month there was mention of a certain Yuri VE3MB. Yuri has not changed his call, and is still VE3BMV to the best of my knowledge. In September TCA, the VE3FLL mentioned in the Canada Day Contest Remarks should be VE3FKK.

1983 is to be World Com- munications Year, as proclaimed by the United Nations General Assembly. The theme is to be the 'Development of Communica- tions infrastructures'. In honour of the event, the Potomac Valley Radio Club, a very active contest group, are sponsoring a 24-hour long contest on 15 January. Although it conflicts with the 73 Magazine 160m SSB test, it may be worth looking into. Rules will ap- pear in December TCA.

This month we have not only the CQ WW DX SSB contest to look forward too, but also CARTG's RTTY DX Sweepstakes, which ranks as the world's biggest RTTY contest. The RSGB 21/28 MHz SSB contest should provide a good warm-up for the CQ WW, and hopefully, there won't be another proton flare like there was last year.

#### Pseudo-MM?

In the August issue of 'Long Skip', Bob VE3KZ's column 'CQ Contest' brings up an interesting subject. The question of Multi- single stations with multiplier chasing positions has come in for some criticism lately in the USA, and at the Dayton Hamfest in the Contest Forum, W1XX got up and took a poll on such questions as: "Should a new entry class be

created for Multi-operator sta- tions, a two-transmitter multi- multi?" It was felt that many of the MS entrants are actually, as Bob described them, 'pseudo-MMs', with two or more operating posi- tions set up. In the CQ WW DX and ARRL DX contests, MS sta- tions may run on one band, and collect multipliers only, on another band. Many MS stations in Canada have taken advantage of this provision, and have engineered stations around this concept. When we at VE3PCA set down to design our station, this was a paramount consideration, and we have built a good deal of flexibility into the system to ac- commodate this idea. The idea of multiplier stations for MS opera- tion allows for the group to carry on running on one band, while another station either collects multipliers, or checks other bands for openings. If MSs, as in the WPX could only use one transmitter, a great part of the strategy and plan- ning that goes into a successful MS operation would be shelved. This sort of MS class is perhaps better described as 'Single operator with help', as other members of the

group can do little except wait for their shift. The present MS format in the CQ WW and ARRL DX makes these contests, a great deal of fun for every member of any MS crew, as everyone has something to do. The concept of a two- transmitter MM seems a bit of a dud, especially when a good number of the successful MM en- trants are presently 3-transmitter affairs. (W3LPL for example). At Dayton, the idea was soundly defeated by a show of hands. I am surprised the ARRL's Contests Ad- visory Committee are considering such a move. Remembering that it was W1XX who was responsible for the disastrous 1980 ARRL DX Contest rules, I just dismissed the whole idea as another well- intentioned idea with a slow leak. Bob VE3KZ is the Canadian rep on the ARRL's Contests committee, and he seems quite firmly oppo- sed to the idea of any change in MS rules. If you have any opinions on this issue, please make them known to Bob, giving him as much ammunition as he needs to shoot this one down.

Thanks to VE3s, GCO, KKB and KZ for material used.

#### CQ WW DX SSB 1981

#### Canadian Results

Class	Call	Score	QSOs	Zones	Countries
A	VE7WJ	3,303,990	3482	131	274 (W6VEF op.)
A	VE3GCO	2,108,592	1865	112	320
A	VE3UOT	934,908	1096	96	242 (VE1BCZ op.)
A	VE2AYU	762,560	941	89	231
A	VE1CEG	567,030	946	73	173
A	VE7BSM	533,200	800	89	159
A	VE3ABR	272,731	396	82	181
A	VE3GP	201,749	365	71	158
A	VE3MV	163,542	333	59	135
A	VE2DUN	135,000	586	36	72
A	VE4AIV	128,954	487	38	84
A	VE3CKR	95,760	564	26	58
A	VE3GCE	87,824	186	62	114
A	VE3EZU	63,048	186	43	99
A	VE3NBY	37,030	128	40	75
A	VE7IQ	31,977	137	45	54
A	VE2FUY	22,018	90	35	66
A	VO1AW	5,253	39	14	37
28	VE3LNW	571,608	1338	33	120
28	VE7BTV	422,484	1742	31	77
28	VE5RA	319,451	1268	30	85
28	VE7AWT	271,710	1210	29	67
28	VE6AYE	113,661	705	24	48
28	VE4RP	113,661	705	24	48
28	VE2DVI	110,052	363	24	44
28	VE7EOA	69,714	540	24	37

28	VE2EVO	52 207	241	23	60
28	VE3MKJ	14 628	118	14	39
28	VE4AKX	12 852	106	17	34
28	VE6BEO	12 300	129	19	22
21	VE3BMV	130 206	2376	38	141
21	VE7IN	73 372	2058	37	97
21	VE1TG	170 040	565	29	91
21	VE7AVL	126 380	756	23	47
21	VE1CAN	49 248	248	21	60
14	VO2CW	898 720	2216	35	129 (K6LPL op.)
14	VE3EEW	314 145	1066	34	101
14	VE2WA	51 300	203	29	71
14	VE3DYB	17 520	89	19	54
14	VE3LAG	13 286	70	20	53
14	VE7AZC	8 479	53	24	37
3.5	VE3IPR	37 544	344	15	31
3.5	VE3CPL	11 934	220	11	66
1.8	VE3MFA	5 180	207	6	8
1.8	VE3BBN	3 553	169	5	6
MS	VE1DXA	6 257 990	4593	139	415
MS	VE3PCA	3 357 492	3616	137	411
MS	VE6OL	4 920 807	4120	135	354
MS	VE3BVD	3 761 032	3006	131	410
MS	VE5DX	3 295 015	3719	122	263
MS	VK3WA				
	VE3	1 538 166	1769	104	267
MS	VY1CC	1 469 859	2541	82	159
MS	VO2WL	1 173 510	2154	67	267
MS	VE5AE	1 023 519	1373	105	224
MS	VE6AMV	388 935	752	85	130
MS	VO2CC	372 176	1618	43	69
MS	VE2CLA	253 943	516	52	129
MS	VE5NM	226 670	468	71	119
MS	VE5CHS	34 522	183	29	53

**CQ WW DX SSB Canadian Record scores**

Class	Call	Score	Year
A	CZ6NW	3,493,340	79
28	CZ6WQ	1,182,315	79
21	VE3BMV	1,130,206	81
14	VO2CW	898,720	81
7	VE3EDC	133,496	76
3.5	VE3EDC	141,726	75
1.8	VE3BMV	29,750	76
QRP	VE1ALT	87,584	79
MS	CZ6ZT	6,642,405	79
MM	VE3KZ	10,612,755	78

**VK/ZL/Oceania**

Period: SSB: 1000z 2 Oct. to 1000z 3 Oct.

CW: 1000 9 Oct. to 1000z 10 Oct.

Classes: Single operator, all bands only

Bands: All Amateur bands (except 10 MHz)

Exchange: RST and serial number

Multipliers: Total of VK and ZL call areas worked on each band  
QSOs: 2 pt./QSO with VK or ZL, 1 pt./QSO with other Oceania.

Awards: Certificates will be sent

to the top scoring entrant from each Canadian Call area.

Entries: Separate logs must be used on each band. A summary sheet and the customary declaration must be included. Logs must arrive by 31 Jan. at NZART Contest Manager, Jock White ZL2GX, 152 Lytton Rd., Gisbourne, New Zealand.

**CLARA AC/DC**

Period: 1800z 16 Oct. to 1800z 17 Oct.

Classes: Single op., all bands only

Bands: 80 through 15 metres only (ec. 30m) Suggested Frequencies are: 3690, 3775, 3900, 7035, 7200, 14035, 14160, 14280, 21035, 21300 kHz.

Exchange: RST, name, QTH.

Multiplier: total of provinces and territories worked, regardless of band.

Points: each station may be worked twice, either on two different modes or on two different bands. CLARA members may work anyone, non-members may work only YLs. 1 pt./QSO, 3 pt./QSO with each bonus station. These stations will identify themselves as such.

Awards: 1st, 2nd and 3rd place certificates will be awarded to the top non-members, and a pin will go to the top CLARA member.

Entries: Logs should be sent by 31 Dec. and be sent to: Lynn Boothroyd, VE3LQL, 673 Tackaberry Dr., North Bay, Ont., P1B 8R1.

**RSGB 21/28 MHz SSB**

Period: 0700z to 1900z 10 Oct.

Classes: Single or multi op, both bands only.

Exchange: RS and serial number

Multiplier: total of UK prefixes worked on each band. GB prefixes do not count for QSO or multiplier credit.

Points: 3 pt./QSO with stations in the United Kingdom.

Awards: Outside the U.K., 1st, 2nd, and 3rd place certificates will be awarded.

Entries must include a summary sheet listing multipliers on each band, and must be received before 1 Dec. a RSGB HF Contests Committee, P.O. Box 73, Litchfield Staffs., WS13 6UJ, U.K.

**RSGB 21 MHz CW**

Period: 0700z to 1900z 17 Oct.

Classes: Single op only, with a separate QRP class.

Bands: 21 MHz CW only

Multipliers: total of UK prefixes worked. GB prefixes do not count for Multiplier or QSO credit.

Points: 3 points/QSO with stations in the United Kingdom.

Awards: Outside the U.K., 1st, 2nd and 3rd place certificates will be awarded in each class.

Entries: Should be submitted by

31 Dec. to D. Lawley, 24 Glen View, Gravesend, Kent, DA12 1LP, U.K.

### CARTG RTTY DX Sweepstakes

The rules, especially concerning the point scoring system are so complicated that their reproduction here would not do them justice. Please send an SASE to CARTG, 85 Fifeshire Rd., Willowdale Ont., M2L 2G9. This is one of the premier RTTY contests, and all active RTTYers are encouraged to participate.

### CQ WW DX Contests

Period: SSB: 0000z 30 Oct to 2400z 31 Oct.

CW: 0000z 27 Nov to 2400z 28 Nov.

Bands: 160 through 10 metres (exc. 30m)

Classes: Single op all, bands; Single op, single band; Multi op., single transmitter; Multi-op., multi transmitter. There are separate single operator all and single band QPP sections.

Points: 0 Points for QSOs with Canada; 2 points for QSOs with stations in other North American countries; 3 points for QSOs with stations outside North America.

Multiplier: total of CQ WAZ Zones and DXCC/WAE countries worked on each band.

Awards: Certificates are awarded to the high scorers in each class in each Canadian Call area. In the Phone contest, Plaques are awarded to the top scoring Canadian Single op all bands, Single op single band, and Multi-single entrants. In the CW contest, plaques are awarded to the top scoring Canadian Single op, all bands and single op, single band entrants.

CARF is the sponsor of the Single op single band CW trophy.

Entries: Official entry forms are available from CQ Magazine. Entries should be postmarked before 1 December for the SSB, and 15 January for the CW. SSB logs may be sent to: Bob Cox, K3EST, 6548 Springvalley Dr., Alexandria, Va., 22312, USA. CW logs may be sent to: Larry Brockman, N6AR, 7164 Rock Ridge Terrace, Canoga Park, Cal., 91307, USA.

# Overmodulation - who me?

A lovely light from 60 watt dummy load. Check calculations for a 10 watt input. RF sure efficient for lighting lamps. Will convert house and save some bucks. Who said 813 no good on top band? Some lid!

Lovingly unwrap new microphone. Fire up modulator. Ex BC610. Real beauty! Stacks of audio. Mod tranny sure rugged. LOUD BANG - 200 ma fuse gone. Fit with 500 ma fuse. LOUDER BANG - fit with one amp fuse. Sounds like howitzer! Bridge fuse holder with 16 SWG. Lot of dud fuses. Odd smell, very odd. XYL having troubles in the kitchen? Dive madly for power switch. Dark brown smoke, from microphone. Like high pressure fountain. Grab it. RED HOT! Plastic case all soft and changing shape!!

Check microphone socket. Wired to high tension. Have quiet cry. Kick bench leg, miss, hit shin, have loud cry. Microphone still smoking. Plastic changed shape beyond recognition. Rewire, back to tank microphone. Tune up again.

H-E-L-L-O... Why does lamp go out before "o" ... Why does lamp go out??? Lamp back on again, then out again, that's odd ... Up gain, lamp goes out ... stays out ... ear splitting screech from mod tranny, lamp lights ... Ease mod control up by a gnats whisker.

H-E-L-L-O... Why does lamp go out??? Book says it should get brighter ... must be misprint ... Check modulator. Oh! - mod tranny primary and secondary reverse ... rewire ...

H-E-L-L-FLASH!!! POP!!! Lamp bursts. Cheap lamp. Whip one from bellringers cloisters. FLASH!!! POP!!! Gone! Put in photo flood ... OH BOY look at that modulation!!!

Hook on antenna ... Loads like clappers ... Good 5 amps!

Call CQ for 15 minutes. Tune over band. Humber radio, Land's End radio, Nitton radio and some highly excited Dutch guy, all shouting the odds about interference ... None at this end ... No calls either!

I'll wake somebody up ... Call CQ for 30 minutes.

Called by a VE3 with a very enquiring mind. Been working some DX on 2. That's nice ... Heard me on 2??? Must be a pirate! Heard me on 6-10-15-20-40-80... Can't these pirates use other calls??? Why pick on me? Believes I am on top band ... Only band where there is a carrier, until I modulate ... then just audio all over - like on 80-40-20-15-10-6- and 2 metres... Sounds as though he is choking.

Casts doubts on my mental capacity and parentage ... Cannot understand it ... He is morally very meek ... Says I must be 1000/ over overmodulation...

After all my careful testing ... Overmodulation ... Who ME???

**Credit Harry, VE3FJJ  
from RTTY News**

### Local Weather for Mobilers.

Mobile operators seeking local radio forecasts when driving far afield from broadcast stations whose frequencies they know are often frustrated after carefully listening to a weather bulletin to learn that they have been monitoring an AM station half a continent away. If you are driving into Atlanta, who cares if there is freezing rain in Chicago? To pinpoint such information it is best to depend on FM stations, preferably strong ones, which necessarily have only regional coverage. A further refinement, when one's antenna has local and distance settings, is to start with the local setting, select the strongest station on the band, and then change the distant position for clearer reception if desired.

**Marsh Jeanneret VE3EMJ**



# Angels in Barcelona

by Paul Cooper, VE3JLP

"How's DX?" I jumped at the sound of Chip's voice. I hadn't heard him come into the shack. However I was glad of the interruption, twenty metres seemed very dull that evening every CQ I checked turned out to be a US station and the final blow had been that weak, quavering note, which promised to be something rare and turned out to be another VE3, less than a hundred miles away.

"DX is not what is used to be Chip, what's the matter with the band these days?"

"Perhaps all the good stuff is being frightened off by the woodpecker" he suggested, and we laughed as he eased himself into a chair and picked up my log book.

I was just slipping the phones back on again when Chip pushed the book in front of me and pointed a finger at an entry I'd made a couple of weeks earlier. "What's this", he demanded, and I followed his finger into a cryptic comment on the blank side of the log which read "Angels in Barcelona?"

"Oh dear, I was afraid you'd spot that" I said. "It's rather a strange story which you may feel is a reflection on my ability to copy code but I suppose I'd better come clean and tell all". Chip nodded firmly so I took the phones off and tilted the chair back to a more comfortable position.

"It was an evening rather like this" I began, "no real DX coming through, just a few European stations and, of course, the ubiquitous Russians. I had decided that if I worked one more 'Vlad' who sent 'MY QSL SURE VIA THE BURO DR OM PAUL' I should scream!"

"My fingers were gently easing the tuning knob around when I noticed, half buried in the QRM, a weak CQ. Perhaps this is something interesting, I thought, and as he started to send his call my interest quickened . . .

EA . . . perhaps he's a 6 or even a 9, I thought, but no such luck, the rest of the call struggled through the noise . . . 3BFT. I checked the call again to ensure I'd got it right and wondered whether I should give him a call. I decided, why not, so when he signed I pushed up the switch on the Tempo One and squeezed off a reply with my keyer"

"He came back, of course" Chip said.

"Oh yes, he heard me OK. Only he had the last letter of my call as a G not a P. He gave me a nice report, 579, and slowly worked his way through his QTH Barcelona, and his name which was an odd one, 'Angel' "



"I don't think that's very odd" Chip interjected, "You should see some of the names of the Japanese hams I've worked!"

"Do you want to hear the story or don't you" I said, and Chip put on his attentive look as I continued.

"On my next transmission I sent my call three times at the beginning and twice at the end. That ought to do it, I thought, but no, he came back with JLG".

"Did you slow down?" Chip enquired, and I nodded. "I turned the keyer down to about eight words per minute for the next exchange but it was still no good, he still copies G".

"I suppose he wanted a card?"

"Oh yes, we had been through all that and it was depressing to think that he would send off his card into the blue with no chance of it arriving at this end".

"Should have thought you'd got plenty of EA cards by now Paul" Chip said, and I nodded, "Yes, but it's the principle of the thing, if you exchange cards at the very least the calls ought to be correct".

"I suppose he still got it wrong even on his final" Chip said, and I confirmed his guess, "Yes the 73 CUAGN SN was still signed with the wrong call".

"Can't win them all, old man" said Chip, "Is that the end of the story?"

"Certainly not" I snapped, "This is where it starts to get interesting. I had begun to fill in the log and was checking the time the QSO ended when I realized someone was calling me. Another weak one, just about the same strength and oddly enough apparently on the same frequency as the note sounded very similar. He sent my call again and again but finally I heard 'de' and the long awaited call started...EA...another Spanish station, perhaps that EA9 I've been looking for . . . 3 pity . . . B . . . oh, not again . . . I . . . or was it an 'F', the QRM was still rough . . . T. That's it, I thought, It's old back Angel back again with another reminder to QSL or something".

"What did you do?" I could tell Chip was getting interested by the tone of his voice.

"What could I do, he was calling me, this time he had my call correct but I was still not quite sure of his call since the QRM continued to blot out the odd character in his transmission. Anyway, perhaps it really was someone else, but the call was so close, only one letter different. I had to do some quick thinking and I decided to treat it as a new QSO and see what happened. I felt a bit of a fool as I plugged my way through the first transmission sending a report, my Qth and my name perhaps to someone I'd only just signed with".

"What came back" Chip asked. "Oh the usual thanks for the call

then my report which was 579 again then he started his QTH... the acid test, I thought, as I began to copy".

"And it was Barcelona again" Chip said, and I nodded.

"I was sure by now that it was Angel again. The coincidence of almost the same all and the same QTH was just too much, I must have copied his call wrong the first time".

"What about the name".

"Well this is where it gets really interesting" I said. "I'd stopped copying seriously as the characters filtered through the noise but my ball pen was almost automatically writing the letters down... ANGELES. Yes, I checked the second time with my ears straining to catch those last characters but there was no doubt it was ANGELES".

"You're sure it wasn't that shaky code of yours, Paul?" Chip's smile annoyed me. "Not this time, old man, I was beginning to realize that this was another operator, perhaps another station even though those coincidences were still there. The last transmission cinched it though, in a rather nice way. Angeles was running through the usual CUAGN SN routine then came 73 and finally, almost as an afterthought "88", Angeles was a girl!"

"I suppose you'll have to wait to see if you get two cards to prove it once and for all?" Chip said.

"No, there's an easier and quicker way than that, I looked them up in the Call Book and sure enough those two calls are in Barcelona, at the same address with first names Angel and Angeles. I sent them both a card direct, I wish my Spanish was bet-

ter, I wanted to tell them how much confusion they'd caused that evening...I'd practically lost faith in my ability to copy code!" Chip laughed as he stood up. "That'll be the day, you've got those phones on your head seven nights a week it must be almost automatic now!"

I shook my head, "If only it were true, what I need is more practise". It was then that I remembered WIAW, looked at the clock, and was spinning the dial up to 14080 as Chip left.

(Paul tells us that the QSOs in his story happened just the way he described them, he hopes to have the cards soon to prove it. His only invention was the visit of his good friend and neighbour, Chip,, VE3JLL)

(Illustration by the Author's son, Michael Cooper).

## Insurance? . .

For those of you who had intended to take advantage of the recent ARRL offer of insurance for your Amateur equipment, the following should be of interest. Your insurance would have been invalid as it is illegal for the insurance, as was proposed by the league. The Federation received a letter from the Ministry of Consumer and Commercial Relations of Ontario which clarified what actually happened. I quote the following:

"It would appear that the insurance administrators of the League's program intended to mail their equipment program only to United States members of the American Radio Relay League. Due to an oversight, the material was in advertently mailed to Canadian residents.

We have been assured by the administrators that this situation has now been corrected and shall not occur again unless appropriate administrative details of doing business in Canada are worked out."

If you are interested in insuring

your Amateur equipment, I am sure you will find that your Homeowners policy can cover it. Discuss this with a competent insurance agent and make sure of all the possibilities before you sign on with a special policy which will cost you extra.

## Two Gallons By The Bootstraps

### Errata

In my article "Two Gallons By the Bootstraps" published in May TCA, there appears that a couple of errors have introduced themselves between writing and publication.

In particular, the relaying should be amended to:

K2A should be a normally open contact and labelled K1B. **R4 is wire across it.**

K1B should be labelled K2A.

If a coaxial relay with a set of normally closed auxiliary contacts is available, the entire relaying

could be accomplished with a single relay.

R4, however, must be shorted out in the transmit mode, not the receive mode.

The other points are as follows:

a) TS1 is a normally closed contact.

b) R7 is described in the text as being a surge limiting device. For R7 read R6.

c) Output Circuitry should read: "Builders should equip themselves with an adequate selection of enamelled wire and various insulated forms. In this version approximately 100 turns of no. 28 enamelled wire, wound close spaced over a 4" ... etc."

I hope this will assist any intended construction.

**Martin MacGregor, VE7CGM**

### NEWS BULLETIN:

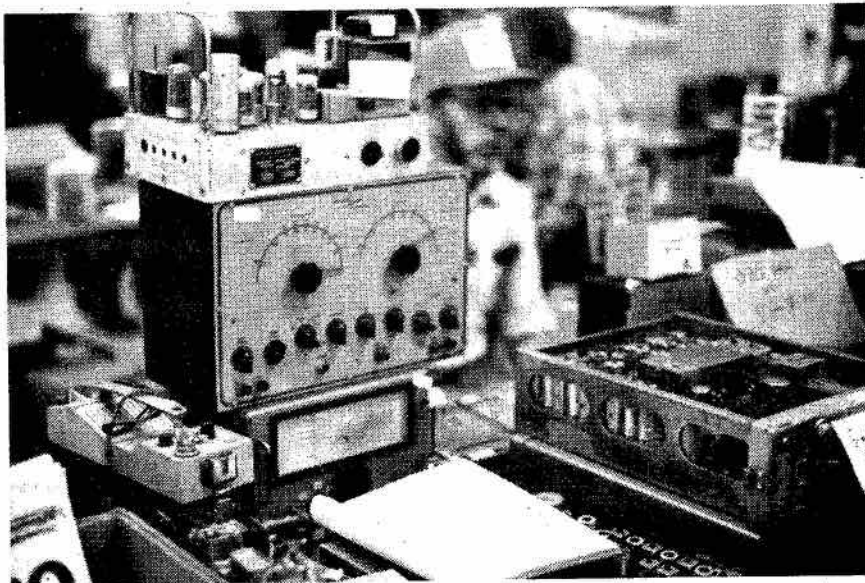
The Canadian Division ARRL/CRRL has informed CARF of the retirement of the Canadian Director, Mitch Powell, VE3OT. Tom Atkins, VE3CDM, formerly the Vice Director, has been appointed Director of the Canadian Division to fill out the present term. This took effect during the last weeks of September.

# Convention hopping

CARY VE3ARS

This past summer I had the pleasure of attending several hamfests, fleamarkets and conventions in various parts of eastern Canada. During June and July, I attended the Guelph Fleamarket and the Milton Hamfest. I found both entertaining, informative and impressive.

**Guelph**, this year had a bit of bad luck. The Saturday of the event turned out to be one of those wet Saturdays that only Ontario can come up with. Drizzly, damp and depressing. The organizers took this turn of events in stride and moved the whole works indoors. The hall turned out to be surprisingly large and the majority of vendors were able to sell without being overly crowded. The array of used equipment on display was impressive as well. Everything from used Amateur gear to unused junk was laid out for all to see. Each year seems to improve the quality of the junk by any means. Most of the major Amateur dealers from eastern Canada were there, as were many vendors of equipment not usually thought of as radio equipment. I look forward to being there again next year.



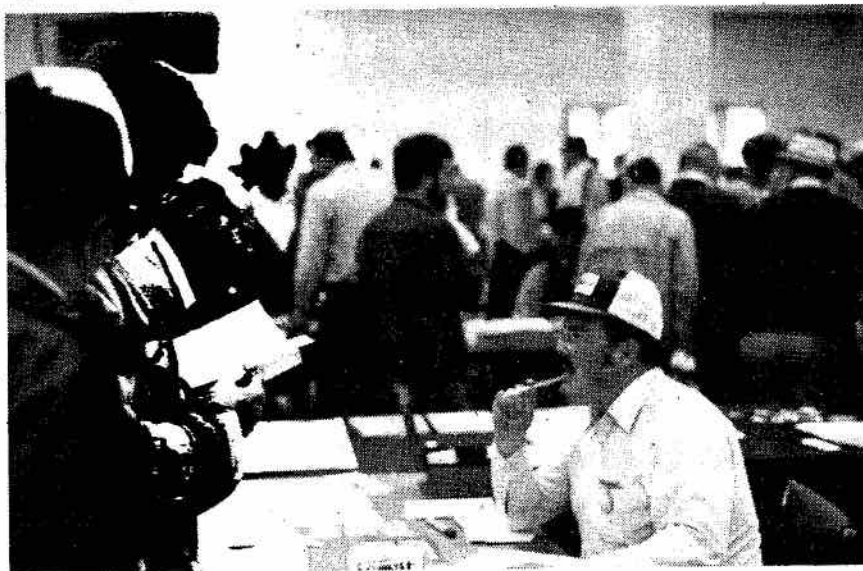
*Not all the equipment at the Guelph flea market was new.*

**Milton.** I attended my first Milton Hamfest this summer, and I can only say that I was totally impressed with this event. I have been to several American fleamarkets over the past several years, and the Milton affair compares very favorably with them all. Though not as large as most American fleamarkets, The Milton Hamfest has all that you really need to be successful. Good

organization, well set up displays, a large field or parking lot, a central location, and lots of rich Amateurs to spend money.

Two things interest me most about a Hamfest; equipment, and people. The Milton Hamfest had good numbers of both. Coming from Ottawa where the equipment seen at the local auction has probably passed through everyones basement over the years, seeing relatively new equipment up 'on the block' at bargain prices is next to seventh heaven. It used to be that you had to go to the Rochester Hamfest to see the same sort of thing. Now, thank goodness, all you have to do is go to southern Ontario. It is my opinion that most clubs should go to the fleamarket approach to selling used gear rather than the auction. Few people turn up to auctions with good equipment for sale as they know that they will always lose out. Most of what you see at Ham auctions isn't worth buying anyway. I don't sell junk. Neither do I buy it. You will rarely find me at auctions with money or equipment.

As a case in point, an auction held in Ottawa just before the Guelph fleamarket had little



*Craig Howie, VE3HWN fields questions at the CARF booth. Cary VE3ARS, editor TCA and Bill Carew, VE3MEW, both out of picture, helped out.*



*Only half the crowd at Guelph, the other half were in another room.*

usable equipment for sale. A couple of weeks later, a vast quantity of equipment from Ottawa turned up at the Guelph affair. That should tell you something. The auction format is dying.

The people attending these affairs are always in the best of spirits. Perhaps this is why the hospitality of both Guelph and Milton was so good. This is why people keep coming back. I enjoy meeting all the people I can at these hamfests, and I sometimes forget who I have been talking with, however everyone seems to be having a good time so I guess no one cares if you forget a name or two . . . or three. With the likes of George Collins, VE3FXT or Fred Hammond, VE3HC around, there is always something or someone to talk about.

#### **Prince Edward Island**

My last stop this summer was Prince Edward Island, where the "Convention '82" 1982 Maritime convention was held. I must say, I cannot remember when I have enjoyed a convention more. About 340 Amateurs from the Maritimes and eastern Canada attended this event, and I know of no one who went away sad or dissatisfied. The hospitality and organization of the committee along with the friendly atmosphere of the surroundings went a long way to making a successful Hamfest. During my stay there, I was joined by Doug Bur-

rill, VE3CDC, an ex-Maritimer, and Nate Penny, VO1NP, CARF Atlantic director. Manning the CARF booth for the two days, plus giving a speech at the CARF forum sure kept me busy, but I was able to meet a lot of our Maritime Amateurs and be treated as much courtesy and enthusiasm as you could find anywhere.

The Friday night opening ceremonies gave everyone a chance to meet the out of town Amateurs, and greet old friends. We were served a chowder stew as a late treat, and anyone who hasn't tasted one of those is missing a treat. The Saturday forums and displays were all well attended, and much news and information was passed. A display of the new Teledon system was brought over from Newfoundland, and this proved to be of interest when it

**All photos here by Yorick**



*This is the other half.*



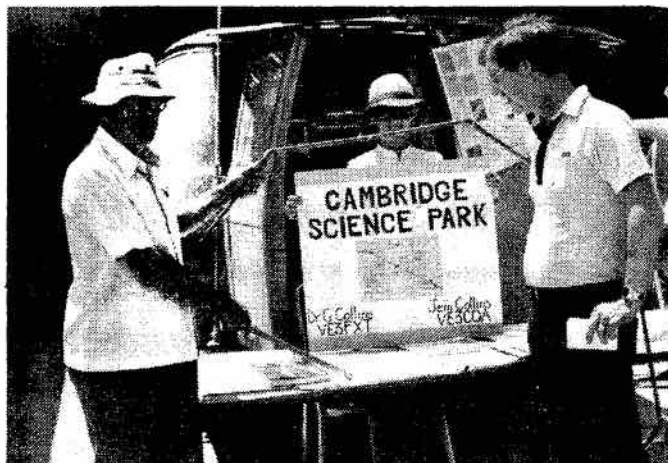
*Just a small portion of the crowd at Milton.*



Bill Carew, VE3MEW (right) and Geoff Smith, VE3KCE searching for more give-aways at the Milton Hamfest.



VE3IPR in a selling mood at Milton.



DXer George Collins VE3FXT (left) and his wife Jem, VE3COA, behind poster take time off from globe hopping to demonstrate a loop antenna made out of 1/2" copper tubing.



Ralph Ronza, VE3KTC (left) and Eric Paterson, VE3IUE (right) take advantage of the warm weather and large crowds at the Milton Hamfest.

was learned that information on Amateur Radio was included in the package.

At the CARF booth, I met with a number of Amateurs who were interested in the operation of TCA, and got promises of many articles.

One of the featured speakers was Gerry King, VE3GK, who gave his "20 Metre Gain Game" talk to a large group of interested Amateurs. His talk interested so many, that he held another session the next day, in his room, to continue his talk. From what I heard, his room was very crowded.

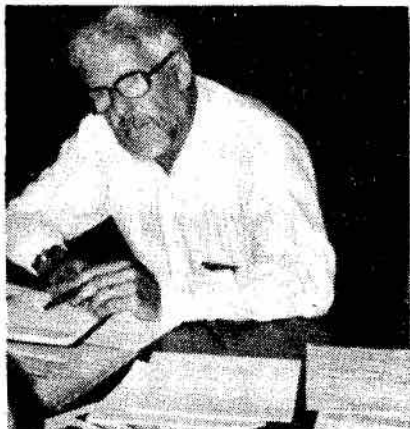
At the CARF forum, I gave a speech on TCA, and what Amateurs can expect from their national Amateur magazine. Doug Burrill gave a talk on the CARF News Service, and provided some news to the gathering on the Japanese reciprocal licensing plan. I also had the pleasure of presenting Jim Nichol, VE1BCI with a cheque for his crossword puzzle, published last November. He received a well deserved standing ovation. His next puzzle was to be in this issue, but we have had to hold off until next month due to technical problems.

At the banquet, on Saturday night, we had a chance to talk with Ron Hesler, VE1SH, and along with Doug Burrill, VE3CDC, and a young couple from New Brunswick, we all enjoyed a fantastic Lobster supper, and great entertainment. I must thank the

Master of ceremonies, who kindly introduced me, but I must apologize to the crowd. When I stood up to wave hello, my zipper popped open full length. As I was at the back of the hall, I am sure few could see the event. For those who wondered why I was walking with awkward steps, I think this should clear the matter up.

up.  
 Sunday brought with it a couple of good contests. One, the brain-child of Atlantic Assistant Director Doug Cormier, VE1BCN, was a "spud hunt". You had to find Amateur calls with letters in them which would spell "potato". The prize was 50 pounds of spuds and as I was flying home, I decided not to participate in case I chanced to win. I chose, however, to participate in the CW contest in the morning. I offer no excuses for my placing in the contest except to say that I normally do not write out anything when I copy code in a QSO. I consider CW like any other language in that you don't need to write out a translation if you can translate it in your head. My script is horrible at the best of times, so writing anything down would do me no good anyway. As it was, I was to learn later that it was my writing that cost me the contest. Oh well! Try to handwrite anything at 55 words per minute and you will see what I mean. Congratulations to VE1MX who won the contest. We were all in it for the fun.

Speaking of fun, as a preliminary round, they held a "Kooky Code contest" just before the main



Don Slater, VE3BID chairing the Annual meeting.



Canadian Amateur representation from coast to coast. This is your Federation!!

event. I won't try to explain the procedure, but one Amateur was heard to say "You need to be kooky to attempt to read the code." I don't know if Barb, VE1ARB heard him. She won the event.

Before things got underway at the campus on Sunday morning, the old-timer's club held their "Breakfast" down the road at a local motel. Not really being an "OT", I felt rather sheepish attending, but I soon found out that friendliness seems to be the only pre-requisite to attending this event. Everyone was introduced, and some wild jokes were told.

One of the major parts to this convention seems to be the picture taking session which also occurs in the morning on Sunday. Everyone lines up for a group photo. I had hoped to include that photo in this issue, but no one sent me one. (I did ask).

I, personally, would like to thank all those who made my stay in PEI so much fun.

The following is a partial list of winners in the contests, and the awards presentation:

Main prize (Delta HF Transceiver) — WB2LCN

Second Prize (IC2AT) — VE1AGT

Kooky Code contest — VE1ARB

Ladies Code Contest (High speed) — VE1ARB

Men's Code Contest (High speed) — VE1MX

Transmitter Hunt — 1st VE1BC1, 2nd VE1ABU, 3rd VE1AMA.

Oldest Ham — VE1BZ

Most CW contacts in 1st year — VE1CCO

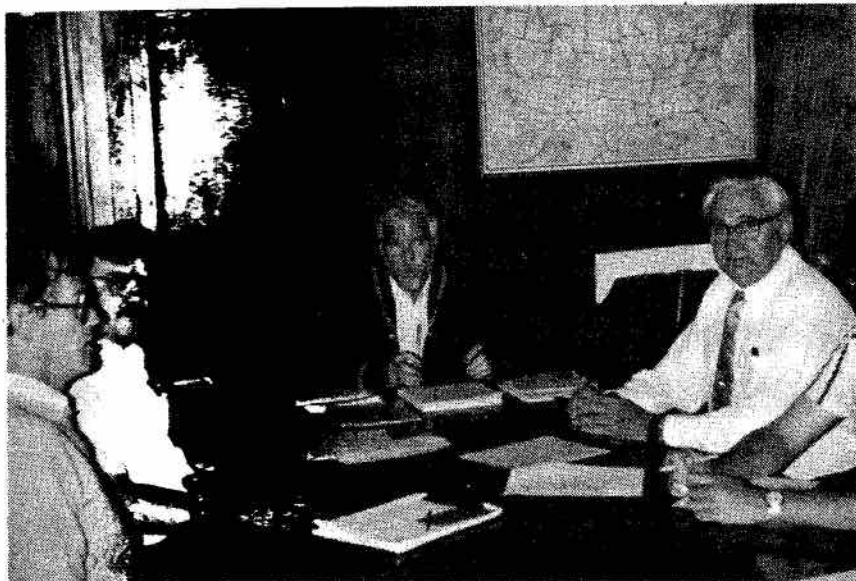
Mike Morrison, VE1CCO is quite an accomplished CW man as well as being a youngster. Due to a handicap, Mike is not as agile as most of us, so he uses a typewriter to copy code down. During the High Speed CW contest, he was in the booth behind me pecking away on a mill, and doing quite well. We were well into the 40's before the clicking died out. Good work Mike.

Doug Cormier asked me to pass along a note on behalf of the committee. They would like to present a big thank you to all the delegates who attended the convention, and to those Amateurs who helped to make it a huge success. The University administration was very complimentary on the way we Amateurs conducted ourselves while staying there. It speaks well for Amateur Radio as a whole when we can have so much fun, and yet not destroy something in the process.

Congratulations to you all.

Finally, I cannot let this go by without mentioning the CARF annual general meeting, held in June. Rideau Ferry Inn is a bit of a recreation spot, and could not have been a better setting for a get-together of this kind (aside from the rain and insects). I won't give a long dissertation on what did or did not happen since anyone who wants to know can write the Federation for a copy of the minutes. I did, however, get some pictures.

One picture is worth a thousand words.



The Directors meeting (Sunday) left to right, Geoff Smith VE3KCE (Ont), Craig Howie VE3HWX (Ont), Don Slater VE3BID (Pres, Carp), Nate Penny VO1NP (Atlantic).

## Convention '82 PEI International Hamfest

One of the best Atlantic region Hamfests in years was attended by 350 Amateurs and XYLs in Charlottetown last month. Hosted by the Prince Edward Island Amateurs, the convention featured VE3GK, Gerry King. Well known for his work on antennas, he spoke on the Twenty Metre Gain Game, and the development of some of his large antennas.

The CARF forum gave Atlantic director Nate Penny, VO1NP, Cary Honeywell, VE3ARS, the TCA editor and CARF News Service editor Doug Burrill, VE3CDC, the chance to describe how CARF and TCA operate.

A novel contest was devised by Assistant Director, Doug Cormier, VE1BCNI Reflecting a major factor in "Spud Island's" economy. His "Potato Contest" had the audience in the auditorium of PEI University in a hilarious scramble to see who could, from among the group, find those who had a letter of the word "potato" in their call sign. The first ones to collect the necessary calls and letters were suitably awarded with 50 pound bags of spuds. The Saturday night banquet featured another Island specialty — a lobster supper.

TCA editor VE3ARS and VE1MX fought a photo finish high speed CW contest right down to the wire. Speeds went up to 55 words per minute and it was only after considerable deliberation that it was decided that VE1MX had the edge over VE3ARS.

The international aspect of the gathering was emphasized when one of the visiting U.S. ops won the grand prize of a transceiver!

*Our sincere thanks to the CARF News Service, PEI boys and gals for the warm welcome and hospitality extended to the CARF team. It was a great opportunity to meet those VE1s with whom we worked on the National Traffic System for many years. (ed.)*

### A REMINDER

In case you need to know where to send your letters, regarding membership renewals or errors in addresses, corrections, articles, etc., I will include this column in TCA for the next couple of months.

#### MEMBERSHIP INFORMATION Corrections:

Send to CARF, P.O. Box 356  
Kingston, Ontario  
K7L 4W2

**Do not send this information to the Editor of TCA. He cannot help you.**

#### TCA General Articles, Letters, - etc.

Send to Editor, TCA  
P.O. Box 2610, Station D,  
Ottawa, Ontario, K1P 5W7

**Do not send them to the Kingston office. It delays the process.**

#### TCA Technical Articles

Send to Technical Editor, TCA,  
P.O. Box 356,  
Kingston, Ontario,  
K7L 4W2



Mailes Dier, VE3BCO, (in CBC-shirt) an active participant at the AGM.

#### Contests, DX, VHF/UHF, EMCOM, CRAG columns

Send to the appropriate columnist, indicated on page 1. You may send material to the Editor if you wish, but it takes less time, and costs less if you mail directly to the columnist.

## Commentary

# How To Flunk The Code Test

It's easy.

Just take the test in one of the set-ups used by some of the DOC examiners. A large hall, loud-speakers, echoes, poor tapes, and you've got it made for a failure.

Originally the code exams for all classes of radio certificates were given on a one-to-one basis, with the inspector sending manual morse and the candidate reading it on earphones. With this simulation of real operating conditions the candidate had a fair chance; however, all this has changed. Because modern radio inspectors are not required to know morse and must examine large numbers of candidates, the use of large, bare halls or rooms and the use of loudspeakers echoing out poor code tapes has become customary in many exam centres. For many of the candidates the former fair chance has become, instead, an almost certain failure.

The situation came to a head recently when VE3KND, Ray Fleury, wrote to the Minister of Communications regarding the fiasco he witnessed during the June set of exams. In no uncertain terms he described the facts of the code exam, facts which are not unique to the particular exam centre which he attended but which can be encountered elsewhere in the country.

Ray's credentials as a critic in this matter are impressive. He has spent most of his working life in the Royal Canadian Corps of Signals. In his career from signalman in 1932 to major when he left the Corps in 1966, he spent a number of years in training Army operators, both as an instructor and later as officer-in-charge of signal training units. Ray can still handle 35 or 40 words per minute on a typewriter and to top that, is proficient in the Japanese code.

Here's the story in Ray's own words as written to the DOC Minister. The names of the inspectors and the place are omitted 'to protect the innocent' as the examiners are caught up in the ex-

isting, unreal system of morse testing.

"... for the past three years I have been teaching the morse code to prospective radio Amateurs on behalf of our Amateur Radio Club... From the failure rate of the past two years of DOC tests and complaints voiced by our and other candidates regarding the poor conditions of the testing facilities... I decided that I had a moral obligation to be present at this year's code examination, to see for myself.

"On my arrival... I introduced myself to the four DOC personnel... They were in the process of testing their equipment. What was being sent from a tape machine was simply horrible. I could NOT read any of it."

Ray objected strongly to the test being held under such poor circumstances but the inspectors said they had done their best with the equipment they had and had no choice but to proceed with the exam.

Ray's letter continued, "I tried to read what was being sent but I gave it up in disgust. It was an insult to be submitted to such trash. However, I did manage to time the speed and found that it was over the ten words per minute required. I also found that the sending rated as about the worst I had ever heard in my fifty years of reading morse code from all over the world.

"The test was held in a big convention room equipped with built-in speakers, bare walls and wooden tables. This created an extremely bad echo which was as strong as the signal itself, plus very heavy key clicks, heard out of phase due to poor recording. Needless to say I was stunned at the whole show. I could not believe that such terrible code was being sent to candidates who had worked hard all year and longer, had travelled hundreds of miles to attend courses and in many cases had made special arrangements to get the day off from work... for

the test. Candidates were stunned to say the least, but could not say anything as it could jeopardise future exams and tests. I know now why candidates were failing so badly at code tests..."

"I would strongly recommend that all future testing be done by the instructors of the different Amateur radio clubs at their respective locations, with their good equipment, under supervision of the DOC..."

A lot of people have reached conclusions similar to Ray's, both here and in the U.S.; there, the Congress is in the midst of passing a bill which would give the FCC the power to delegate examination procedures to Amateur organizations. Some years ago here in Canada, CARF Regulations chairman Art Stark, VE3ZS, made a proposal to DOC to permit Amateurs to give exams and with the Department's increasing concern over rising costs the time has been deemed right to again suggest to the DOC that there are several advantages to this idea. An up-dated version has been included in the brief which CARF recently sent to the DOC in reply to its Gazette notice asking for comments on a study to be made on the costs of administering each radio service.

There are obvious benefits to both aspiring Amateurs and to the DOC.

For the Department it would mean a saving of man-hours, travel time and expenses and overtime payments now dedicated to examinations.

For candidates it would mean the opportunity to write examinations at convenient times and places and on mutually agreed dates. There would be a saving of travel time and expense and no need to lose time or money due to being absent from work -- examinations could be conducted on evenings or weekends. The elimination of the problems generated by large group exams could be accomplished by tests



held on a one-to-one basis and the use of headphones instead of loudspeakers.

The authority to appoint examiners already exists in Section 3, subsection (3) of the "Radio Operator's Certificate Regulations" which allows the Deputy Minister to designate examiners. They do not have to be Radio Inspectors or even government employees. The Department has for many years been approving examiners other than Radio Inspectors; for example from the ranks of aircraft pilots, ship's officers, air traffic controllers and marine traffic controllers, to test those employed in these professions.

In some countries such as Norway or Japan, the Amateur organizations are deeply involved in administering the Amateur Service, including examinations. CARF proposes that examiners could be nominated by Amateur clubs or provincial organizations. In rural areas where there are no clubs, nominations could be initiated by the provincial societies. Nominees should be screened and recommended to DOC by the provincial organizations and by the national society, CARF. They would be subject to approval by DOC, which would appoint approved nominees as official examiners for a term of one or two years, extendible if desired. A minimum of 18 years of age and an Advanced Amateur ticket would be required of nominees.

Candidates would make the usual application to DOC, which would then prepare an exam packet including instructions both for the examiner and the candidate, the written questions, a code receiving test tape and a blank tape for recording the candidate's sending. The applicant would be advised of the examiner's name and address and advised to contact him to arrange a time and place for the test.

The exam would consist of the examiner playing the code tape, recording the candidate's sending, presenting the written questions to the applicant and permitting the allotted time for answering. The examiner would send all the test

papers, answers and the code tapes to DOC.

Initially all papers would be marked by DOC but as the system became accepted and approved examiners could mark papers and assess the code tests. This would require DOC to develop guidelines and sample answers, detailing pertinent points to be covered for each essay type question, as is already done for the guidance of Radio Inspectors. Multiple choice type questions could be marked by hand or overlay. Code testing should pose no problem for the appointed examiners.

In the event of a candidate being dissatisfied with the results or conduct of an exam, he or she could appeal to the DOC. In the event that a re-examination is allowed, it should be conducted by the Department.

In its brief to the Department, CARF has asked for a meeting with DOC officials to review these ideas with the objective of making more specific recommendations in the matter.

In the meantime, CARF solicits comments from Amateurs as these would probably go a long way to supporting the final proposals to DOC.

**Doug Burrill, VE3CDC**

## The 1988 Calgary Winter Olympic Games

Yes, it is only 1982, however for an event of this caliber which may come only once in a lifetime in the same city, we must be completely prepared. The Calgary Amateur Radio Association has a committee in place to work on this event. A meeting with the organizers was held in May, 1982.

Many Amateur related involvements were discussed, which will give the C.A.R.A. committee some time to think of what has to be done.

Some of our involvements will include the International message handling via the Official Olympic Station, which will be located at the Olympic Village. This station will handle all incoming and

outgoing messages for athletes, official families, staff and support personnel as well as any other officially accredited people. This station will have a walk-up type service for those who have access to the Olympic Village, and for others a special telephone number will be listed with operators who will then take your message. These messages must be, of course, brief and have the proper address included.

Also, we will be involved on the Olympic Torch Run. This will be a major undertaking by itself, because it will involve Amateurs from possibly the whole country. It will be an all-out dedicated effort by all Canadian Amateurs.

Other items which were discussed was Medical Info., traffic control communications, communications from down-hill skiing, security backup, packet radio, ATV, satellite communications, etc.

We presented the XV Olympic Winter Games Organizing Committee, (formerly C.O.D.A.) with a brief outline of our club's history, our involvement of all our community projects, and our capabilities with Amateur Radio.

We are planning to contact all the clubs in the province through A.R.L.A. to set up a system from which we could draw operators for the different communication modes.

The XV Olympic Winter Games Organizing Committee is planning a complete dry run in 1986. So there we are, only 3 1/2 years away.

Anyone really interested in participating in any aspect of this great project, please contact your local club or the C.A.R.A. Olympic Committee direct. We must do a lot of planning to pull this off and we are looking for advice from each and all of you. Do your part and be a proud amateur involved in the 1988 Olympics.

For any information, write to Box 592, Calgary, Alberta, in care of the C.A.R.A. Olympic Committee, or call Abe Mackay, VE6AMU at 282-0104 in Calgary. We will keep you all informed via articles in the VE6 magazine.

**Credit VE6 Magazine**

# VHF/UHF News

John Dudley VE5JQ

## Perseids Meteor Shower

The Perseids shower of August was of variable quality according to reports heard. Many contacts were made on 144 MHz, some on 220 and I did not hear of any successful 432 contacts. The big U.S. stations made numerous random QSO's and several bursts from them were heard here. My only schedule, with WA1JXN - Montana, was unsuccessful but he did work VE4MA Winnipeg and VE6SW Calgary. The peak of the shower appeared to be on August 11th with conditions dropping off rapidly after this.

The Orionids in October, the Leonids of November and Geminids of December should keep "ping jockeys" busy for the rest of the year. More about this interesting mode next month.

## New Propagation Book

The **VHF Propagation Handbook** by Jim Stewart WA4MVI is now available. It covers the VHF DX modes with chapters on E.M.E., meteor scatter, tropo, Oscar, etc. Also included is a history of VHF DX operation. The book is well written and available from Nampa Offset Printing, Inc., 312 12th Avenue South, Nampa,

Idaho 83651. The price is \$3.95 in U.S. funds.

## E.M.E. Contest

The A.R.R.L. E.M.E. will get a second running this year with a move to the fall time slot. The last few years have seen difficult aurora conditions and nasty spring weather leading to the switch from spring to fall. The new time will also allow all of that summertime antenna work to be put to a good test. The first half will be on October 9th and 10th, coinciding with the October perigee. The second half will go the weekend of November 6th and 7th. See you off the moon!

## Using sun noise to evaluate receiver systems

With the availability of low noise microwave transistors and interest in E.M.E., satellites and other weak signal work, a reliable way of testing the efficiency of receiving systems is needed. The sun can supply a fairly reliable signal source to check our receive systems against.

The receiver noise is made up of noise generated within the receiver and that detected by the antenna from the environment.

Thus the installation of a new low noise pre-amp could reduce overall receiving system noise figure and lead to an increased sensitivity for the system. To see if this is the case solar noise measurements can be used. The antenna is pointed at the "cold" sky and then at the sun, the difference in db is the sun noise. Thus comparisons between receive systems/antenna arrays can be made.

The easiest way to make the measurement is with the aid of a calibrated attenuator in the signal path. If a calibrated S-meter is available this can be used or else an audio frequency volt meter with the receiver AGC turned off.

One word of caution, solar flares and other disturbed solar activity can produce temporarily elevated solar activity which will give extraneously high sun noise readings. Thus readings should be done when a "quiet" sun is available.

## Reference:

Determining the Sensitivity of Receive Systems with the Aid of Solar Noise by G. Hoch DLWU, VHF Communications, 2/1980. pp 66-72.

## AMSAT's phase IIIB launch delayed again . . . soviet launch satellite

AMSAT has been notified that the launch of the Ariane L7 rocket carrying the Phase IIIB amateur radio spacecraft along with the ECS-1 (European Communications Satellite) has been delayed until January 1983. The Phase IIIB satellite will have a 435 MHz uplink and a 145 MHz downlink. The Ariane launch schedule has been set back due to a major malfunction aboard a test launch last December. The delay should have little effect on the AMSAT program, but as AMSAT's Vern

Riportella (WA2LQQ) says, "It would have been nice to have had a launch this summer or autumn."

Meanwhile, the USSR has orbited ("tossed out" is a better explanation) another Russian Amateur Radio satellite. It was jet-tisoned from the Salyut 7 space station by the Cosmonauts aboard. The 62 pound satellite built by Russian engineering students, signs the call RK02 and has been heard on 28.878 and 26.576 MHz. AMSAT was notified of the impending launch by

HA5WH (Dr. Andre Gschwindt of Budapest), Chairman of the IARU's Region 1 Satellite Coordination Group. The communique said the satellite was an "HF 21/29 MHz" satellite, but so far nothing heard on 21 MHz. Its orbit carries it beneath the ionosphere, thus the HF frequency allowing signal refraction to earth. The world's first HF-to-HF transponder obviously has a problem since it has yet to be activated.

## W5YI Report

## Docket 82 - 83

Enough has been said in print and on the air about the F.C.C.'s notice of proposed rulemaking that it is not necessary to repeat the whole thing here. Both your Federation, and the Canadian Division ARRL/CRRL have sent in their comments and we all wait the inevitable results. I thought it might be interesting for all Canadian Amateurs to see what your representation to both organizations resulted in, so here, courtesy of the Canadian Amateur Radio Federation, and the Canadian Division ARRL/CRRL, are the submissions to the F.C.C. regarding Docket 82 - 83. The CARF document was obtained through Bill Wilson, VE3NR, while the CdnDiv ARRL/CRRL was given to us by its new President, Tom Atkins, VE3CDM. We thank them both.

VE3ARS, Editor TCA.

## CARF submission

Re: PR Docket 82-83

### Gentlemen:

We are writing to comment with regard to the Commission's Notice of Enquiry and Proposed Rule Making concerning the "Expansion of the Telephony Segments of the High Frequency Amateur Radio Service Bands".

### Background

The Canadian Amateur Radio Federation Inc. is a national association, incorporated under the federal laws of Canada and is owned and controlled by member Canadian Radio Amateurs. The Federation has no financial or other obligations to or connections with other associations or leagues of Radio Amateurs outside Canada. It has a membership of some 5000 Radio Amateurs located in all parts of Canada. It is governed by a board of Directors elected every two years by member Amateurs. The main objective of the Federation is to represent and act for Canadian Radio Amateurs on all matters concerning them.

The matter of Amateur band sub-allocations may be said by some to be solely a domestic issue but the very nature of H.F. radio propagation precludes this. Any action the FCC takes on this matter is bound to affect Amateurs throughout the world. For this reason the Federation feels it should comment with the hope that the Commission will give those comments careful consideration.

### Proposal to Expand the 20 Metre United States Phone Sub-band

The proposals submitted to the FCC all note that the U.S. 20 metre phone sub-band is congested and that expansion is necessary to relieve this congestion. The proposals also note that:

1. Protection from powerful U.S. stations is no longer necessary.
2. Non-U.S. Amateurs would welcome expansion as they could then work U.S. stations on a com-

mon frequency.

3. The United States no longer has the dominant Amateur population so expansion would not pose an undue hardship to foreign stations.

4. If the proposed expansion were restricted to use by a particular class of U.S. Amateur or by lower powered stations than presently authorized to U.S. Amateurs, the impact on non-U.S. Amateurs would be lessened.

The FCC note in their proposal to expand the 20 metre sub-band by 50 kHz that:

1. It will provide relief to the current overcrowding.
2. It will cause only minimal disturbance to international operations.
3. Increasing sophistication of Amateur equipment used by U.S. and foreign Amateurs will not result in undue interference being caused by the proposed expansion.

4. U.S. Amateurs will have less difficulty in attempting to contact a foreign Amateur because they will be able to use single frequencies rather than two frequencies as is now the case.

While it may be that the U.S. 20 meter phone sub-band (14.20 - 14.35 MHz) is overcrowded, certainly the so-called international phone sub-band (14.10 - 14.20 MHz) is overcrowded. Let us look at the reason for this.

Sophisticated equipment is available to Amateurs throughout the world these days. However, United States Amateurs, with their higher per capita income and preferred currency can get this equipment much more readily than non-U.S. Amateurs who inevitably have to get by with poorer equipment, less efficient antennas and lower power, especially if he lives in one of the many countries that has lower power limit for Amateur stations than the United States. The result is that the U.S. Amateurs, with their large number

of high-power stations, operating in the sub-band 14.20 - 14.35 MHz have pretty well crowded non-U.S. Amateurs into the 14.10 - 14.20 MHz sub-band, a narrower sub-band. Put another way, while 1/3 of the world's phone Amateurs (the Amateurs of the United States) operate in a 150 kHz sub-band, 2/3 of the world's Amateurs (the remaining Amateurs in the world) operate in a 100 kHz sub-band at 20 meters. Thus, frequency congestion for Amateurs who operate outside the U.S. phone sub-band at 20 meters is 3 times what it is for the United States Amateurs.

The position of Canadian Amateurs is not unlike that of other non-U.S. Amateurs. Because Canadian wages on average are not as high as those in the United States, because the Canadian dollar is discounted by 20 % in terms of the U.S. dollar and because we have different tax structures, Canadians have to work 30 % to 40 % longer to obtain the same sophisticated Amateur radio equipment as a U.S. Amateur. In general, this does not happen and Canadian Amateurs do not have the same level of equipment.

On the matter of single vs. two-frequency phone contacts, expanding the U.S. phone sub-band into the so-called international phone sub-band will not improve this situation. The non-U.S. Amateur who wants to work into the United States needs only to operate in the 14.20 - 14.35 MHz sub-band. If he wants to work other non-U.S. Amateurs he has to work outside the U.S. phone sub-band. Most non-U.S. Amateurs know their signals will usually be swamped if they try to operate in the U.S. phone sub-band, especially if they have rare calls or have what is classed in the United States as a DX station. Consequently, if the Commission decided to expand the 20 meter phone

sub-band, non-U.S. Amateurs will squeeze together and try to continue operating in whatever is left over. The situation will be unchanged for U.S. Amateurs.

The solution for U.S. Amateurs is to return to the old operating practices and to use two-frequency equipment. It will be recalled that when Amateurs adopted crystal frequency control in the mid-thirties two-frequency operation was normal. The current trend is very much toward transceivers with a dual frequency capability. Thus U.S. Amateurs who have a much easier access to this more modern equipment and who want to work non-U.S. Amateurs can acquire a two-frequency capability and adopt the appropriate operating techniques.

Expanding the U.S. phone sub-band at 20 metres will inevitably result in narrowing the sub-band allocated to what was originally CW telegraphy and is being used increasingly for Baudot and ASCII. If the pinch is too much, telegraphy and data operations could be moved into the phone sub-band to the detriment of phone operations since telegraphy and data are more tolerant of interference than phone.

Limiting the use of the expanded portion of 20 metre phone sub-band to a particular class of U.S. Amateur will help the U.S. situation and, if the number who are permitted to use it is not too large, the impact on the rest of the world's Amateurs may not be too great. However, restricting the amount of power U.S. Amateurs operating in the expanded portion may use is not realistic as the rule would be unenforceable. There are very few Amateurs who would not turn on their amplifier in an attempt to secure a contact. Who would really know and how would the regulatory body prove that any Amateur exceeded the power limit?

In concluding our comments on your 20 metre proposal, we must advise you that Canadian Radio Amateurs are opposed to any expansion of the 20 metre U.S. phone sub-band. We think that the proposed expansion will have a significant and detrimental effect

on international Amateur operations. Non-U.S. Amateurs will be crowded into the spectrum that is left over after the U.S. expansion and goodwill towards U.S. Amateurs may be affected. It is very likely that Canadian Amateurs will seek a compensatory revision of the Canadian phone sub-band as they did when this happened before. Indeed Canadian and other non-U.S. Amateurs restricted by laws or other informal agreements may seek to have all sub-band allocations abolished.

#### **Inquiry Regarding the Possible Expansion of the Other U.S. H.F. Phone Sub-Bands**

We would like to turn now to the issues affecting the possible expansion of the other H.F. Amateur phone sub-bands about which you have invited comment.

What we have said about the Commission's 20 metre sub-band proposal would apply to the 80, 40, 15 and 10 metre Amateur bands if proposals in those bands were to be made. We would not, however, agree that the 10 metre phone sub-band was congested. We can see no valid reason for expanding the 10 metre phone sub-allocation.

In response to paragraph 17 of the Commission's inquiry, our comments on the seven issues are as follows:

A. One cannot reasonably consider domestic and international telegraph operations separately. There is no doubt that expansion of the U.S. phone sub-bands will have an impact on both classes of operation. If unduly squeezed, telegraph operations could be moved into the phone sub-bands to the detriment of phone operations. We Canadians have some experience in this regard since we share our phone sub-band with U.S. Novices.

B. Since U.S. Amateurs dominate the phone sub-bands that they now use, there is no doubt that they will dominate any expanded U.S. phone sub-bands. The United States could reasonably show some consideration by not swamping the operations of less fortunate Amateurs

outside the United States.

We subscribe to the concept of freedom of communications between Amateurs. This includes freedom of communications between non-U.S. Amateurs as well as between U.S. Amateurs and non-U.S. Amateurs. We feel the Commission has some obligation, bearing in mind the nature of H.F. propagation, to protect these two allied freedoms.

C. We wrote earlier on the matter of split frequency operations. We think that equipment now on the market makes split frequency operation much, much easier and that this argument for sub-band expansion now has little weight.

D. We have no comment  
E. on these questions.  
F.

G. We think that the recent expansion of the Canadian telephony sub-band at 40 metres should influence your consideration of expanding the U.S. H.F. phone sub-bands. Spectrum congestion in the 7.15 - 7.30 MHz phone sub-band due to international broadcasting and U.S. Amateur operations resulted in Canadian Amateurs not being able to work Amateurs in other parts of the world and in some parts of Canada on phone. Canadian Amateurs sought and eventually obtained authority to operate in the 7.05 - 7.10 MHz band to get around this problem. If the United States chooses to expand its Amateur phone sub-bands, it can expect other countries to take similar steps in self-defence. In those countries where Amateurs observe the informal agreements regarding sub-bands, Amateurs will find it easy and tempting to take compensating measures.

In closing we wish to thank you for your consideration of these comments which reflect the views of Canadian Amateurs as expressed at the Sixth Canadian National Amateur Radio Symposium held this year in Scarborough, Ontario, on May 29, 1982, and in the very large amount of mail from Canadian Amateurs to the Federation.

**Yours very truly,  
Don Slater, VE3BID,  
President.**

# CRRL submission

Provided by

Tom Atkins VE3CDM

## Comments in response to the notice of inquiry and proposed rulemaking

CRRL, the Canadian Radio Relay League, Inc, a nationwide non-profit organization of over 4500 radio amateurs licensed by the Canadian Department of Communications, and Canadian member-society of IARU, the International Amateur Radio Union, hereby submits its comments to the Notice of Inquiry and Proposed Rulemaking released 1982 February 24 (PR FCC 82 - 83 30774).

1. Since February, hundreds of Canadian amateurs have contacted CRRL representatives and workers, through correspondence or personally at amateur radio gatherings across Canada, and have made comment on the Commission's proposal. We must inform the Commission that CRRL representatives and workers have received no comment supporting the expansion of the U.S. phone sub-band on 20-meters or on any other band. There has been no comment even condoning such expansion. All comment has been against expansion. We conclude that Canadian amateurs are almost unanimous in this feeling.

2. Canadian amateurs agree that the present U.S. phone sub-band on 20-meters is crowded. They readily admit that modern, sophisticated, commercially-produced transceivers are used by U.S. and non-U.S. amateurs alike. They note, however, that when simpler equipment is used, it is often in the hands of non-U.S. amateurs. Because of high cost and limited availability, non-U.S. amateurs are less likely to own powerful linear amplifiers and efficient directive antenna systems that give so many U.S. amateurs a "big signal". This is true even for Canadian amateurs. In addition, in some jurisdictions, amateurs are subject to severe power restrictions. Bermuda would be an example.

As a result, many non-U.S. amateurs find that they cannot

communicate effectively in the present U.S. phone sub-band. Their signals tend to be weaker, while so many U.S. signals are strong. This is why non-U.S. amateurs still feel that there is a legitimate need for their own sub-band, where they can communicate with each other, and by means of "split frequency" operation, with U.S. amateurs, free from excessive interference.

3. Under the Commission's proposal, such a sub-band would still exist, but it would be reduced in size and usefulness. Many Canadian amateurs feel that as U.S. amateurs move into the proposed 14.15 - 14.2 MHz segment, international communications in that segment will become as difficult as it is now above 14.2 MHz. As a result, non-U.S. amateurs will move into the remaining 14.1 - 14.15 MHz segment, causing interference to each other, and interference to the U.S. cw telegraphy that is increasingly being found on this segment. Some Canadian amateurs suggest that the Commission's proposed expansion will bring only temporary relief to the problem of overcrowding in the present U.S. phone sub-band. The new segment will attract additional amateurs to 20-meter phone operation, and conditions will become as crowded as before.

4. Experienced DX operators do use "split-frequency" because of proposed expansion will minimize the need for "split-frequency" operation. Foreign DX operators use "split-frequency" because of the large number of amateurs, particularly U.S. amateurs, that wish to speak with them. They transmit on a clear frequency below 14.2 MHz, and listen for calls over a 5 - 10 kHz portion of the band above 14.2 MHz. Often it is the only way that communication is possible. The alternative is single-frequency "pileups" in which no one is heard. If expansion occurs, the need will remain but the foreign DX operator will have to call from below 14.15 MHz, from within a more crowded and interference-

prone "international phone band" Communications will become more difficult for everyone.

We would add that manufacturers of amateur radio equipment continue to recognize the need for "split-frequency" operation. Most transceivers designed today incorporate some form of dual-frequency capability.

5. Many Canadian amateurs also express a concern for the fate of cw telegraphy and increasingly popular radioteletype operation found below 14.1 MHz. In both Canada and the United States, phone operation is confined to certain sub-bands by regulation. This is not so in many jurisdictions, where phone operation remains above 14.1 MHz only by "gentleman's agreement". If expansion occurs, leaving a smaller and less useful "international phone band", there is no reason to believe that some amateurs, not bound by regulation, will not begin to operate phone below 14.1 MHz. This will spoil cw telegraphy and radioteletype operation for U.S. and non-U.S. amateurs alike.

6. Some Canadian amateurs have suggested alternatives to expansion which should be more fully explored. Increasingly, modern HF transceivers are being fitted with 1.5 kHz filters or means of narrowing receive bandwidth to this range. Narrowband voice techniques still offer promise. New WARC bands at 18 and 24.5 MHz will help relieve overcrowding on 20-meters and other bands. The AMSAT Phase III satellites, the first of which should be launched next year, will take over some of the communications now conducted on HF bands. Major manufacturers are designing and even offering off-the-shelf equipment capable of communicating through the Phase III satellites. The cost of such equipment will be high, but because of the relative affluence of amateurs in the United States, nowhere else in the world will such equipment be

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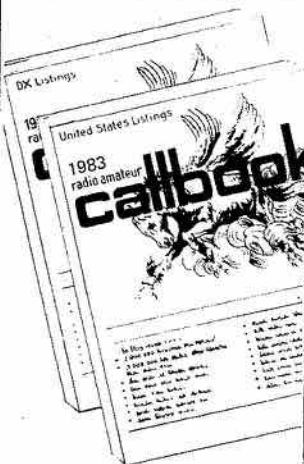
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- Precision machined chrome plated brass frames
- Standard model has black textured finish base, deluxe model is chrome plated
- Heavy steel base, non-slip feet

**USED GEAR**

\* 10 day Trial (pay only Shipping Charges)

AS OF SEPT. 1, 1982.

YAESU FT-902DM*	-----\$1349
YAESU FT-901DM*	-----\$1099
YAESU FC-901 Ant Tuner	---\$ 149
YAESU SP-901P Sp Patch	---\$ 75
YAESU FT-7b 100W PEP	---\$ 475
YAESU YC-7b Dig Disp	---\$ 99
YAESU FT-207R Handie	---\$ 225
YAESU NC-3(b) Chrgr	---\$ 49
YAESU PA-2 DC-DC Adaptr	---\$ 20
YAESU MMB-11 290 Mount	---\$ 35
MFJ-962 1.5kw tuner	---\$ 239
DAIWA RF-440 Sp Proc	---\$ 99
CUBIC ST-3b Ant Tuner	---\$ 149
ATLAS 215X 160-15M	---\$ 399
ATLAS Power Supply & Vox	---\$ 99
AZDEN PCS-3000 2M FM	---\$ 349
AZDEN CS-ITK TT Back	---\$ 39

**A.E.A. PRODUCTS**

MM-2 Morsematic	\$229/209
CK-2 Contester	\$185/169
ISOPOLE 144	\$ 60
ISOPOLE 144JR	\$ 45
MBA-RO READER	\$429/399

ALINCO ELH-230 \$129/119  
 2M ALL MODE AMPLIFIER  
 3watts in - 30watts out

**CLEARANCE ITEMS:**

SWAN 100MXA HF Transceiver	---\$599
YAESU FV-101Z VFD 101/901/2	---\$229
YAESU FT-107M/DMS & Pwr S.	---\$1399
HENRY RADIO 2KD5 w/tubes	---\$1199
MFJ-101 24 hour clock	---\$ 49
DAIWA CNA-1001 Auto Tuner	---\$ 399
DAIWA RF-440 Speech Proc	---\$ 149
KWANTRONICS Signal Enforcer	---\$ 199
SWAN FS-2 Field Str Meter	---\$ 25

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more available to amateurs than the United States.

7. We would like to briefly address the Commission's questions found in paragraph 17 of PR FCC 82 - 83.

A. Yes. This concept has been discussed in our Section 5 above, and has application to all HF amateur bands.

B. Yes. This concept has been discussed in our Section 2 above.

C. No. This concept has been discussed in our Section 4 above.

D. Contiguous telephony sub-bands would seem desirable, but this is a U.S. domestic matter.

E. No comment. This is a U.S. domestic matter.

F. No comment. Again, this is a U.S. domestic matter.

G. The creation of a new Canadian phone sub-band on 40-meters was a response to a request by some Canadian amateurs (but not through the Canadian Radio Relay League, or as members of the Canadian Radio Relay League), that would allow Canadian amateurs to communicate without interference from strong U.S. amateur stations and international broadcast stations. It should be noted that this new sub-band is not receiving extensive use by Canadian amateurs. They are finding that phone operation is difficult because of the cw telegraphy and radioteletype operation found in this sub-band. Many avoid using phone in this sub-band out of courtesy for such operation. Concern is often expressed for the operation of the American Radio Relay League headquarters station, W1AW. For these reasons, we do not feel that the presence of this sub-band in Canada should be a major factor in the Commission's thinking.

8. There is a general feeling among Canadian amateurs that despite their wishes, and the wishes of thousands of amateurs around the world, the Commission will rule in favour of some kind of expansion. Whenever CRRL representatives and workers have discussed this possibility, they find that amateurs feel that if expansion does take place, they would prefer that it take place

along the lines proposed by ARRL, the American Radio Relay League, rather than along the lines proposed by the Commission. The ARRL proposal would have U.S. General-class amateurs remain above 14.225 MHz, and allow only U.S. Advanced - and Extra-class amateurs access to the new 14.15 - 14.2 MHz segment. We believe that all the hardships discussed in this submission would still occur, but that the ARRL arrangement would somewhat lessen their impact.

In conclusion, Canadian amateurs are concerned that the controversy surrounding the Commission's and other's proposals not destroy the friendship that exists between themselves and the amateurs of the United States. Nevertheless, for all the reasons discussed above, they do not wish expansion. On behalf of its members, and other Canadian amateurs, CRRL, the Canadian Radio Relay League, urges the Commission to take into account the points made in this submission, and asks that expansion of the U.S. phone sub-band, on 20-meters or on any other band, not take place.

Respectfully submitted,  
**The Canadian Radio Relay League, Inc.**

(Editors note: The request for the Canadian 40 metre sub-phone band was made by CARF. The Canadian Division ARRL has never supported expanding Canadian phone sub-bands.)

## VE6OIL: Fuel For Thought

by VE6JK

A repeater with the call VE6OIL, (Tx - 146.610 and Rx - 146.010) has been operating in the Calgary area for about 6 months. This repeater could be considered a wide coverage system. VE6OIL will be linked in the near future via UHF to VE6GAS to provide dial access for the Calgary area.

A UHF link will also be established to Banff, from VE6OIL, in the next couple of months, with its call sign being VE6BNF. The Banff repeater will operate on '.64 - .04'.

All of the above sites have battery standby in case of power failure. All of the above repeaters and links are operated by the Petroleum Repeater Club and are available for the use of all Amateurs, with no restrictions placed on any of the systems at this time.

Another repeater which has been in operation for about 8 months, is VE6AID, operated by Aaron Hughes, VE6FQ. VE6AID operates on '.24 - .84'. This is a low power repeater and is generally operated by mobile in the north end of Calgary, and by base in most other areas of Calgary. This repeater is open for all Amateurs to use.

## Wanted for TCA

Wanted for TCA: News items, pictures, original stories and technical articles. Make pocket money by writing for The Canadian Amateur!

Technical articles are especially welcome. We can use simple construction projects, antennas, hints and kinks, explanations of the theory and practice of modern Amateur operations and equipment.

Photos should be glossy black and white prints, although we can use colour prints. Written material should be typed, double-spaced. Legible handwriting is acceptable. Finished artwork and drawings will add to the value, but sketches and rough drawings are acceptable.

Send **Technical material** to: **Technical Editor**, CARF Inc., Box 356, Kingston, Ont. K7L 4W2. Send **all other material** to **Editor**, TCA, P.O. Box 2610, Station D, Ottawa. K1P 5W7.



## 32ND ANNUAL CONVENTION

## 'RAQI'

## 32E CONGRÈS ANNUEL

August 13, 14 and 15, the phrase to say in Québec was "Au mois d'août, c'est le Rendez-vous", the theme of the 32nd annual RAQI convention held at the Auberge des Seigneurs in St. Hyacinthe, a picturesque small town only a leisurely half hour from Montreal.

Approximately 200 people were treated to hospitality Quebec-style, hosted by the Club Radio-Amateur de St. Hyacinthe, from the corn roast on Friday night to the official banquet on Saturday night.

On Saturday, there were workshops on electronic mailboxes and AMSAT, a clinic on the uses of the Apple computer, and displays on Telidon and TVRO for interested persons.

Additional activities were talks on wine, pork, energy conservation, and a tour of the town of St. Hyacinthe.

RAQI invited CARF to attend the convention and, as such, I was treated as an honoured invited guest. Unfortunately, due to prior commitments, Don Slater and his wife were not able to attend and asked myself to represent them.

The invitation gave the executive of RAQI a chance to meet with the CARF representative on several occasions to express their views on a variety of subjects of interest to amateur radio.

A renewed feeling of co-operation was expressed about future relations between RAQI and CARF during these meetings.

At the banquet on Saturday night, several awards were given out. Of particular importance was the award to Jose, VE2 ELO, for services to the amateur fraternity in the establishment of the VE2 RUA network.

Sunday, the action swung to the local arena for the Quebec Hamfest (otherwise known as the Montreal Hamfest) where approximately 500 people wheeled and dealt for new and used equipment.

All in all, a very interesting convention.

To the organizers, congratulations. To RAQI, another great convention and thanks for the memories.

Le 32e congrès de RAQI a eu lieu à l'Auberge des Seigneurs à St-Hyacinthe, une petite ville pittoresque seulement 30 minute de Montréal. Le thème de ce congrès était "Au mois d'août, c'est le Rendez-vous".

Environ 200 personnes se sont régales de l'hospitalité québécoise grâce au Club Radio-Amateur de St-Hyacinthe. Les festivités ont commencés vendredi soir avec une épiluchette de blé d'inde et se sont terminés samedi soir avec un banquet officiel.

Le samedi, il y avait des ateliers de la boîtes aux lettres électroniques et de AMSAT, une clinique sur l'ordinateur Apple, et des démonstrations des systèmes Télidon et du système de réception de télévision à péage.

Les activités parrallèles étaient des sessions d'information au sujet des vins, de la nutrition, des énergies nouvelles puis un tour de la ville de St-Hyacinthe.

FRAC est venu sur l'invitation de RAQI au congrès et en tant que telle était un invité d'honneur. Malheureusement, M. Don Slater, le président et sa femme avaient une promesse antérieure et il m'avait demandé de les représenter.

L'invitation a donné aux executifs de RAQI l'occasion de rencontrer le représentatif de FRAC à plusieurs reprises et à partager les sentiments aux divers sujets qui intéressent les Radio-Amateurs.

Un sens de coopération amélioré entre RAQI et FRAC a été exprimé au sujet des rencontres à venir.

Au banquet, le samedi soir, quelques citations étaient décernés. D'une importance particulière était le récompense à José, VE2 ELO, pour les services rendues pour l'établissement du réseau VE2 RUA.

Le dimanche, l'activité se dirigeait à l'arène locale pour le Hamfest du Québec (autrefois the Montreal Hamfest) ou environs 500 personnes avaient fait le commerce des équipement nouveaux et usagés.

Dans l'ensemble, un congrès intéressant.

Aux organisateurs - félicitations. A RAQI - un autre congrès merveilleux et merci. Je m'en souviendrai.

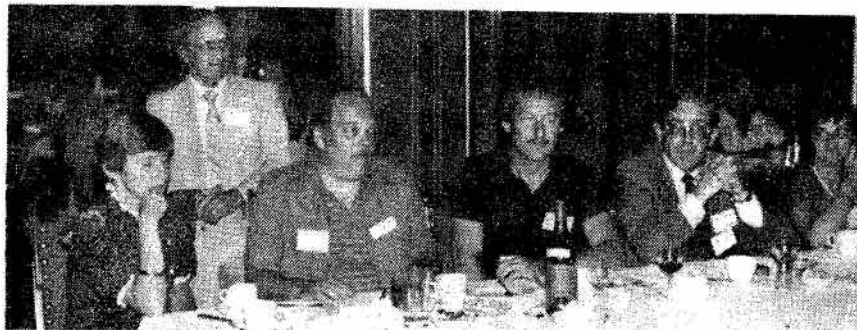


Table d'honneur lors du banquet: Micheline VE2 EFM, Gilles VE2 RD, président de RAQI Jose VE2 ELO, ancien coordonnateur du réseau VE2 RUA, Jacques VE2 DBR, nouveau coordonnateur du réseau VE2 RUA, M. Ken Kendall, de CARF.



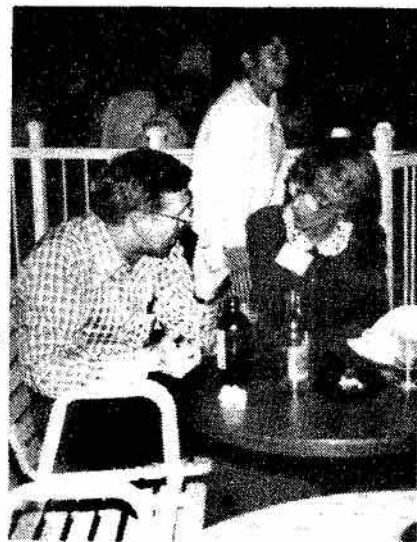
Vue générale de l'assemblée lors du banquet.



Vue générale lors du Hamfest



Vue générale lors de l'épluchette de ble d'inde.



Lors de l'épluchette, au premier plan: M. Ken Kendall de CARF en grande conversation professionnelle avec la Directrice générale de RAQI.

## Don't Give Up The Plug

When putting together a fan for the computer, I wanted a small connector for the AC line. Frantic searching through the junk-box revealed only one potential candidate. However that lonely Jones plug jack combo was configured the wrong way. The male contacts were on the plug, not the chassis mount portion.

Since my nerves are usually on edge enough without having live 110vac prongs lying in wait, it seemed that the old junk-box had let me down. Don't give up!

It turns out that the connectors can be reversed. The chassis mount flanges are easily removed by simply filing down and removing the riveted holding pin. The flanges can then be re-attached to the other connector. The rivet hole and the cable cover locking pin hole are in identical positions. A spare Jones pin will even serve as a new rivet.

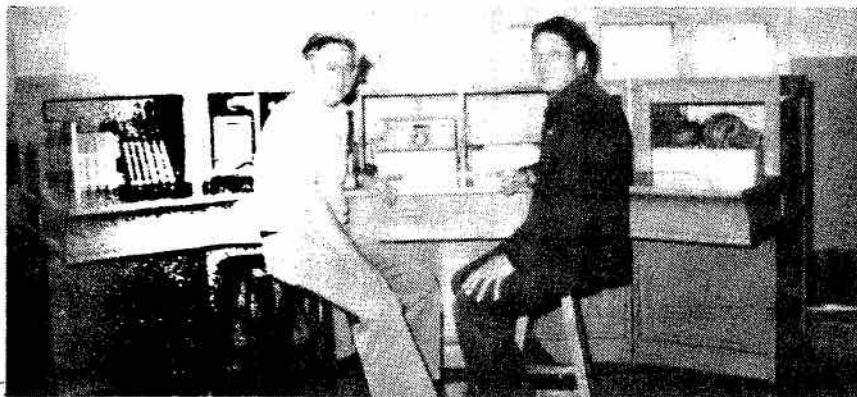
A quick check of various connectors in the Jones series would indicate that the same technique could be used on other pin configurations.

VE5KP

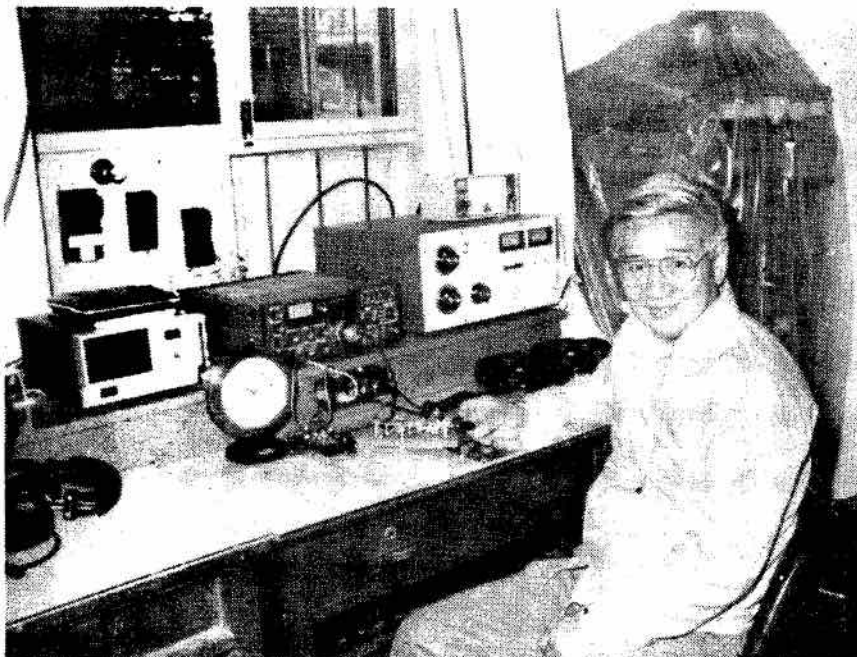
# China on the Air Again



Tom with some of the equipment donated by Canadian and U.S. firms, individual Amateurs and groups. Tom co-ordinated the many administrative details surrounding the collection, shipping and customs clearances of the gear . . .



Another BY station which should be on soon. It is located in the Beijing Institute of Post and Telecommunication, also in Peking. (Photos — Tom Wong VE7BC)



Tom at BY1PK, the University of Peking station.

VE7BC, Tom Wong, reported that VE1BCX and VE1ILD were the first Canadians to work BY1PK on CW last April. Tom told the CARF News Service that there will be further opportunities for BY contacts as he expected to be in Peking during the first week of October. He hoped to be on sideband from BY1PK, possibly using VE7BC/BY or BY1BC. He said that he would work split frequency, with no lists, on 14.195 MHz and 21.295, using an FT-107. Tom will phone one or two friends here as to the times he will be on.

Tom said that BY1PK has been off the air for the last month while the results of the activity are analyzed and that any stations heard using that call during this time can be considered as a 'pirate'.

QSLs for genuine BY contacts should be sent to Tom Wong, VE7BC, 220 Gravenor Ave., Burnaby, B.C., V5B 1J4. A SASE is required and any donations to Tom for assisting the BY stations will be welcome. Many Canadians and U.S. Amateurs and Amateur organizations have donated funds and equipment.

Two more Chinese stations are expected to be on the air; a BY7 late this month (Oct.) and a BY4 in Hunan province late spring. (Photos — Tommy Wong VE7BC)

## VE1LD and VE1BXI first to contact China

On April 12, 1982, Wes Veale, VE1LD, heard BY1PK testing on 20 metres. A quick call received a reply for the station, making Wes the first North American Amateur to work China. During this contact, Wes got on 2 metres to see if anyone else wanted to join in. Borden MacKenzie, VE1BXI was quick to grab the chance, making him the second to work China.

For a while they were a little suspicious about the authenticity of the station and waited anxiously for a QSL card. About three weeks later, they got their cards and were both elated. The speedy delivery of the cards was due to the personal attention of Tom

Wong, VE7BC who was at BY1PK at the time of the contacts.

Tom has since stated that Wes and Borden were the first North American contacts made by BY1PK. To quote Wes; "The big-

gest break I ever got after 53 years of hamming."

This is not only a feather in the caps of Wes and Borden, but a feather for all Canadian Amateurs.

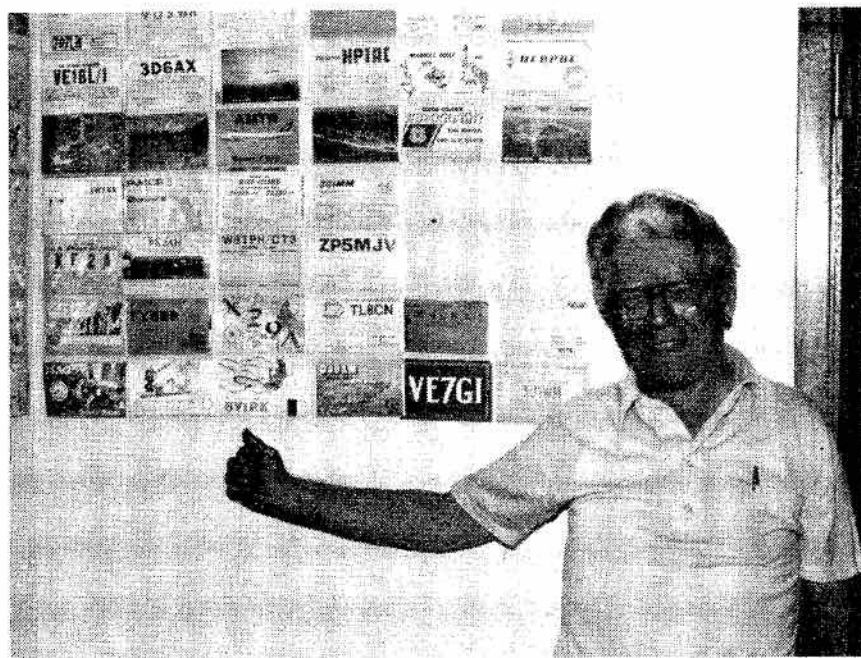
Clay, VE3TL  
Tom, VE7BC  
Doug, VE3CDC



This smiling group at BY1PK is, left to right, operator Gou, Tom and station master' Tong. (photo: Tom Wong, VE7BC)



Borden VE1BXI displaying his prized QSL from BY1PK.



Wes, VE1LD; a place of honour for an historical QSL.

### All users of the TCA Newline Telephone

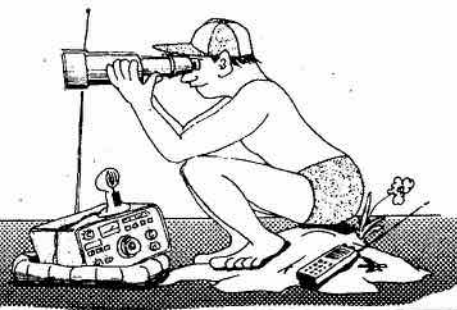
The telephone number will be changing as of October 15,

Watch TCA (November) for the new number

It will be announced on the CARF News Service Bulletin as well.

**Pin-pointing DX Skeds.** How often have you opened up to call a fellow amateur "on sked" only to realize that one or more other QSOs were set to begin on the same frequency at the same moment? In these days of quartz time, it's no longer efficient to set up DX skeds for the hour or half hour; it's better to agree to check your watches against WWV or whatever time standard you like, and to call at any arranged number of minutes before the hour or half hour, which you can assume a majority of amateurs will probably go on using. Another and somewhat better understood wrinkle is to avoid even frequencies, such as 14260, 14750, 21270, and so on. Better pick less likely MHz, such as 14263, 14752, 21273. And speaking of quartz time, do you want to cut in half the chances of your both calling and then listening at the same times? Just agree who will call on, say, odd minutes and who on even. Don't forget that for such pin-pointing "sked time" falls on an **even** minute!

Marsh Jeanneret VE3EMJ

**DX**by D.W. Griffith  
VE3KKB

Conditions continue to improve on the H.F. bands as we move deeper into the Fall of 1982. With the first of the big DX contests at the end of this month, I hope that this trend continues.

Although cycle 21 remained stalled for almost a year, it took a sharp dip in May, and is once again declining. The mean sunspot number in May, 1982 was 81.4, the lowest reported level of activity since August, 1978. A smoothed sunspot number of 114 is forecast for October/82. However, since anything over 100 should still result in good conditions, particularly on 10M, DX propagation should be great on all of the high bands.

It is with great regret that I report the passing of Jim Lawson, W2PV. Jim died on May 25, 1982, after a long illness. Jim will be remembered for his many excellent articles on antennas, and propagation. He was always willing to give advice, and was often a guest speaker on the subject that he knew so well at many of the Eastern U.S. Amateur Radio clubs. I feel a personal loss at Jim's death as I spent many an hour talking with him, both on the air, and on the telephone, while I was designing the contest station, VE3PCA, and a lot of his ideas are incorporated into the station design. Jim was at least to have the satisfaction of leading a multi-multi-crew to victory over N2AA in last year's CQ WW Phone Contest, and indeed was awarded the plaque just prior to his death. Jim, we'll all miss you.

Two other well known amateurs became silent keys recently. W3KT, Jessie Bieberman, died on May 27, 1982, and HS1WR, Gen. Kamchai Chotikul (Kam), who was president of the Radio Amateur Society of Thailand, and one of

the strongest pro-amateur voices in Asia also passed away. They too will be missed.

Last month, I stated that there were no Canadians listed as having won the 5 Band WAZ Award, nor did there appear to be any listed in the top 10 contenders for the award. I appear to be wrong. In the September issue of CQ Magazine, the No. 10 contender for 5 Band WAZ is listed as being NE7IG, with 192 zones worked. It has been brought to my attention that this call should read VE7IG. Congratulations, and I hope that you make No. 200 soon.

In a recent article, the U.S. Air Force over-the-horizon-backscatter (OTH-B) radar system was described, and the transmitting antenna, and amplifier setup is enough to make anyone who has bitten the dust of a massive pileup green with envy. The antenna array is 2,265 feet long, and will soon be extended to 3,630 feet in length. At present, transmissions are on 4 bands, from 6.74 Mhz. to 22.25 Mhz. The transmitter site has its own 7.5 megawatt substation, and much of this powers 12 hf transmitters, each capable of 90KW. The power tubes are Eimac 4CW100,000's,

and the B+ on the plate of each is 11.3 kv. All are under computer control, once up to operational potential. How would you like to have access to that kind of power for the CQ WW? (Yes I know that it is illegal!) There is of course a rub -- other than the obvious one of illegality. The power bill is something like \$18,000 to \$20,000 a month.

All that, and it's only the working model. Unbelievable! The receiving station is equally complex. A broadside array of 137 fan monopole receive elements, backed by a screen measuring 3,096 feet long, and 50 ft. high, feeds signals by coax from as many as 82 active elements to an equal number of low noise receivers. Wouldn't that be nice for a bit of 160M DX? Back to reality!

With the plethora of new, and confusing prefixes about these days, it's hard to know whether you have worked something new, or just an old, common country all wrapped up in a fancy package. August's QST, and September's CQ Magazine both presented an unusual prefix list, originally prepared by the Northern California DX Club. This list of unusual prefixes is reproduced below:

- A22 . . . Botswana, old A2
- A71 . . . Qatar, old A7X
- AH1-AH0 (KH1/KH0) . . . Baker, Canton, and Howl and Is.
- CF-CK/CY-CZ . . . Canada
- EA-EH . . . Spain
- H31 . . . Republic of Panama
- H44 . . . Solomon Is., old VR4
- H5 . . . (unofficial) Bophuthatswana : . . = ZS
- HD . . . Ecuador
- HG . . . Hungary
- HT . . . Nicaragua
- HW . . . France
- J2 (J28) . . . Djibouti, old FL8
- J6 . . . . . St. Lucia, old VP2L
- J7 (J73) . . . Dominica, old VP2D
- J8 . . . . . St. Vincent, old VP2S

The following also include:

- AH, WH, and NH;
- KH1 . . . Baker, Canton & Howland Is.
- KH2 . . . Guam
- KH3 . . . Johnson Is.
- KH4 . . . Midway Is.
- KH5 . . . Palmyra Is., & KH5K (Kingman Reef)
- KH6 . . . Hawaii
- KH7 . . . Kure Is.
- KH8 . . . American Samoa
- KH9 . . . Wake Is.
- KH0 . . . Northern Marianas Is.
- KP2 . . . U.S. Virgin Is.
- KP4 . . . Puerto Rico
- P41,P42 . . . Netherlands Antilles, old PJ2,3,4, & 9
- P47 . . . St. Maartin, old PJ5,7 & 8
- S4 . . . (Unofficial) . . Ciskei . . = ZS
- S8 . . . (Unofficial) . . Transkei . . = ZS
- SV5 . . . Dodecanese Is.
- SV9 . . . Crete
- SV0 . . . Foreign amateurs in Greek Terr.
- T2 . . . Tuvalu, old VR8
- T4 . . . Assigned to Cuba, but used unofficially by Venda . . . = ZS
- T5 . . . Somalia, old 60
- T30 . . . W. Kiribati, old T3A, T3K, and VR1
- T31 . . . Central Kiribati, old T3P, or VR1
- T32 . . . E. Kiribati, old T3L, or VR3
- TK . . . France
- V2A . . . Antigua, old VP2A
- V3 . . . Belize, old VP1
- VK9N . . . Norfolk Is.
- VK9X . . . Christmas Is. (Zone 29)
- VK0Y . . . Cocos Keeling Is.
- WP2 . . . same as KP2
- WP4 . . . same as KP4
- XJ-XO . . Canada
- XQ . . . Chile
- YZ1 - Y99 . . . East Germany, old DM
- YT-YU . . . Yugoslavia
- YZ . . . . . Yugoslavia
- Z2 . . . Zimbabwe, old ZE
- ZV-ZZ . . . Brazil
- 1A . . . unofficial prefix for SMOM
- 4K . . . Soviet Antarctic stations
- 4M . . . Venezuela
- 4N . . . Yugoslavia
- 4T . . . Peru
- 6D-6J . . . Mexico
- 6T-6U . . . Sudan
- 8J . . . Japan
- HB9AMO . . . 2356Z . . . 10.105-Mhz
- VP2MIX . . . 0040Z . . . 10.112M-hz
- PJ9EE . . . 0226Z . . . 10.105Mhz
- DL2GG/YV5 . 0153Z . . . 10.101-Mhz
- ZL3RK . . . 0940Z . . . 10.106M-hz
- JA7IG . . . 0950Z . . . 10.106Mhz
- VK5KL . . . 2150Z . . . 10.105M-hz
- G3SED . . . 2232Z . . . 10.104M-hz
- DK5CN . . . 2259Z . . . 10.104M-hz

With the coming of Fall, many amateurs are thinking of the low-band antennas that they failed to put up during the Summer months. I am looking forward to getting up a simple loop on the new 30M band, and seeing what things are like. Dave Goodwin, VE2ZP, has been active on that band recently, and the following is a list of what he has either heard, or worked:

These 9 countries were worked in a three day period in August, just after Dave modified his rig. One of his contacts, DL2GG/YV5, states that he has already worked some 54 countries on this new band, and while DXCC may take a while, there is no doubt that 10 Mhz will provide some challenge, and excitement this Fall, and winter.

### Bits and Pieces:

BV2 . . . Taiwan . . . This call assigned to the China Radio Association, with Tim Chen the only member with permission to operate. The station is some distance from his home, so operation is somewhat difficult. Also, he has dropped his beam for the typhoon season. QSL to K2CM for BV2A (CW), and direct to Box 101, Tapai, Taiwan, for BV2B (phone).

BY1PK . . . China . . . Continues to be active on, and off. More stations should be heard soon. Unfortunately, bootleggers continue to be a nuisance. Look 30 Khz up from the band edges, on 15M, and 20M CW. A straight key, with request for exchange of QTH, and name is typical of the real operators. QSL to Box 6106, Beijing, People's Republic of China. Don't forget to send IRC's.

FOOJ . . . Fr. Polynesia . . . W6GO, and K6HHD, will be in Tahiti for the Oct. CQ WW phone contest. Before the test, they will be active, mainly on CW. QSL via W6GO for FOOJ, and to K6HHD, for FOJO.

OX9 . . . Greenland . . . To commemorate the 1000th anniversary of the landing of Eric the Red in Greenland, all amateurs in Greenland were allowed to use this prefix during the month of August.

PJ2 . . . Netherlands Antilles . . . A group led by W8LRL will be heading South for a multi-multi effort in the Nov. CQ WW CW contest.

VP2K . . . St. Kitts . . . Will be active during the CQ WW contests, and during the 160M contest that follows in early Dec.

VS5 . . . Brunei . . . VS5DA often on 21.300Mhz at 0700, and

1500Z. QSL to Box 1200, BSB, Brunei. VS5HG at 1230Z on 14.210 Mhz. QSL to Box 980, BSB, Brunei.

VK0HI . . . Heard Is. . . Plans are still progressing for an early 1983 expedition. The month of Feb./83 is reported to be the most likely time. A decision has been made to increase the number of amateurs to 3. The vessel selected for the trip is the Anaconda II, one of the largest of its type in VK, and one with previous Antarctic experience. For those of you who don't know where Heard Is. is, put your finger on Saskatoon, Sask., on a globe, and find the spot in the same relative position, but antipodal (diametrically opposed).

ZL1AZV . . . Tony Ward has left ZL, and is now in Canada, signing VE3IAT (I Am Tony).

9N1 . . . Nepal . . . 9N1CGO is reported to be the callsign being used by the Canadian Everest Ex-

pedition. They are to be active through October. The chances of hearing them, however, are slim, as propagation to N.A. from that part of the world is very difficult, with only 2 windows a day. They are only using a transceiver, to a ground plane. No QSL info. is available.

9U5 . . . Burundi . . . It is a great pity that 9U5WR is now QRT, as he was very active in contests, and on CW. QSL's are still available from: Zenon Pietrzak, Box 2156, 50-985, Wroclaw, Poland.

9X5 . . . Rwanda . . . 9X5PP is active around 18-2000Z on 21.300Mhz. There are currently 9 active amateurs in Rwanda. QSL to Peter Pike, Box 863, Kigali, Rwanda, E. Africa. Also, 9X5WP, on 14.340, around 0400Z-0600Z, and 1400Z. He is also often on 21.405, at 1900Z. QSL to Wes Porter, Box 1, Nyanza, Rwanda, E. Africa.

CALL	QSL
9L1LS	N3ADC
9M8WR	G4DXC
9Q5ZA	ON6FN
9X5SP	DL8OA
9Y50VU	W3EVW
A22GM	N4FD
A35RF	VK3VU
A35TN	VK3VU
A4XYB	G4KII
A92DD	K7DVK
AH2E	N9AVY
AH3AC	KB2RV
AH8AA	W4FGX
C53DZ	DJ6SI
C6ADV	N7YL
CE0ZAD	WB6WOD
CN8B	AK3F
CN8CY	GW3IEQ
CO7AM	EA1QF
CP6IM	WB1DQC
CX5AO	CX7BY
CZ3PCA	VE3KKB
HK0QA	K4TXJ

CALL	QSL	CALL	QSL
IA0KM	I0MGM	D68AAB	
3A2GX	I2YAE	DA2AR/HBO	
3B8ZZ	W2TK	DA2CK/HBO	
3D2AB	WB8WMS	DF8MP/LX	
3D2EH	K8VIR	DJ6SI/3X	
3D2TI	VE3CVX	DL7RT/EA6	
3V8DX	G3SVK	DX6NRA	
4S7AJG	K9AJ	EF5SSC	
4S7MX	SM3CXS	EJ0RTS	
4X2BYB	WB2WOU	EJ3AK	
4Z4KX	VE3IXE	EL8N	
5B4IJ	OE8PSK	EL9B	
5B4JE	DF4FX	EP2TY	
5R8AL	WA4VDE	F0DYM/FS	
5W1DC	DL3GU	F0FOO	
5Z4CS	J11VLV	FB8WG	
5Z4CS	WA4VDE	FG0GA	
5Z4CV	W2KF	FH8CL	
6W8AK	WB4LFM	FK8DD	
6W8AR	WB4LFM	FO0KP	
6W8DY	VE4SK	FO0WA	
8Q7BC	DL5BC	FP0FSZ	
8Q7DL	DL9BAF	GD4INU	
9J2JN	WB2IZN	GU5EHF	
9J2NO	JA3RLI	H5AIR	
9K2TS	JA2LZB	H5HAF	
9K2BE	G4GIR	HC8SL	
9K2DX	N6TR	HH2A	
9L1EX	LA2EX	HK0EHM	

CALL	QSL	CALL	QSL
G4DYO	T32AF	WH6AIF	
DA2DC	T32AG	K7TI	
KA2JFY	T32AH	KE0A	
DL2KAO	T32AI	KE0A	
DJ6SI	T12EY	DF6EX	
DL7RT	T12JIC	AG1K	
DU7EM	TL8CK	F6EWM	
EA5BAA	TU2HU	W3GHK	
EI7CC	TU2IE	DL4BAM	
EI3AK	TU2LE	F6ESH	
SM4CW-			
Y	TYA11	ON5NT	
KA8BXA	UPO122	UA0QFY	
JR3WRG	UY4L	UA4LM	
W3HNK	V2ADX	W9SWM	
N6RA	V2AN	KA1JP	
F2CL	V3ME	G3OGO	
N6ZV	V3TV	G3ATK	
VE2FOU	VK0DX	VK7LJ	
KA3E	VK6ZX/LH	VK6ZX	
W6SZN	VK9ZD	VK6YL	
W6SZN	VK7ZG	VK6YL	
VO1FB	VK9ZH	VK6YL	
VE3IUI	VK9ZR	VK2BJL	
K2UO	VP2EC	N5AU	
ZS6BSK	VP2ED	AD8J	
ZS6BSK	VP2EE	AA4NC	
HC2SL	VP2KAV	N7KA	
AJ9D	VP2MKV	N7KA	
WD9DZ-			
V	VP2VIC	KA2IXW	

CALL	QSL
K4TXJ	VP2VIH
HS5AID	AG6N
HV2VO	I0GPY
J20/D	F2GA
J20/Z	F6ATQ
J28CB	F6HFS
J3AVT	W8UVZ
J5HTL	SM3CXS
J6LOV	K2QIE
J6LZA	K4LTA
KH8AC	WB2ACL
LG5LG	LA7XB
OA4JR	KA9FKL
OD5LX	SM0DJZ
OH0BA	OH2BAZ
OJ0MR	OH0AA
P42C	PJ2PP
PZ9AB	W1KSZ
R6L	UK6LAZ
S79ARB	WA4VD-
	E
T32AB	N7YL

<b>CALL</b>	<b>QSL</b>
VP2VI	KD3P
VP2VII	W5SJ
VP5JEX	W4DR
VQ9CW	WB1D- QC
VQ9SB	WA6IJZ
VQ9WB	WD9GI- G
VS5DO	G4EFE
VS6JW	G4LRG
VU2YOU	K4YT
WB0MKR/KH3	KB2RV
XK5DX	VE5DX
XZ5KNU/9	DL2KAO
YB0PG	KB5AS
YB1CD	WA1ROI
YJ8VU	DK5EX
YK3AB	OE1DH
ZD8CG	W9CN
ZD8DZ	AB4B
ZD8JGN	W9CN
ZD8MJH	G3GIQ
ZD8MW	G3GIQ
ZD9BV	W4FRU
ZF2BN	W4HET
ZF2CD	W3ODJ
ZF2GC	W4UY
ZK1XG	DL1VU
ZK2BA	VK3VU
ZK2BB	VK3VU
ZL0AEO	WB8MS
AM7VU	F6DYG

I would like to thank VE2ZP, Long Skip, QST, CQ Magazine, and the W6GO/K6HHD List, for some of the material appearing here. That's it for this month. Good DX.

73  
Doug, VE3KKB

## The new designations for Amateur Radio emissions

WARC '79 changed the designations for emissions effective January 1, 1982. These designations are primarily used in the assignment of frequencies for the determination of interference and to ensure that the type of emission conforms with the band requirements. They tell us two things about emissions:

a) the necessary bandwidth i.e. the width of frequency band which is just sufficient to ensure the transmission of information at the required rate and quality, and

b) the type or sort of emission for which the frequency is being used.

Each emission designation is prepared according to a comprehensive set of ITU rules and comprises at least seven characters. The first four characters spell out the necessary bandwidth while the remaining describe the type of emission.

Bandwidth limits for the Amateur Radio Service are not given in our Regulations in the ITU format; they are set out in the text and plain language is used. Thus we do not need to give a thought to the new method of designating bandwidths.

However, the DOC does follow the ITU method in designating the authorized types of emissions in the Schedules of Amateur frequencies. Here are the new symbols that are used for this purpose. They will help you understand the recently proposed regulations to the published in December '81.

### (1) First symbol - type of modulation of the main carrier

Modulation used only for short periods and for incidental purposes (such as, in many cases, for identification or calling) may be ignored provided that the necessary bandwidth as indicated is not thereby increased.

- |   |   |
|---|---|
| (1.1) Emission of an unmodulated carrier  | N |
| (1.2) Emission in which the main carrier is amplitude-modulated (including cases where sub-carriers are angle-modulated)  |   |
| (1.2.1) Double-sideband   | A |
| (1.2.2) Single-sideband, full carrier   | H |
| (1.2.3) Single-sideband, reduced or variable level carrier  | R |
| (1.2.4) Single-sideband, suppressed carrier   | J |
| (1.2.5) Independent sidebands   | B |
| (1.2.6) Vestigial sideband  | C |
| (1.3) Emission in which the main carrier is angle-modulated   |   |
| (1.3.1) Frequency modulation  | F |
| (1.3.2) Phase modulation  | G |
| (1.4) Emission in which the main carrier is amplitude and angle-modulated either simultaneously or in a pre-established sequence  | D |
| (1.5) Emission of pulses <sup>1</sup>   |   |
| (1.5.1) Sequence of unmodulated pulses  | P |
| (1.5.2) A sequence of pulses  |   |
| (1.5.2.1) modulated in amplitude  | K |
| (1.5.2.2) modulated in width/duration   | L |
| (1.5.2.3) modulated in position/phase   | M |
| (1.5.2.4) in which the carrier is angle-modulated during the period of the pulse  | Q |
| (1.5.2.5) which is a combination of the foregoing or is produced by other means   | V |
| (1.6) Cases not covered above, in which an emission consists of the main carrier modulated, either simultaneously or in a pre-established sequence, in a combination of two or more of the following modes: amplitude, angle, pulse | W |
| (1.7) Cases not otherwise covered   | X |

### (2) Second symbol - nature of signal(s) modulating the main carrier

- |   |   |
|---|---|
| (2.1) No modulating signal  | 0 |
| (2.2) A single channel containing quantized or digital information without the use of a modulating sub-carrier <sup>2</sup> | 1 |
| (2.3) A single channel containing quantized or digital information with the use of a modulating sub-carrier <sup>2</sup>    | 2 |



Emissions where the main carrier is directly modulated by a signal which has been coded into quantized form (e.g. pulse code modulation) should be designated under (1.2) or (1.3).

<sup>2</sup>This excludes time-division multiplex.

- (2.4) A single-channel containing analogue information 3
- (2.5) Two or more channels containing quantized or digital information 7
- (2.6) Two or more channels containing analogue information 8
- (2.7) Composite system with one or more channels containing quantized or digital information, together with one or more channels containing analogue information 9
- (2.8) Cases not otherwise covered X

**(3) Third symbol - type of information to be transmitted<sup>3</sup>**

- (3.1) No information transmitted N
- (3.2) Telegraphy - for aural reception A
- (3.3) Telegraphy - for automatic reception B
- (3.4) Facsimile C
- (3.5) Data transmission, telemetry, telecommand D
- (3.6) Telephony (including sound broadcasting) E
- (3.7) Television (video) F
- (3.8) Combination of the above W
- (3.9) Cases not otherwise covered X

<sup>3</sup>In this context the word "information" does not include information of a constant, unvarying nature such as is provided by standard frequency emissions, continuous wave and pulse radars, etc.

## York Region Amateur Radio Club

The York Region ARC is holding its annual flea market on Saturday 13 Nov 82 at the Newmarket Community Centre, NEWMARKET, ONTARIO. The town of Newmarket is just north of Toronto and easily accessible by Highways 11, 400, or 404. The fleamarket will operate 0800 - 1400 EST, with doors open for exhibitors at 0630. General admission is \$2.00 (children admitted free of charge if accompanied by an adult) and the cost of admission includes a door prize ticket. Tables for exhibitors are available for a fee of \$2.00 per table.

The talk-in station, VE3YRA, will be operating on 142.52 MHz simplex, and through the local repeater, VE3YRC, 127.225 MHz input/147.82 MHz output. Refreshments will be available on the premises.

### ATTENTION

#### All users of the TCA Newline Telephone

The telephone number will be changing as of October 15, 1982  
 Watch TCA (November) for the new number  
 It will be announced on the CARF News Service Bulletin as well.

Send all social event notices to:

"SOCIAL EVENTS"  
 TCA, PO Box 2610  
 Station D, Ottawa,  
 Ontario. K1P 5W7

### Editor TCA, VE3ARS

Dear Sir:

I have just returned from another trip to DL-land. Since becoming a Radio Amateur, I have visited DL six times. The reception, hospitality and friendliness from the Ham population has always been very good.

This time around, I got the "Red Carpet" treatment from the local Radio Club in the city of Minden/Westphalia

Stepping from the train at the station, something red was rolling towards me. Two powerful hands grabbed my arm to guide me over the "Red Carpet." This reception was a complete surprise to me.

I don't count myself a celebrity, just an ordinary Amateur Radio Operator, visiting his hometown.



It seems Hams have always something up their sleeves.

Fleury, VE7BYP

### Last Month

To those of you who wondered when Fred Towner, VE6XX took over as CARF president, let me inform you that he hasn't. The title of his article should have read "From The Vice President".

We had hoped to get that issue out in the first week of September, but production difficulties prevailed. It still took 10 days to go from Renfrew Ontario, Ottawa, a distance of only 45 miles. Some Amateurs are just getting their July August issue! To VE3MFN of St. Catharines, Ontario; we still have a postal problem. So much so, that this month, I am not going to predict what is going to be in the November issue, or when it will be out.



# QCWA Canadian Report

by Ron J. Hesler,  
VE1SH, QCWA Director

At the outset of this new column in TCA, I just want to say how grateful I am, to the Federation, for their most kind offer to give our organization monthly space in their journal. I only hope that, in time, I shall be able to make this column as interesting to the non-members of QCWA as it hopefully shall be to the members.

I believe that, perhaps, this first effort should be directed to just what is the QCWA and what are its aims and objects, because I **know** that, to many Canadian Amateurs, it is completely unknown.

## What is the QCWA?

It is, very simply, the Quarter Century Wireless Association. A fraternal, non-profit **international** organization composed of pioneer Amateurs who have been licensed for twenty-five years or more and now hold a valid Amateur license. It is governed by an elected Board of Directors, although its main "back-bone" is that of the grass-root Chapters. It does not, currently, involve itself in government liaison, although there presently is a rather strong opinion of the membership, coming to the surface, that it should . . . that the legacy of the experience of its membership, should have a voice in such matters. At this point in time, my personal and rather strong opinion is that the QCWA should not **directly** attempt **any** such liaison; however, I feel that national Amateur organizations, such as CARF, could refer to QCWA on especially important matters of regulatory matters, if only to get the considered opinion of these 'old (and hopefully experienced) fogies' Perhaps, someday, the QCWA could even have a voice on the boards of such organizations. In many countries, the regulatory waters are muddy enough now, with two or more, in some instances, "national" organizations!

## What is the purpose of QCWA?

The founders of QCWA agreed that they should meet with other 'old-timers' who had been licensed at least twenty-five years previously for the objective of enjoying each others' company and some interesting activities. At this point in time, there are more than 130 Chapters of QCWA throughout the world and more coming every day.

## Are regular meetings held?

In most instances, each local Chapter has arranged the various breakfasts, brunches, luncheons, banquets and other activities in accordance with the interests and desires of its local membership. There are special meetings organized and held in conjunction with various Amateur clubs, associations and so on. A QCWA National Convention is scheduled once a year. Many of the Chapters arrange on-the-air meetings via the Amateur bands and there are certain frequencies, weekly, on which QCWA members can meet on an international basis.

## Are there other activities or interest?

Yes, an annual QSO Party is held, each year, during which many members join in to determine who will win a handsome plaque awarded to the high scorer for contacts. A second Party is held in the fall, in which QCWA members invite **all** Amateurs to participate so that they will be familiar with QCWA and what it stands for. Certificates are also available for fifty or sixty years or more, in addition to other operating awards. Recently QCWA has established a scholarship fund as a memorial to its Silent Key Members, who remain on its roster and directories forever . . . once a membership

number has been issued, it is **never** re-issued . . . a most fitting memorial.

## Is there a regular QCWA publication?

Yes, the QCWA News (100 pages or more) is published quarterly and contains many interesting items and reports from the various Chapters, as well as news and information by individual members. In addition, a HOT-LINE report is sent to each Chapter Secretary on a regular basis, which contains the latest news from QCWA Headquarters. Individual members may, if they wish, subscribe, for a very small sum, to the HOT-LINE report. A comprehensive QCWA Directory is published and made available to the individual membership every third year.

## What are the current membership fees?

The initial membership fee is \$12.00 (which includes the initiation fee of \$3.00) for one year, or \$18.00 for two years, or \$22.00 for three years. Life membership is available for \$78.00 and may be paid in three equal installments of \$26.00 each, which must be completed in a period of one year. All fees quoted are in U.S. dollars, as the operating headquarters is in Texas.

## Are there many Canadian Chapters and members?

Not as many as I would like to see . . . but growing daily. Currently there are more than 400 individual Canadian Amateur members and four Chapters: National Capital Chapter (Ottawa), Southern Ontario Chapter, Dogwood Chapter (British Columbia), Laurentian Chapter (Quebec) and a soon-to-be-added (you can bet your bottom dollar!) Maritime Chapter. All it takes to organize a local Chapter is a minimum of ten



Left to right - Bill, VE2BZU; Bob, VE3IWR; Lloyd, VE2AYX; Ed, VE2BHX; Ed, VE3SH; Gord, VE3HTJ; Chuck, VE3JDM; Bob, VE2FPA.  
Photo: VE3SH

## QR Net Meets in Montreal

The regular annual meeting of the Quebec Radio Net Controllers was held on June 5th, 1982, at the QTH of Lloyd McClintock, VE2AXY in Montreal.

Hosts were Lloyd, VE2AXY and Bill, VE2BZU with their XYLs providing a very enjoyable meal.

In attendance to enjoy the fellowship were:

VE2s AXY, Lloyd; BZU, Bill; BHX, Ed; FPA, Bob.

VE3s HTJ, Gord; JDM, Chuck; IWR, Bob; SH, Ed.

Re-elected for a third term for 1982/83 was Lloyd McClintock, VE2AXY, QR Net manager.

As a result of votes taken from all controllers and assistants, three persons were selected for the annual QR Net Participation Award for 1981/1982. The winners were: Louise Horne, VE1BRX (her second award); George Stone; VE3GCS, Earl Harron, VE3KCZ.

It is difficult to single out anyone from the many loyal followers the QR Net has attracted over the past eleven years. Congratulations to these three and a hearty thanks to all out there who make it so worthwhile.

At this time we invite anyone to write to us with comments and/or suggestions about the QR Net. The net is held for all Radio Amateurs and input from you would be appreciated. Correspondence can be sent to:

Lloyd McClintock, VE2AXY,  
5156 Belmore Ave.,  
Montreal, Quebec. H4V 2C6

All the best for now and don't forget - we're standing by for check-ins!

73 de Ed Henderson, VE3SH

### THE QUEBEC RADIO NET PARTICIPATION AWARD

1981 / 1982

THIS AWARD IS HEREBY PRESENTED TO :

IN APPRECIATION FOR CONSISTENTLY CHECKING INTO, HANDLING AND RELAYING TRAFFIC FOR, AND GENERALLY CONTRIBUTING TO THE SUCCESSFUL OPERATION OF, THE QUEBEC RADIO NET, WHICH MEETS NIGHTLY AT 1930 HOURS EST/EDST ON 3775 KHZ.

5 JUNE 1982



QR NET MANAGER - VE2AXY

## QCWA Canadian

members. QCWA members are issued, when they join, with a comprehensive listing of all of the Chapters, in order that they may partake in meetings in their travels. As you might imagine, the woods (?) of Florida have many many Chapters which makes it most interesting to all of you snow birds!

So there you have it in a nut shell. I would be pleased to send additional information, together with membership application forms, to any Canadian Amateur

who qualifies . . . just drop me a line or Radiogram to: P.O. Box 418, Sackville, N.B. E0A 3C0.

Oh yes . . . before I forget it, I would like to clarify one important point, as far as I am concerned. In various publications, when making reference to my QCWA office, I have often been referred to as "the **Canadian** QCWA Director." I guess that this might be a hold-over from the long established ARRL office of **Canadian** Director. In QCWA, there is no such thing as a regional or country director. One is a director of QCWA as a **whole** and not representing any specific region or country. In the

last election, for instance, there was even a German candidate for office, just to illustrate the international aspect of this august body of "old-fogies!"

See you here, on these same pages, for the next few months. But then, there possibly could be a brief absence, for a month or so, while I visit the Florida Chapters!

# TECHNICAL SECTION



## Studying for the digital amateur ticket part IV

John Blommers  
VE6BAA

For those studying for the Amateur Digital Radio Operator's Certificate, here is another set of problems with solutions.

(1) On what basis would you select the packet size for a pure ALOHA random access channel if you were transmitting digital voice?

The following parameters must be considered:

- channel data rate
- number of bits per voice sample
- sampling rate of the voice signal
- number of concurrent users on the channel.

These guidelines must be observed:

- The channel should not be monopolized by one user too long or packet collisions will occur with near certainty.
- If a packet arrives at the receiver too late to be voiced, it should be ignored and any resulting silent period must be short so that objectionable clicks that result will not impair voice intelligibility.
- If packet data blocks are not large relative to the packet header, then voice data throughput is impaired because overhead becomes a significant part of the total data sent.

Respecting the above, the following rules would be followed when selecting packet size:

**Rule No 1** - packet length exceeds 10x the header length

**Rule No 2** - packet will represent less than 0.01 sec of voice

**Rule No 3** - voice sample rate will be five to eight kilohertz

**Rule No 4** - periods of voice silence will be encoded by sending packet headers showing zero length data

**Rule No 5** - for voice intelligibility, a compandor following the A-law or U-law an at least three bits per voice sample will be used

**Rule No 6** - a pure ALOHA channel can support 18% real traffic when 50% of the net traffic is offered (due to collisions). Each user sends the same packet an average of  $50/18=3$  times.

Using the above information, let's sample the voice signal at 5000 Hz and allow 4 bits per sample. Let each packet contain 0.01 seconds of voice data. The data portion of the packet will contain  $5000*4*0.01 = 200$  bits. Allowing a 10% overhead for header, we arrive at a total packet length of 220 bits. Allowing for three transmissions we find  $220/0.01 = 22000$  bits per second of data is generated by this user on a pure ALOHA system. The channel bandwidth available will determine how many users can be supported. A 132000 Hz channel will carry 66000 Hz of total traffic - which can be offered by  $66000/22000 = 3$  users.

(2) You are given a choice: do you prefer to use a channel with a capacity of  $B$  bits/sec, or do you prefer to divide the channel into  $M$  parallel subchannels each with a capacity of  $B/M$  bits/sec?

Suppose we have packets  $B$  bits long that require one second to transmit. If the packets arrive at a rate of less than one per second, then the queue of waiting packets will be relatively short - say one to three long on the average. Allowing one second of transmit time, a packet will require two to four seconds to be transmitted.

If the channel were subdivided into five channels, then it will always take at least five seconds to transmit a packet. Of course up to five packets could be in the transmitter at one time.

Intuitively we see that for light traffic conditions the one fast channel is superior to a bunch of slower ones. Without delving into the deeper math, take it from one who HAS delved that the average time to transmit a packet is always less for a single high speed channel than for a subdivided channel.

### 1. ANTENNA

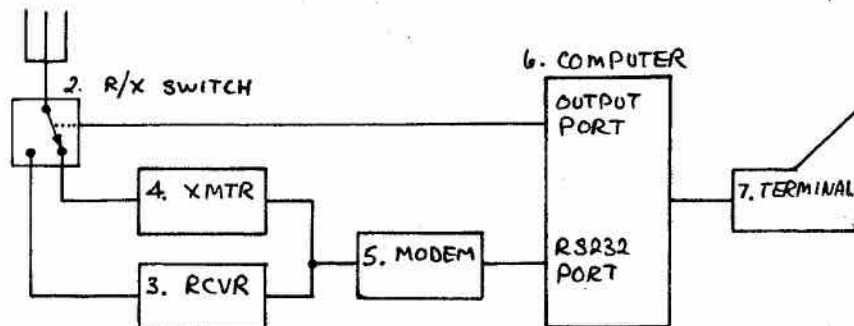


FIGURE 1

A SIMPLEX PACKET TERMINAL

(2) Draw a block diagram of a simplex packet radio terminal identifying and describing all of its major components.

Refer to FIGURE 1.

1. Antenna - transmits and receives radio waves
2. R/X switch - a switch operated by the computer which connects either the receiver or the transmitter to the antenna
3. Receiver - tunes to the frequency of the radio channel and recovers the FSK analog modulation on it
4. Transmitter - modulates the radio frequency carrier with FSK data from the modem
5. Modem - converts serial binary data from the computer's RS232 port to frequency shift keying (FSK) and vice versa
6. Computer - contains a stored program to operate the receive transmit (R/X) switch, store packets in memory, do error checking on the packets, operate the RS232 port, interact with the terminal and generally coordinates station activity
7. Terminal - the user interface to the packet terminal allows received packet messages to be displayed, and allows user composed messages to be entered for transmission.

(3) Draw a block diagram for and describe the function of a packet radio repeater.

Refer to FIGURE 2.

1. Antenna -simultaneously

transmits and receives radio waves carrying packets

2. Duplexer - allows both the transmitter and receiver to operate simultaneously into the same antenna without the other being aware of it

3. Receiver - see above

4. Transmitter - see above

5. Modem - converts the FSK audio output of the receiver into a serial bit stream and passes it to the computer's RS232 input port

6. Modem - converts the serial bit stream of the computer's RS232 output port into audio FSK signals for the transmitter. Note that both modems can operate simultaneously to support full duplex operation

7. Computer - accepts packets at its input RS232 port, verifies there were no errors, request a retransmission if so, acknowledges correctly received packets, queues packets in memory, and retransmits them via its output RS232.

(4) A number of packet radio earth stations communicate with each other through a geostationary satellite. Would it make sense to use the Carrier Sense Multiple Access Protocol (CSMA) in this case? How come?

The packet radio earth stations will be using VHF frequencies to penetrate the ionosphere and employ directional antennas to maximize their effective radiated power. These stations will not in

general be within line of sight of each other. Therefore they cannot sense each other's transmissions directly. Of course each is perfectly able to sense the satellite's carrier. The CSMA protocol is only partially effective in this example and a more effective protocol should be used.

(5) Suggest suitable protocols for the above, giving reasons for your choices.

The satellite should poll each earth station in round robin fashion until a station has traffic to offer - at which time it is transmitted on the channel. This gives more control to the satellite, eliminates pirate stations (they're never polled), and allows 100% utilization of the channel.

An alternate scheme is to have the satellite interrogate each earth station as to how much traffic it has to offer, and then to tell each earth station in advance for how long and at what interval it may transmit packets. This protocol lets the satellite determine its own workload - giving it total control.

Suppose that the satellite could transmit a carrier on channel 'A' - the same one it uses to transmit packets on, while receiving packets on channel 'B'. CSMA used on channel 'A' would work because now an earth station knows when another earth station is transmitting packets to the satellite and when the satellite is transmitting packets to an earth station.

1. ANTENNA

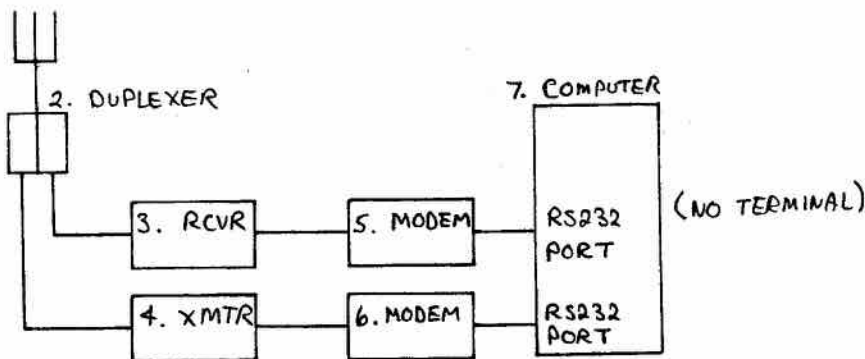


FIGURE 2

A FULL-DUPLEX PACKET REPEATER

Readers are invited to mail their questions to the author. These will be answered in a future installment of this series on Packet Radio. The address is:

**John Blommers VE6BAA**  
 17060-98 Street  
 Edmonton, Alberta  
 Canada T5X 3G5

NEXT EXAM DATE is October 20. First one in 1983 is February 9. Applications for that one are due in DOC by January 12.

# External VFO Interface for the TR7

Have you ever tried to work a 5 KHz frequency split using a transceiver without a second VFO? It can be done, but it is a juggling act worthy of a circus performance. The Drake TR7 is a fine rig but will not operate splits of more than 2 KHz without an external VFO. And the Drake accessory VFO is very expensive.

This article is about how to connect almost any external VFO to the TR7. The VFO must, of course, function in the frequency range required by the TR7, which is a standard 5.0 MHz to 5.5 MHz. You could even build a suitable VFO for this purpose, since most TR7's are equipped with the digital frequency readout, no dial is required on the VFO. The VFO must deliver at least 1/2 volt RMS output into a low impedance load. If the VFO will operate from a +13 volt supply, the necessary voltage can be taken off the TR7.

The TR7 owner's manual provides the following information on the remote VFO socket (the VFO is called a PTO by Drake). The socket is a standard 8 pin Cannon connector.

Pin	Function
1	Ground
2	RV7 PTO
3	+13.6 VDC
4	Transmit Disable
5	RV7 PTO Enable
6	RIT
7	RV7 Receive
8	RV7 Transmit

Some of the connections are obvious, such as ground and B+. Some of the other pins of interest to us have the following functions:

2- The rf from the external VFO enters the TR7 on this pin. Note, however, that at least +2 volts DC must accompany the RF, or else the TR7 will ignore this source.

4- This pin signals the external VFO when the TR7 is in transmit mode. In transmit, it is about +5 VDC; in receive, zero volts.

5- The TR7 places about +9

VDC on this pin when either pin 7 or 8 have been enabled by the external VFO. This signal can be used to tell that the external VFO is on and has disabled the PTO in the TR7. If used, this source must be buffered since it is high impedance.

6- The TR7 supplies a DC voltage corresponding to the position of the RIT control. About +4 VDC when the RIT is off, +2 to +6 VDC when the RIT is on.

7- This pin is used by the external VFO to signal the TR7 to turn off its PTO during receive. Requires +13 VDC.

8- This pin is used by the external VFO to signal the TR7 to turn off its PTO during transmit. Requires +13 VDC.

It can be seen by the above description that a combination of DC signals on pins 2 and either pin 7 or 8 are required to switch the TR7 from internal to external VFO. Although this may seem like a complicated way of doing things, the same scheme is used by the TR7 to handle the AUX accessory and the connection of the R7 receiver.

The diagram shows a very simple interface for using your own external VFO with the TR7. It is configured to operate during receive, while the TR7's PTO operates during transmit. Transistor Q1 senses when the transmit signal on pin 4 is present, and since it acts as an inverter, provides a signal to the TR7 on pin 7 during receive. This tells the TR7 to disconnect its PTO during receive. The same signal is taken



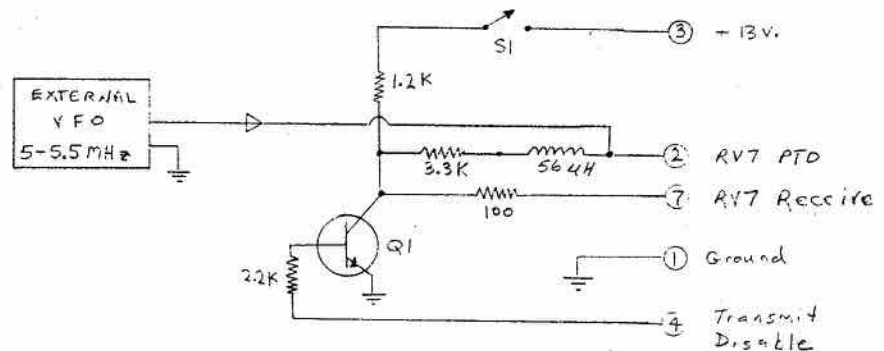
from the collector of Q1 through an rf choke to be added to the rf line going to pin 2, thus enabling this source during receive only.

When switch S1 in the collector of the transistor is open, the circuit is inactive and thus does not affect the operation of the TR7. This is a handy way to turn the external VFO off without removing power from it, which might degrade its stability.

Q1 can be any general purpose NPN transistor such as the 2N2222 or 2N3904. The rf choke can be any suitable unit in the range of 50 to 250 uH. In most cases it should be easy to build the circuit right inside the external VFO.

Once you understand the operation of the TR7/external VFO interface, you will find it easy to add some bells and whistles to the circuit. For example, you could use the signal on pin 5 to drive an indicator lamp on the external VFO. A switch could be added so that the external VFO could be switched to operate either on receive or on transmit. Also, the RIT signal on pin 6 could be used to fine tune the VFO.

Jack Botner, VE3LNY  
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No. 1708  
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TR7- EXTERNAL VFO INTERFACE

# TECHNICAL SECTION



## The 220 MHz "J"

### General

Some time ago, Craig Howey (VE3HWN) had some very interesting articles on converting two meter commercial gear to work on 220 MHz. This is definitely an economical way to explore this thinly populated band. If you are on 220 and get tired of the limited range provided by the "temporary service" whip that stuck to the back of your rig, why not try an outdoor antenna? Here, I'm going to discuss the construction of a stub fed vertical antenna, which is commonly called the "J pole". It consists of a half wave radiator end fed through a quarter wave stub.

### Material

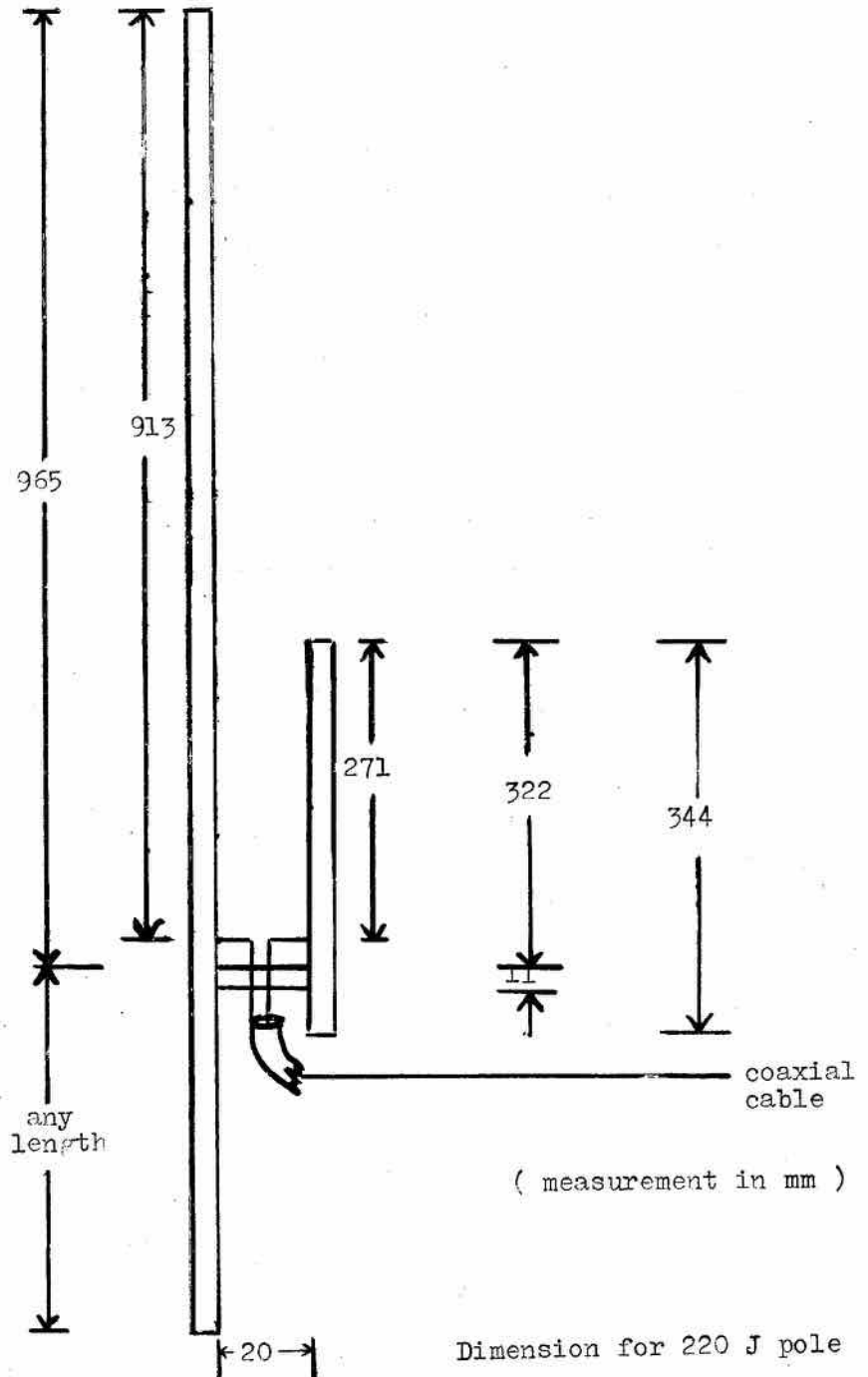
The material needed for the construction is the following:

- \* 6 feet of copper tubing; 1/2 inch diameter,
- \* 2 closed off end caps,
- \* 1 BNC female connector,
- \* 1 piece of plexiglass or thick plastic sheet,
- \* 2 4-40 x 1" machine screws and nuts.

If you have to buy everything new, the cost is around 5 to 7 dollars.

### Preparations

**Tubeing:** use a piece of fine grade sand paper to clean off the surface of the copper tubing. Then, saw off one 344 mm section for the quarter wave stub and an 11 mm section for the "short" bar. The 11 mm section has to be slit and spread open. Use a mallet to hammer it flat. Trimming is required to



reduce the size to approximately 11 mm x 24 mm.

**Insulators:** Make up two antenna spacer plates and one connector plate according to the dimension shown on the diagrams: The holes for the spacer plate should be drilled just a touch less than 16 mm so that the plate can be slid on the tubing with a small amount of friction.

### Construction

1. Put one closed off end cap on the radiator element (the longer section) and one on the matching stub. A propane torch is required for this type of work, but if it is not available, use the kitchen stove!

2. After the tubings cool off, slide the insulator on the radiator section and on the matching section.

3. Mark off 965 mm from the top of the radiator and 322 mm from the top of the matching section, solder the "short" bar in place. Further trimming on the bar may be required in here. Care has to be exercised so that the insulator will not be destroyed by the intensive heat.

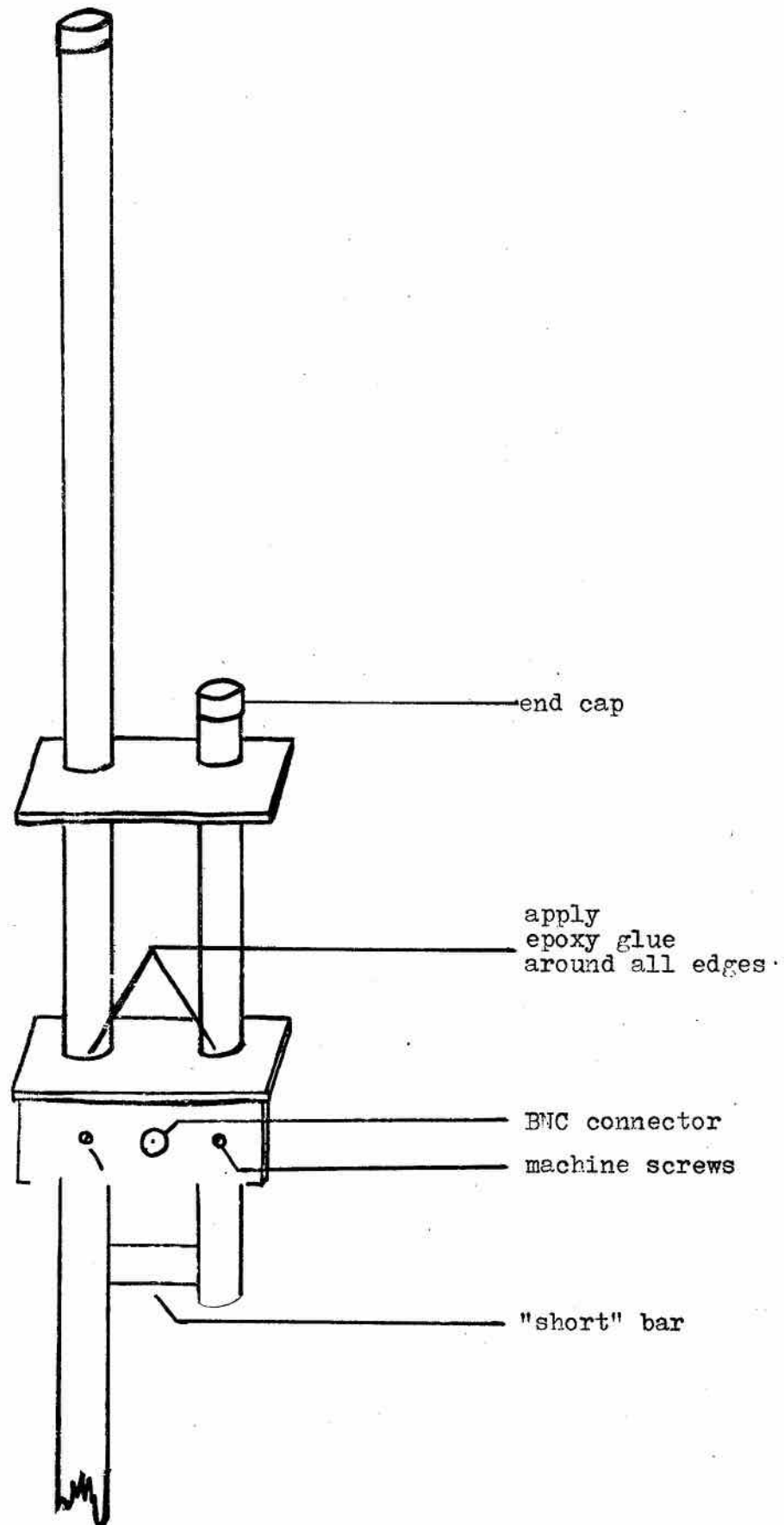
4. Mount the connector on the connector plate.

5. Solder the connector on the tubings; a high power soldering iron should do the work. (The connector can be eliminated by soldering the coax cable directly on the feed point. But the cable has to be taped down securely.)

### Adjustment

The feed point location as shown on the diagram will give lowest SWR reading (1.05 : 1) at around 223 MHz and about 1.6 : 1 at band edges. There is a significant change in SWR reading by varying only 5 mm up or down from the suggested feed point location.

After the exact feed point location is desired, the connector plate has to be fastened onto the antenna. Through the holes that are allowed for the machine screws, drill a hole on the radiator section and another one on the matching section. Finally, secure the connector plate in place.



220 MHz J pole antenna



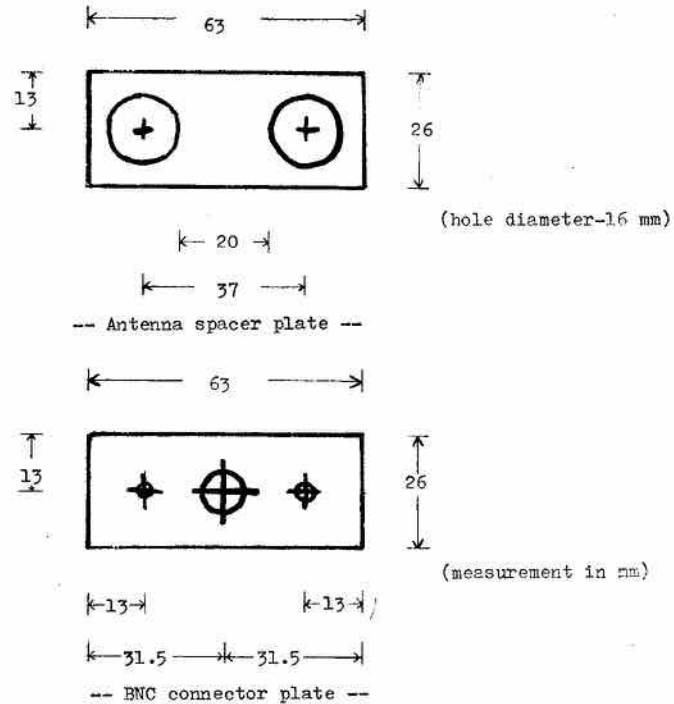
### Final Touch Up

Apply good grade epoxy glue around all edges on the spacer plates as shown on the diagram. After the epoxy is dried completely, preserve the antenna by applying 3 to 4 coatings of lacquer on all surface of the antenna.

### Conclusion

The antenna is now up on the tower of a local ham. Good signal reports are received from many stations. So far the antenna has survived a heavy wind storm without a scratch.

**Author: Mike Chan,**  
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N0A 1A0.



## Radio News

There's good news for U.S. operators in the recently-passed U.S. law which will permit the FCC to delegate to the Amateur community the setting and conduct of exams. CARF has asked DOC to discuss a similar procedure in Canada. The U.S. legislation, which is now awaiting presidential approval, would also permit the delegation of enforcement. There was bad news in the U.S. law for Canadians. It imposes stricter RF interference rejection standards on home entertainment equipment and unless DOC gets moving with similar legislation there is a more than an even chance that sub-standard radios, stereos and TVs will be diverted from the U.S. market and dumped in Canada.

The minor regulations changes proposed by DOC last January have been stalled in the Privy Council Office for some time, awaiting the PCO's OK.

U.S. Amateurs are seeking special permission to go on 10 MHz without waiting for their government's ratification of the WARC'79 agreement. They could be on the air band this month.

'73

**Doug Burrill VE3CDC**

## Cordless phones . . . more trouble???

A new interference menace has surfaced in the U.S. according to the U.S. Amateur publication 'WESTLINK REPORT'. Two units of so-called "ultra-long-range cordless phones" are being made in the States "for export". One of these, the "Non-Cord DX Model NC 20 M" boasts operation in the two-metre band, from 143 to 147 MHz, complete with a claimed 13 watts and a "twenty-mile range". Accessories include "gain" antenna and a power amplifier of 25 watts. The second one, with similar "long-range" claims, is something called the Rova/Pro Cordless phone. Both of these units are illegal in Canada and the U.S. Anyone discovering such units for sale or in operation should notify the DOC or CARF immediately.

Canadian regulations permit the operation of very low power devices without licensing if they operate above 510 kHz and if they do not interfere with regular radio services. Typical of these units is one sold by Radio Shack. The units, which provide for full duplex working, use a number of

channels between 1.6 and 1.8 MHz for the 'base' station and the remote sets transmit on various channels in the 49.8 to 49.9 MHz band. The outputs are so low that users are advised to operate them near the A.C. lines which can 'piggy-back' the very weak RF output. One obvious drawback is that this may introduce an A.C. hum. Another is that there is no privacy to phone conversations using these units. A third problem is that if your neighbor is using one and it happens to be on the same channel, one or the other of you will have to take the units back and exchange them for a different frequency pair.

DOC is attempting to keep up with the inventive genius and the hustling marketing of consumer-oriented manufacturers and is currently rushing a Telecommunications Regulation Circular setting out the requirements for type acceptance of this new product.

These devices operate on a secondary use basis and licensed services, such as the Amateur Service, have priority in use and in any cases of interference.

# TECHNICAL SECTION



## An HT Mobile Adapter

When looking for a two meter rig, I decided that a handi-talkie would best fit my needs. However, it was quickly realized that NiCad battery packs always seemed to go flat in the midst of a WSO. This was no problem at home since an AC adapter was available. But what do you do when you are driving along the highway? After having this happen a number of times, a remedy was sought. I did not want to pay the price of a commercial mobile adapter, so the circuit of Fig. 1 was developed. Although originally designed with the Yaesu FT207R in mind, these units have also been used with Icom IC2A's.

The circuit uses a 5V three terminal regulator to provide the required output voltage at currents of up to 1A. The unit is fused to prevent excessive current from damaging the HT.

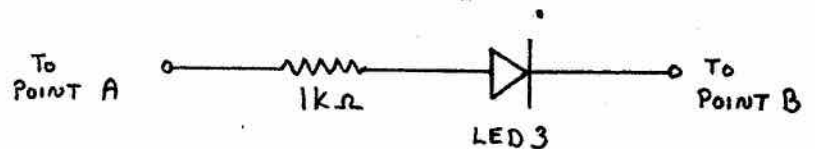
Overvoltage protection is provided by the SCR crowbar circuit to prevent damage to the HT in the event that the regulator should fail.

The LED's provide a visual indication of the operating and fuse blown conditions.

If the power output of the HT is over 1.5 W, an external antenna should be used to prevent RF from affecting the operation of the regulator if a metal case is not used.

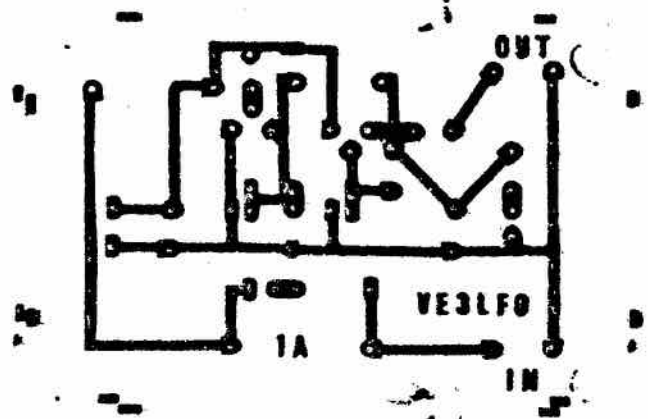
### Construction

The unit was constructed using a PC board and was housed in a small experimenter's box. The aluminum top of the plastic box was used as the heat sink when the maximum output of the HT in



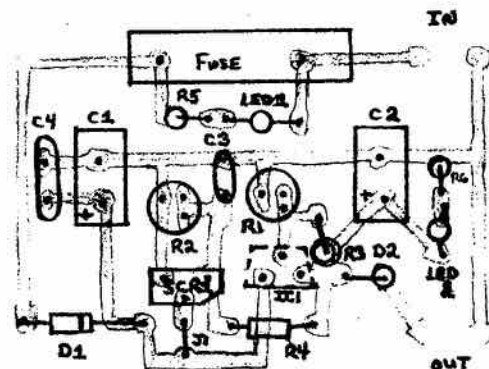
Temporary Circuit

Fig 2



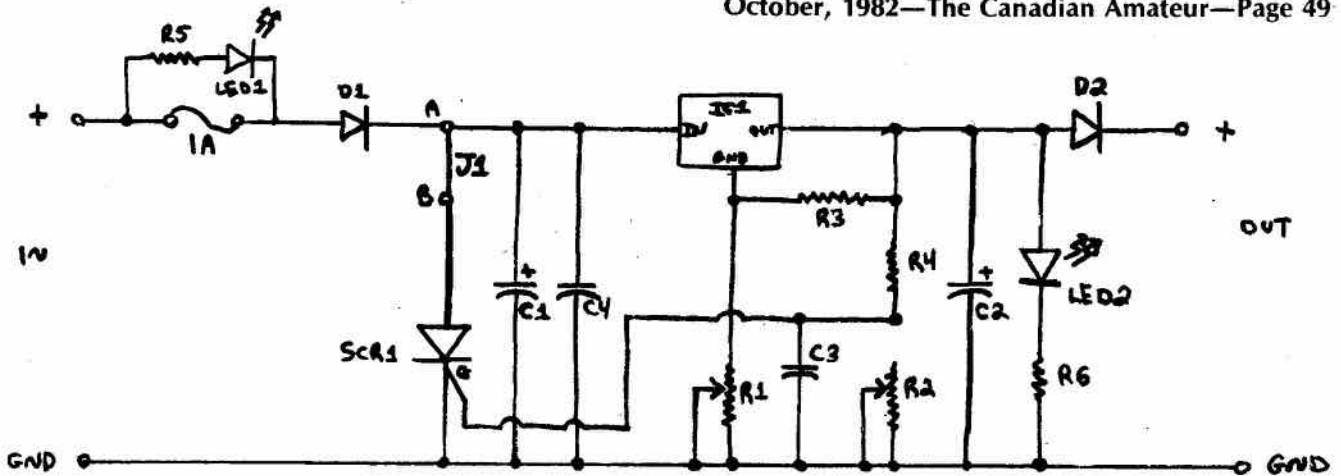
PC Board Layout

Fig 3



Parts Layout

Fig 4



HT Mobile Adapter

Fig 1

Parts List

- IC1 - 5V, 1A regulator
- SCR1 - C106D 5A, 400V Silicon Controlled Rectifier
- D1,2 - 50PIV, 1.6A rectifier
- LED1,3 - red light emitting diode
- LED2 - green light emitting diode
- C1,2 - 47 uF, 50VDC
- C3 - .01 uF
- C4 - .1 uF
- R1,2 - 1k $\Omega$  trim pot
- R3,5,6 - 1k $\Omega$
- R4 - 10k $\Omega$

use was 1.5 W. For bigger rigs, an additional heat sink was added.

1. Except for IC1 and J1, mount all components on the board. Temporarily install the circuit of Fig. 2 in place of J1.

2. Connect a 0 - 15 volt variable DC supply to the input and a voltmeter to the output. Starting from zero volts slowly increase the input voltage and note the output at which LED3 turns on. Turn the voltage down until LED3 turns off.

3. Adjust R2 and repeat step 2 until LED3 turns on at 11.5V. The over-voltage circuit is now adjusted.

4. Install IC1. Apply 14VDC to the circuit input and adjust R1 for an output voltage suitable for your HT. Ensure that LED3 is off during this process.

5. Remove the temporary circuit and install J1.

6. Mount the unit in a case.

Comments

Five of these units have been constructed and have been in use for nearly a year. To date no problems have been encountered. You could also use the unit with a 12VDC power supply for running the HT at home, or adjust the out-

put voltage for use with a tape recorder or other battery operated device requiring 5V to 12V for operation.

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K1S 5G5  
238-1158

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The Ontario Trilliums would like to know of the current addresses of the following hams: IAV, IBI, ICE, ICF, IEW, IHV, IJN, IKO, IKR, ILJ, ILW, IMJ, IMR, IMT, IQL, IRR, ISP, ISQ, ISY, IUM, IVC, IVN, IWF, IXJ, IXN, IYS, IZQ. Please direct any info to John VE3ECP, Box 7, Fonthill L0S 1E0 or to Ont. Trilliums, Box 157, Downsview. MEM 3A3.

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Don Prickett VE5KP

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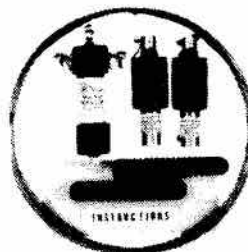
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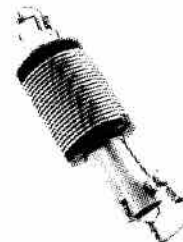
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The Canadian Amateur Radio Federation, Inc. is incorporated and operates under a federal charter, with the following objectives:

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

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The following countries have notified the International Telecommunications Union that they forbid radiocommunications with Amateur stations under their jurisdiction: Democratic Kamuchea, Iraq (Republic of), Libya (Socialist People's Libyan Arab Jamahiriya), Somali Democratic Republic, Turkey, Viet Nam (Socialist Republic of), Yemen (People's Democratic Republic of), Zaire (Republic of).

**THIRD PARTY TRAFFIC AGREEMENTS**

Canada has concluded agreements with the following countries to permit Amateur radio operators to exchange messages or other communications from or to third parties: Australia, Bolivia (Republic of), Chile, Columbia (Republic of), Costa Rica, Dominican Republic, El Salvador (Republic of), Guatemala (Republic of), Guyana, Haiti, Honduras (Republic of), Israel (State of), Jamaica, Mexico, Nicaragua, Paraguay (Republic of), Peru, Trinidad and Tobago, United States of America, Uruguay (Oriental Republic of), Venezuela (Republic of).

Negotiations for the establishment of similar agreements or arrangements with Ecuador and the Federal Republic of Nigeria have been initiated.

Amateurs who wish to operate in Commonwealth countries other than those listed above should apply to the embassy in Canada or directly to the appropriate regulatory agency.



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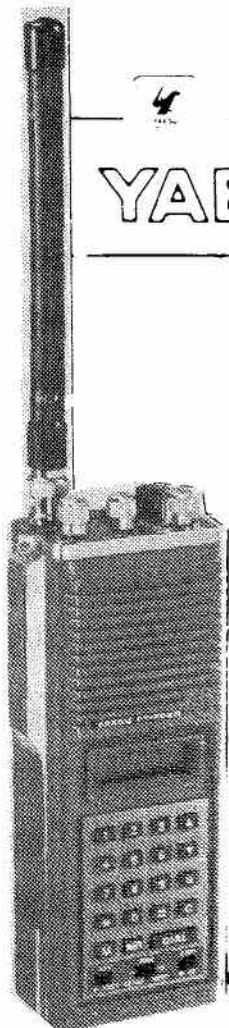
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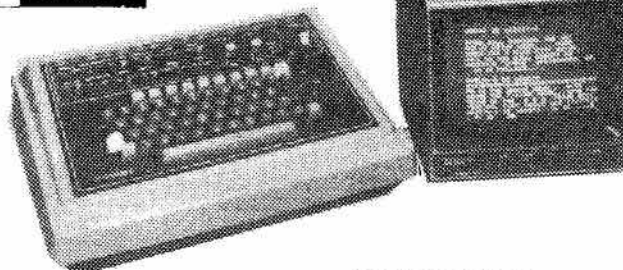
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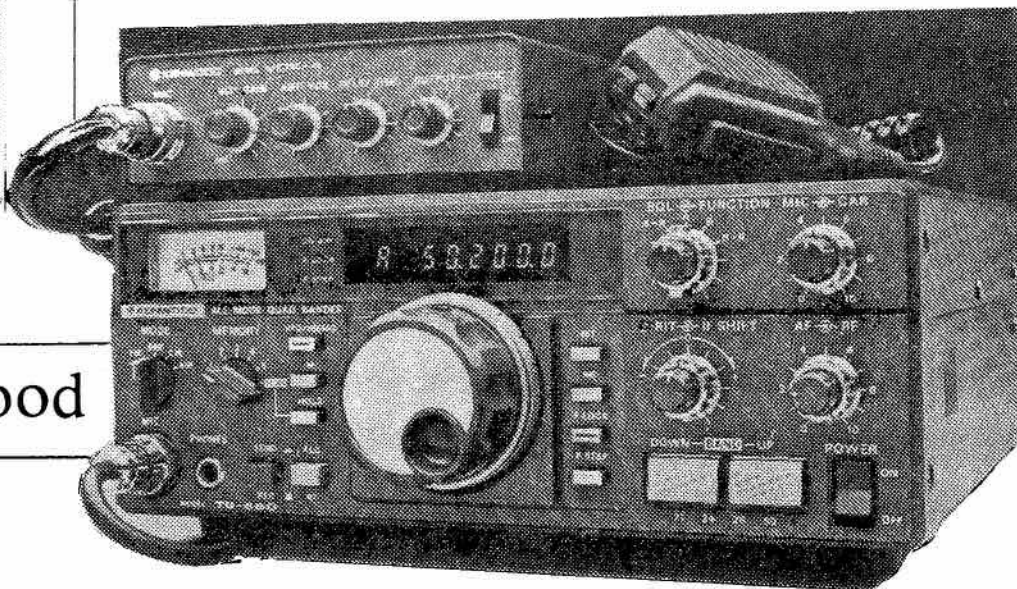


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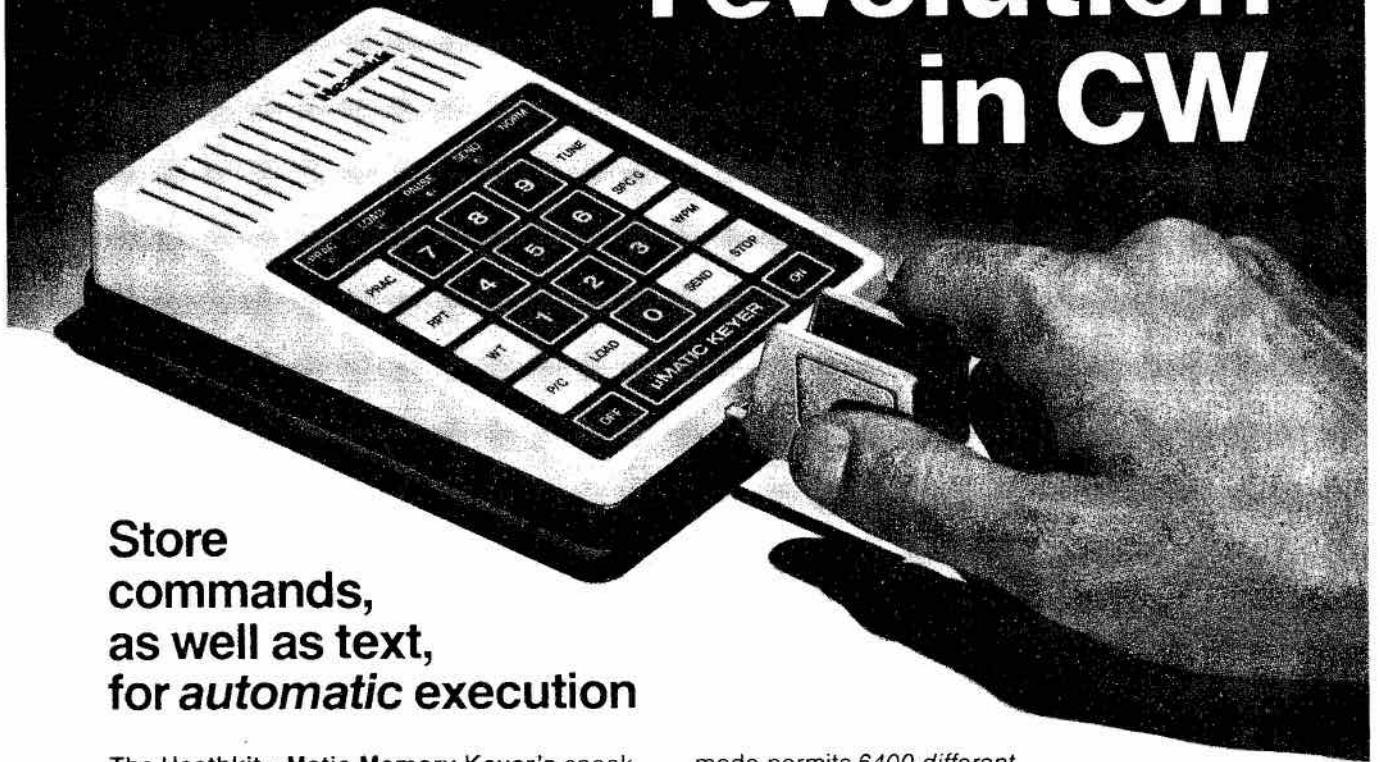
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