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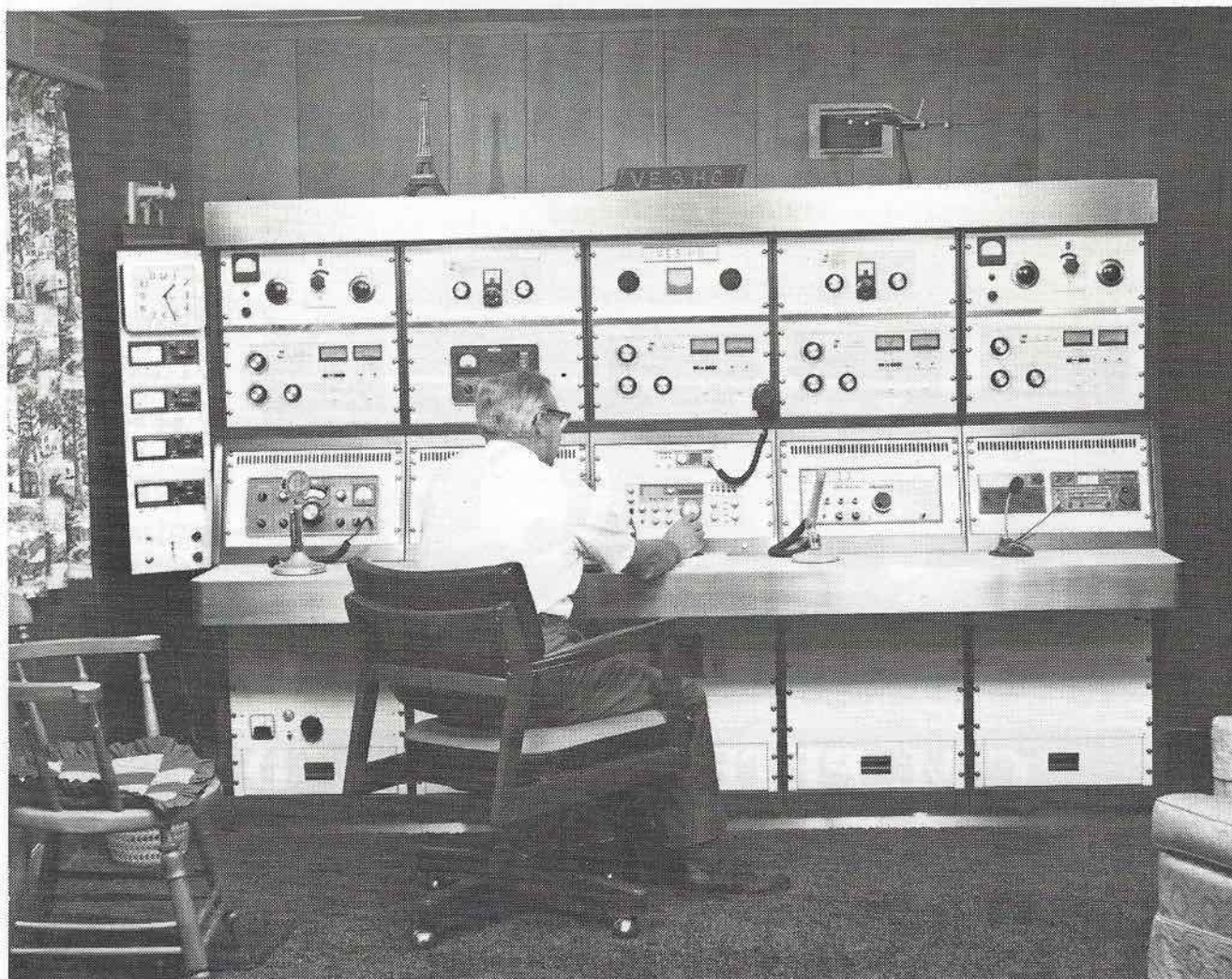
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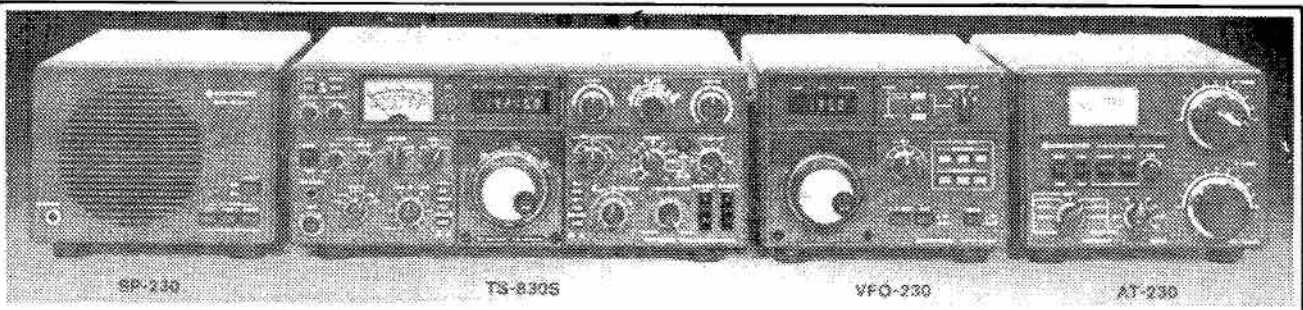
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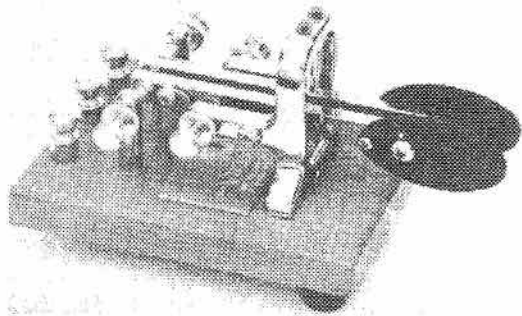
The Canadian Amateur Radio Magazine



Fred Hammond, VE3 HC — The man with the museum

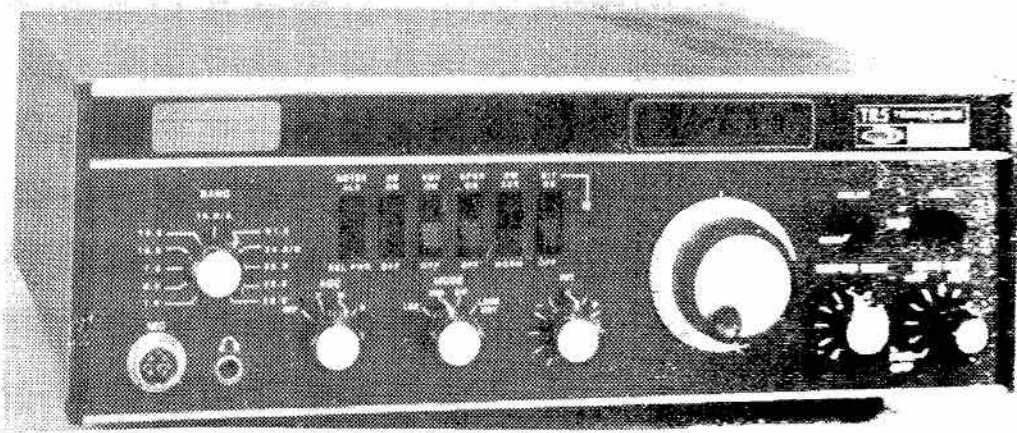
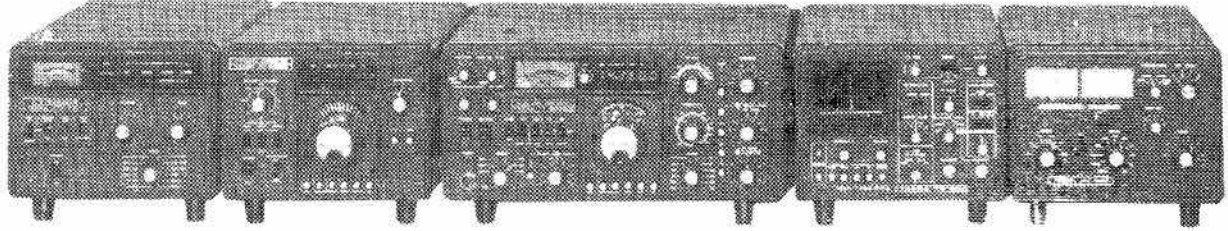


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THE CANADIAN AMATEUR

NOVEMBER, 1982

Vol. 10 No. 10

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PRODUCTION AND
PRINTING BY
Runge Newspapers Inc.
Renfrew, Ont.

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TCA — *The Canadian Amateur* is published in Canada 11 times per year to provide Radio Amateurs, those interested in radio communications and electronics and the general public with information on matters related to the science of telecommunications.

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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TCA — *The Canadian Amateur* is published by C.A.R.F. Publications Limited, 370 King St., P.O. Box 356, Kingston, Ontario, Canada K7L 4W2. It is available for \$15 per year or \$1.50 per copy. It is recommended by the Canadian Amateur Radio Federation Inc. and members receive it automatically.

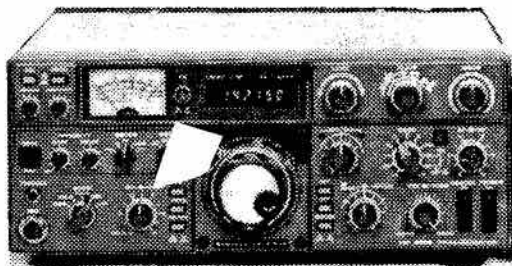
Indexed in the Canadian Periodical Index: ISSN 0228-6513

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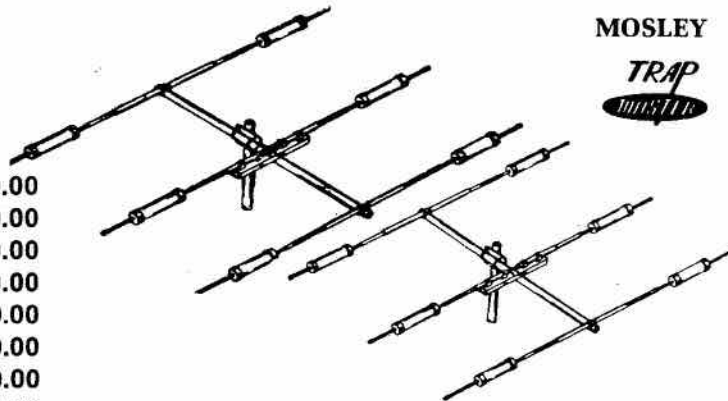
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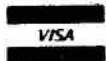
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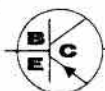
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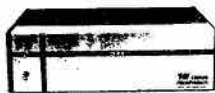
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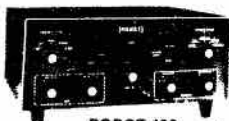
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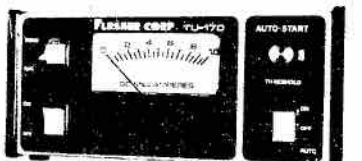
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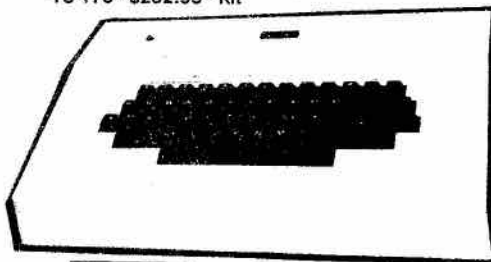
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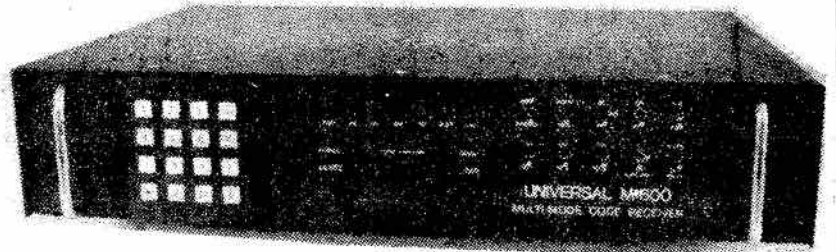
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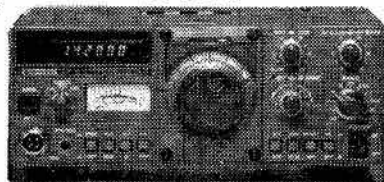


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CALL FOR NOMINATIONS

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

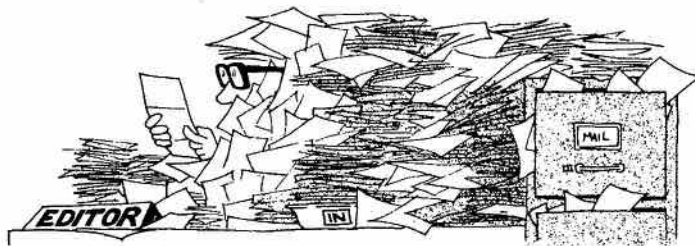
Each Region, with the exception of Ontario, has 1 Regional Director with Ontario, because of its large Amateur population, having 2 Regional Directors. This division gives fairly equitable representative voting powers to each Regional Director.

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.

LETTERS



"I agree with a lot of comments you have made on having Amateurs conduct exams in the October issue of 'TCA', but I am afraid that I do NOT agree with the method that you are proposing to conduct the tests . . .

"That system of testing is for the birds . . . and probably worse than the existing one. Surely if a club can conduct the whole course, it can be trusted to give all the exams locally, the standards in TRC 24 and 25 are there to be met and until candidates meet those standards they would never become Amateurs.

"Now with regards to code tests, you don't need earphone or tape to ensure that someone can read or send the code. With a small group, one good oscillator and speaker is all you need. From my experience, the tapes produced for code practice are not very good and if you have not learned the code from them, you'll never pass a code test trying to read from one. Sure, you can make good tapes but, they should all be checked before being put into use. The best way to give an exam, especially as we are proposing, is by hand key or tape produced locally . . . I cannot think of one reason for sending DOC anything but the results of our own tests; -- 'Passed, or Failed'.

"I would agree with you that DOC should make out the written tests and these should be sent back to DOC for correcting. This would keep the standard the same for the whole country, but as far as the code reading and sending is concerned, that is something that must be done locally.

". . . You also talk about approved examiners. I don't think that you need any of them. In the first place as they mentioned they

would have to be Amateurs and if they are, surely they would belong to some kind of Amateur organization, so why complicate things. Amateur clubs conducting courses would be authorized to carry out the tests. For example, if I teach the code, I know darn well who can make it even without giving an exam and I know who can send also. However, no one would get a pass unless he was able to perform in accordance with the standards given by DOC. . . . Date, time and place for all tests would be given to DOC who could send a representative.

"Thanks for everything that you are doing. I think that we are on the right track and we should get results . . ."

**Ray Fleury VE3KND
Barrie, Ont.**

Thanks for the comments, Ray. The ideas in the CARF proposal are not cast in concrete. They were written to get the ball rolling on comments and discussion. For example, your remarks on "approved examiners" and having the course instructors conduct exams could bring out the counter arguments that the appointment of a number of individuals as examiners would widen access to exams for those people who live in areas remote from clubs; the rationale of instructors not examining their own students is that it would ensure the possibility of collusion or the appearance of it would not arise. This may not be a palatable or acceptable suggestion so your idea of a DOC representative dropping in on scheduled exams, probably only on a random or 'sampling' basis might achieve the same result. That sort of check

would of course, still cost money chargeable to the Amateur Service.

More reaction from readers is required in order for CARF to get some consensus on the idea of Amateur participation in the administration, of its hobby. Lets hear it!

**TCA WELCOMES LETTERS
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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.

CONTEST

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

SCENE



Contests Calendar

November
6-7 ARRL SS CW
13-14 European DX RTTY
20-21 ARRL SS SSB
27-28 CQ WW DX CW
December
3-5 ARRL 160 m CW
11-12 ARRL 10m

19 CARF CANADA CONTEST

January
8-9 73 mag 40/80m SSB
15-16 73 mag 160m SSB
15-16 PVRC WCY Contest
16 VE1 CW Contest
28-30 CQ WW 160m CW
29-30 REF CW
30 VE1 SSB Contest

The results of the CQ WW DX CW 1981 were released in October CQ, and as promised, the results appear below. Only two Canadians made it into the box, with Yuri VE3BMV placing 4th world high on 21 MHz and Bob VE3KZ placing 8th world high All Bands QRP. New Canadian records were set in the single op, all band, single op 21 MHz, single op all bands QRP and Multi-single classes.

VE3IY bettered the old all band mark by 600k, and among the comments published with the results was Jim's remark that he worked more multipliers on 40 metres than on 10! Yuri VE3BMV, who already dominated the records table with four single band records, moved up his own 15 metre record by almost 100k. Bob, VE3KZ made the QRP record very respectable indeed, moving it up almost 200k. VE3PCA improved the multi-single mark by about 900k. Conditions were certainly very good. The low bands particularly were in superb shape, and were largely responsible for

some of the fantastic multiplier totals for all band entrants.

There was one rather unfortunate slip-up in the results, however.

For the second year in a row, the top Canadian Multi-single was left out. Last year, CZ6ZT smashed the MS record with a fine 2.8 Meg score, but for some reason, their log got lost somewhere between the high claimed scores and the final tally. This year the same thing happened to VE3PCA. Doug, VE3KKB, part of the VE3PCA team, made a number of telephone calls to K3EST and N6AR, the directors of the CQ WW DX contests, to see just what went wrong. They were both very apologetic, promised a correction would appear in W1WY's column in a forthcoming issue, and expressed surprise that this sort of thing doesn't happen more often! While I am happy to see they were so cooperative, it still seems strange that multi-million score logs can just get lost. CQ certainly runs the largest contests in the world by far, and going through three or four thousand logs certainly presents its share of logistical problems, but major slip-ups like that are still inexcusable.

If anyone else has mystically 'disappeared' from a contest in

like manner, please let the organizers know, and demand some satisfaction.

Now that the sour grapes are over with, congratulations go out to the Canadian trophy winners, Jim Roberts, VE3IY for his superb single op all band performance, and who wins the CANAD-X trophy, and Karl Korhonen, VE1BRB who wins the CARF trophy for his fine Single Band 14 MHz performance. Yuri, VE3BMV, who was the first place VE single band entrant, won the single band trophy three years ago, and now is eligible for it in this year's contest.

According to all the propagation forecasters, the CQ WWs should be another record-breaking classic. Most of the all-band and multi-ops would be back again for a last shot at the records table. Yuri, VE3BMV has taken down his 15 metre razors, and should be on 20 single band this year with two 5-element razor beams. Yuri will hold 5 of the possible 6 single band records in this contest. We at VE3PCA are praying for some sort of propagation disaster to prevent VE1DXA from taking away our MS record. Time will tell!

CQ WW DX CW Contest Canadian Records

Class	Call	Score	QSOs	Zones	Countries
A	VE3IY	2,607,795	2863	113	292
A	VE6OU	1,839,702	2302	110	217
A	VE2AYU	935,688	1209	88	224
A	VE7BTV	885,720	1687	82	138
A	VE1AIH	774,080	922	86	242
A	VE3DZV	470,880	624	87	201
A	VE1ANU	462,735	603	85	230
A	VE3HD	411,808	537	89	183
A	VE3GCO	393,476	596	78	178
A	VE3UOT	275,317	410	77	182
	(VE1BCZ op.)				
A	VE4AIV	195,917	861	39	68

A	VO1AW	172,142	423	53	113
A	VE3GCE	158,498	310	66	128
A	VE1CAN	129,628	556	26	66
A	VE2DPO	121,268	369	46	96
A	VE4MF	69,550	186	45	85
A	VE3NBW	27,010	135	29	45
A	VE3MKJ	17,160	155	20	32
28	VE7QC	11,340	139	14	21
21	VE5BMV	653,856	1665	35	112
21	VE1TG	89,440	465	24	56
21	VE6COC	12,265	122	16	26
21	VY1DD	960	28	9	11
14	VE1BRB	167,132	772	26	68
14	VE2AH	138,753	644	22	59
14	VE3DUS	73,206	334	25	58
14	VE1CEG	56,225	333	18	47
14	VE7DLM	52,083	236	19	62
14	VE2WA	4,810	50	14	23
7	VE3KRN	113,119	557	23	66
7	VO2CW	25,393	158	20	47
7	VO1QU	14,112	124	13	35
1.8	VE3INQ	10,944	238	11	13
1.8	VE1BEC	472	65	2	2
QRP					
A	VE3KZ	261,632	450	70	154
MS	VE3PCA	3,711,956	2794	135	373
MS	VE1DXA	3,357,354	3174	117	312
MS	VE7WJ	2,920,776	3103	125	268
MS	VE5DX	2,777,273	3064	124	267
MS	VE3MFA	935,881	1356	84	199
MS	VE3OCU	44,055	230	38	51

* - new Canadian Records tnx CQ

CQ WW DX CW Contest

Canadian Results

Class	Call	Score	Year
A	VE3IY	2,607,795	1981
28	VE3BMV	504,063	1980
21	VE3BMV	653,856	1981
14	CY3EDC	399,663	1977
7	CY3IXE	180,978	1977
3.5	CY3BMV	102,828	1977
1.8	VE3BMV	30,258	1976
QRP			
A	VE3KZ	261,632	1981
MS	VE3PCA	3,711,956	1981
MM	VE3DU	1,335,928	1976

tnx Long Skip/VE3KZ

RSGB 7 MHz CW 1982

Canadian Results
VE1CEG 2700
VE3FGU 1380
tnx RSGB

VK/ZL/Oceania CW 1982

Canadian Results
A VO1AW 154
7 VE7BS 540

VK/ZL/Oceania SSB 1982

Canadian Results
A VE7WJ 3902
14 VO1AW 40
tnx CQ/W1WY

DOC, as with most other departments of the federal government is operating on the basis of cost-recovery, where fees charged are supposed to cover the cost of services provided. Over the past few years, there have been a number of licence fee increases for every service except our own. There are rumblings that unless we can find ways to cut the costs of administering our service, we may not be able to maintain licence fees at their present level.

CARF is now working on some proposals to relieve DOC of some of the costs of administering Amateur exams through the use of Amateurs as invigilators at examinations.

One cost DOC would like to do without is authorizing special prefixes. Their present policy demonstrates that while they don't want to lower the boom, they are going to make getting a special prefix as difficult as possible.

For Contesters and DXers, a callsign is not simply a means of identification. A callsign is a means to an objective. A call that can easily be understood is CW and SSB without endless repetition can make the difference between a successful Contester or DXer and an also-ran. How many DXers have had the frustrating experience of receiving cards addressed to the wrong callsign? VE3GCO is now working on a DX-CC - "Wrong Call". In working Contests and DX on 80 metres with my former callsign, VE2DZE, I often had difficulty getting that final "E" through the QRN. I am sure VE2DZ has a pile of cards for 80m DX QSOs he never made. God help anyone cursed with Js, Gs or Qs in his or her callsign, and a taste for DX. On SSB, especially when working anyone who speaks a romance language, any com-

Whither special prefixes?

Some time ago, in the March and July/August 1980 issues of TCA, the question of special prefixes for contest work was raised. Some positive comments from Contesters and non-contesters

alike were received. Bob Nash, VE3KZ in his column in May 1980 Long Skip has discussed and made proposals for special prefix policies. The idea in each case was to assign a series of prefixes for contest work, for use with one's normal callsign.

We pay for technical articles.

Send contributions to:
CARF Technical Editor, Box
356,
Kingston, Ont. K7L 4W2.

bination of these letters can be murder, and turn hopes of DX or contest success into a nightmare.

For Amateurs who are not serious DXers or contesters the callsign does not play the same role. For those who enjoy ragchewing, traffic handling, or any of the other strong-signal, low QRM aspects of the hobby, one's callsign plays only the role of identifying your station. The contest of your transmissions is far more important, and a snappy callsign won't help you enjoy the hobby any more or less.

Over the last few years, the new 2-by-1 USA callsigns have shown themselves to be very popular in contests. As their calls are so short, running piles of USA stations becomes a very pleasant and productive experience. During the WPX contests, these hundreds of new USA prefixes have added a whole new strategic dimension, and have served to keep scores rising.

Canada has some 21 callsign blocks outside the VE, VO and VY labels presently used for Amateurs. With the exception of the Experimental service (VE9) stations, there are no callsigns constructed in the same format as Amateur callsigns. Why can't Amateurs be issued callsigns out of the other blocks on the same 2-by-1 format as callsigns in the USA, Mexico, Haiti, Columbia, Venezuela, South Africa, Norway, Switzerland, most of eastern Europe, Israel, etc., etc.

If we would be given the privilege of nominating our own callsigns and be able to keep them on a permanent basis, DOC's administration costs would be limited to issuing the new callsign. From that point, it is simply another licence to be renewed in the normal manner.

I am sure that most contesters or DXers would be willing to pay the freight of administrating this programme through a one-shot application fee, which would be set to recover DOC's costs. The expenses of such a programme would certainly be higher than the normal licence fee, but only those who would make use of it would be asked to bear its costs. From

the contesters' or DXer's point of view, the cost would be another investment in his station.

By this idea, DOC would be relieved of the cost of rejecting Contesters' applications for special prefixes to mark concocted anniversaries. For those few anniversaries for which a special prefix is authorized, these new callsigns, with one-letter suffixes would not present any conflict with VE/VO/VY stations using unusual prefixes.

Stations who hold one of these new 2-by-1 calls would not be eligible to use special prefixes, for obvious reasons of practicality except perhaps as something like CF1A/XK1 or XK1 were the special prefix. There may be one of two loose ends around this idea, but it may represent a practical way of answering the demand for unusual callsigns, while relieving DOC of the financial responsibility of handling that demand.

In about a year from now, the CARF Symposium will take place in Halifax. Leigh, VE1ZN who is undertaking to organize the symposium has given assurances that it will not conflict with any major contest, so we may be able to get this or some similar policy adopted at that time. Any discussion before the symposium will only help to define what position contesters should adopt. Any comments on this issue would certainly be welcome for inclusion in this column, and letters supporting this idea or any other would certainly help us make our point to DOC and the rest of the Amateur community.

The "CQ Contest" Book

As mentioned in last month's column, Garry Hammond, VE3GCO has produced a sequel to his awards directory, this time, dealing with contests. Garry's latest effort is a compendium of contest rules, official entry forms, official and ad-hoc multiplier checksheets, dupesheets, a large number of VE3BMV's 100 QSO/page log sheets in a loose-leaf format. It appears that this will be a very useful book, especially for those with an interest in some of the national and regional con-

tests. Garry has included a number of useful operating suggestions which will be of use to those just starting out in contests. The advantage of having all this information in one place, where it can be referred to or copied from with a minimum of fuss should make this a useful book for the experienced contesters as well. For anyone, it appears to be a most useful book. Thanks Garry, for all the effort you put into it. Garry is asking \$8 - for his book, which includes shipping costs, and can be ordered from him at: 5 McLaren Ave., Listowell, Ont., N4W 3K1.

ARRL 160m CW

Period: 2200z 3 Dec to 1600z 5 Dec

Classes: Single or Multi-op.

Exchange: RST and ARRL section/DXCC Country

Points: 2pt/QSO with VE/W; 5pt/QSO with others

Multiplier: total of ARRL sections (max. 74) and DXCC countries worked.

Entries: Official forms are available. Dupe sheets must be used if more than 200 QSOs are made. Entries should be sent within one month of the end of the contest to ARRL 160 metre contest, 225 Main St., Newington, Ct., 06111, USA.

ARRL 10m

Period: 0000z 11 Dec. to 2400 12 Dec. Max. 36 hrs may be worked.

Classes: Single op, single or both modes; Multi-op, both modes

Exchange: RST and Province. Stations outside VE/W will send RST and serial number.

Points: 2pt/QSO 4pt/QSO with a USA Novice or Technician. They will identify themselves by sending /N or /T after their calls. Novices and technicians are allowed cw only on 28.1-28.2 MHz.

Multiplier: Canadian call areas, USA States and DXCC countries.

Entries: should be submitted within 30 days of the contest. Official forms are available. Dupe sheets must be included if more than 500 QSOs are made. Entries should be sent to: ARRL 10 metre contest, 225 Main St., Newington, Ct., 06111, USA.

CANADA CONTEST 82

The Canadian Amateur Radio Federation is pleased to announce the following contests.

Canada Contest 1982

0000-2400z 19 December 1982

These contests are open to all Amateurs, everybody works everybody, on the 160, 80, 40, 20, 15, 10, 6 and 2 metre bands, in Phone and CW.

Classes of Entry: Single operator, all bands; single operator, single band; multi-operator, single transmitter, all bands. There are separate single operator QRP (5w, DC, 10w PEP out) and single operator non-Advanced Amateur classes.

Contacts: All contacts with Amateur stations are valid. The same station may be worked twice on each band, once in CW, and once in Phone. CW contacts must take place in the agreed CW-only parts of each band. No crossmode contacts are allowed.

Exchange: Signal report and consecutive serial number starting with 001. VE1 stations must also send their province.

QSO Points: 10 points for each contact with a station in Canada. 1 point for each contact with others. VE0 counts as Canada. 10 bonus points may be claimed for each contact with any CARF official station, using the TCA or VCA suffix.

Multipliers: Multiplier is the total of Canadian Provinces and Territories worked on each band, on each mode. The Provinces and Territories are: VO1/VO2 VE1-NB VE2 VE3 VE4 VE5 VE1-PEI VE1-NS VE6 VE7 VE8 VY1.

Suggested Frequencies: CW - 1810, 3525, 7025, 14025, 21025, 28025, 50.1, 144.1.
Phone - 1810, 3770, 3900, 7070, 7230, 14150, 14300, 21200, 21400, 28500, 50.1, 146.52. We suggest Phone during even hours, and CW during odd hours, Z.

Entries: A valid entry must contain log sheets, dupe sheets, and a cover sheet showing claimed QSO points, a list of multipliers and a calculation of final claimed score. Cover sheets and multiplier checklists are available. Entries should be mailed within one month of the contest, with your comments to: CARF, P.O. Box 2172, Stn D, Ottawa, Ont., K1P 5W4.

Awards: A plaque will be awarded to the top-scoring single operator, all band entry. The top scoring single or, single band entry will receive the TCA Editor's Trophy. Certificates will be awarded to high scorers in each entry class in each Province and Territory, USA call area and DX country.

Results: Results will appear in TCA, The Canadian Amateur journal. Non-members of CARF may wish to include an SASE with their entry for a copy of the results.

RSO Convention Commentary

by VE3ARS

At the start of the Fred Hammond article I mentioned that I attended the RSO convention. I do not intend to expand on that topic in this issue. As the PEI convention was only a short time ago, it would not be fair to the organizers to evaluate their efforts. Perhaps I am feeling sort of put out by the whole thing. TCA put an effort into supporting the RSO convention this year despite the fact that no material was sent in to the Editor.

It almost seemed as though they didn't want to publicize the event in the National magazine. I had been previously informed by more than one participant of the '81 convention that CARF had been treated rather poorly by the

organizers of the banquet. As I was not able to attend, I am not in the position to confirm what did or did not happen last year. If it is true, however, that CARF was treated worst last year than they were treated this year, then I can only wonder what prompted CARF officials to even show up this year. I came out to promote TCA, meet some of our readers, and find out what Canadian Amateurs want to see in their National Magazine. In this I was successful. CARF officials were there to sell memberships, answer questions and help people. In this they too were successful. They had also wished to show support for RSO, which is declining in membership and incurring increased expenses (like all of us).

To me it seemed that the Convention Committee showed no support at all for CARF, except to acknowledge a nuisance value on their behalf.

It is my recommendation to CARF, that no more money be wasted in sending people to RSO conventions. It is obvious that these events don't need CARF's support or publicity. Why should CARF waste its time? I, for one, will be taking a long hard look at the costs incurred in attending this last one. If those who agreed to write for TCA follow through, then it will be money well spent. As for next year, it will take something special to get me out to the RSO convention, and if they hold it in Waterloo again, I won't be there.

Curing the examination Blahs . . .

Philip Gebhardt, VE3ACK
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No one would debate the fact that copying code is a skill. Therefore, everyone practises code for hours and hours before attempting the exam. And I doubt that anyone would deny the need for a detailed study of the theory and regulations. Why then do we ignore the skills required to tackle the exam? After all, if you do not express yourself effectively, or if you use your exam time ineffectively, all the technical knowledge in the world will not obtain a pass.

Assuming that you have prepared yourself adequately for the technical aspects of your life in Amateur Radio, the exam should only be a vehicle for proving to everyone concerned that you have reached an acceptable level of proficiency. What may stand in your way, however, is a lack of understanding of how to approach an exam. For many of us, it is a skill we have long since forgotten. And to complicate matters, few theory courses give practice in exam writing or even offer concrete assistance to help candidates cope with the problem.

The suggestions outlined here are the result of a number of years teaching in the public education system as well as my long involvement with Amateur Radio courses. Although most of the material presented here is geared toward the actual exam, there is a necessity to include some beforehand comments as well.

A. Before starting to write the exam.

1. Long before the exam date, obtain a book of questions and answers related to radio theory and regulations. Not a book which gives multiple choice questions and answers, but one which contains essay type answers — the type you are required to provide on the exam. Most of the available material is American, but as far as the theory is concerned that is of no consequence since theory is theory. There is both commercial

as well as Amateur oriented material available, either will help. The answers are crucial. Anyone can make up questions; the answers are the tricky part. One of the major advantages of having the answers provided is that it gives you a feel for the scope required in a good answer — an aspect which always seems to give examines difficulty. Naturally, the book answers will allow you to assess your own answers as far as content is concerned.

2. You would not sit down to a meal without the proper utensils, so why go to an exam unprepared? Take along several pencils, an eraser, several pens, a ruler, an electronic symbol template if you have one, and a calculator if you have one (provided it is not programmable). If you do use a calculator, make certain that the batteries are in good working order or that they are fully charged, since you may not be close to an electrical outlet when you write the exam.

3. When you receive the exam booklet, read over the instructions carefully.

4. Next, take a few minutes to read over the whole exam question-by-question. This will give you some concept of the difficulty of the exam and will allow you to complete the next positive move.

5. Group the questions into three categories:

(i) group 1 — questions for which you have sufficient technical knowledge to answer easily.

(ii) group 2 — questions which will require some thinking in order to answer properly.

(iii) group 3 — questions for which you have insufficient knowledge.

Why go to all this trouble? Well, this step does two important things for you. First, it allows you to realistically assess your position, since all questions on DOC exams are of equal value. For example, if you decide that 5 of the 12 questions fit into group 1, 4

questions fit into group 2, and 3 fit into group 3, then you can assume that group 1 will provide you with approximately 50 of the required 70 marks needed to pass. Presumably, you cannot depend on the questions in group 3 to contribute any marks. Therefore, the necessary additional 20 marks you need for a pass must come from group 2. You also know that you must obtain at least half the marks allotted to the group 2 questions. Based on this rough assessment, you can determine where to concentrate your effort and how crucial it is to answer specific questions.

Second, grouping the questions allows you to tackle 'guaranteed' marks first and to avoid spending valuable time on unproductive (group 3) questions. People often get hung up on questions they should not have attempted, only to find out too late that there is insufficient time left to respond to the questions for which they do know the answers.

6. Look for and underline key words, such as, compare, briefly, primary, name, explain. These words are specifically chosen by the exam writer to provide you with some guidance as to what is expected in the answer. Use them. For example, if a question asks for the primary reason for using a pre-amplifier ahead of a mixer stage, then only the primary reason will obtain marks. As a matter of fact, if you were to write down four major reasons, you might end up with no marks at all, since you failed to single out the primary reason — even though you may have included the required reason. In addition, over-answering eats up valuable time which can be better spent earning marks on other questions.

B. While answering questions

1. Make things easier for yourself by making them easier for the exam marker. Write neatly and legibly. If you cannot write neatly, then print neatly. Use a pencil to draw diagrams, because

it is easier to make corrections. If you do not have an electronics symbol template, use a quarter to draw circles for tubes and transistors and a ruler to draw straight lines.

2. Avoid over-answering. As mentioned above, this is a fruitless undertaking. The more unnecessarily complex you make an answer, the more likelihood there is that you will make an error. This is particularly true of schematic diagrams.

3. Pace yourself throughout the exam. Never let any one question monopolize your time. The added time you spend trying to pick up one extra mark may cost you many more marks later on, if you run out of time. Besides, you can always return to a question at the end of an exam.

4. Try every question which you are entitled to answer. Do not leave any blanks; blanks cannot possibly earn you any marks. You may only pick up one or two marks on a very difficult question, but that may mean the difference between passing or failing.

5. After reading the question, but before attempting to answer, determine the best format for the answer. For example, some questions do not specifically ask for a diagram (e.g. Explain briefly how a diode demodulates an a-m signal.), but it sometimes makes answering the question easier and clarifies your answer. As a further example, consider the question "Compare the characteristics of Hertz and Marconi antennas." An answer in sentence form would not only consume too much time, it would also encourage overlooking possible comparisons, be almost impossible to check quickly, and would be very difficult for the exam marker to evaluate. A much more effective format is shown in Figure 1.

6. As you start a question, jot down the points you want to cover. Many times people get halfway through a question and cannot remember some of the important facts which had come to mind when they first read the question.

7. With questions involving calculations, write down the information on your answer sheet to be sure you understand what is given and what is required. An example question: A parallel-connected 60 ohm and 30 ohm resistor combination is connected in series with a 40 ohm resistor. If the source voltage is 9 volts, calculate the current through the 30 ohm resistor.

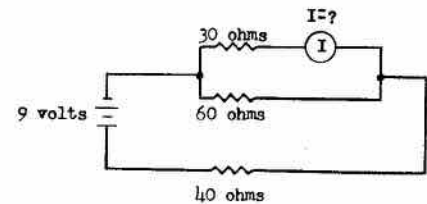
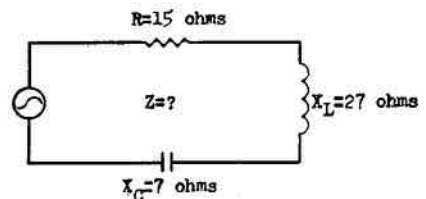


Figure 2 -

Drawing a neat diagram will help you to analyze a question and to demonstrate to the exam marker that you have an understanding of the concepts.

In this case, you should draw the circuit, fill in the values which are given in the question and finally indicate what you are required to determine. Refer to Figure 2. By following this procedure, you establish clearly in your mind what is involved in the question, thereby avoiding misinterpretation. It has the added benefit of showing the exam marker that you know what you are talking about.



$$\begin{aligned}
 Z &= \sqrt{R^2 + (X_L - X_C)^2} \\
 &= \sqrt{(15)^2 + (27-7)^2} \\
 &= \sqrt{(15)^2 + (20)^2} \\
 &= \sqrt{225 + 400} \\
 &= \sqrt{625} \\
 &= 25
 \end{aligned}$$

The total impedance of the circuit is 25 ohms.

Figure 3 -

Show all your rough work for calculations. Even calculators do not guarantee a correct answer every time. If you do slip up, your rough work will indicate that you knew the correct method.

	Hertz	Marconi
length	$\lambda/2$	$\lambda/4$
polarization	horizontal	vertical
normal feedpoint location	centre of antenna	between base of antenna & ground
normal feedpoint impedance	73 ohms	36.5 ohms
radiation pattern	figure 8 pattern at right angles to line of antenna	omnidirectional
type of feedpoint	balanced	unbalanced
diagram		

Figure 1 - Before you answer a question, determine how to present it most effectively. This makes it easy for you to check and easy for the exam marker to evaluate.

8. Show rough work for all calculations, even if you use a calculator. Things have a strange habit of going wrong on exams. And when they do if all you have written down is an incorrect answer, all your work — and marks — go down the drain. An example question: Calculate the total impedance of a series AC circuit in which the resistance is 15 ohms, the inductive reactance is 27 ohms and the capacitive reactance is 7 ohms. Refer to Figure 3 for the complete answer.

9. What do you do if you find that despite all your careful planning you are running out of time? Well, given the amount of exam time, this should not happen, provided you have come prepared and have followed all the steps so far. But if it does, start to write answers in point form.

C. After finishing

1. Check your answers. It is easy, especially in mathematics questions, to copy information incorrectly or to inadvertently put a formula down incorrectly. Ask yourself: Did I answer the question which was asked? Did I use the numbers given in the question? Did I use the appropriate formula?

Although these measures cannot compensate for a lack of technical knowledge, they will help you to capitalize on what you do know, to present it effectively, and to utilize your exam time to your best advantage.

Attention!

All users of the
TCA Newsline
Telephone

The telephone number
changed as of October
15th, 1982.

THE NEW NUMBER IS
824-3467

Elint-Electronic Intelligence

by Serge VE3JRG

Radio Amateurs are interested in all aspects of electronic communication. The recent operations in the South Atlantic have shown what radars and computers can do. There is a fascinating chapter called "The Intelligence War" in a Coronet paperback "The Falklands Conflict" written by Christopher Dobson, John Miller and Ronald Payne, \$3.75, published apparently almost immediately after the cessation of hostilities from which the information in this article has been taken.

The British needed to know the radar frequencies of Argentina's missiles so that they could be confused by electronic countermeasures. The Argentines needed to know the position of the British ships so that they could estimate when and how an attack could develop. Both the combatants used anything they could to keep space, all-seeing, all-hearing, and Moscow and Washington probably knew more about the overall progress of the war than the commanders in the field. The U.S.S.R. put up 8 Cosmos satellites in orbit over the Falklands some able to see through the fog and the cloud and equipped with a nuclear powered radar unit. How much of the information which they got they passed to the Argentines is not publicly known.

The U.S. Blackbirds, successors to the U2 fly at mach 3 at 80,000 feet and what they see is collected by the 12 ton Big Bird satellites one of which is in the northern hemisphere and one in the southern hemisphere. They are able to photograph objects as small as 12 inches in diameter and while the Russian satellites have to parachute their film the Big Bird does it over the Pacific where its capsule is caught in mid air by C130 Hercules transports equipped with "fishing nets", but a newer system still, the KH11, records its photographs in digital form which it can beam to ground stations positioned around the

world and that information is converted back into photographic form.

Through arrangements existing before the conflict U.S. intelligence was available to the U.K. and of course electronic eavesdropping was practised continuously in fact just as it was during World War II as described in the recent books about the enigma system.

The task force commander was provided with a flow of information from the men of the Special Boat Service and the Special Air Service who prowled the islands seeking out landing beaches and acquiring detailed knowledge of the Argentine defenses.

American reports say that these teams were given brand new American mobile radios which link into the radio satellite system giving them instant communication, not only with the task force but also with London, thus providing British military and political leaders with immediate news of the developing situation.

The authors of the book point out that there are many different kinds of intelligence which can be made use of, especially in times of war but they point out that intelligence is not an end in itself. It is how it is used that matters. Apart from the paragraphs concerning information, 'ELINT', the book is a very good summary of the situation as it developed from the very start, the landing of the so-called scrap merchants on the South Georgia Island right up to, but curiously enough not including the final assault on the airfield at Port Stanley. A day by day account of the operations from May 21 to June 5 is included, and it is indeed a gripping story even though the final outcome is known. Recommended reading. The above was transcribed from cassette form by VE3KLX

OVMRC Rambler

Amateur Band Intruders

by Ralph Cameron, VE3BBM

In September of 1979 my attention was drawn to a strong unmodulated carrier in the 15M. band. Night after night an S9 plus carrier appeared on 21177 Khz and faded when propagation ceased. This signal carried no identification and peaked during the period 1800-2100 hours local time. Other Ottawa Amateurs confirmed that what I heard was not an image nor some internal receiver spurious.

Unmodulated carriers have always held a fascination for me; especially ones which last for ten hours at a time. During weekends this happened on many occasions. Without any sign of life, it was almost like being cheated to lose the signal when the band closed.

My interest came alive when suddenly there was life! Modulated sidebands occurred every 10 Khz. I was able to detect 8 separate subcarriers which contained frequency shift keying in short 3-5 second bursts. All subcarriers appeared to contain identical information. One transmission on Feb. 11/80 took place on a subcarrier at 21165 (12 Khz below the main carrier). Transmission via FSK was preceded by a hand keyed QSA? After a brief period the hand again sent, OK NR1 . . .".

A series of cipher groups followed. Surprising how humans talk to humans with Morse code - scarcely secure communications.

There was considerable hum on this carrier and this later proved to be significant.

A two element mini quad is not an elegant antenna for direction finding but over a two month period this signal seemed to peak 30 degrees South of East or 30 degrees North of West.

One evening it was possible to eliminate the 300 degree bearing by cross checks with an Amateur in Medicine Hat Alta. Another check was made with an Amateur in Corpus Christi Texas and it tallied. The long baseline from

here to VE6 made it possible to use my bearing, the VE6 bearing and plot the intersection on a desk globe. It landed smack in the middle of Cuba!

A letter to the Ottawa D.O.C. Regional Office with these details and our D.F.'ing was confirmed. The intruder originated in Cuba. To my knowledge an official protest was made; however, it took 8 months for the carrier to disappear.

How often do we hear "funny" signals on the Amateur bands? Frequently, I suspect and many are quite legitimate. I'm appalled at the number that appear so regularly in the 3.5-4.0 Mhz segment. Just out of curiosity I started to log signals which either did not identify or which used a transmission mode not authorized for the Amateur Service. This "Intruder Log" has been of little interest to anyone but myself. Over the months it has shown at least one correlation with the appearance of a new intruder. A loud multi-carrier RTTY signal appearing on 20 metres last year not only had the hum of the Cuban intruder but had subcarrier spacings identical to the 21 Mhz one. Many Cuban signals including commercials and short wave broadcast have this characteristic hum.

Legitimate, well established intruders, that is, those received regularly by regional overlap (during favourable propagation) can be useful as band beacons. From September '80 to March '81 one old time regular was UMS on 21032 Khz. The frequency keying from this commercial often covers 5 Khz. As his speed increases so does his bandwidth. The keying quality is poor by any standard.

UMS peaks a few degrees West of North and is a good indicator of the UA0-UA9 path. UMS purportedly transmits to the Soviet submarine fleet. Last Fall (1981) other "coffee grinder" signals appeared on 21018 Khz and lasted several weeks without ever identifying. In most instances the "coffee grinders" peaked from the same general area as UMS. Coffee grinders transmit information at such high data rates that audibly they sound like grinders. Parallel transmission on closely spaced frequencies are meant to prevent jamming. They seldom have competition in the Amateur bands (Woodpeckers included).

Here is an excerpt from a list of non-Amateur signals logged within a one week period in January '81 - All times are Eastern Standard.

Date	Time	Freq. Khz	Transmission Mode	Identity
20 Jan.	2135	3669	Facsimile	Unknown
20 Jan.		3637.5	Beacon	Unknown
20 Jan.	1902	3523	C.W.	JJ??
20 Jan.	1845-1900	3600	C.W./RTTY	RCG73/RHE73
21 Jan.	1948	21032	F.S.K.	UMS
22 Jan.	1900-2100	3600	C.W./RTTY	RHE73/RCG73
	2100	3520	RTTY (commercial)	Unknown
	2051	3668	Facsimile	Unknown
	2051	3672	High Speed F.S.K.	Unknown
	2200-2216	3646	USB/Spanish commercial	
26 Jan.	1910-	3711	C.W./Russian	Unknown

ATTENTION!
ALL USERS OF THE TCA NEWSLINE TELEPHONE

The telephone number changed as of October 15th, 1982.

THE NEW NUMBER IS 824-3467

The 80 metre band is a favourite of mine during the winter because the high occupancy quickly tells me the most favourable as well as the limits of propagation. Surprisingly, reliable conditions exist between this QTH and the Mexico/Carribbean area almost any night of the week. Even during summer. By using a Mexican commercial as a beacon of conditions it is a simple matter to verify that North-South to W4 and W5 will be good. Not so surprising-East/West propagation has been less than 250 miles under these conditions. What this all leads to is an attempt to define the distance limits of propagation. Without a directional antenna on 80 metres knowledge of the local propagation is one way to generalize the area from which a given intruder originates. One way to gain this knowledge is through regular skeds.

VE3GN and myself have maintained a regular sked for some 25 years. His location is about 300 miles to the North West. Our skeds commence at 1900 hours with frequency varying according to QRM. It usually falls outside the Novice band and as far as possible from traffic nets. Interesting things can happen on any particular frequency when occupied for a long enough interval - hence the following true story which began in September 1979.

During my nightly skeds with VE3GN C.W. QRM appeared several times, almost zero beat with our frequency. We assumed traffic nets had simply QSY'D and landed on us. We usually moved away, but the QRM persisted for several nights in a row. Out of curiosity I took pains to identify the careless operator because I felt he should have heard us. All I copied was a smattering of Morse and the rest was gibberish. No identification at the start or end of transmission! Strange Indeed.

There are not many occasions when two operators cannot QSO with an S9 plus 20 over at one end and this was the exception. Many QRA?, QRZ?, QTH? requests were unanswered. The more persistent the activity became the more convinced I was that some kids had

invented their own computer code and were having a "ball", on the Amateur bands. Attempts to read the code failed. Intrusion was by prearrangements because within one or two seconds of key down the other station responded. While one of the signals was very strong others were about 10bd weaker. This kind of signal variation on 80 metres is not too meaningful.

What were other characteristics of these intruders? Signals were strong, stable (within 100 Hz of my calibrated receiver every night), evidence of battery power because of initial drift during QSK and the use of common Amateur abbreviations at the start and ending of transmissions. Another more subtle feature was the excessive use of TU. The rest was an unknown code - mostly 4 bit sometimes 6 bit characters. Night after night when I could spare the time these intruders were taped for five long months. I had no idea what to do with these tapes because local area hams showed little interest and I can't blame them. In January 1980 I mentioned to the odd local C.W. operator that he should listen for these signals. No takers except the intruders were so strong in Hamilton one night it was suspected the signals originated on the Great Lakes.

Copies of the various telegraph codes were obtained from which the C.W. was verified as being Japanese! Quite a surprise as this revelation occurred about 3 months into the taping. I recall some veiled references to a code used by the Japanese during the war but had never seen it nor did I at this point in time know anyone who had ever known it. The code was some unpronounceable ---- kana or something - none of which made much sense to me. I wish I could recall how many times I was told that you simply could not hear Japanese stations in the Pacific at 20 over 9 on 80 metres especially at 7 p.m. That I could accept. What monitoring facilities or intercept/translate facilities had existed were no longer active due to economic constraints. These were the

messages I got. It was at this juncture that I knew this type of operation violated the Radio Act, not only for not identifying but using a code other than International Morse, in Canada.

I resolved to learn the Japanese code, perhaps to be able to tell my grandchildren. The only thing I knew in Japanese was, "Ah so". I was to later learn that expression does have meaning.

I obtained many copies of the Japanese code for once I knew what to look for they seemed to fall out of the sky. None of the copies was complete and to explain why requires some knowledge of Japanese. To fill in the needed pieces of this jigsaw puzzle required many, many hours of listening, discussing, forays to reference libraries and a good deal of "digging". Eventually, keys to the many "locks" came from C.W. QSO's with Japanese Amateurs in addition to friends and acquaintances and veterans who knew that code in the last war. Ron Toole, VE3BIA and now a Silent Key filled in a couple of blanks but the real breakthrough came when I worked a young Amateur being trained to become of all things - a Japanese Marine Radio operator. He knew the answers to my questions and we have corresponded ever since. Another source which proved to be most cooperative was the Japanese Embassy who supplied a neat and tidy copy of the code, precisely hand written.

It took about six weeks of daily devotion, precisely hand written. I was able to force 15 w.p.m. Some of the tapes were now looking like frustrated doodles on paper. Friends shook their heads (and still do). To me there was a sense of accomplishment. Many Japanese Amateurs never learn their own code - there's no need to. You can still use Morse to send Romaji. Written Japanese is a very fascinating language. With 2000 years of evolution, many of the Kanji are Chinese derived. The present katakana is a much simplified syllabary and has existed for several hundred years in more complex form. Pity the poor school student! Kanji are used to

express the main ideas while the two syllabaries katakana and hiragana are used according to prescribed rules i.e. to complete verb endings or phonetically write modern technical terms or Anglicized words. Telegrams use katakana and the grammatical rules for use of the kana are well defined. Their dictionaries are considerably different than our own - Kanji are/or may be listed by a) number of strokes, b) how the character is read. The same Kanji can often have several ways to be read or c) by radical or root of which there are 214.

C - - - - ツ - ト ヲ ツ - ト ヲ

A . - - ト ヲ ツ -

R . - - ト ヲ ツ - ト ヲ

F . . - - ト ヲ ト ヲ ツ - ト ヲ

di	ト ヲ	}	JAPANESE
	TON		
	ツ -		
dah	Tsu	}	FOR C.W.

Japanese code in Japan is known as "hore" and pronounced with a lilt to the "R" which makes it sound like "hole". The "o" is short. On C.W. this is sent as DO, as one character. As a commercial abbreviation DO means honbun or text. Two years of plodding resulted in my learning this because DO is frequently used to indicate that what follows is in Japanese or text. It is also used as a simple interrogation. "Do you know Japanese code?" DO?

Meanwhile, back on 80 metres patience paid off and many times I was ready to start taping a minute or two before their transmissions started. The intruders were seldom late. At first their exchanges were meaningless then gradually followed the typical pattern of net operation. One station acted as Net Control while all the

others passed what I took to be daily reports. One more confusing aspect of their transmissions was the use of common English abbreviations thrown in the midst of the kana. TU was one common expression and of course relates to the polite manners of the Japanese. Often times text was simply encrypted by reversing one or more kana. Number strings were frequent and gave no hint of their content. One interesting fact gleaned from grammatical useage was that more than one female operator was a frequent "check in" and that some fraternization had taken place.

In mid January '81 the intruders several times switched to SSB right after passing their marine traffic and carried on with a half hour of chit chat. One complete but puzzling message sequence turned out to use a series of "code" words. These "code" words turned out to be the names of Japanese Sumo wrestlers. It appeared the fleet liked to keep up to date on sports in the homeland!

Transmissions in Japanese are continuous, without breaks for punctuation so that a twenty minute transmission can cover a lot of ground. One such transmission took 8 pages and six hours of effort. At the end of a session like that the fifty or so kana characters have a rather grating effect.

The net control station used the nom de plume of "hah" which in Japanese means "mother". This would be consistent with the mother ship in any fishing operation; however, "haha" is suspected of being on land from her rock steady 20 over S9 signal, during the five months of observations. There are other indications to support this conclusion. Using the propagation "window" "haha" had to be 100-400 miles East of this QTH. The question was and still is, where?

One may question my seeming obsession with a relatively harmless intruder network. I sometimes wonder myself. If this article does nothing more than sensitize some Amateurs to an awareness that other services can operate in Amateur segments with relative impunity then the sooner

they will collectively object or kiss their Amateur bands goodbye. Our respect for law and the Regulations are a credit to being able to police ourselves.

This intruder group, I believe they numbered 28 in total, ceased operation in February 1981 and were headed to the Carribean and Spanish ports. With some knowledge of fishing operations it was safe to assume they would return - and they did in September '81. Over 100 transmissions were logged during three months of tapping.

The past two years has given me a good appreciation for an Oriental language and I am well on the way to simple correspondence using Kanji. You may call it a hobby within a hobby - after all as Amateurs we learn to communicate - no one said how. Kongo tomo yoro shiku.

(BCNU)

Read the manual first or last?

Marsh Jeanneret VE3EMJ

The manual is normally the first item unpacked after a new piece of equipment is taken home, although it unfortunately is then sometimes not carefully studied by impatient consumers, who too often like to turn the power on and flip the switches first. This has led to a sardonic saying: "After all else has failed, read the manual." Amateurs would be wise not only to turn this around, but to improve it to read: "Before purchasing, be sure to consult the manual." Why? Because it is the one piece of literature written to inform and caution a user about a product; free of hyped-up advertising, it answers scores of questions not faced by a colourful sales brochure. Don't be told there is no manual available for a half hour's study in the corner of the retail shop. There has to be one, if even a single demonstrator is on display.

Saskatoon Hamfest 82

This past summer, Saskatoon Saskatchewan celebrated its 100th anniversary. In order to help the celebrations along, about 340 Amateurs from western Canada and the U.S. attended the CRRL mid west Convention and from all accounts, had a good time. CARF Mid-west Director Norm Waltho, VE5AE of Moose Jaw, Sask. also attended and sent along some pictures and a brief report.

"The program featured a packet radio presentation, Oscar, Fibre Optics, Human Engineering in the shack, A Fred Hammond slide presentation, and a talk on the Smith Chart, by Phil Gebhart, VE3AKC. (Phil writes for TCA as well. ed). Along with the forums there were CW contests, 75 and 2 metre hunts, DX and homebrew contests and an excellent banquet and awards program to wrap up the whole show.

There were displays throughout the convention featuring SED systems, TVRO systems, computer displays and Amateur gear of all kinds. Of particular interest was Herb Frederickson's fine display of antique radio gear, working and on the air. The ladies were kept busy with a fine ladies program consisting of tours, films and demonstrations.

The main prize at the convention, a VTR or \$1000, went to Shella Sines of Saskatoon, and the Amateur prize of a TR2500 went to Les, VE5DS also of Saskatoon. Trophies were awarded to VE4AP for Amateur of the Year (Manitoba) Bill, VE6ABC, Amateur of the Year (Alberta, and Bill, VE5WM, Amateur of the Year Sask.) Also mentioned was Lloyd, VE5JI who was awarded a plaque in recognition for his work with the Sask. QSL bureau for the past 13 years."

Norm really got around this summer. In May (not really summer) he attended the CARF National Symposium in Scarborough Ontario. After that, the Saskatoon Hamfest, The MooseJaw Air Show and then the Glacier Hamfest.



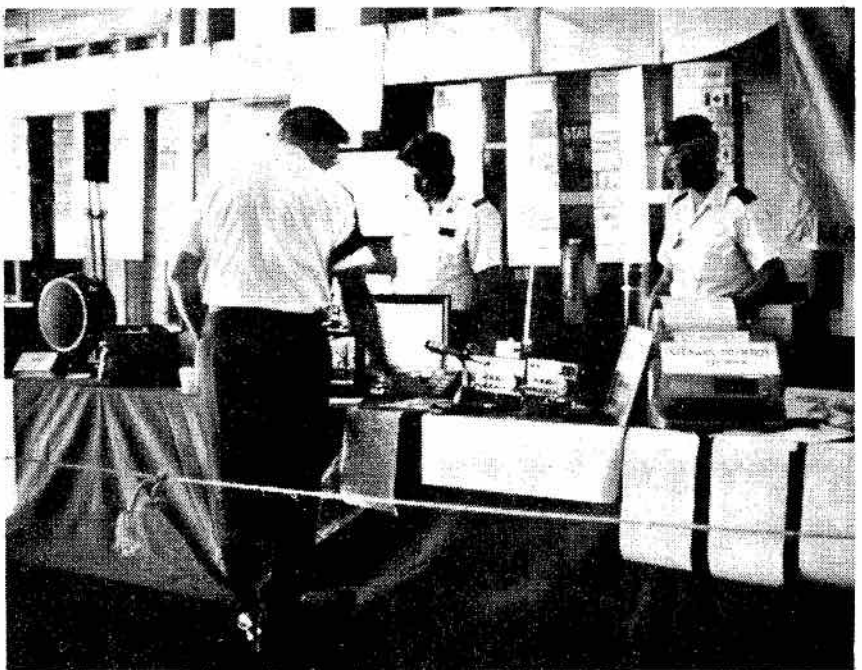
Art VE3ZS heading through Saskatchewan to go to Australia via Norms Garage sale.



CARF at the Waterton - Glacier Hamfest



Norma Waltho VE5AE meeting Bill Carew VE3MEW (Ont. Assistant Director) at the Scarborough symposium.



CARF at the Moose Jaw Airshow along with the Moose Jaw Amateur Radio Clubs Display.

With all this going on, Norm still managed to entertain visiting Amateurs. In July, Art Stark, VE3ZS our CARF/DOC liason man, stopped by Norm's QTH and managed to participate in Norm's garage sale.

Recently, Norm started up what he calls the CARF family net on Friday nights. It is a friendly get-together of Amateurs interested in information from CARF and getting news about other Canadian Amateurs. If Norm puts as much effort into this venture as he put into his summer activities, this net may become a going concern.



DX

by D.W. Griffith,
VE3KKB

Looks like the declining sunspot numbers are finally beginning to express themselves in real terms of propagation on the higher HF bands. The principle manifestation of the deterioration of cycle 21 is demonstrated by the slow return of East-West propagation on 10M this Fall. Unfortunately, this is one of Europe's favourite bands, and unless things pick up soon, there will be far fewer multipliers to be had in this year's round of contests. There is, of course, a bright side to everything, and in this case, it is the probability that 160M, 80M, and 40M will experience the lowest levels of QRN since 1978, making this an excellent year to start chasing DX on the lower bands.

The U.S. phone expansion is a foregone conclusion, and it will not be long now before the voices of those well-known "policemen" often found below 14,200 will be legal (in so far as their spectrum is concerned, if not their lack of identifying themselves). Further, the ARRL has proposed an additional band plan that will also cover phone band expansion on 80M, 15M, and 10M. They have suggested no change on the 40M band. Interestingly enough, anyone I have spoken to in the U.S. would prefer to see phone privileges in the 7.050-5.100 MHz segment of the band, and in many instances could really care less about any of the other proposed expansions, including the defacto 20M one. The proposed phone expansions include the following:

80M

3.750-3.775 MHz

15M

21.200-21.250 MHz

10M

28.300-28.500 MHz

This truly has not been a good year for some of the DX community's more venerable members. It is with sorrow that I report the death of Dick Spenceley, KV4AA, at the end of July. Dick was one of the greats, and a CW operator par excellence. Many of us owe our first American Virgin Island (KV4 now KP2) contact to him. Dick's presence on the Amateur bands will be missed.

There has been much furor regarding list operations in the past, and every so often someone takes pen in hand (metaphorically speaking) and writes a diatribe on the subject. Now it's my turn. Some are so against lists as to have demanded that any country worked on one should not count towards DXCC.

Others have stated that if it were not for these list operations, they could never have worked half of the rare DX that is found in their logs. These two views represent opposite poles in the argument. While it is true that lists tend to detract from the art of chasing DX, and lead to more sloppy operating techniques, and less efficient stations (it does not take 5 or 6 elements at 100 feet to get on a list - more accurately, a tribander, at 35-40 feet is more likely to get you on the MC's list), it is also true that we often lose sight of the more practical reasons for the lists. First and foremost, is the DX station's preference as to their operating technique. It is not up to us to dictate to the DX stations how they will operate. There are several practical reasons for lists. If the DX operator is new to the Amateur

bands, and through no fault of his own, other than the fact that he happens to be the resident of a rare country, feels that he is too inexperienced to handle the mobs that descend on him each time he comes on the air, and asks someone to give him a hand by taking a list, then I don't see any particular problem. Indeed, I think there is a problem with the individual who has the gaul to suggest that such a station should not qualify for DXCC status. This type of arrogance has no place in Amateur radio.

A second instance where lists might prove useful is in the case where there exists a profound language barrier, and the MC happens to be proficient in the language of the DX operator.

Where I strongly disagree with lists however, is the situation where there is no language barrier, the DX station has a strong signal, and has been active long enough to have acquired the expertise to handle the pile-ups on his own, yet still comes up nite after nite at the request of some MC who gets his "high" from his affiliation with the DX station.

As much as I dislike list-type operations, we must never lose sight of the fact that it is the DX station's right to operate in whatever fashion he so desires, and that there are circumstances in which lists can be condoned. Moreover, being philosophical by nature, it is my feeling that, like them or not, lists are here to stay.

Bits and Pieces

J28 Award: The Amateur Radio Association of Djibouti has announced the A.R.A.D. award for contacts made after June 27, 1977. All contacts made with J28 sta-

tions, as well as special event station J27RDD, and expedition calls: J28A, J20Z, and J20D are valid for the award. 1st class award requires 8 contacts, all modes, but two bands minimum. The 2nd class award requires 15 contacts, all modes, 2 bands minimum, and 5 contacts on CW. The same station may be worked on several bands. To apply, send a photocopy of the logs, QSL cards, and 8 IRC's to: Awards Mng. J28DM, Box 1076, Djibouti, Djibouti Republic, East Africa.

There is a new address for the 8R QSL Buro: Syd C.H. D'Ornellas, 8R1B, 110 Barrack St., Georgetown, Guyana, St. America.

By . . . China . . . Tom Wong, VE7BC, was supposed to be active from China on October 4, 1982. We had the frequencies, and the times that he was to appear. The only thing that we don't have yet is why he didn't make it. I hope that the last statement didn't seem particularly sarcastic, because over all else, Tom has made tremendous strides in getting the Chinese on the air, and in view of their political climate, often circumstances beyond anyone's control prevail. Keep at it Tom.

C9 . . . Mozambique . . . There is little chance that the upcoming OH2MM/C9 operation will be accepted for DXCC. Amateur radio still is not sanctioned there.

4U1UIC will not count for DXCC.

Y1 . . . Iraq . . . Watch for JA1DNG/YI on 21.260 at 1430Z on Fridays. He occasionally QSY's to 20M following his 15M activity.

VU9 . . . India . . . This special prefix is being used by all Indian stations until mid-November to celebrate the All Asian Games, taking place in New Delhi.

TL8GE . . . Central African Rep . . . Michel is active most days from 20-2200Z on 21.285. QSL to Michel Loizeau, Box 34 Banqui. He expects to be active from Tchad as TT8LM soon.

F6FIC/TZ . . . Mali . . . Jean should be there until April/83. He has requested his own TZ call, and expects to have it soon. Look for him on 21.275 at 17-1900Z, and

14.222, about 0030Z. QSL to F6CRS.

A35PZ . . . Tonga . . . Listen 14.232 at 0530Z. QSL via P. Evans, Box 916, Nuku, Alofa, Tonga.

SU1ER . . . Egypt . . . Fridays, and Saturdays, from 1800-2100Z. Listen on 14.260, 21,260, and 28.460 MHz. QSL's go to P.O. Box 33, International Airport, Cairo, Egypt.

SV9 . . . Crete . . . SV0BP/SV9 have been active recently, around 0400Z. Listen on 14.292, and 14.022 MHz.

VU . . . India . . . Indian amateurs may now use the 3.500-3.540 MHz segment of 80 M for CW, and 3.880-3.990 MHz for phone operation. The VU ssb net meets daily on 3.894 at 1400Z.

FBBWG . . . Crozet . . . Alain seems to be limiting his operating to the "Open House Net" 14.332 MHz Sundays, and the CHC net on 14.297 MHz Sundays. These are LIST operations ONLY.

VK2AGT/LH . . . Lord Howe Is . . . Is still active on 14.205, about 0600Z. QSL to CBA.

Congratulations to Garry Hammond, VE3GCO, on his DX Forum at the R.S.O. Convention in KW, on Oct. 2, 1982.

Anyone requiring IRC's may obtain them from Garth Hamilton, VE3EUP, in lots of 10, priced at \$5.00 Can. For more information, send a S.A.S.E. to VE3EUP, at Box 1156, Fonthill, Ont., L0S 1E0.

That's it for now. Many thanks to Westlink Report, Long Skip, QST, CQ Magazine, CARF News Service, and a host of A.O.T.A.R. (anonymous off the air reports).

'73
Doug, VE3KKB

**QSL Managers - 82
10-06-82**

Call sign
1AOKM
3A2GX
3B8ZZ
3D2AB
3D2DX
3D2EH
3D2TI
3V8DX
4D9RG
4S7AJG

**GE 1
QSL VIA**
10MG
12YAE
W2TK
WB8WMS
SM3CXS
K8VIR
VE3CVX
G3SVK
DU9RG
K9AJ

4S7MS
4X2BYB
4Z4KX
5B4IJ
5B4JE
5H3BH
5R8AL
5T5RR
5W1DC
5Z4CL
5Z4CM
5Z4CS
5Z4CS
5Z4CV
6W8AK
6W8AR
6W8DY
8Q7BC
8Q7BQ
8Q7DL
9J2JN
9J2NO
9J2TS
9K2BE
9K2DX
9L1EX
9L1LS
9M8WP
9M8WR
9Q5ZA
9X5SP
9Y50VU
A22GM
A35RF
A35TN
A35WM
A4XYB
A92DD
AH2E
AH3AC
AH8AA
C31HD
C31XO
C53CC
C53DZ
C6ADV
CE0ZAD
CN8BX
CN8CY
CO7AM
CP6IM
CT2ARA
CX5AO
CZ3PCA
D68AAB
DA1XR
DA2AR/HBO
DA2CK/HBO
DF8MP/LX
DJ6SI/3X
DK2GZ/5Z4
DL7RT/EA6
DX6NRA

SM3CXS
WB2WOU
VE3IXE
OE8PSK
DF4FX
SM0EAI
WA4VDE
F1ANH
DL3GU
W5BCB
W5BCB
J11VLV
WA4VDE
W2KF
WB4LFM
WB4LFM
VE4SK
DL5BC
K9AJ
DL9BAF
WB2IZN
JA3RLI
JA2LZB
G4GIR
N6TR
LA2EX
N3ADC
G4DXC
G4DXC
ON6FN
DL8OA
W3EVW
V4FD
VK3VU
VK3VU
KJ1WM
G4KII
K7DVK
N9AVY
KB2RV
W4FGX
F6BII
F6GOW
WA4VDE
DJ6SI
DJ6SI
WB6WOD
AK3F
GW3IEQ
EA1QF
WB1DQC
AG1K
CX7BY
VE3KKB
G4DYO
N3BOR
DA2DC
KA2JFY
DL2KAO
DJ6SI
DK2GZ
DL7RT
DU7EM

EA6JD
EF5SSC
EJORTS
EJ3AK
AL2AG
EL8N
EL9B
EP2TY
FODYM/FS
FOFOO
FB8WG
FG0GA
FH8CL
FK0AF
FK8CW
FK8DD
FM7CF
FO0KP
FO0WA
FP0FSZ
GD4INU
GU5EHF
H5AIR
H5HAF
HC8SL
HH2A
HH2KR
HK0EHM
HK0QA
HR1JSH
HS5AID
HV2VO
IU8ITU
J20/D
J20/Z
J20Z
J28CB
J3AVT
J5HTL
J6LOV
J6LZA
JW5VAA
KH8AC
KH8AC
LG5LG
LX1BI
OA4JR
OD5LX
OH0BA
OJ0MR
OX3GH
OX3PT
P42C
PZ9AB
R6L
S79ARB
T32AB
T32AF
T32AG
T32AH
T32AI
TA2KS
TI2EY

EC6AL
EA5BAA
E17CC
E13AK
WA4VDE
SM4CWY
KA8BXA
JR3WRG
W3HNK
N6RA
F2CL
N6ZV
VE2FOU
FK8DD
K2IJL
KA3E
WB3AKI
W6SZN
W6SZN
VO1FB
VE3IUI
K2UO
ZS6BSK
ZS6BSK
HC2SL
AJ9D
W4AJX
WD9DZV
K4TXJ
WB6WOD
AG6N
I0GPY
I8MPO
F2GA
F6ATQ
F6ATQ
F6HFS
W8UVZ
SM3CX5
K2QIE
K4LTA
LA7JO
WB2ACL
WP2ACL
LA7XB
KB3MC
KA9FKL
SM0DJZ
OH2BAZ
OH0AA
WA2TTI
WA2TTI
PJ2PP
W1KXZ
UK6LAZ
WA4VDE
N7YL
WH6AIF
K7TI
KE0A
KE0A
G3SCP
DF6EX

TI2JIC
TI2WX
TL8CK
W3JHK
TU2IE
TU2LE
TYA11
UPOL22
UY4L
V2ADX
V2AN
V3ME
V3TV
VK0DX
VK6ZX/LH
VK9ZD
VK9ZG
VK9ZH
VK9ZR
VP2EC
VP2EED
VP2EE
VP2KAV
VP2MIX
VP2MKV
VP2MO
VP2VIC
VP2VIH
VP2VII
VP5JEX
VQ9CW
VQ9SB
VQ9WB
VQ9XX
VS5DO
VS6JW
VU2YOU
WB0MKR/KH3
XK5DX
XZ5KNU/9
YB0PG
YB1CD
YJ8VU
YK3AD
ZD8CG
ZD8DZ
ZD8JGN
ZD8MGH
ZD8MW
ZD9BV
ZF2BN
ZF2CD
ZF2GC
ZK1AF
ZK1XG
ZK2VA
ZK2BB
ZK2KH
ZK2WM
ZL0AEO
ZL4GF/C
ZM7VU

AJ1K
K4WVX
F6EWM
W3JHK
DL4BAM
F6ESH
ON5NT
UA0QFY
UA4LM
W9SWM
KA1JP
G3OGO
G3ATK
VK7LJ
VK6ZX
VK6YL
VK6YL
VK6YL
VK2BJL
N5AU
AD8J
AA4NC
N7KA
W0IJN
N7KA
KA4BOT
KA2IXW
KD3P
W5SJ
W4DR
WB1DQC
WA6IJZ
WD9GIG
N6BFA
G4EFE
G4LRG
K4YT
KB2RV
VE5DX
DL2KAO
KB5AS
WA1ROI
DK5EX
DE1DH
W9CN
AB4B
W9CN
G3GIQ
G3GIQ
W4FRU
W4HET
W3ODJ
W4UY
SM3CKS
DL1VU
VK3VU
DK3VU
KJ9KH
DJ1WM
WM8WMS
ZL4KI
V6DYC

What a call

In scanning through my log, it became apparent that one could learn a lot just by noting the suffixes of the stations worked. For example.

(Capitals denote call suffixes worked. The same suffix worked with a different prefix allows its use again.)

BY CSB AND NHA, I got a house. AS the note WAS DUE, not having a SOU, AN AD sold IT.

ME VW at high MPH TO the "BAN the BRA" BAR-FLY for some NOG. BAD! should have stayed with the ADE. Off to the LOO, then the AA.

AHH! TO BED DON, GUD LAD.

OR ANY DX? FM, CW, FD, ETC?

GUD HAM FUN.

PA SED SW AM.

E EK! CB!

VE5KP

TCA WELCOMES LETTERS
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PLEASE SEND ALL
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Swap Shop



To CW or not CW

Recently, two Hams were overheard complaining that they had, again, failed the CW test in an attempt to obtain their Advanced Certificate. They had, some months earlier, been successful in passing the portion of the examination pertaining to the theory and rules and regulations for this class. Their failure, according to them, was primarily due to their total lack of interest in the CW mode of operation. They were determined, however, that eventually they would meet the necessary requirements but, when they had their Advanced, they would show no interest whatsoever in CW. Even though they intended to meet the DOC requirement for CW, they thought this was foolish, outdated and not at all necessary in order to become a good Amateur Radio Operator.

On first thinking of their viewpoint, it seemed to me that there was, perhaps, some justification for their complaint. On further reflection, however, we had some grave doubts. To many of us, CW is the corner-stone on which

Amateur Radio was built and on which it still survives. If there is one, and only one, common denominator which we have as Licensed Amateurs, it is that we all have some degree of proficiency in CW and without that it would be a far far cry from what it has been over the years and still is today. Eliminate the CW requirement and it would not be too long before a proposal was made to do away with all tests and examinations.

I would hate to see the day when almost anyone could pay a fee at the local DOC office and thereby obtain slip of paper with three or four letters and eighteen digits and thus become a licensed amateur. We would, of course give up our distinctive Canadian VE call signs. We could then adopt some of the more popular "handles" of the day such as, Dunda Fats, Big Dick and yes, even Juicy Lucy and Easy Lay. I'm sure that some of our unlicensed sons and daughters would, from time to time, get on their air and get a vicarious thrill from talking to Eighteen Wheelers all over the

world instead of the local ones to which they are now limited. Far fetched you say....not at all. I can almost hear the proposal put forth that, due to the high technology of our equipment today, it is impossible to create TVI, to over-modulate, to operate outside the Amateur Bands etc. and, therefore, tests and examinations are totally unnecessary and may, indeed, be an infringement of our civil liberty and right to free speech.

God forbid that this picture which we have painted will become a reality...if it does, I'm sure I can tell you where you can buy a lot of Ham gear real cheap.

Many of us, over the years, have had problems with our CW. Nevertheless it can be done as is proved by the thousands of licensed Amateurs all over the world. In the name of Heaven, do what you can to uphold our high standards and the unique position which we now have in the eyes of a lot of people on this Planet Earth and, who knows, maybe beyond.

VE3KTT

Teletype Matures

West Island ARC

The standard for amateur radio teletype (TTY) for many years has been 45 baud Baudot and tones at 2125 (mark)/2295 (space) hertz.

Many WIARC members are active on HF and VHF using TTY. Some members have the capability to send/receive ASCII code at 110 and 300 baud. The original tones of 2125/2295 hertz were still used to save the cost of another terminal unit.

Many commercial computers use ASCII code. Remote ASCII terminals can be connected to these computers by the use of a telephone acoustical coupler. This coupler, called a modem (modulator / demodulator) is similar in operation to the Amateur radio TTY terminal unit.

Because operation via telephone link is full duplex, a different standard of tone pairs have been devised. For 300 baud ASCII, this standard is called Bell 103. The tones used are: 1270 (mark)/1070 (space) and 2225 (mark) / 2025 (space) hertz. For higher data transmission rates, different tone standards were again devised.

Personal computers became a reality and some amateurs adapted them to their radio equipment for TTY operation. Computer clubs were formed. Some clubs conceived Community Bulletin Board Systems (CBBS). This is a message exchange service among computer hobbyists that uses a telephone link, modem and communication of 300 baud ASCII. As of March/82, there was

no CBBS in Montreal. The nearest CBBS is in Ottawa at (613) 236-3009.

Local Hams who have been monitoring 147.63 MHz may have heard experimental 300 baud ASCII data transmissions using the Bell 102 standard. More of these transmissions are contemplated on other VHF/UHF frequencies. A UHF 300 baud ASCII electronic mail repeater is in the planning stage for Montreal.

Montreal's UHF fast scan television repeater, VE2RTV has the capability for receiving 300 baud ASCII. Standard tones used are 1200 (mark)/2200 (space) hertz inputted on VE2RVS repeater and the video output can be seen on 440 MHz on VE2RTV.

Teletype matures

Oscar 9 transmits 1200 baud ASCII data on 145.825 MHz. Standard tones used are 1200 (mark)/2400 (space) hertz. Circuits have been published for Amateurs to decode these data transmissions.

Packet radio users are using still other different transmission techniques.

New commercial computer equipment is available that may be adapted for Amateur use. Two units of interest are:

1. Radio Modem: provides point to point and multi-point transmission over VHF and UHF FM radio channels. Speeds are 300, 1200 and 2400 bits per second.

2. X.25 Packet Multiplexer: interfaces up to 16 channels at asynchronous speeds from 50 to 9600 bits per second.

(Both units are manufactured in Ottawa by Gandalf Data Limited in the West Island ARC Bulletin.)

Bruce, VE 2QO

Loveboat

The Hamilton Amateur

No doubt many of your readers have seen the T.V. programme "Love Boat".

Away back in the 1920's I had the pleasure of being Radio Officer on the White Star Liner "Doric", call GJTP.

We sailed from New York for a six week cruise into the Mediterranean with a full complement of 300 passengers.

The first stop was Las Palmas where we arrived on Franklin's birthday. Our passengers being American let loose and there were hours of high jinks to celebrate the famous American.

On to Gibraltar. Being in the days of peace tours were made all round the "Rock". The final evening a dance was held on board and the Officers of the "Rock" garrison were there in all their splendour.

Next stop was Naples, Italy. Passengers did much shopping and sight seeing. It is customary for the Radio Staff to go visiting whenever they are in Port and here in Naples was our Sister ship the "Laurentic" so off we went to see our friends and have a few drinks.

On to Alexandria, Egypt. Here we found the Dutch liner "Nieuw Amsterdam" and again off we went to visit the Radio Staff. A great pleasure and lots of Dutch beer.

Being a "Love Boat" our girl friends had gone on a visit to Cairo and were expected back shortly so we decorated the radio shack and had the steward supply tea and cookies on two tables and waited.

However instead of the girl friends dashing into the radio shack here were the three Operators from the Nieuw Amsterdam!! Flabbergasted they said, "Oh Mr. Holland you shouldn't have gone to all this trouble to entertain us". That was the shortest Tea Party they ever attended, we hustled them off with many excuses.

Over then to Athens and then on to Constantinople Turkey after an hour or so into the Black Sea.

Next stop was Haifa where many of the passengers went to collect water from the River Jordan; — souvenir I suppose.

One must remember that during all this entering and leaving ports and taking part in all the entertainments on board the radio staff were busy.

As on "Love Boat" shown on TV there was an abundance of social functions on board the "Doric" and in all of these the Officers were always welcome which made this voyage a great pleasure.

Leaving Haifa for New York brought to an end a most enjoyable voyage. The radio traffic was very heavy, with lots of traffic for the USA and also local traffic to the ports we approached arranging activities for the passengers.

Handling traffic...that's what we were paid for so didn't mind it at all.

John K. Holland VE3BOJ
in the Hamilton Amateur

"Be Aware of Pirate Intruders"

On April 19th, 1982, like most dedicated amateurs, I slipped silently out of bed and even before shaving managed to find a few minutes to go downstairs into my hamshack to listen on the bands for any activity.

On this occasion I scanned the 20 meter band. As I was tuning up from 14.100 MHz I was suddenly taken by a conversation between two stations.

One an Italian station whose call supposedly was legitimate "15LOAV" who was talking in Italian with a Toronto station whose call will not mention to save him from embarrassment. By the way I am very fluent in Italian so I understood the whole QSO perfectly.

If it had been I who answered that call, I would have automatically asked the Italian Station to explain why the suffix of his call contained 4 letters instead of 2 or the usual three. I would have examined his operating procedures which to my judgement indicated an illegal operation.

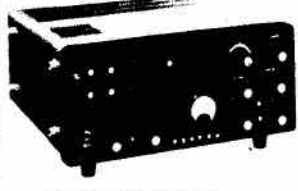
On the contrary, I am sorry to say the Toronto station answered this station's call and conversed with him for about 7 or 8 minutes without asking any questions.

The point that I am trying to make is this; if we are concerned well disciplined Amateurs we should be more protective of our hobby. If the station you are answering sounds the least doubtful to you, don't be reluctant to inquire about his call before proceeding with a lengthy QSO. You will find that most stations will be very happy to explain the nature of their call and you as a Canadian will be honoured for asking.

Dear fellow hams it is our hobby and a proud one at that, let us be concerned and protect it together. I hate to see it convert to a 27 MHz operation.

PETER BATTISTA VE3 KYX
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Welland Ont. L3C 5Z7

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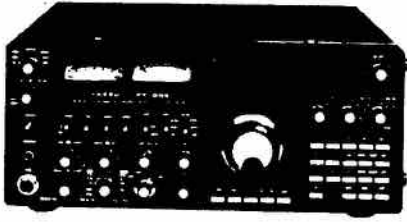
Frequency coverage: 160m 1.8-2.0 MHz,
80m 3.5-4.0 MHz, 40m 7.0-7.5 MHz, 30m
10.0-10.5 MHz, 20m 14.0-14.5 MHz, 17m
18.0-18.5 MHz, 15m 21.0-21.5 MHz, 12m
24.5-25.0 MHz, 10m 28.0-29.9 MHz
Power requirements: AC 100/110/117/200/
220/234 volts, 50/60 Hz; DC 13.5 volts
±10% (DC-DC converter optional)
Power consumption: AC: 85VA receive (73
VA HEATER OFF), 330VA transmit, DC:
5.5 amps receive (1.1 amps HEATER OFF),
21 amps transmit
Size: 345 (W) x 157 (H) x 326 (D) mm
Weight: Approx. 15 kg.

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Emission type: LSB, USB, CW, (AM, FM)
Power input: 180 watts DC (SSB, CW)
50 watts DC (AM, FM)
Carrier suppression: Better than 40 dB
Unwanted sideband suppression:
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Spurious radiation: Better than 40 dB
Transmitter frequency response:
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0.35 µV for 20 dB OS (FM)
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Better than 50 dB (10m)
IF rejection:
Better than 70 dB (160, 80, 20-10m)
Better than 60 dB (40m, 30m)
Selectivity:
SSB 2.4 KHz (-6 dB); 4.0 KHz (-60 dB)
CW* 0.6 KHz (-6 dB); 1.2 KHz (-80 dB)
CW** 350 KHz (-6 dB); 1.2 KHz (-60 dB)
AM*** 3.6 KHz (-6 dB); 6.8 KHz (-60 dB)
FM*** 12 KHz (-6 dB); 24 KHz (-60 dB)
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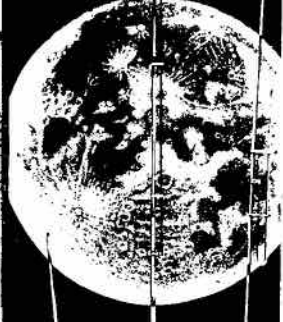
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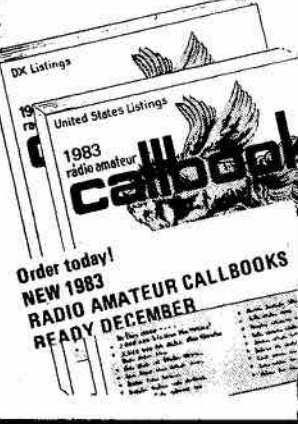
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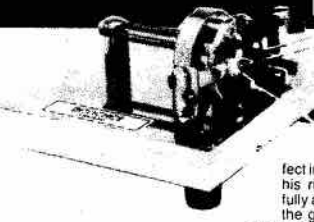
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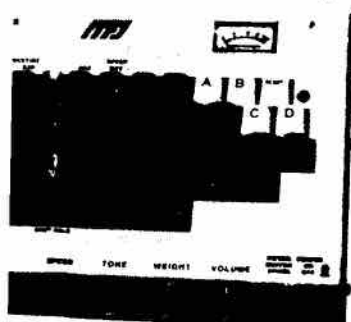
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New Horizons Month

June 1982 was proclaimed "New Horizons Month" to celebrate the tenth anniversary of the New Horizons Program. The Victoria New Horizons Amateur Radio Club contributed to the program by presenting a display of "The Old & New in Amateur Radio" along with many of the other arts and crafts by Victoria Seniors.

During this display, Madame Monique Begin, Minister of Health and Welfare, responsible for the New Horizons Program, sent formal greetings via the Amateur Radio National Traffic System to all Provincial Premiers and the two Territorial Commissioners. The enclosed photo shows her signing the Radiogram which was dispatched the same evening in "Book" form via the BCEN, RN7 and PAN operators. We would like to thank all operators of the NTS for their efficient message handling techniques.

In addition to this venture, a New Horizons Trans-Canada Net was conducted twice a week for the month of June only, on 14140 kHz but due to poor band conditions it was not too successful. However, we did try and was joined by New Horizons clubs in Thunder Bay VE3LMB, Moose Jaw VE5AQ, Saskatoon VE5SON, Lethbridge, VE6EO plus many others such as Ray VE5RB, Bill VE3APM, Dave VE6DD, Pete VE8PZ, Ken VE6COH and several VE7's.

At another display of our "Old & New" Amateur Radio theme on August 13th and 14th in the Mayfair Mall, we were honoured by a visit from Art Stark, VE3ZS, DOC Liaison Officer for CARF who was on his way to Australia.

You can see him enjoying a visit with his old friend Art Brown, VE7DXA and New Horizons Club President George Hill VE7D).

E.J. Colmer VE7CCJ
New Horizons
Amateur Radio Club



*New Horizons Display in the Mayfair Mall, Victoria B.C.
Theme: The Old & The New in Amateur Radio.*

Left to right:

Art Brown VE7DXA

Art Stark VE3ZS - Doc Liaison OFCR

George Hill VE7DJ - Club Pres.



Left to right:

Mrs. Davie Fulton (Pat)

Madame Monique Begin M.P.

Bob Scott, Chairman "Showcase New Horizons"

Signing the Radiogram addressed to all Provincial premiers and the two territorial commissioners.

Place: Crystal Gardens, Victoria B.C.

VUCOM Cursor Control

In a recent issue of the RTTY NEWS bulletin, I requested information on how to modify my VUCOM terminal to reset and clear with the cursor in the upper left hand corner while in the scroll mode. Gary Mills, VE4CM very kindly responded to this request, for which I thank him very much.

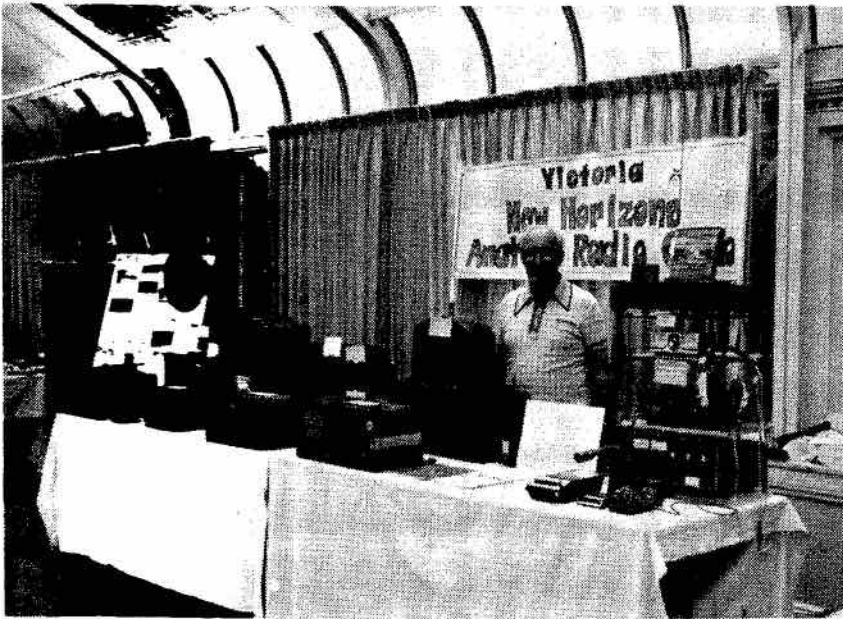
Since I have already passed Gary's modification along to two others who were having the same problem as myself, I thought there might be others who would appreciate this information, which is exactly as I received it from Gary.

"The modification is on the 1CGE board which is located farthest from the CRT. See drawing 302 if you have a manual. Locate the IC at location B6. It is a 7400 with a house number of 140. Cut the trace which leaves pin number 1 of this IC, on the bottom side of the board. Then ground pin 1 to the ground pin of the nearest IC in the next row. The result of this modification is that the output (pin 3) of the gate is always high."

Gary's modification works flawlessly and I have written a driver routine which allows my Digital Group computer using the OASIS disk operating system, to perform cursor X-Y addressing on the VUCOM. In addition, it will perform block erasing on the right hand side or lower portion of the screen, depending on the position of the cursor when the end of screen erase command is sent. All that I can say is thanks to Gary, and I am very happy with this new and necessary capability.

If anyone out there is running OASIS on a Digital Group system and would like a copy of the assembly language source code for X-Y addressing the VUCOM cursor, I would be very pleased to supply this information.

Farncomb Le Gresley, VE3BHQ
RR 3, Newcastle, Ont.
LOA 1H0



Victoria New Horizons Amateur Radio Club's display during "Showcase New Horizons" on June 8 with President George Hill VE7DJ. Theme: The Old & The New in Amateur Radio. Place: Cross Gardens, Victoria B.C.



Greetings from Kenya

RE: Station 5Z4YW = Nairobi, Kenya

During a recent move by 5Z4YW, the logs were inadvertently lost. It is realized that many stations have yet to have their contacts confirmed. 5Z4YW operated from Nairobi from 1979 to 1982. If any stations still require their contacts QSLed, please re-submit your cards with self-addressed stamped envelope to VE3ACY, 488 Cameron Ave. Windsor, Ont N9B 1Y7. Final deadline will be 31 December '82. The few surviving log sheets and QSL cards will be disposed of after that date.

**Thank you
Rob Bareham VE3ACY**

From Tot-Topics

Wedding Bells

On Wednesday, July 28/82, the Trillium ARC gathered together for one of our well known POT-LUCK suppers in honor of 'Jo' VE3IMS/GW3DWR, whose wedding date was set for Aug. 6th.

Jo arrived as per usual schedule, expecting to work in the CARF QSL Bureau. The surprise to her must have been close to shock as I know she had no inkling of our plan. She said 'You told me you had lots of work.' I said 'True, there is work here, but I didn't say for the bureau.' (hi)

Ann and Gary Westhouse (Gary is VE3NIT) were the first guests to arrive followed soon after by one car full after another as each driver had arranged to pick up others, (a good idea these days). Each arrival carried their own favourite creation to the feast, and feast it was.

Cathy VE3GJH and George VE3DGX, were carefully carrying one of Cathy's specialties, a wedding cake for the bride-to-be. Just so beautiful with all its trimmings. Delicious eating too. The top layer was transported home by Jo and her intended, Ishwar, to be used when her family arrived the following week from Britain.

Thelma VE3CLT and Mary VE3COH had a great idea, contributing a wallet with 2 centennial silver dollars inside, one for Jo and one for Ishwar. As this was the date they signed for their new home, it will be one of those memorable days. Instead of us all tramping around stores trying to decide on colour, style, etc. the gifts, the wallet became a purse of money presented to Jo. A most suitable gift.

Doris VE3BBO, her friend Doris the 2nd, and Eva, VE3EVA arrived together with their favourite salads tucked into a cooler, and as arranged, Doris took charge of the bar -- bar person.

The Trilliums outdid themselves, if that is possible, as I'm sure we could have fed a small regiment. Last to leave was Bill VE3KDT and his XYL Lil, who won the draw

prize created by Mary VE3HDW, a ceramic masterpiece. Though many were away on vacation and could not attend, close to 40 guests were on hand to wish Jo and Ishwar the very best for the future. Considering the day and time of year, appreciation and thanks are in order to so many who became part of the celebration.

I wondered at times what would happen when 'Jo' fell in love, as she is one of the busiest volunteers, not only sorting for CARF QSL Bureau, but also handling the C and K files, no mean task in themselves. To my relief and delight, we have not lost Jo but have gained Ishwar. A nicer OM you wouldn't wish to meet. My hope is that in time, 'ham' radio will rub off on him which will assure VE3IMS being used on the air, and we will gain another worthwhile addition to the ranks. Ishwar attends classes at college, and on his way home stops to pick up Jo. He stays to help complete a phase of the work, much appreciated as Jo is known to stay until every card is sorted.

A few days after the party, three of Jo's sisters and one brother arrived. Imalda from Scotland, Kathleen, Francis, and Kieran from England.

Aug. 6th -- the Big Day for Jo and Ishwar

Jo is aware that I'm not fond of driving alone late at night, so she told me to feel welcome to bring a friend with me. One of my neighbours not only accompanied me, but drove her own car. How lucky can I get . . . another enjoyable evening ensued, meeting Jo's and Ishwar's friends, neighbours, and workmates, one of latter being Terry, previously only a voice on the land-line, albeit, a lovely friendly voice, but now proved to be just as nice to meet on a personal basis. 'One of their neighbours told us about a

man who advertised his home saying 'For Sale . . . Good Neighbours'. He was swamped with calls, the majority more interested in the 'Good Neighbours' part. So true these days with impersonal clerks in department stores, large supermarkets and places of business, so that when one meets that rare individual who is interested in all people and affairs, its like a ray of sunshine and hope.

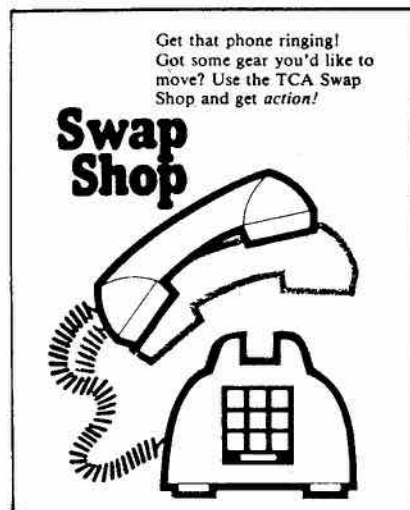
Again, enough eye catching and delicious food to feed a small army. I came home with enough finger lickin' goodies for several day's breakfasts, lunches, and suppers. 'Oh so good'.

Their wedding cake was west Indian recipe, where fruit and nuts are soaked in rum for six months. Need I say more?

I could go on and on, naming all those who attended and about the whole evenings, but will say instead a very sincere 'thank you' not only for your interest in attending and/or getting in touch, but for your contributions of your favourite dishes. You name it, we had it. Many calls came on a daily basis for several days afterwards, with words of thanks and appreciation, so everyone must have enjoyed themselves as much as I did. So nice to be able to wish Jo and Ishwar the best of health and happiness in their future together. Nice memories for them and for us.

Once again, thank you and God bless you all.

73.88/33 Jean VE3DGG



CRAG

Canadian Repeater Advisory Group

Lots of news now that summer is over and the travelling is finished.

From Norm VE5AE (CARF Director) come some changes for Sask. Add note B (Battery Power) to VE5CI in Moose Jaw, VE5KE in Regina, VE5SS in Regina and

ALTONA	VE4SMR	146.070	146.670
BALDY MT	VE4BMR	146.430	147.030
HADASHVILLE	VE4EMR	NOT	KNOWN P
HAZELRIDGE	VE4INT	147.220	147.820 L
LETELLIER	VE4LET	147.960	147.360
NEEPAWA	VE4NEP	147.810	147.210 L
THOMPSON	VE4TPN	146.340	146.940
WINNIPEG	VE4AGA	147.720	147.120 T
WINNIPEG	VE4OMR	147.870	147.270
WINNIPEG	VE4UHF	449.00	444.00

Make the following changes to your BC listings. Change Burnaby VE7FVR 147.780/147.180 to Burnaby VE7RBY 144.750/145.350. Change Chilliwack VE7RCK from 146.370/146.970 to 147.700/147.100. Change the Courtenay repeater VE7CVR to VE7RCV. Delete the note P from VE7RNA in Nanaimo. Change Terrace VE7DRT to VE7RDD still on 34/94. Change Trail VE7CAQ from 146.340/146.940 to 146.240/146.840. The second Trail repeater is VE7RBV and the frequencies are now 147.930/147.330. Change VE7RAG in Vancouver from 147.630/147.030 to 147.620/147.020. Change VE7ESR in Vancouver from 147.810/147.210 to 144.890/145.490. Change VE7VIC in Victoria from 146.250/146.850 to 146.240/146.840.

That's it for this month. I still have not received much information on area repeater co-ordination groups. Please send me any information you may have on the groups in your area. In particular the area, name of the group, and name and address of a contact in the group.

VE5XW in Rock Point. Add the note E (emergency power) to VE5RRG in Regina.

From the Winnipeg Repeater Society comes a complete update for Manitoba. Add the following repeaters to the Manitoba list:

ALERT BAY	VE7RNC	146.080	146.680
FORT NELSON	VE7RFN	146.340	146.940
MT THYNE	VE7RTN	147.990	147.390
NELSON	VE7?	146.040	146.640
SMITHERS	VE7RBH	146.280	146.880
TERRACE	VE7RTK	146.250	146.850
VANCOUVER	VE7RBC	146.120	146.720
VANCOUVER	VE7RHS	144.670	145.270
VICTORIA	VE7RPE	144.570	145.170
VICTORIA	VE7RMT	144.850	145.450
WILLIAMS LAKE	VE7RWL	147.720	147.120
VANCOUVER	VE7RPT	222.700	224.300
VICTORIA	VE7BEU	223.300	224.900
PRINCE RUPERT	VE7RPR	222.980	224.580
NORTH VANCOUVER	VE7RTM	449.925	443.925 D
SURREY	VE7RPM	449.200	444.200
MAPLE RIDGE	VE7RMR	448.625	443.625
VANCOUVER	VE7RPT	448.525	443.525
VANCOUVER	VE7RAP	449.975	444.975 D
VICTORIA	VE7VIC	448.950	443.950

Change the following Manitoba listings. VE4HS in MIAMI on 22/82 is now ALTAMONT VE4HS 146.280 146.880. Change VE7AL in Brandon to VE4TED and delete the notes A and T. Change VE4MAN in Winnipeg to Starbuck and add the note L. Add note E (Emergency Power) to VE4WPG in Winnipeg. Change the output frequency for VE4AGA in Winnipeg from 52.760 147.210 to 52.760 52.500.

From Geoff VE3KCE (also a CARF Director) comes the following changes. VE3SSI in Sudbury no longer exists and can be deleted from your listings as can VE3WAW in Wawa and VE3NSR in Elliot Lake. The other Elliot Lake machine is now VE3TOP and still on 147.600 147.000. VE3MUS in Dwight can also be listed under Huntsville since Dwight is a "suburb" of Huntsville.

John VE3JJH sends in some news from Kenora. Change VE3LWR to read 146.430 147.030 and the note A (autopatch).

From Al VE7EWB and the BCFMCA come these changes from the west coast. Add the following machines:

ALERT BAY	VE7RNC	146.080	146.680
FORT NELSON	VE7RFN	146.340	146.940
MT THYNE	VE7RTN	147.990	147.390
NELSON	VE7?	146.040	146.640
SMITHERS	VE7RBH	146.280	146.880
TERRACE	VE7RTK	146.250	146.850
VANCOUVER	VE7RBC	146.120	146.720
VANCOUVER	VE7RHS	144.670	145.270
VICTORIA	VE7RPE	144.570	145.170
VICTORIA	VE7RMT	144.850	145.450
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VICTORIA	VE7BEU	223.300	224.900
PRINCE RUPERT	VE7RPR	222.980	224.580
NORTH VANCOUVER	VE7RTM	449.925	443.925 D
SURREY	VE7RPM	449.200	444.200
MAPLE RIDGE	VE7RMR	448.625	443.625
VANCOUVER	VE7RPT	448.525	443.525
VANCOUVER	VE7RAP	449.975	444.975 D
VICTORIA	VE7VIC	448.950	443.950

ATTENTION!
ALL USERS OF THE TCA NEWSLINE TELEPHONE

The telephone number changed as of October 15th, 1982.

THE NEW NUMBER IS 824-3467

Book Review

by Hersh Sax VE3JBU

How To Troubleshoot & Repair Amateur Radio Equipment by Joseph J Carr, K4IPV

(published by TAB Books Inc., Blue Ridge Summit, Pa. 17214. 448 pages. Approximately \$15.95 in Canada).

If you're like me -- can't change a light bulb without blowing a fuse -- you must wonder, often, what you're doing in Amateur Radio. Communications is just part of the game: experimentation and modification are two of the most mentioned other activities.

I've communicated, experimented, and modified, all to some degree of success but repair -- never! Well, that's not true.

Once the wire from the battery pack of my Kenwood TR 2400 broke so I got out the soldering iron and managed to reconnect it in what I thought was a professional job. It took me three weeks, though, to get back on the air -- that was the amount of time I needed to find the choke I had burned out. So, it was with some hesitation that I opened **How to Troubleshoot & Repair Amateur Radio Equipment**.

Carr, K4IPV writes that "all electrical circuit troubleshooting involves one of two activities: 1) finding a lost, but required path for current, and 2) finding a new, unwanted path for current." Carr precedes this advice with the reassurance that even I ("Yes you! he writes) can repair my own equipment. It turns out that the only difference between me and the professional service person is that I wouldn't win in a troubleshooting speed race -- but then again, repair your own equipment and there is no labour charge and that's an average savings of \$30.00 an hour.

Carr's introduction summarizes troubleshooting in four steps; 1) determine what the problem is **not** (in other words, make sure the equipment is plugged in); 2) locate

the defective stage; 3) locate the bad component; 4) if analysis techniques fail to locate a defective component, shotgun the stage (that is, replace all of the components in that stage).

There are 33 chapters in the book, too many to go into detail in this review, but the headings that follow will give you the scope of coverage. Basic Troubleshooting (no dial lights or tube filaments lit); Troubleshooting Transistor Circuits (DC voltage checks); Voltmeters, Ammeters, Ohmmeters; Signal Generators (audio, function, RF, sawtooth, pulse, frequency synthesizers); Oscilloscopes; Probes and Connectors (low-capacitance, high-voltage, RF detector/demodulator); Digital Test Instruments (decimal counting units, display devices, trigger circuits).

Following the preceding topics, Carr gets down to repair: Troubleshooting the Power Supply; Receiver Rf Amplifiers and AGC Related Troubles; Receiver Detector Problems (AM, FM SSB, PLL, Digital); Troubleshooting Distortion Problems; Troubleshooting the Dead Oscilloscope; Solid State Amplifiers; Troubleshooting Internal Noise Problems (oscillations, noisy transistors); Mobile Noise Problems (antenna and radio grounding, auto electrical systems, inductive and capacitive pick up); Operational Amplifiers; the Phase-Locked-Loop; Servicing Untuned Amplifiers (biasing, dual supply operation, Darlingtons pairs); Testing Tuned Circuits; Measuring Frequency and Period; Receiver Measurements; AM & FM Receiver Alignment (phase modulation, CW, AM, FM, Nonswept and basic IF alignment); Antenna and Transmission Line Measurement; Testing Radio Transmitters; Troubleshooting FM Tranceivers; Rejuvenating Old Equipment; Scanners; Transistor Substitution; and Troubleshooting Single-Sideband Gear.

Carr's text is easy to read and doesn't overburden the reader with extraneous data. While it is true that for people like me, electronics is a difficult subject area,

this book presents its information more clearly than the ARRL Handbook. The chapters average 15 pages each and get right to the point. Carr takes the mystery out of what makes the equipment work and presents a logical approach to the problem.

Have I used the book to fix my HF rig? Nope, but you can be sure that if my HR-10 and DX-60 break down, that next to my Heathkit manuals, **How to Troubleshoot & Repair Amateur Radio Equipment** is the first book to which I'll turn.

TCA WELCOMES LETTERS
TO THE EDITOR.
PLEASE SEND ALL
CORRESPONDENCE
TO EDITOR TCA.
P.O. BOX 2610 STATION D
OTTAWA, ONTARIO K1P 5W7

Canadian Forces Base Gagetown Amateur Radio Club

On Jan. 6, 1982 the Club (VEIJO), in conjunction with the Fredericton Radio Club (VEIND), began conducting classes to assist those interested in obtaining an Amateur radio license. The course was based on the CARF Canadian Amateur Certificate Study Guide and candidates were preparing for the DOC exam on 21 April 82.

Lecture rooms and facilities were provided by the Ease Club and were arranged for by Club President VEIBMV. The majority of instructors were from the Fredericton Club and did an excellent job of covering the necessary material. Instructors were VEIKO, VEIBOG, VIKVK, VEIAIL, VEITC and VEIAXE with VEIAVR and VEIBOH supplying the code practice.

Many thanks to all others who dropped in to visit and to show their interest in the classes. A special thanks to VEITU, president of the Fredericton Club, who turned out regularly and provided transportation from Fredericton for the instructors.

In the past two years, the combined efforts of the two Clubs have qualified 12 amateurs and 3 advanced amateurs.

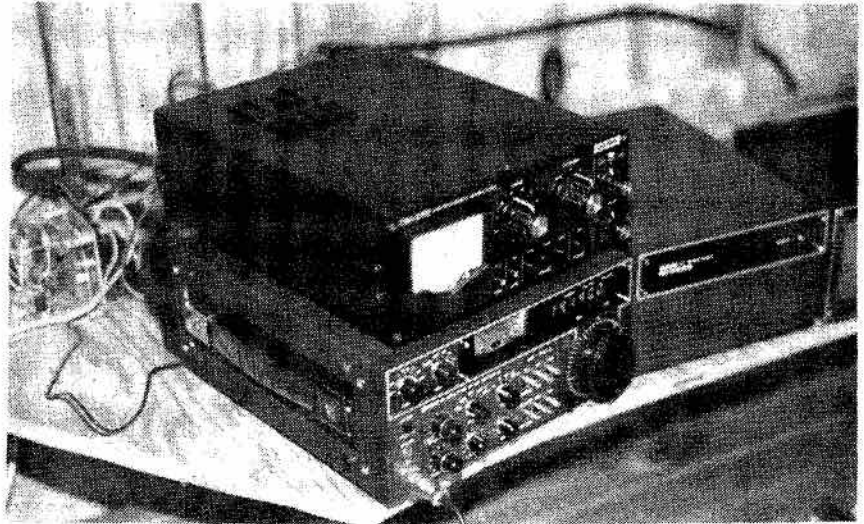
VERNE, VEICU and Mel VE1BMV

The Fred Hammond Museum

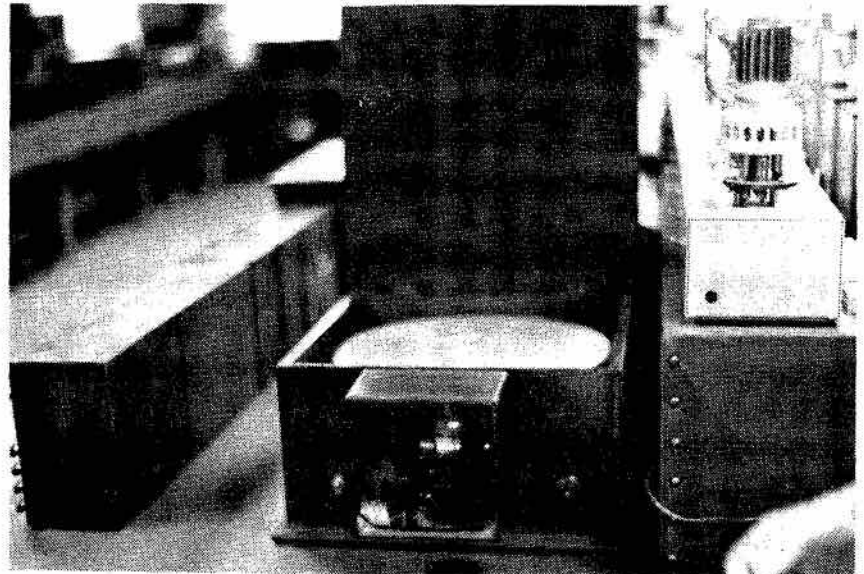
In the past few years I have attended various gatherings in and around the Guelph area of southern Ontario. In all these trips down there I have failed to visit at the Hammond factory in Guelph, and so have missed the opportunity of seeing for myself the famed Hammond Museum: at least until last October. At that time, I happened to be attending the RSO convention in Kitchener-Waterloo, Ontario, and, finding myself at loose ends on Sunday, I took up Fred Hammond's invitation and ventured down to the factory. You seldom realize the change in technology in our hobby until you can compare what we had to what we have now.

I had spent a good portion of the convention drooling over the newest goodies and praying I'd win the local lottery, yet knowing all along that this would be the closest I would get to most of this stuff unless I worked someone who had it. Every year the Amateur technology aims at being smaller than the last year's. How many of us remember having a room full to the brim with radio gear: Vikings, Rangers, DX100s, HT41s, 32Vs, the old DX40, Globe Scouts, Gelosos, ARC5 sets, 19 sets - and that covers only the transmit side of things. On the receive end, the HQ129X, NC183, HR0 series, 75A series, SX88, 99, 100s; the list is endless. Linears were usually homebrew or surplus. Amateurs built their own antenna tuners or just ignored the SWR. Feedlines were made from two wires, spaced with toothpicks or glass or Millen ceramic spreaders. Then along came SSB.

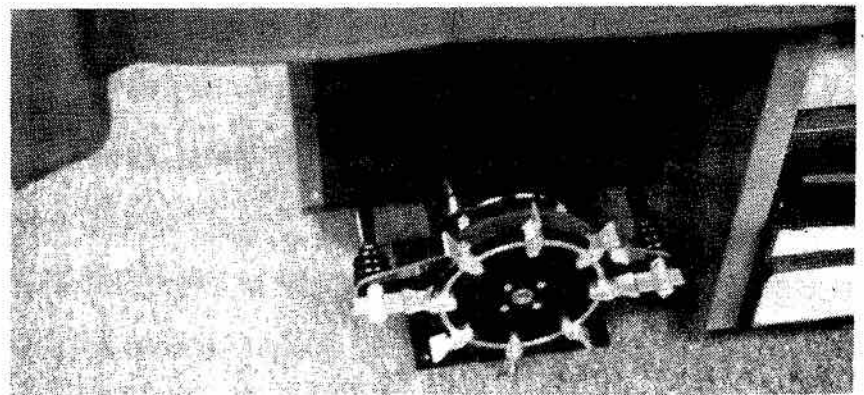
All this changed. No longer needed were the large power supplies and the "mod" transformers. The cabinet size shrivelled. Next came solid state, and then "digital logic" - further reducing the size of the average rig. With the advent of SSB came the need for the "tranceiver". Now we have the complete station in one package;



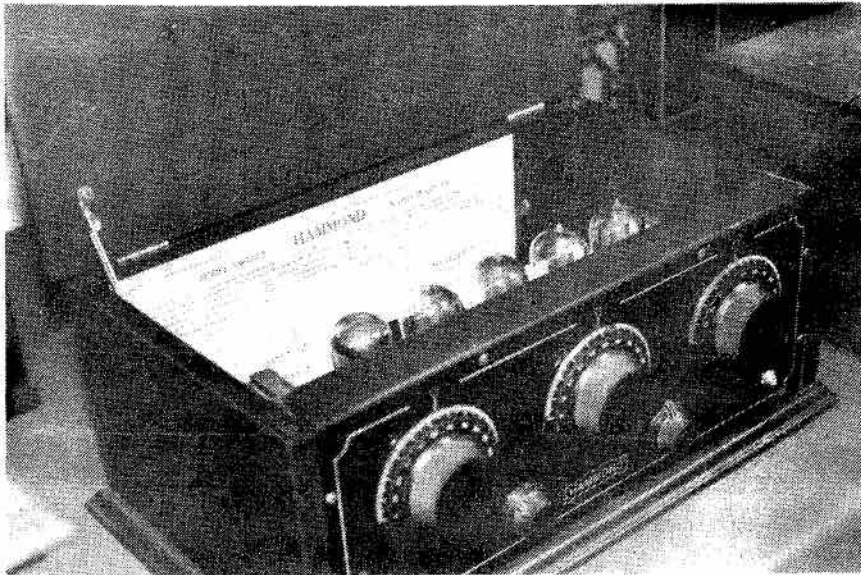
Station at VE3ARS. Compare it to VE3HC's station on front cover.



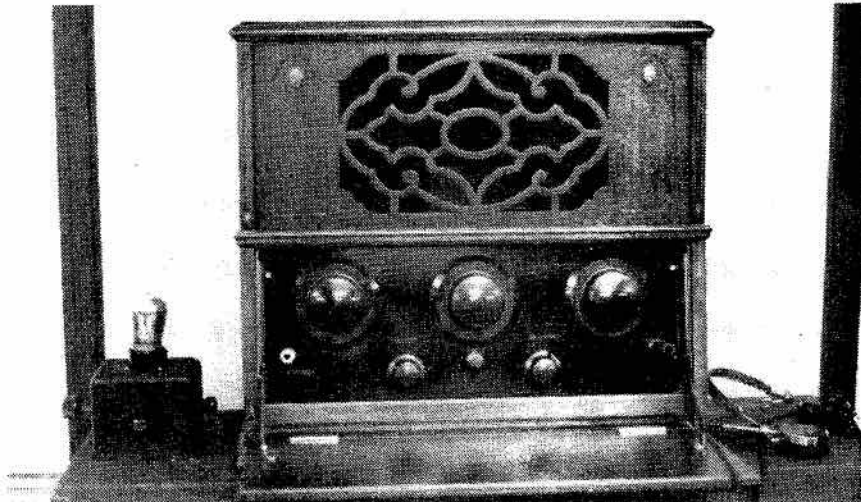
This is actually a TV set. Can anyone guess when it was made?



A rotary spark-gap



The Hammond Model 12 Receiver. Note the name of the company.



A typical Cabinet Receiver.



Rows of old gear, with rows of newer gear stored below.

receiver, transmitter, amplifier, electronic keyer, uncounted VFO's, multitudinous filters, compressors, expanders, intensifiers, relaxers, RIT's, NB's, ATT's, PBT's, ALC's, VSOP's, RSVP's and of course, the on-off switch. All of this goes up in smoke if the SWR goes above 1.5 to 1, so naturally we need an antenna tuner. In this area we have the Pi, L, T, Linc, split stator T, split stator L, split stator Linc, baloned unbalanced, or unbalanced balanced, etc, etc..!

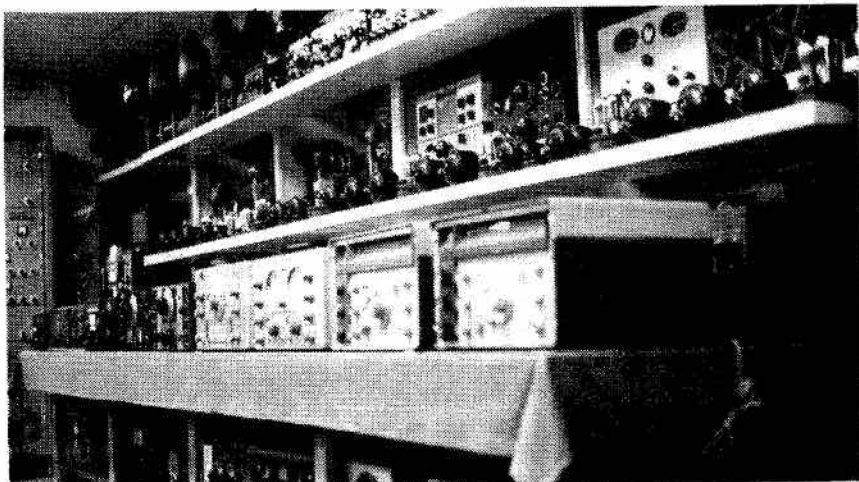
We also have manual or automatic tuning. This is great until we get a power surge, or a lightening hit in the area, or someone plugs the DC in backwards. One might think that the computer in the rig would sense those darn things and sound an alarm or something. I have visions of an Amateur weeping and gnashing his teeth after discovering that his new Komakazie 2000 all band, all mode, all everything rig was used as a water plug by his Great Dane, thus rendering invalid the warranty.

However obtuse this all seems to you the reader, I think the point has been made that we are all changing our habits in accord with the changing technology. This, despite what I have previously implied, is as it should be. As I sit here typing this, I can hear in the background, one computer talking to another computer on 80 metre CW. Someday, not only will the computer make the contact, but will do everything else as well. Before going to work in the morning, the operator will only have to ask the computer who it worked last night and how the bands were. (He, of course, having been in bed asleep at the time).

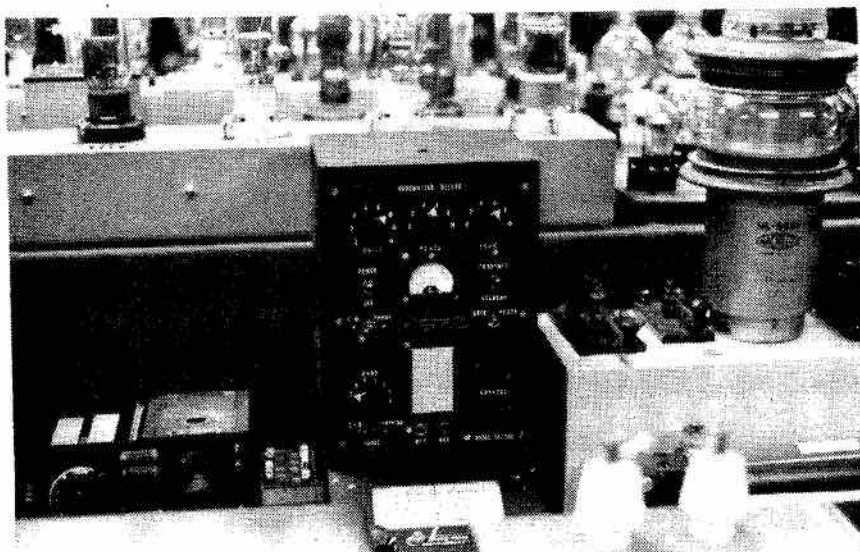
When I started out in Amateur Radio, in the mid 60's, my dream was to have a station that would fill the room I was in. Being that the room was quite small, I soon fulfilled that dream. My parents soon shipped me down to the basement where I could expand my horizons at will. The move was percipitated by a burnt transformer, and several frying high voltage electrolytic capacitors. (I love the smell of burnt electrolyte in the morning.)

Once down in the basement the shack began to look more like Crown Assets Disposal, than a Ham shack. Local Amateurs considered my house a black hole where equipment went never to be seen again. Soon the operating portion of the station swelled to fill one room, and overflow into another. I don't know where I got the money for all this, but wherever it came from, soon the well was dry. On top of that, I was attending University, so I needed all my spare cash for the main activity on campus: drinking. It was at about this time that I finally settled on what I thought was my dream station. If you take a look at the cover of the July/Aug TCA you will get a fair view of what I had at that time. Compare that to the picture of what I have now. (pic 1).

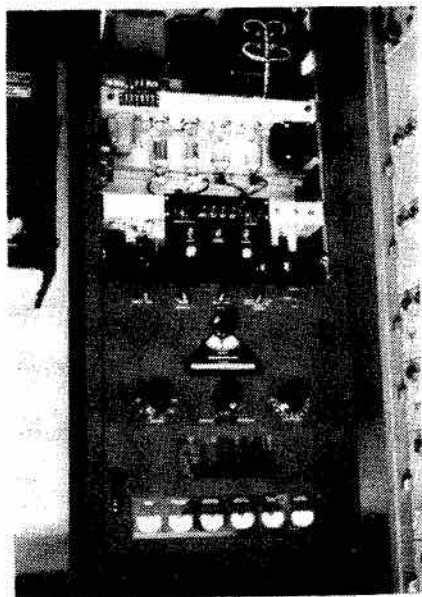
By now, you must be wondering what all this has to do with Fred Hammond's museum. By answer I suggest you look again at the front cover of this issue. I asked the printer to make the cover green for envy. Fred has a station like it at the museum, and you have to see it to understand what I mean. He has combined the efficiency of the new technology with the classic form of Amateur station development, to produce both a functionally efficient and visually appealing station. From there, you



A line of National Receivers, NC303, NC300, NC183, HR060, Older HR0's etc. Note the horn speakers on the top shelf.



How many of us have had one of these in our shack?



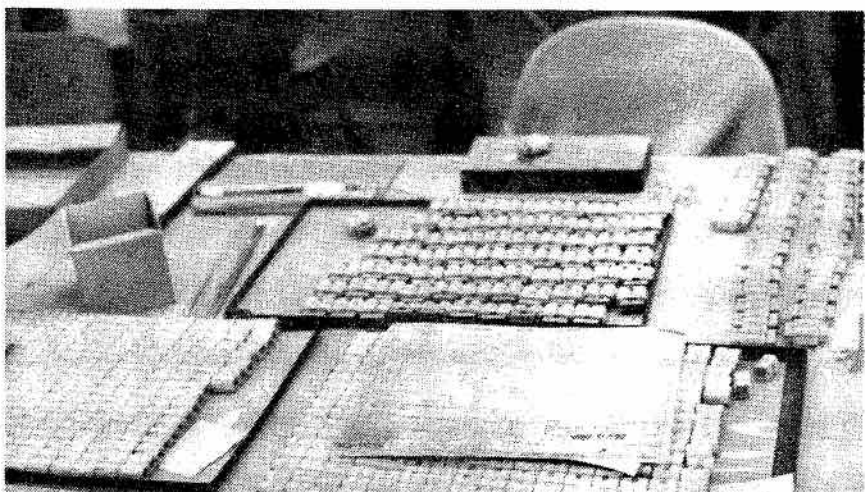
A Collins KW-1. Someone's pride and joy a quarter of a century ago.



Dave Goodwin, VE2ZP (left) and Doug Burrill, VE3CDC (right) look slightly amazed at all the tubes in front of them.



Fred Hammond, VE3HC, (right) pointing out pieces of equipment to Bill Wilson VE3NR (left) and Doug Burrill VE3CDC (centre) during recent tour.

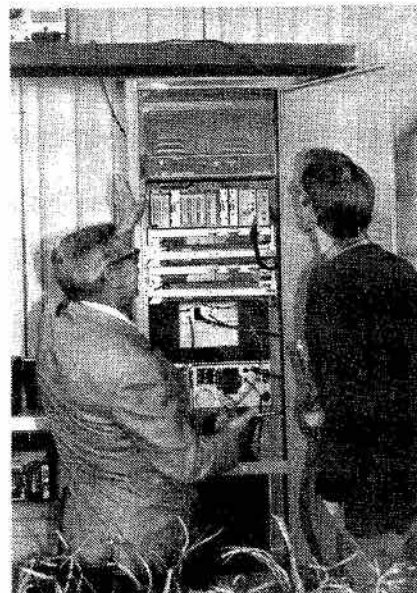


An array of miniature transformers awaiting final assembly. The core itself is no larger than a wad of chewing gum.



Just a small view of the manufacturing side of the building housing the museum.

look across the room to the museum where the history of radio is waiting. Every imaginable piece of antique gear is represented there. Even a very old TV set, a rotary spark-gap, (pic 2, 3). At one time, the company produced their own radio gear. According to the number on the receiver on display, there were at least 12 models. (pic 4) Old cabinet models line the shelves along both sides of the room. (pic 5, 6, 7) Most of us who have been around for 15 years or more will remember the Harvey-Wells Bandmaster from the late fifties. You will be pleased to hear that Fred even has one of those beasts on display. (pic 8) Even an old Collins KW-1 graces the floor at the museum. (pic 9) An incredible number of tubes line the centre table. A flip of the switch, and the heaters light up too! (pic 10) I was lucky, the day I went to see the museum, in that Fred was along to give us the guided tour. (pic 11) Fred is an Amateur's Amateur. He takes pride not only in the hobby, but in the heritage of the hobby. It is evident to anyone who takes a tour through the museum with him, that he has a sound background and knowledge of not only the equipment in the museum, but also the history



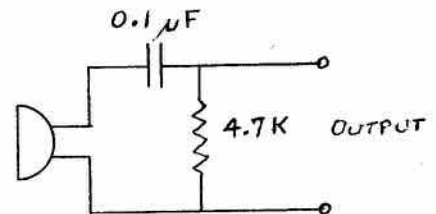
Fred, VE3HC explaining the technology of his club repeater to Bill VE3NR.

The Low Down

"You sound too bassy" was a comment I heard from several amateurs after purchasing a YD844 Yaesu mic. This is a nice unit but suffers from excessive bass response. This is not a problem with some voices but others seem to respond with too much bass. After fudging around with resistors and capacitors I found that by installing a bass attenuator network right on the mic cartridge enough lows were removed to give the mic a more pleasing response to deeper voices. By using a small ceramic disc capacitor and one quarter watt resistor there was no problem finding room for the network on the back of the mic cartridge. Values of components are not critical and it is quite easy to have your mic output tailor-made to your voice.

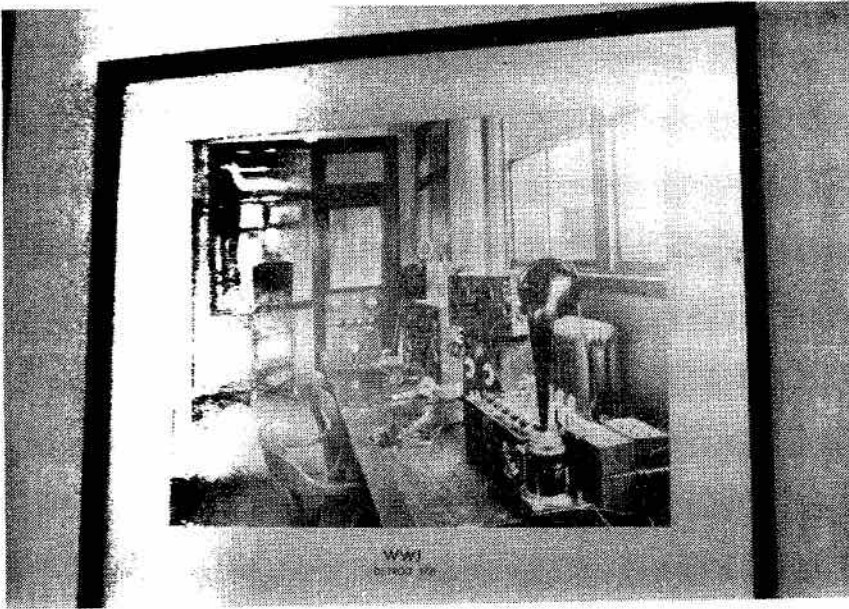
Another "problem" that I personally wanted rectified was the fact that one could not use the mic as a hand-held unit because of the location of the PTT switch. After gaining some courage with an 807 I drilled a hole on the side of the mic near the base and installed another PTT button and wired it in parallel with the existing switch. Again no problem finding room for this addition and hand-held mic operation is now possible. Any small normally open switch is OK.

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We pay for technical articles.

Send contributions to:
 CARF Technical Editor, Box
 356,
 Kingston, Ont. K7L 4W2.



WWJ Detroit Mich. circa 1921. (Photo from Hammond Museum collection. Photographed off wall).



Fred (Captain Canada) Hammond, VE3HC toting a Klystron ray gun (just a klystron). A little younger but just as enthusiastic. (Photo from Hammond Museum Collection. Photographed off wall).

behind the equipment. Although obviously a tube man, Fred is not intimidated by the solid state rig. He has both in his own setup. He has actively supported Amateur activity not only in his own area,

(pic 12) but also in the international scene. (see "China On The Air Again" Oct 22 TCA. Check the linear in the picture on page 33). His generosity takes a back seat to no-one.

While on site, Fred took us on a tour of the back room, where the company manufactures transformers for the military. Row on row of tables and work-stations filled with wire, cores, winding machines and all the equipment needed to produce the thousands of miniature transformers and components for the armed forces. (pic 13) (pic 14).

After reading all this about the Hammond Museum, I think you can understand why I took a trip down nostalgia lane in the first few paragraphs. The museum is a real eye opener and is a must for anyone travelling around Guelph in southern Ontario. I know Fred is on the lookout for any antique radio gear, so remember not to throw anything out that you think might go well in Fred's museum.

He is glad to get any donation of gear. By the way, if you have any of those old 4 pin Johnson High Voltage sockets gathering dust around the shack, send them in.

He uses those sockets to light up his bank of tubes. (pic 15, 16)

Radio Is Our Passport



Lester Pearson College club station, VE7LPC, Victoria. Zach, VE7FLP, at the microphone, is from Kenya. Harya, centre, VE7FMB, Indonesia; and Nina, OA4BBU, Peru. VE7LPC is on the air weekends, and some weekdays, after classes. Students from 52 countries attend Pearson College. Sponsor is Roy Parrett, VE7TG.

Nina Pejnovich, OA4BBU

"There is a call for you in the radio room," the ship's radio officer told Alejandra Alcade, a student visiting the MV Tubal, tied up near Victoria.

Surprised, Alejandra made her way to the ship's radio room, to find her whole family waiting on twenty metres, to wish her a happy birthday.

It was a nice gesture by First Officer Alex, CE2FJ who contacted Montevideo amateurs, and arranged the birthday greetings.

The MV Tubal had worked students at Lester Pearson College club station, VE7LPC, while crossing the Pacific, visited them on "International Night" - and invited them back to the ship, delaying their sailing for 12 hours, to accommodate them. The captain, first officer and radio officer were all "CE" amateurs.

Pearson College has students from 52 countries. For many of them it is a passport to the world,

and an important link with home. The college has a fine Amateur station, donated by the Victoria Kiwanis Club, on the air on weekends, and sometimes during the week, after classes - about 2300Z. Classes are held in Amateur radio, with several graduates from many countries.

Our college is one of the World Colleges, with Prince Chales as President. Others are at Singapore, Wales, New Mexico, Italy, most with Amateur clubs. Others are being planned and built, throughout the world.

I graduated from Pearson College, just over a year ago. While taking Amateur Radio there, I got a call from my uncle on a tuna boat in the Carribean - an Amateur, of course, promising me my equipment for my 19th birthday, if I passed. With that kind of incentive, I did pass, and am now on the air from Lima, Peru, my home, on all bands. I speak seven

languages, and am often on about 14,160 to 14,180 kHz, around 0400-0500Z, looking for contacts, especially from Canada.

We have other graduate students around the world who keep in touch, by radio, especially, Maarten, PA3BEW; Arnoud, PA3ARC; John, a teacher at Wales college, GW4LFF; Wales ARC, GW3YXP; Harya in Indonesia, VE7FMB; Zach, from Kenya, VE7FLP, Sebastian, 9V1VE.

Many of our students do not know about Amateur Radio, before they come to our college. "The only people who have two-way radio are the secret police," some tell us. So we are doing what we can to change that attitude, at VE7LPC.

Our sponsor is Roy, VE7TG, and Hilda, VE7FLN, who are often heard from their home location in Victoria, or from VE7LPC.

Lester Pearson said in his address, when accepting the Nobel Peace Prize, in 1957:

"How can there be peace without people understanding each other, And how can this be if they do not know each other?"

Perhaps Amateur Radio can help us know each other!

We will be listening for you!

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Get that phone ringing!
Got some gear you'd like to move? Use the TCA Swap Shop and get action!

Swap Shop

Not Much Room Left on 2 MTRS

It was not too many years ago that we were saying it was time to get active on 2 metres because "if we don't use it we will lose it". The fear was the DOC would take the 2 metre band away from us because we were not making use of it. This was about the time that some people felt Novice was a good idea because it would create a lot of new Amateurs fast and they would populate the 2 metre band so we would not lose it. Well time has shown this to be "so much boloney" with no greater justification than to sell something.

As repeater chairman for VE3 NCF, I have recently been involved with the Western New York and Southern Ontario Repeater Council, and gained some rather interesting knowledge. The Council is a voluntary group of self motivated Amateurs who seek only to constructively contribute to a vehicle that would maintain co-operation among repeater users. Without some intelligent planning the number of usable repeater channels would be greatly reduced and the amount of inter-repeater interference increased. Basically, the idea that if you plan to put a repeater on the air then for your own convenience and respect for other repeaters, you request the opinion of the council as to whether a particular frequency pair would be in everyone's best interest. If the channel you have in mind would have draw backs for you or someone else the council would recommend a different channel. The system has worked well and for sometime now this has been mainly due to the efforts of John Riddell VE3 AMX who acts like a human computer to find a spot for everyone.

Now the bad news. In the 146 to 148 MHz range the usable channels have all been taken by the major cities. This means, if you live in the Golden Horseshoe you will have trouble finding a channel that is "clear". Clear, means, at least 100 miles from another repeater on the same frequency

and not within 40 miles of any repeater operating within 15 KHz of your repeater. These standards are required to avoid such things as "hitting 2 at once" or 2 machines locking each other up. With 15 or so repeaters on the air in Toronto and that many again within 20 miles you can see that this chews up a big chunk of spectrum, especially when you consider the '15 kHz adjacent channel' requirement. As a reflection of this, many repeaters are now coming on in the 144.5 MHz to 146.0 MHz band, commonly referred to as the 'sub-band' and which, you recall, includes simplex FM and SSB, RTTY, and ATV. I would imagine that even the sub-band will be loaded in a year or so. There is hope however, because of technology in such

areas as private line systems which can allow 2 or even more repeaters on the same channel in the same area by way of each repeater having selective 'turn-on' by way of tones. Then, of course, there is 220 MHz and 440 MHz but these are also being occupied rapidly for such things as links and control.

Yes, the fear of losing 2 metres or 220 or 440 is far past, if it ever did exist; in fact, these bands will probably go on to test the Amateur's ability to co-operate in a gentlemanly manner. On the other hand if the DOC were to take away frequencies as punishment for the manner in which we use these bands, maybe we still do have something to worry about.

Fred J. Robinson, VE3GCP
Repeater Chairman

Tower and antenna safety

As former Antenna Committee Chairman of the Burnaby Radio Club, there is one thing, I do not take for granted, or at least try not to: - SAFETY!!! We are all probably guilty of not taking that extra precaution and just saying, that it will be OK this time.

Well, to begin with, I guess, the first thing in mind, is setting up towers. There are several ways, the manufacturers state to do this job.

I have helped to install a couple of towers, and they could be classed as simple, straightforward installations. The best and safest way to install any tower, is to go directly by the manufacturer's specifications, as to size of hole, maximum wind load that it can carry and max height. Anything other than what is called for can be dangerous to property or people.

I can not think of all the safety factors involved, but one thing I make sure of is that my safety belt, the ropes, pulleys, and other equipment in use is in good condition. The safety belt is one thing, that is most important to me. These belts come in different styles and sizes. Just make sure it fits well around your waist, not too

loose, nor too tight. I recommend going to a safety supply store and asking for information as to which type of belt would be suitable for your needs. Be sure to use CSA and WCB approved type belts. Your life depends on it.

Another good point to bring out is when you are with someone on a tower, keep a watch out for him as well as yourself. Know what he is doing at all times. It is best to work with someone who is not afraid of heights!!!

Ropes, pulleys and guy wires are very important. Make sure that the rope you are using to pull up a beam does not decide to let go or break. The size of a pulley and the rope on it should be the proper size. If not, the rope can be chewed up.

One other point is that the crew helping out on the ground should be aware of what is happening up above. (I drop all kinds of things. These falling objects, like a wrench, can be missiles from a height of 50 feet.) Hard hats should be worn at all times while working around a tower.

Guy wires are also a major item

Cont'd on page 54

TECHNICAL SECTION



A simple autopatch

If you are planning to put a repeater with autopatch facility on the air, you may use a lot of sophisticated devices to produce complex functions such as an access code, auto-dialing, etc.

But, some Amateurs prefer to proceed step by step and simply don't have the money for expensive design. The circuit mentioned here is easy to build and has few and inexpensive parts.

The most important advantage is the LED tuning which permits accuracy frequency adjustment with a simple tone encoder (crystal control is preferred).

Circuit description:

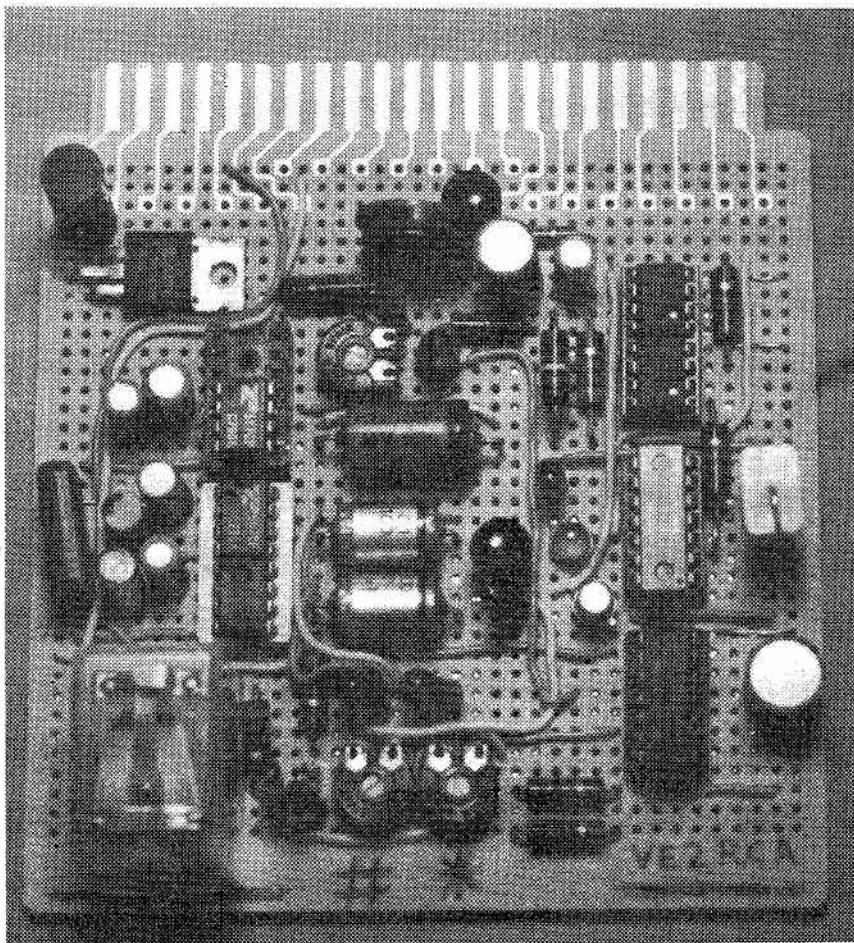
The circuit use a single 12 volts supply. An internal voltage regulator prevents any false pulse error from penetrate to the logic functions.

When two valid frequencies are received in the appropriate 567, the corresponding LEDs turn on and the logic circuit is activated. When the * or the # are generated, the signal must last at least one second, checked by a common 555. When it lasts the required time, it then controls the "time out" timer. Two 22k resistors filter the fast pulses generated by the logic gates. A useful LED then indicates the output state and also drives the telephone line relay.

Adjustments:

If you don't have a frequency counter or signal generator, you will appreciate the easy tuning of this circuit.

You can plug the unit into the repeater and lock the transmitter



off. Using a little 2 meter rig, you generate simple tones first by pushing two tones in the same column of your keyboard. Example: if you want to adjust the *, push it and also the upper 7. You then trim the corresponding frequency pot so the LED turns on. Repeat the procedure while decreasing the 1k audio pot toward minimum.

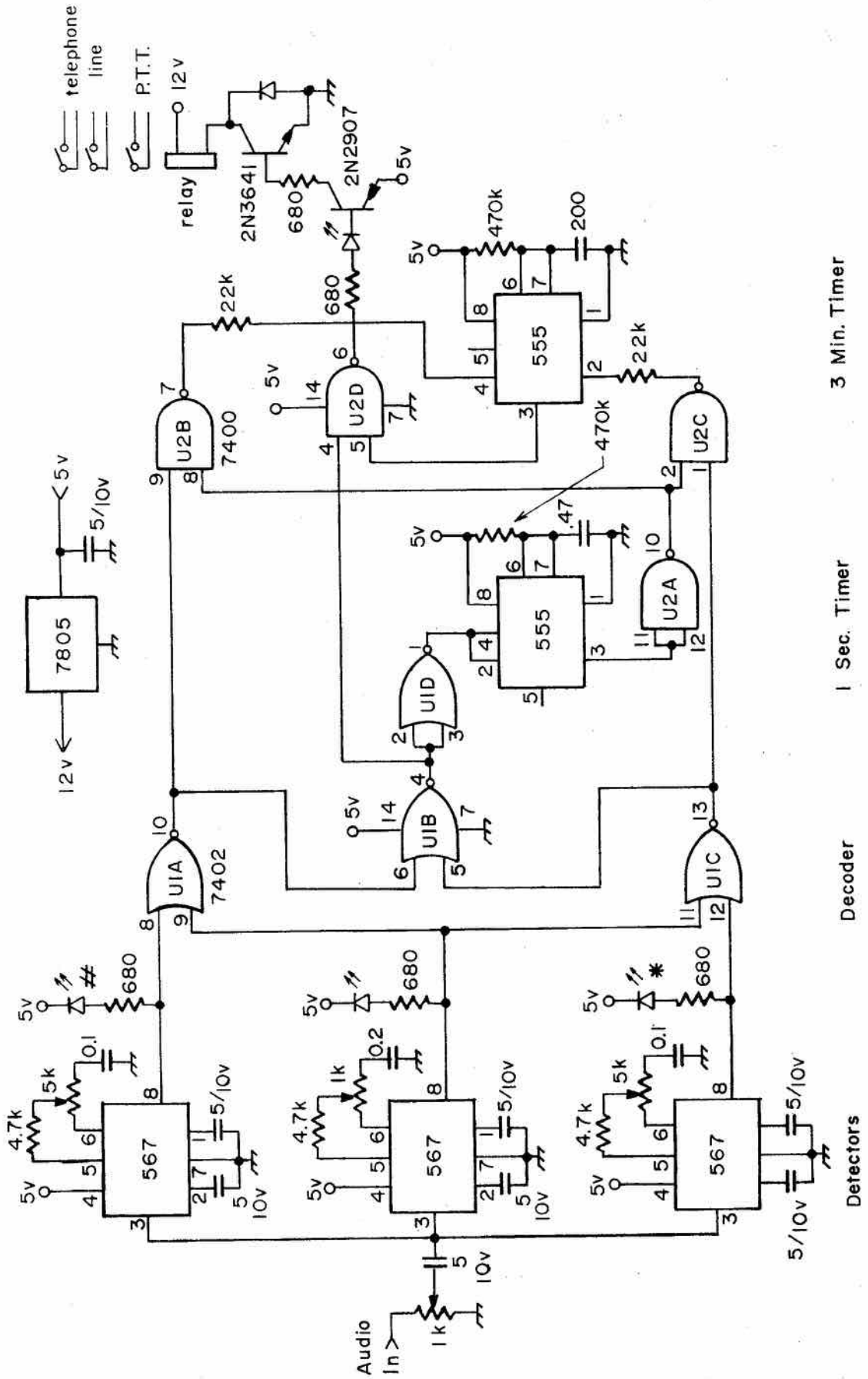
The row decoder is tuned the same way, except that you push both the * and the #. I would recommend the tuning procedure of generating the two frequencies of each tone because we want the best performance in normal operating conditions. This procedure will give an improvement

in performance over conventional tuning.

The autopatch has been in operation for 3 years. It works very well, but some modifications have been made to improve stability. The trim pots have been replaced by precision ones because the shack was surrounded with motors that were producing too much vibration for the normal trimpot types. A reverse autopatch and functions program including remote controls have been added to the system.

Good luck!

**Roger Coude VE2DBE
1045 Ricken
Alma, P.Q. G8B 4L9**



3 Min. Timer

1 Sec. Timer

Decoder

Detectors

Phased verticals on 80 metres — CHEAPLY

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

On our lower frequency bands building antennas capable of reliable DX work can present something of a challenge. In order to get any horizontally-polarized antenna to radiate a low-angle signal so necessary for DXing requires getting the antenna as much as a half-wave or more above ground level. Most of us are not blessed with a pair of 40-metre tall towers, so other solutions must be sought. An easier way to get a good low-angle radiator would be to put up some form of vertically-polarized antenna, the simplest of which is a quarter-wave vertical or ground plane. This kind of antenna would be about 20 metres tall on 80 metres, and requires one support. Simple verticals, as the old adage goes, radiate equally poorly in all directions. Often it is desirable to get some sort of directional antenna operating, which concentrates more of your power in the direction you wish to work.

First at my home station, then later at club contest station VE3PCA, I constructed and put into action an array of two quarter-wave long verticals, half-wave apart. The antenna is supported by two trees, each about 20 metres tall. These two antennas can be fed so that they give a pattern which is bidirectional, and which can be changed to favour signals from the ends of the antennas, or broadside to them. I claim no originality for the design of the antenna, but the way in which they are constructed may be fairly unique.

Using all the conventional formula, the antenna operates as follows: When the two antennas are fed in phase, that is, when they each receive power from the same transmitter at the same instant, they will exhibit a radiation pattern favouring signals coming at right angles to the antennas.

When fed such that one antenna receives power one half-cycle later, or 180° out of phase with the other, the antenna will show end-fire directivity.

The gain of the array over a single quarter-wave vertical should be about 3db, and the front-to-side ratio should be about 6db. Those figures may not wow you, but on 80 metres that extra few decibels may make the difference in a pileup or in the high noise levels so common on the low bands.

The actual construction of the array is probably the only innovative aspect to the way I built it. The two quarter-wave verticals are made of wire (preferably insulated) supported on a tall tree (at least 20 m.) with rope. I have the good fortune at home, and at VE3PCA to have a couple of poplar trees 20-25 metres tall spaced almost exactly 40 metres apart. A line drawn from one tree to the other runs along the bearing to Europe. Broadside to this line is Japan. Armed with bow and arrow, it is a simple matter to send up some heavy-duty nylon fishing line over the top of each tree. Then some 3/16" polypropylene rope is pulled up, and then the verticals themselves. The verticals can be raised or lowered with the rope, and can be tied quite securely to the tree. I suggest insulated wire be used, because the antenna will run right up alongside the tree trunk, through leaves, and there could be all sorts of problems if power was fed to the antenna with it touching moist weeds or leaves.

Now we have two verticals sitting half-wave apart (41.4 m) that have to be fed somehow. Feeding the array and doing all the phase changeover can be done with three pieces of cable. The actual feeders to the antennas can be any convenient length, except that one length must be electrically a quarter-wave longer than the other. One end of these feeders is connected directly to each antenna, with the centre conductor

connected to the radiating element, and the shield connected to a system of ground radials. These radials should be quarter wave long pieces of wire either buried or laying on the ground, with at least six or eight under each antenna. The third piece of cable should be an electrical quarter-wave long, with a coax 'T' on each end. Each feeder from the antennas should be connected to one or the other of the 'T's. The unused ends of the 'T's become the feedpoints for the array. Fed through one 'T', current arrives at each antenna at the same time. Fed at the other 'T', power will arrive at one antenna 180° after it arrives at the other. Steering the array is a simple matter of changing the feedpoint from one 'T' to the other.

What I chose to do to make steering the antenna as simple as possible, was to use a standard antenna switch, and run a short length of low-impedance line from each 'T' to the switch. If you have a switch of the self-shorting type, you will have to make a small change to the way it functions in the two positions you will need to feed the antenna. Normally, most of the commercially-available antenna switches will short unused antennas to ground. If the unused feeder were shorted in this array, you may find that no power is delivered to one antenna in either position. These switches operate as they do by putting two switches on the same wafer, back-to-back. One selects the desired antenna, and feeds it to the transmitter, and the other shorts all the unused antennas to ground. On the two positions you will use for this array, carefully desolder the shorting-side wafer connections from the selecting-side wafer. All of the other antennas on the switch will be shorted when unused. A way to get around this would be to use a relay to switch from one feedpoint to the other, but that is rather messy, requiring relays, power supplies and switches. I warn you

that a 20-metre-tall piece of wire can look awfully attractive to lightning, so if you plan to alter your antenna switch, be sure to lower the two verticals before thunderstorms during the summer.

Operationally: I have found the antenna performs just as the theory books tell you, and by luck, the SWR across 3.5-3.8 MHz is less than 2.1 in both installations. I think the unused feeder going from the 'T' to the switch somehow acts as a capacitor to shunt out some reactance at the band edges. I used 75 ohm cable in the phasing line and the feeder going to each antenna, and 50 ohm line from each of the feed-points to the transmitter. All the nulls appear where they are supposed to, so I think there are no truly destructive affects of these 'capacitors'. I have found that high-angle signals, from less than 1000 km or so are not able to notice any directionality in the array, nor am I able to notice any real change when steering the array away from them.

I have found the antenna to perform extremely well, and significantly better than my old ground plane at times. My total investment in the antenna was to cover the cost of the polypropylene rope, as I had the wire for the antennas and the feedlines available. I reckon the total cost should not exceed \$40.00 if your junkbox is bare.

I hope my suggestion is of some use to you, the readers of TCA and perhaps someone else will try this simple, yet remarkably effective antenna.

For design frequency of 3.650 MHz, the following dimensions should apply.

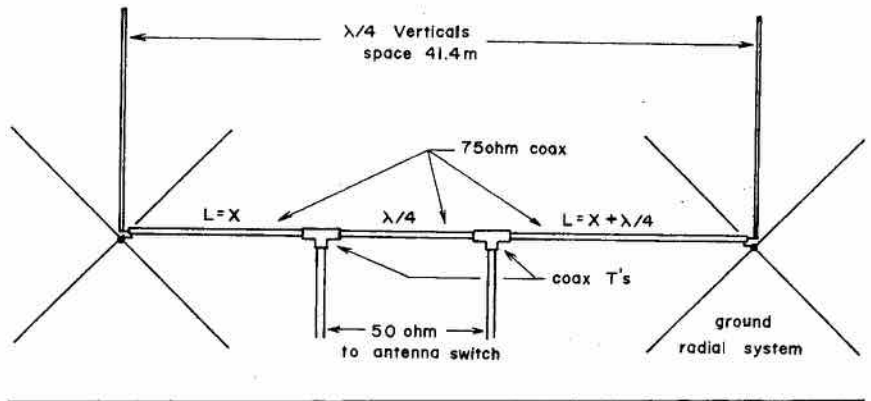
Antenna length: 19.73 m
Interelement spacing: 41.4 m.

Quarter wavelength of coax:

Solid dielectric: 13.65 m

Foam dielectric: 16.44 m

The two feedlines can be any length, except, that one must be an electrical quarter-wave longer than the other. If using cable with foam dielectric, it should be 16.44 m longer, and if using cable with solid dielectric, the difference should be 13.65 m.



Operating Information

Reciprocal Operating Agreements

Canada has concluded agreements or arrangements with the following countries to permit licensed Amateur radio operators to operate radio stations while temporarily in the other country: Australia, Austria, Barbados, Belgium, Bermuda, Botswana (Republic of), Brazil (Fédération Republic of), Chile, Colombia (Republic of), Costa Rica, Denmark, Dominican Republic, Ecuador, Finland, France, Germany (Federal Republic of), Greece, Guatemala (Republic of), Haiti (Republic of), Honduras (Republic of), India (Republic of), Indonesia (Republic of), Iceland, Ireland, Israel (State of), Jamaica, Luxemburg, Malta (Republic of), Netherlands (Kingdom of the), New Zealand, Nicaragua, Norway, Panama (Republic of), Peru, Philippines (Republic of the), Poland (People's Republic of), Portugal, S. Lucie, Senegal (Republic of the), Sweden, Switzerland (Confederation of), United Kingdom, United States of America, Uruguay (Oriental Republic of), Venezuela (Republic of).

Negotiations for the establishment of similar agreements or arrangements with the Republic of Bolivia, Cuba, Japan and Italy have been initiated.

Banned Countries List

The following countries have notified the International

Telecommunications Union that they forbid radio-communications 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, Colombia (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.

30 Metres for the Yaesu FT-901

Dave Goodwin, VE2ZP,
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The Yaesu FT-901 is a fine piece of Amateur gear, and I am pleased with the way it operates in almost all respects. One failing of the rig is that it is a victim of history. The '901 came out before the great changes of WARC '79, and therefore makes no provision for operation on the 10, 18 and 24.9 MHz bands. As 10 MHz has just been released to Amateurs in most of the world, and the 18 and 24.9 MHz bands are not likely to be turned over for some years, I was only concerned with getting the transceiver working over the 10.0 and 10.5 MHz range, where I could work not only the 10.1 to 10.15 MHz Amateur band, but also listen to the propagation bulletins and time information from WWV to 10.0 MHz.

Parts Required

- Capacitors: 36pf fixed mica
100pf fixed mica
These should be the small PC board type, able to handle low-level RF.
- Crystal: 24.48750 MHz, available from Lesmith Ltd., or CTS, both of whom have advertised in TCA. Cost: \$8
- 20 cm of ga. 16 or 18 insulated wire.
- General coverage receiver or oscilloscope, and small loop of wire as a pick-up.
- Screwdriver made of non-conducting material, with a 2 mm tip. I used a flat toothpick, cut to fit the slot in the slugs of the small transformers to be adjusted.

What is involved?

The FT-901 has a receive-only bandswitch position for 15.0-15.5 MHz, which was designed for the reception of WWV on 15.0 MHz. On this band, the 20 metre preselector tuned circuit is borrowed, and is tuned to 15 MHz with the preselector variable capacitor. Separate heterodyne

oscillator and VCO circuits allow operation on 15 MHz. These can easily be made to work on 10 MHz.

These are the changes I made to get my FT-901DM going on 30 metres:

Enabling the transmitter in the 'WWV' bandswitch position

This involved soldering a few jumpers across three of the bandswitch wafers. These are accessible if the bottom cover and internal shields are removed. S1a is the wafer closest to the front panel, and the wafers fall in alphabetical order from there. S1m and S1n are back-to-back on the same wafer.

By running a jumper of insulated wire from the unused WWV lug to the 20 metre lug on switch wafer S1i, the driver stage is enabled.

On "Sierra 1 Oscar", which selects the appropriate tap on the tank coil, run a jumper from the WWV to the 40 metre lug.

Next, open up the final compartment, and remove the PA tubes. Behind the PA tubes you will see a three-section close-spaced variable capacitor, perpendicular to the front wall of the final compartment. This is the Load capacitor, and a jumper should be soldered between the second and third sections, across the lugs." This will give the tank circuit enough range to resonate on 30 metres. The transmitter will now operate in the WWV position, but it is still on 15 MHz.

Heterodyne Oscillator

The next step is to alter the Heterodyne Oscillator stage. Remove the XTAL BOARD, PB-1711, and carefully remove X10, the WWV crystal. Carefully desolder and remove C37, and replace it with a 100pf mica capacitor. Replace X10 with a 24.48750 MHz crystal.

Return the board to the rig, turn it on, and using a general coverage receiver or oscilloscope loosely coupled to the stage, tune the slug of T10 for maximum signal on 24.4875 MHz. The

heterodyne oscillator should now be working on the correct frequency to allow 10.0-10.5 MHz operation.

VCO

The last step involves making the VCO operate on the new band. Carefully desolder and remove C58, and replace it with a 36pf mica. Replace the board, and turn on the rig. When the VCO is not operating, or is 'unlocked' the digital display will flash. Set the VFO to 000 kHz on the main dial, and turn on the calibrator. Tune the slug of T08 until the calibrator is heard, and the display stops flashing. You are now close to getting the VCO to operate as it should. Move the VFO to 500 kHz, and adjust T08 until you hear the calibrator and the display stops flashing. Go back and forth a few times until the VCO appears to be locked across the entire 10.0 to 10.5 MHz range.

The modifications are now complete, and the transceiver can now be tuned up and put on the air on 30 metres. The Preselector will usually sit around 4.5 on the inner numbered scale. The Plate tuning will point to 8 or 9, and the Load will point to 6 or 8 when looking into a non-reactive 50 ohm load. You may notice that the position of the preselector is slightly different when you peak the receiver and the transmitter. It is probably best to leave the preselector peaked for best power output, and suffer the 2 or 3 dB loss in receiver sensitivity.

Problems with this modification

The most nagging problem with this modification is that the digital display will continue to indicate your frequency as being in the 15 MHz band. The FT-901's frequency display uses a diode matrix, contained in Q2911 of the counter unit. To programme the first two digits of the display, which correspond to the frequency in whole MHz. Unless you are able to build ICs at home, you won't be able to change this condition. If your

display reads 15.101.5. your actual frequency is 10.101.5. The other digits of the counter will function normally. If you are ever visited by the Radio Inspector, this should give him quite a scare.

As you are making some compromises with the tank circuit, remember that the 30 metre tank has a more limited range, and is therefore less able to contend with mismatches than is the case on the other bands.

In Conclusion

The transceiver seems to perform very well on 30 metres. The

transmitted signal appears to be quite clean, and as pure as it is on the other bands. Receiver sensitivity is about as good as on 20 or 40 metres, even with the -2dB preselector problem. I am totally satisfied with the operation of my FT-901DM on 30 metres, especially now that 10 MHz WWV signals appear to be even more consistent than 15 MHz signals were.

For an hour or two of your time, and \$8 for the parts, this has to be one of the cheapest ways of getting an FT-901, an already superb transceiver, on this exciting new band.

The Evening Telegram

400 Topsail Rd. St. John's, Newfoundland

A Marconi monument

Submitted by Nate Penny VO1NP

On December 12, 1901, the Italian inventor, Guglielmo Marconi, on Signal Hill, St. John's opened the door to the electronic era, when he and his helpers received the first wireless message from across the broad Atlantic Ocean. Late last fall, in a premature observance of that remarkable happening, the Association of Professional Engineers of Newfoundland (APEN) made arrangements to reenact the epoch-making event in St. John's in the city.

The affair was timed to coincide with the visit of Marconi's daughter, Ms. Gioia Marconi Braga, who came here to receive an honorary degree from Memorial University. The association also presented her, as a memento, with a large framed photograph of Cabot Tower, including the rather unpretentious column and plaque recording her father's achievement.

With hindsight, some sources have felt the occasion should have been seized on by provincial and municipal authorities, as well as historical and heritage groups, to secure a more definitive and imposing monument to the great event and brilliant inventor. Our Nova Scotia neighbours appear to

be ahead of us in this department (as they seem to be in everything else with federal backing). We recently received a clipping from the Halifax Chronicle-Herald that indicates they are well on the way to getting more kudos from this modern communications miracle than we have.

It is unfortunately, an historic fact that Marconi was forced to take his subsequent experiments from Newfoundland to Nova Scotia. But that was not, as some people think, the fault of the Newfoundland government of the day. It was the exercise of the monopoly held by the Anglo-American Telegraph Company (who envisioned a threat to its Atlantic Cable service) that caused Marconi to move to Glace Bay, Nova Scotia. From that place, in December of this year, there will be, take note, a Canadian-Italian exchange of messages to celebrate the significance of Marconi's exploits.

The thing that bothers us about this upcoming observance is the way in which the federal government has been brought into, or has insinuated itself into the affair. In conjunction with the Italian government, Ottawa is planning a whole series of events, climaxing with the Glace Bay incident,

which came about some time after the "miracle" at Signal Hill, and was only a continuation of what that event had started. How is it that we cannot seem to get such federal enthusiasm for the "historic" rights of this province, the oldest part of Canada, with more communications 'and other' "firsts" than the rest of the country put together?

But read on! The president of the Italian Senate, Amintore Fanfani, has already had meetings with Liberal Communications Minister Francis Fox; and they have worked out a program, according to the Halifax paper. Not only that, but the Italian ambassador to Canada, Dr. Francesco Fulci, originated the concept of a Marconi celebration (1902-1982), prompted by the effort of three young Canadians to produce a radio show featuring the life of the Italian genius. Furthermore, Italo-Canadians, presumably with some input from Fulci and Fox, have raised one million dollars (!) for a "permanent monument" to Marconi, the site of which has not yet been decided.

If this was purely a Cape Breton venture, or a Nova Scotian project, we would have no quarrel with it. But when the Canadian and the Italian governments are working hand in hand on a program and its spinoff that could, in effect, "rob" this province of its international claim to a significant historic "first", then we have reason to be upset. On top of that there's that million dollars, publicly subscribed, that could be put to good use here. Our university would, we feel sure, be happy to include a "permanent Marconi monument" on its campus, perhaps in the shape of a new building, dedicated to the development of the electronics sector of modern engineering technology.

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More on converting systemcoms to 220

Craig Howey VE3HWN

Convert Your Systemcoms Part II

Since my last article on converting the VRC5 Receiver and VEX2 exciter, I have acquired a VTR8 and several VTR1/VTR74 type radios. My particular VTR8 is a 6 channel 13 Watt set with the VRC5 receiver (see Nov TCA for conversion) and the earlier VEX1 exciter and VPA2 P.A.

When I did the conversion on the VEX2 (see TCA Dec 81), I opted to retain the times twelve multiple in the exciter. This was very easily done in the case of the VEX2 and helped to maintain output drive capabilities. In future I think I will just change the last doubler into a tripler and leave Ca to Cf alone. This would result in a times 18 multiplier from X3 X2 X3. I chose this approach for the VEX1 modification.

Converting the VEX1

(1) Remove the last two coil cans near the output terminals to expose L710 and L713 and their related capacitors.

(2) Remove and discard C744 a 8pf ceramic disc in Q709's collector circuit.

(3) Remove one turn from L710 at the collector end. L710 is located in the smaller can along with C744.

(4) Remove one turn from L713 at the end which connects to the output tuning capacitor C750.

As a consequence of changing the doubler to a tripler, a considerable decrease in output drive results. To overcome this I did the following;

(5) Short R742 the 10 ohm emitter resistor in the exciter output stage beneath the board.

(6) Remove R749 - 470 ohm, R750 - 470 ohm and R747 - 10 ohm which formed a resistor PI circuit in the exciter output.

(7) Connect output directly to C763.

This eliminates TP704 for tune-up. To increase output into the P.A. one might try adjusting the

tap connecting C763 the 0.001 uf output coupling capacitor by a fraction of a tune. Similarly same for the Tripler.

Tuning the VPA2 on 220

The Dec 81 article covered suggested modifications for the P.A. Modifications were as I had theorized except there appears to be no reason to change C1318 which is an UNELCO 40 pf VHF capacitor soldered on the foil. The schematic of the VPA2 appears in the DEC TCA on page 42.

Alignment of the VEX1

Since a X18 multiplier now exists, for 223.34 TX the crystal frequency is 12.40777 Mhz.

Alignment of the VEX1 is performed with a 100 micro amp meter between ground and the test point.

(1) With the meter + to the first test point, peak the first two coil cans.

(2) With the meter + to the second test point peak the third coil can (L706/L707) and adjust C736 for a maximum reading. This is the first large coil can on the exciter strip.

(3) With the meter + to the third test point peak the fourth coil.

(4) Use a SWR or other output indicator terminated into 50 ohms and tune C745 the now tripler output and C750 the output Tuning. This is a very sharp adjustment. In my set this meant C745 at 1/2 rotation and C750 at 30 degrees covered (min capacity)

VPA2 Alignment

Disconnect power from the output stage for steps (1) and (2). On most sets this is accomplished by a tune/operate slide switch. With a

100 micro amp meter + to the + power rail;

(1) Connect the - ve lead to TP1301 and adjust C1303 for maximum. Re-adjust the output tuning of the exciter as well.

(2) Connect the - ve lead to TP1302 and adjust C1314 for maximum.

(3) With power re-applied to the output, adjust C1315, C1320 and C1319 for max output. Repeat (3) a couple of times.

Harmonic Filter

The Harmonic filter between the P.A. and antenna works nicely to immediately kill the 220 Mhz signal we've strived so hard to produce. The circuit of this filter is approximately as shown in Figure 2. I modified it before I copied this circuit so the capacitor values might be slightly off.

(1) Remove one turn from each inductor then reshape to reach the connection point.

(2) Change capacitors to 6.8 pf. (Ceramic disc will do)

(3) Repeak the P.A. output into the filter.

Bits and Pieces from the VRC5 - Nov TCA article

Some of the later VTR series have a slightly different FCU, frequency control unit than described in the article. The FCU 21, 22, 23, 25, 26 and 28 are revisions to the FCU 1, 2, 3, 5, 6, and 8. These featured an additional buffer stage after the crystal oscillator and have an additional tuning element denoted as L409 in the RX and L416 in the TX sides of the FCU. This inductor and three capacitors form a tuning circuit at the crystal fundamental. As the Crystal frequency range has changed from 13 to 18 Mhz range, one or more of these capacitors may need changing to slightly lower values. I would suggest just removing C1405 the 150 pf and see if the circuit tunes.

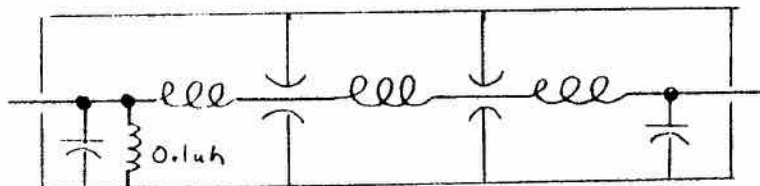
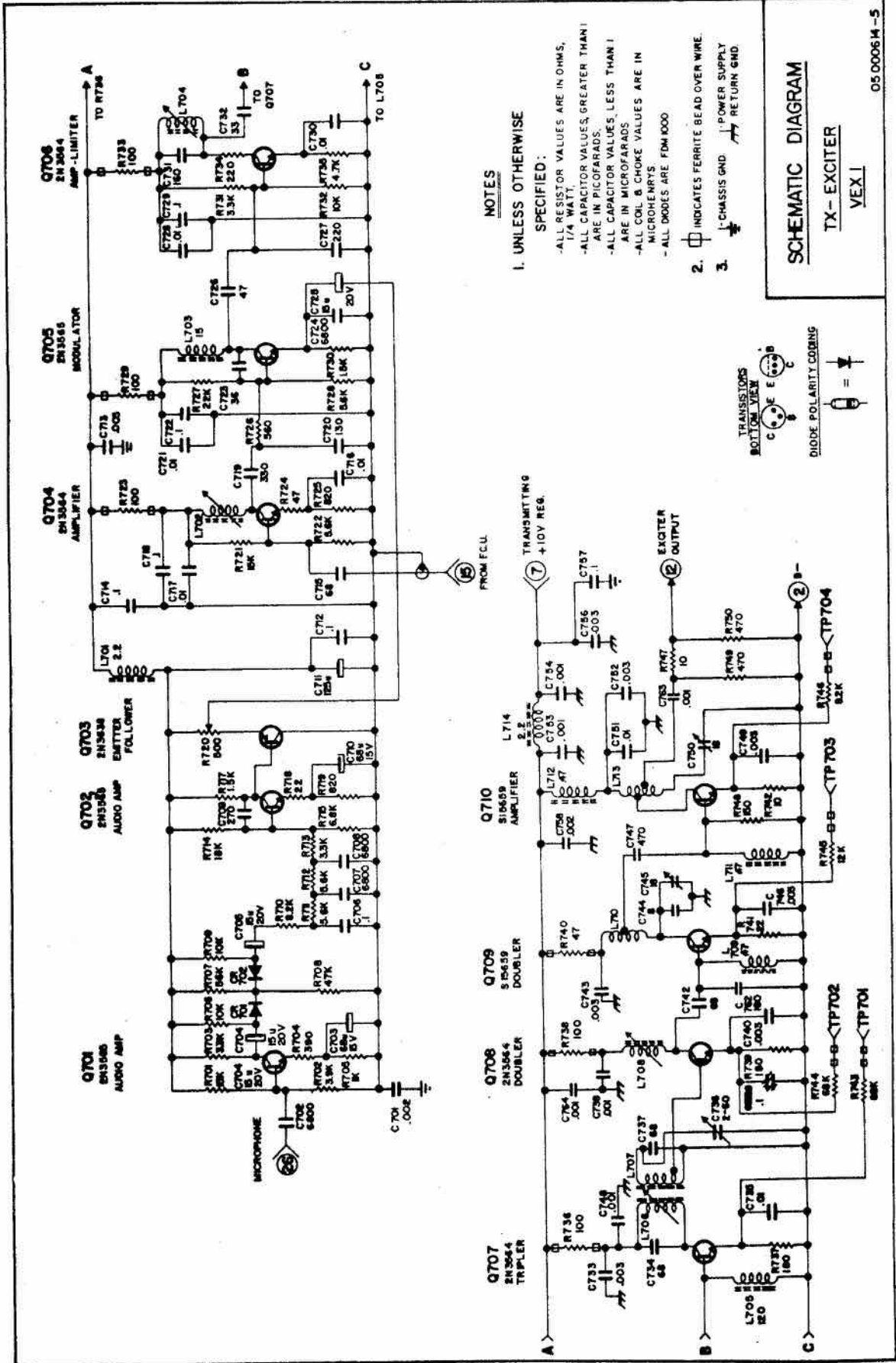


Figure 2



NOTES

1. UNLESS OTHERWISE SPECIFIED:

- ALL RESISTOR VALUES ARE IN OHMS, 1/4 WATT.
- ALL CAPACITOR VALUES, GREATER THAN 1 ARE IN MICROFARADS.
- ALL CAPACITOR VALUES, LESS THAN 1 ARE IN MICROFARADS.
- ALL COIL & CHOKE VALUES ARE IN MICROHENRYS
- ALL DIODES ARE FDM4000

2. INDICATES FERRITE BEAD OVER WIRE.

3. POWER SUPPLY
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SCHEMATIC DIAGRAM

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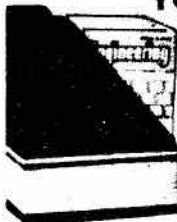
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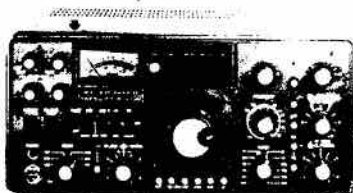
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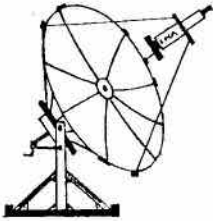
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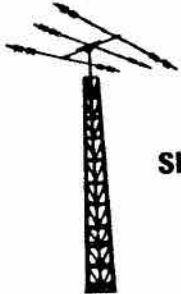
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Tower safety

Cont'd from page 41

when installing towers. There are individuals who have their own ideas as what to use. According to the article on THE UPS AND DOWNS OF TOWERS In July 81 QST, page 35, guys should not be smaller than 3/16" (5 mm) EHS, and 120 degrees apart from each other. All Amateurs should read this article if they intend on buying a tower.

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

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Canada has concluded agreements or arrangements with the following countries to permit licensed Amateur radio operators to operate radio stations while temporarily in the other country: Australia, Austria, Barbados, Belgium, Bermuda, Botswana (Republic of), Brazil (Federative Republic of), Chile, Colombia, (Republic of), Costa Rica, Denmark, Dominica, Dominican Republic, Ecuador, Finland, France, Germany (Federal Republic of), Greece, Guatemala (Republic of), Haiti (Republic of), Honduras (Republic of), India (Republic of), Indonesia (Republic of), Iceland, Ireland, Israel (State of), Jamaica, Luxembourg, Malta (Republic of), Netherlands (Kingdom of the), New Zealand, Nicaragua, Norway, Panama (Republic of), Peru, Philippines (Republic of the), Poland (People's Republic of), Portugal, S. Lucie, Senegal (Republic of the), Sweden, Switzerland (Confederation of), United Kingdom, United States of America, Uruguay (Oriental Republic of), Venezuela (Republic of).

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

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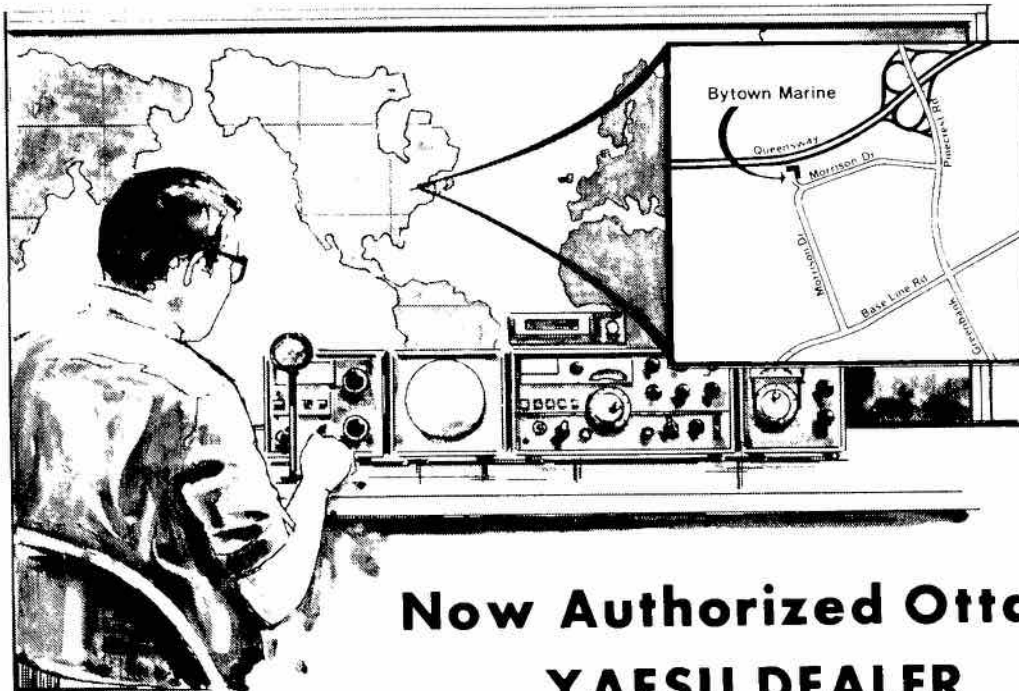
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