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The Canadian Amateur Radio Magazine

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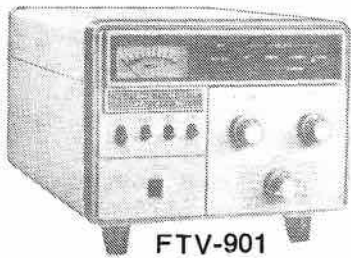
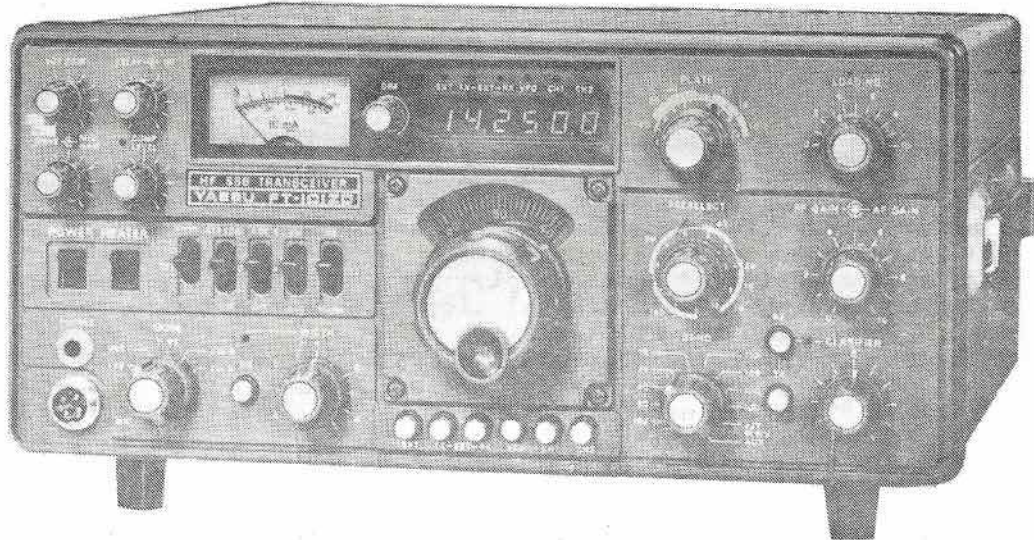
February
1980

WARC '79

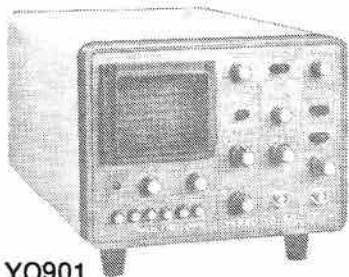
How did the World Administrative Radio Conference
affect Canadian Amateurs?
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New Format!
New Computer column!
Technical Section
News and Features

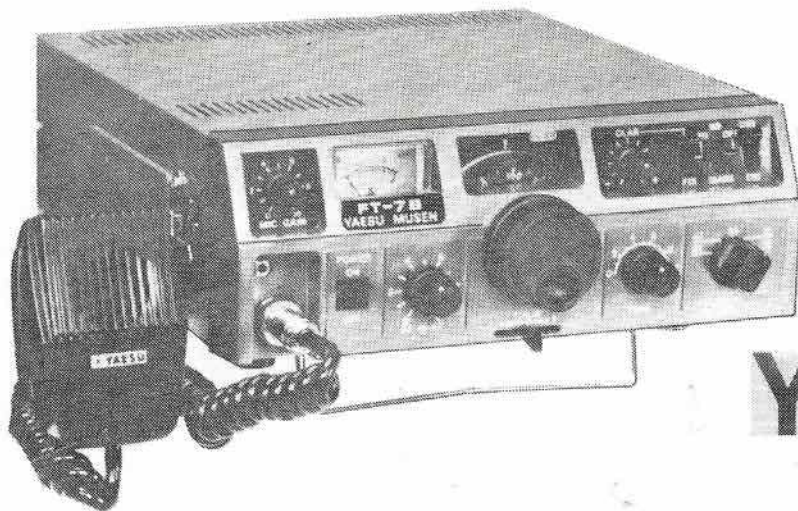




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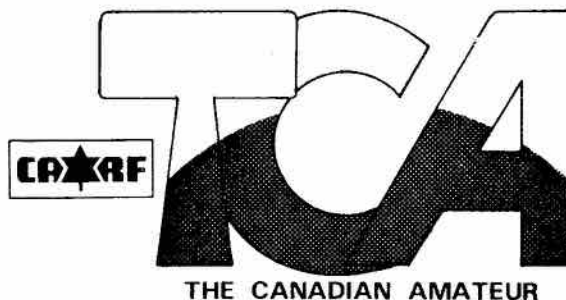
TCA - The Canadian Amateur is published in Canada 11 times per year to provide Radio Amateurs, those interested in radio communications and electronics and the general public with information on matters relating to the science of telecommunications.

Unsolicited articles, reviews, features, criticism and essays are welcomed. Manuscripts should be legible and include the contributor's name and address.

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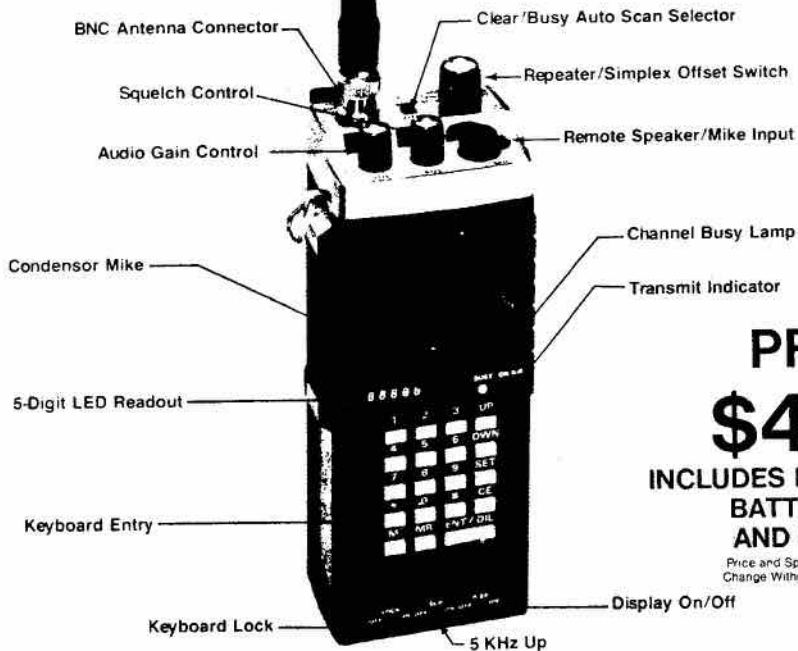


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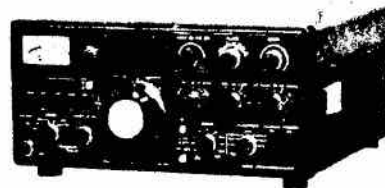
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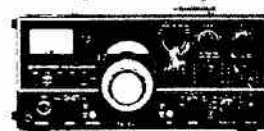
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The IC-551 has All Mode capability: USB, LSB, AM, CW, and FM. The operating mode is indicated by an LED display beside the frequency readout. The module to provide FM is optional. Scanning is a standard feature, which includes Program Scan and Memory Scan. Program Scan allows scanning between two programmed frequencies. Stop-On-Signal and Speed adjustment is also included. All scanning operations work in any mode. Reading and writing to the three memories is quick and simple. Complete 4 MHz coverage without a band select switch. Two built-in VFO's provide split frequency operation at no extra cost. The optional extras for the IC-551 are FM, VOX, and Pass Band Tuning. The IC-551D includes all of the options, except FM, plus 80 watts RF output. An external power supply is necessary for this model.

Specifications

GENERAL	
Frequency Coverage	: 50 ~ 54MHz
Operable Temperature	: -10°C ~ +60°C (14°F ~ 140°F)
Power Supply Requirements	: 13.8V DC ±15%, negative ground, or 117V/240V AC ±10%
Power Consumption	: Receive at min. audio level DC 0.9A AC 35W at max. audio level DC 1.1A AC 41W Transmit in SSB/CW modes DC 3.3A AC 98W in AM mode DC 3.0A AC 92W in FM mode* DC 3.3A AC 98W
Dimensions	: 111mm (H) x 241mm (W) x 311mm (D)
Weight	: 6.1 kg
TRANSMITTER	
RF Output Power	: SSB 10W PEP (1 ~ 10W adjustable) CW 10W (1 ~ 10W adjustable) AM 4W (0 ~ 4W adjustable) FM* 10W (1 ~ 10W adjustable)
Modulation System	: SSB/AM Balanced modulation FM* Variable reactance frequency modulation
Max. Frequency Deviation*	: ±5KHz
Spurious Emission	: More than 60dB below peak power output
SSB Carrier Suppression	: More than 40dB below peak power output
SSB/AM Unwanted Sideband	: More than 40dB down at 1000Hz AF input
Microphone	: 600 ohm dynamic or electret condenser microphone
RECEIVER	
Receiving Mode	: A1 (CW), A3J (USB, LSB), A3H (AM), F3 (FM)*
Receiving System	: SSB/CW/AM Single Superheterodyne (Triple Superheterodyne when Pass Band Tuning unit is installed) FM* Double Superheterodyne
Intermediate Frequency	: SSB/CW/AM 9.0115MHz (When Pass Band Tuning Unit is installed: 2nd IF: 10.75MHz, 3rd IF: 9.0115MHz)
Sensitivity	: SSB/CW/AM Less than 0.5 µV for 10dB S+N/N FM* More than 30dB S+N+D/N+D at 1 µV
Spurious Response Rejection Ratio	: More than 60dB
Selectivity	: SSB/CW/AM More than ±1.1KHz at -6dB Less than ±2.2KHz at -6dB (When Pass Band Tuning Unit is installed: less than 1KHz at -6dB) FM* More than ±7.5KHz at -6dB Less than ±15KHz at -60dB
Squelch Sensitivity	: SSB/CW/AM 1 µV FM* 0.4 µV
Audio Output Power	: More than 2 watts

551-\$749 FM-\$195 VOX-\$85 PBTUNE-\$169

551D-\$1125

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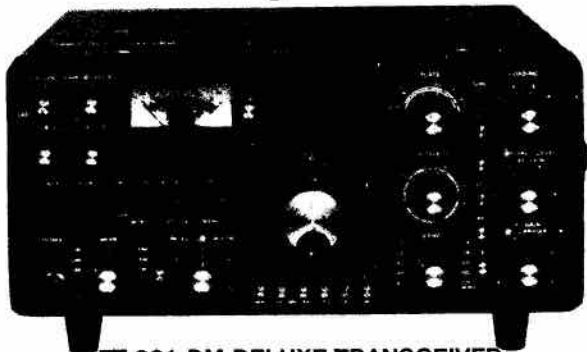
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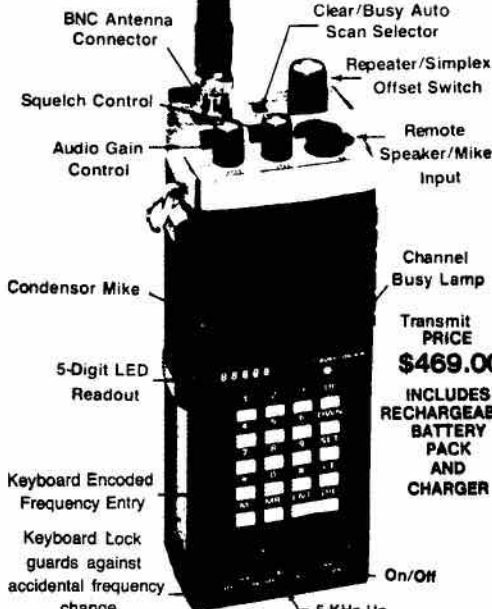
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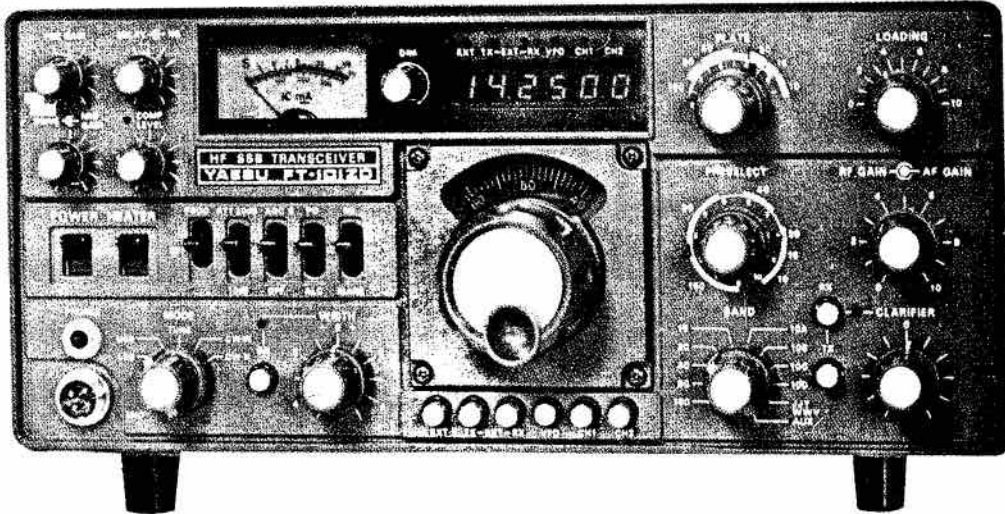
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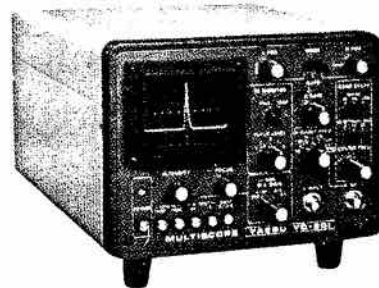
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CHIPS & BITS

By Charles MacDonald
Service Manager,
Compumart,
411 Roosevelt Ave.
P.O. Box 6132, Station J,
Ottawa, Ont. K2A 1T2.

A new computer column for Amateurs!

One day, someone is going to open his rig and find a chip with the label SY 6502 or TMS 1000 or something similar. When the owner looks perplexedly at the schematic, he will find said chip is called a microprocessor or CPU. The schematic symbol will show only a blank box with lead designations like A0, A1, D7, IRQ, R/W, RST and so on. Our friend has just run up against the 'computer on a chip' and will have to adjust to yet another jump in technology.

What is this magic little chip? How does it do its amazing act of finding VK4STX at exactly 7.4568745 MHz or translating a CW contact into plain text on a TV screen or beating the OM at Breakout when he steals the kids' new Christmas video game?

When we go to look at the microprocessor, we immediately come up with a language problem. Unfortunately, the computer has grown up for many years in a sheltered environment.

The first UNIVAC and IBM computers took up more floor space than the average house, and because of the heat from hundreds of vacuum tubes, required more air conditioning than a small office building. This physical limitation meant that 'The Computer' was put off in its own little room and only

'Computer People' got to use it.

The attitude that the computer was something only for specialists was somewhat justified in those days by the fact that just replacing tubes that had burned out took up an hour or two, and the machine was so expensive that the rental was over a thousand dollars a day. On the job training was simply too expensive to contemplate.

A well-known fact about technical people in general is that they tend to develop their own technical terms or buzz words. Hams are famous for referring to the QRM when they are really talking about nothing more than a noisy neon sign. Computer People have a whole glossary of terms that they have developed over the years. When low-priced microcomputers become generally available, computer hobbyists quickly latched on to the professional terms and now cherish them as their own.

Another major barrier to understanding computers is the feeling that somehow the computer is an intelligent machine capable of greater thought than Einstein. This is absolute bunk. The computer fools people into thinking it is smart by simply working very quickly. The computer is only capable of adding and comparing numbers but, since it can do several

hundred thousand additions per second, it gives the (false) impression that many things are going on at once.

The modern microcomputer chip is small enough to fit in a 24 or 40 pin dual in-line package and draws only a few milliamps from a five volt supply. A complete computer typically can be built on a single circuit card only 30 cm by 40 cm that will only draw about 50 watts. A complete microcomputer system can now be purchased for anywhere from \$250 to \$10,000 depending upon how fancy you want it, and the dedicated microprocessor has found its way into \$20 kids' games, \$500 Hi-fi equipment and \$1,000 up transceivers. (A dedicated microprocessor is one that spends all its time doing one job.)

Over the next several months we plan to explain some of the mysteries of the computer field. I hope I can help clear up the mystery of the world of bits and bytes and at the same time show you a few places that this technology can help you in your shack.

GOODBYE 220, AGAIN?

● As a result of WARC, look for FCC to drop code requirements above 30 MHz and to propose a marine mobile service of the citizens' band variety on 220 MHz.

LETTERS:

GL1L?

On Oct. 5, 1979, I made a 20 metre contact on CW. The call given was GL1L, QTH was Hayes, and the name was Jack. That is all I received before our signals faded.

If there is such an 'animal' I am completely stumped on this one and would appreciate any information I can get.

Unfortunately, I feel it was a 'snow job', but I am curious.

Jim Laird VE7EAJ
Terrace, B.C.

**Poor morse? Social call?
New country? Comments
anyone?**

IMPROVING TCA

I've been an Amateur for less than two years and, happy to say, have been a CARF member from the start. I read the monthly issue of TCA completely and find it a very useful and informative publication. Like almost everything though, I have a couple of thoughts which may improve the magazine.

First off, it is annoying trying to find the 'List of Contents', which seems to be located anywhere between pages 10 and 20. Why not put it on page 1? This would make for an easy reference especially when looking for specific articles.

Second, one article I feel could be more informative is The Canadian Contest Scene. I have only participated in one contest and found it very enjoyable. It was a club effort

and all preparations had been made before my arrival. If TCA could not only publish the dates of contests but also where to obtain duplicate logs, rules, etc., I'm sure there would be much more Canadian participation from newer Amateurs. After all, it's likely easier to join them than beat them on a contest weekend.

John O'Brien VE3KKB
Kingston, Ont.

Re 'Contents': It seems we have some mental telepathy at work, John. The same idea struck the TCA Production Committee, and the Contents will now appear on Page 1 in every issue. Your comments on contests have been passed to our Contest Editor; limited space, however, has to be considered.

THE AUTO-ALARM

I have been getting a lot of feedback from CARF readers about the Auto-Alarm article. We have tried two kinds of alarms here. The Amperite delay relay in my TCA article seems to be hard to obtain, so we are testing a number of solid-state boards which an American Amateur built.

What is important is that the London, Hensall and Goderich clubs have all chosen my suggested 941 Hz tone with 3 to 4 second delay. Dave VE3GSO wrote in the December London ARC bulletin: "I've proposed to all who have listened that the most logical tone to use is 941 Hz, the standard tone used for #,

0 and *. Because it is readily available, this 'bottom row' tone has gained rapid acceptance and will probably become the standard across Canada for emergency alert by Amateurs."

I'm glad to see that two other clubs have followed my lead in adopting the standard Auto-Alarm tone. The TCA article I wrote seems to have started something, eh?

Could you mention in TCA that anyone considering a tone alert alarm system should standardize on a tone of 941 Hz for 3-4 seconds? I am afraid that, unless something is suggested now, many different 'standards' will come into use and this is not a good idea. It would be advantageous to have one tone and one procedure for the entire country. Also, since one tone freq and not the double touchtone frequencies are much easier to generate and decode, the system costs less money. One does not need to own a touchtone pad - just an encoder that can produce a single 941 Hz tone. I am working on a PLL IC encoder which takes only a few parts and should cost only \$10 to make. This would enable many hundreds more to enjoy the protection of the various auto-alarm systems as many cannot afford \$70 for a T/T encoding mike. When I get the encoder perfected I will write it up for TCA.

It is of interest to note that, since I started the idea, there have been over 35 A-A

**TCA welcomes Letters to the Editor. Please send correspondence to Editor
TCA, 151 Fanshaw Ave., Ottawa, Ont. K1H 6C8.**

units built in the Goderich-Hensall-London area – all on the standard VE3CGU Auto-Alarm tone and delay. If we get this idea started correctly our systems could be used as a model for other clubs in the country.

I am willing to act as a central repository for references and inquiries on Auto-Alarm systems. I will answer any questions readers might have on the best way to set up their systems. I think this is a good idea that should spread

across the country once its value is realized.

Glen McMichael VE3CGU
Box 231
Goderich, Ont. N7A 3Z2
**The CRAG Co-ordinator,
VE3DWL, will broach the
idea to repeater councils.**

NET DIRECTORY

I would like to point out a few errors in the Net Directory as published in the December TCA.

The Muskeg Swap Net is no longer operational and the Laurentian Net is not off on

Sundays but meets daily. These errors have been appearing for several years now despite many attempts to change them.

Gord Woroshelo VE3EYW
Sault Ste. Marie, Ont.

The directory was an old one but deemed better than nothing. We would appreciate up-dates from others.

**Thanks for letters from
VE6BAZ and VE3CVF. Letters
re the exams will be
discussed with DOC officials
responsible for setting them.**



Canadian
Repeater
Advisory Group

Hugh Lines VE3DWL
53 Monterey Dr.
Nepean, Ont. K2H 7A9

John, VO1FX reports from St. John's that the VO1 entries in the repeater directory are not quite in order, and should appear as in the table directly below.

Also, John advises that he knows of no repeaters up in Labrador. If anyone has any different information, please let me know. All VO1 repeaters are 'open' access and all visitors are invited to use them.

Ernest, VE1BKY, in Dalhousie N.B. reports that the Dalhousie Amateur Club has a new repeater, VE1SMR, on

the air using the frequencies 146.040, 146.640.

From Mirabel P.Q., VE2DKU reports on a new repeater located in Brownsburg P.Q. (45.40.50 North, 74.25.53 west for you navigators). VE2RWC operates on 146.205, 146.805 with a power output of about 60 watts. Although an autopatch is not available yet, one is planned in the future. This is an open repeater as well, and the Carillon Radio Club invite anyone to use this machine.

Ray, VE3AQJ, in Thornhill, reports on a new six-metre machine on the air in the

Toronto area. He is the licensee, and advises that VE3SIS is in operation on 52.23 and 53.23. Ray also points out a couple of corrections in the present repeater listings: The listing for VE3IZU in Georgetown should be changed from 53.13/52.13 to 52.13/53.13. Also, in the Province of Quebec, change the listing for VE3JGP in Hull/Ottawa to read 52.76 as an input frequency. Ray rightly points out that the present listed frequency of 56.76 is just a little bit out of band!

Your editor has been spending much of his time travelling for the past while, and that has been the reason for the 'sporadic' columns. Hopefully that will come to an end soon, and things will be back to normal.

Corner Brook	VO1MO	146.34	146.94
Gander	VO1AV	146.46	147.06
Grand Falls	VO1CNR	146.34	146.94
St. John's	VO1GT	146.34	146.94
St. John's	VO1EN	146.46	147.06

CONTEST CALENDAR

- Feb. 2-3 RSGB 7 MHz Phone
- Feb. 16-17 ARRL DX Contest CW
- Feb. 23-24 RSGB 7 MHz CW
- Feb. 23-24 French Contest Phone (see Dec. 73 Magazine)
- Mar. 1-2 ARRL DX Contest Phone
- Mar. 8-9 Commonwealth Contest.

As many of you know already, the ARRL have changed the rules of their annual DX contest significantly this year, bringing it more in line with the CQ WW in some respects.

Now single op, single band entries are recognized as such, with the old 'high band'/'low band' nonsense having been done away with. Also it is permissible for multi/single stations to use a 'spotting' transmitters to pick up additional multipliers. DX to DX contacts are now permitted, but we Canadians are still considered to be no different from Americans. Although useful for multiplier credit, QSO's between Canadian and U.S. stations have no point value. I, for one, find the idea of being considered no different than an American annoying at best and, at worst, it seems to indicate a lack of appreciation of the extent of our pride in this country. Oddly enough, although very much a part of Canada, St. Paul's Island and Sable Island are worth QSO points, while the U.S.A. is not.

RSGB 7 MHz Contests

Periods: 1200Z 2 Feb. to 1200Z 3 Feb. for Phone. 1200Z

23 Feb. to 1200Z 24 Feb. for CW.

Bands: 7 MHz only.

Classes: Single op stations only.

Exchange: RST plus serial number (e.g. 57001, 579002)

Scoring: 15 points per U.K. station worked (inc. GD, GJ, GU), multiplied by the total number of U.K. prefixes worked. GB prefixes do not count. QSO points multiplied by prefixes worked gives you your final score.

Entries: All logs must include date, time (Z), call, and exchange sent and received. Entries must include a signed declaration stating all rules of the contest and radio regulations were followed. Entries must be sent to: RSGB HF Contest Committee, c/o P.A. Milne, 28 Scotch Rd., Litchfield, Staffs., WS13 6DE, U.K. and received no later than 29 March 1980 for Phone and 12 April 1980 for CW.

ARRL DX Contests

Periods: 0000Z 16 Feb. to 2400Z 17 Feb. for CW. 0000Z 1 Mar. to 2400Z 2 March for Phone.

Bands: 1.8 through 28 MHz bands.

Classes: Single op/single band; Single op/All band; Multi-op/single transmitter; multi-op/multi transmitter.

QRP stations running less than 10 watts are in a separate class.

Exchange: RST and province or territory (e.g. 579QUE), DX will send RST and approximate power input (e.g. 58150).

Scoring: Every DX QSO is worth 3 points, Canadians and Americans are worth no

points, but may be worked for multiplier credit. Total score is the total QSO points on all bands multiplied by the DXCC countries worked on all bands.

Entries: Logs must include date, time (Z), call, exchange sent and received, and dupe sheets for any band where more than 500 contacts have been made. All entries must be received by April 2, 1980 at ARRL, 225 Main St., Newington, CT 06111, USA.

Commonwealth Contest

Period: 1200Z 8 March to 1200Z 9 March.

Bands: The bottom 30 kHz of the 3.5, 7, 14, 21 and 28 MHz bands, CW only.

Classes: Single op stations only, either single or all-band.

Exchange: RST plus serial number (e.g. 579001, 579002)

Scoring: Each QSO with a Commonwealth country is worth 5 points, and 20 bonus points may be added for the first three contacts with each Commonwealth call area. Call areas in Canada, Australia and New Zealand are counted as separate areas, but all the U.K. is only one. There are no multipliers.

Entries: Separate logs must be used for each band, and logs should include date, time (Z), call, exchange sent and received, and points claimed per QSO. A checklist of call areas worked on each band, and points totals for each band must be included. Entries must be received by May 12 1980 and sent to: D.J. Andrews G3MXJ, 18 Downsview Cres., Uckfield, East Sussex, TN22 1Ub, U.K.

CBC plans broadcast station on 75 metre band

After hearing about some rather wild rumours circulating in the U.S. about Canadian broadcasting intentions in the 3950-4000 kHz section of the 75 metre band, CARF News Service interviewed a senior Canadian Broadcasting Corporation official to get at the facts.

As a result of frequency re-allocations at WARC '79, the CBC plans to use one or possibly two frequencies in that segment for its Sackville, New Brunswick transmitters. The starting date, which could be as early as June 1981, depends on completion of a new curtain array, beamed to the Canadian North.

The new facilities are designed to augment those already serving the people in those regions with programs in English, French, Cree and Inuit.

The impact on U.S. operators may not be as much as first thought, as the stations will have a band spread of only eight kilohertz. Canadian operators could be affected if the U.S. Amateurs at the top end are displaced to any extent and they then edge down toward the other end of the band and everybody shifts down with them. The joke about the elephant and the mouse sleeping in the same bed could then take on a new meaning as it did in the first few weeks of the U.S. phone band expansion from

3800 to 3775 kHz a few years ago. That problem, however, sorted itself out after the initial pandemonium and a number of blood-curdling threats made by 'shifters' and 'shiftees' alike.

The CBC will use 250 kilowatts fed to a curtain antenna oriented to the northwest. With that power, however, the broadcasts will certainly be heard to some degree in the northeastern U.S. states, off the back of the beam. It may well be readable in Florida as well, thus allowing the annual Canadian migrant snowbirds among us to learn at first hand, from CBC newscasts, just what they are missing in winter weather.

At WARC '79, the Canadian delegation argued for broadcasting in this segment of 75 metres on the basis of technical reasoning that the state of the sunspot cycle made poor propagation for northern service in the present crowded six and nine megahertz bands. Although support for broadcasting in 3950-4000 kHz was originally given by the U.S., it was dropped due to the intervention of Mexico, which wished to keep that slice for its fixed service, free of broadcast station interference. Canada then, along with Greenland, had a footnote or exception added to the allocation, which permits both to operate broadcasting stations in the

top 50 kHz. The new international frequency table for Region 2 of the International Telecommunications Union, effective January 1982, shows this part of the band as allocated on a primary basis to Amateur, Fixed and Mobile services, with the footnote adding Canadian broadcasting on a primary basis as well.

The CBC official emphasized that it will strive to keep any disruption to other services at a minimal level and that, after operation begins, adjustments to the beam pattern might be possible if they are found necessary to meet this undertaking. □

● Sources in the U.S.A. commenting on the reaction to the WARC allocation of a 75 metre slot for the Canadian Broadcasting Corporation short wave services have informed CARF News Service that some prominent U.S. Amateurs have told club gatherings that our People's Radio will use the yet-to-be-built station "to be used to aim broadcasts at Louisiana in order to convince the French-speaking people there to secede from the United States when Quebec does". Apparently Civil War memories and ignorance of the realities of Canadian politics go hand-in-hand in some American minds!

DX

By Garth Hamilton VE3EUP
 P.O. Box 1156
 Fonthill, Ont. L0S 1E0

For some of the older DXers in Canada, the author's name and call will be familiar from days gone by. For those of you who were not active at the peak of the last sunspot cycle, here is a brief background:

Garth was first licensed in 1962 while serving with the RCN where he operated club stations ashore and afloat. Most notable was VE0NV, HMCS Haida, where fully half of the radio types aboard were licensed. 1968 brought a big move to Africa, where for the next five years he used the call 5H3LV. Several DX-peditions to the islands of Zanzibar provided plenty of excitement.

On return to Canada, he reverted to VE3EUP, a call originally issued to him in Kingston in 1964 after leaving the RCN. In his travels around the country he has held a number of calls, including VE2EUP, VE2VY, VE7AUE and VE7PT.

In writing this column, it would help if I knew what topics you would like to see covered. What information do you need? Some topics could be covered monthly, and others occasionally.

First, I would like to cover QSLing. This is the end result for most DXers, getting that rare card up on the wall. There are a few rules which, if followed routinely, should produce satisfying results. They are:

1. Date and time must be in GMT (Greenwich Mean Time).

2. You must enclose an SASE (self-addressed stamped envelope) when requesting a QSL from a Canadian QSL manager or DX-pedition group from Canada.

3. You must enclose an SAE when requesting a QSL from outside Canada, and include the means of covering the return postage (in IRC's).

To elaborate on these suggestions further: It is a good idea to have in your shack a clock which stays on GMT time and includes a calendar with at least the date and, if possible, the day. This helps eliminate the problem of correcting the local time to GMT. If you make a mistake, the DX station will most likely have worked 60 or more stations in the hour, so if you are out by an hour he is not likely to look further than ten calls either side of the time given. So, it is important to be correct within + or - two minutes.

During a contest it helps to give him his serial number when QSLing; the one he sent you, not the one you sent him.

The SASE and SAE are self-explanatory. The return postage can be covered in several ways. The most common is the IRC (International Reply Coupon). They can be purchased from your local Post Office. The person who receives the IRC can redeem it for postage from his country to Canada. This is true for countries who are members of the International Postal Union. Soviet Block countries are not in this group, plus a few others. Your post office will be able to tell you which are members.

IRC's are also available from QSL managers and DX-pedition stations for the money they would receive if the coupon were redeemed in the post offices which in Canada is 35¢ each. There

January						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

N4XX Propagation Forecast Jan 20 to Feb 17

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
20-H	21-H	22-H/L	23-L	24-L/B	25-B	26-L
27-L	28-L	29-H	30-H/L	31-H	01-H	02-H/A
03-A	04-A	05-A	06-A	07-H	08-A	09-L
10-L*	11-L	12-H	13-H/L	14-L	15-H	16-H
17-H						

are some who sell them for less, but usually 35 cents is the current rate. If you purchase them in the post office, you pay more than twice this amount.

The sending of money (currency) overseas is tempting due to the cost of IRC's. However, it should not be done, for in most countries it is illegal to receive or hold foreign currency regardless of the means used to receive it. There are very few countries in the world where currency controls do not exist. The countries which do not have currency controls are mostly in North America and Western Europe. One good example is A51PN who

has, on several occasions recently, told American Amateurs to stop sending money as it was illegal to have foreign money in Bhutan.

The last thing on QSL's. Please keep at least one SASE envelope at your QSL Bureau Manager's desk so that he can send them to you. Once you have received a QSL, please answer it either direct or via the Bureau.

Regarding the Russian SWL cards you receive: in the U.S.S.R. every candidate to become an Amateur must be an SWL first, and must show so many confirmations of stations heard before he can qualify for an Amateur licence. So please, take the

time to answer their requests.

This month I will also deal with the continent of Africa, and what frequencies and times you would most likely find propagations to Africa.

Ten metres opens in the East around 12Z or shortly after sunrise and lasts to well after sunset with some West African stations still good copy at 24Z. The peak is about 16-19Z.

Fifteen metres opens at about the same time as ten, 12Z, but lasts longer. There have been some nights recently when 15m has not closed and you could work Africans all night long. I have also worked via long path, on 15m to West Africa 5T5 at 10Z 59+ and to 5Z4 at 11Z 5 x 6 using a TH-6 at 60 feet from VE3. Normally 15m seems to close to Africa, as the stations close to go to bed around 24-01Z. The peak seems to be about 18-21Z.

Twenty metres: 02-05Z short path 10-14Z long path (over the Pacific Ocean beam 180 degrees from direct heading) 17-24Z short path.

Forty metres opens about one hour before sunset until midnight local times. The way to figure this one is to find the time of sunrise in the area you want to work. Then from one hour before local sunset until one hour after his sunrise you will have propagation with peaks at your sunset and his sunrise. Eighty metres is much like 40m, but opening about 30 minutes later and much more noticeable peaks at your sunset and his sunrise. The band will also close sooner than 40m will.

Please write with your comments and requests; the address appears at the top of this column.

DOC asks for comment on special calls

CARF was recently asked by DOC to comment on "the need for special prefixes and an indication of the type of control (the DOC) should apply to their assignment and use".

Clubs and individuals are invited to make their views known to CARF, which will forward them to the Department. Comments should be mailed to the Federation president, Bill Wilson VE3NR, 1427 Cavendish Rd., Ottawa, Ont. K1H 6C1 before March 15.

The objective of the Department's query is to determine if its present policy for special call sign prefixes "to signify special occasions"

requires amending. The current policy is "to assign a special prefix to only one Amateur station at the site of significant Canadian events of national interest having a cultural or historical concept, whether or not it pertains to Amateur radio. If the significant event is an anniversary, a special call sign is issued for those of 25 years or more. Normally, the prefix is assigned for the duration of the event, with a maximum of one year".

Comments expressing the view that special prefixes for special occasions should be available should include reasons and conditions under which they should be granted. □

Amateur Radio

In late August I had the opportunity to observe first hand, what and how Amateur radio works in Holland.

First off, let me tell you that the PA's and PE's are just as eager to show a visitor around as we - perhaps even more so! I was only a few hours in Holland when I was inundated with calls and offers to come and pick me up and drive me all over Holland to visit groups and homes.

Second, out of necessity, the Netherlands Amateurs are builders. You name it and they've built it - out of scrap, dump and surplus equipment. I even admired a homebrew 2m synthesized rig that anybody would be proud to own. It was about the size of my Standard C828 M 2m rig. There is always a beg, borrow and steal scramble going on for parts, etc.

And now, let me point out some basic differences and similarities between 'us' and 'them'. About 80% of the Netherlands Amateurs are on 2 metres and higher, for reasons that will become obvious later in this article. Yes, they have repeaters, about six, spread throughout Holland which, by the way, has an area that would nicely fit into Lake Ontario with room to spare.

The most interesting thing I observed was the use of

their transponder, which I am sure is Holland's answer to the Amsat satellites! It has a fairly wide bandwidth and can accommodate at least 10 parties of two or more. Transmit 75 cm, receive 2m. It was a very interesting demonstration. At one particular moment, there were at least 12 parties involved in a round table discussion.

Because Holland has a very mild climate, temperature inversions are not uncommon and, therefore, fairly long distances are bridged on two metres when the conditions are right. You will also find that most Amateurs have optimized their 2m and 75 cm antennas. As you find three-element beams in Canada and the U.S.A., so you find arrays of stacked Yagis for two metres in Holland. One of the reasons is space; a second is that towers for HF have to be passed by the local government. This is a very involved procedure and can take up to five years to get a permit! So, not many Amateurs have the patience for this. Another reason for the popularity of 2m is that your first licence, called the 'D' licence, allows you six channels on 144-146 MHz (no 144-148 in Holland) simplex only - no repeater use - 20 watts out, voice only.

The requirements for the 'D' licence are rather simple.

No code required, 40 multiple choice questions on theory, on par with the novice licence in the U.S.A. There are also ten questions on rules and regulations. The choice is between three answers given. Pass is 70%. Exams are held twice per year at a central location and the fee for this exam is about \$20.

The next highest licence is the 'C' licence. Again, no code is required and the theory and regulations are a bit more difficult, but easier than our Amateur licence. The main difference between our licence and the 'C' licence is that on the exam there are questions on T.V., RTTY and FAX. Having passed this exam, the 'C' licence holder is now privileged to use the full two-metre band and up; all modes - 50 watts maximum, but no CW. Again, there is an exam fee - about \$30 this time!

The next upgrading licence is the 'B' licence, which is rather tough to obtain. Theory and regulations are on par with our Advanced Amateur licence and this time the four answers to the 40 multiple choice questions are very closely related, so it is rather difficult just to guess! The code requirement is eight wpm receive and send, using a straight key only.

in PA and PE

By Tome Van den Elshout VE3LNT

Text is sent in random groups – plain 'Dutch' and English. The sending part seems to be the tough part because it is recorded on a paper strip and even though it might sound good, if on the paper strips the dots and dashes do not stand up to criticism, chalk up a failure! And what do most Netherland Amateurs do after they receive a 90% or more? (90% is a pass in code) why of course, they go out to Germany and buy a beautiful electronic keyer – with memory – from Siemens!!

The exam fee is \$30.00, but the lucky holder is now allowed all bands – all modes – so there is no requirement for a year of CW. Power out – 50 watts maximum!

The next and final licence – you guessed it – is the 'A' licence. A little more difficult than the 'B' ticket. For that reason the exam fee goes up to about \$35.00! Code requirement is 12 wpm. This licence gives the same privileges as the 'B' licence except that the 'A' licence holder is now allowed the maximum output of 150 watts. Funny though, I did notice a trend to linears over there by some of the more affluent Amateurs!!

And by the way, you don't have to take the exams in order; you may try any

licence at random; so if you think you are good, by all means, go directly for the 'A' licence!

The exams are held twice per year, including code. There is no extra opportunity to try the code at your friendly local DOC office. So, we had better count our blessings here.

The exam committee however is jointly composed of members of the "VERON" (like our CARF) and government officials, so CARF and DOC please take note! This would make a very good cooperation I would say!

You might have guessed that the Dutch are fussy about the airwaves. Another good example of this is that before a station goes on the air, it will be inspected for example, third order products, unwanted modulation, key clicks, parasitics, etc. A whole gamut of tests are done at the station. If it is passed, a sticker will be applied to the equipment and a written permit issued. If you ever visit the Netherlands with your own equipment, using their "guest licence" which they will issue if you give them enough advance notice, your set too will have to be tested!

Oh, and before I forget, Netherlands Amateurs are allowed to play music on their rigs, albeit for testing pur-

poses only.

The licence bureau is part and parcel of the official government run telephone company. So, third party traffic is absolutely taboo, forbidden and banned! And is that ever annoying for Canadians. Maybe CARF could do something about that, especially as I have a personal stake in this. I still have family there!

The Dutch do have a problem with parts etc. so the VERON, stocks a complete assortment of ready-to-build kits. They are not in competition with Heathkit as their kits are usually such items as pre-amps, frequency counters, etc. specifically for Amateur use only and devoted by their own members.

In passing I would like to mention the Netherlands' answer to CB. As of January 1, 1980 it will be legal – 500 mW – FM – Type approved – exam in rules and operational procedures. I hope they will be successful.

Finally, for RTTY fans, every Friday 18:30 UCT on 14.1 MHz, 45 Baudot, there is QST de PA0AA from the VERON; it is in English and they would like to hear from you. □

Tom VE3LNT in 'Splatter' – the North York, Ont. ARC.

CARF meets DOC on exams

Bill Wilson VE3NR, President of CARF, met in Ottawa with W.W. Scott, DOC's Director of Regulations Development, on Dec. 27 to discuss Amateur examinations. The following is the gist of CARF's presentation.

The first CARF national Amateur symposium in November 1977 recommended that the Amateur exams be upgraded. The symposium in Calgary the following year

agreed with that conclusion. DOC did just that and, as predicted, the Amateur Experimental Service has benefited. Last month, the 1979 Symposium in Montreal recommended that the present level be maintained.

Since the improvement in the exams, only 13% of all those who wrote to CARF thought the exams were too tough. Of that 13%, roughly two-thirds were non-Ama-

Well done!



Some of the Canadian delegation, including DOC and some industry personnel, at a plenary session of WARC '79. Third row back: Al Heavenor, Wayne Longman, Jeff Beddingham VE3BDA; Second row: Lorne Dougherty, Bud Punchard VE3UD (Amateur advisor), Al Adey, Don Fraser VE3CDF, Murray Hunt; Front row: Bob Eldridge VE7BS, Vic Decloux VE3LVD, Chris Siocos, Ed DuCharme.

teurs. About 20% of those writing thought that all that was required was more study, but they did not complain about it.

About 44% of those who wrote commented on the syllabus and asked that more detail be given in the DOC publication TRC-24 so that both instructors and students would be better informed as to DOC's requirements. Training could then be more

closely aligned to the exams and the requirements.

Around 25% of those who wrote were concerned about the nature of the questions and said that too many were 'tricky'. CARF is pleased to note that our earlier representations on this point have been taken into account and that in recent months we have not received this kind of comment.

Interestingly enough, all

of the clubs writing to CARF requested that the code sending tests be resumed.

A few Amateurs suggested that clubs offer to help in the giving of exams to defray costs and to enable exams to be given at more convenient times so applicants would not lose pay. In effect, they confirmed the Calgary Symposium's recommendation on this matter.

A few wrote in to say that they had studied on their own, had passed, and could not see the reason for all the commotion! CARF noted that those who had written to say that they studied carefully, reviewed their courses and taken a 'dry run' at a few hundred typical questions generally passed first time with good marks.

The recommendations of the 1979 CARF Symposium in Montreal agreed generally with the views expressed by Amateurs and others in their letters to the Federation. Taking into account all representations received, the Federation recommended to DOC that:

1. The levels of difficulty in examinations should be maintained, as should the clear difference between the Amateur and Advanced Amateur exams.

2. The syllabus should be expanded to provide more detail for the guidance of instructors and students and to indicate the difference in levels as mentioned above.

3. Exam questions should be checked to ensure that there can be no misunderstanding of their content and intent.

4. Clubs should be called upon to assist with the conduct of examinations so

It was shortly after WARC '79 was announced that your Federation asked the former Minister of Communications to include on the Canadian delegation an Amateur who could advise the team on Amateur matters. As a result, Bud Punchard VE3UD was nominated to the delegation. The choice of Bud could hardly be a better one. He not only had international experience and an excellent, lengthy background as an Amateur, but his business career in the telecommunications world and the work he did as chairman of the CARF Working Group enabled him to contribute fully to the work of the delegation.

CARF President VE3NR wrote the following to Bud:
"Dear Bud,

On behalf of the Radio Amateurs of Canada, I am writing to tell you how much we appreciate the work you did for us in preparing for the World Administrative Radio Conference, Geneva, 1979, and in representing us at the Conference as a member of the Canadian Delegation.

As a delegate to WARC '79, you faced numerous demands that were quite different and much more stressful than those normally faced in everyday business at home. Then, too, you gave months of your valuable personal time to do all this work. Your contribution to the future of Amateur Radio has been very great.

We thank you sincerely for all you have done.

Regards,
W.J. Wilson VE3NR
President

A vote of thanks, too, on behalf of the members and executive of CARF, and for that matter, all Canadian Amateurs, to members of the CARF WARC '79 Working Group for putting together the genuine Canadian proposal for Amateur frequencies which was submitted to the government committee on WARC '79.

Members were Tom Atkins VE3CDM, Steve Chisholm VE4AI, Frank Merritt VE7AFJ, George Davis VE3BBW, John Henry VE2VC, Ralph Hindle VE2BMH, Cary Honeywell VE3ARS, Warren Huget VE3RU and Art Stark VE3ZS. Secretary was Doug Burrill VE3CDC.



that they could be given at more convenient times (including weekends) and so that candidates would not be forced by unforeseen demands of their jobs to miss exams held on their working days. This would also permit exams to be held in centres where it would be otherwise impractical for DOC to hold them.

5. The examination books should be separated so that each level will have its own book. This would ease the

initial surprise that the large books now create. Further, it would be helpful if the books could be printed in both working languages side-by-side. Language difficulties would be minimized by doing this.*

As mentioned in a letter to DOC last March and recommended by the Montreal Symposium, CARF said they would be pleased to organize a committee to represent the Amateur community on matters concerning exams, syllabus

content and examination procedures should DOC find this to be helpful.



* Note: Those writing the French exams will benefit from the fact that, in line with this recommendation, not only is the translation now done by a technically qualified translator, but where the term in French is dissimilar or liable to be an uncommon expression, the English equivalent is given...Ed.

News Briefs

● The dissolution of Parliament has not only meant a delay in any new Radio Act (as reported last issue), but will also affect implementation of the deletion of the 15% tariff on Amateur transmitters, receivers and transceivers. Although the ending of this duty was recommended by the Tariff Board earlier in 1979, action by Parliament is needed to remove it. Let's hope that all of those letters written to the former Minister of Finance were passed down the pipe to the bureaucrats who will advise the next politician to hold that portfolio.

● Maritime province Amateurs are being polled to determine whether they want distinctive call sign prefixes for each province. The 1980 Maritime Convention Committee in Sydney, N.S. is co-ordinating this opinion poll, the results of which will be turned over to the provincial societies of Prince Edward Island, Nova Scotia and New Brunswick by April 1, 1980.

● The new director of the Canadian Division of the American Radio Relay League will be Mitch Powell VE3OT. It is reported that, with about 1600 votes, he doubled the votes cast for Bill Loucks VE3AR.

● George Collins VE3FXT recently worked Ottawa Amateurs on 20 metres, using his exotic call HS4AMA, in Thailand. He is rumoured to be trying for permission to operate from Communist China (BY) sometime this spring.

● The Canadian Radio Technical Planning Board, which is an advisory body to DOC, has re-vitalized its interference committee. Representation will broaden and a point interesting to Amateurs is that the problem of radio interference in both non-radio and radio equipment will be investigated. CARF president Bill Wilson VE3NR attended the Board's annual December meeting in Ottawa. A good number of the industry representatives on the Board are Amateurs.

● In Ottawa, the DOC has announced that it is extending the date for public comment on the uses of the 890 MHz to 10.68 GHz spectrum to March 1, from the original closing date of Dec. 21.

TCA EDITOR NAMED AMATEUR OF THE YEAR

TCA Editor Doug Burrill VE3CDC was voted 'Amateur of the Year' by the Ottawa Amateur Radio Club at its December meeting. In presenting the club's Certificate of Merit "in recognition of dedication and outstanding contribution to the advancement of Amateur Radio", club president Larry Bradley VE3CRX recapped Doug's long involvement in Amateur organizations and publications, beginning with the Saint John, N.B. club in 1947. In thanking members of the club for the honour and for their standing ovation, Doug stressed that while TCA and CARF are a joint effort of himself and others, in the end their success was a direct result of the support of the Amateurs of Canada.

Canada Day Contest

The first ever running of the annual CARF Canada Day Contest last July 1 was only mildly successful, due largely to the fact that it was conceived in the spring and, consequently, the advertising of the contest was rather limited. The next one, on July 1 this year, will be advertised in all the major Amateur Radio magazines and this should boost participation.

Congratulations go to 1979 winner Mike Holley VE7AVM who more than doubled the runner-up score made by VE3VCA. The Carleton University Club in Ottawa, operating as VE3TCA, took multi-single honours. An excellent single band score was posted by VE6ABC (14 MHz).

It was clear from reading the logs sent in that some very active stations did not send in theirs, like one VE7 who made over 300 contacts. The best way to ensure the continuation of this contest is to send in your log; besides, you may find that you did a lot better than expected.

Both CARF official stations VE3VCA Kingston and VE3TCA Ottawa were very active.

With the high solar flux values next year it should be very easy to beat the scores listed here. Note, too, this contest is also a great opportunity to make contacts which count toward the five-band CANADAWARD. □

VE7BBQ

Class	Call	QSOs	Pnts	Mult	Score
A	VE7AVM	234	1905	28	53,340
A	VE3VCA	106	934	24	22,416
A	VE1ABU	106	808	20	16,160
A	VE5QY	103	958	14	13,412
A	VE3KK	56	479	22	10,538
A	VE2HY	43	340	15	5,100
A	VE1EJ	44	350	12	4,200
A	VE3LEU	32	320	10	3,200
A	VE7IQ	31	212	11	2,332
A	W6MUL	5	50	3	150
28	VE1BUG	205	394	5	1,970
14	VE6ABC	170	1547	14	21,658
14	VE7CRU	116	548	9	4,932
14	VE3CEF	9	90	5	450
MS	VE3TCA	251	1572	37	58,164
MS	VE7CUZ	54	513	25	12,825
MS	DA2BS	47	470	12	5,640

Operators:

VE3VCA - VE3EW op

VE3TCA - VE1BJC, VE2BDZ, VE2DZE, VE3 JLG, VE3JMX ops

VE7CUZ - VE7CUZ, VE7CUS

DA2BS - VE7DGM, VE3LAL, VE4ABO ops

A = all band 28 = single band

MS = multi-single

SOAPBOX

COMMENTS FROM PARTICIPANTS

"Generally, the level of activity was surprising, especially considering the short lead time and scant publicity" - VE3TCA.

"Had a good time but didn't lose much by working DX between VE contacts" - VE1ABU

"There didn't appear to be many VE's participating in the test" - W6MUL

"Makings of a good contest, needs more publicity prior to contest day" - VE7AVM

"Nicely paced contest and hopefully CARF will consider holding this one again next year" - VE2HY

"It was disappointing that only two of the stations we worked knew of the contest, and only one was calling CQ contest." - DA2BS

"Never got so many Canadians in the log at once before" - VE3VCA

AMATEUR EQUIPMENT DELIVERED TO YOUR DOOR

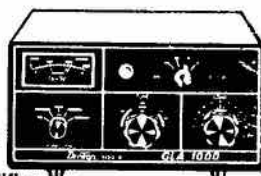
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MFJ-941B Versa tuner II

This accurate unit has SWR and dual range wattmeter, antenna switch, built-in balun, 300W RF output. Matches everything from 1.8 thru 30 MHz. You can use just one antenna and increase the useable bandwidth. Has SO-239 connectors. Mobile mounting bracket.

\$124. postpaid.



DENTRON GLA-1000 linear amplifier

Freq. coverage 80 to 10 meters, covers most MARS freq., RF drive: Max. 125, power consumption: 117 VAC 50/60 Hz 12.5 Amps, factory fused at 15 Amps. 234 VAC 50/60 Hz 7 Amps, DC input: 1 KW CW and 1200W PEP SSB. Final tubes 4D-50A tubes (6LQ6).

\$ 589. List. Call for deal



KENWOOD TS-700SP all mode 2m transceiver

Covers the entire 2 meter band. SSB, CW, FM, AM, and semi-break in CW, side tone monitor, digital frequency readout, receiver preamp and 600 KHz repeater offset operation within all 2m repeater subbands including the new 144.5-145.5 MHz. 10 watts RF output complete with AC/DC power supply.

\$ 1199. Free mic!!

YAESU

YAESU FT-207R
synthesized Handi-Talkie
144-148 Mhz, 5 KHz steps,
output: 2.5W hi/200 mW low,
4 memories plus program-
mable offset, prior ch.,
memory band & auto scan,
keyboard encoder freq. entry,
2 tone input from keyboard,
keyboard lock, programs odd
splits, auto. battery saver for
LED, rubber flex antenna & 15
hr. wall charger.



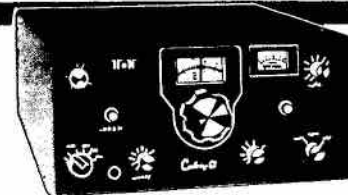
\$479. List Call for deal



DRAKE TR/DR7 general coverage digital R/O transceiver

Covers 160 thru 10 meters, reception from 1.5-30 MHz continuous, 0-30 MHz with optional Aux-7 modes: USB, LSB, CW, RTTY, AM equiv., true passband tuning, RIT, built-in RF wattmeter/VSWR bridge, SSB 250W PEP, CW 250W AM equiv. 80W. Power supply required for AC operation.

\$2098. In stock



TEN-TEC Century 21 CW transceiver

Full break-in, 70 watts input, all solid state, built-in speaker, receives CW or SSB but transmits CW only, overload protection, offset receiver tuning, adjustable level sidetone, built-in regulated power supply. Crystals are provided to cover the 80 thru 10 meter bands.

\$ 539. In stock



CDE Ham IV antenna rotor

Pinpoint accuracy with snap action switched wedge brake and rotational controls. Tower mounted only. Turns 12 sq. ft. of antenna. 8 conductor cable required.

\$239, Special!



KENWOOD TS-120S HF transceiver

No tune up! With digital display, cooling fan, IF shift, protection for the final transistor, VOX, noise blanker, 25 KHz marker, 80-10 meters, WWV, modes: SSB and CW, 200W PEP SSB, power requirements: R.O. 7A 13.8 VDC, T. 18A 13.8 VDC. Size: 3 1/2" H x 9 1/4" W x 13 1/2" L.

\$ 1049. Call for deal



KENWOOD TS-180S solid state HF transceiver

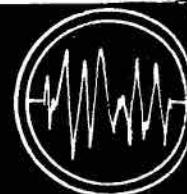
Covers 160-10 meters, digital frequency control with 4 memories and manual scanning, 200W PEP/160W DC 160-15 meters and tunable noise blanker, dual RIT (VFO and memory/fix) SSB, CW, and FSK, 13.8 VDC operation, and built-in digital display to show VFO freq. and difference between VFO and M-1 memory freq.

\$ 1659. Call for deal

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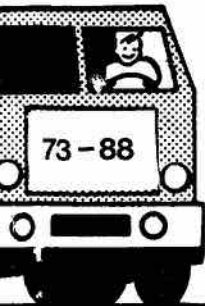


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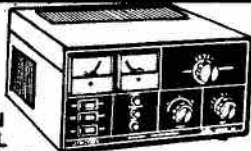


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DENTRON DTR-2000L 2000W precision linear amplifier

Features a Broadcast proven 8877 tube, freq. coverage 160 thru 10 meters, covers most MARS freq., modes: USB, LSB, CW, RTTY, SSTV, power requirements: 234/117 VAC 50/60 Hz. RF drive power 125W max and 65W RMS min for 1 KW DC input. 1.8-21 MHz 2000W PEP.

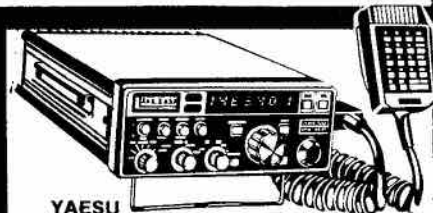
\$ 1699 In stock



YAESU FT-101ZD HF transceiver

Covers: 160 thru 10 meters plus WWV, modes: LSB, USB, and CW, built-in power supply, digital and analog frequency readout, 6146B final tubes, RF speech processor, variable IF bandwidth, noise blanker, heater switch, VOX, attenuator 10 dB or 20 dB selectable.

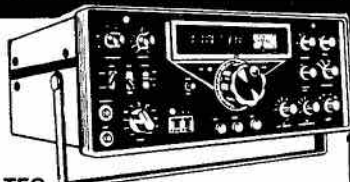
\$ 1299 List Call for deal !



YAESU CPU-2500RK 2m FM transceiver

With 800 PLL ch., automatic scan over entire 2m band, 4 memories, tone burst, 25W hi/3W lo, 13.6 VDC at 8 amps, freq. coverage 144-148 MHz. Keyboard mic allows remote input of memory or dial freqs., up/down scanning control, aux. repeater split selection to 4 MHz, and 2 tone input for autopatch or control link.

\$ 725. List Call for quote !



TEN-TEC Omni D Series B HF transceiver

Totally solid state, 200W all bands with 50 ohm load. Covers 160 thru 10 meters. Features digital readout, VOX and PTT, 4-position CW/SSB switch 8pole crystal filter, crystal calibrator, notch filter, zero beat switch, SWR bridge, adjustable sidetone, operates on 12 VDC for mobile. Full break-in CW.

\$ 1735. In stock



NEW KENWOOD TS-520SE High Quality HF transceiver

200 watts PEP SSB, 160 watts DC CW, 160 thru 10 meters, noise blanker, 3 position amplified-type AGC, RIT, 8 pole crystal filter, built-in 25 KHz calibrator, VOX, PTT, MANUAL operation, speech processor, semi-break-in CW with sidetone, low power tune up 20 dB RF attenuator and built-in speaker.

\$ 929. In stock

BENCHER BY-1 Iambic paddle

The Ultimate iambic paddle. Features solid silver contact points, full range adjustment, non-skid feet and heavy steel black textured base.



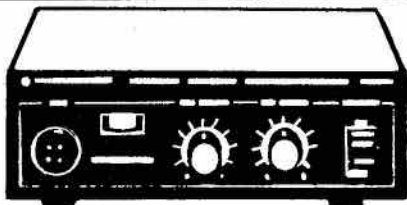
\$ 59.95

BENCHER BY-2 Iambic paddle

The BY-2 has all the features of the By-1 but comes with chrome base.



\$ 74.95



KENWOOD PC-1 phone patch

A matching phone patch for Kenwood equipment with NULL control, RX and TX gain control. Must be connected between a transceiver and a phonerline.

\$ 82.95 In stock

KENWOOD TR-2400 synthesized 2m hand-held transceiver

Featuring: 143.900-148.495 MHz, operates on MARS, 10 memories, auto. memory scanning for busy or open channel, mode switch for standard repeater ± 600 KHz, offset, simplex and non-standard repeater splits, LCD digital readout, built-in touch tone generator with 16 button keyboard, and 1.5 watts RF output. Includes flex antenna with BNC connector, NiCad battery pack and charger.

\$ 499. In stock



KENWOOD TR-7625 25W transceiver

Memory channel with simplex or repeater operation ± 600 KHz transmitter offset, mode switch, full 4 MHz coverage on 2m (144.00-147.995), 800 channels, 5 KHz offset switch, MHz selector switch, digital fre. display, unlock indicator for transceiver protection.

\$ 659. In stock

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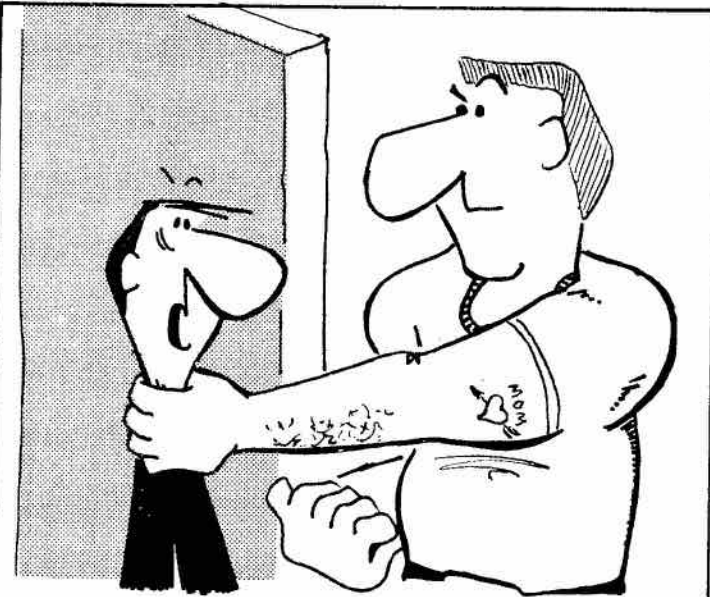
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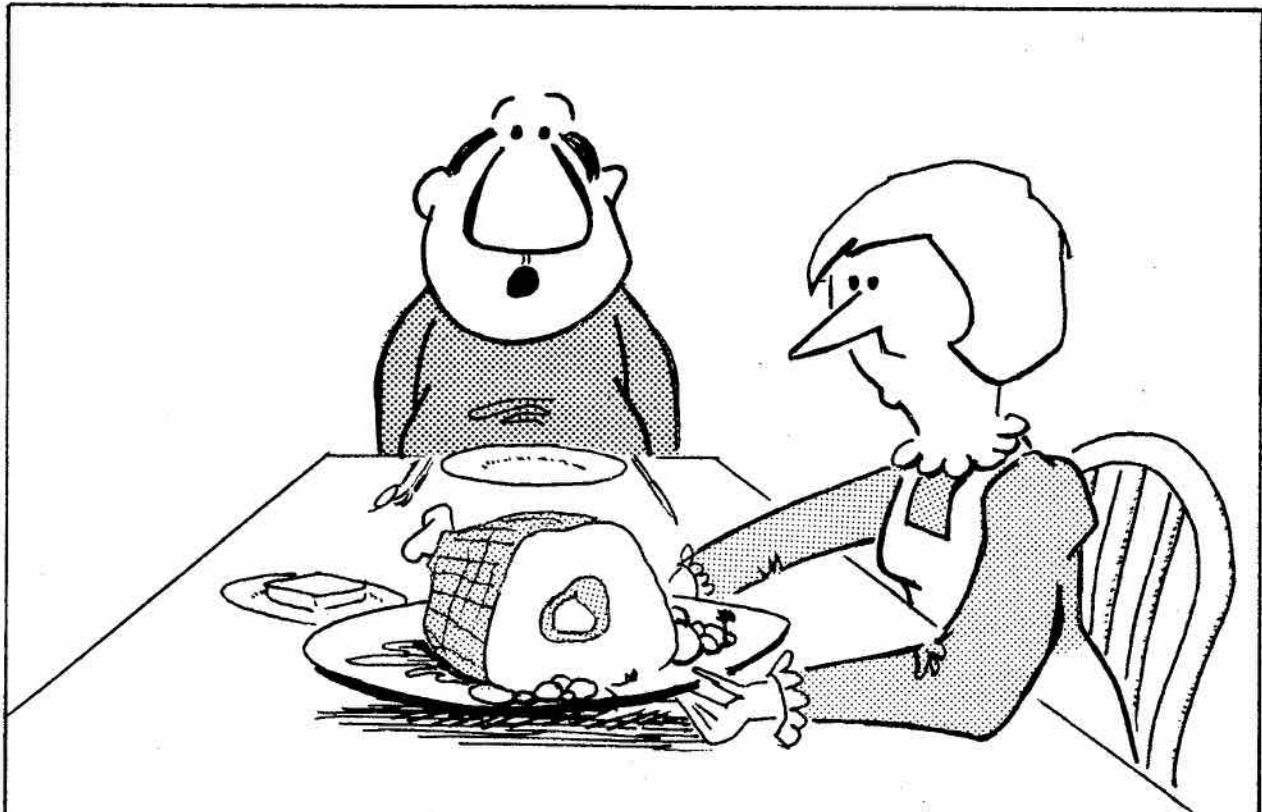
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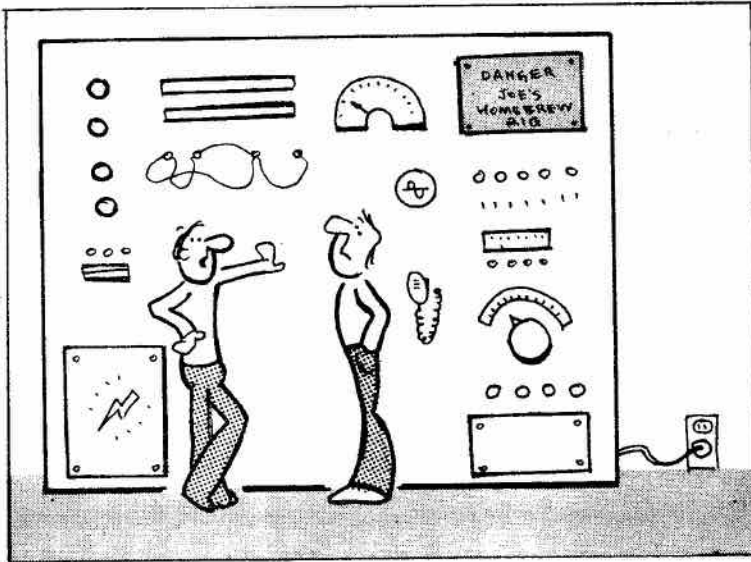


Then again, sometimes TVI is caused by
Amateur gear ...!

TCA Production man Steve
Campbell takes a look at the
lighter side of Amateur Radio.



Now that you've told me what it is,
I don't think I have the heart to eat it...



Transistors?! What are transistors?



Well, gotta go now, Frank ...
I just got the call for dinner.



©Campbell



Well **you** can call them what you want, they look like roaches to me!

That's it for 20 Years!

TCA presents the long-awaited detailed report on WARC '79, with accompanying information reflecting its effect on the future of Amateur radio operation in Canada.

The World Administrative Radio Conference of 1979 is all over. TCA has taken the Amateur frequency allocations (including the relevant footnotes) applicable to our region (Region 2) from the 'Final Acts' (more often called the ITU Radio Regulations) and reproduced most of them in this issue. As the allocations from 3300 MHz up are of interest only to a few, and due to limited space, these are only summarized.

The numbers in the tables refer to 'footnotes' which usually describe some restriction, addition or alternative to the frequencies shown in the tables. The use of capital letters in the table indicates that the service is a 'Primary' service. When lower case is used, the service shown is a 'Secondary'

service and stations in this service shall not cause harmful interference to stations in a primary service, nor can they claim protection from harmful interference from stations in the primary service. An 'Additional' allocation is one which is added to the service(s) in an area or country while an 'Alternative' service is one which replaces the allocation indicated in the table in an area or country. The Region numbers refer to the three International Telecommunications Union Regions. Region 1 takes in Europe, Africa and Asian U.S.S.R.; Region 2 is North and South America; and Region 3 is Australia and the rest of Asia.

While the Final Acts take effect on Jan. 1, 1980, most of the changes required by them

will take anywhere from a year or two to ten years or more to be implemented. There may be the odd case where changes or variations can be implemented by a country within the terms of the ITU Regulations in a shorter time (such as the current DOC proposal to implement Amateur operations in 902-928 MHz and delete them in 420-430 MHz). Until official notice is given by DOC through a change in the Canadian Radio Regulations, Amateurs in Canada are bound by the current Regulations.

There are a number of important changes and additions that apply to Amateurs. Resolution BN (see also footnote 3499A) recognizes the importance of communications in national disasters

and permits the use of specific Amateur bands by non-Amateur stations for disaster communications. Use is limited to the duration of the emergency, to specific geographical areas as defined by the responsible authority of the affected country, and to communications between the country and the permanent headquarters of the organization providing relief. Main users are expected to be the Red Cross, Red Crescent, Red Lion and Red Sun organizations. Amateurs are requested to cooperate and avoid interfering with stations engaged in disaster communications.

Resolution BV requires that any Administration intending to establish an Amateur Satellite system must notify the ITU, among other things, of the characteristics of typical Amateur

stations which will control the satellite system.

Resolution CR 1 requires that the Broadcasting Service be prohibited from using the Amateur band 7000-7100 kHz and that Broadcasting stations using the band shall cease such operation.

Resolution CV relates to the implementation of changes in allocation and use of the bands between 4.0 and 27.5 MHz and is one of the longest and most complex in the Final Acts. It sets out procedures for finding replacement assignments and requires that the changeover be completed by July 1 1989 for frequencies above 10 MHz and July 1 1994 for frequencies below 10 MHz.

Finally, one important change to old Article 41 says that Administrations may waive the code requirement in the case of Amateur

stations licensed to use exclusively frequencies above 30 MHz.

As a result of WARC '79, Amateurs will eventually have to make some adjustments to their operations. With this in mind, CARF is arranging with the provincial associations to hold regional symposia across Canada in March 1980 which will lead to a National Symposium in Hamilton, Ontario on May 17, 1980, to finalize recommendations to DOC on matters of new sub-allocations and band plans, sharing with other services, effective dates for implementing the required changes, Amateur allocations in the domestic frequency allocation table, coordination with the United States and the use of Amateur bands for communications during disasters. Keep a watch on TCA, your club publications and club nets for further details.

Allocation to Services (kHz)		
Region 1	Region 2	Region 3
1 800 - 1 810 RADIOLOCATION 3490A 3485B 3490B	1 800 - 1 850 AMATEUR	1 800 - 2 000 AMATEUR FIXED
1 810 - 1 850 AMATEUR 3492C 3492D 3492E 3492F	3492/198	MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation
1 850 - 2 000 FIXED MOBILE except aeronautical mobile 3488/194 3490/195A 3499/205	1 850 - 2 000 AMATEUR FIXED MOBILE except aeronautical mobile RADIOLOCATION RADIONAVIGATION 3492/198 3492A	3492/198

3492 198 - In Region 2, Loran stations operating in the band 1800-2000 kHz shall cease operation by Dec. 31, 1982. In Region 3, the Loran system operates either on 1850 kHz or 1950 kHz, the bands occupied being 1825-1875 kHz and 1925-1975 kHz respectively. Other services to which the band 1800-2000 kHz is allocated may use any frequency therein on condition that no harmful interference is caused to the Loran system operating on 1850 or 1950 kHz.

3492A - Alternative allocation: in Argentina, Bolivia, Chile, Mexico, Paraguay, Peru, Uruguay and Venezuela, the band 1850-2000 kHz is allocated to the fixed, mobile except aeronautical mobile, radiolocation and radionavigation services on a primary basis.

Footnote 3492C states that in Region 1, AMATEUR use is conditional upon other frequencies being found for other services sharing this band, plus certain other conditions.

Region 1	Region 2	Region 3
3 500 - 3 800 AMATEUR 3499A FIXED MOBILE except aeronautical mobile 3490/195A	3 500 - 3 750 AMATEUR 3499A 3500B 3500D	3 500 - 3 900 AMATEUR 3499A FIXED MOBILE
3 800 - 3 900 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	3 750 - 4 000 AMATEUR 3499A FIXED MOBILE except aeronautical mobile (R)	
3 900 - 3 950 AERONAUTICAL MOBILE (OR) 3501A		3 900 - 3 950 AERONAUTICAL MOBILE BROADCASTING
3 950 - 4 000 FIXED BROADCASTING	3500C 3500D 3502A 3502AA	3 950 - 4 000 FIXED BROADCASTING 3502B

The following footnotes refer to the 3500-4000 kHz band: In Region 2 3500B, 3500C, 3500D provide for additional and alternative primary services in Central and South America. 3502AA adds BROADCAST for Greenland from 3950-4000 kHz.

3502A - Additional allocation: in Canada, the band 3950-4000 kHz is also allocated to the broadcasting service on a primary basis. The power of broadcasting stations operating in this band shall not exceed that necessary for a national service within the frontier of this country and shall not cause harmful interference to other services operating in accordance with the Table.

Region 1	Region 2	Region 3
7 000 - 7 100	AMATEUR 3499A AMATEUR-SATELLITE 3508BA. 3508C	
7 100 - 7 300 BROADCASTING	7 100 - 7 300 AMATEUR 3499A 3508D	7 100 - 7 300 BROADCASTING

3508D - The use of the band 7100-7300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3.

In some Region 1 countries 7000-7050 kHz is shared with the fixed service, on a primary basis, per footnotes 3508B and 3508C.

10 100 - 10 150	FIXED Amateur 3499A
-----------------	------------------------

3499A - For the use of the bands allocated to the amateur service at 3.5 MHz, 7.0 MHz, 10.1 MHz, 14.0 MHz, 18.068 MHz, 21.0 MHz, 24.89 MHz and 144 MHz in the event of natural disasters, see Resolution BN.

14 000 - 14 250	AMATEUR 3499A AMATEUR-SATELLITE
14 250 - 14 350	AMATEUR 3499A 3514/218

3514 218 - Additional allocation: in Afghanistan, China, Ivory Coast, Iran and the U.S.S.R., the band 14250-14350 kHz is also allocated to the fixed service on a primary basis. Stations of the fixed service shall not use a radiated power exceeding 24 dBW.

18 068 - 18 168	AMATEUR 3499A AMATEUR-SATELLITE 3515B 3515C
-----------------	---

3515B - The band 18068-18168 kHz is allocated to the fixed service on a primary basis subject to the procedure described in Resolution CV. The use of this band by the amateur and amateur-satellite services shall be subject to the completion of satisfactory transfer of all assignments to stations in the fixed service operating in this band and recorded in the Master Register, in accordance with the procedure described in Resolution CV.

3515C - Additional allocation: in the U.S.S.R., the band 18068-18168 kHz is also allocated to the fixed service on a primary basis for use within the boundary of the U.S.S.R., with a peak envelope power not exceeding 1 kW.

Region 1	Region 2	Region 3
21 000 - 21 450	AMATEUR 3499A AMATEUR-SATELLITE	
24 890 - 24 990	AMATEUR 3499A AMATEUR-SATELLITE 3518A 3518B	

3518A - Additional allocation: in Kenya, the band 23600-24900 kHz is also allocated to the meteorological aids service (radiosondes) on a primary basis.
3518B - The band 24890-24990 kHz is allocated to the fixed and land mobile services on a primary basis subject to the procedure described in Resolution CV. The use of this band by the amateur and amateur-satellite services shall be subject to the completion of the satisfactory transfer of all assignments to the fixed and land mobile stations operating in this band and recorded in the Master Register, in accordance with the procedure described in Resolution CV.

(MHz)

28 - 29.7	AMATEUR AMATEUR-SATELLITE
BROADCASTING	50 - 54 AMATEUR 3543A 3543B 3542/244 3545/247

3542/244 - Alternative allocation: in New Zealand, the band 50-51 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis; the band 53-54 MHz is allocated to the fixed and mobile services on a primary basis.

3543B - Alternative allocation: in Afghanistan, Bangladesh, Brunei, India, Indonesia, Iran, Malaysia, Pakistan, Singapore and Thailand, the band 50-54 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis.

3543A - Additional allocation: in Australia, China and the Democratic People's Republic of Korea, the band 50-54 MHz is also allocated to the broadcasting service on a primary basis.

3541B - Alternative allocation: in Botswana, Burundi, Lesotho, Malawi, Namibia, Rwanda, South Africa, Swaziland, Zaire, Zambia and Zimbabwe, the band 50-54 MHz is allocated to the amateur service on a primary basis.

3545/247 - Additional allocation: in New Zealand the band 51-53 MHz is also allocated to the fixed and mobile services on a primary basis.

3589A - Additional allocation: in Singapore, the band 144-145 MHz is also allocated to the fixed and mobile services on a primary basis. Such use is limited to systems in operation on or before Jan. 1, 1980, which in any case shall cease by Dec. 31, 1995.

Region 1	Region 2	Region 3
144 - 146	AMATEUR 3499A AMATEUR-SATELLITE 3584AA 3589A	
146 - 149.9 FIXED MOBILE except aeronautical mobile (R)	146 - 148 AMATEUR 3598A	146 - 148 AMATEUR FIXED MOBILE 3598A

3584AA - Additional allocation: in China, the band 144-146 MHz is also allocated to the aeronautical mobile (OR) service on a secondary basis.

3598A - Alternative allocation: in Afghanistan, Bangladesh, Cuba, Guyana and India, the band 146-148 MHz is allocated to the fixed and mobile services on a primary basis.

174-223 BROADCASTING 3601A 3601/293 3608A 3608/300	220 - 225 AMATEUR FIXED	174-223 FIXED, MOBILE, BROADCASTING 3601C 3602A 3602B 3608AB 3608AC
223 - 230 BROADCASTING Fixed Mobile	MOBILE Radiolocation 3608AA	223 - 230 BROADCASTING FIXED Radiolocation MOBILE AERONAUTICAL RADIONAVIGATION

3608AA - In Region 2, the band 216-225 MHz is also allocated to the radiolocation service on a primary basis until Jan. 1, 1990. On and after Jan. 1 1990, no new stations in that service may be authorized. Stations authorized prior to Jan. 1 1990 may continue to operate on a secondary basis.

3640A - Additional allocation: in Australia, the United States, Jamaica and the Philippines, the bands 420-430 MHz and 440-450 MHz are also allocated to the amateur service on a secondary basis.

3640 319 - Different category of service: in Australia, the United States, India, Japan and the United Kingdom, the allocation of the bands 420-430 MHz and 440-450 MHz to the radiolocation service is on a primary basis (see No. 3432/141).

3640C - Additional allocation: in Canada, New Zealand and Papua New Guinea, the band 440-450 MHz is also allocated to the amateur service on a secondary basis.

3640D - Different category of service: in Canada, the allocation of the band 440-450 MHz to the radiolocation service is on a primary basis (see No. 3422/141).

There are about a dozen footnotes which pertain mostly to Regions 1 and 3 and are too lengthy for reproduction here. They do not affect in any degree Amateur operations in Region 2, in North America.

Region 1	Region 2	Region 3
420 - 430	FIXED MOBILE except aeronautical mobile Radiolocation (Adds Amateur 420-450 in U.S.A.) 3640/319 3640A 3636/318	
430 - 440 AMATEUR RADIOLOCATION 3636/318 3646/322 3646A 3646B 3646D 3643/320 3646C 3645A 3645/321 3642/319B 3644/320A 3646E	430 - 440 RADIOLOCATION Amateur 3636/318 3643/320 3640B 3646C 3642/319B 3644/320A	
440 - 450	FIXED MOBILE except aeronautical mobile Radiolocation (adds Amateur in Canada) 3640A 3640/319 3636/318 3640C 3640D 3641/319A	

The following footnotes are important to the Amateur Satellite Service:
3642/319B - Additional allocation: in Brazil, France and the French Overseas Departments in Region 2, and India, the band 433.75-434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis until Jan. 1 1990, subject to agreement obtained under the procedure set forth in Article N13A. After Jan. 1 1990, the band 433.75-434.25 MHz will be allocated in the same countries to the same service on a secondary basis.
3644/320A - In the bands 435-438 MHz, 1260-1270 MHz, 2400-2450 MHz, 3400-3410 MHz (in Regions 2 and 3 only), 5650-5670 MHz the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. 3442/148). Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. 6362/1567A. The use of the bands 1260-1270 MHz and 5650-5670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.

3669A - Different category of service: in the United States, the allocation of the band 890-942 MHz to the radiolocation service is on a primary basis (see No. 3432/141) and subject to agreement obtained under the procedure set forth in Article N13A.

Region 1	Region 2	Region 3
890--942 FIXED, MOBILE (except aero mobile) BROADCASTING Radiolocation	902 - 928 FIXED Amateur Mobile except aeronautical mobile Radiolocation 3669A 3670/340	890 - 942 FIXED, MOBILE BROADCASTING Radiolocation

3670/340 - In Region 2, the band 902-928 MHz (centre frequency 915 MHz) is designated for industrial, scientific and medical (ISM) applications. Radio-communication services operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. 5002A.

Region 1	Region 2	Region 3
1 240 - 1 260	RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) Amateur 3673/343 3674/344 3673A 3675A 3675B	
1 260 - 1 300	RADIOLOCATION Amateur 3644/320A 3673/343 3674/344 3675A 3675B	

3675B - Additional allocation: in Canada and the United States, the bands 1240-1300 MHz and 1350-1370 MHz are also allocated to the aeronautical radionavigation service on a primary basis.

Footnotes 3673/343, 3674/344, 3673A refer to additional services including space research, and fixed and mobile services as primary. Other than space research only one or two Region 2 nations in South America are involved in these additions and exceptions; hence they are not important enough to warrant the page or two necessary to reproduce the countries involved.

SUMMARY OF ALLOCATIONS FROM 3300 KHZ AND ABOVE

In the following tables only the Amateur allocations are shown. 'Other' indicates other services have been given that allocation. 'S' indicates that the Amateur or Amateur Satellite allocation is shared by a primary user or users; 's' shows sharing by other services on a secondary basis. 'Amateur Sat.' or 'AMATEUR SAT.' indicates that Amateur satellite experimentation may be carried out in that Amateur band.

SUMMARY OF ALLOCATIONS FROM 3300 kHz AND ABOVE

	<u>REGION 1</u>	<u>REGION 2</u>	<u>REGION 3</u>
2300-2450	Amateur (S)(s)	Amateur (S)	Amateur (S)
3300-3400 MHz	other	Amateur (S)(s)	AMATEUR (S)
3400-3500 MHz	other	Amateur (S)(s)	Amateur (S)(s)
5650-5725 MHz	Amateur (S)(s)	Amateur (S)(s)	Amateur (S)(s)
5725-5850 MHz	Amateur (S)	Amateur (S)	Amateur (S)
5850-5925 MHz	other	Amateur (S)(s)	other
10.00-10.45 GHz	Amateur (S)	Amateur (S)	Amateur (S)
10.45-10.50 GHz	Amateur (S) Amateur Sat.	Amateur (S) Amateur Sat.	Amateur (S) Amateur Sat.
24.00-24.05 GHz	AMATEUR AMATEUR SAT.	AMATEUR AMATEUR SAT.	AMATEUR AMATEUR SAT.
24.05-24.25 GHz	Amateur (S)(s)	Amateur (S)(s)	Amateur (S)(s)
47.00-47.20 GHz	AMATEUR AMATEUR SAT.	AMATEUR AMATEUR SAT.	AMATEUR AMATEUR SAT.
76.00-81.00 GHz	Amateur (S) Amateur Sat.	Amateur (S) Amateur Sat.	Amateur (S) Amateur Sat.
142.0-144.0 GHz	AMATEUR AMATEUR SAT.	AMATEUR AMATEUR SAT.	AMATEUR AMATEUR SAT.
144.0-149.0 GHz	Amateur (S) Amateur Sat.	Amateur (S) Amateur Sat.	Amateur (S) Amateur Sat.
241.0-248.0 GHz	Amateur (S) Amateur Sat.	Amateur (S) Amateur Sat.	Amateur (S) Amateur Sat.
248.0-250.0 GHz	AMATEUR AMATEUR SAT.	AMATEUR AMATEUR SAT.	AMATEUR AMATEUR SAT.

News Briefs

NO MORE FCC FORMS

- The Department of Communications, acting on a long standing recommendation by your Federation, recently concluded an arrangement with the FCC in the U.S.A. whereby the registration permits required by each agency before Amateurs could use their rigs when visiting the other country will no longer be required. The effective date was January 21, 1980.
- Official notice of changes in regulations and the loss of

42 to 430 MHz and the opening of the new band from 902 to 928 MHz will probably have appeared in the Canada Gazette by the time this issue of TCA is distributed.

- WARC '79, as may have been noticed, has expanded the North American broadcast band up from 1605 kHz to 1705 kHz, providing another two or three high power or up to ten low power channels. WARC re-allocations will not become effective until Jan. 1, 1982 at the earliest.

- DOC announced that the first direct satellite TV broadcasting to small earth stations in private homes is under way and that receivers are being installed in northern British Columbia, the Yukon and the Northwest Territories. Communities in Northwestern Ontario are already receiving direct TV programs as part of the experiment.

- 1980 examination dates are April 16, June 18 and October 15.

Adding Receive Offset

By Nick Fong VE7BAM

This article describes how and why the author added a + 600 kHz receive offset feature to a Kenwood TR7400A 2 metre radio.

+ 600 kHz RECEIVE OFFSET

This feature is very useful while operating on a calling repeater because I can listen on the repeater's input frequency momentarily, which is also the transmitting frequency of the other station with which I am trying to establish contact, and decide whether I can work that station on a simplex mode or not. A good signal heard on the repeater's input frequency

means that I can work that station on simplex mode. This feature makes the task of establishing a contact on a busy calling repeater faster and easier. Also, it can be used during a QSO with a mobile station on a rag-chewing repeater to determine when that station is close enough to work on simplex, leaving the repeater for other users who may need it more.

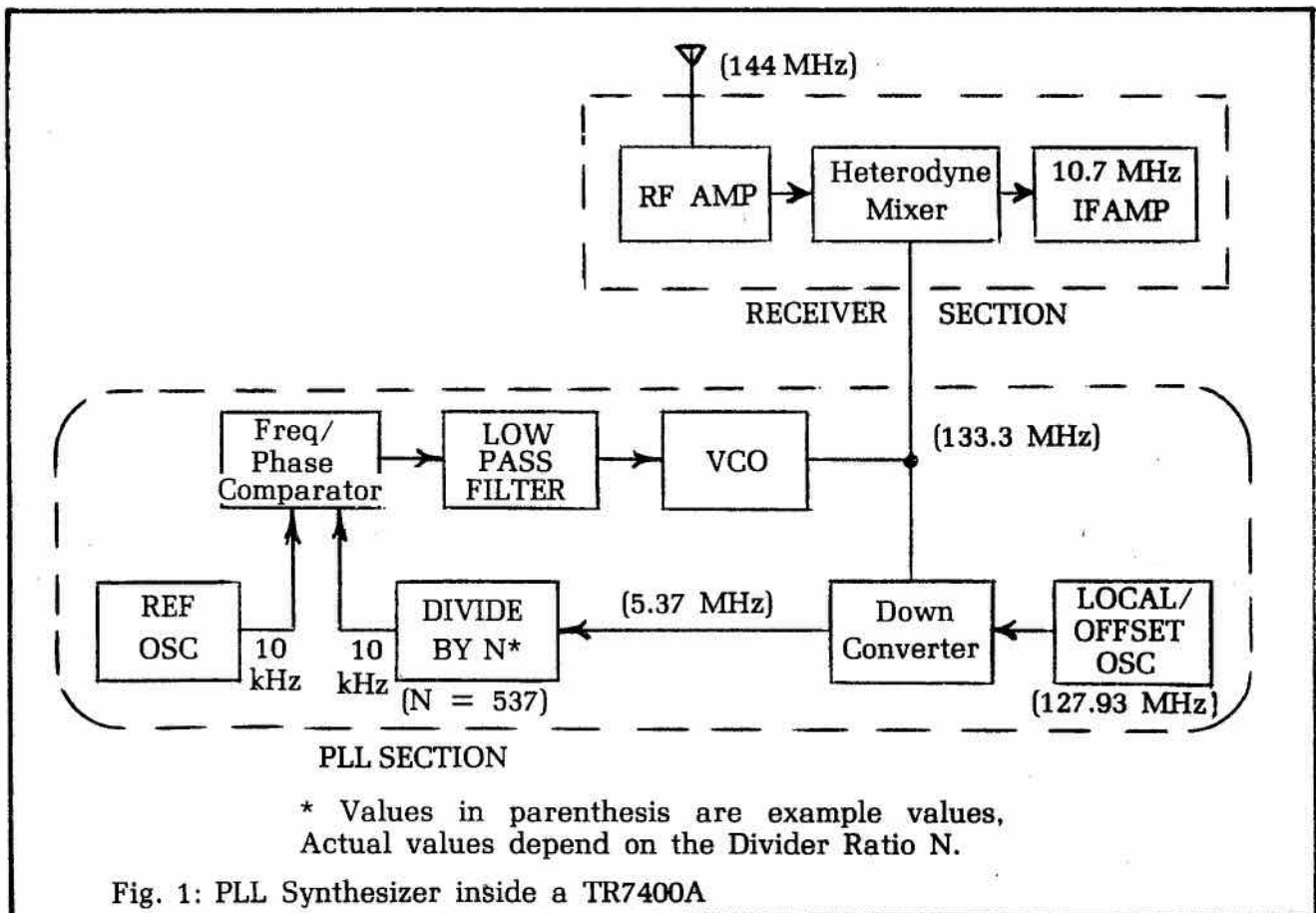


Fig. 1: PLL Synthesizer inside a TR7400A

PLL SYNTHESIZER INSIDE THE TR7400A

Fig. 1 shows the block diagram of the phase locked loop synthesizer inside a Kenwood TR7400A. To avoid repetition, I recommend the readers to refer to the November 1978 issue of TCA on how a PLL works. The PLL block diagram in Fig. 1 is the same as the one in the reference article with the exception of an additional down converter and a local oscillator (also called an offset oscillator). The converter shifts the 133 MHz signal down to 5 MHz, which is within the frequency range that the TTL counters in the divider can operate. It is worth mentioning here that a PLL synthesizer of this type (i.e. with an offset oscillator) is commonly used to shift the VCO's output frequency up or down to suit the operating speed of the divider; and one can change the PLL frequency not only by changing the divider ratio but also by

changing the frequency of the offset osc. For example, if the frequency of the offset osc. is 127.935 MHz instead of 127.930 MHz, the VCO's output will become 133.305 MHz. This effectively tunes the receiver from 144.000 MHz to 144.005 MHz, (still remember the heterodyne receiver principles?) That's how the TR7400A works when the 5 kHz switch is activated. Note that a shift of 5 kHz cannot be obtained by changing the divider ratio since any integer change in the divider ratio results in a frequency change of steps of 10 kHz only.

If I add 60 to the divider ratio, I shifted the VCO's output (also the receiver's frequency) up by 600 kHz. Here's how it works: adding 60 to the divider ratio means that the divider is now dividing by 597, and this forces the VCO to shift to 133.9 MHz in order to maintain equilibrium in the loop. The output of the down converter now becomes 5.97 MHz and after dividing by 597, it is back to 10 kHz again. Similarly, subtracting 60 from the divider ratio shifts the VCO's output down by 600 kHz. So, simply by adding 60 to, or subtracting 60 from, the divider ratio I can shift the receiver up or down by 600 kHz. It seems

Fig. 2 Adding the receive offset switch

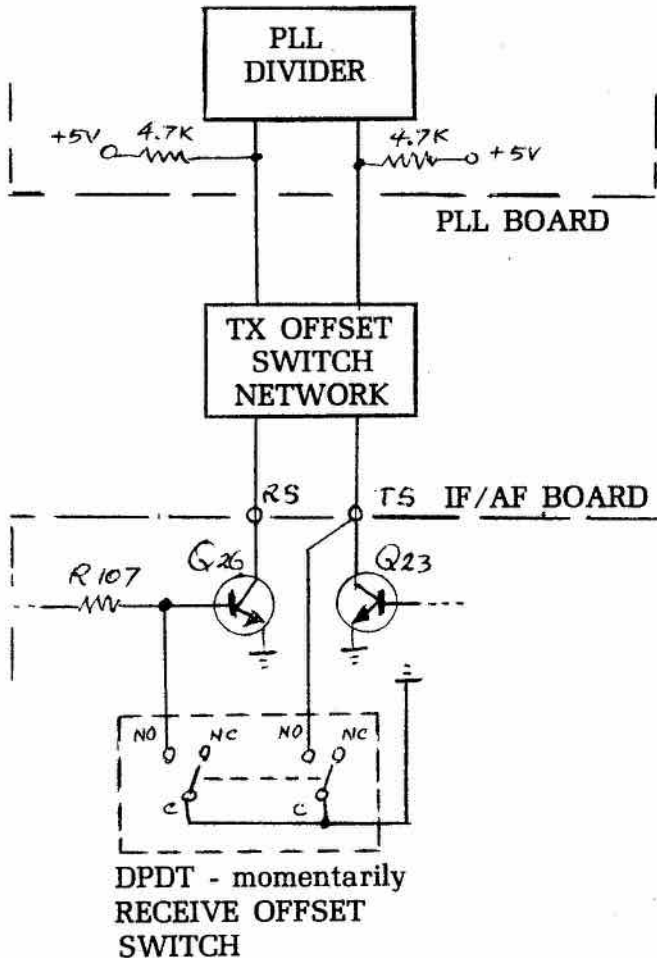


Table 1: Truth table for Q23 and Q26

N is a number whose value depends on the freq selector switches.				
MODE	Q23	Q26	TX OFFSET SWITCH POSITION	PLL DIVIDER RATIO
TX	ON	OFF	SIMPLEX	N
RCV	OFF	ON		N
TX	ON	OFF	+ 600	N + 60
RCV	OFF	ON		N
TX	ON	OFF	- 600	N - 60
RCV	OFF	ON		N

however, like a formidable task to modify the divider by adding or subtracting 60 to it. Fortunately, this feature is already built-in for the transmit offset mode. All I'll

have to do is to make the PLL divider 'think' that it is in the transmit mode while the rest of the transceiver is still in the receive mode.

MODIFICATION

The modification is straightforward. It consists of adding a miniature DPDT-momentarily push-button switch, e.g. a C&K type 8221 or equivalent, to the control circuit as shown in Fig. 2. Table 1 shows the truth table of the control functions of transistors Q23 and Q26. The objective here is to make the PLL divider 'think' that it's in TX mode while keeping the rest of the transceiver in RX mode. From Table 1, it is obvious we can do just that by forcing (or simulating the effects of) Q23 to ON and Q26 to OFF.

Here's how the added DPDT switch works: (1) to simulate Q23 ON, I short the collector of Q23 to ground because for a transistor in the ON state, its collector is essentially at ground potential; and (2) to force Q26 OFF, I short its base to ground. This eliminates its base current and forces it to cutoff.

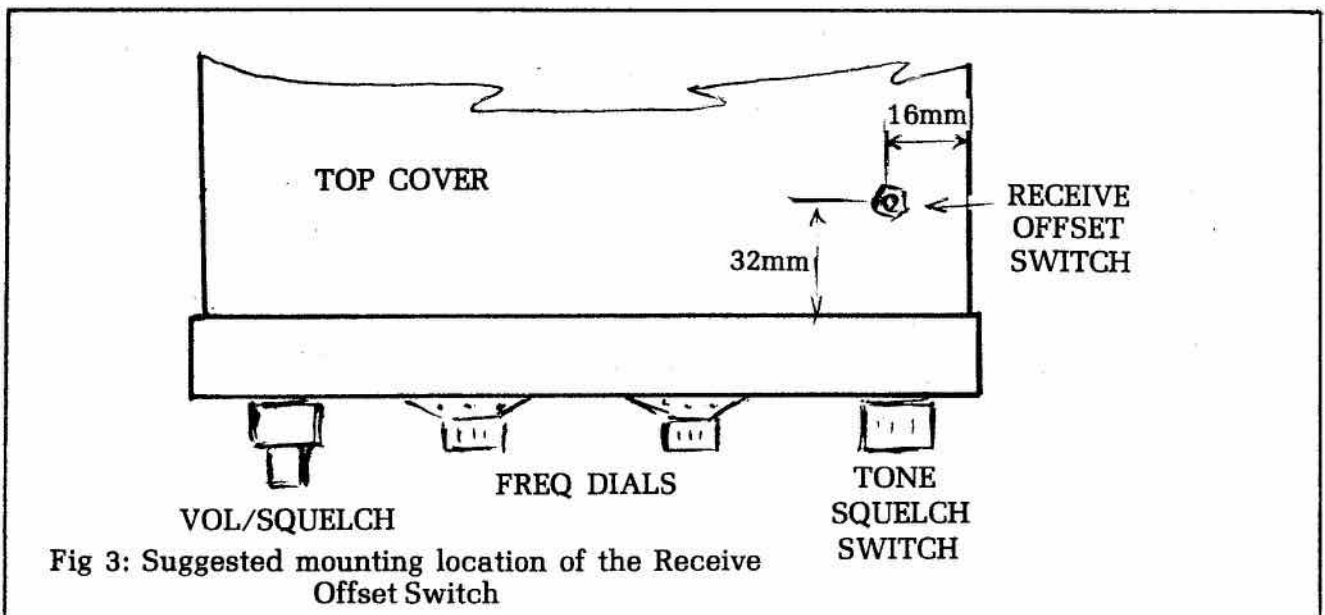
The DPDT switch can be mounted on the top cover plate at a location behind the tone squelch selector switch. Fig. 3 shows the location where it can be conveniently mounted. The next step is to find the three points on the IF/AF board which corresponds to the collector of Q23, base of

Q26 and ground. Fig. 4 outlines the approximate locations of these points. Note that while the collector of Q23 is not easily accessible, the wire-wrap post labelled 'TS' is within easy reach and it is the same point. The next step is to solder three wires from the DPDT switch to these three points (it is not necessary to remove the IF/AF board since all soldering can be done on the component side) and the project is now completed.

COMMENTS

I find the modification is a worthwhile project. It cuts the time required to establish a contact through a busy calling repeater and avoids going to a simplex mode without making sure that a contact can be made in that mode. Also, I can easily find out that the other station forgets to flip his TX offset switch to simplex after we've just QSY from a calling repeater to a simplex frequency.

I suspect that similar modifications can be done on other synthesized radios as well and hope that this article will



encourage more owners of commercial rigs to modify their rigs to suit their particular needs, thereby enhancing the value of the

rigs and keeping the experimentation spirit high.



Nicholas Fong VE7BAM

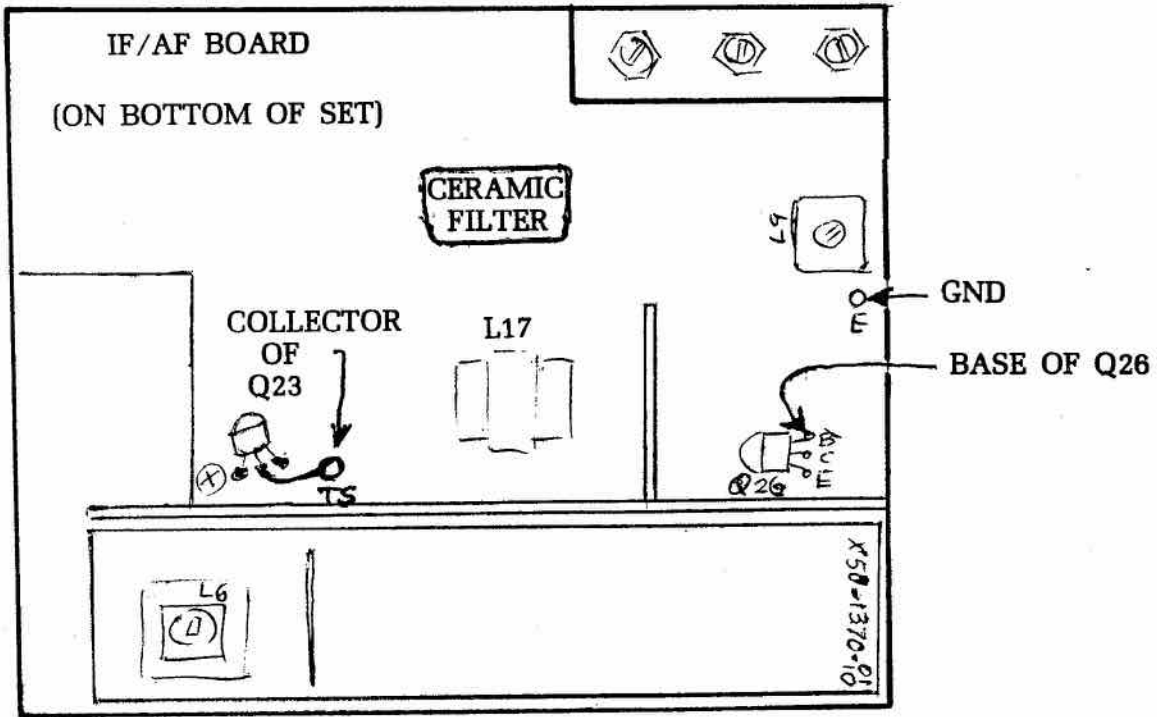
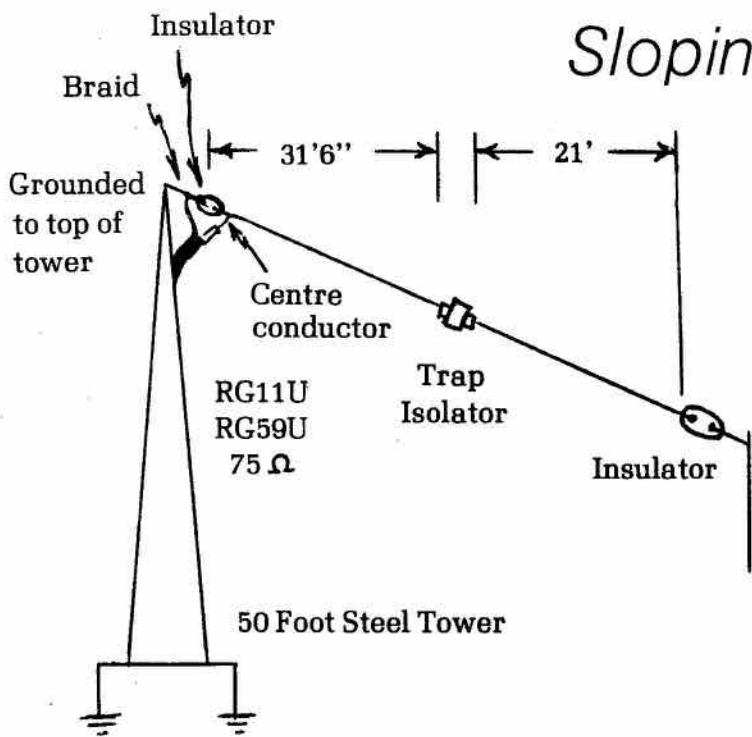


Fig. 4: Approximate locations of Q23 and Q26 on the IF/AF Board

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Trimming may be required for best operation and SWR addicts may want to use a tuner, but from my own experience I coupled the antenna directly to the transmitter with good results.

DX worked on 40 metres

was consistent, with decent reports; best contact was with OE6XG/A Abu Ail on 40 metres. Directivity is quite amazing and swinging the base (bottom) more than 90° makes quite a difference. Gain on 20, 15 and 10 metres

seems to be on the level of 2.5 dB to 3.0 dB compared to a horizontal dipole at the same height.

Hope this antenna will fill some voids and make DXing more interesting for all.

Joe Adams VE3CPU

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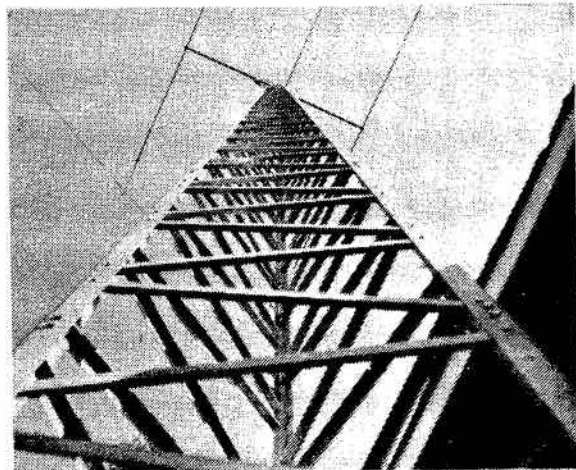
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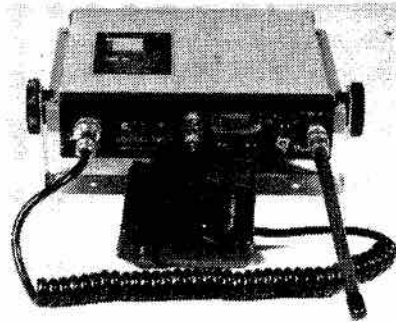
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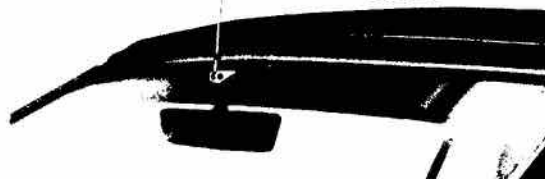
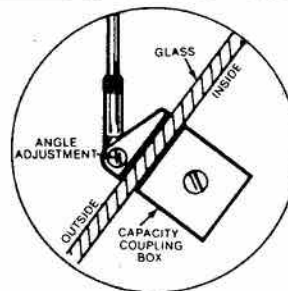
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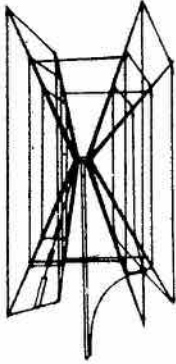
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CARF & TCA on the move!

One year ago The Canadian Amateur was reborn with a new appearance, new logo and a new format. The new TCA was well-accepted by the Amateur fraternity and aspiring Amateurs alike; in fact, the response was even better than we had hoped. Correspondence, memberships and on-the-air remarks justified the large amount of planning and extra time devoted to these major changes.

In our introduction to TCA in that landmark issue, we noted that "This doesn't mean that TCA won't keep changing and improving, but we believe we've put together a solid foundation for further growth". This proved to be a prophetic statement ... you now hold the results of another year of planning, studying, debugging and brainstorming.

With this issue, TCA has expanded its format and switched to a basic three-column layout. This means more space per page, and an opportunity to explore new dimensions of design possibilities. Among the changes in this issue: a Page One contents page (a direct result of reader comment); three new column editors, including a brand new monthly feature on computers; cartoons to reflect the lighter side of the hobby; a shift in the position of the technical section, and a new cover logo.

We believe that this phase in the evolution of Canada's national Amateur magazine is a giant step forward within the boundaries of our goal ... to serve the Amateurs in this country. But, the final say is yours: write and let us know!

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

This feature is for use of members wishing to trade, buy or sell personal radio gear. It is not open to commercial advertising.

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1. To act as a coordinating body for 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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 ** Station XU1AA has been authorized to exchange communications with Amateurs of other countries. Note: The calls 70A to 70Z are assigned to the Peoples Republic of Yemen.

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Note: As a general rule, DOC will consider licensed Amateurs of Commonwealth countries for reciprocal privileges in Canada if the other country does the same.

CARF News Service Radio Bulletins are heard from its key station VE3TCA every week, using the facilities of Ottawa's Carleton University Amateur Radio Club station VE3OCU. Here is the sked:

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1745 Z	14.140 MHz	SSB
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0100 Z	3.590 MHz	CW 15 wpm
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(Note that times shown will be Sunday p.m. and Monday evenings in North America.)

OTHER CARF NEWS STATIONS

VE7TCA:
 Mondays 0230Z 3.618 MHz RTTY 5 level
 0245Z 3.755 MHz SSB (After BC ARPS Net)
 VE5WM: nightly 0100 Z 3.785 MHz SSB (Sask Phone Net)
 Sundays 1530 Z 3.780 MHz SSB (ARES Net)
 VE5GG
 Thursdays 1830 Z 14.077 MHz RTTY 5 level

A number of two metre repeaters provide local coverage. VE7BBQ is on VE7RPT 34/94 Thursdays at 2000 Pacific Time and VE5WM is on VE5KE 46/06 nightly at 0300 Z.

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If you are changing your address or renewing your membership, please send the change, cheque or money order to CARF, Inc., Box 356, Kingston, Ont. K7L 4W2, where CARF and TCA records are kept in the administrative offices of the Federation. Please do **not** send them to the Editor, who happens to live in Ottawa. Re-mailing means a delay in your change or renewal.

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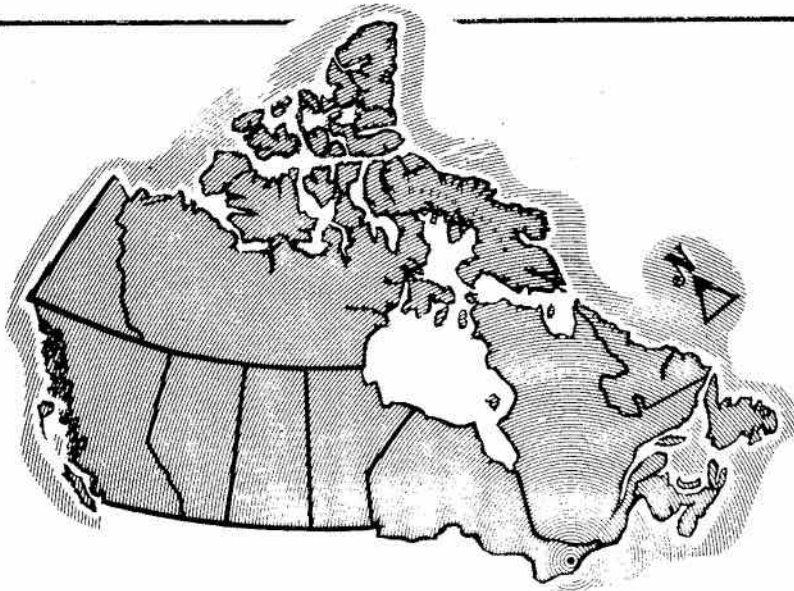
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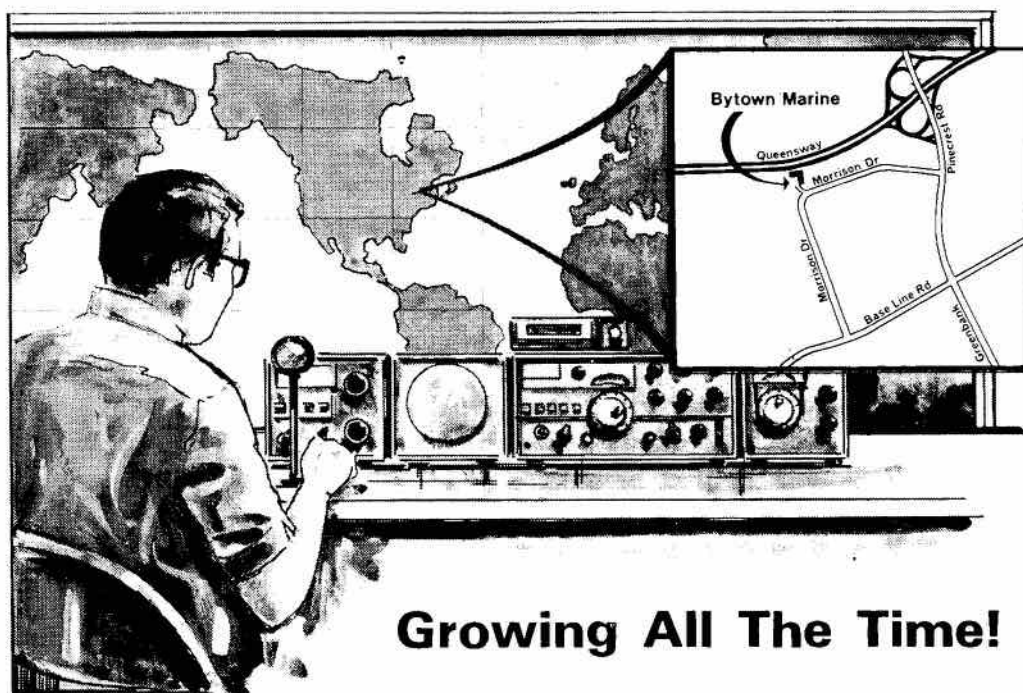
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