

Second Class Mail Registration
Number 5073

TCA

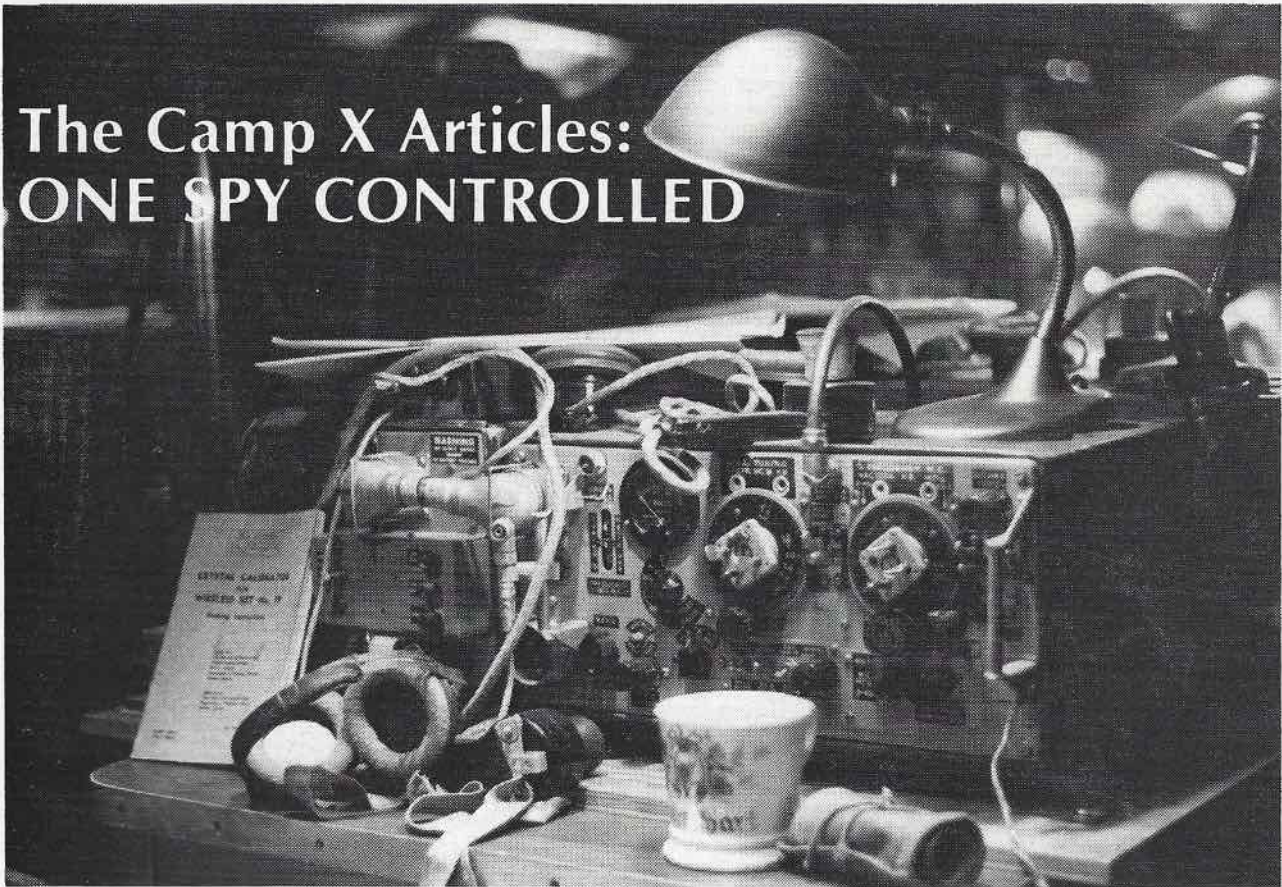


\$1.50

The Canadian Amateur Radio Magazine

March 1983

The Camp X Articles: ONE SPY CONTROLLED



Contests . . . YL News . . .
And much more . . .

ANNEE MONDIALE DES
COMMUNICATIONS
WORLD COMMUNICATIONS
YEAR
AÑO MUNDIAL DE LAS
COMUNICACIONES



1983

EDITOR

Cary Honeywell VE3ARS
P.O. Box 2610, Station D
Ottawa, Ont. K1P 5W7

ASSISTANT EDITOR
Dave Nessman

CONTRIBUTING EDITOR
(C.A.R.F. News Service)
Doug Burrill VE3CDC
151 Fanshaw Ave.
Ottawa, Ont.
(613) 733-7108

TECHNICAL EDITOR
Ed Hartlin VE3FXZ
P.O. Box 356, Kingston, Ont.
K7L 4W2

TECHNICAL DESIGN
Don Prickett, VE5KP
41 McAskill Crs.,
Saskatoon, Sask. S7J 3K1
CRAFC COLUMN
Hugh Lines VE3DWL
P.O. Box 192, S.S. 11 Belleville,
Ont. K8N 4Z3

CONTEST SCENE
Dave Goodwin VE2ZP
4 Victoria Place
Aylmer, Que. J9H 2J3

DEAD EDITOR
Douglas W. Griffith VE3KKB
33 Foxfield Drive,
Nepean, Ont. K2J 1K6

EMCOMM
Ken Kendall VE3IHX
777B Springland Dr.
Ottawa, Ont. K1V 6L9
YL NEWS AND VIEWS
Cathy Hrischenko VE3GJH
56 Stockdale Crescent
Richmond Hill L4C 3S9
Ontario

VHF/UHF COLUMN
John Dudley VE5JQ
3125 Mountbattan St.
Saskatoon, Sask. S7M 3T3

QCWA REPORT
Ron J. Hesler, VE1SH
P.O. Box 418
Sackville, N.B., E0A 3C0

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

ADVERTISING
REPRESENTATIVE
Don Slater VE3BID
R.R. 1 Lombardy K0G 1L0
(613) 283-3570

DESIGN
J. Geoffrey Paterson
P.O. Box 2610, Station D
Ottawa, Ont. K1P 5W7

ISSN 0228-6513



THE CANADIAN AMATEUR

March 1983

Vol. 11 No. 3

Letters.....Page 9

Once Upon a Time.....Page 13

Resolving Cable TV Interference.....Page 15

Contest Scene.....page 19

DX.....Page 23

XL News and Views.....Page 26

VHF/UHF News.....Page 28

One Spy Controlled.....Page 29

How to Flunk the Code Test.....Page 34

Telegraph Re-Visited.....page 36

Math Notes.....page 37

Technical Section.....Page 40

Info Section.....Page 42

Swap Shop.....Page 42

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

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

The contents of this publication are copyright and may not be reproduced without prior consent except by a bonafide Amateur organization which may reproduce them provided the source is acknowledged.

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

Indexed in the Canadian Periodical Index: ISSN 0228-6513

Second Class Mail Registration Number 5073

KEEP OUR PEOPLE WORKING
BUY NORTH AMERICAN BUILT PRODUCTS

SALE

Robot # 800 \$650⁰⁰

**Info-Tech
M 200 F \$725⁰⁰**

**New — Pineapple®
48K Color Computer Kit \$895⁰⁰**

**Franklin Ace — 1000 \$1895⁰⁰
64 K Computer**

We are now the Canadian dealer for
Hal Communications Corp.

Colin MacIntyre
VE7 BXX

COLMAY PRODUCTS

Telephone: (604) 536-3058

(Reg'd Trade Name Ont. 1958)

14903 Beachview Avenue
WHITE ROCK, B.C. CANADA V4B 1N8

We Pay Freight or Postage at Regular Rate.

VISA



Hear the local news as it happens ...with Bearcat[®]



Bearcat 20 20



Bearcat 100

Bearcat 200



Hear it all. Police and fire calls. Weather warnings. Transportation messages. With Bearcat, the state of the art scanner, you'll hear it all loud and clear.

Bearcat gives you not only outstanding performance, but also superb value. All models have extended Canadian UHF and VHF bands. Solid state circuitry means you never have to buy a crystal. And large decimal display panel shows you channels and frequencies as well as features selected.

The Bearcat 200 covers 8 bands and 16 channels.

With Bearcat 20 / 20 you can monitor 40 frequencies from 7 bands, including aircraft.

Bearcat 100 is the first handheld no-crystal programmable scanner, gives you 16 channels, 8 band coverage.

Let us show you Bearcat today, so you can get right in on the action.

**A.C. Simmonds & Sons
Limited**

975 Dillingham Road, Pickering, Ontario L1W 3B2 (416) 839-8041

The ICOM IC-740 Cadillac



The IC-740 from ICOM contains all of the most asked for features, in the most advanced solidstate HF base station on the amateur market...performing to the delight of the most discerning operator.

Study the front panel controls of the ICOM IC-740. You will see that it has all of the functions to give maximum versatility to tailor the receiver and transmitter performance to each individual operator's requirements.

Features of the IC-740 receiver include variable width and continuously adjustable noise blanker, continuous, adjustable speed AGC, adjustable IF shift and variable passband tuning built in. In addition, an adjustable notch filter for maximum receiver performance, along with switchable

receiver preamp. and a selection of SSB and CW filters. Squelch on SSB Receive and all mode capability, including optional FM mode. Split frequency operation with two built-in VFOs for the serious DX'er.

The IC-740 allows maximum transmit flexibility with front panel adjustment of VOX gain and VOX delay along with ICOM's unique synthesized three speed tuning system and rock solid stability with electronic frequency lock. Maximum versatility with 2 VFO's built in as standard, plus 9 memories of frequency selection, one per band, including the new WARC bands.

With 10 independent receiver and 6 transmitter front panel adjustments, the IC-740 operator has full control of his station's operating requirements.

Options include:

- FM Module
- Marker Module
- Electronic Keyer
- 2 - 9MHz IF Filters for CW
- 3 - 455MHz Filters for CW
- Internal AC Power Supply

Accessories.

- SM5 Desk Microphone
- UP/DWN Microphone
- Linear Amplifier
- Autobandswitching Mobile Antenna
- Headphones
- External Speaker
- Memory Backup Supply
- Automatic Antenna Tuner



The World System

Dollard Electronics Ltd.

P.O. BOX 58236, 810 S.W. MARINE DRIVE
VANCOUVER, B.C. V6P 6E3 (604) 321-1833 TELEX 04-54315

\$ 1295



Get High on the Ultra-High Band with ICOM's new IC-490A



5 Memories Priority Scan/squelch on SSB.

FM Ease.

- Five memories - VFO's - store your favorite repeaters
- Priority channel - check your most important frequency automatically.
- Programmable offsets - for odd repeater splits.
- 25kHz, 5kHz or 1kHz tuning.

SSB/CW Convenience.

- Squelch on SSB - silently scan for signals.
- 2 VFO's with equalizing capability - mark your signal frequency with the touch of a button.
- RIT - receiver incremental tuning.
- 1kHz or 100Hz tuning.
- CW sidetone and semi-break-in.
- AGC - selectable slow or fast in SSB and CW.
- NB - Noise blanker - suppresses pulse type noises on SSB CW.

Full Capability Scanning.

- Scan the whole band/scan between VFO's/scan memories and VFO's.
- Automatic stop and automatic resume scan after carrier drop or predetermined adjustable delay.
- Adjustable scan rate.
- Stop on busy or empty channels.

ICOM Performance.

- 430 to 440MHz coverage.
- Remote tuning from supplied IC-HM11 microphone.
- Digital frequency display - significant digits only.
- Hi/Low power switch.
- LED indicators - RECV/SEND/PRIO/DUP.
- LED bar meter.
- Provision for retention of memory with optional NiCd battery system IC-BU1.
- Touch Tone® with optional IC-HM8 microphone.
- Compact size - (170 mm) W x (64 mm) H x (218 mm) D.

\$ 749

Dollard Electronics Ltd.



P.O. BOX 58236, 810 S.W. MARINE DRIVE
VANCOUVER, B.C. V6P 6E3 (604) 321-1833 TELEX 04-54315

**WE PAY THE SHIPPING
ON NEW TRANSCEIVERS**



DELHI SELF-SUPPORTING DMXHD, DMXMD CONCRETE-BASE TOWERS

Medium Duty and Heavy Duty Ham Towers

MARCH SPECIAL

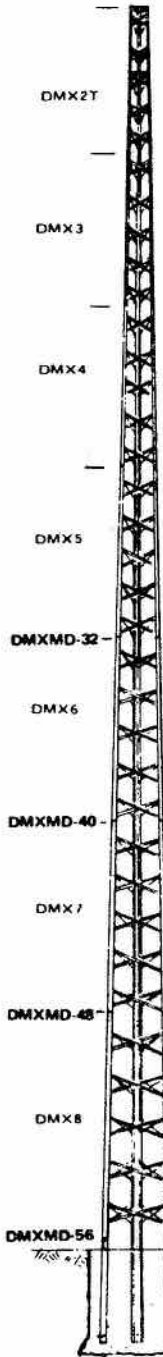
Ham IV rotor \$279.00 when purchasing a H.F. beam

Shure 444D dual impedance desk

Regular 127.50

TO CLEAR \$92.50

Sections



- TH3MK3 jr. 3 el tri-band beam 329.00
- TH5DXX 5 el tri-band beam..... 329.00
- TH5DXX 5 el tri-band beam..... 439.00
- TH7DX 4 el. 20 mtr. beam 449.00
- DB10/15 dual-bander..... 289.00
- TH6 to TH7 conversion kit..... 265.00
- 402BA 2 el 40 mtr. beam..... 439.00
- 18AVT/WB 80-10 trap-vertical..... 189.00



- ATB-34 4 el tri-band beam..... 469.00
- 20-4CD 4 el 20 mtr. beam..... 429.00
- A-147-4 4 el 2 mtr. beam 55.00
- A-147-11 11 El. 2 mtr beam 85.00
- A-147-22 22 el. 2 mtr. power-pak . 239.00
- ARX-2 Ringo Ranger 55.00
- ARX-2B Ringo Ranger 11..... 79.00
- ARX-2K kit for Ringo ARX-2B..... 37.00
- A14-3 3 el. beam 20 mtrs..... 349.00



- RG-8U coax 49c foot
- RG-213 coax 65c foot
- Rotor cable 42c foot



- TA-33jr. 3 el. 20-15-10 tri-band... 320.00
- TA-33 3 el. tri-band beam..... 419.00
- CL-33 3 el. tri-band beam S.S. ... 439.00
- CL-36 6 el. tri-band beam S.S. ... 509.00
- S-402 40 mtr. beam, regular 610.00449.00
- MPK-3 TA-33 jr. conversion kit... 129.00
- RV*4C & RV-8C 10-80 mtr. vertical 169.00
- D1-6 6 mtr. ground plane 79.00
- D1-2 2 mtr. ground plane 49.00
- Mosley BW-144 2 mtr trunk mount
% antenna complete mount,
spring, etc. 55.00

H.C. MacFarlane Electronics Ltd.

R.R. #2 Battersea, Ontario K0H 1H0 Phone: 613-353-2800 VE3BPM

YOUR ONE-STOP HAM SHOP

ANTENNA SYSTEMS INSTALLED WITHIN RADIUS 150 KM
EXPERTISE FREELY GIVEN ANYWHERE



THE FINEST IN SWL IS AT GLENWOOD



R-600

\$519

The R-600 is a high performance, general coverage communications receiver covering 150 kHz to 30 MHz in 30 bands, at an affordable price. Use of PLL synthesized circuitry provides high accuracy of frequency with maximum ease of operation.

30 bands, each 1 MHz wide, for easier tuning.
Five digit frequency display, with 1 KHz resolution.
6 kHz IF filter for AM (wide), and 2.7 kHz filters for SSB, CW and AM (narrow).
Up-conversion PLL circuit,

**Global Coverage
Global Appeal
Global Operation**

| | Frequency Range: | | |
|-----|------------------|-------|---------------|
| LW | 145 — 360 kHz | UHF-1 | 30 — 50 MHz |
| MW | 525 — 1600 kHz | UHF-2 | 68 — 86 MHz |
| SW1 | 1.8 — 3.8 MHz | UHF-3 | 88 — 108 MHz |
| SW2 | 3.8 — 9 MHz | UHF-4 | 108 — 136 MHz |
| SW3 | 9 — 22 MHz | UHF-5 | 144 — 176 MHz |
| SW4 | 22 — 30 MHz | UHF | 430 — 470 MHz |

- FEATURES:**
- Double conversion
 - USB LSB Switch
 - Antenna adjust control
 - RF Gain control
 - Squelch control
 - SW Calculator
 - Highly accurate digital read-out
 - BFO
 - Speaker/headphone jack
 - Tape record/playback switch
 - AC 110V/220-240 Volt, 50/60 Hz
 - DC 12V from car lighter socket or 8x'D' cells (not included)
 - Bass and Treble controls
 - Light display ON/OFF switch
 - 452(W)x268(H)x130(D)mm.
 - Weighs 5.4 kg

**12-BAND
WITH DIGITAL
FREQUENCY COUNTER**

**Global
NR-82F1
\$499**



R-1000

\$649

The R-1000 is an amazingly easy-to-operate, high-performance, communications receiver, covering 200 kHz to 30 MHz in 30 bands. This PLL synthesized receiver features a digital frequency display and analog dial, plus a quartz digital clock and timer. Its easy-single-knob tuning and high sensitivity, selectivity, and stability make the R-1000 a favorite amongst Radio Amateurs, shortwave listeners, engineers, maritime communicators, and others who demand high quality in a general-coverage communications receiver.

IN STOCK



GLENWOOD TRADING COMPANY LTD.

278 East 1st St., North Vancouver, B.C. V7L 1B3
If you have not yet received our latest catalogue write for your free copy, today.

**ORDER DESK
(604) 984-0405**

New Yaesu FT-102 Series Transceiver of Champions!



The long-awaited new generation of Yaesu HF technology has arrived! New research in improved receiver filtering and spectral purity is brought to bear in the competition-bred FT-102, the HF transceiver designed for active Amateurs on today's intensely active bands!

FT 102 — \$1,139.00

NEW FT 77



ALL BANDS TRANSCEIVER

NEW FT 980
CAN BE COMPUTER CONTROLLED



ALL BANDS TRANSCEIVER

**GOOD DEALS AVAILABLE ON
OTHER RIGS & ACCESSORIES.**

PHONE—WRITE—TELEX—DROP IN FOR QUOTES

EXAMPLES

FT 707 — \$809.00 FT 902 DM — \$1279.00

VE AMATEUR RADIO SALES
378 Wilson Avenue

Downsview, Ontario M3H 1S9

Phone: (416) 636-3636 Telex: 065-24751

**FT 980
FT 77**

Phone for price

**FT-ONE
\$2200.00**

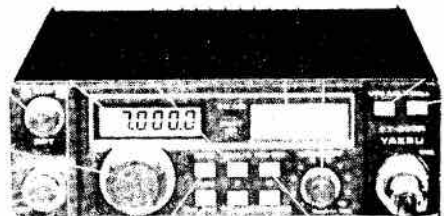


**Limited
quantities
at these
special prices**

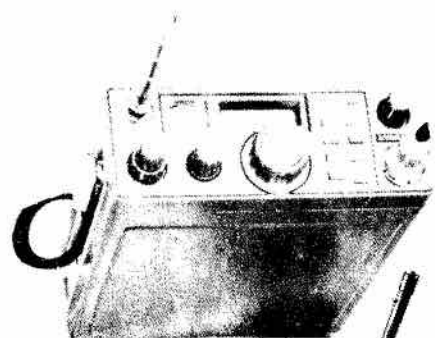
**Order today
not to be
dissatisfied!**



**Extra Special
FT 720 RU
complete with
Cable and
Switch Box
\$509.00**



**FT 230 R—25 WATTS
2 MTR FM — \$349.00**

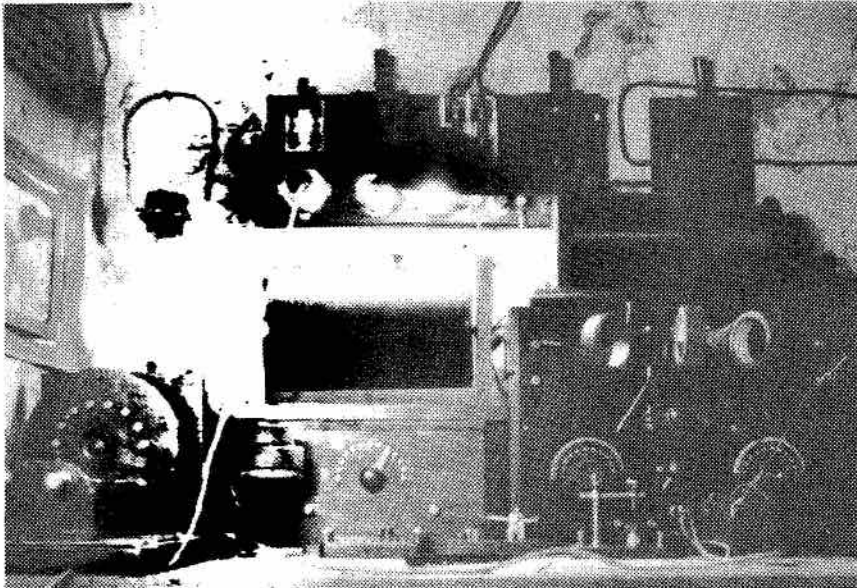
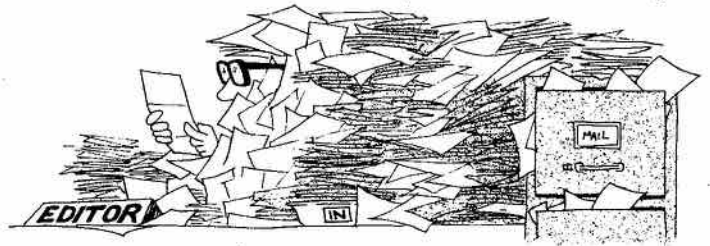


**FT 290 R—ALL MODELS
2 MTR FM — \$395.00**

**FT 208R
2 MTR, 10 MEMORY
HANDHELD —
\$309.00**



LETTERS



Early 1920's receiving gear of 3AG (note no VE prefix) Now VE3 MUG.

Dear Editor:

Going over some old negatives recently I came across one of some of the receiving gear for my original station in the early 1920's. I thought you might be interested in seeing this antique, homebrew gear so am enclosing a print. If you can make any use of this photo e.g. as a "filler" in TCA you have my permission and please feel free to edit the following description as you see fit.

At the right of the photo is a loose-coupler. in the centre (rear) is a loading coil with a tuning coil on top of it. On the left is the piece de resistance, a one tube receiver with honeycomb coils, on top of it is another loose-coupler. In the foreground, on the table, are two crystal detectors and to their left a "fixed-variable" condenser. The boxlike object to the right of the crystal detector is a "potted" fixed condenser. The array of knife switches etc. on the wall looked very impressive, at the time, but I don't remember what purpose they all served.

My transmitter at that time was located to the right of this receiving gear and unfortunately is out of the photo. It consisted of a Ford spark coil, spark gap, key, pancake helix. I still have the original transmitter less the helix, but not in use of course. My call at that time was 3AG (note no VE prefix then).

Keep up the good work with TCA. So nice to have a 100% Canadian magazine and organization. Only one "beef". The delay sometimes in the arrival of TCA. I have not to date (Jan. 29/83) received my Jan. copy, however, I'm sure it will arrive in due course, if we don't have another postal strike hi!

"73"
Eric Shulver VE3MUG
 7 Eastpark Bl.
 Scarborough, Ont.
 M1H 1C5

Dear Editor:

Well, it looks like we don't have a leg to stand on. The U.S. con-

gress is on the verge of passing into law that proposed phone band expansion. I feel this is the biggest mistake the A.R.R.L. has ever created. Their popularity world wide should suffer even more. All that protesting from around the world hasn't done any good. They are going to go ahead and do it anyway. Leaving Canada and the rest of the world squeezed into a 50 kHz space on the 20 meter band. The result will be bloody chaos I'm sure. Then, the A.R.R.L. will sit back and pat themselves on the back for their victory.

It looks pretty obvious that the league doesn't care about anyone else but themselves.

I withdrew my membership to the A.R.R.L. last year, to protest the expansion. So being a member of the A.R.R.L., to me, represents approval of American expansionism in Amateur Radio. I urge all my fellow Canadians not to join such a self centered organization.

Yours truly,
Jim Young VE7AZO

To be fair to CRRL, they objected to the expansion as did CARF.

ed.

Dear Editor:

I am writing about the recent Amateur Radio Examinations held in Feb. The Amateur Radio Exam appeared to be within the guidelines that were presented to us about a year ago. I tried the exam on some students who are about three quarters thru their studies and they handled these questions quite comfortably.

The Advanced Amateur Examination is another story. It is one of the most difficult that I have seen for several years. We are getting back to 1979 when the failure rate was very high. I think the pass rate for this one will be about 10%

LETTERS

and those who pass will be persons with a recent technical training at a technical institute. One of my friends with a recent technical education says that he might have passed and that this exam was harder than a recent commercial examination that he passed. Where does that leave an ordinary Amateur who simply wants to upgrade so that he can have phone privileges on more bands?

As a well meaning Advanced Amateur who has taught classes for several years, I think that the exam is at too high a level and that if this continues, I will have to go to school for a couple years so that I can continue to teach this course. The potential students will have to have a university education to get into the course. Over 50% of those in my "Amateur Class" are over 50 years old without a recent formal education. They want a hobby as something to do in their retirement years. They have no desire to make a living at electronics. Simply to share a fun hobby and do their best at Amateur Radio.

Both National Organizations CRRL and CARF need to make representations to The Department of Communications for a fairer level of Advanced Exam. If we wish to acknowledge a higher level of electronic knowledge, there is plenty of room for that at the Digital Licence Level.

73

J.A. Lou Beaubien VE7CGE

Dear Cary:

I recently heard that the CTN was in operation on 7055 kHz nightly. I checked in with QTC VE8 (1) one. NCS sent me down 5 with VE6BLQ I sent QNP. NCS asked me if I would take tfc for ONT and I said OK. At no time did NCS offer to QSP either my tfc or the tfc from VE6BLQ.

I certainly would like to support the CTN and their effort, however, I felt in this example I could not get any co-operation from NCS

and left the net saying I would never check in again. I then took my tfc to GBN.

I regret having to leave the NCS with the words "never check in again" but my feeling in the matter is that why have a traffic net if nobody wants to take traffic!!!

PS NCS was VE5BAF

**73,
Joe VE3ABG**

I hope this was only an isolated case. The boys on CTN are trying to get things moving. Hope they write a reply and explain what happened. ed

Dear editor,

Still enjoying most of your articles especially "Life on the Ocean Wave" written by Bill Deacon.

Although I wasn't a "Sparks", I spent many a pleasant hour chewing the rag with that special breed now passing so quickly into oblivion.

I can remember many a stormy night when "Sparky" said "Look, I got a fully automatic bug!"

Take care Bill and look forward to others.

**Yours truly and 73
Mel Lever, VE1 BSH**

Good, Bill has promised more articles if people want them. This should help encourage him. If there are more "Sparks" around who have a story to tell, send the material to me.

ed.

Dear editor:

Because of its official policy of racial segregation, the Republic of South Africa has become an international pariah, isolated from the community of nations.

Not only governments, but also the sportsmen of most countries now shun South Africa. Even when amateur sportsmen attempt to travel there entirely at their own expense, a furor usually ensues.

Almost uniquely — and shamefully — among sporting and cultural activities, amateur radio continues to maintain links with that country. As far as Canadian

amateurs are concerned, it's still business as usual.

When the governing bodies of most kinds of sport officially discourage or forbid contact with South Africa, why is it that amateur radio organizations actively support sporting links by including that country and its dependencies for recognition in DX awards and contests? Such recognition gives credibility to South Africa that other kinds of sport normally withhold. If Canadian Amateurs have any claim to political consciousness and moral responsibility, we ought to suspend sporting contact with this racist police state.

To ban all amateur communication with South Africa might impose an unreasonable restriction on those amateurs who have relatives or old friends in that country. On the other hand, the overwhelming majority of Canadian amateurs have no such excuse, and I suggest to all of you that the continuing maintenance of a business-as-usual attitude towards the affluent, predominantly-white minority in a racist state is not a harmless activity. At the very least, it projects an attitude of normality and tacit approval that is at serious odds with the position of the United Nations, with Canadian foreign policy, and with the kind of morality to which most of us would like to feel that we adhere.

A Canadian Amateur who deplores racism in all its ugly manifestations can do something about it by putting his DX awards where his mouth is — by voluntarily refraining from amateur contact with the Republic of South Africa and its oppressed dependencies. I am personally prepared to go on record for having placed that country on my personal "banned country" list until such time as apartheid is abolished. I invite other concerned amateurs to join me in making this trivial sacrifice to combat a very great evil.

Some may decry this suggestion as politicization of a fraternal sport. I respectfully submit to them that racism, repression, the jailing and torture of political

dissidents in South Africa is political and must be countered by all political means. The thinking people of the civilized world have a moral duty to fight the obscenities of South African racism with all the non-violent means at our disposal.

In the name of human dignity, boycott South Africa.

**Yours very truly,
Neil Harding McAlister, VE3KSP**

I don't think this will encourage international friendships or co-operation. By denying the South African Amateur the ability to work the rest of the world, we only alienate them from their peers. Pressure should be brought to bear upon their government by our government and the governments of our allies. Only by this method will we influence the racism occurring down there. Practicing our own form of racism will achieve nothing.

ed.

Dear Sir and OM:

The attached Xerox copy is self-explanatory. I am pointing my finger to the last paragraph. I am

also commenting as follows: Anyone against taking code lessons?

Here is some item of personal experience. In 1955, involved with some exploration work in northern Quebec, I got stuck at a place called Blough Lake. Raging bushfires prevented any plane flying in or taking off from that area. Robberval -- the base -- requested weather reports and other very vital information. Murphy's law demanded that the modulator of the transmitter broke down and no spares on hand within that circle of fire . . . So, a knife cut the cord for the mike and after locating the push-to-talk leads I did go CW. Lucky, the operator at the other end was familiar with CW. It was very slow CW having no key on hand. But the message was delivered . . .

As a final note to FMers: Hang on to CW. One day it could save the day.

**Kurt U. Grey, VE2UG
95 Blouin
Sept Iles, P.Q.
G4R 2K5**

Dear Editor:

I'm at work with a few idle

moments to finally finish reading the October TCA; and find there are a couple of things which make me wish to put ink to paper . . .

Firstly, Doug Burrill's "How to Flunk the Code Test": I'm one of the lucky ones who graduated from the one-on-one school (way back there in the spring of '68, 'twas) and I didn't realize that things had deteriorated to such a sorry state. My fiancée is interested in getting her ticket, but she already finds the code requirement a score point. Also being an audiophile, she'd not take too kindly to the sort of nonsense that Doug describes. I do hope that some sort of change can be made, for the betterment of amateur radio in Canada.

We here in B.C. have an active and knowledgeable group of radio instructors and I'm sure there would be no trouble at all in getting the requisite number of volunteer examiners in both code and theory, should the DOC decide to permit us users to have some more authority in the matter.

The second item . . . Wes Veale, VE1LD, was out here this past summer visiting all his old friends

The GAZETTE, Montreal, Thursday, December 16, 1982

61 sailors plucked from raging sea

SEATTLE, Wash. (UPI) — A merchant ship battled high winds and heavy seas yesterday to rescue 61 crewmen who took to lifeboats and abandoned a sinking Indian freighter 1,125 km off the Oregon coast. One of the rescued men later died.

The U.S. Coast Guard said the *Timor Girl* out of Singapore steamed 55 km through high seas and winds to the aid of the 137-metre *Jalamorari*, which had reported its crew was abandoning ship in two lifeboats.

Crewmen of the *Timor Girl* worked in pre-dawn darkness and

4.5 metre seas to find the lifeboats and pull everyone from the *Jalamorari* aboard.

Lt. Mark Ashley of coast guard district headquarters in Seattle said one of the rescued crewmen, who was not identified, lost consciousness and died aboard the rescue ship.

"The cause of death is unknown, and since there are no doctors aboard, it will probably be a while before we know what happened," Ashley said.

The *Jalamorari* sent out its distress call at 10:17 p.m. Tuesday, saying it was taking on water in 90 km/h winds

due west of Florence, Ore.

"Just about every vessel in the Pacific" picked up the SOS, Ashley said, and a coast guard computer determined the *Timor Girl* was within two hours of the sinking ship. The second closest ship was six hours away.

Coast Guard Petty Officer Chris Couch praised the crewmen of the rescue ship for an "excellent job in adverse conditions." He said the quick rescue probably saved many lives.

The *Timor Girl* rescued the men in the first lifeboat at 2:30

a.m. and took aboard all those in the second lifeboat at 3:40 a.m.

No serious injuries were reported among the 60 survivors, Ashley said.

The *Timor Girl* was steaming toward Vancouver, B.C., and expected to arrive this afternoon.

The *Jalamorari* left Squamish, B.C., Saturday with a load of wood pulp and asbestos. Ashley said the coast guard didn't know its destination.

He said most communication with the ship was through Morse Code because of a language problem.



**DRAMA AT SEA
Indian ship sinks**

and attending the Maple Ridge Hamfest and the Pacific Northwest DX Convention. He received a number of prizes, etc., from one or the other, but there was nothing he was prouder of than the BY1PK QSL card. Tommy Wong, VE7BC, has recently given a number of talks about his efforts to get an amateur radio system functioning in China, so I know the amount of effort that went into these achievements. Congratulations to both Tommy and Wes!

And, thirdly, the article "The new designations for Amateur Radio emissions", while interesting in theory, left a lot to be desired in practice:

It should have had the "legalese" translated into the common language understood by us non-lawyers. For instance, I used to call my single-sideband suppressed carrier voice transmissions "A3J" when I entered them into the log. Now, if I'm reading this new stuff correctly, it would be J3E, right? And good old code, CW, or A1, would now be N1A or B, depending on whether I'm talking to a person or a computer, I presume . . . or would it be N3A or B, or even XXX?? And when most of us are on 2 meters, we'd be using F (or G) 3E, I think.

Actually, what I think is that these new definitions definitely need defining!

Yours sincerely,
Dave Bennett, VE7AZG

DEAR EDITOR: Please announce somewhere in TCA . . . that we received from the post office a set of house keys . . . 2 qy. brass . . . "WESLOCK" make, on a WSI KEY RING . . . this may or may not be a customer of WSI . . . and could be located anywhere in Canada. Sincerely, D.W. Wismer, VE3EHC, WSI Radio, 18 Sheldon Avenue North, Kitchener, Ontario N2H 3M2. Telephone (519) 579-0536.

Dear Editor:

Would you please check and see whatever happened to a technical article I submitted in November of last year on a dual test oscillator for IF's. I wrote to the Tech Ed in January but received no answer to that inquiry. The

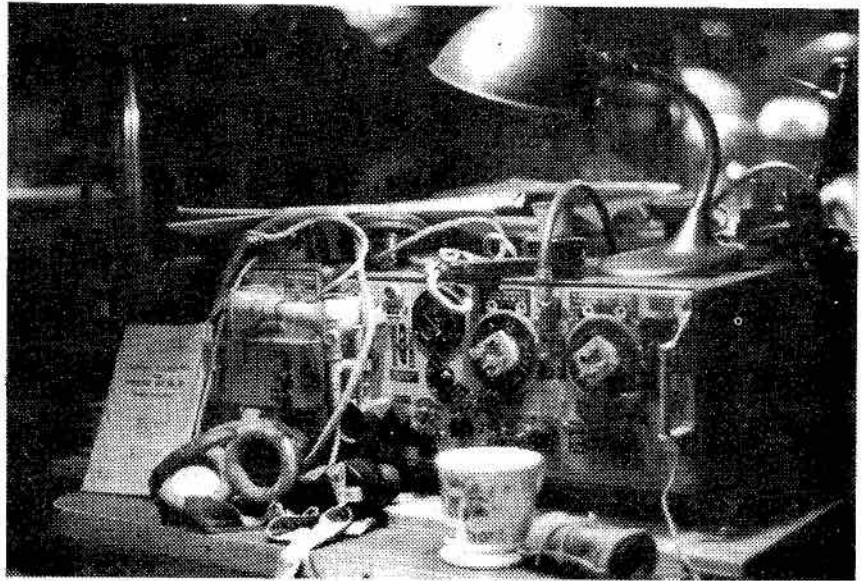
article was submitted to him at Box 356.

I have about another half dozen articles in varying states of completion and from the number of technical articles in the last issue (Feb.) it would appear that you could use some.

Thanks,

Dave Marling
VE1VQ

You are right. We could use some more. As for your article, it is in this issue! ed.



During Easter of 1981, my wife and I spent an enjoyable weekend riding our motorcycle in and around the fair city of Victoria, BC.

Among the fascinating displays we found at the Provincial Museum was this WW II era "No.

19" set, as used by Canadian and Allied radio ops. It does look a little different from the latest boxes from Japan, doesn't it?

73 de VE7EMD
Robert Smits

Regulations for power lines

The DOC has proposed new radio noise regulations covering power transmission and distribution lines as well as substations using phase-to-phase voltages from 1 kilovolt to 700 kilovolts AC. The first-ever regulations of their kind in Canada, they are designed primarily to protect AM sound broadcasting but they will also benefit Amateurs. For example, depending on the type of measuring equipment used, the limits proposed vary from several hundred microvolts per metre in the 160 metre band to several tens of microvolts per metre in the 10 metre band for distribution lines and substations and to a few

microvolts per metre in the 10 metre band for transmission lines, all operating at 220 kilovolts. The limits have to be met at a distance of 15 metres from a point immediately below the nearest line conductor or 15 metres from the property line of a substation. The proposed regulations require that the measuring equipment meet special requirements for quasi-peak noise measurements. They are also very complicated as you have gathered by now. Amateurs who are interested in them should get a copy, complete with tables and graphs, from the nearest DOC office. Ask for Notice DGTR-021-82.

Once Upon a Time

Fred Towner, VE6XX

Once upon a time many, many years ago, there was once a code, sworn to by all Amateur Radio operators. This code has the status, almost, of Holy Writ. It was called "The Gentleman's Agreement".

This Gentleman's Agreement came into being because of necessity. The Amateur bands were in chaos. Anarchy reigned supreme. The operator who had the strongest station ruled the airwaves and the "little guy" got lost in the shuffle.

Somewhere along the way someone started a rumour that if we didn't add large numbers of new Amateurs to our ranks we would lose all of our frequencies and privileges. The big push started. In our efforts to save our bands we turned out new Amateurs like sausages, paying heed only to numbers. Quality no longer meant a thing. We began to "program" would-be Hams instead of teaching them. Well we surely added to our numbers. But, in programming our students, instead of teaching them, we forgot to instill in our students some of the history and traditions of our hobby.

We forgot to tell them about The Gentleman's Agreement.

We forgot to mention the Amateurs Code. We programmed him so that he could respond, Pavlovian fashion, to a known set of exam questions. This was sufficient to get him his Amateur Licence. We never bothered to tell him what his responsibilities as an Amateur Radio Operator are. We were only interested in him as a number.

We worked with the student until we had programmed him sufficiently to pass that DOC exam, then we dropped him cold. From the point where he passed that exam on, he was on his own. We didn't bother to show him how to put together a station. We never showed our new Number the importance of operating courtesy.

We never imparted to our students sufficient knowledge of how to, most fully, enjoy our hobby. Instead, we turned him loose on the bands with only half a deck.

We churned out hundreds, if not thousands, of new Amateurs with barely enough knowledge of Morse to pass that test, (In fact, we did a pretty poor job of that because better than 60 % of our students fail the code test), and not even enough knowledge to put a clean HF station on the air. Is it any wonder that most of our students have never gotten on HF. Have entirely forgotten the code they worked so hard to learn, and, if heard on the air at all, are only heard on two metres.

Those of our students who do manage to get an HF station of the air, never having been told anything of the traditions of Amateur Radio, never having learned of the Gentlemen's Agreement, or The Amateurs Code, invariably end up by doing something that is detrimental to our hobby. For example, those CW stations who are chewing up the bottom portion of the 20 metre phone band, 14.100 to 14.120 usually, or the group that have started a CW traffic net on 3.757 MHz, the same time and frequency as the BC Public Service Net, or those super aggressive DX'ers who throw good operating habits, courtesy and the regulations to the winds in an effort to snag that rare one. This aggressive behaviour spreads like wildfire and you eventually find even Old-Timers, who should know better, emulating the behaviour of these "bad guys".

A prime example of this was the chaos that ruled the 20 metre band last September during the PY0, Peter and Paul Rocks, DXpedition. Here you had a DX station calling on 14.195 MHz and telling the world he was "listening 14.200 and up". The result, total chaos on the whole 20 metre band. People, who were, by law,

restricted to 14.200 and up were dropping down below 14.200 to hold their QSO's and skeds because the band above 200 was unusable because of the intense QRM. Of course the self-appointed policemen promptly took over and added to the screaming, cursing spectacle that ensued. Never, in my more than 25 years on the Amateur bands, have I heard such crudeness. A YL W4 came on the PYO's, frequency and started calling CQ DX. She justified this on the premise that the PYO was causing QRM over the portion of the band where she was authorized to operate so therefore she was perfectly justified in QRMing both the DX station and those who wished to work him. Some of the dialogue that went on between this YL and the "policemen" was crude in the extreme, even to the point of someone questioning her satisfaction with her sex life. Disgusting. I was ashamed and saddened that such a noble and uplifting hobby as ours had degenerated to this.

I hope, by now, that it has become obvious that our quest for numbers could be fatal. What we need is quality as well as numbers, with, I feel, quality being much more important than just sheer numbers.

Whenever the talk of justifying the vast bands of frequencies allocated to the Amateur Experimental Service is instigated, we always seem to be able to hold our heads high while we trot out the old myths of opening up HF, pioneering the use of CW, improvements to antennae, popularizing SSB, etc. Even if all this were true, the burning question remains, "what have we done lately to justify our existence?" The answer seems to be "darn little, if anything". Why is this so? I maintain it is because we have turned out a whole generation of Amateurs, with so little knowledge of even the basics, that they are unable to understand even the most basic of techniques so

necessary as a foundation to the health and continuance of our hobby.

Please don't get me wrong, I'm not saying that numbers are not important. They are, to some degree. But quality is the primary importance to the existence of Amateur Radio. We don't hold on to this vast spectrum of ours because of our past exploits in the "early days" of radio. We really can't justify it because of the promise of future exploits. We continue to hold on to our frequencies because the military administration in the worlds most influential countries want it that way. We are holding these frequencies in trust for the military. We hold vast hunks of valuable RF real estate, we are readily controlled by our governments, we can be easily removed from these frequencies should the need arise. That is the reason why we continue to hold all this choice RF spectrum. So lets forget the pious bleatings about all our contributions to the art of communications. Let us, instead, concentrate on putting out a quality product that we can be proud of, and will greatly increase our enjoyment of the greatest hobby ever.

When we set up our Amateur Radio courses let us not forget to **teach** our students a bit about our history, our traditions, courtesy. Let's do a follow up on our students and help them put together a station that we can be proud of. A station that can be operated by the new Amateur with pride and knowledge. But let's not drop our new Amateur there. Let's continue to do a follow up. Encourage him to go for his Advanced ticket, not just his Ten Meter Endorsement. And, last but not least, let's clean up our own act so we can be a good example to our new compatriot. Let us return, once again, to the days of "once upon a time" so that we may hold our heads high with justifiable pride in our hobby.

We pay for technical articles.

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

The perils of portables

Joe Carberlin VE3 ABG

Some recent visitors to a large shopping mall in Toronto have run afoul of the law.

After hearing a lot of talk on one of the local two meter repeaters about how much fun it was to challenge the mall security staff it seemed to me that something should be done to find out what was going on, and inform my fellow amateurs on my findings.

I contacted the head of security at "Handheld Mall" and he confirmed the information that follows.

During visits to the mall over a period of two or three weeks time, several persons have been approached by mall security staff and have been asked to leave after being observed to be carrying and using two meter handheld radios. In several instances the security staff have been challenged, thus forcing them to call the Police to settle the issue.

One individual began using very abusive language and it was the opinion of the head of security that the police maintained their composure even though they received a lot of uncalled for verbal abuse.

In the case of one individual a false name was given when he was asked to identify himself.

The individuals involved have been banned from the mall as a result of their rather questionable behaviour. Some of them have been banned because they repeatedly ignored warnings that they were on "Private Property" and that their so-called Federal Radio licence was not going to get them any immunity.

Mall security officials said they have to control the use of handheld radios for security reasons. Since mall security staff use handheld radios in their daily line of work and are well known by the mall merchants, strangers seen operating handhelds in the mall are liable to confuse the merchants and even distract the shoppers. There has been one case of a bank robbery in a mall involving the use of "walkie talkies".

The mall security staff are very well trained and have a job to protect the interests of the merchants in the mall. It was pointed out that shopping was the purpose of the mall and that it was not a proving ground for the purpose of testing handheld radios.

I concluded that the mall security staff were entirely within their rights and the law to ask the people to leave.

I wonder what your readers think of this situation.



Stations: VE1 IV, Barak Smith (Smitty), Dayton, N.S.

Resolving Cable TV Interference

Bill Wilson, VE3NR

Cable TV interference (CATVI) is not a new kind of interference. We have had it since the first day cable TV systems were built in Canada almost 30 years ago. But it is new for Amateur and other radio services beginning the day cable TV systems began to use mid-band and super-band frequencies. See Figures 1 and 2 respectively. It is due to leaks in cable TV (CATV) systems which allow signals in the cable to leak out and interfere with radio systems on the outside. Of course, those same leaks make the cable system susceptible to interference leaking into the cable. However, we will leave this latter problem for the future when, if ever, CATV systems use mid or super-band frequencies for reception from the places they now serve.

In any geographical area served by CATV, the magnitude of the interference to Amateur services depends on how "tight" or well built the CATV system happens to be. CATVI received a lot of discussion at the CARF National Symposium at Scarborough last year and later that same year at the RSO Convention. It has been a serious problem for the Halifax Amateur Radio Club among others for some time now. It has also been a concern to other non-broadcasting radio services in the Toronto area for at least 10 years.

In years gone by, whenever Amateurs had interference problems, only the complainant (most often a private individual), the Amateur and DOC were involved. With a little cooperation these problems were quickly resolved.

However, Amateurs and Amateur clubs involved with CATVI will have to play in an entirely different ball game. The opponent is a company rather than an individual; two umpires with different objectives in mind will do the judging, and the corrective measures will be very costly and time-consuming to implement. Also, it is a uniquely Canadian-made game; no one else in the

world plays it like we do. But, Amateurs can win if they are prepared to understand the game and take advantage of all the opportunities that it creates. Now let's look at the law and the key players.

The Law, The Regulators and the Regulated

Cable TV systems are regulated under the Radio Act by the Department of Communications which grants Technical Construction and Operating Certificates (TC and OC), and under the Broadcasting Act by the Canadian Radio-television and Telecommunications Commission (CRTC) which grants licenses. According to these two acts, the license has no authority unless there is a valid certificate, TC and OC, in effect. While DOC, therefore, could shut down a CATV system if a case of interference were not resolved, DOC would think hard and long before it deprived a city of umpteen channels of TV. One channel, maybe; a whole system, never.

To see what opportunities are available for Amateurs to get a case of CATVI resolved, we should start by familiarizing ourselves with both of the authorization processes.

The Authorization Processes

An application must be made to the DOC for a TC and OC. In it and in an accompanying technical brief, the applicant must satisfy the DOC that the proposed system will provide an acceptable grade of service, meet DOC technical standards (known as Broadcast Procedure 23) and be compatible with other radio systems. If DOC finds problems with a proposal, the applicant will be asked to make changes to resolve them. If a third party is involved, a meeting may be held to do this and ensure that all affected will be satisfied. If there are no problems, the DOC

promises the CRTC that it will issue a TC and OC.

At the same time as the embryo cable company files an application wit DOC, it also files one with the CRTC for a license. In this second application with its accompanying brief, the company has to satisfy the CRTC that, after a review of such considerations as ownership and control, financial viability, social benefit to the community and country, impact on other broadcasting services, area to be served, stations distributed and other services provided and rates charged, the proposal is acceptable and may be licensed. If the DOC has promised to issue a TC and OC and the application to the CRTC is generally acceptable, the Commission refers the application and supporting brief to a public hearing at which anyone can comment in support or in opposition. The hearing procedures are very strictly followed. Comments have to be made in writing and made available for public reviewing prior to the hearing.

While, according to the law, the CRTC is not required to have any interest in technical matters, it does in fact take quite an interest because equipment costs money and affects service to the public and the system's viability.

At the CRTC hearing it is customary for the Commissioners and some of their senior staff to question the applicant and those supporting and opposing the application regarding the proposal and the comments. If there is a conflict or problem the Commissioners will get to the bottom of it through their questioning. Usually the DOC sends an observer to assist with any technical matters should they arise. When the hearing is over, the Commissioners meet "in camera" to write their decisions.

If the decision is favourable, the DOC and CRTC coordinate and issue the TC and OC and license on the same date. Normally both are valid for five years.

Two possible courses of action are open to the cable TV company from here on. It can "run out" the five year period and seek a renewal of its TC and OC and license or, if business is good, it may want to enlarge its service area, add channels or otherwise make extensive changes within the five year period.

To obtain a renewed or amended TC and OC and license, it has to go through the same process as outlined above.

Amateurs with CATVI problems should realize that the CRTC hearings provide excellent opportunities to publicize interference problems and they should plan to make the best of them. More about that later though.

Technical Briefs and Proofs of Performance

Briefs, as mentioned earlier, are associated with applications and are not terribly important from the Amateur's point of view and CATVI.

Proofs of Performance, however, are important. They show the DOC that "the system performance ie essentially meeting the operational and technical standards of the Department". Broadcast Procedure 23 sets out the standards (including the radiation standard) and how they are to be measured. Proofs are prepared by Registered Professional Engineers experienced in CATV design, operation and evaluation. A Proof has to be submitted one year after a system commences operation and one year prior to the expiry date of a TC and OC.

Additionally, "For major changes to a system such as the introduction of augmented channel capacity, ie. the use of channel capacity beyond the potential of 12 channels available in the standard VHF broadcast band, or extensive increases in service area, the Department may require the submission of a proof of performance...". If you read the above extracts from broadcast Procedure 23 (BP 23) carefully, you may have noticed a couple of loopholes in the requirements.

The regulatory processes are certainly complicated but their very complexity creates several opportunities which can be put to good use by Amateurs who are prepared to persevere in seeking solutions.

Suggested Steps for Resolving CATVI Problems

1 Get a copy of the latest issue of Broadcast Procedure 23 from the local office of DOC and study it carefully. It is essential that you know the radiation limits that the CATV company has to meet and how they are measured. Other related information in BP 23 should not be overlooked.

2 Because leakage in the 2 meter band from a cable system which meets the DOC standard (10 microvolts per meter at 3 meters from the cable) will result in a receivable signal in modern Amateur equipment 60 feet from the cable, one cannot assume that, since a signal is received, the standard is exceeded. Therefore, the leakage from the cable lines must be measured at a number of locations throughout the interference area to confirm that the leakage exceeds the DOC requirements.

It is a time-consuming task but, because DOC Inspectors may not have time to do it, there may be no other alternative. Be sure the carrier measured comes from the cable and not directly from some distant transmitter. Test equipment (receiver, transmission line and antenna) should be calibrated if at all possible so that you can get a fairly accurate indication of the radiation in microvolts per meter. You may be pitted against a cable company and/or DOC engineer on the matter of measurements and you will want to have a good case technically.

3 So as not to get caught short of time, find out from the Canadian Radio-television and Telecommunications Commission, 1 Promenade du Portage, Hull, Quebec, K1A 0N2, when the cable system license comes up for renewal and the closing date for the receipt of interventions to be heard in connection with that

renewal. If you cannot get your problem resolved, the public hearing is an opportunity to "go public" with your problem that cannot be missed.

Interventions, as they are called, take time to prepare and the CRTC will not accept them if they are late.

4 Now, equipped with measurements that prove interference, you can go and talk to the cable company to get them to repair the leaks. If they are reluctant, bear in mind that locating and repairing the leaks can cost many thousands of dollars, especially if the system has not been well maintained. You may have to be very persuasive.

The Canadian Cable Television Association recognizes that leaks result not only in interference to, but also make a cable system liable to interference from, other radio services. Leakage is therefore of concern to the Association and its members and it has prepared a "Radiation Monitoring Handbook" to help member companies. Included in the handbook is advice on how to monitor a system for radiation leaks, measure radiation and locate leaks. Technical help is also available to the companies from many other sources. Accordingly, Amateurs should not become involved in any more than helping cable technicians locate leaks.

Amateurs should not overlook another complication. House and apartment building "wiring", when improperly done, can cause terrible interference problems and, depending on who owns and maintains the distribution system in the building, may be beyond the control of the cable company.

5 If you cannot make any headway with the cable company, go to the nearest DOC office with your measurements and lodge a complaint in writing concerning the illegal interference to your licensed Amateur service.

6 If the DOC's local office cannot produce results after a reasonable amount of time, you should write the Minister of Communications. Throughout all these steps you should keep an eye on the closing date for interventions

at the public hearing. A copy of your letter to the minister should also be sent to the Chairman of the CRTC at the above address.

7 There is an opportunity to get some support from the non-broadcasting radio services. If a cable system leaks TV channels 18, 23 or 24 E.I. or K1 into an Amateur band it will leak TV equally well into the 120 - 174 MHz band used by police, fire public utility, municipal, provincial, marine taxi, railway, mobile phone and many other radio services.

See Figures 1 and 2 again. Licensees in these services can be consulted and their support sought if they are getting interference. This is leverage that should not be overlooked though it may require quite a bit of work to make a go of it.

8 By now, if progress is uncertain or nil, you should get on with the preparation of your intervention before the CRTC. As soon as you can, you should get a copy of "CRTC Rules of Procedure" from the CRTC (at the address given earlier). It is essential that you have this, as it tells about the preparation of interventions and replies to them, the production and filing of documents, the conduct of public hearings and other related matters.

Your intervention before the CRTC should not be based solely on the technical aspects of the problem, otherwise they will turn it back to the DOC. The Commissioners are not technical people. Rather, you should pull out the stops and sell Amateur Radio for the social, cultural, public and international services it performs as well as for the technical skills it develops. Explain briefly the cause of the interference. Then, by reference to your measurements and the DOC standards, show that the radiation is excessive and explain how it interferes with your Amateur activities. Conclude by asking the CRTC to require the licensee to stop the interference by such methods as tightening up the leaky cable system or forbidding the use of the interfering channel on the system.

The above outline of what

should go in an intervention is merely a suggestion to help get thoughts started. What you finally decide to say will have to be tailored to suit your particular problem and the way in which the DOC and the CATV company have reacted to your requests. When you go to the hearing you should be prepared to be questioned on all aspects of the problem and to rebut the claims of the licensee.

If DOC is not moving on your problem, you may want to tell it that you plan to air your problem before the CRTC. You may be able to pick up some leverage here as DOC may not want that to happen.

9 Until the interference is cleared, the pressure has to be kept on the DOC and the CRTC. Further, an intervention should be made at every hearing of the CRTC when the CATV company's license comes up for renewal or for amendment. Amateurs would be well advised to monitor the interference regularly to see that the repair program is properly completed. Even after that, monitoring should be carried out regularly to ensure that, as the system ages and weathers, it does not spring leaks again and create a return of the interference.

Finale

This whole procedure may ap-

pear overwhelming on first reading. However, take heart. The Halifax Amateur Radio Club had a CATVI problem in the 2 meter band from the Halifax Cablevision Limited system. They eventually had to take their case to the CRTC, not once but twice. The end result was success. An interesting note in passing: in response to a question from the CRTC at one of the hearings, the cable company said it would take 5 to 6 part-time workers, a 25% increase in their technical staff and approximately 4 months to repair the cable system in one section of their service area. As a result, it will cost \$20,000 to \$30,000 to do that one section.

The Halifax Amateur Radio Club is monitoring the progress carefully. They have very kindly provided CARF with copies of its correspondence with the Minister of Communications and its intervention before the CRTC. Clubs with CATVI problems will find this most helpful and so CARF Headquarters will make copies available to affiliated clubs and members for a nominal charge to cover reproduction and mailing costs.

(The CRTC decision in the Halifax case was printed in February's TCA. ed)



CARF

Crests

\$2.00

plus 50¢
shipping & handling

made of woven fabric
for your jacket

Check Order form on Page 48

Resolving cable TV interference

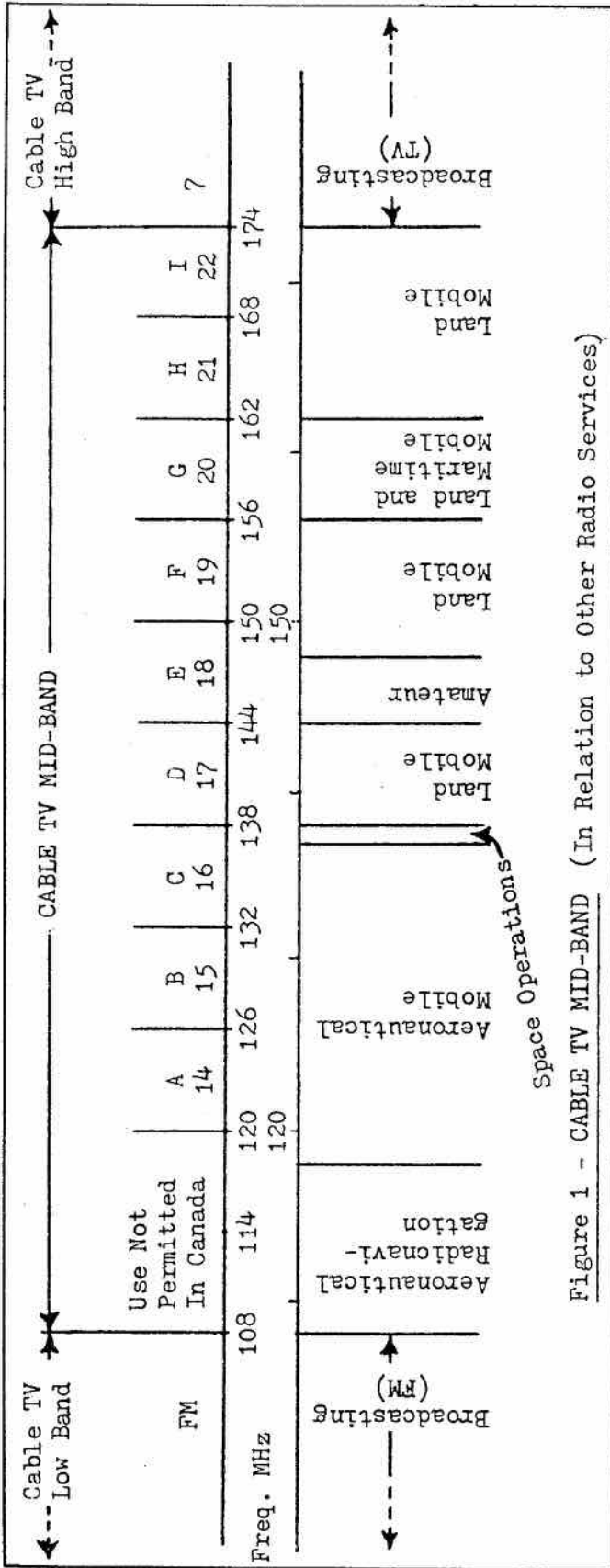


Figure 1 - CABLE TV MID-BAND (In Relation to Other Radio Services)

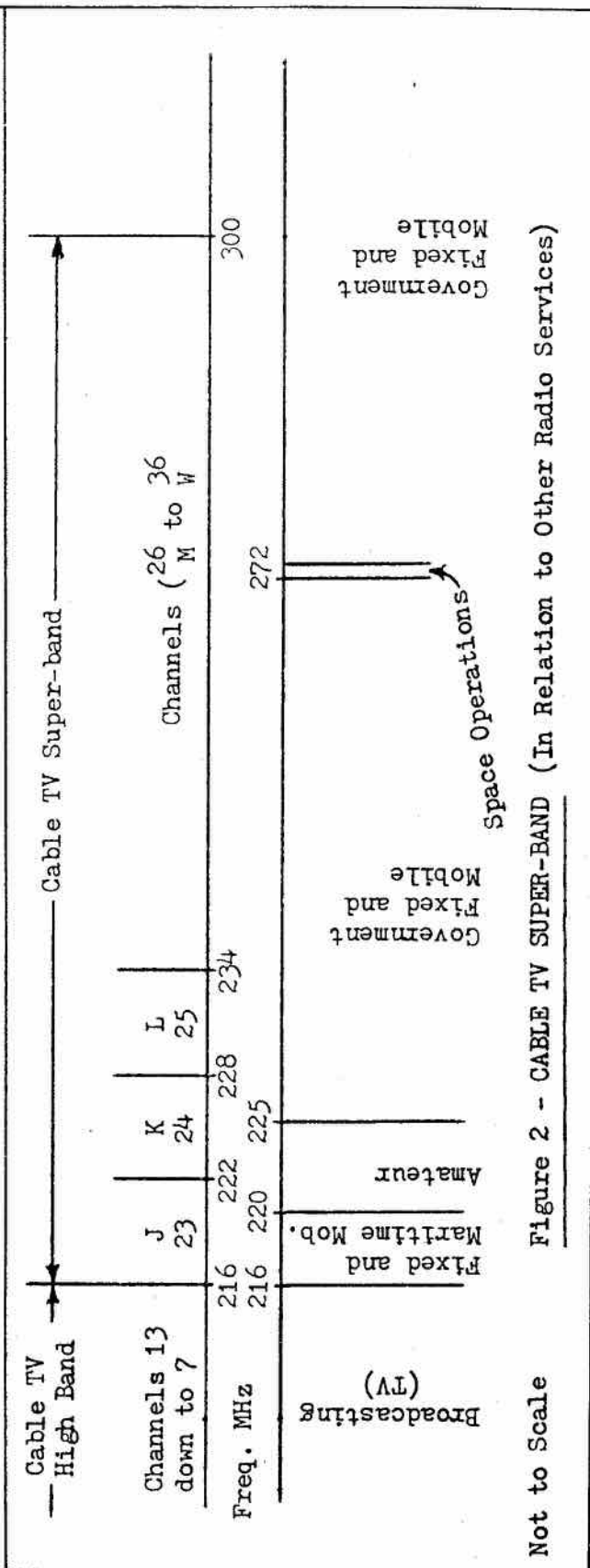
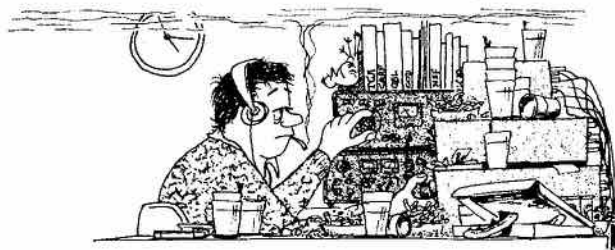


Figure 2 - CABLE TV SUPER-BAND (In Relation to Other Radio Services)

Not to Scale

CONTEST SCENE

by Dave Goodwin,
VE2ZP



Contest Calendar

March

5-6 ARRL DX SSB
12-13 RSGB Commonwealth CW
19-20 Bermuda Contest
19-20 BARTG RTTY
26-27 CQ WPX SSB

April

1-3 VO Activity Contest
2-3 Polish DX CW
9-10 **CARF Commonwealth SSB**
16-17 Polish DX SSB
23-24 Swiss 'H-26'
23-24 King of Spain

May

14-15 USSR CQ-M
28-29 CW WPX CW

Although January was not a great month for propagation, the contests of that month came away relatively unscathed.

The second running of 73 Magazine's 40 and 80 metre contests was quite successful. The contests have been formally split, and are run as separate affairs. This year on 40 metres the principal race was between VE2ZP and VE3ICR. ICR did very well in terms of multipliers, collecting about 105, but ZP's higher QSO total, especially with DX, made up the difference. Participation did not seem as high as last year, and was certainly down a bit in this country, but the number of Europeans who have taken interest in this contest has risen noticeably. Canadians were among the first-place scorers last year, but this year, some of the US stations may have pulled ahead. On 80 metres, there appeared to be even less participation. In this one, VE2ZP was graced with the presence of VE1BCZ, and went multi-op. Scores on 40 metres were in the 60-70k range from ZP and ICR, and about 40-45k on 80 from ZP.

Although participation seemed down a bit from last year, conditions were at least as good, and there were certainly more DX stations available to add to the multiplier total.

The World Communications Year Contest sponsored by the Potomac Valley Radio Club in the USA came off fairly well, although participation could have been higher. Almost all the action took place on CW, and most of that on 20 and 40 metres. Europeans were present in good numbers, as were US stations, but only a few Canadians were at all active. VE1ASJ was the most prominent VE, but Andy did not appear to be attacking the contest seriously. I must apologize for the errors I made when publishing the rules. I hope no one was inconvenienced.

The other Contest that same weekend, the 73 Magazine 160 metre SSB contest was quite well attended. A number of VEs appeared to be active, with VE3ABG leading the pack by a fair margin. A number of people were heard commenting on the good conditions, but at one point I looked around the band in the middle of the contest on Saturday at about 0500z and heard not one single signal. I'm sure there is a deeper story in there.

The other 160 metre event of the month, the CQ 160m CW contest appeared to enjoy exceptionally good conditions. Andy VE1ASJ, using the call XL1ASJ (200th anniversary of the incorporation of Saint John) was very active in the time available between work. He made in the order of 400Qs, more than 100 of them with DX. If he decides to send in a log, he could do very well. VE3INQ was the other major player from Canada. As mentioned before, the new rules for this

contest should help VEs rise to top of the heap. It will be interesting to see how the results look with the new rules.

Commonwealth Contests

Both the RSGB CW and CARF SSB contests are coming up in the next few weeks. Rules for the CARF SSB contest appear elsewhere in this issue of TCA. Rules for the RSGB's venerable CW contest are identical, except that the contest is run, naturally in CW, activity should take place in the lowest 30 kHz of each band, entries must be **received** by 17 May, and logs should be sent to: Dennis Andrews, G3MXJ, 18 Downsview Cres., Uckfield, East Sussex, TN22, 1UB, U.K.

Bermuda Contest

Period: 0000z 19 Mar to 2400 20 Mar. Operate a maximum of 36 hours, with rest periods of not less than 3 hours.

Classes: Single operators only, and from your own home location.

Bands: 80 through 10 metre bands, (except 10 MHz) No cross-mode or cross-band working allowed.

Points: 5 Points/QSO with VP9 and DL. 7 points/G, GI, GM, etc. work each stations once only per band, in either CW or SSB.

Multipliers: Total of VP9 QSOs.

Exchange: RST and Province. G stations will send RST and county, DL will send RST and DOK number, VP9 will send RST and Parish. USA stations will also participate, but you cannot work them.

Awards: The first place Canadian entrant will receive a trip to the RSB annual dinner in October to receive his or her plaque. You can only win this trip once in five years. Certificates will be awarded

CONTEST SCENE

by Dave Goodwin,
VE2ZP

to top scorers in each Province and territory.

CQ WPX Contests

Period: SSB: 0000z 26 Mar to 2400z 27 Mar. CW: 0000z 28 May to 2400z 29 May

Classes: Single operator: Single or all bands, with separate QRP sections; Multi-operator, single or multi-transmitter. Single operator entrants may work a maximum of 30 hours.

Bands: 160 through 10 metres, except 30 metres.

Points: 0 points/VE, 2 points/other North American, 3 points/QSO with stations on other continents. These values are doubled on 160/80 and 40 metres.

Multiplier: total of prefixes worked. A prefix counts only once, regardless of band.

Entries: should include dupe sheets and a summary sheet showing claimed Contacts and points per band, and calculation of final score. Include a checklist of prefixes worked. SSB logs should be sent by 10 May and CW logs by 10 July to: CQ WPX Contest, 76 N. Broadway, Hicksville, NY, 11001, USA, or to Steve Bolia, N8BJQ, 7659 Stonesboro Dr., Huber Heights, OH, 45424. USA.

VO Activity Contest

Period: 0000z 1 April to 2400z 3 April.

Classes: Single operator only.

Bands: 160 through 10 metres. Although this is not stated, I presume this excludes 30 metres. Both CW and SSB may be used.

Points: VO stations may work all Canadians. VE/VY may work only VO. VO to VO QSOs count 2 points. VO to VE QSOs count 1 point. QSOs with members of the SONRA executive count 5 points. They are: VO1s FX, IF, JN, JW, KM, KR, KZ, and MP.

Exchanger/Multiplier: there is no mention of either of these. Presumably there is no multiplier scheme, and as for the exchange, take your lead from the VOs who

are most active in the contest.

Entries: Send logs by 17 April to: Maurice Gladden, VO1FG, Awards Chairman, SONRA, P.O. Box 1226, St. John's Nfld., A1C 5M9.

Polish DX Contests

As Polish stations are not yet back on the bands, this is written on the presumption that they may show up in time for this contest. As they did show up for 24 hours of the CQ WW CW last fall, it may be that they will be given similar permission for their own national contest.

Period: 1500z 2 April to 2400z 3 April.

Classes: Single op, single or all bands; Multi op, single transmitter.

Bands: 80 through 10 metres.

Exchange: RST and serial number. SP will send their county.

Points: Work only SP stations, 3 pt/QSO. Each station may be worked once per band.

Multiplier: Total of Polish Provinces worked on all bands.

Awards: Certificates to the top scoring entrant in each Canadian call area.

Entries: Must be sent by 30 April for CW and 15 May for SSB. Entries should be sent to PZK Contest Committee, P.O. Box 320, 00-950, Warsaw.

Contests and Awards Committee

The Canadian Amateur Radio Federation is pleased to announce the CARF Commonwealth Phone Contest, 1983 1200z 9 April to 1200z 10 April.

This contest is open to Amateurs in all countries of the Commonwealth of Nations. Entrants may work other Amateurs in the 80, 40, 20, 15 and 10 metre bands, using SSB (J3E).

CLASSES OF ENTRY:

Single operator stations only, in all - or single-band classes.

EXCHANGE:

RS report and a consecutive serial number, starting at 001.

SCORING:

Work only Amateurs outside

your call area. Each station may be worked once on each band. Each QSO counts 5 points. A bonus of 20 points may be claimed for the first, second and third contacts with each Commonwealth Call Area on each band.

SUGGESTED FREQUENCIES:

Plus and minus 20 kHz of 3600, 3760, 7080, 14130, 21200 and 28480 kHz.

ENTRIES:

A valid entry must include Log Sheets, Dupe Sheets, a checklist of Commonwealth Call Areas worked on each band and a summary sheet showing claimed QSO and bonus points and final claimed score calculation. Summary and Call Area Checklist sheets are available for an SASE. Entries should be mailed within one month of the contest to: Carf, P.O. Box 2172, Station "D", Ottawa, Ontario, K1P 5W4, Canada.

AWARDS:

A plaque will be awarded to the top scoring all-band entrant. Certificates will be awarded to high scorers in each class in each Commonwealth Call Area.

RESULTS:

Will appear in TCA - the Canadian Amateur Radio Journal. Non-members of CARF may wish to include an SASE with their entries for a copy of the results.

This contest should not be confused with the RSGB's March CW Contest on which the rules of this contest are based. Do not send entries for the SSB event or RSGB, or CW entries to Carf.

Results, Canada Day Contest 1982

This year's Canada Day Contest was hit by another of the legion of propagation disturbances that will make 1982 a year to forget. Not all was dark and gloomy, as a few of the standing records were moved up. The VE7ZZZ gang did a nice job on the multi-op record, moving it up a few thousand over last year's fine effort. CJ5RA, using the only special prefix available during this contest, made short work of

CONTEST SCENE

by Dave Goodwin
VE2ZP

the long-standing 20 metre record, almost doubling it. With the coming years of declining sunspot activity, Doug may have set a record that will not be beaten for a long time. VE7AB, taking advantage of one of the handful of 4 element Yagis on 40 metres in this country moved the 7MHz mark up a few notches. Ivan VE3LNQ, the prominent 160 metre active, filled in the 1.8 MHz hole in the records table, and should conditions be better next year. Ivan will certainly improve on his efforts.

Conditions were generally very poor, with only very marginal openings on 10 and 160, and somewhat better openings on 15 and 80. 40 was in fair shape, but by far 20 metres was the big traffic band. Coast-to-coast openings on 20 seemed to be the order of the day, and activity was generally high. 10 metres seemed to be of some use to stations in the West, with some contacts made among the four western provinces. In the east, there was a different picture. No eastern entrant appeared to work anything but locals. 15 was a fairly good source of multipliers, but skip was fairly long, and that made collecting those Maritimes multipliers very tough from Central Canada. 20, as mentioned above, was good for coast-to-coast work right through the contest, and as on 15, skip was quite long. As we can see from CJ5RA's score, this really helped roll up Western QSO totals, and VE7ZZZ's collection of VE1/2/3 QSO's is almost as impressive. For those of us stuck in Central Canada, and to a lesser extent the Maritimes and Newfoundland this made the going a little rough.

40 metres was not very good for QSOs, but the multipliers were there to collect. Signal strengths were not great, but it was fairly easy to work Central Canada from the west. Going through the logs I did not notice any QSOs between VO/VE1s and VE6/VE7s. 80 was very much like 40, except signals

were even poorer. There did not appear to be great numbers of stations taking advantage of what propagation there was to enjoy on 80, and this certainly kept scores down.

Participation was fairly good this year, with all provinces and territories represented in the results except for the perennial 'tough nuts' VE8 and VY1. A few stations were on from these areas, but they were suffering the worst of the lousy propagation, and only a few people were able to snag these multipliers. It is worthwhile noting that none made a clean sweep of multipliers on any band/mode.

The CARF trophy for the top single op all bands entrant goes to Dave VE2ZP for the second consecutive year, who just barely nosed out Bob VE3KZ. Bob was far

ahead in terms of QSOs, but Dave had the jump in multipliers. One big disappointment was the non-appearance of a log from Tom VE3FKK, who would have placed third overall. His score was reckoned at about 155k. VE3MBN was the sole entrant on 28 MHz, and his score certainly speaks accurately for the shape of the band. CJ5RA was the big score on 14 MHz, with a very tight race for second place among VE6CHW, VE7EGR and VE7CNQ. On 7 MHz, VE7AB's fine score was just 2k ahead of his nearest competition, VE1CCM. Peter was able to pull ahead on the strength of his multipliers. John was able to work the population centres of VE2/VE3 much more easily than was Peter, but that wasn't quite enough to pull ahead.

RESULTS, CANADA DAY CONTEST, 1982

| A-Single op., all bands | | | |
|---------------------------------------|---------|------|----------|
| AA-Single op all bands, Amateur class | | | |
| AQ-Single op all bands, low power | | | |
| Cl. Call | Score | QSOs | Pts Mult |
| A VE2ZP | 267,812 | 399 | 3266 82 |
| A VE3KZ | 241,626 | 512 | 3661 66 |
| A VE1CEG/ns | 120,566 | 337 | 2621 46 |
| A VE1AJJ/ab | 82,017 | 285 | 2103 39 |
| A VE3LMG | 76,976 | 262 | 2264 34 |
| A VE3LQJ | 62,370 | 181 | 1485 42 |
| A VE3LMN | 58,509 | 202 | 1723 33 |
| A VE3LNY | 50,232 | 150 | 1288 39 |
| A VO1OI | 37,671 | 133 | 1299 29 |
| A VO1VCA | 32,504 | 199 | 1912 17 |
| A (VO1NP op.) | | | |
| A VO1QST (VO1AW op.) | 21,160 | 132 | 920 23 |
| A VE3JCV | 20,655 | 101 | 765 27 |
| A W5WG | 19,761 | 93 | 941 21 |
| A VO1OK | 18,984 | 89 | 904 21 |
| AA VE3KHE | 16,728 | 96 | 697 24 |
| A K3FN | 14,166 | 148 | 787 18 |
| A VE1BAK/ns | 13,194 | 71 | 733 18 |
| A W7TC | 13035 | 157 | 869 15 |
| A VE3LHS | 11,580 | 123 | 1158 10 |
| A VE7IQ | 10,773 | 125 | 567 19 |
| A VE3GWM | 10,710 | 61 | 595 17 |
| A VE4RF | 10,374 | 61 | 494 21 |
| A VE5BCT | 9,006 | 49 | 474 19 |
| A VE7EGD | 8,330 | 58 | 595 14 |
| A K88Q | 8,295 | 56 | 553 15 |
| A W3ARK | 7,536 | 86 | 628 12 |
| AQ WA4PGM | 5,784 | 84 | 482 12 |
| A W6YMH | 5,488 | 58 | 392 14 |
| A VE3NBE | 5,423 | 114 | 493 11 |
| A LU1EWL | 4,848 | 60 | 404 12 |
| A VE3JKE | 4,308 | 70 | 359 12 |
| A W8VSK | 3,828 | 47 | 319 12 |
| A K6XO | 3,670 | 133 | 367 10 |
| A VE7EXK | 3,360 | 37 | 280 12 |
| A VE3IDW | 2,849 | 29 | 289 11 |
| A VE7DLQ | 2,484 | 50 | 276 9 |
| A VE2AMN | 1,818 | 20 | 202 9 |
| A VE1DX/pei | 1,368 | 17 | 152 9 |
| AQ VE5AQY | 1,188 | 28 | 198 6 |
| AQ KA1CZF | 984 | 30 | 164 6 |
| A AA6AA | 847 | 21 | 121 7 |
| A VE7EOQ | 636 | 25 | 106 6 |
| AQ KEAQM/VEL/ms | 516 | 30 | 129 4 |

| | | | |
|--|---------|-----|---------|
| MS VE7ZZZ | 356,440 | 599 | 4690 76 |
| MS VE6CAW | 56,875 | 227 | 1625 35 |
| MS VE3VCA | 20,614 | 107 | 937 22 |
| MS DA1TR/p | 4,617 | 62 | 243 19 |
| MS operators: | | | |
| VE7ZZZ: VE3ORD, VE7s ENF, ENI, EMX, SK, VY | | | |
| VE6CAW: + VE6s CCO, CQG | | | |
| VE3VCA: VE3s EW, HWS | | | |
| DA1TR/p: +DA2GN, DA2RO. | | | |

| 28-Single op., single band | | | |
|--|--------|------|----------|
| MS-Multi-op., single transmitter | | | |
| K4A-Single op single band, Amateur class | | | |
| Cl. Call | Score | QSOs | Pts Mult |
| 28 VE3MBN | 156 | 15 | 78 2 |
| 14 CJ5RA | 54,820 | 582 | 2741 20 |
| 14 VE6CHW | 33,246 | 335 | 1847 18 |
| 14 VE7EGR | 29,916 | 254 | 1662 18 |
| 14 VE7CNQ | 26,800 | 184 | 1340 20 |
| 14 VE7EDA | 13,086 | 76 | 727 18 |
| 14 VEGAMY | 6,939 | 75 | 771 9 |
| 14 KO7G | 2,870 | 163 | 587 10 |
| 14 G4HBI | 2,256 | 59 | 584 9 |
| 14 DL6YBD/VO2 | 4,752 | 62 | 594 8 |
| 14 VE3LCZ | 4,543 | 43 | 413 11 |
| 14 VE4AKP | 4,408 | 99 | 551 8 |
| 14 VE7BAG | 4,015 | 40 | 365 11 |
| 14A VE3KOY | 3,357 | 57 | 373 9 |
| 14 VE3ACB | 3,020 | 31 | 302 10 |
| 14 VE3KZE | 2,849 | 110 | 407 7 |
| 14 W4AP | 2,536 | 38 | 317 8 |
| 14 VE6CFH | 2,488 | 70 | 311 8 |
| 14 VE1ZN/ms | 2,254 | 60 | 322 7 |
| 14 W5NR | 1,760 | 21 | 220 8 |
| 14 JELCKA | 1,350 | 25 | 225 6 |
| 14Q VE3NOS | 1,328 | 26 | 188 6 |
| 14 YB8AEG | 850 | 17 | 170 5 |

| (VE2ATD op.) | | | |
|--------------|--------|------|----------|
| Cl. Call | Score | QSOs | Pts Mult |
| 14 VE5AE/m | 720 | 11 | 120 6 |
| 14 K9GDF | 93 | 4 | 31 3 |
| 14 KHGCP | 46 | 5 | 23 2 |
| 14 WB2QEU | 20 | 11 | 20 1 |
| 14 EI5DP | 10 | 1 | 1 1 |
| 7 VE7AB | 7,744 | 61 | 484 16 |
| 7 VE1CCM/ns | 5,709 | 105 | 519 11 |
| 7 VE7BS | 3,735 | 73 | 415 9 |
| 7A VE4AEB | 1,614 | 44 | 269 6 |
| 7A VE7CGL | 1,365 | 66 | 273 5 |
| 7 YU7SF | 680 | 18 | 136 5 |
| 7 KM7T | 180 | 6 | 60 3 |
| 3.5 VE2CUA | 12,420 | 135 | 1242 10 |
| (VE2DUBop.) | | | |
| 1.8 VE3INQ | 297 | 17 | 99 3 |

| Multiplier leaders | | | | | | | | | |
|--------------------|-----|----|----|----|----|----|---|---|-------|
| | 160 | 80 | 40 | 20 | 15 | 10 | 6 | 2 | Total |
| VE2ZP | 5 | 15 | 17 | 23 | 10 | 4 | 4 | 4 | 82 |
| VE7ZZZ | 3 | 7 | 15 | 22 | 17 | 8 | 2 | 2 | 76 |
| VE3KZ | 3 | 10 | 17 | 23 | 9 | 2 | 0 | 2 | 66 |
| VE1CEG/ns | 0 | 8 | 10 | 18 | 10 | 0 | 0 | 0 | 46 |
| VE3LQJ | 0 | 8 | 12 | 21 | 0 | 1 | 0 | 0 | 42 |

| Record Scores | | |
|---------------|---------|------|
| A VE2ZP | 514,789 | 1981 |
| 28VE1BUG | 1,970 | 1979 |
| 21DF6VE | 3,015 | 1980 |
| 14CJ5RA | 54,820 | 1982 |
| 7 VE7AB | 7,744 | 1982 |
| 3.5 VE2CUA | 22,872 | 1981 |
| 1.8 VE3INQ | 297 | 1982 |
| MS VE7ZZZ | 356,440 | 1982 |

DX

by D.W. Griffiths, VE3KKB



1983 International DX Convention

Make plans now to rub shoulders with big gun and little pistol DX'ers at the 34th International DX Convention. This joint effort of the Northern California and Southern California DX Clubs will take place at Visalia Holiday Inn Hotel, Visalia, CA Friday, Saturday and Sunday, 22, 23, and 24 April, 1983.

Convention General Chairman Bill Zachman, W6TPH, promises the 1983 affair will be the greatest ever. The three days will feature DXpedition reports, technical presentations, awards, prizes, contests, dining and hospitality room congeniality. Slides and movies will abound. Open forums will give everyone an opportunity to participate.

Program Co-chairmen Jay and

Jan O'Brien, W6GO and K6HHD, are at work lining up big DX names to make presentations. They also promise some innovations. One of these: A single-track program so you will be able to attend *all* of the sessions of interest to you. There will be an interesting, free, program for registered spouses and guests.

As in the past, the prizes will be major, both in quality and quantity. The usual pre-registration amenities will prevail. Pre-registration cut-off date is 15 March, 1983.

Registration for the full convention is \$40, which covers Program sessions, Saturday Banquet, Sunday Breakfast, and prizes. With a full convention ticket, you may purchase additional "Meals Only"

tickets at \$25, each for your non-amateur guests. "Convention Only" tickets will be available at \$20, for those who want to attend the Program sessions without meals or prizes. For room reservations write or call Holiday Inn-Visalia Airport, 9000 Airport Drive, Visalia, CA 93277. Tel. (209) 651-5000.

Many overseas DX'ers are expected to attend. If you haven't attended the International DX Convention you owe it to yourself to find out what you've been missing. It's something not to be missed. Mark your calendar and plan to attend - now! For further information, write Northern Calif. DX Club, PO Box 608, Menlo Park CA 94025.

National Ukrainian Festival in Manitoba

Once again the Dauphin Amateur Radio Club will be operating a station at Canada's National Ukrainian Festival. The station will be on the air from July 28th thru July 31st afternoons and evenings.

The station will operate on 80 meters around 37.65 mHz and on 20 meters around 14.140 mHz.

There will also be 2 meter coverage through the Baldy Mountain and Neepawa Repeaters.

We will be operating on a Special Call VE4NUF and have designed a commemorative QSL card with Ukrainian motif.

Last year's effort was a big suc-



*Canada's National
Ukrainian Festival Incorporated*

119 Main Street South
Dauphin, Manitoba, Canada
R7N 1K4 (204) 638-5645



VE4 NUF

WELCOME BITAEMO
to
CANADA'S NATIONAL
UKRAINIAN FESTIVAL INC.

DAUPHIN, MANITOBA, CANADA

Held annually the first long weekend in August, where a unique and colorful pageant of Ukrainian culture awaits you.

cess with the station handling messages between visitors to the festival and friends and relatives all over Canada and the United States.

Help us make this year even better.

Give us a call or if you are in the area drop in and visit the station.

IC-740 Extensive versatility for the serious operator



IC-740 \$1295 IC-5P3 \$70
 IC-238 Int P.S. \$220
 IC-5M5 \$65 IC-2KL \$1795

100 DB dynamic range, optional built-in power supply, exceptional noise blanker, passband tuning, 160-10M optional FM, squelch, adjustable AGC, and much more. Accessories in stock.

IC-730
 The Affordable Mobile Transceiver



IC-730 \$995

Truly an exceptional buy. Measures only 3.7" (H) x 9.5" (W) x 10.8" (D) Dual VFO's with 1 frequency memory per band. Covers 10-80M including the new WARC bands. 200W PEP input.

IC-720A
 All Band HF Transceiver



IC-720A \$1495

IC-PS15 \$175 IC-PS20 \$249
 General coverage receiver, HF band ham transceiver. Pass-band tuning, dual VFO'S. Fully synthesized.

IC-25A

\$429



VERY COMPACT. 25 watt, 5 memories with scanning, priority channel, 2 meter mobile transceiver with encoding microphone, HM-8



IC-290H

NEW
 CALL



All Mode, 5 memories, squelch on FM and SSB, RIT, NB, Green Display, 25 W, with encoding microphone.

NEW

IC-R70 COMMUNICATIONS RECEIVER

\$949

General coverage reception at it's best. Fully synthesized, Commercial grade Communications Receiver, High grade filters, passband tuning, notch filter.



MEET THE NEW YAESU FT-1



YOU WANT A DEAL — WE WANT CALL NOW!!!

IN MOST CASES WE CAN MEET OR BEAT THE YAESU PRICES. CALL US NOW. WE ARE READY.

EXAMPLE: 2 METER FT-208R \$28

HANDHELD

LIMITED TIME — LIMITED QUANTITY

FT-77
 THRIFTY HF TRANSCEIVER



DISPLAY

With the AEA MBA-RO Reader

Automatic display of transmitted and received Morse and RTTY coded signals has come of age. It is proving to be most worthwhile for improving one's own transmitted "fist" and for allowing SWL's or visitors the opportunity to experience the thrill of Amateur Radio coded transmission.

\$399/379



Don't Be Left Out in the Cold with the Russian Woodpecker

GET A MOSCOW MUFFLER™

Another first from AEA. The Woodpecker Blanker, WB-1 really works. This unit effectively blanks the pulsing interference of the Russian Woodpecker. Two versions are available, the WB-1 for use with communication receivers and WB-1C for use with all popular transceivers.

\$239/229 WB-1C



A.E.A. ISOPOLLS
 ISG144 DUAL \$75/69
 144JR \$49 440DUAL \$109

MM-2 MM-2 + ME
 \$259/249 \$329/319



MorseMatic™

CK-2

\$219/209



Contest Keyer

ASTRON POWER SUPPLIES

Heavy Duty - High Quality - Rugged - Reliable
 • Input Voltage: 105-125 VAC Output: 13.8 VDC ± 0.5V
 • Fully Electronically Regulated — 5mV Maximum Ripple
 • Current Limiting & Crowbar Protection Circuits
 • M-Series With Meter — A-Series Without Meter

| Model | Cont. Amps | ICS Amps | Price |
|-------|------------|----------|-------|
| RS4A | 3 | 4 | \$ 69 |
| RS7A | 5 | 7 | 95 |
| RS12A | 8 | 12 | 129 |
| RS20A | 16 | 20 | 169 |
| RS20M | 16 | 20 | 199 |
| RS35A | 25 | 35 | 249 |
| RS35M | 25 | 35 | 279 |
| RS50A | 37 | 50 | 369 |

MODEL RS-50A



INSURED SHIPPING & HANDLING
 ADD 4% ONT & EAST; 5% WEST
 ICS AMPS: 50% Tx - 50% Rx
 CONT AMPS: 100% Tx REPEATER

HI-Q BALUN

- For dipoles, yagis, inverted vees and doublets
- Replaces center insulator
- Puts power in antenna
- Broadbanded 3-40 MHz.
- Small, lightweight and weatherproof
- 1:1 Impedance ratio
- For full legal power and more
- Helps eliminate TVI
- With SO 239 connector
- Built-in DC ground helps protect against lightning

STILL ONLY \$15
 S&H INCLUDED..

HI Q
 Balun

Police / Fire Weather

on 2 Meter Handhelds with this MFJ VHF Converter.



Scanning Handhelds become Police/Fire Scanners

MFJ-313 \$65

New MFJ VHF converter turns your synthesized scanning 2 meter handheld into a hot Police/Fire/Weather band scanner. 144-148 MHz handhelds receive Police/Fire on 154-158 MHz with direct frequency readout. Hear NOAA weather, maritime coastal plus more on 160-164 MHz.

Mounts between handheld and rubber ducky. Feedthru allows simultaneous scanning of both 2 meters and Police/Fire bands. No missed calls.

Highpass input filter and 2.5 GHz transistor gives excellent uniform sensitivity over both bands. Crystal controlled.

Bypass/OFF switch allows transmitting. Won't burn out if you transmit (up to 5 watts) with converter on. Low insertion SWR. Uses AAA battery. 2 1/2 x 1 1/2 in. BNC connectors.

Enjoy scanning, memory, digital readout, etc. as provided by your handheld on Police/Fire band.



\$69 DEL. 24 HOUR MFJ-101

Two independent 24 hour LED display. Six digit main display. Six digit auxiliary display. Four digit auxiliary display. Alarm plays 4 selected melo "ON" indicator. Snooze button. Quartz timing. Synchronizes to V. Flip-top cover serves as a Night light. Forward/reverse buttons. Lock function. Display main time only. Includes alarm time. Includes battery. 2x2x



24/12 HOUR, 10 TIMER \$59 MFJ-102

SWAN 1



Made In

FT-102



WE WANT TO DEAL WITH YOU!!!
 OTHER ADVERTISERS ARE READY TO DEAL WITH YOU!!!

\$285.00
 LIMITED QUANTITY
 PRICE BASED ON CERTIFIED
 CHEQUE WITH ORDER
 FT-101ZD Mk3 \$999

NEW

NEW FT-77 \$599
 707 ACCESSORIES
 PRICED BELOW \$800 IT IS AN IDEAL RIG FOR BEGINNERS, AS WELL AS THE PERFECT SECOND TRANSCEIVER FOR 3LD TIMERS.



only 2 inches high, 8 3/4 inches deep. It is 1 1/2 inches wide.

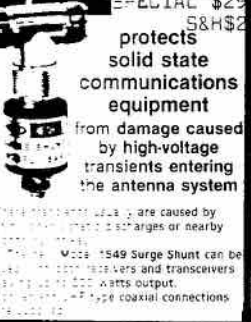
The new PCS-4000 features 8-MHz coverage, 16 channels of memory plus up/down channel, independent or simultaneous scanning, dual programmable band scan, programmable non-standard offsets, and much more. The PCS-4000 covers 142,000 to 148,000 kHz in 5 or 10 kHz steps.

ALL KEYBOARD FREQUENCY CONTROLLED PCS-4000

Extra DC Cord \$9
 Astron RS7A Power Supply \$95 + \$5 S&H
 Prepaid includes 3 month Canadian Warranty as well as 12 month U.S.A. Warranty
 Prepaid includes 12 month U.S.A. Warranty. S&H add 2%.

NEW!!

SURGE SHUNT



SPECIAL \$29 S&H \$2
 protects solid state communications equipment from damage caused by high-voltage transients entering the antenna system.
 Mode 1549 Surge Shunt can be used with all transmitters and transceivers. It has a 1000 watt output. It has type coaxial connections.

JAPAN BUYING TRIP — SERVICE WILL BE CURTAILED SLIGHTLY MARCH 26 TO APRIL 18. THE PRESIDENT AND SECRETARY-TREASURER (MY WIFE AND I) ARE GOING ON A FAR EAST BUYING TRIP. THIS TRIP WILL COVER VANCOUVER, JAPAN, HONG KONG, AND CALIFORNIA. THIS THREE WEEK TRIP SHOULD RESULT IN A BETTER CHOICE OF PRODUCTS FOR CANADIAN AMATEURS THIS FALL. STRAIGHT FORWARD ORDERS WILL BE PROCESSED. THERE WILL BE NO TECHNICAL INFORMATION, OR ADVICE AVAILABLE. SO PLEASE REMEMBER . . . SAT., MAR. 26 — MON., APR. 18. LIMITED SERVICE ONLY!

A WORD OF WARNING!! — Choose your Amateur Radio Equipment Dealer carefully. In these difficult economic times some dealers are forced to sell stock at or near cost prices because they need the ready cash to pay bills. Such measures are only effective in a very short span. No business can survive without profits. The majority of Amateur Radio Equipment Warranties are supplied by the Dealers and not by the Manufacturers nor by the Importers. A Dealer that is no longer in business cannot provide warranty service. ATLANTIC HAM RADIO is a family run business. We keep our overhead low and are able to pass on some of those savings to you. Our stock has grown from just under \$100,000.00 in 1979 to well over \$1,000,000.00 in 1983. Our customers know that our service is fast. Well over 90% of the items shipped out are sent from stock. Rather than lose some of our many customers WE WILL COMPETE in this upcoming price battle. Some of the competition will come from dealers who are also Importers and Wholesalers to Dealers and who also sell Retail. Such competition is most unfair and in my opinion not ethical IF THAT WHOLESALER SELLS BELOW SUGGESTED LIST PRICE. Wholesalers who undercut their dealers and sell at or near Dealer cost will quickly lose their Dealers. YOU, the consumer must make the choice. Before purchasing an item consider the following:
 1. Does the Dealer carry a wide variety of stock and is he able to ship immediately???
 2. Check the Dealer's reputation for prompt shipment and promises made.
 3. Does the Dealer have a good, honest reputation???
 4. Do you have confidence that the Dealer will be in business next year???
 ATLANTIC HAM RADIO is proud to have a solid reputation. We stock what we advertise. We deliver goods quickly. We service what we sell. Ask around our reputation speaks for itself.

USED GEAR

- CLASSIC PORTABLE PSU-6 PWR SPLY \$1299
 - YAESU FT-101ZD Mk3 10-160M SUPER BUY \$899
 - YAESU POWER BOARD FOR FT-901 \$35
 - YAESU 100W 15M 100W OUTPUT \$399
 - YAESU FT-101ZD ALL MODE 15W OUT \$350
 - YAESU FT-101ZD 2M FM 25W 4 MEM. \$279
 - TEMPERATURE 2M FM 25W SYNTH. \$199
 - MFJ-941C ANTENNA TUNER METER \$85
 - HAMPON 3kW TUNER ROLLER \$229
 - YAESU FT-101ZD TUNER FOR FRG-7700 \$59
 - YAESU FT-101ZD ACTIVE ANTENNA " \$59
 - YAESU FT-101ZD VHF CONVERTER " \$109
 - GEARHEAD 80-350 TOP OF THE LINE \$499
 - YAESU POWER BOARD FOR FT-101 SERIES \$19
- 10 DAY FULL REFUND GUARANTEE ON ALL USED EQUIPMENT (EXCEPT S&H).....

MFJ-941C Versa Tuner II



THE INTERFACE™ from KANTRONICS

Now your personal computer becomes a complete CW and RTTY terminal for your transceiver. THE INTERFACE receives any shift of RTTY, ASCII or CW and transmits all necessary tones.
 \$295/279

Software available for APPLE \$49 VIC20 \$79 ATARI \$79 TRS-80 \$95

1983 HANDBOOK



LIMITED TIME HANDBOOK SPECIAL
 \$12 INS S&H
 ONT & EAST \$2
 MAN & WEST \$3
 \$10 ANTENNA HDBK

AN 100MXA



All Solid State
 ONE ONLY \$599
 ● 235 Watts Input SSB & CW.
 ● 80, 40, 20, 15 & 10 (28.5-29.0) Meter coverage.
 ● VOX, NB & Calibrator built-in.
 ● 12 VDC operation.
 ● Dial calibrated in 1 khz increments.
 ● Mobile mounting bracket included.

INSURED SHIPPING AND HANDLING: Ont & East add 2% MIN \$2.50
 Man & West add 3% MIN \$3.50 UNLESS OTHERWISE STATED.....
 IF TWO PRICES ARE SHOWN THE FIRST PRICE IS THE REGULAR PRICE WHICH ALSO APPLIES TO CHARGES, THE SECOND PRICE APPLIES TO ORDERS ACCOMPANIED BY CHEQUE OR MONEY ORDER.....
 FOR INFORMATION OR PRICE REQUESTS SEND 30¢ STAMP.....

ATLANTIC HAM RADIO LTD.

HOURS: MON-FRI 6pm-11pm
 SATURDAY 1pm-5pm
 SUNDAY 1pm-5pm
 ATLANTIC TIME PLEASE CHARGES \$50
 P.O. Box 755
 Saint John, N.B.
 Canada E2L 4B3
 (506) 652-5753

33 News and Views

Cathy Hrischenko VE3GJH
56 Stockdale Crescent
Richmond Hill, Ontario
L4C 3S9

Finding Canadian YL networks

If you are working on some YL certificates and can't seem to find enough YLs, here are some nets and frequencies that should help.

Canadian YL nets:

CLARA 20 metre afternoon net
19:00 GMT 14.160 each Tuesday
CLARA after dark net 02:00 GMT

14.120-5 1,3,5 Tuesday of each
month. (Wednesday GMT time)
CLARA 10 metre net 19:00 GMT
28.488 each Sunday
CLARA Sunday net 03:00 GMT
14:120-5 each Sunday
Dogwood net 03:00 GMT
3.775 each Thursday
Dogwood net CW 03:00 3.675 last

Thursday each month
Wild Rose net 03:00 3.775 each
Monday
Maritime Sparkettes net 10:00 AM
Atlantic time 3.770 each Wednes-
day
The Ontario Trilliums net 4:00 PM
local Ont. Time 3.770 each Satur-
day

Static soothes, kids snooze

I guess we have all felt a bit guilty about operating on the air while the kids are in bed, feeling we might be disturbing their sleep.

Well, fret no more! According to the Australian Better Sleep Council, research has shown loud radio static is far more soothing to infants than any music. They settle

down to snooze quicker when lulled by continuous noise. The researchers also say they tend to sleep for longer periods. Now, doesn't that make you feel better?

Amateur of the year

Amateur of the Year: Gwen Burnett VE3AYL has been awarded the CRRL Amateur of the Year Award. Tom VE3CDM did the presenting at the RSO Convention.

Gwen first received her call in 1930. July 8th to be exact. She said "my knees were weak and my fingers trembled when I went to take the exam." Over the years she and her OM sampled every mode in amateur radio and had many experiences, both bad and good. One of the bad times was when an irate neighbour cut their antenna down because he said they were causing interference. One of the good things that happened involved traffic handling. A public service certificate was received in 1955 for "meritorous work in connection with Hurricane Hazel". This was earned by passing traffic while mobile in different locations when all other communications were out. In 1965 they became interested in RTTY. This became the main mode of operation. In 1970 Gwen became Editor of a monthly bulletin called the RTTY News. It was and still is a one person operation. Gwen and I served on the executive of CLARA together and



Gwen VE3AYL and Tom VE3CDM at presentation.

she was very helpful and cooperative. A truly GREAT person. Congratulations Gwen!

HELP: Are there any VE2YL nets still operating? I would appreciate any info regarding VE2YLs.

Defining a number of terms

From time to time I've had people ask me about certain terms

they have heard YLs use on the air and when they have tried to look them up, they've had no luck. So, I thought I'd take this opportunity to explain about three and give you their background.

"33" - This is the brain child of Clara Reger W2RUF (x-W8) now a silent key. Clara was a good friend of mine and we visited each other, carrying on our friendship through the P.O., QSOs and looked forward to seeing each other at the Rochester and Hamburg, New York, Hamfests. Clara became licensed in 1933 when there were very few YLs on the air and they would work with each other on a regular basis. They developed warm friendships and Clara wanted some sort of signature that was a bit warmer than 73 but not as gushy as 88. She told me she picked 33 for two reasons. The first being it sounded good on CW and the second because she was licensed in 1933, and it was a constant reminder of those friendships developed through a great hobby. Later, when the YLRL was organized, they decided to use the 33 and gave it a definite meaning of "Love, sealed with friendship between one YL and another". And so, it has been, ever since. Clara

who was a charter member of the YLRL (that's the American Young Ladies Radio League) and also a member of CLARA (Canadian Ladies Amateur Radio Association) became a silent key in February 1979. She received many awards over the years and will always be remembered as the originator of "33", used worldwide by YLs.

"76" - God Bless You: When I

asked a friend from the Buckeye Belles (that's the Ohio YL club) what the 76 was on her last letter to me, she sent me this: '76 God Bless You - Dear friend of mine, there is no way . . . In which I could address you . . . with more sincerity of heart . . . Than just to say God Bless You . . . My words could wish that all your cares . . . Would be a little lighter . . . And I could send you greeting cards . . .

To make your hours lighter . . . My lips could call good luck to you . . . Or whisper happy landing . . . And I could promise you the depth . . . Of faithful understanding . . . But I am sure no other thought . . . Or message would impress you . . . As lovingly or lastingly . . . As asking God to bless you . . . And so I say God Bless You, friend . . . In every good endeavor . . . And may his guiding grace be yours . . . Forever and ever. 76 to you all."

New CLARA exec takes over

The new CLARA executive has taken over as of January 1, 1983. This is CLARA's 16th year.

Hallie du Preez VE6AUP is President. She is an advanced operator. Her OM is Buddy VE6ANC and son Tavis VE6BMW. She had been a member of CLARA since 1979 and been very active on the air. She enjoys DX but prefers rag-chewing. She is a member of CARF, ARLA, ALARA and NZWARO in addition to CLARA.

Vice President is Muriel Foisy VE3LQH. Her OM is Pete and they

have one son Glen. Muriel is fairly new to CLARA but full of enthusiasm and anxious to do a good job. As VP she will handle net controls and our annual AC-DC contest.

Secretary will continue to be Olive Roeckner VE7ERA. She is a member of Wireless Pioneers and BCARA. She works as a secretary so is well educated for this job.

Treasurer will continue to be Anne Rushford VE6ATR who has done a fine job this past year.

Editor will continue to be Diana Van derZande VY1DV. She is our

immediate past President. Diana has been holding down the 2 jobs, plus working, plus caring for a young family and OM. Ask a busy person to do a job and they will always find time.

Anyone wishing to join CLARA, send \$5.00 to the treasurer and you will receive a membership form to fill out, membership card and receive the quarterly bulletin and be welcomed!

Remember Happiness is still Homemade!

When you get a "Round Tuit"

The Round Tuit was brought to my attention a few years ago by the Treasurer of CLARA. One of our members had sent in her dues late with the following attached:



"It's a pleasure to provide you with this Round Tuit. We have gone to a lot of trouble and considerable pains to make one available so that everyone may have one. (It is even permissible to make facsimiles to this one, so that others may have one.) But for

Heaven's sake, take care of it! Do not lose it or allow anyone to take it away from you. We hope you will cherish it because we know that the demand has been great and your having it will solve a number of difficulties."

You see, you may have said, "I will get started attending church just as soon as I can get a Round Tuit." Others have mentioned that they have been meaning to tithe their income, but they just haven't gotten a Round Tuit. Some intend to bring their neighbours and friends, who have no church when they "get a Round Tuit."

Think of what it means! Now you can do all those things and many more, about which you have had to say, Gee, I never seem to be able to get a Round Tuit. Now that everyone has a personal Round Tuit, great things

should be in store for us all. Not only is this a potential solution for our personal problems and those of our church it is even conceivable that the whole country could whip the energy crisis, solve the environmental problem, lick the inflation spiral, make poverty and racism a thing of the past and even get the women's libbers and the male chauvinists to love one another. - IF each of us only cared enough to get a Round Tuit, and us it!

We've had alot of fun with this one and often you will here one of us say, I better get that Round Tuit and use it!

We pay for technical articles.
Send contributions to:
CARF Technical Editor, Box
356,
Kingston, Ont. K7L 4W2.

VHF/UHF News

John Dudley VE5JQ

Dayton Hamvention

This year's Hamvention at Dayton promises to be bigger than ever. The VHF/UHF enthusiasts will be treated to a full program of events concerning the higher frequencies. Jim Stitt, WA80NQ, has lined up a full two days of activities. The tentative schedule is as follows:

Friday, April 29th

- 12 noon till 5 p.m. at the Hara Arena and Exhibition Center there will be forums and technical talks on VHF/UHF including such topics as contesting, moon bounce, antenna/equipment design, propagation and more.

- From 6 p.m. until 11 p.m., at the Imperial House, North Bavarian Room will be a noise figure measurement competition and receiver dynamic range demonstration. These events cannot be held at the Hara Arena

due to RF interference. There will be a hospitality suite and open bar and lots of prizes at this get together.

Saturday, April 30th

- From 2 to 5 p.m. there will be additional VHF/UHF forums and technical talks.

- From 7 p.m. in the evening at the Imperial House Motel there will be various hospitality suites and meetings of special interest groups.

Sunday, May 1st

- From 9 a.m. until 12 noon at the Hara Exhibition Center will be an antenna gain measurement with weather permitting. There is a whole raft of prizes and certificates for participants in these activities and we hope to see you all there.

Canadian VHF Get Together

The weekend following the ARRL VHF QSO Party (September 10th and 11th, 1983) on Saturday, September 17th there will be a get together of VHF enthusiasts at the Bristol Place Hotel, Airport Road, Toronto at 8 p.m. Please direct your inquiries to VE3BQN. Please mark your calendar for this important date.

Contests

Listed below are the results from the 1982 ARRL September VHF QSO Party. As you can see there is reasonable activity with some big scores from VE3ONT and also from VE3LNX in the multi-operator category. It has also been brought to my attention that Dr. Ted Sparrow, VE3BQN, 125 Lytton Boulevard, Toronto, Ontario, is sponsoring trophies for the winners in the ARRL VHF QSO Parties. These are for Canadian stations only and will cover all frequencies from 50 to 1296 MHz. Please send your scores to VE3BQN.

| | |
|----------|--------|
| VE1UT | 6090 |
| VE1AHM | 56 |
| VE1YX | 560 |
| VE2SH | 4554 |
| VE2KW | 264 |
| VE2CUA | 624 |
| VE2FUT | 408 |
| VE2CVR/2 | 287 |
| VE2ADE | 112 |
| VE3BFM | 4865 |
| VE3FN | 4818 |
| VE3EYR | 3472 |
| VE3FGU | 672 |
| VE3ONT | 86,700 |
| VE3LNX | 28,512 |
| VE5JQ | 36 |
| VE7NOR | 325 |
| VE7ASF | 279 |

Canadian First on 2300 MHZ

VE3LNX has established what appears to be a Canadian first with

regards to operation on the 2300 MHz band. On October 3rd, he contacted W8YIO in Ohio, a distance of 295 miles from Victor's QTH. The first contact he used a six foot dish and 10 to 12 watts. After his initial contact he worked WA8TXT also in Ohio, a distance of some 273 miles and earlier in the summer WA2WVL in the Rochester area, some 95 miles away. He has also been heard in Michigan while just running 400 milliwatts. Victor is very interested in having Skeds or getting together with anyone interested in getting on 2300 MHz or has been active in the past on the band. Congratulations, Victor, for this pioneering UHF work. Victor also notes that Bob, VE3ADJ, was in-

strumental in helping him get going on the band.

Aurora January 10th

A very strong aurora was observed by many VHF operators on January 10th. Six M out west had an auroral E opening with signals very strong right to the east coast. No activity was heard on 2 M here but apparently 144 and 220 MHz provided good QSO's in eastern Canada. VE3LNX reports working K1PXE on 432 SSB during that aurora. Victor also tried for a QSO on 1296 but with no success. We certainly have been treated to a number of dandy auroras in the last few years. Propagation experts tell us that they will probably be fewer but I am certain the observant listener is still in store for some good DX openings via the buzz mode.

Return of the Camp X articles

Marsh Jeanneret VE3EMJ

One spy controlled

By the summer of 1943 the Axis forces were on the defensive both in Europe and the Pacific. But neutral Uruguay lay half a world away from the ravages of war, and Montevideo society was too cosmopolitan to show much curiosity about the cultured, middle-aged Spaniard who had recently settled down there "to write a book."

Luis had been born and educated in Madrid, true enough, but he had managed to go abroad on private foreign journeys notwithstanding the ebb and flow of hostilities swirling about his "neutral" homeland, itself only recently ripped to shreds by Franco's revolution. Until recently, he had admitted to nobody that his most recent post-graduate course was as a wireless operator and espionage agent in Nazi Germany. As far as Montevideo was concerned, he was simply another emigre from Franco's war, as he explained to anyone who asked.

But Luis was not one of the destitute refugees, of whom there were too many to count. He was lucky enough to have some small royalty earnings credited to his bank account from time to time by a European publisher, although he had little to say about the writing he had done before he came to Uruguay. Nor did he divulge that he received a somewhat better regular cash income from a quite different source, also unidentified. He alone was aware that it came from a powerful Allied counter-espionage body loosely known as "British Security Co-ordination." Luis was a double-agent, and he was actually taking his orders from BSC, not from Berlin.

The British had intercepted Luis on his way out from Europe, confronting him in his hotel room in Buenos Aires on the very afternoon he came ashore from a merchantman in the harbour. A number of recently published

works have confirmed that the vast majority of such enemy agents in World War II were promptly identified by the Allies and "bought over" as Luis had been, or else neutralized in other ways. However, too little has been reported about the role played by Canadians, and by Canadian amateur radio operators in particular, in these real-life spy dramas.

Needless to say, a double agent was useless to both sides the moment the fact of his interception became known.

But for Luis, it had been a choice between internment in "neutral" Uruguay for the duration and throwing in his lot with the British counter-espionage branch. Greatly disillusioned with the way the war was going, Luis had easily enough been persuaded to go forward with the mission he had been assigned in Germany — but now all strictly under the close supervision of Allied intelligence. The immediate responsibility of his new masters was to feed him relatively innocuous information for transmittal to Germany while at the same time they ensured that his superiors in Germany did not twig what was going on.

One spy arrested and charged meant one spy who would be replaced; but one spy secretly controlled was one spy fewer for the Allies to worry about. From a security standpoint the wise course was always to aim at controlling an intercepted spy. Moreover, a controlled agent could be used to transmit not only inconsequential bits of intelligence to the German High Command; he could also be

ordered to send critically important misinformation as well, especially whenever the Allies might wish to screen a particular operation or mislead the enemy in other ways.

Military intelligence from agents could not practicably be transmitted across the Atlantic otherwise than by radio, and the need to police the air waves closely made it little wonder that amateur licenses were suspended automatically the moment hostilities broke out. This dependence on radio also meant that espionage agents on both sides had to take crash courses on the operation of wireless equipment, and especially on how to read and send CW.

When code was used, a message could often be put through even under adverse conditions. Moreover, CW lent itself well to cipher, it required lower transmitter power, and the identity of the sender could be more positively determined than for a voice transmission, for reasons to be explained. Admittedly no cipher is entirely proof against eavesdropping by counter-espionage monitoring stations, although some elaborate systems have come close to being unbreakable and most of to-day's computerized packet transmissions are impervious to translation by anything less than an equally powerful and suitably programmed computer.

Even during World War II, however, remarkably sophisticated decoding machines were developed by the Allies and used to decipher messages sent in cipher by the enemy, which is precisely what the word "decipher" means. For example, the secret cracking of the code processed through Nazi Germany's famous cipher machine "Enigma" is a classic of such counter-espionage work.

The monitoring of messages, however, frequently had a more subtle purpose than to decode specific information being passed by the enemy; and anyway, some kinds of traffic yielded information without being deciphered. The following true account of Luis and the Canadian amateur radio operator who was assigned the task of supervising the Axis spy in Uruguay in 1943 illustrates the kind of monitoring being done and why it was being done.

Few radio amateurs need to be reminded that every telegraph key operator possesses his own "fist," which is as uniquely characteristic of the individual as his handwriting or his fingerprints. It does not matter whether sending is done in cipher or plain language, nor even whether the message itself can be deciphered. What counts is the formulation and weighing of dots and dashes, it being as difficult for one operator to ape another's fist successfully as to forge his signature successfully.

A sophisticated method of tracing the movements of enemy U-boats based directly on this distinctiveness of the fists of different operators came into use during World War II. Every herz of the spectrum was routinely monitored in London, as well as elsewhere, to intercept such messages. As ciphered CW was tuned in it was converted into visible waves on oscilloscope screens which were recorded on movie film for quick comparison with other similar recordings. These "fingerprint files" (as they were aptly named) could tell the British Admiralty that a particular submarine, for example, had moved from the Azores to a new position off Newfoundland (or at all events that its radio operator had done so). For this purpose it did not matter much whether the actual messages could be deciphered or not; the individuality of the sender's fist was enough. On the other hand complex ciphers were not practicable for the average espionage agent, whose principal needs were security from detection and hence portability of equipment; large and involved code reference books could not

be used in the field as conveniently as aboard a naval vessel.

The fact that an operator's fist could not easily be mimicked meant that every controlled spy was required to operate his own telegraph key if his captors wanted to have him continue to pass messages to and from his base. A substitute operator risked immediate detection by the enemy home station. On the other hand, there was the ever-present danger that a spy under control might send a pre-arranged warning signal, perhaps nothing more than a single coded letter, to indicate that he had been intercepted and was now transmitting under direction. This was a risk that had to be taken, but it also meant that close and expert surveillance had to be maintained over the double-agent in every way possible.

Obviously Allied intelligence had to field a miniature army of qualified Morse code operators to furnish the necessary technical supervision of intercepted enemy agents, and do it quickly.

Hence proficiency in CW was a special qualification among men enlisting, and British intelligence lost no time in bringing recruitment of such persons at home and overseas to a high state of efficiency. Of course by far the best source of code experts, and of ready-made ones at that, was the amateur radio fraternity. Sir John Masterman and William Stevenson have disclosed in their books,* written many years after the war, much of the background of this remarkable counter-espionage effort, and have acknowledged the key role in it played by Canada. A few of the details of what Camp X was all about, occupying as it did a secret location near Oshawa, Ontario, have at least been published, a few but not many. And far too little information has been reported about the Canadian amateur radio operators who gained their ground

in counter-espionage work there. One of them, just one of many who are still active now on the Canadian amateur bands, was Norm Delahunty, VE3AAG of Ottawa, well known to countless operators on the low and high frequencies to-day. For a critical period during the war, Norm and Luis were to be thrown into forced companionship in Uruguay.

Norm and several of his amateur colleagues, who like all others of their breed had been ordered off the air the moment war broke out, found themselves within hours of their enlistment in training at Camp X. It proved indeed to be an under-cover camp devoted to under-cover activities being conducted on an international scale. One of its more visible features was a series of short-wave radio transmitting towers which the CBC explained were theirs when the people of nearby Oshawa grew curious. The transmitter itself was known in intelligence circles as Hydra, and placed the base in instant communication with British Security Co-ordination everywhere about the world, not only in countries allied militarily with Canada, Britain, and the United States, but also in countries that were officially neutral such as Uruguay. When Norm and his colleagues were posted to Camp X some of the trainees there were receiving rigorous commando training, which included frequent crossings of Lake Ontario with faces blackened to make secret night landings on the American shore near Niagara, in the course of which they were taught every grisly trick of personal defence and offence in the book. Norm and his amateur friends found that their own duties were mainly to maintain and operate the radio station itself, and to continue its development as a trans-Atlantic communications facility. The famous old 50 kilowatt short-wave transmitter used by W3XAU in Philadelphia, which had somehow come into the possession of Camp X, was made part of a two-way radio link between Washington and London. It was quickly placed in twenty-four hour operation, feeding huge rhombic antennas

which occupied a large part of the "farm" on which the camp was situated.

Day after day was spent "pounding brass" as ciphered messages were processed back and forth between Britain and North America. Traffic grew rapidly, and before long they found they could adopt a duplex mode whereby one operator transmitted on one frequency while another received elsewhere on the band and a third busied himself with the paper work. After a few weeks everyone seemed to be eating, dreaming, and thinking in CW. The equipment they put to work for the war effort thus became the nerve centre of Allied trans-Atlantic communications during the days of preparation for D-Day, and provided part of the hot-line between Roosevelt and Churchill.

In the end, some of the erstwhile "amateurs" were retained at Camp X to help man the system they had helped to establish. Others were ordered to postings far afield, each of which involved its own unique duties that required more long and detailed individual briefings. At the time, the Japanese were still roving the Pacific, and there was real fear lest they might launch an attack on the Panama Canal area or even attempt to establish brigadeheads on the west coast of Central or South America. Not surprisingly therefore, several of the Canadian trainees were despatched to such South American countries as Colombia, Venezuela, Ecuador, Peru, and Chile. Their principal duties were to monitor and transcribe enemy radio signals, of which an endless stream could now be heard on the air waves.

Each Canadian was instructed to stop off in New York City en route to their destinations to report to the "British Passport Control Office" located near the Battery. Here were the American headquarters of British Security Co-ordination, responsible for the whole counter-espionage project. BSC furnished all the documents needed for agents to travel in neutral countries, including semi-diplomatic passports. Norm noted

that his own passport identified him as "Assistant to the Press Attache, Quito, Ecuador." A few weeks later he was at work on his new job in the city of Quito, 9000 feet high in the Andes at Quito, accompanied only by his trusty HRO National Receiver and an assortment of interesting, but antiquated wireless gear drawn from British Navy stores.

Each graduate of Camp X was expected to establish his own schedules for listening and was encouraged to experiment to find the most useful times and frequencies to monitor. This was all in line with the need to spot every new operating trick and time introduced by the enemy, shifts in frequencies used, changes in call signs, and so on; no centralized system of close supervision would have produced the results that did the exploring done by a number of skilled operators working independently.

There were various side-missions as well, not all of them by any means productive.

For example, Norm was sent off to Guayaquil to spend several nights on the roof of the Metropolitan Hotel trying to determine whether or not welding flashes from a small factory near by could be sending Morse messages to a possible submarine hovering in the Guayas River. His "contact" was much disappointed when Norm reported that the flashes were entirely random and so quite meaningless. At other times orders came to check out even less likely "signals," ranging from strange bird calls to mysterious tappings on walls, none of which proved to have any more significance than the welding flashes.

As the Japanese offensive in the Pacific was gradually slowed to a halt the threat to the Panama Canal eased; but an increasing level of clandestine activity was now noted in the South Atlantic area, especially about the mouth

of the River Plate. Argentina and Uruguay were vitally important suppliers of food for the Allies, and the Nazis were bent on cutting off these sources through their U-boat campaign. Moreover, there was then as now a large German element in the Argentine population and the army and government there showed considerable bias in favour of the Axis (until finally in 1945, in the closing days of the war in Europe, they came to realize that it was time to join the winning side and made the gesture of formally declaring war against Hitler's forces).

Norm now found himself re-posted to Uruguay, where he joined another well-known Canadian amateur who for this account need not be identified. From a monitoring post in downtown Montevideo the two soon started to log a new base station transmitting from Hamburg, Germany. It "came up" punctually twice weekly, always with a new call sign (this actually made it easier to identify). Over some weeks no reply could be heard anywhere on the bands. The Germans were apparently waiting for one of their new graduates to set up shop somewhere in the New World, as was indeed confirmed later. What Norm and his companion did not realize was that the incoming spy was about to roost on their very doorstep.

Suddenly orders came for Norm to report to headquarters of British intelligence in Uruguay, which he knew were located in the Montevideo Railway Station. Here he was led in to meet the head of the whole British undercover operation, a man referred to by those in the service simply as "H.H." It turned out that H.H. was the most

Attention!
All users of the
TCA Newline
Telephone

THE NEW NUMBER IS
824-3467

senior official in British Uruguayan Railways, a pretty sound cover for a person with such a responsibility. Indeed the clerical staff of the railway included a good number of faithful Anglo-Uruguayans who combined their duties to the railway system with varying levels of involvement in the wide range of covert operations that were also directed by their chief.

Norm tried to appear cool and matter-of-fact as he was shown into the executive offices and seated in a large, comfortable armchair in front of a gigantic fireplace. Here H.H. himself poured glasses of brandy for them both and opened a box of expensive cigars. But Norm was ill enough at ease, not being able to guess what was in store. Everything was soon explained, however.

A Nazi spy on his way out from Germany had recently been intercepted by the British, who even found in his baggage a German standard issue suitcase transmitter. He was a Spaniard, one of General Franco's "Alumni" (having been an officer in the latter's army); he had agreed to go through the German spy school in Hamburg, but faced now with the alternatives of a trial or co-operating with his captors he had chosen to throw in his lot with the Allies. That is to say, he agreed to being "bought over" as a double-agent, which meant that he was now on the payrolls of both the Germans and the British — a dangerous game indeed. Understandably enough, his new employers did not trust him for a moment, but good use could be made of him just the same. Norm's job was now clear-cut enough. He was to supervise the double-agent closely at all times that he was communicating by radio with Germany in order to make certain that the only messages sent were what he had been told to send, no more and no less!

Norm's first discovery was that he had to fine-hone his Spanish, in which he was already fairly fluent, because Luis (the name of the double-agent) could not speak a word of English. But this was no obstacle to going to work; the only

language Norm had to understand perfectly was what Luis tapped out on his telegraph key. Naturally enough, this was completely scripted by BSC, probably by H.H. in person, thought Norm.

Within the week there, a signal came for Norm to wait at an appointed spot in downtown Montevideo. Sure enough, right on "sked" up rumbled an old Model A Ford driven by an old employee in the railway office. Luis, whom Norm now met for the first time, was reclining comfortably in the rear seat with his suitcase beside him. All three were shortly bouncing along a road that led out into the country, while Norm tried to size up his new protegee. This was not done easily, but there were to be many more opportunities. After they had travelled about ten miles, the driver drew up at a house standing alone on the roadside and turned off the ignition. Here he escorted the two passengers to the front door of the building, opened it, and motioned them to go inside while he would wait in the car until they were ready to return.

**The house was empty,
but comfortably furnished
and in Norm's view quite
"homey."**

Luis knew what he had to do to set up his equipment, and Norm willingly lent him a hand. Both transmitter and receiver were simple affairs, and surprisingly compact for those pre-solid state days. Norm estimated that Luis might be able to put out about 40 watts, as the two of them strung up a short antenna from an upstairs window to the peak of the roof nearby. Long before the awaited call from Hamburg came through an hour or so later on the 31 meter band, Luis was ready to punch out his pre-digested replies, which he managed to do with reasonable accuracy and without a single deviation from the supplied script. Reception was good and it was clear that Luis' transmitter was being heard in Germany. It was being heard in other parts of the world as well, as Norm was soon to be reminded.

All went well for the first half dozen "skeds" and it quickly became a weekly routine to be driven together to the house in the country. In fact, the trip became an almost easy outing after word came through for them to store their gear in a particular empty closet in what they were now calling their "country-house". Luis dutifully transmitted a seemingly endless number of messages which Norm passed on to him, most of which comprised information of slight military importance such as the lengths of runways at the Montevideo airport and the previous month's figures for certain American aircraft production. Nothing was faked, but nothing was of much security consequence either; often it amounted to facts the Germans were known to possess already, or ones they could easily procure by other means. Hamburg was particularly anxious that Luis procure details of the Allies' Sonar submarine detection system, which was proving uncomfortably effective in the sea war. The tone of all incoming instructions suggested that there was no suspicion in Germany that another of their men was being "controlled".

One night after contact with Hamburg had been established, Norm observed that Luis departed slightly from normal sending procedure. Instead of using the usual radio abbreviation "nr" for "number" he started a message with "No 3 GR 32"; it was all in order except that second character. Norm casually reported the slip the next day, but it was obvious that he was not telling his superiors anything they did not know already. The transmission had been monitored in fine detail at Heaven knew how many Allied listening posts! Suddenly Norm realized what a hot wire had been stepped on. It became still more clear, especially for Luis (to whom

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

Norm was told to say nothing), when they reached the country-house for their next radio session with Hamburg.

The house which had always been empty when they arrived, appeared to be full of people that night. They were greeted at the door by a man wearing trench coat and fedora: the latter pulled down over his eyes in best spy-thriller fashion. It was H.H. himself! Norm noted that his chief's side-pockets bulged ominously, and realized with a jolt that he had been taking part in something far more serious than a radio amateur field day. When Luis was roughly pushed off into a back room where others could be seen waiting to grill him, Norm's heart almost went out to the spy. It was impossible not to overhear the accusations being hurled across the table in the next room.

Apparently everyone was convinced that Luis had sent a pre-arranged signal to tip off his German masters to the fact that his transmissions were being controlled by the British. Nothing more than the switched abbreviation would have been necessary to convey such information. After much loud shouting and pounding, which Norm persuaded himself came only from fists on the table, Luis stumbled back into the living room looking pale and shaken, and denying vehemently that he had betrayed us in any way.

Obviously Luis had not convinced H.H. of this, because Norm was ordered to start the next morning to practise imitating the spy's CW fist. He groaned inwardly, realizing as he did how impossible a task it was for one Morse code operator to imitate another, and as much for his own sake as for the spy's he prayed that poor Luis would not be eliminated from the operation as seemed altogether likely.

In the end, H.H. did begrudgingly order Luis to carry on with his sked with Hamburg that night, and none too soon either because the base station had been calling for five minutes by the time the transmitter was on line and tuned up. H.H. and his men watched

like hawks as poor Luis began to operate the key, nervously but accurately, as if he was convinced that if Norm called him out on one dot or dash he expected to be **liquidado pronto**. His jerky, novice-like rhythm would have been almost impossible to mimic, Norm was thinking, as the clandestine QSO finally ended. Norm nodded to H.H. to confirm that all had gone off well, and was relieved when he was told to carry on with the regular Hamburg skeds so long as Luis never again departed from his "script."

There were other incidents during the CW sessions that followed.

But none as hairy as the one caused by the switched code abbreviation. One night a noise outside the window caused Luis to panic until they discovered that it was coming from a friendly horse that had wandered over from a neighbouring farm to nibble the weeds. Except for the night of Luis' interrogation they were always alone in the house, which invariably had been left spic and span for their arrival. A large grand piano and an ice-box amply stocked with beer for their use were among the mysterious "perks" that went with the job. However, Norm could not easily put out of his mind the fact that Luis' every key-tap was probably being monitored up and down the Atlantic coast and doubtless in Britain and Africa, too. One night, after they had completed a particularly good radio contact with Germany, Luis fetched a bottle of beer from the kitchen, slid himself on to the bench in front of the grand piano, and began to play. His fingers swept ever more quickly across the keyboard as they rippled through one piece of classical and Alusian music after another. Suddenly an air of innocent mischief briefly lighted his features, holding a chord, he remarked with a broad smile, "This is the way it is in the movies when the police break in!" Norm could not help laughing heartily as

he sensed, not for the first time, some feeling of warmth for this tall, handsome, but by no means trustworthy adventurer from Spain.

There were not many more sessions with Luis. Early in 1945 the news was in the press that the Allied forces had reached the outskirts of Hamburg, and the conversation between Norm and his protege began to centre on how much longer radio contact with it would be possible.

Or was it Hamburg with whom they had been in such regular communication all this while? Was it possible that they had been having their legs pulled as well?

The question was answered in the last contact they had. Luis had just finished pecking out the usual bit of misinformation and received Hamburg's signal of acknowledgement. This was followed by a few words of Nazi propaganda, never before heard on these transmissions. There was a pause, after which the message continued in plain English as both Norm and Luis copied it out in longhand:

THIS WILL BE OUR LAST TRANSMISSION FROM THIS POST XRAY WE SHALL BE ON AIR AGAIN IN A FEW WEEKS FROM A NEW LOCATION THANKS FOR EVERYTHING XRAY HEIL HITLER.

*MASTERMAN, Sir John. **The Double-Cross System**. New Haven: Yale, 1982.

STEVENSON, William. **A Man Called Intrepid: The Secret War**. New York: Ballantine Books, 1977.

NEWS SERVICE

The number of Amateurs visiting Ottawa this year will include many who will be there to attend the Satellite Communications Conference on June 15 to 17. The gathering will be co-sponsored by DOC, the Crown agencies Telesat and Teleglobe, the University of Ottawa and commercial and industrial organizations. New developments and the future of space communications technology will be featured.

How to Flunk the Code Test: Part 3

Doug Burrill
VE3CDC

In this episode maybe we should have changed the title to "How to PASS the Code Test" but that wouldn't have grabbed your attention so readily. As a result of the first two parts in this series and the letters written to the Minister of Communications by Ray Fleury, VE3KND, on the subject of the poor conditions under which codes tests have been held at some centres, CARF was invited to meet with DOC officials in the Toronto office. Ray was delegated to attend on behalf of the Federation and his subsequent report on the November 12 meeting (which also went to the Minister) is reproduced here. Ray wrote:

"All aspects of code testing were discussed thoroughly, and from the DOC point of view there appear to be some advantages in carrying on as in the past - i.e. using a large room to accommodate a large number of candidates. There is nothing wrong with this method providing the equipment used gives out a perfect signal and the acoustics are good. This has not been the case so far. Candidates failing the original test are retested at the 55 St. Clair Ave. office.

"At the meeting a sample tape of a 'ten words per minute' test was played from a small portable cassette recorder, and I submit this tape was good, in fact, easy to read. This is how candidates finally could pass the code test. If tests are to be carried out as in the past, i.e. en masse, then *high quality equipment must be provided* to achieve the same quality signal I heard at this meeting. However, many disadvantages exist in such a method of testing. It is costly, as candidates have to make arrangements for time off work, often without pay. Many have to travel substantial distances, face harrassing traffic jams, parking problems, etc...all of which can unnerve them even before they begin any testing. None of this is conducive to candidate satisfaction. A large hall must be rented, equipment has to be installed and

tested, and on completion candidates have to wait weeks before finding out if they succeeded or failed, and only then can they make arrangements for retests.

"Suggested means of testing by qualified Radio Hams were discussed and I submit the following advantages in using such a procedure:

- 1) Lower cost of operation for DOC.
- 2) More flexibility as to time and place for tests.
- 3) Less inconvenience and cost to candidate.
- 4) Candidates studying on their own and wishing to be tested could be advised by DOC of nearest Ham Club to be contacted. Necessary arrangements could then easily be made.
- 5) Full receiving and sending tests could be carried out. (*Note: Despite what it says on Amateur Certificates, candidates have not for some time, been asked to pass a sending test. Ed.*)
- 6) Written tests could be supplied by the appointed DOC representative and the whole testing period could be under his supervision.
- 7) Results of code testing would be available within minutes. Retests, where necessary, could then easily be arranged.
- 8) Ham Clubs have fully qualified personnel to administer testing.
- 9) Testing could be carried out during evening or week-end hours to much smaller groups and in an atmosphere more relaxing and contributory to success.
- 10) Amateur Radio Clubs have excellent equipment at their disposal and can provide good testing conditions.

"I was pleased to have an opportunity to discuss these testing problems with your staff in an atmosphere of understanding and mutual respect, and I am sure we all benefited from the discussions. I also feel that your staff is now much more aware of the problems that exist as well as appreciating my suggested corrective measures.

"I therefore strongly recom-

mend and urge that steps be taken to give Radio Ham Clubs the responsibility for the testing of amateur candidates under the full supervision of the DOC."

As a result of such letters, articles and letters to the editor and a Federation suggestion to the Department some years ago which was re-submitted last summer, on February 1st the Department wrote a letter to CARF president Don Slater, VE3BID, which said:

"The discussion has reached the point where our further consideration of the subject would benefit from detailed input from your organization. Of specific interest would be your recommendations under the following headings:

- (a) method to use to select volunteer Amateur examiners;
- (b) minimum criteria for examiners, i.e., qualifications, experience, skills;
- (c) how to assure impartiality of examiners and avoid charges of conflict of interest and favoritism;
- (d) quarterly scheduling of exams or an altered frequency/schedule;
- (e) how to ensure availability of examiners and suitable facilities for candidates in remote or isolated areas;
- (f) maintenance of integrity of examination papers;
- (g) how to ensure uniformity on national basis in awarding marks;
- (h) examination paper production and distribution networks;
- (i) coordination and contact points between DOC inspection staff and Amateur examiners;
- (j) provision of service in official language of candidate;
- (k) desirability of establishing pilot project in one province or in a limited area;
- (l) how to ensure the departmental objective of reduced costs with equivalent or better service will be achieved and maintained;
- (m) other relevant matters which are important to the process."

The original deadline given in the letter was March 31st but when it was pointed out that this was too short a time to disseminate the letter's contents and get comment back from individuals and clubs. CARF's request for a later deadline was met by setting it ahead by two months (see below).

Some ideas for Amateur participation have been discussed in recent issues of 'TCA' and comment was sought from readers but to date the response has not been

exactly overwhelming. Now, however, the DOC has asked specific questions and is seeking answers from CARF and other organizations. In order to ensure that varying ideas and views are incorporated in the recommendations in the CARF brief to DOC, comments from clubs and individuals are now urgently sought. The response will be indicative of just how much Amateurs are concerned with the consultative process followed by the Department, so it behooves those interested in

this matter to give some thought to it and to make their views known to CARF.

Comments and ideas on each of the points listed by DOC should be sent to CARF DOC Liaison Committee chairman, A.P. (Art) Stark, VE3ZS, 22 Lyall St. K2E 5G8, Nepean, Ont. They should reach him before May 10 as the DOC deadline for CARF recommendations is May 31st. A subsequent meeting to discuss them with DOC is to be arranged.

It's Magic!

For a long time we have known that when an individual can copy fifteen words a minute of the International Code that he no longer feels the urge to be rude or repugnant in any way; that warm currents of kindness and understanding surged warmly through his soul. Significant changes have even been observed in many individuals at ten words a minute. Researchers have also observed that most Australians and some Americans undergo these changes at five words a minute! This has not been recorded, in Canadians, by any researcher to date.

At fifteen words a minute, though, the change here is complete; and the changes in some individuals is quite miraculous. Beyond a few errant flights when one says strange things like "I'm going to QRT," or wishes someone Happy New Year as late as January 27th the individual could justly be judged the paragon of virtue and decorum.

Recently, the results of long, careful and secret experiments performed in Hamilton, Ontario, have caused concern amongst local hams and thrown some doubt on our ancient belief. Fortunately there exists no doubt about the magic of fifteen, for even under the most stringent clinical conditions the magic persists. Of the thousands of people tested, everyone assumed the new code of manners; perfect in every way.

Only when the subjects voluntarily allowed themselves to be

Continued on page 39

The code of virtue and decorum

For a long time we have known that when an individual can copy fifteen words a minute of the International Code that he no longer feels the urge to be rude or repugnant in any way; that warm currents of kindness and understanding surged warmly through his soul. Significant changes have

even been observed in many individuals at ten words a minute. Researchers have also observed that most Australians and some Americans undergo these changes at five words a minute! This has not been recorded, in Canadians, by any researcher to date.

At fifteen words a minute, though, the change here is complete; and the changes in some individuals is quite miraculous. Beyond a few errant flights when one says strange things like "I'm gonna go QRT," or wishes someone Happy New Year as late as January 27th the individual could justly be judged the paragon of virtue and decorum.

Recently, the results of long, careful and secret experiments performed in Hamilton, Ontario, have caused concern amongst local hams and thrown some doubt on our ancient belief. Fortunately there exists no doubt about the magic of fifteen, for even under the most stringent clinical conditions the magic persists. Of the thousands of people tested, everyone assumed the new code of manners; perfect in every way.

Only when the subjects voluntarily allowed themselves to be retested did amazing new data emerge. It has now been conclusively documented that one's ability to sustain these positive social skills is directly proportional to one's ability to sustain the fifteen words per minute of copying code.

As this ability to copy code slips, one begins to return to 'normal,' and below six words per minute it is "all gone," to quote one surprised researcher. One subject, at seven words per minute on his way down, kept repeating words like "handle," for some reason. One even said, with a sneer and a knowing wink, "good buddy," whatever that may mean. He now carries that sneer permanently on his face; his lips twist upwards to his left, showing parts of his top teeth.

These subjects, after regaining a proficiency of fifteen words a minute immediately remodified their behaviour, however. Increasing the speed beyond fifteen, seemingly has negligible effect; but a few of the subjects who went as high as sixty words, have permanently glazed looks. The experiments continue.

John Parr
53 Paisley Avenue North
Hamilton, Ontario
L8S 4G7

Telegraph Re-Visited

Just the other day an item in Vogue magazine came to my attention and prompted me to do some research. Samuel F.B. Morse, the Vogue item began, American Renaissance Man is more famous as a scientist than as an artist. They go on to say his work "Gallery of the Louvre", 1832, 73 $\frac{3}{4}$ " x 108" oil was recently purchased by Daniel J. Terra for his Museum of American Art in Evanston, Illinois for 3.2 million dollars and made headlines.

Samuel Finley Breeze Morse came into life April 27, 1791 in a manse his parents occupied where his father was a minister for the First Congregational church in Charlestown, Mass.

His first love was painting as he demonstrated through drawings at age four in school and on graduation from Yale in 1810 his parents sent him overseas to study. Then later he was to pay his own way for a number of years again overseas by selling paintings and doing portraits. Already a famous painter, he was returning home in 1832 and while on board ship, joined a group of men discussing Ben Franklin and his latest experiments. It was during this voyage that Morse finalized the method he would use in passing intelligence along a wire and formed the nucleus of the Morse code using dots, dashes and spaces.

Samuel Morse had help with financing, making working models and operating so he took on a partner named Alfred Vail. Morse visited printing shops to obtain valuable information as to how often each letter appeared in daily usage. The printers font displayed an overabundance of the most often used word letters and it was to these he assigned the least number of dots and dashes. To what extent Vail figured in the code as it is known today remains a mystery.

Canadian telegraph followed close behind that world famous bible message (Numbers 23;23) "What Hath God Wrought" of May 24, 1844, by the exchange of

messages between Toronto and Hamilton in December 1846. By 1847 Canada had hooked up to Buffalo which was around the time Morse had finally received proper recognition for at least this one successful invention of his. He also had enough money for his own house and had a private wire installed in his study. It was over this wire he was able to maintain communications with his many friends both local and world wide. Probably much in the manner of Amateur Radio Operators today.

| | Alphabet | Today |
|------|----------|-------|
| 1837 | A | .. |
| ... | B | ... |
| ... | C | ... |
| .... | D | ... |
| .. | E | .. |
| .... | F | .. |
| .. | G | .. |
| .... | H | .... |
| .. | I | .. |
| ... | J | ... |
| .. | K | .. |
| — | L | — |
| .. | M | .. |
| .. | N | .. |
| .. | O | .. |
| .... | P | .... |
| ... | Q | ... |
| .. | R | .. |
| .. | S | ... |
| .. | T | .. |
| .. | U | .. |
| .. | V | ... |
| .. | W | .. |
| .. | X | ... |
| .. | Y | ... |
| .. | Z | .... |

| | Numbers | Today |
|------|---------|-------|
| 1832 | 1 | .. |
| .. | 2 | .... |
| ... | 3 | .... |
| .... | 4 | .... |
| .... | 5 | --- |
| .. | 6 | ..... |
| .. | 7 | .. |
| .. | 8 | — |
| .... | 9 | .. |
| .... | 0 | — |

| | Punctuation | Today |
|------|-------------|-------|
| 1844 | Period | .... |
| | Comma | .. |
| | ? | ... |
| | Colon | .. |
| | Semi Colon | ... |
| | "on" | .... |
| | "off" | ..... |
| | ! | --- |
| | / | ... |
| | (| |
| |) | |
| | \$ | |
| | ' | |
| | Hyphen | .... |

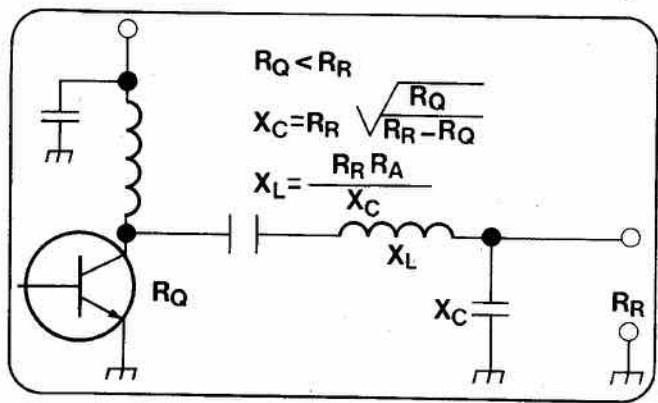
Samuel F.B. Morse died April 2, 1872 in New York where Central Park has a statue erected in his honour. There are very few if any morse operators created of cultivated today but there is a Morse Telegraph Club formed in 1942 to perpetuate his memory. For those interested in joining they should write Mr. P.A.K. Shepherd, Secretary, Maple Leaf Chapter Morse Telegraph Club Inc., 507 Vangard Crescent, Oakville, Ontario. L6L 5G6. Still others of us are trying to keep Morse Code alive by using it every day.

So you think you know the Morse Code? A Radio Amateur Station, KN7B in Malino, Oregon is contributing more than a little with twice weekly sessions on Thursday and Saturday at 0430 UTC on 3587 KHz. Try your hand at copying this station when propagation is favourable or ask on the air with other hams if they know the Morse Code.

Moe Lynn
VE6BLY

This writer was born in a railway station where his father was a Telegrapher for the CNR and was named after Morse but his mother preferred to spell it Maurice. At age 5, before being able to recite his ABCs, he was sending messages on the telegraph.

MATH NOTES FOR HAMS



PHILIP GEBHARDT VE3ACK

Mathematics. Like chess, euchre or hockey, it's just a game. You learn a few rules; you play the game to apply the rules. You learn more rules and more complex rules so you can become a better player. Eventually, you know so many rules and you have played the game so often that you become an expert.

The fascination of the mathematics game is partly its versatility: you can play it alone (like solitaire) or as part of a group; you can play with a few simple rules or with a massive collection of complex rules. The pity of the game is that so many of us are taught the rules, but are never given the opportunity to play the game.

This series provides an opportunity for you to play the game by showing you how mathematics can be applied to Amateur Radio. Although primarily aimed at secondary school students, others may find the information useful. Concepts presented are accompanied by practical applications whenever possible, rather than theoretical calculations. In addition, most of the material is derived from Amateur Radio publications to allow you to pursue topics which catch your attention. Because of space constraints, no technical explanations are given. If a term such as 'bandwidth' is used, it is assumed that you are familiar with the term or that you will search out an explanation in an Amateur Radio text. Similarly, mathematical explanations are short and to the point. If you do not understand how a solution

moves from one step to another, ask someone.

This is not a mathematics course, a textbook or a substitute for a teacher. Only a few applications can be shown in each part of the series, although an abundance of examples exist and they can be uncovered with a little digging.

Using the examples presented plus others you find yourself, you can practise the principles being taught in class. Hone your skills until you can tackle anything. You may not be able to remember a specific mathematics concept, but

if you can remember how you applied it to Amateur Radio, enough detail may come back to memory for you to pick up extra marks on tests.

One last point before plunging headlong into the series. Dr. Murray Miller, VE3MED who is head of the Science Department at Markham District High School has reviewed the mathematics to ensure accuracy, and Brian Compson, VE3GVR who is a standard products engineering section manager for Motorola Canada Ltd. has reviewed the electronics to verify the applications.

Manipulating Equations (Part 1)

Substituting Numbers

Before you can cope with

$$e = E_o \sin 2\pi f_c t + m \frac{E_o}{2} \cos 2\pi (f_c - f_m) t - m \frac{E_o}{2} \cos 2\pi (f_c + f_m) t$$

you need to understand the concepts required to solve simpler equations such as

$$C_T = \frac{C_1 C_2}{C_1 + C_2}$$

As a result, teachers try to illustrate basic concepts with simple applications. However, after the twentieth question asks, "If $x = \frac{84}{y}$, what is the value of x when y equals 7?" enthusiasm tends to wane.

An Amateur Radio version of the simple equation above could be $\lambda = \frac{300}{f}$ where λ is the

wavelength (in metres) of an rf signal and f is the frequency in MHz. Admittedly, there are not many equations which simply require that you insert a single value to produce an answer. Usually in Amateur Radio, several values must be substituted. For example, $X_L = 2\pi fL$ requires that you

We pay for technical articles.

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

know both f and L before you can calculate X_L

Figure 1 shows a useful circuit which employs simple substitution in the equations to determine circuit values. By selecting an appropriate cut-off

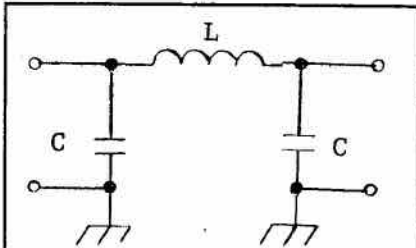


Figure 1 - Shown above is a constant - k - pi-section low-pass filter. Inserted in your transmission line, this simple filter will pass all frequencies below the cut-off frequency () and attenuate all frequencies above the cut-off frequency.

frequency f_c and knowing the impedance Z_o of your transmission line you can substitute in equations 1 and 2 to determine the correct values.

$$L = \frac{Z_o}{\pi f_c}$$

$$C = \frac{1}{2\pi f_c Z_o}$$

where Z_o is the transmission line impedance in ohms, f_c is the cut-off frequency in Hz,

L is the inductance in μH ,
 C is the capacitance in pF

For a cut-off frequency of 24 MHz and 53-ohm coax, the values are:

$$L = \frac{Z_o}{\pi f_c} = \frac{53}{\pi \times 24 \times 10^6} = 0.70 \mu H$$

$$C = \frac{1}{2\pi f_c Z_o} = \frac{1}{2 \times \pi \times 24 \times 10^6 \times 53} = 125 \text{ pF}$$

(Based on a suggestion from VE3MED, I will use engineering

notation for quantities such as frequency, i.e. 24×10^6 rather than 24 000 000. Contrary to standard mathematical practice, I will not adhere to conventions dealing with significant digits.)

Or perhaps you have a milliammeter which measures 0-1 mA, but you need to measure current up to 50 mA. How can you do it? Figure 2 shows the circuit and equation 3 uses substitution to provide the value.

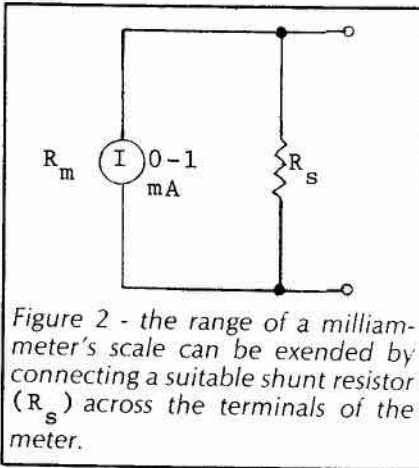


Figure 2 - the range of a milliammeter's scale can be extended by connecting a suitable shunt resistor (R_s) across the terminals of the meter.

$$R_s = \frac{R_m}{n-1}$$

where R_s is the shunt resistance in ohms,
 R_m is the meter resistance in ohms,
 n is the factor by which you want to increase the original meter scale

In the above example, if the meter resistance R_m is 25 ohms, then

$$R_s = \frac{R_m}{n-1} = \frac{25}{50-1} = 0.51$$

It is not, however, always a simple matter to substitute a number

into the equation. Sometimes you must perform some operation on the number, substitute it, and then perform more operations. Imagine, for example, that you have just moved into a new home. You

discover, much to your dismay, that a local CB operator interferes with your reception on 10 metres. The solution to your problem is shown in figure 3.

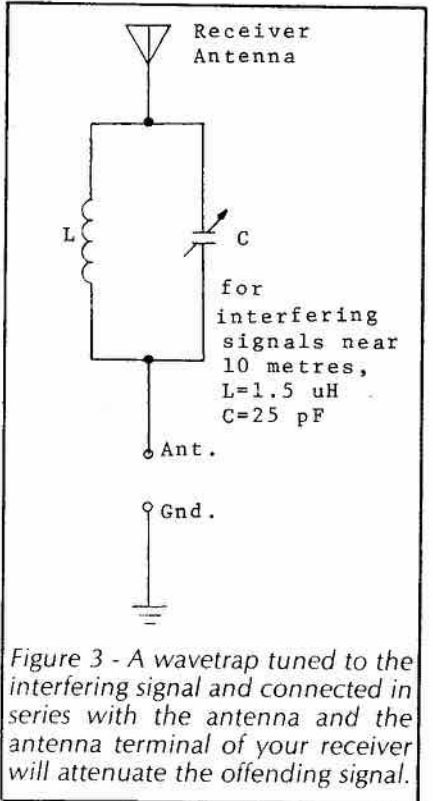


Figure 3 - A wavetrapped antenna tuned to the interfering signal and connected in series with the antenna and the antenna terminal of your receiver will attenuate the offending signal.

As it turns out, you find an air-wound coil in your junkbox: 9 turns, 1" long, 1" in diameter. (Obviously a coil left over from the days before metric.) Can you use it in the wavetrapped? If you can apply equation 4, you can find out.

$$L = \frac{a^2 n^2}{9a + 10b}$$

where a is the coil radius,
 n is the number of turns,
 b is the coil length

Attention!
All users of the
TCA Newsline
Telephone
THE NEW NUMBER IS
824-3467

Question Period

$$L = \frac{a^2 n^2}{9a + 10b}$$

$$= \frac{0.5^2 \times 9^2}{(9 \times 0.5) + (10 \times 1)}$$

$$= 1.4 \mu\text{H}$$

(Despite the small discrepancy between the required value -1.5 uH - and the inductance of your coil -1.4 uH - the frequency will shift only slightly, and with the use of a variable capacitor, this can be compensated for. - VE3GVR)

And that's not the end. The equations become more complex and the substitutions and operations become more and more intertwined. For example, the reactance of the loading capacitor in a pi-network is determined by equation 5.

$$X_C = R_1 \sqrt{\frac{R_1/R_2}{Q^2 + 1 - (R_1/R_2)}}$$

where R_1 and R_2 are the input and output impedances to be matched.

X_C and Q have their standard meanings

The isolated operations you perform in class may appear mundane, but each new concept you learn can be coupled with all the others you know, so you can handle more and more complex equations.

It's Magic

retested did amazing new data emerge. It has now been conclusively documented that one's ability to sustain these positive social skills is directly proportional to one's ability to sustain the fifteen words per minute of copying code.

As this ability to copy code slips, one begins to return to 'normal,' and below six words per minute it is "all gone," to quote one surprised researcher. One subject, at seven words per minute on his way down, kept repeating words like "handle," for some reason. One even said, with a sneer and a knowing wink, "good buddy,"

At the end of each part in the series, there will be a question. You have two weeks to calculate the answer and submit it to me. After that period, I will begin selecting letters from the mail. The Amateur submitting the first correct answer will receive a book as a prize. The question is open to all Amateurs who have up to a grade

12 education. You can be a full-time, part-time or night school student. Or not even a student at all. To enter, send your name, call, address and complete solution for the question to:
Philip Gebhardt, VE3ACK
14 Odin Cres.
Aurora, ON
L4G 3 T4.

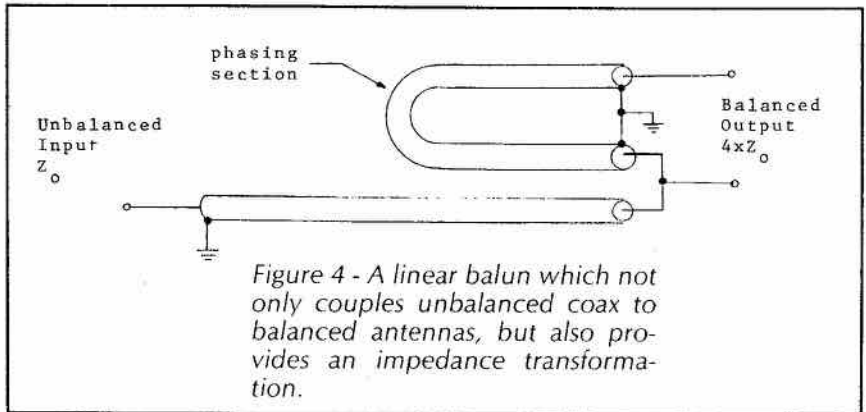


Figure 4 - A linear balun which not only couples unbalanced coax to balanced antennas, but also provides an impedance transformation.

This month's question: Refer to figure 4. The linear balun shown is useful for coupling a 300-ohm balanced antenna (a folded dipole, for example) and 75-ohm coax. The balancing action and the 4-to-1 impedance transformation are due to the half-wave phasing section.

Equation 6 is used to calculate the physical length of the phasing section.

$$L = \frac{150 \times V}{f}$$

where L is the required length in metres,

V is the velocity factor of the coax,

f is the frequency in MH

If the balun is being constructed for use at 28.6 MHz and the velocity factor (V) of the coax is .66, how long should you make the phasing section?

whatever that may mean. He now carries that sneer permanently on his face; his lips twist upwards to his left, showing parts of his top teeth.

These subjects, after regaining a proficiency of fifteen words a minute immediately remodified their behaviour, however. Increasing the speed beyond fifteen, seemingly has negligible effect; but a few of the subjects who went as high as sixty words, have permanently glazed looks. The experiments continue.

John Parr
53 Paisley Avenue North
Hamilton, Ontario
L8S 4G7

NEWS SERVICE

The recent visit of the Prime Minister to the British associate state of St. Lucia prompts us to note that while we have a reciprocal operating arrangement with this Caribbean island, it is incorrectly shown in the DOC English listing as "S. Lucie".

It also noted that visitors to the U.K. will no longer have to get a "G5" license. They can now use their home call with the prefix "G4".

73 de Doug VE3CDC

TECHNICAL SECTION



Dual IF Test Oscillator

General

It is a well known fact that electronics things (and for that matter - most things made by man) work until needed most. In the haste to get equipment ready for a recent trip to New Brunswick to demonstrate some of the company's receivers and transmitters, I neglected to check the frequency of the main VHF transmitter to be used in the tests.

Of course, it didn't work! And I didn't have any test equipment other than my trusty Simpson VOM. While I use it for many things, it still hasn't learned to indicate frequency with its little black pointer.

After some confusion (and much embarrassment) I managed to adjust it by ear close enough to get it to work.

One simple piece of test equipment would have made life at that time much simpler. That item, a simple oscillator on the receiver's intermediate frequency, and some of its uses are described in this article.

As can be seen from the schematic, the unit is made up of two separate oscillators; one on 455 KHz and the other on 10.7 MHz. Both are standard intermediate frequencies.

Either oscillator can be selected by switch S1 with the RF being routed to the output connector J1.

Oscillator No. 1 - 455 KHz

The idea for this part came from a recent edition of Ham Radio Magazine (Mar. 82, Pg. 66). Since I wanted something as small as possible to be able to carry in a tool box or suitcase, I replaced the collector choke in the original

with a sub-miniature 455 KHz transformer taken from a junked CB walkie-talkie. Any such part which will resonate at the frequency should work. Unusual as it may seem, the circuit took off the first time voltage was applied. The value of C3 may have to be changed, depending on L1, to get it to tune. If you have a dip oscillator which covers the range, temporarily connect C3 in parallel with L1 and adjust the slug in the transformer for a dip at 455 KHz. If not then tune for maximum output using an oscilloscope or your receiver 455 KHz IF. Next connect the output to a frequency counter and adjust L1 for an exact reading of 455.0 KHz.

Oscillator No. 2 - 10.7 MHz

This circuit is another one which worked the first time. There are no adjustments to peak. Simply connect the output to a frequency counter and turn capacitor C9 for an exact frequency of 10.70 MHz.

Diode CR1 may be omitted by those who never make a mistake when connecting a battery to a circuit. For those like myself, it is cheap insurance.

Switch S1 can be a miniature rotary or toggle switch, whichever you have on hand or prefer.

Construction

At the frequencies concerned, just about any style of construction will work. The original circuits were lashed up on a Hammond test board without any thought given to lead lengths or circuit paths. The final version was built on single sided printed circuit board drawn by hand with a resist pen and etched in ferric chloride.

The two oscillators were constructed on separate boards for ease in further experimenting. Other than that there is no reason for them not to be built on a single piece. The boards were mounted in a cast aluminum case on standoffs. The nine volt battery is tucked between the end of the board and the case. A bit of foam rubber glued to the cover keeps it in place.

Before applying voltage, take the time to make a final check to ensure correct wiring and parts placement.

Uses

While this piece of test gear will not replace the signal generator and frequency counter in the lab, in the field it can be a valuable aid to have.

A commonly used method of netting receiver crystals in Amateur and commercial VHF receivers is to input a signal of known accuracy from a signal generator or another station and to monitor a test point in the discriminator circuit. The crystal trimmer is then adjusted for a zero reading on an indicating meter. In a good many sets that I have checked, the discriminator setting has been off and sometimes by a good deal. An easier way is to inject a signal from the IF oscillator and beat it with the incoming signal, then adjust the netting trimmer for an audio zero beat. Once that is done, check your discriminator reading and adjust it (don't touch the crystal trimmer!) for a zero reading.

Want to set a transmitter crystal? Simply beat the IF oscillator against the signal in your receiver

and set the transmitter crystal adjustment for zero beat. The same thing applies for setting a signal generator on frequency to check a receiver's sensitivity.

Having problems with your receiver? This oscillator can help you quickly determine which section is causing the trouble. Use it to inject signals into the IF amps starting at the discriminator and working back toward the RM mixer. Where the signal stops is a likely spot to look closer.

All of these examples assume that your receiver has this common IF scheme. Should your receiver have other intermediate frequencies, it is a simple matter to change the crystals in the oscillator to other desired.

The next time you get stuck somewhere and need a lab full of test equipment perhaps this piece could save the day for you.

Parts List

Capacitors

- C1,C4 0.1mf
 - C2 220pf
 - C3 82pf (to resonate with L1)
 - C5,C8 0.01
 - C6,C7 150pf
 - C9 0-60 pf variable
- All capacitors are ceramic disc unless noted.

Coil

L1 455 KH IF transformer, primary side used.

Crystals

- Y1 455 KHZ, HC18U, parallel resonant, 30pf load.
- Y2 10.7 MHz, HC18U, parallel resonant, 30pf load.

Diode

CR1 1N4004

Resistors

- R1 15K
- R2 6.8K
- R3 680
- R4 1K
- R5 150
- R6 120K
- R7 47K

All resistors are 1/4 watt, 5%.

Switch

DPDT, Center off toggle or two pole, three position rotary.

Transistors

Q1, Q2 2N4124 or similar NPN

Miscellaneous

- Case Hammond 1590M or 1590MP
- Connector BNC UG1094/U
- Battery connector
- Battery 9v alkaline
- Standoffs
- Assorted 4-40 hardware

Technical Errors

I note in reading my article published in the July/August issue of TCA that the second paragraph under the Electrical heading contains a couple of errors. It should read as follows:

The signal comes from the input connector (a BNC in my case) via blocking capacitor C1 to the volume control. From there to the input pin 6 via capacitor C2 and resistor R2. R2 and R3 set the gain of the preamplifier stage. Motorola recommend that R3 be no larger than 1.0 Meg. for best stability. Increasing R1 and/or decreasing R3 reduces the gain. Capacitor C3 sets the high frequency response. The -3db point occurs when $X(C3) = R3$.

The errors are contained in the second and last sentences.

Dave Marling

VE1VQ

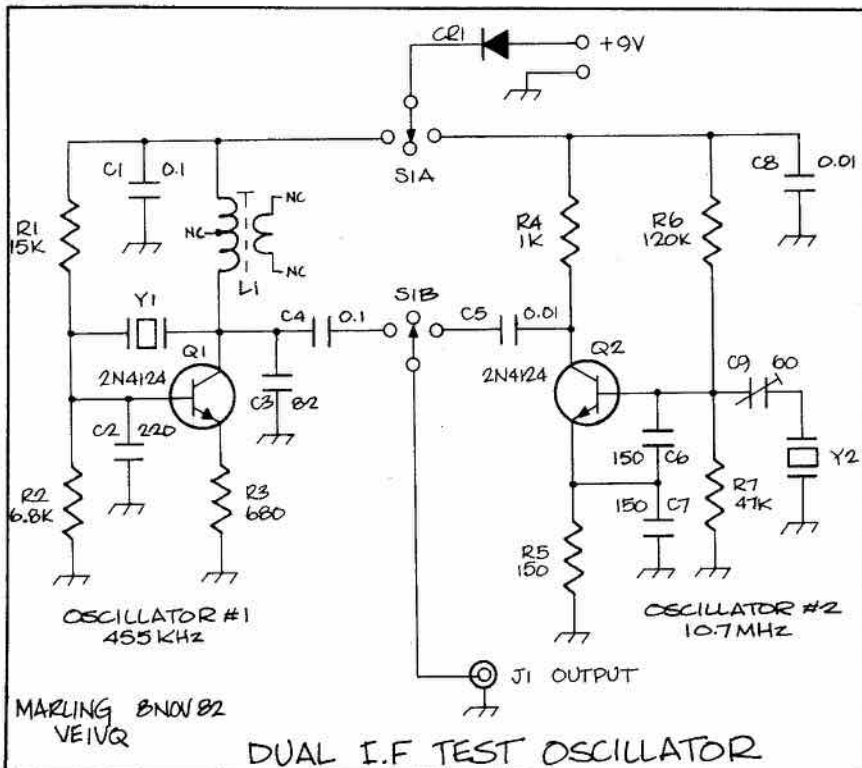
Box 53A, RR 1, Tusket, Yarmouth Co., Nova Scotia B0W 3M0



MONTANA - ALBERTA: 49th Glacier-Waterton International Hamfest, July 15-17, 1983. H.Q. at Waterton Homestead Campground, just north of Waterton National Park entrance on Highway 6, (Alberta, Canada). Prizes, bunny hunt, technical sessions, entertainment, swap tables. Information and Pre-registration P.O. Box 148, Milk River, Alberta, T0K 1M0.

NEWS SERVICE

The Russian Amateur satellite program will probably end up with a total of about twenty birds, according to G3LOR as reported in a recent "WESTLINK" newsletter.



MARLING BNOV82
VE1VQ

DUAL I.F. TEST OSCILLATOR

Infosection

CHANGE OF ADDRESS

Considerable time is wasted in having to search membership records of incomplete information sent to the CARF Office. For example, the Office has received requests like this: Have moved to B.C. so please change address, etc., to J. Blow VE7XXX (new call), 123 Jones Ave., Smithville, B.C., V9Z 1B6.

Membership records are held in the computer system and a search can be made by *call, membership number or postal code only*. But, as none of the above is given for the former address, we cannot update label data until this information is received. The coding (first) line of your label contains this data, so please copy this out and send with your request for change, renewal, etc. so that an update can be made.

CARF outgoing QSL service

Abuses have been made of this Service that is Free to CARF members in good standing. As a result QSL cards sent to the Service for forwarding will only be processed if the address label (or a copy or facsimile) from your current issue of TCA is included with your cards.

If not included the sender will be notified and asked for disposal instructions.

CARF Elections 1983

Nominations for the six directorships of the CARF Board closed on 31 December 1982. The following people have been nominated in the following regions.

For Atlantic Director:

Leigh Hawkes, VE1ZN, of Arm-dale, N.S.

Nate Penney, VO1NP of Shoal Harbour, Nfld. (incumbent).

Keith Piercey, VO1AE of Corner Brook, Nfld.

For Quebec Director:

Robert Sondac, VE1ASL of St., Luc.

For Ontario Director:

Craig Howey, VE3HWN of Waterloo. (incumbent)

Geoff Smith, VE3KCE of Aurora.

(incumbent)

For Mid-West Director:

Norm Waltho, VE5AE of Regina, Sask. (incumbent)

For Pacific Director:

Watler Stubbe, VE7EGR of Westbank, B.C.

Peter Driessen, VE7AG of Surrey, B.C. (incumbent)

With the exception of the Atlantic and Pacific directorate, the number of nominations received is equal to the number of seats available. Messrs. Howey, Smith, Sondac and Waltho are acclaimed, and will become directors effective at the end of the Annual General Meeting in June. An elec-

tion will be held in the Atlantic and Pacific Provinces by mailed ballot. Ballots will be sent from the CARF Office in Kingston well in advance of the closing date for voting. All ballots must be returned postmarked before midnight, 30 April to be valid. All CARF members in New Brunswick, Newfoundland, Nova Scotia and Prince Edward Island, British Columbia and the Yukon are eligible to vote, and will receive their ballots automatically. Election results will appear in July/August TCA.

Dave Goodwin, VE2ZP
Secretary

Swap Shop

Single insertion is \$1.00 (minimum charge) - 10 words and \$1.00 for each additional 10 words. To renew, send copy and payment again. Deadline is first of month preceding publication (e.g. Jan 1 for Feb. issue). Put your membership number and call (not counted) 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. TCA accepts no responsibility 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. Send to: TCA Swap Shop, Box 356, Kingston, Ont. K7L 2W2.

FOR SALE: (1) Drake R4C, \$400.00 (2) Macrotronics terminal for RTTY/CW, as new, \$500.00. (3) Drake TR4CW with 34NB, power supply. Mint condition. (4) Heath SB200 Linear, mint condition. \$1400.00 for both or best offer. Phone after 6 p.m. 416 682-2018. John Phillips VE3CRP.

FOR SALE: Heathkit station. SB401 transmitter with crystal pack, SB300 receiver, desk mike, all cables and manuals. Some spare tubes. All for \$425.00. VE3GTF, Box 100, Green Valley, Ontario, K0C 1L0. Tel. (613) 525-2092.

FOR SALE: Unused receiving type vacuum tubes. Most in their original cartons. Many unusual types. For 5 to 15% of their original retail value. For a complete list send a SASE to: Tino Zottola; VE2GCE, 5443 MacMahon Ave., Montreal, Quebec, H4V 2C1.

Swap Shop

FOR SALE: Heath HD-1410 Electronic Keyer. Works great. Asking \$75.00. Jeff 416-877-9398, 110 John St., Georgetown, Ontario. L7G 4T5.

FOR SALE: SB100 transceiver with CW filter HP23 power supply new final tubes \$250. DX60 transmitter and HG10 VFO \$60. HW8 QRP transceiver HWA7-1 power supply almost new \$200. All in good working condition and FOB Bracebridge. R. L. Cowan, Box 2194. Phone 705-645-5388.

WANTED: Vintage radios, tubes, magazines. By collector. # H 926. A. R. Nolf, 620 Auburn Cr., Burlington, Ont. L7L 5B2 — 416 634-3267.

FOR SALE: Kenwood TS 820 CW, SSB filters, service manual, \$750.00. D. Lincoln, VE6VU, 8807 — 100 St, Grande Prairie, Alta. T8V 2K3.

FOR SALE: Commercial high power Linear R.F. deck, 1.5 to 30 MHz continuous, Pi-L network, all vacuum capacitors, 8295 tube plus spare, 1 watt in - 2kW out, very clean, no power supply \$500.00. High power Linear tube 7704, 4kW dissipation at 220 MHz with chimney and hardware. \$175.00. 4-1000 with socket, chimney, plate connector, FC-30 filament choke and blower \$175.00. Tektronix signal generator Model 190A \$185.00. VE3CTP 416-291-0088.

ANTIQUE RECORDS FOR SALE: Westinghouse Aeriola Sr. (circa 1921) — complete with WD 11 tube. Excellent condition. \$100.00. Grebe tye CR9, (circa 1921) — working. \$150.00. Atwater Kent 5 tube breadboard — beautiful display piece. \$100.00. Audion Ultraudion 1 Step Detector Amplifier, complete with 2 Ceramic base DV2 tubes. \$150.00. Power Supply with all A - B - C. voltages and adjustable filament voltage will run virtually any Antique Radio. \$150.00. Other items including some horn speakers and old tubes also available. Ian McAuley, VE3MYO, P.O. Box 541 Alexandria, Ont. K0C 1A0 or phone 613-525-1770.


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

ROTATOR SPECIAL

Buy now and save! Antenna Rotators by HY-GAIN (formerly CDE). All rotators are new with factory warranty. Because of our large stock (see picture) we ship the day we receive your order. Catalogue with details \$ 1, refundable with order.

| | |
|---|---------------|
| T2X Tailtwister. Heavy Duty with Wedge Brake. Rotator and control box. | \$ 399 |
| Ham IV Most popular rotator with wedge brake. Rotator and control box. | \$ 299 |
| CD 45 II Allpurpose rotator with control box and lower mast adaptor. | \$ 159 |

We pay all shipping charges, insurance and handling (except N.W.T.). Ontario residents add 7% provincial sales tax.



Part view of our large stock

Pick the right rotator for your antenna and your area.

| ANTENNA WIND-LOAD CAPACITY | | |
|----------------------------|-------------------------|----------------------------------|
| ROTATOR MODEL | MOUNTED WEDGE TORQUE | WITH STANDARD LOWER MAST ADAPTOR |
| T2X | 6.5 kg m (175 kg ft) | 5.0 kg m (140 kg ft) |
| HAM IV | 15.0 kg m (40 kg ft) | N/A |
| CD 45 II | 20.0 kg m (50 kg ft) | N/A |

Mail order is our business, but, please write clearly and give your full postal address including your postal code. Thanks.


Uncertain which rotator to buy? Any technical question? Phone 1-807-767-3888 and ask for Ed, VE 3 LML. He'll help

TERMS OF PAYMENT: Cash, Money Order, Certified Cheque, VISA or MasterCard. Personal Cheques require 4 weeks clearing time. Credit Card Purchasers please indicate: VISA or MasterCard, Card No., Issuing Bank. Expiry Date and Signature.

Garant Enterprises, Dept. CF
227 County Blvd., THUNDER BAY, ONT. P7A 7M8
For Phone Orders Call: 1-807-767-3888
Monday to Friday from 9.00 am to 9.00 pm.

REMEMBER! We do not ask for a service charge of 2% or 3%, as others do. Our advertised price is all you'll have to pay!

Prices are subject to change without notice.



Member, Canadian Direct Marketing Association

To All Members in the Pacific Region

If you wish to have a Regional Director who is:

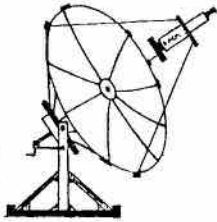
- Accessible
- Active on Public Service Nets
- Willing to look after your complaints and Inquiries
- Lives up to commitments
- Active in C.A.R.F. sponsored contests
- Participates in community events
- Active on the H.F. Bands
- Ready to distribute bulletins on phone — R.T.T.Y. & C.W.
- A contributor to T.C.A.
- An active club member
- Ready and willing to represent your views

Then you can do no better than to Elect:

Walter Stubbe VE7EGR as your Director

Don Yule VE7AGA Campaign Chairman

Paid Advertisement.



The ultimate in satellite TV earth stations. Complete package professional installation. Lindsay 10 ft. dish system now \$5720, 12 ft. system now \$5950, 15 ft. system \$7495. Package consists of roof or ground mount assy, dish antenna, 100 to 120 degree LNA, rotor, 3.7 GHZ/70 MHZ converter, Drake ESR-24 receiver, RF modulator CH 3 or 4 and all cables. We can perform recommended site survey. Communications and TV towers from \$195. Tower construction & antenna repair services available. Tower removals & rotor service. We are a Yaesu dealer in commercial band VHF & UHF transceivers and HT's. We will be glad to discuss your requirements. Engineers at your service to get your signal out.

We specialize in CDE and Telex - Hygain rotor overhaul to factory specs. Most rotors rebuilt at \$37.50 plus parts.



1 - 416 - 249 - 6774
**SIGNAL COMMUNICATIONS
 COMPANY**

Box 276, Station "A"
 Weston, Ontario
 Canada M9N 3M7



DC ELECTRONICS

897 Haute Rivière, Ste-Martine, Qué.

Téléphone (514) 427-2563

Professional service for
 Radio Amateurs.....



Call Mel
VE2DE
 for
Specials



You've Got Terrestrial Interference... We've Got Filters!



The concrete under your new earth station isn't hard yet, but you've got trouble already—unwanted microwave signals are destroying your picture. Your customer is throwing tantrums, and you have two choices: Tear it down and eat the installation costs, or filter it.

We can help. Call us and we'll send you MTV/82, which tells how to eliminate terrestrial interference on earth stations and lists a complete line of filters designed and tested for this purpose. Created for effective use by novice and experienced earth station operators alike, MTV/82 explains each type of interference, describes the symptoms and recommends specific filters to solve your specific problems.

Products include:

- microwave & IF bandpass filters
- IF traps
- waveguide adapters
- power dividers
- coax adapters
- specials!

Call or write today and we'll also send you FG/82, "Earth Stations & Terrestrial Interference: A Filtering Guide for the Installing Dealer."

MFC
MICROWAVE FILTER COMPANY, INC.

6743 Kinne St., East Syracuse, NY 13057
 Toll Free 1-800-448-1666 — TWX 710-541-0493
 NY/HI/AK/Canada (Collect) 315-437-3953

TRANSMITTERS — RECEIVERS — TEST EQUIPMENT — LAB EQUIPMENT — COMPONENTS

CARF

VE3 KHB

ARRL/CRRL

BOUGHT — SOLD

4 Miles East of Franktown
3 Miles South of Prospect

**WILLIAM J. FORD
ELECTRONIC SURPLUS**

Display area over 2500 sq. ft.

Mail: R.R. 6
Smiths Falls
Ont. K7A 4S7

Phone: (613) 283-0637

Jennings Vacuum Capacitors:

VCCE 250pf 29Kv, new, fixed \$25.00
JCS 1000pf 12Kv, new, fixed \$65.00
UCSVH 35pf, new, variable \$36.00
UH 75pf 20Kv variable \$25.00
UCS 200pf 15Kv, new, variable . . \$36.00

UCSF 250pf 10Kv, variable \$36.00
UCS 375pf 10Kv, variable \$42.00
UCSF 400pf 15Kv new, variable . . \$60.00
USCX 700pf 7.5Kv, new variable . \$75.00
UCSXF 1500pf 10Kv variable . . . \$100.00

General Radio impedance (RCL) bridge model 650A with 650PI pwr supply and 1Khz osc/amp unit \$75.00

High power Navy HF transmitters, like new. Uses 16 type 4CX250B tubes in output. Built in SWR and pwr meters. Pick up only \$370.00.

HRO 60 National rcvr, rack mount with 4 sets of coils (A, B, C and D), coil box and manual \$280.00

DEC computer tape units model TU55. Two reel motors, plug-in PCB's, reed relays etc. \$20.00

Spectrum analyzer, Polarad model TSA. Uses plug-in RF units. 925-4500MHz \$125.00

Broadcast studio style Ampex 300 tape deck. 2 speeds, VU meter, floor console on castors, with manual \$75.00

Picker industrial X-Ray unit, on castors, with spare tubes, diffraction filters. Fully metered with 50Kv HT meter, Fil. I and Fil. V meters and anode current meter. Oil filled HT xmfr. \$50.00

4CX250B tubes pulled from equipment \$5.00 each

Collins permeability tuned oscillator units type 70E1 \$6.00

Oscilloscopes — Tektronix, Hewlett Packard, Dumont, Military, etc. Various models and types, all with 5 inch CRTs. Orders filled with units on hand at the time. \$75.00

National NC 109 rcvrs, SSB/AM/CW, rack mounting, with manual, \$100.00

X-ACTO type knife blades, package of 5 for 25 cents, new.

National HFS rcvr 27-250MHz complete with 110vAC and 6vDC pwr supplies \$40.00

Military BC221 Freq. Meters. 125KHz-20MHz. With xtal & calibration book \$20.00

Marconi CSR5 rcvrs, 80KHz-515KHz and 1.5MHz-30MHz. Complete with cabinet and separate power supply. \$85.00. Copy of manual \$5.00

All items used unless indicated otherwise. FOB Smiths Falls, Ont. Ontario residents include 7% Sales Tax. Any queries phone or write (save on calls, phone before 8 a.m. or after 6 p.m.)

**IMPORTANT: — For more surplus odds and ends refer to previous issues of TCA
Your ONE STOP Source for Vacuum Capacitors**



Canadian Amateur Radio First

WHAT IS CARF?

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

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

OFFICERS

| | | |
|---------------------|--------|--------------|
| President | VE3BID | Don Slater |
| Vice-President | VE6XX | Fred Towner |
| Imm. Past President | VE3NR | Bill Wilson |
| Secretary | VE2ZP | Dave Goodwin |
| Treasurer | VE3IWH | Lorna Hill |
| General Manager | VE3AHU | Art Blick |

BOARD OF DIRECTORS

If you want to contact the Federation, write or call a Director in your Region or write to CARF, Box 356, Kingston, Ont. K7L 4W2.

VE7AB Peter Driessen, 13142-69 'A', Surrey, B.C. V3W 6N9. 604-732-3298.

VE5AE Norm Waltho, 1547 Glendale St., Moose Jaw, Sask. S6H 7B3.

VE3HWN Craig Howey, No. 304 598 Silverbirch Rd., Waterloo, Ont. N2L 4R5 519-885-4545.

VE3KCE G.R. (Geoff) Smith, 7 Johnson Rd., Aurora, Ont. L4G 2A3 416-727-6672.

VE2BIE Raymond Mercure, 208 Bourque St., Hull, Que. J8Y 1Y4. 776-6495.

VO1NP Nate Penney, Box 10, Shoal Harbour, Nfld. A0C 2L0. 709-466-2931.

OPERATION INFORMATION

RECIPROCAL OPERATING AGREEMENTS

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

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

How to use the CARF QSL Service

The CARF Outgoing QSL Service will forward your QSL cards to anywhere in the world. This service is **free to CARF members**. If you send a lot of cards, a CARF membership will soon pay for itself in view of the high cost of postage when cards are mailed direct.

Please observe the following rules when using the CARF Outgoing QSL Service:

1. Sort cards alphabetically by prefix.
2. Sort Canadian cards numerically by call area.
3. Place small lots of cards in strong, heavy envelopes and seal securely. Wrap heavier packages in strong paper or put in cardboard box. Tie securely. Do not staple!
4. Address your package as shown in the diagram.
5. **Do not register the cards.** This only delays them, costs more and is not really necessary.
6. If you want proof that CARF received your cards, enclose a self-addressed, stamped postcard or envelope with 'Receipt' marked on it.
7. If a package should be damaged on arrival (very rare), CARF will send you a list of cards received so that you can check if any were lost.

(For an explanation of QSL Bureaus in general, see the CARF Regulations Handbook chapter on QSLing).

| | | |
|---|-------------------------------------|--|
| Name, call Return Address CARF Membership No. | PRINTED MATTER | <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;"> Correct Postage </div> |
| CARF National QSL Bureau P.O. Box 66 ISLINGTON, ONTARIO M9A 4X1 | | |
| <div style="border: 1px dashed black; border-radius: 50%; padding: 10px; display: inline-block;"> Use this address NOT Box 356 Kingston </div> | | |

BANNED COUNTRIES LIST

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

THIRD PARTY TRAFFIC AGREEMENTS

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

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

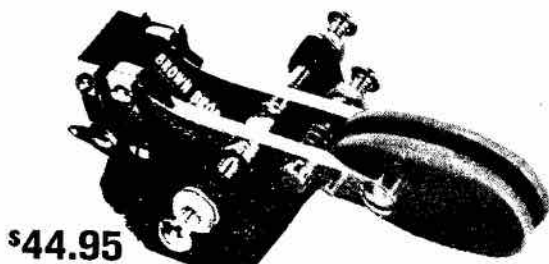
Amateurs who wish to operate in Commonwealth countries other than those listed above should apply to the embassy in Canada or directly to the appropriate regulatory agency.

R & S ELECTRONICS LTD.

157 MAIN ST.
DARTMOUTH, NOVA SCOTIA
B2X 1S1

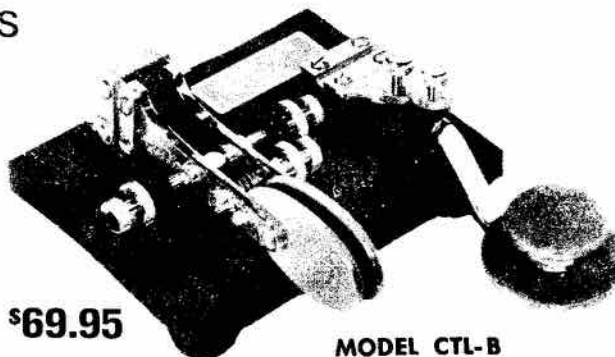
Telephone 902-434-5235

BROWN BROS. PADDLES & KEYS



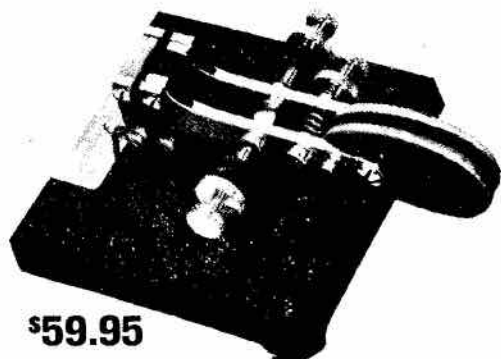
\$44.95

MODEL UTL-A



\$69.95

MODEL CTL-B



\$59.95

MODEL BTL-A



\$32.95

MODEL ST-A

Visa, Master Card, Money Order, Certified Cheque
Please Add \$3.00 for Shipping!

TEN-TEC

KENWOOD



YAESU

RADIO AMATEUR
callbook



ICOM

KLM



Cushcraft

TELEX



Bearcat

BROWN BROS. PADDLES & KEYS

ATLANTIC CANADA'S OLDEST DEALERSHIP

FOR THE FINEST EQUIPMENT AND FRIENDLY, EXPERIENCED SERVICE

R & S ELECTRONICS LTD.

CARF is Canadian Amateur Radio!!!

Mail this handy form today. Memberships include certificate, TCA - The Canadian Amateur, FREE QSL Service and much more.

Full Voting Member *

\$15⁰⁰ per year

\$40⁰⁰ for 3 years

\$65⁰⁰ for 5 years

Associate Member

(Foreign Call Sign Holders
and non-licensed supporters)

\$15⁰⁰ per year

\$40⁰⁰ for 3 years

\$65⁰⁰ for 5 years

Family Membership

\$1⁰⁰ for each year

extra per person

\$15⁰⁰ for LIFE

Life Membership

(Full or Associate)

\$225⁰⁰

Check Quantity Required:

Canadian Amateur Certificate Study Guide \$7⁹⁹ _____

Canadian Amateur Radio Regulations Handbook \$7⁹⁹ _____

Advanced Amateur Certificate Study Guide \$7⁹⁹ _____

Instructor's Guide \$5⁰⁰ _____

Log Sheets (Package of 50) \$2⁵⁰ _____

Message Forms \$2²⁵ _____

CARF Logos (6" x 2 1/2") 4/\$1⁰⁰ _____

Check one: adhesive sticker

window decal

CARF Name Badge \$3⁰⁰ _____

Print name and call desired _____

(Ontario add 7% sales tax)

Public Service Cards

25/\$2⁰⁰ First Class Mail _____

30/\$2⁰⁰ Third Class Mail _____

Money Order or Cheque Total _____

MY CALL _____ FAMILY CALL(S) _____

NAME _____

ADDRESS _____

POSTAL CODE _____ DATE _____

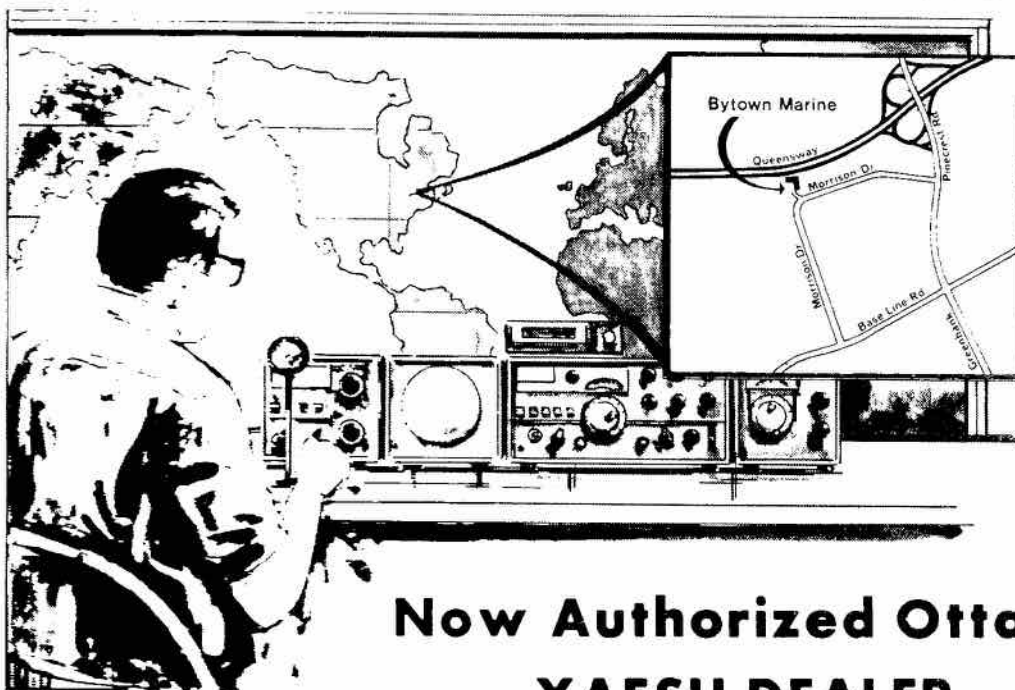
* If renewing, Membership No. is: _____

Canadian Amateur Radio Federation

P.O. Box 356, Kingston, Ontario, Canada K7L 4W2

613-544-6161

Ottawa's Newest Ham Store...



Now Authorized Ottawa YAESU DEALER

MANUFACTURERS

ATLAS RADIO
KENWOOD
M.F.J.
HY-GAIN
MOSELEY
A.R.R.L.
CALLBOOK
NYE VIKING
V.H.F. ENGINEERING
SHURE
CORNELL-DUBILIER
AMPHENOL
ANTENNA INC.
INTERNATIONAL WIRE & CABLE
TIMES WIRE
BARKER & WILLIAMSON

PRODUCTS

HF/SSB TRANSCEIVERS
2M-VHF TRANSCEIVERS
AMPLIFIERS
REPEATERS
ANTENNAS
INSULATORS
ROTORS
ANTENNA TUNERS
KEYS
FILTERS
PHONE PATCHES
MICROPHONES
CALLBOOKS
PUBLICATIONS
CODE TAPES
CO-AX SWITCHES

Bytown Marine
LIMITED

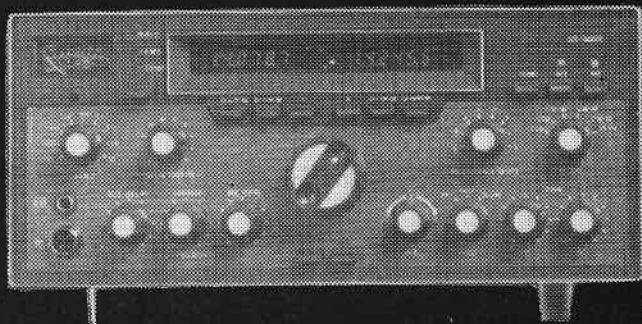
LEISURE TIME COMMUNICATIONS
SPECIALISTS AMATEUR • CB • MARINE

7125 MORRISON DRIVE OTTAWA ONT.

TELEPHONE 613-820-6910

More Transceiver

Contest or rare DX—the world is waiting to hear from a new breed of HF operators who'll have the power of a microcomputer at their instant command. The Heath SS-9000 signals a new era in Amateur Radio, full of exciting promise. Challenge. And opportunity...



MORE WORLD HORIZONS

In the SS-9000, we met a major design goal: *provide the highest-tech, most versatile transceiver possible.* Our objective? Nothing less than setting the pace for transceiver performance in the next decade. And transforming the state-of-the-art in amateur telecommunications potential.

As a microprocessor-based, fully-synthesized nine band Transceiver, your SS-9000 leads the new revolution in computer-enhanced hamshacks — with an array of applications yet to be

discovered. At your command under direct or RS-232 control, it could break all known records for station performance.

MORE MICRO CONTROL

Harness the SS-9000 to a video terminal, ASCII teletype or home computer. Commands are available to select, display and change all 27 operating and memory frequencies, assign and toggle T/R/Tr status on the dual readout, and freely manipulate the three stored frequencies on each band, with full diagnostic error-prompting.

Keyboard command also allows you to set and switch the band, mode, passband shift, baud and scan rates, plus switch to one of five antennas automatically.

MORE POWER AS A PAIR

The PS-9000 AC Power Supply has an in-cabinet speaker and two digital 12 or 24-hour clocks. Both units benefit from thermal and over-current protection with high VSWR cutback. Test-prove the assembled System 9000. Get a hands-on tryout at your nearby Heathkit Electronic Center.*

MORE DETAILS IN CATALOG



Send for your free catalogue! Write:
HEATH COMPANY
1020 ISLINGTON AVE.
TORONTO, ONT.
M8Z 5Z3

Or visit the nearest HEATHKIT ELECTRONIC CENTER where Heathkit products are displayed, sold and serviced. Locations in Vancouver, Calgary, Edmonton, Winnipeg, Mississauga, Ottawa and Montreal.

There's more for the Ham at Heath

*Units of Veritechnology Electronics Corporation in the U.S., a subsidiary of Zenith Radio Corp.



Heathkit™

Heath
Company