

Second Class Mail Registration
Number 5073

TCA



\$1⁵⁰

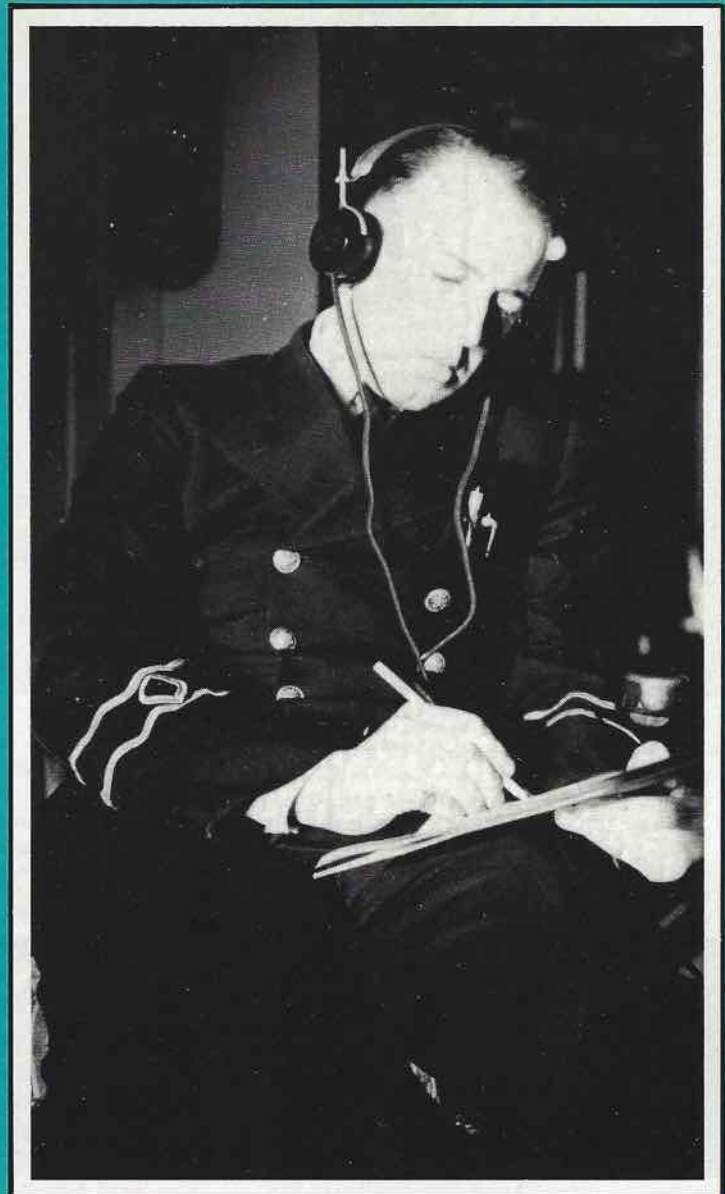
The Canadian Amateur Radio Magazine

APRIL
1983

Life on the Ocean Wave: IV

On shore in Shanghai

*Plus:
Contests,
DX,
Technical,
and much more...*



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



1983

Ringo Ranger II

Simply the best

The best combination of gain, bandwidth and low angle radiation for simplex or repeater operation.

Quick easy assembly and installation

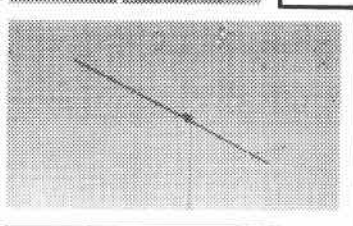
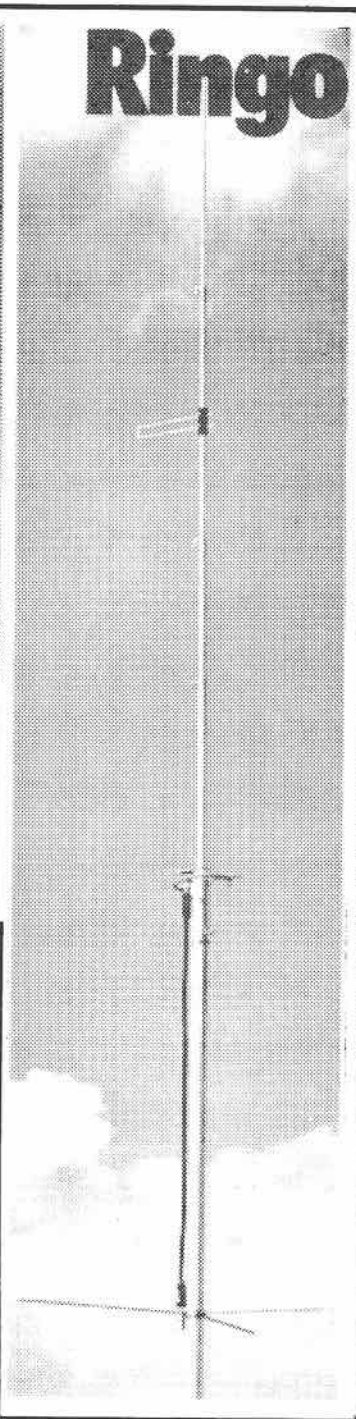
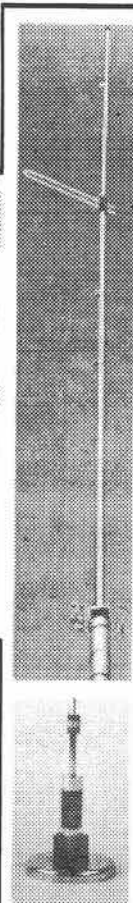
Mount anywhere with compact dimensions and neat appearance

Proven performance and durability in all environments

Complete FM band coverage

One year warranty

Cushcraft antennas created the FM antenna revolution by making the best performance and value available to every ham. We continue to set the pace with a broad line of antennas for every FM application. Tune across the band and you will find the overwhelming majority of hams using one, two, or more Cushcraft antennas. The reason is very simple that they are the best. Now is the time for you to enjoy the value of a Cushcraft antenna. See your nearby dealer today.



RINGO RANGER II

ARX-2B	134-164 MHz
ARX-220B	220-225 MHz
ARX-450B	435-450 MHz

RINGO RANGER

ARX-2	134-164 MHz
-------	-------------

RINGO

AR-6	50-54 MHz
AR-2	135-175 MHz
AR-10	28-29.7 MHz
AR-220	220-225 MHz
AR-450	440-460 MHz

MOBILE ANTENNAS

AMS-147	144-148 MHz	Magnetic Mount
ATS-147	144-148 MHz	Trunk Lip Mount
AMS-220	220-225 MHz	Magnetic Mount
ATS-220	220-225 MHz	Trunk Lip Mount

YAGIS

A147-4	145.5-148 MHz	4 Element
A147-11	145.5-148 MHz	11 Element
A147-22	145.5-148 MHz	22 Element
214-FB	145.5-148 MHz	14 Element
A220-7	220-225 MHz	7 Element
A449-6	440-450 MHz	6 Element
A449-11	440-450 MHz	11 Element

CROSS YAGI

FOR CW/SSB and FM	
A147-20T	144-146 MHz Horizontal
	145.5-148 MHz Vertical



cushcraft
CORPORATION

Write for Catalogue Sheets
c/o J.H. Williams VE3XY, Brian Riley VE3JEO

C.M. PETERSON CO. LTD.

Communications Electronics Division

Head Office C.M. Peterson Co. Ltd.

220 Adelaide St. North, London, Ont. N6E 3H4

519-434-3204

Toronto Amateur Dept.: 47A Colville Road, Toronto 15, Ont.

TCA

THE CANADIAN AMATEUR

APRIL, 1983

Vol. 11 No. 4

EDITOR

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

ASS'T EDITOR, DESIGN

Peter Hammond
163 Russell Ave.
Ottawa, Ont.

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 Cres.,
Saskatoon, Sask, S7J 3K1

CRAG 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

DX EDITOR

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

EMCOM

Ken Kendall VE3IHX
777B Springland Dr.
Ottawa, Ont. K1V 6L9

YL NEWS AND VIEWS

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

VHF/UHF COLUMN

John Dudley VE5JQ
3125 Mountbattan St.
Saskatoon, Sask. S7M 3T3

ADVERTISING
REPRESENTATIVE

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

PRODUCTION AND

PRINTING BY
Mutual Press Ltd.
Ottawa, Ont.

Letters	11
Editorial	14
Satellite comment	17
Contest scene	18
DX	20
Radio Range	24
Through the Years	26
Life on the Ocean Wave	30
Dayton or Bust	39
Technical Section	41
Books	47
Elections	49
Infosection/Swap Shop	51

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

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.
- 25k Hz, 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

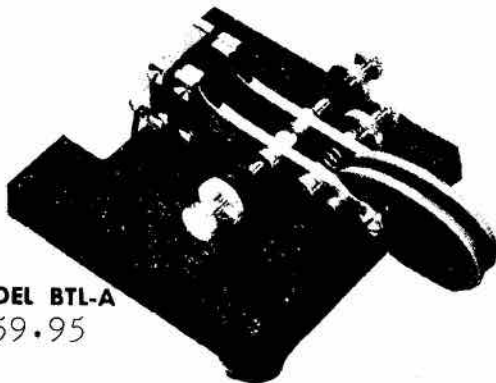
WE PAY THE SHIPPING
ON NEW TRANSCEIVERS

R & S ELECTRONICS LTD.

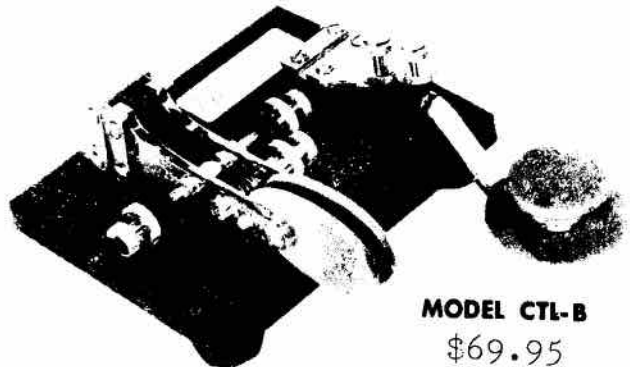
157 MAIN ST.
DARTMOUTH, NOVA SCOTIA
B2X 1S1

Telephone 902-434-5235

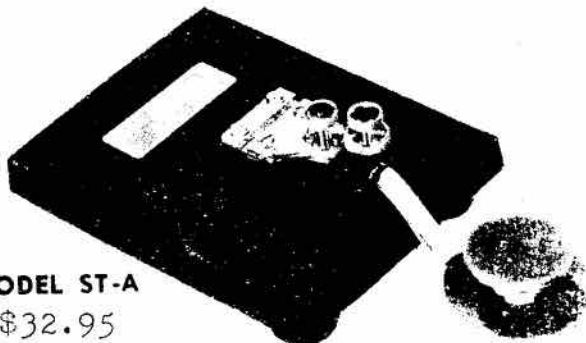
BROWN BROS. PADDLES & KEYS



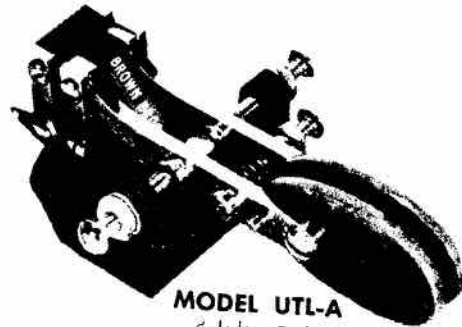
MODEL BTL-A
\$59.95



MODEL CTL-B
\$69.95



MODEL ST-A
\$32.95



MODEL UTL-A
\$44.95

ADD \$3.00 FOR SHIPPING.



RADIO AMATEUR
callbook



KLM



TELEX



Bearcat

BROWN BROS. PADDLES & KEYS

ATLANTIC CANADA'S OLDEST DEALERSHIP

FOR THE FINEST EQUIPMENT AND FRIENDLY, EXPERIENCED SERVICE

R & S ELECTRONICS LTD.

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

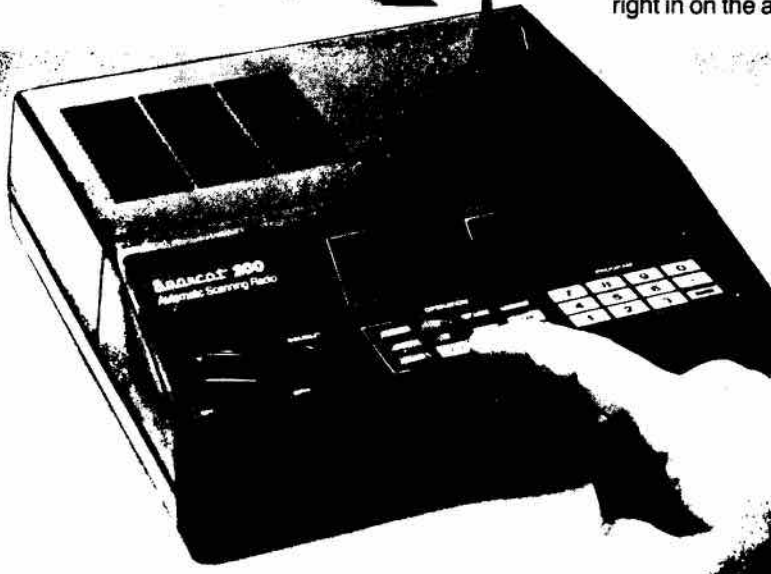


Bearcat 20 / 20



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

DIFFICULT CHOICE - EASY OPERATION

TR-7950 \$549



Outstanding features providing maximum ease of operation include a large, easy-to-read (direct sunlight or dark) LCD display, 21 multi-function memories, automatic offset, programmable priority channel, memory and band scans, built-in lithium battery memory back-up, built-in 16-key autopatch, and a choice of a hefty 45 watts output (TR-7950), or 25 watts output (TR-7930).

TR-7730 \$449

The TR-7730 is an incredibly compact, reasonably priced, 25-watt, 2-meter FM mobile transceiver with five memories, memory scan, automatic band scan, UP/DOWN manual scan from the microphone, and other convenient operating features.



TR-9130 \$719

The TR-9130 is a powerful, yet compact, 25 watt FM/USB/LSB/CW transceiver providing increased versatility of operation on the two meter band. It features six memories, memory scan, memory back-up capability, automatic band scan, all-mode squelch, CW semi break-in, and incorporates microprocessor technology.



TR-8400 \$679

Synthesized operation on the 440 MHz amateur band now is available with KENWOOD's TR-8400 70 cm FM mobile transceiver. This extremely compact, full-featured rig covers 440-450 MHz, in 25 kHz steps and includes five memories, memory scan, automatic band scan, UP/DOWN manual scan, and two VFOs.

TR-2500 \$439

The TR-2500 is a compact 2 meter FM handheld transceiver featuring an LCD readout, 10 channel memory, lithium battery memory back-up, memory scan, programmable automatic band-scan, Hi/Lo power switch and built-in sub-tone encoder.



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) 984-0408

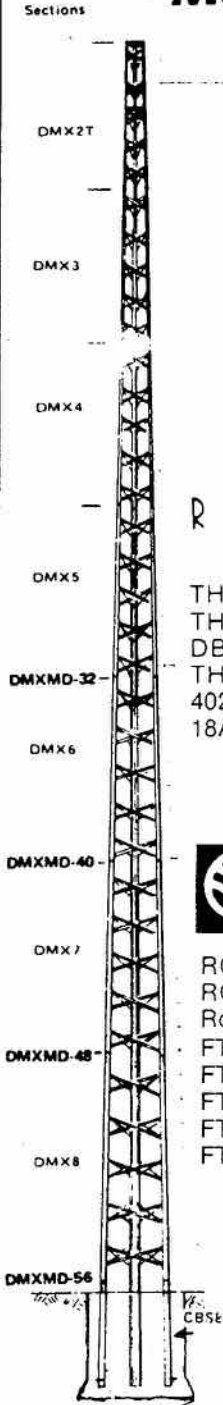


DELHI SELF-SUPPORTING DMXHD, DMXMD CONCRETE-BASE TOWERS

Medium Duty and Heavy Duty Ham Towers

APRIL SPECIAL

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



- TH3MK3 jr. 3 el tri-band beam 329.00
- 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 49¢ foot
- RG-213 coax 65¢ foot
- Rotor cable 42¢ foot
- FT208R-2 MTR Hand Held 319.00
- FT290R All mode 2 MTR Portable .. 429.00
- FT707 H.F. Transceiver with mic ... 999.00
- FT102 H.F. Transceiver 1229.00
- FT-ONE H.F. Transceiver 2449.00



- 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

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



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—DROPIN 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

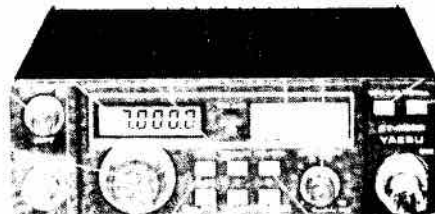
**FT 980
FT 77**

Phone for price

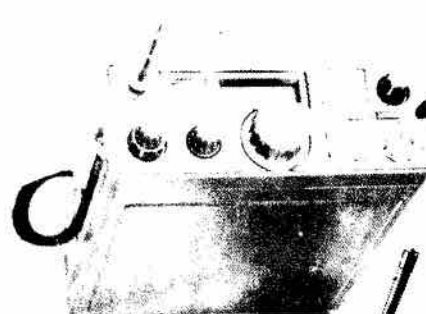
**FT-ONE
\$2200.00**

Limited quantities at these special prices
Order today not to be disappointed!

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



WHY NOT! YOU DESERVE IT!

THE REMARKABLE FT-ONE



\$2349

THE NEW FT-980 WITH 8 BIT MICROPROCESSOR



\$1899

SPRING SPECIAL!

ATARI 800 with EASIC and 48K. RAM.....\$879

DC ELECTRONICS

Box 308

Ste. Martine, Que. J0S1V0

(514) 427-2563

Mel, VE2DC.

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 25,000 SQ. FT.

MAIL: R.R. 6
SMITH FALLS
ONT. K7A 4S7
PHONE: (613) 283-0637

Important - For more surplus odds and ends, refer to previous issues of "TCA"

Counter, 8 digit military URM504 (Beckman 6146 with 1000MHz heterodyne plugin 607). Temp controlled oven, adjustable gate; X and/or Y inputs with X-Y and X/Y as well. AC/DC attenuators, printer output, solid state \$375.00

RF amplifier decks consisting of 2 4CX1000 tubes, Eimac SK800 sockets and SK806 chimneys, two filament xlftrs, 500pf var vacuum, turns counters, two roller coils, variable capacitors, rt angle drives, meters, etc. 24 inch rack panel, 12 high, 12 deep. \$275.00

New Filter capacitors, 53mfd at 3.5Kv approx 11x4x4 with wtof 10 1/2 lbs \$37.00

Marconi "Atalanta" marine receivers, 15KHz to 28MHz, bandspread tuning, xtal calibrator, rack mounting. Depending on condition \$100.00 to \$150.00
Photocopy of manual can be supplied with order \$10.00

Hammarlund SP600 receivers, .5-54MHz. Rack mounting \$130.00
Partial copy of manual with order \$5.00

General Electric SSB exciters with Snelgrove xtal filters. Loaded with coils. Bandswitch 1.6-20MHz. Size approx 14x8x9 deep. \$20.00

Teletype sets, Model 33 complete with punch and reader for tape. On stands. \$80.00

Solid state German Electron tape decks, reel to reel, push button controls, 3 motors. \$15.00

Your ONE STOP Source for Vacuum Capacitors

Jennings Vacuum Capacitors:

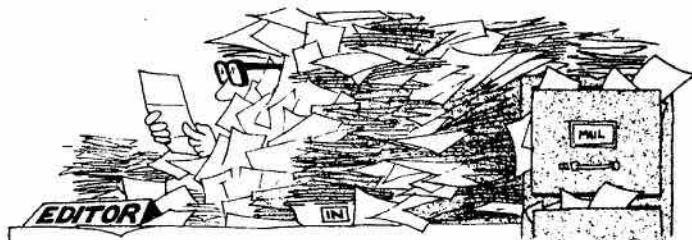
VCCE 250pf 20Kv, new fixed	\$25.00	UCSF 250pf 10Kv variable	\$36.00
JCS 1000pf 12kv, new fixed	\$65.00	UCS 300pf 7.5Kv new variable	\$42.00
UCSVH 35pf new variable	\$36.00	UCS 375pf 10Kv variable	\$42.00
UH 75pf 20Kv variable	\$25.00	UCSF 400pf 15Kv new variable	\$60.00
UCS 200pf 15Kv new variable	\$66.00	UCSX 700pf 7.5Kv new variable	\$75.00
		UCSXF 1500pf 10Kv variable	\$100.00

Signal generator, SG47/USM 16. Am/FM/CW/Pulse, 10-450MHz complete with copy of manual, cables and probe. \$175.00

TMC antenna loading unit, like new. Motor driven rotary coil and capacitor in weatherproof fibreglass box, model TU-2. Solid state remote control unit ATCU-16. Easily handle a KW. Will load automatically if supplied with SWR information. \$150.00

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 8AM or after 6PM)

LETTERS



Civic antenna controls?

Dear Sir:

Attached please find a copy of a notice published in the VANCOUVER SUN of November 30, 1982, regarding antennas of ham radio operators. The ham radio operator referred to in the notice is undersigned.

In a personal discussion with Mayor Humphreys I have advised him that ham radio antennas come under Federal jurisdiction

but apparently a pressure group wants to force the issue.

Their reference to the Union of B.C. Municipalities and the Federation of Canadian Municipalities is a serious matter and if they eventually succeed it will affect ALL ham radio operators in Canada.

I am therefore bringing this to your attention with the suggestion to take pre-emptive measures by approaching the DOC in Ottawa as they sooner or later will become involved in this matter.

Yours very truly,

H. E. Driessen,
VE7CTT

We are working on it, and thank you for writing. (Ed.)

ANTENNAS DEBATED

West Vancouver council was urged Monday by Ald. David Finlay to adopt regulations to control the height and placement of antennas and television satellite dishes in the municipality.

Finlay said antennas are a structural matter over which council has jurisdiction.

Complaints about a ham radio operator's antenna triggered the debate on who can regulate antennas.

Mayor Derrick Humphreys said the jurisdictional question is a problem in municipalities throughout Canada, and "if we pass a bylaw we may be the first test case. This would go through to the Supreme Court and take years."

Council decided to seek legal advice and to ask the Union of B.C. Municipalities and the Federation of Canadian Municipalities to help establish which level of government has control.

— from the *Vancouver Sun*
Nov. 30, 1982

Code test conditions OK

Dear Editor:

I would like to make some comments with reference to recent articles and letters re the code exams given by DOC.

Within the past year I have written both the amateur and advanced amateur code exams. In both cases the initial exam was written in a large class room with about 30 hopeful aspirants in attendance (this was in Victoria, B.C.). The source of sound was a cassette recorder without further amplification. I am rather deaf and wear a hearing aid, but, in neither case did I have any difficulty in hearing the code. In fact, in both cases, the inspectors made a point of asking any person who could not hear to move closer to the sound source.

Under these circumstances I failed the amateur exam, I simply

was not ready. I passed the advanced amateur on the first attempt.

Re-writes were written in the inspectors private office. I was left alone to write and certainly the inspector went out of his way to make me feel as comfortable as possible. Failures here were certainly not due to the quality of the code or the conditions under which it was written.

Your correspondants made a point of mentioning chirps and key clicks, perhaps they were present, to be honest I was too busy to notice, but my impression was that the code was clear, the characters well timed, and the spacing between both words and characters was excellent. Certainly anyone who could not read the test would be completely unable to read most of the noise that comes over the air under the guise of cw.

I don't have any particular brief to carry for DOC but do feel that I should put in a word for the help and friendliness of our Victoria office at least.

73

E.S. (Ted) Coombes
VE7 FND

Teachers and testers should coordinate

Dear editor:

The recent Amateur Theory examination, October 20, 1982, prompts me to write to your magazine with a few suggestions.

After having been in Amateur Radio some twenty years ago; leaving it for that period, and now returning for my reclining years, I fully appreciate the

LETTERS

tremendous changes that have taken place in this field. All aspects, including the examination process for amateurs, has changed.

The October examinations showed me in no uncertain terms the need for background knowledge and preparation. I thought I had taken care of the preparation aspect when I sat in reasonably "gened-up" in circuits. But circuits were hardly dealt with on this exam. Consequently, I wrote it as best I could in deep frustration. Upon checking with the examiner afterwards, I discovered that DOC expects "key" words to appear in the answers to their questions.

Older people have difficulty retaining these "key" words, and may answer in rounded terms without mentioning the expected wording; particularly if they have been away from the subject for some time and if the paper comes up with surprise topics as the October exam certainly did.

I would therefore like to suggest:

1. That Amateur Radio Club Instructors and the DOC examiners form some kind of co-ordination to assist in general preparation;
2. That TCA reproduce the paper after the sitting with answers supplied according to DOC expectations.

I personally know a few capable retired seniors who have been having difficulty with this theory in repeated sittings and have actually given up in despair. Such should not be the case in a HOBBY as rewarding as Amateur Radio; particularly when it can be avoided with just a little working relationship between Amateur Radio Clubs and the Department of Communications. Such has been the case for years in music preparation between the Con-

servatory and music teachers across the country. Why not in Amateur Radio?

I am currently preparing for the February sitting in Amateur Theory; but still somewhat apprehensive in that I may not make it again — to become a discouraged "drop-out" — because of age and a lack of co-operation between Clubs and Department.

Thank you.

Ivor J. Mills,
QSL Manager,
Burnaby ARC.

Powerful pagers causing pollution

Dear Sir:

I have been reading quite a bit about R.F. leakage from cablevision systems in recent issues of TCA. The concern shown seems to be considerable and has prompted me to write about another problem that is taking place in Ottawa.

In the last few years a severe interference problem has developed that is ruining two meter operations in the Ottawa area. This problem is the result of a large number of paging transmitters running high power that have been allowed to transmit just above and below two meters. This problem is so severe that communications is almost impossible unless you are listening to a very strong repeater in the immediate area. This means that it is not possible to monitor or scan quiet channels without hearing an almost continuous outburst of squeeks and squeels, and voices screaming out paging messages, not to mention foul language and music. I wonder how it is possible that any person is allowed access to the airwaves to transmit foul language, music, singing, shouting, all without any licence whatsoever. I am extremely upset that this type of R.F. pollution and garbage has been allowed to develop especially so close to the Amateur two meter band. Even repeater re-

ceivers with selective front ends and filter duplexers are not immune to pagers.

I have discovered that the pagers have not only been allowed to transmit above the two meter band, they are also below us between 143.000 and 144.000. Many of these systems are using multiple transmitters that are situated in various locations in the Ottawa area, and they are all using excessive power output probably with little or no filtering to suppress out of band emissions.

Why this situation has been allowed to develop is beyond reason. There is no excuse to allow such severe R.F. pollution to occur at all, let alone so close to another radio service. I have logged ten different pagers operating between 143.000 and 143.995, and between 148.000 and 149.995. There is actually far more than ten transmitters due to the fact that many of these systems are using multiple transmitters on each frequency. The fact that they have been crammed so close to the Amateur two meter band is an insult to all Amateur Radio Operators, and it also shows that there is a serious problem with spectrum management.

Now that this situation has been allowed to develop, it will be almost impossible to resolve. The best solution is to move radio pagers to much higher frequencies far away from other services, however I do not believe this will happen now that so many pager systems have been installed. If these systems cannot be moved, then the only solution is to enforce a reduction of power to a maximum of five watts at each transmitter. Five watts should be more than enough power when you consider the number of transmitters involved. Imagine

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

how well an Amateur repeater would work if it had six transmitters scattered throughout Ottawa all transmitting on the same frequency with five watts of power. If this power is not enough, then the system should move to a much higher frequency as mentioned above.

I feel that this problem is far more important than the small amount of cablevision leakage we now have on only one unused frequency. I hope that CARF will recognize this problem and take whatever action is necessary to convince DOC that the pagers must be moved, or at least reduce their power. Remember that if this situation has been allowed to develop in Ottawa, then it might just happen in your town. If I had the choice, I would much rather put up with leakage from the cablevision system on 145.250 rather than the severe interference now caused by the radio paging systems.

Yours truly,

Michel W. Miskell
VE3HRT

Radio Pagers in Ottawa

149.890; 149.770; 149.260;
148.510; 148.315; 148.165;
143.745; 143.525; 143.375;
143.225.

Calling all Amateurs to call Belgium

In the autumn of 1944, the Canadian Troops fought a long and exhausting battle to liberate the mouth of the river SCHELDE and the East Coast of Belgium. KNOCKE was liberated on the 1st of November 1944 by those young courageous CANADIAN SOLDIERS of whom many lost their life.

Knokke has not forgotten the heroic behavior of the Canadian Army, that's why every year a LIBERATION MARCH is organized to remember this fact.

Because 1983 is the YEAR OF COMMUNICATION, the radio-

amateurs will be present to contribute to the success of this event: REMEMBER . . ."

The ON6HC club shack will be stationed in the TOWNHALL of KNOCKE. We asked the Minister of Traffic and Communications the permission to use a special call sign (probably OS 1 NOV) during the period of the 28th of October till the 2nd of November 1983.

A splendid AWARD (in 6 colours-printing) can be applied for, for each QSO.

In USB following frequencies

will be used: 14.141, 21.212 and 28.282 kHz.

In CW following frequencies: 14.025, 21.025 and 28.025kHz.

We beg for the cooperation of ALL RADIO-AMATEURS and we do a special request to the VETERANS-HAMS, who held high the COLOURS OF FREEDOM in our region.

All further information: please contact:

Victor Claeys, ON4UM
Koningslaan 116
8300 Knoffe-Heist
Belgium.

TCA: Speed-up part of improvements

We are trying a bit of an experiment with TCA this month to see if we can speed up the delivery of the magazine. We have also taken on someone to handle the typos and general design of TCA in the hopes that we can further improve our National publication. I would appreciate your help and comments in this regard.

First, let me know when you receive the April issue. Write the date down on your QSL card and send it to me. Secondly, let me know how you would like to see the magazine improved. Now that we have a better organized system going here, I can spend more time replying to your requests. Thirdly, use the TCA Newsline. It has become one of the more successful ideas that we have come up with. Even CRRL copied it. Don't be discouraged if it takes a day to get a phoned reply, if requested. At times, the TWO HOUR MESSAGE TAPE IS FULL! Each reply takes about twenty minutes to complete. With two hundred and forty messages to wade through, (including the odd obscene call), you can imagine why replies are slow in coming. Remember, the number is (613) 824-3467. If you cannot get through, try the CARF number in Kingston. Although not

publicized, this number has had an answering machine on it for over a year. The number can be accessed 24 hours a day, as can the TCA number.

Our ideas are often copied, but never bettered.

CARF ANNUAL GENERAL MEETING

The Annual General Meeting of the Federation will be held on the 14 and 15 of May, 1983, in Ottawa at the Park Lane Hotel. All members of CARF are invited to attend. If you are planning to attend, please inform the Secretary of CARF so that adequate seating can be arranged. The Annual Meeting of the CARF Board of Directors will take place on the evening of 13 May.

Dave Goodwin, VE2ZP,
Secretary.

La Reunion Annuel Générale de FRAC sera tenu le 14 et 15 mai a Ottawa à L'Hôtel Park Lane. Tous membres de FRAC sont invitées. Si vous voulez attendre, veuillez informer la secrétaire, à assurer que il y sera autant place. Le réunion des directeurs sera tenu le soir de 13 mai.

Dave Goodwin, VE2ZP,
Secrétaire.

EDITORIAL

Good marketing...

by: Fred Towner, VE6XX

The CRRL/ARRL 1983 Amateur Radio Survey arrived here yesterday, Jan. 21. My first reaction upon reading this "survey" was one of anger at the transparently obvious attempt to lead respondents to a "proper" answer to key questions. My second reaction was to drop it in the round file and forget it. However, after a restless night of thinking about this thing I decided I would do best to answer, honestly, this questionnaire and to then detail my reasoning for answering it the way I did.

Questions 1 through 7 are normal questions to be expected in any questionnaire of this type.

However, the preamble to question 8, covering the reasons for having "strong representation at the national and international levels" are merely setting up the respondent for a favourable, to the League, response to that \$0.75 weekly figure. I hope the majority of those responding to this questionnaire will take the time to calculate the actual annual cost of the figures they circle. When you calculate that \$0.75 weekly is actually \$39.00 per year things begin to come into perspective. League membership is \$36.00 per year. A neat, but rather transparent bit of marketing.

The cost of supporting Amateur Radio organizations is becoming oppressive. \$36.00 per year for CRRL/ARRL, \$15.00 per year for CARF, \$15.00 per year for

the provincial organization and \$15.00 per year for the local club. Add to this the additional cost of other Amateur periodicals that the Amateur may find a necessary adjunct to the hobby, 73, Ham Radio, CQ, etc. Consider, that with many Amateurs now into Computers/Packet Radio, etc., there is now the added cost of joining the local computer group, computer users group, and at least one, if not more, computing periodicals.

Even without the cost of equipment Amateur Radio is now becoming a very expensive hobby. With the recent downturn in the economy it is very necessary for many of us to watch our ex-

The cost of supporting Amateur Radio organizations is becoming oppressive

penses even more closely than ever before. Because of the facts stated above I find the strategy employed by the writer of this questionnaire to be particularly reprehensible. Tying an emotional appeal to a minimizing of costs may be good marketing, but is it good morals? Even more, the implication in the statement seems to be that only the CRRL is capable and is "competent and well-supported". I think that even the most biased will recog-

nize this implication as, just simply, not honest fact. However, the unknowledgeable may quite well be taken in by the implication contained in this preliminary statement and by the reduction of the \$39.00 annual cost to a mere \$0.75 per week. Again, I say, good marketing, but is it ethical?

Question 9 asks us to express an opinion whether or not it is a good idea for a country to have two "national" Amateur Radio organizations. I answered NO to this question. It is a compromise answer. If the two organizations could only join forces, forming a powerful new organization, then my answer would be vastly different. As it is, with the CRRL seeming to take every opportunity to undermine the Federation, and the expenditure of \$4,000.00 to \$5,000.00 (estimated) to distribute this "survey" is a fine example of that, and the Federation being required to expend so much of its resources defending itself from these attacks and setting facts straight, neither organization is utilizing its scant resources in the best interest of its membership.

For many years the Federation ignored these attacks on it, and on the integrity of its officials, and just continued on its own way, working for Canadian Amateurs. With the ever increasing stridency of the attacks on the Federation the Federation has been left with no other alternative but to defend itself. As the Federation grows in numbers

and influence, and as the CRRL apparently declines in numbers and influence, these attempts to undermine the Federation grow in frequency and sophistication.

It is a real pity that the money, time, effort and other resources of both organizations is not put to better use. I assure you, your Federation would much rather be using these resources on your behalf than utilizing such a scarce commodity in a constant attempt to fend off these attacks.

To a large extent, my answer to question 9 also answers question 10, which asks "Which organization do you feel has the experience and resources, and should represent Canadian amateurs . . .". As any school teacher, experienced in making up multiple choice exams, will tell you, you can lead a respondent into any answer you wish just simply by phrasing the question correctly and specifying the choice of answers in the correct sequence. I wish this thing didn't feel so much like the writer had such a poor opinion of the intelligence of the Canadian Amateurs. I stated that I felt that CARF was the best organization to represent the Canadian Amateur. Not because I'm biased, my attempts to get both organizations to seriously discuss amalgamation are well known, but because I am now convinced that the will does not exist within certain areas of the organizations concerned to seriously consider the proposition. These disruptive elements are convinced that, in the end, their game of power politics will triumph and that the Federation will simply disappear. With a total membership now outnumbering that of the League this is not likely to happen.

Frankly, if only we could dispose of these "propagandists"

we could probably resolve these problems and get on with the task at hand. Unfortunately, I no longer believe the will exists to take the necessary steps to remove these agitators from their,

"Which organization do you feel has the experience and resources, and should represent Canadian amateurs . . ."

usually self-appointed, positions. Somehow, Canadian Amateurs must find a way to impress on these people that the future of Canadian Amateur Radio must be based on combining the strengths of the two organizations. You cannot build by destroying your base. These destroyers must be halted before their damage becomes irreparable.

Questions 11 and 12 is merely an introductory blow to impress on the reader some of the services provided and funded by the League. It is only intended to draw the respondents attention to the question that follows, concerning the League's latest attempt to aim a blow at CARF, an outgoing QSL bureau.

In response to question 13 I ask, "Why should the League go to such great expense and effort to provide a service that the Federation has been providing for years". The natural assumption is that, now attention has been drawn to the amount of money the League has been drawing out

of Canada for years, and, that many of the League's "services" benefit only the U.S. Amateur, the CRRL has been forced into a position of attempting to compete directly with the Federation by offering competing services. It all sounds rather childish and non-productive to me. I feel certain that the Leagues funds could be put to more beneficial use by offering services that are not yet available through any source in Canada.

Question 14, regarding Amateur organizations helping DOC administer the Amateur examinations, this proposal seems to have generated far more controversy than I anticipated. As in the U.S.A., our ruling body has been hit with financial cutbacks that are crippling. These cutbacks are resulting in a further loss of services to the Amateur community, as well as a reduction in the quality of the services still offered. The DOC cannot be faulted for this, they are a victim of the same circumstances that have so adversely affected every segment of this nation. However, if by assuming some of the burden, presently carried by the department, we can allow the DOC to transfer some of its meagre funding to other services provided to us, why not? After all, we should be more than competent to administer and conduct these examinations. In fact, I maintain, we are probably in better shape to administer these examinations than is the Department. Also, by assuming some of these tasks, we may in fact forstall hefty increases in license fees that are certain to come under the present "user pay" concept of the Federal Government.

Question 15 asks, "what kind of Amateur organization should administer the exams". I have re-

...but is it good morals?

plied that I think it could be best done with the national organization administering the examination procedures (such as DOC HQ presently does), and the local clubs should actually conduct the exams. A simple concept that would benefit both Canadian Amateurs and the DOC.

Questions 16, 17 and 18 all deal with sub-band allocations. I would like Canada to follow the example of many other countries in the world, that is, not forcing sub-band allocations on the Amateurs. Instead, the Amateurs of these countries respect the so-called "gentleman's agreement". I would like to see the 160 metre band unregulated for many reasons, foremost among those reasons are, it would encourage experimentation on a band that could use a greater population, and, secondly, it would help us to determine if the Canadian Amateur were ready for total deregulation or not. If things worked out okay on 160, and if we were not faced with total anarchy and the need to petition the DOC to put us back into straightjackets again, we might be ready for the next challenge, deregulation of the other bands.

Other countries in the world seem to be able to handle the no sub-band concept, I'm confident that Canadians can do as well. At every meeting I attended, during the Digital License conflict, I heard Amateur after Amateur trot out the old claim about being a "self-policing" group. I don't, for a moment, believe that claim to be true. But, maybe, just maybe, it is time for us to put some money and effort into the pot to cover what our mouth has been saying.

Despite what I have said above, I was certainly intrigued by the proposal contained in question 18 wherein sub-bands would be designated by bandwidth of mode in user rather than by mode. I would certainly like to see much more discussion on this proposal and would encour-

age Amateurs to give much thought to this idea and propose some tentative band-plans as a point of discussion. It would surely make a very fine topic of discussion at the next symposium.

Finally, question 19 asks us to express our thoughts regarding the most pressing needs, issues or problems facing Amateur Radio. To this question I replied as follows:

- a. the dissipation of funds, resources, etc. by CRRL and CARF in an insane, disruptive battle for supremacy.
- b. increasing displays of inconsiderate, ungentlemanly behaviour on the Amateur bands.
- c. growing encroaching by illegal stations into the Amateur bands.

I maintain, we are probably in better shape to administer these examinations than is the Department

I'm sure there are many other problems of equal or greater concern, but I believe the concerns summarized above are important because I do not believe they are receiving the attention by the Amateur community that they deserve.

I have given much consideration to the thoughts I have outlined in this editorial. I feel a degree of concern over the future of our hobby that I find difficult to put into words. For our hobby to survive it will require that we provide competent representation on behalf of Canadian Amateurs. The necessary degree of adequacy, however, cannot be achieved, in my estimation, so long as the Federation is constantly being forced to defend itself from the predatory practices

of a foreign organization. With one organization trying to propagandize its way to the top and the other being constantly forced to "defend" itself the only thing accomplished is the further weakening of both organizations in the eyes of the Canadian Amateur, and, equally damaging, in the eyes of the government.

Combined, our two organizations could have awesome strength in dealing with the future. Continue our present course and both will be crippled and die a lingering, and possibly well deserved, death. The future is in our hands, dare we fail?

Fred Towner, VE6XX
Vice-President, CARF

Here It Comes Again!

THE
ANNUAL
SOUTHERN ONTARIO
REPEATER TEAM

**AMATEUR
RADIO**



**FLEA
MARKET**

SUNDAY, MAY 15, 1983
MEDWAY HIGH SCHOOL

(Medway Rd. - Just West of Hwy. 4)

ARVA. ONT.

HOURS - 9:00 a.m. - 2:00 p.m.
ADMISSION - \$2.00 per person



Dish policy signals crossed

Charles Gordon

A satellite receiving dish does not receive satellites, it should be pointed out. If one were to fall from the sky, like the Skylab or something, it would not necessarily land in your backyard just because you had a satellite receiving dish in it.

A satellite receiving dish just receives the **signals** from satellites. Once the federal department of communications was able to grasp this distinction, it was able to make a policy on it. It will have, as they say, profound implications.

The satellite signals in question are television signals. With a satellite receiving dish you can get them from all over the world. If you have a tavern and there is a satellite receiving dish in the parking lot and you use it to bring in television stations from all over the world, the federal department of communications has ruled that you are hindering the "orderly development of the Canadian broadcasting system."

You didn't know you were doing that. You thought you were just bringing in the ballgame for your customers. Find a ballgame on the satellite and more of the guys are going to come in for a beer.

That shows how much you know. What you're doing, according to the federal department of communications, is providing unfair competition for cable operators, broadcasters, advertisers and the Canadian Football League. People who come to your tavern to watch the satellite ballgame received by your dish would otherwise stay home and watch something else. That would be better.

Something else would probably be another ballgame. But

might be a CFL ballgame. Americans would be playing quarterback, running back and making most of the exciting plays. But a few Canadians would be playing in that game. Also, Canadians would be advertising on it and Canadian cable companies would be carrying it.

The Canadians who don't come to your tavern might be watching something other than a ballgame. A program, say. It would probably be an American program. But it might be an American program with Canadian advertisers on a Canadian station.

Of course, with their cable at home they could be watching an American program on an American station with American advertisers. Still, it would be carried by a Canadian cable company. That would be all right.

Whereas if they came to your tavern, they wouldn't be contributing anything to the cultural fabric of the nation, except for having a few beers, which doesn't always do it.

You can see why the minister of communications had to do this, and why he had to take similar action against people who run apartment buildings and put satellite dishes on the roof. They are just making money out of encouraging Canadians to turn their back on their obligations to the broadcasters, cable companies and advertisers of Canada.

This doesn't mean however, that there is anything wrong with you, as an individual, putting up your own satellite receiving dish in your backyard, so that you, as an individual, can turn your back on your obligations to the broadcasters, cable companies and advertisers of Canada. That is all right with the federal department of communications.

It's not legal, but you can do it anyway. Soon it will be legal. The department of communications has summed up its policy by saying that "the state has no business in the backyards of the nation."

This is a straightforward and easily understood policy. The state has no business in the backyards of the nation. The state does, however, have business in the parking lots of the taverns and the rooftops of condominiums.

When you see the state on the rooftop of a condominium or in the parking lot of a tavern, you will know that the state is protecting the broadcasters, cable companies and advertisers of Canada. Don't call a cop.

— Ottawa Citizen

U.S. no-code license

The U.S. FCC has put out a long-awaited notice of proposed rule-making in which it proposes a no-code license. Amateurs are asked to comment on two alternatives—dropping the code requirement from the Technician ticket or going for an "Experimenter" ticket with a tough technical exam along the lines of our Digital Operator license.

A second notice asks for comments on how Amateurs can take over almost all the administration of the Amateur Service. A trial run will probably be held on this deal when the Dayton ARA holds the exams at its famous convention this year. The FCC is too broke to undertake it, apparently.

If a press time rumor proves correct then by the time this appears or shortly after, the FCC will have issued regulations expanding the U.S. twenty metre phone band.

CONTEST SCENE



by Dave Goodwin, VEZZP

CALENDAR

April

- 2- 3 Polish DX CW
- 9-10 **CARF Commonwealth SSB**
- 16-17 Polish DX SSB
- 23-24 Helvetia Contest (HB)
- 23-24 King of Spain

May

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

June

- 11-12 ARRL VHF
- 18-19 All Asia SSB
- 25-26 ARRL Field Day

July

- 1 **CARF Canada Day Contest**
- 9-10 IARU Radiosport
- 16-17 International QRP Contest

The results of the 1982 WPX SSB Contest were published in March CQ, and are reprinted below. Conditions were exceptional this past year, and Canadians were very prominent in the top ranks. As well, four VE records were broken.

All band frontrunners were VE6OU and VE7BTW. John obliterated Hal's year-old record with a fantastic 5.2 Meg score, placing 5th high in the world. Hal was able to best his own record by over half a Meg, but was still 1.5 Million behind John's fine effort. Yuri VE3BMV has reclaimed his old 21 MHz record, with a 3rd place worldwide score of 3.7 Meg. VE3EEW, who was erroneously reported as a 14 MHz single band entrant in the high claimed scores, set a new record on 7 MHz of almost 790k, moving up on VE3KZ's record of the year before by more than 200k. The last record to fall was the Multi-single mark set by VE1DXA in 1981. They thumped home a fantastic 8.3 Meg that will stand for some years. Hot on

their heels was XK5XK with an excellent 7.8 Meg score.

Canadians were certainly prominent in the top scores. No less than 7 VEs showed up in the "box". VE6OU, as mentioned before was #5 world wide and #1 in

North America. VE3BMV placed #3 on 21 MHz, VE3BBN was first on 1.8 MHz. VE3CKR took top spot among 3.5 MHz QRP entrants. VE1DXA and XK5XK were third and sixth respectively in Multi-single, and one of the sur-

CANADIAN RESULTS, CW XPW SSB 1982

Class	Call	Score	QSOs	Multi
A	VE6OU	5,252,399	3175	591
A	VE7BTW	3,868,410	2674	545
A	VO1CM	647,436	766	326
A	VE3MUV	558,554	617	317
A	VE7BSM	345,825	550	225
A	K/UKO/VE8	146,248	394	181
A	VE3EZU	80,229	211	141
A	VO1AW	42,125	141	125
A	VE2XL	19,824	114	84
A	VO2CW	5,848	54	43
A	VE4AKX	1,464	26	24
28	VE3KOY	932,790	956	354
28	VE3FEA	363,740	501	260
28	VE2DVI	232,320	391	220
28	VE2FSU	221,961	347	241
28	VE7EOA	209,600	409	200
28	VE3MKJ	74,053	189	149
28	VE3MAM	3,094	36	34
21	VE3BMV	3,690,450	2283	590
21	VY1CM	401,582	717	199
21	VE3GWM	70	5	5
14	XK5AE	189,875	393	217
14	VE3DYB	49,266	154	119
14	VE3LAJ	34,112	118	104
14	VE2PD	18,924	91	83
14	VY1DV	13,359	80	73
7	VE3EEW	788,718	722	267
1.8	VE3BBN	24,522	106	61
28 QRP	VE5ACY	2,542	37	31
3.5 QRP	VE3CKR	51,512	152	94
MS	VE1DXA	8,272,704	4285	704
MS	XK5XK	7,788,599	4401	637
MS	VE7WJ	5,734,416	3425	579
MS	VE3PCA	5,463,913	2844	619
MS	XK5GF	3,536,460	2409	540
MS	VE7UBC	2,558,007	2129	450
MS	VE5XZ	589,248	710	288
MM	VE7ZZZ	8,252,657	4791	659

CANADIAN RECORDS, CQ WPX SSB

Class	Call	Score	Year
A	VE6OU	5,253,399	82
28	VE3BMV	2,796,255	80
21	VE3BMV	3,690,550	82
14	VE7IG	1,788,825	79
7	VE3EEW	788,718	82
3.5	VE2ZP	405,144	81
1.8	VE3MFT	84,906	81
QRP	VE3KZ	507,210	79
MS	VE1DXA	8,272,704	82
MM	CK7WJ	16,545,370	79

prises of the contest was the appearance of VE7ZZZ as a Multi-multi, taking sixth place overall.

Judging by the general trends in results, it appears this was a particularly good year to be in North America. Although only two new world records were set, North American records were broken in all classes except 1.8 MHz (held by VE3MFT) 28 MHz and All Bands. Only two of the U.S.A. records were left unbroken. It seems unlikely that this year will be as good.

The only Canadian-held world record is the 1.8 MHz single band mark set by Tom VE3MFT in 1981. The old North American, and at

one time world record of Multi-multi CK7WJ has been bettered by NP4A, who now hold the world record in this class.

Trophy winners this year include VE6OU who wins the Single op, all bands trophy sponsored by Garth VE3EUP and VE3BMV who wins the Single band trophy sponsored by Gene VE7KB.

On top of all the other good news for Canadians that appeared in the results of this contest, was a picture of the operators of VE1DXA. Is one picture worth 1000 Qs? If that restructed adage is true, the other

3300 came through sheer hard work and skill.

With the combined duties of university and a part-time job, I have been a little out of things lately, but I have been getting some sketchy reports of activity. The ARRL DX CW was apparently hit by rather poor propagation, and in the few hours I listened, I heard no VEs. The ARRL DX SSB was somewhat better, and in fact was very good, especially to Asia on 20 metres. VEs of note were VE3IY and VE7IN. The two-transmitter MM idea seemed to get some response, but listening to some of the U.S. Scores after the contest, it seems scores were really little better than MSs, which I find rather surprising.

A bit of good news for contests is that starting World Communications Day, May 17, and lasting until July 17, we will all be able to use special prefixes. VOs will be allowed to use the CI prefix, VEs the CY prefix, and VYs the CK prefix. This should make the number of prefixes available for the WPX a little higher, and could make the Canada Day and Radiosport contests a little more exciting.

Klondike hike '83 assisted by Regina Amateurs

by Bill VE5WM

Regina's Wascana Lake was a beehive of activity on Saturday February 12th when up to 150 Scouts, Guides, Pathfinders, Rangers and Ventures along with their Scout and Guide leaders combined for the annual Klondike Hike outing and competition. Entries came from Estevan, Yorkton and Regina.

Starting from the Marina at 09:00 hours, 30 teams were dispatched at 3 minute intervals to trek the 11 kilometer (7 mile) course around Wascana Lake, dotted with twelve check points. At each check point, under the watchful eye of the Guide and Scout leaders, each team had to perform a pre-arranged activity. Prizes were awarded for 1st, 2nd

and 3rd placings in two age categories, 11-14 and 15-17.

Communications for the event were provided by members of the Regina Amateur Radio Association using 2 metre hand helds with the net control base station established at Scout Headquart-

ers building. Amateurs assisting were VE5s BW, CS, IG, OI, WM, XK, AAA, ABT, ACN, AEJ, AEK and AGA.

Casualties were light and with co-operation from the weatherman, an enjoyable time was had by all.

THE CARF QSL BUREAU IS A FREE SERVICE TO ALL CARF MEMBERS. WHEN USING THE SERVICE, PLEASE INCLUDE YOUR MEMBERSHIP NUMBER. FOR NON-MEMBERS, PLEASE INCLUDE ONE DOLLAR. THIS WILL HANDLE THE ADMINISTRATION COSTS. BETTER YET, JOIN CARF AND GET THIS AND OTHER SERVICES FOR ONLY \$15 A YEAR. NO OTHER OUTGOING QSL SERVICE IS AS GOOD.

EXPRESS YOUR OPINIONS TO ALL AMATEURS. WRITE FOR TCA. CONTACT THE EDITOR OF TCA AT P.O. BOX 2610, STATION 'D', OTTAWA, ONTARIO K1P 5W7.

THE TCA NEWSLINE IS ALWAYS OPEN. CALL (613) 824-3467 IF YOU NEED INFORMATION ABOUT TCA OR NEED FAST PUBLICITY. WE WERE THE FIRST, BUT WE CAN'T BE THE FASTEST. WE ARE VERY POPULAR.

DX

D.W. Griffith, VE3KKB



Sunspot 21

Sunspot cycle 21 continues its slow decline with a sunspot number in the mid-nineties forecast for April, 1983. Equinoctial propagation conditions are expected to continue into the first part of the month, with concomitant improved DX conditions.

Hamvention

April marks one of the largest annual Amateur events; the Dayton Hamvention. This year, the Hamvention is being held on April 29, 30, and May 1. Memories from last year, of wall to wall hams, at least every second one talking into a HT, and acres of flea market bargains are already making my heart pound in anticipation. My head has already begun it's throbbing in anticipation of those many late nights to be spent at a variety of hospitality suites. They sure are a friendly group. I found that even more exciting than the flashy new equipment on display, was the opportunity to talk person to person with a plethora of amateurs from around the world whose identities to that point had been mere disembodied voices coming from the speaker of a transceiver. You can't call yourself an amateur until you have been to the Hamvention at least once!

Canadian 1st

Congratulations to Reg Beck, VE7IG, on becoming the first Canadian to win the 5BWAZ award. Reg completed 5BWAZ on February 1, 1983, and was

awarded plaque #52 on that date. Who will be the second VE to win the award? By the way Reg, if you want to see more Western content in the column, I would be only too happy to comply, but it is a two way street, and unless I receive more correspondence from your part of the country, it won't be possible. So, I suggest that you, and some of your friends drop me a line from time to time and let me know what's going on out there.

The Northern California DX Foundation is soliciting reports for the world-wide beacon system established on 14.100 MHz. A complete description of the system, to whom the reports

should be sent, and a sample reporting form, have been included in this column.

Special prefix

XL1 was a special commemorative prefix issued by the D.O.C. to celebrate the 200th anniversary of Saint John, New Brunswick. Probably the most active station was XL1ASJ.

While on the subject of special prefixes, all Canadian Amateurs will be permitted to use one to commemorate International Telecommunications Year, from May 17, 1983 to June 17, 1983. VE1-8 may use CY1-8; VO1,2 may use CI1,2; and VY1 will use CK1.

Banned countries' activity reported but not necessarily endorsed here

The current "Banned" Countries list is as follows:

1. Kampuchia
2. Iraq
3. Libya
4. Somalia
5. Turkey
6. Vietnam
7. S. Yemen (70)
8. Zaire

In a letter a month or so ago, it was brought to my attention that in the DX column, I had mentioned Iraq, specifically, JA1DNG/YI, but that elsewhere in TCA was published a banned countries list, and I was asked how I could explain the apparent discrepancy. I first addressed this "banned" list about two years ago, in one of my first columns in TCA. As a member of the International Telecommunications Union, Canada must respect the

requests of other member nations. Several of these countries have indicated that amateur radio is not permitted, and as such would not like having amateurs from other nations communicating with any 'amateurs' who may appear in their respective nations (the implication being that any activity from these nations would be illegal). Unfortunately, in some of the nations appearing on the above list, amateur activity has been going on for years, with no intervention from that nation's government. Effectively, this means that at least unofficially, these governments condone the practice of amateur radio. This is where the folly of having a 'banned countries' list is evident. If a sovereign nation decides to turn its back on radio activity, then

why should amateurs in Canada effectively be penalized. The U.S. GOVERNMENT, had the foresight to abolish their list several years ago. I think it's about time that we took steps to get rid of ours. If any of you feel that Canada's 'banned countries' list should be eliminated, then a letter to the president of CARF, would be a start, with the intent of making this topic a subject for discussion at the CARF annual Symposium, to be held this Fall, in Halifax.

Unfortunately, this will not help in the meantime. To return to the original question directed at me, I have to say that I am not responsible for what appears in TCA outside of this column. If the list appears elsewhere, fine! Like most of you, I am quite aware of

the list, but treat it as one of those things that is best left unmentioned. If any of you pass up a country that is on the list, that is your decision. Likewise, if you decide to work one, the decision is yours. Just remember: Until changed, it is against the radio regulations to work anyone in any of the above countries, and if you decide to do so, you may be subject to disciplinary action. Since most of the countries on the 'banned' list fit into the rare, or semi-rare category, and in view of the fact that there is amateur activity from 5 of the 8 countries on the list, I intend to report such activity whenever, and wherever possible. Just because I report, it, please do not take it as my endorsement to work it. That decision rests with you!

Beacons around the world

The NCDXF world-wide beacon net is operating continuously for observational use on 14.100 MHz. This is not an ordinary beacon — it is a net that will consist of 8 beacons located around the world.

All of the beacons:

1. Transmit on 14.100 MHz.
2. Send the same text in four 10 dB power steps.
3. Transmit every 10 minutes, 24 hours a day.

As of this writing (late November '82), four beacons are operating: 4U1UN/B, K6OPO/B and 4X6TU/B. All other beacons, save one, have been shipped to their locations and should be operating very soon. The one exception is CT3B, for which we are still awaiting import papers.

Sequence of Beacon Transmissions

The current eight-beacon net plan is for each beacon to transmit in sequence every 10 minutes, 24 hours a day. Except for the South Africa beacon, the stations transmit in order from east to west beginning with the United Nations, New York on the hour.

continued next page

Bits and Pieces

BY8AA . . . China . . . Can be found on 14.049 MHz from 0030-0300Z on Tues., Thurs., and Fridays, and again on 21.049 MHz on Mondays at 0130Z. The ops. listen down 1 to 5 KHz, not on their transmit freq. The station has a distinctive CW note. i.e. if it sounds clean, it is probably a pirate. QSL via BY1PK, Box 6106, Beijing, P.R.C.

CE9AT . . . S. Shetland Is . . . Can be found on 14.200 MHz at 0330Z. The operator's name is Oscar, and as he appears to speak very little English, seems to prefer to operate from a list.

FB8WI . . . Crozet . . . Has been very active on 14.105 MHz, from 12-1400Z. QSL to F6GXB, Jacques Calvo, 8 Rue Messenger, F91240, St. Michele, France.

A51PN . . . Bhutan . . . Prudhan is supposed to be more active this year, but there have been no reports of increased activity yet. Like Nepal, this is a rather difficult path for N. America.

BV2A/B . . . Taiwan . . . Tim has a new address for those qsl'ing direct. The new address is: Tim

Chen, P.O. Box 30-547, Taipei, Taiwan. Do NOT use P.O. Box 100 anymore.

VE2DVG/YK . . . Syria . . . Is expected to be with the UN peacekeeping forces in the Golan Heights for about 6 months, and plans to be active on SSB and CW. QSL to VE2FEX.

VR6TC . . . Pitcairn Is . . . Tom Christian has a schedule every Tuesday at 0001Z on 21.350 MHz with his QSL manager, W6HS. Also, Kari VR6KY has been heard at 19-2100Z on 21.300 MHz. QSL to LA7JO.

QSL information

Station	QSL via	ZB2EO	K3MNV
A4XJO	WB3JRU	ZD9BX	KA1DE
A4XE	GM3ITN	4U1VIC	OE3OLW
C53CL	EA8ZZ	5N6DJA	K6EDV
C53DF	G3LQP	6W8DS	WA4VDE
CN8CO	WB3KGY		
FY7YE	W5JLU		
HL4YJ	JA4BLF		
GU3TXF	G3TXF		
ZB2HL	G4CTQ		

Thanks to VE7IG, Long Skip, CQ Magazine, Westlink Report, VE3CDC, and the NCDXF for material appearing here.

Comparisons

The dashes at each power level are made long enough for the listener to switch back and forth from one antenna to another for comparison during a single dash. Or perhaps it may tell the listener that one antenna is better on relatively local signals while another antenna is better on long-haul DX signals.

We are interested in hearing of any ways you may use the

The beacon net is an educational tool for the listener to use. However we are interested in hearing from listeners who make extensive observations. Mr. Al Lotze, W6RQ, a radio engineer, has volunteered to coordinate listener reports. Al is an experienced sun spot watcher and counter. He maintains records of all WWV indices for correlative work.

W6RQ is particularly interested in finding world-wide volunteer observers who can make observations at the same time each day. He is also interested in daily observations just before and after local sunrise and sunset (whatever time that may be). Please report the date, time and lowest power level dash heard for each beacon monitored. See a sample report format elsewhere in this Newsletter.

If you would like to volunteer as a regular observer, send your observations and tell W6RQ that you will be sending a report each month. His address:

Al Lotze, W6RQ
46 Cragmont Avenue
San Francisco, CA 94116 USA

Given sufficient world-wide reports to make the results meaningful, he will publish, through the NCDXF, a regular report. You are invited to participate by sending in your observations. Al will respond to all reports with an appropriate QSL.

We expect that other beacons will be added to the net to give more north-south coverage and "fill in some of the blanks".

Jack Curtis, K6KU (NCDXF advisor) and Dave Leeson, W6QHS, (NCDXF board member) were responsible for developing the circuit ideas and the electronics. Cam Pierce, K6RU, (NCDXF board member) handled the engineering and production chores. The original idea for a power attenuating beacon net came from NCDXF scientific advisor Mike Villard, W6QYT.

Beacons

Time	Station	Location
00:00	4U1UN/B	United Nations, NY
00:01	K6OPO/B	Stanford University, CA
00:02	KH6O/B	Honolulu Community College, Hawaii
00:03	JA2IGY	Tokyo, Japan
00:04	4X6TU/B	Tel Aviv University, Israel
00:05	OH2B	Espoo, Finland
00:06	CT3B	Madiera Island
00:07	ZS6DN/B	Transvaal, South Africa

The sequence is repeated at 00:10, 00:20, 00:30, etc.

As other beacons are added to the net, the keying sequence and keying interval will be changed to accommodate the additional stations.

Transmitted Message

Each beacon transmits the same CW message (about 58 seconds long) at about 20 wpm. That allows less than 2 seconds between the end of one beacon transmission and the beginning of the next.

Timing is such that the "Q" of the QST for each beacon's identification is within a small fraction of a second of WWV time ticks for each assigned beacon time. In effect, the beacons are a frequency and time standard within the 14 MHz band.

beacons or the dashes to test and compare antennas or receivers. Please let us know of any other uses you may find instructive or usable by others.

General Use of the System

This is a do-it-yourself ionospheric observation system. Hopefully the user may learn something about the day-to-day quality of the 14 MHz band by monitoring signal strengths of the beacons' different power levels. How will these observations correlate with the various A, K and other indices transmitted by WWV? Will anyone hear all 8 beacons in one sequence? At sunrise, if you can or cannot hear a given power level from a particular beacon, will that predict or fortell anything about band conditions that day?

Power Output	Message
100 Watts	QST de K6OPO/B beacon (each beacons signs its own call)
100 Watts (9 second dash)
10 Watts (9 second dash)
1 Watt (9 second dash)
0.1 Watt (9 second dash)
100 Watts	SK K6OPO/B

20 Meter Beacon Observations

Date/Time	4U1UN	K6OPO	KH60	JA2IGY	4X6TU	OH2B	CT3B	ZS6DN	Remarks

The first entry is S-meter reading.
 Second entry is number of signal levels copied. i.e. 3 means 100, 10 and 1 watt levels were heard.

Ranging across the west

Art Stark VE3ZS

In the spring of 1937 I was baby-sitting the remote transmitters for the Vancouver, B.C. (VAB) and Pt. Grey, B.C. (VAI) coast stations at Lulu Island. After only some seven years and still a very junior operator I considered myself very lucky to be on an "inside" station; but any promotion would mean a transfer to an "out-

side" isolated station again for many years. The chance of reaching Officer-in-Charge (OIC) status, even "outside", would not come for some 20 years.

The Canadian government, in its wisdom, decreed that Canada should have its own national coast-to-coast air line. This, of course, necessitated the provi-

sion of state-of-the-art navigational facilities. A series of four-course radio ranges would be built across Canada starting in the mountainous western portion of the proposed route over the Rocky Mountains.

The Radio Branch of the recently formed Department of Transport called for volunteer radio operators from the coast

Art Stark VE3ZS

No, it was not a fore-runner of the microwave oven!

In the 1930's it was the state-of-the-art aeronautical radio navigational aid in North America. It provided an audible signal for the pilot to follow a designated route or path. A series of these beacons provided positive guidance along designated airways which eventually criss-crossed both Canada and the U.S.

The signals at each station were fed into four vertical radiators, each 140 feet high, which with appropriate keying and phasing, produced four narrow courses. These courses by splitting and phasing of the antenna current through a goniometer to the individual radiators could, within certain limits, be varied from a true quadrature pattern. The courses were said to bent and/or squeezed. Thus turns in the airways were made possible at the station sites.

Each pair of towers transmitted an "A" or an "N" signal which when interlocked provided a solid steady signal along the "on course" path; thus the saying, "On the beam".

The transmitters were 400 watt jobs, installed in duplicate, and were capable of providing voice

communications as well as the navigational signals. In early models the beacon signal had to be shut off during voice transmissions, but later models were modified by the addition of a fifth tower (radiator) which permitted simultaneous voice and beacon transmissions.

Range stations operated on low frequencies in the 200-400 kHz band. The voice facility was used primarily for the broadcasting of half-hourly weather reports. If two-way communications with aircraft was desired the aircraft would use one or the other of the two standard NF frequencies — 3105 or 6210 kHz on which all range stations maintained a continuous guard.

At the peak of their service there were some 200 range stations in Canada, from Victoria, B.C. to St. John's, Nfld. northward to Snag in the Yukon and Yellowknife and Frobisher in the N.W.T. They have now all been phased out, with the introduction of VHF ranges, omnis, ADF, radar, etc. A few have been down-graded to non-directional beacons and are still in use.

During WW II a few radio ranges were established in the U.K., mainly for use by the RAF Ferry Command's many Canadian and American pilots.

Radio Range: Getting on the Beam

stations to operate and maintain these new navigational aids of the Air Service. Of course I couldn't pass up this opportunity, although many 'oldtimers' thought I, and a number of other 'youngsters', were completely out of our minds to have anything to do with such a hare-brained scheme as flying passenger airplanes over the mountains, much less across the continent. Such a scheme could not last, and then where would we be?

Thus it was that I found myself well up in the list of volunteers and in May received instructions to report to the Airways Engineer in Vancouver who was in charge of construction of airfields and to proceed to Oliver, B.C. in the Okanagan Valley to take over a one-man military weather station. OIC in just seven years! Unheard of!

I spent a month at Oliver. It was not a busy station — just three schedules a day to pass weather reports to Vancouver; so much of the time was spent in the nearby swimming hole or driving a caterpillar tractor dragging a roller up and down a new emergency landing strip.

Then in July I was instructed to move to Grand Forks, B.C. about 100 road miles east where a radio range was to be established. So in the last week of July I loaded up my car once more and drove east on the trans-Canada highway — a day's travel over a gravel road.

I found myself entirely on my own so set up headquarters in one of the local hotels and waited. A few days later the 'steel crew' arrived to erect the four 140-foot towers for the antennae.

The transmitter building was being built and the tower steel was on a flat car at the railroad station.

By July 28 I was able to report to Headquarters in Ottawa that the lower girders of the west tower were in place and that the south tower insulators were being installed. The next day stationery supplies for the station arrived from Ottawa — including 500 sheets of writing and typing paper (but no typewriter), a half gross of pen nibs (no ball points in those days) and one bottle of black ink and another of red!

On August 7 I was able to report that all four towers were completed and had been plumbed by our surveyor.

A week later, the transmitter building being completed, the commercial electric power was connected. Then on August 16 eighteen large packing cases containing the transmitters and associated equipment arrived by railway express — collect! And I had a \$15.00 limit on my slush fund! This called for fast action and fast talking; I had the cases unloaded directly onto a truck and it was delivered and stored at the transmitter site before the express agent realized he had a bill to collect!

The transmitting equipment for the first six stations of the system were manufactured by the Radio Receptor Co. of New York; later units were all made by the Canadian Marconi Co. of Montreal.

By September 28 all tower, counterpoise and ground systems were in place and ready for connection to the transmitters. During this time I was kept busy keeping a general eye on the

progress and assisting a small team of engineers and technicians engaged in the installation of equipment, control lines, etc. The control office was established in a back bedroom of house at the edge of the "airport" — a vacant field (except for the odd cow) at the edge of town.

On October 7 the first member of my staff arrived. The same day the transmitters were given a 4-hour smoke test — all OK.

On October 14 the courses of the range were aligned and flight checked by the department's calibration aircraft (a DC3, CF-CCT) and found satisfactory. (This aircraft is now on display at the National Aeronautical Museum in Ottawa.)

The following day the Grand Forks radio range — YF — commenced schedule operation, 0900-1700 Pacific Standard Time. The first controllable 4-course radio range in Canada was in operation!

A lot of clean-up work still remained to be done — permanent control lines to be strung, receivers and teletypes to be installed, receiving antennae to be erected, weather observing equipment installed, etc.

It was not until April 30, 1938, that a full staff consisting of myself as OIC and three operators, were assigned that full 24-hour operation of the station began.

The station remained in operation until September 25, 1940, when it was dismantled and moved to Penticton, B.C. I left Grand Forks on October 30, and after a month at Penticton and Carmi (a mountain-top range station) left for duty with the Royal Air Force, flying bombers across the Atlantic.

Through the years...

Art Stark VE3ZS

While attempting to gain filing space and reduce paper through a "file destruction program", a term which government employees will recognize, the following bits and pieces relating to the Amateur Service since I got my first Amateur licence in 1930, came to light. When taken together they show some of changes which have taken place over the years.

In a letter from the Acting Deputy Minister, Department of Marine and Fisheries, Marine Branch, dated May 10, 1930; —

"I have pleasure in enclosing . . . Amateur Experimental Radio Licence #53 call sign VE5AE . . . 1930-1931.

"The Department has decided to grant permission to Amateur Experimental Licenses to use radiotelephone transmissions in the band 14,100-14,130 kc/s who can meet the following requirements —

(a) . . . holder of . . . Certificate . . . of at least Amateur Grade . . . for at least two years.

(b) The station shall be provided with an accurate and reliable frequency meter. . .

(c) The station shall be provided with a properly constructed "monitor".

(d) The transmitter shall be of the type in which a power amplifier feeding into the antenna is supplied from a master oscillator . . . preferably crystal controlled.

(e) The modulation system shall be such as to ensure intelligible speech . . . 'absorption' and 'grid' modulation shall not be used."

From a letter of 14 May 1929 from the General Superintendent to a Divisional Superintendent concerning a request to establish an Amateur station at a government coast station; —

"We have no great objection to our men putting this apparatus for themselves in certain cases as we believe it is of assistance to them in acquiring a knowledge of C.W. work. (The interstation "C.W." circuits were running at 25-30 wpm!) . . . its (the Amateur station) establishment will be subject to the following conditions —

(a) The equipment and aerial system shall be so constructed and placed as not to interfere in any way with government stations. (Most coast stations operated on 500 and 143 kc/s using 1000 watts!) Visiting inspectors shall make a special report in this reference.

(b) The antenna system shall not be conductively coupled to ground but one of the various forms of Hertz antennae . . . coupled to the transmitter by an undergrounded feeder system or . . . an antenna and counterpoise may be used.

(c) Permission will be granted for . . . such transmitters only at stations not provided with a mail service . . .

(d) The OIC of the Government Station may at his discretion cause the Amateur station to be dismantled . . . at any time.

(e) The transmitter should not be re-established at another point without obtaining the approval of Headquarters."

The licence for 1933-1934, issued by the Department of

Marine, listed frequencies in descending order; i.e., from 400,000-401,000 kc/s to 1715-2000 kc/s. There were no bands between 400,000 kc/s and 56,000-60,000 kc/s. CW (A1) was permitted, of course, on all bands, ICW (A2) on 56,000-60,000, 3900-4000 and 1715-2000 kc/s and phone (A3) on 56,000-60,000 and 1715-2000 kc/s.

The licence for 1934-1935 listed the same bands but in ascending order.

Attached to the 1935-1936 licence was a sheet of "Conditions Applicable to the Operation of Licensed Amateur Experimental Radio Stations" which read in part; —

"Portable Privileges. All licensed amateur experimental stations are authorized to operate one radio transmitting and receiving equipment of a portable nature in the bands 28,000-30,000, 56,000-60,000 and 400,000-401,000 kc/s in a passenger automobile owned by the licensee or at a temporary location. (Too bad if you only owned a truck or the vehicle was in your wife's name!)

"Radiotelephone Transmission is Authorized in the Following Frequency Bands.

1,715-2,000 kc/s — subject to conditions (a) (b) (c)

3,500-3,550, 3,850-4,000, 14,100-14,300, 28,000-30,000 kc/s

— subject to conditions (a) (b) (c) and licensee must have been holder of licence for at least two years

56,000-60,000, 400,000-401,000 kc/s — Equipment conditions (a) (b) (c) do not apply.

"Equipment Conditions:

(a) The station shall be equipped with a reliable frequency meter.

(b) The transmitter shall be preferably crystal controlled.

(c) The modulation system shall ensure intelligible speech, must not in any case exceed 100 per cent and must not disturb the stability of the transmitter." (So much for FM!)

Also in 1935-1936 ICW and phone privileges were deleted from the 1715-2000 kc/s band.

Then in 1936-1937 phone privileges could be obtained for the 1750-2000, 3500-3550, 3850-4000 and 14100-14300 kc/s "restricted" bands.

On January 27, 1938, VE5AE was listed on a roster as being Member #25 of the Canadian Red Cross Network, located at Grand Forks, B.C. with operating frequencies of 3515, 3750 and 3850 kc/s. (The only crystals I had.) (3750 kc/s was also the frequency of the original "Five O'clock Net".)

The 1938-1939 licence showed some changes. The first was a change from "C.W.", "I.C.W." and "telephone" to the ITU designators "A1", "A2" and "A3". There was change in frequency assignments effective 1 July 1938 which deleted A3 from the 3500-3550 kc sub-band.

Then with the outbreak of WW II a letter from the Minister of Transport, dated September 5, 1939 ordered all Amateurs to close down —

"Now, in pursuance of the power conferred on me by the Defence of Canada Order and The Radio Act, 1938, and regulations issued thereunder, I hereby notify you that your Amateur Experimental Station Licence is suspended forthwith, and direct you to completely dismantle and render inoperative all equipment installed in your station."

Then after a hiatus of some six years there comes a licence for 1946-1947 with a change of address to Ottawa and a new call sign VE3AW. This licence was issued by the Department of Transport and shows a new set of frequency bands —

3.500-3.800 mc/s
3.800-4.000
27.185-27.455
28.000-29.700
50.000-54.000
144.000-148.000
235.000-240.000
420.000-430.000
1215.000-1295.000
2300.000-2450.000
5250.000-5650.000
10000.000-10500.000
21000.000-22000.000

and such other Frequency Bands as may be authorized by the Department from time to time."

The 1947-1948 licence shows an enlarged list of frequency bands, now including 7.000-7.300 mc/s, 14.000-14.400 mc/s, 3300.000-3500.000 mc/s for A1, A2, A3, but restricting 14.000-14.150 mc/s to A1 only.

In 1948-1949 the 80-metre sub-band was expanded to 3.750 mc/s and FM permitted on all frequencies above 50.000 mc/s. The 5250.000-5650.000 mc/s band was changed to 5650.000-5925.000 mc/s and 420.000-430.000 to 420.000-450.000 mc/s. The 27.185-27.455 mc/s band changed to 27.160-27.430 mc/s.

1949-1950 brought further changes; the 75-m phone sub-band dropped to 3.750 mc/s and F3 was permitted on 75, 20, 11, and 10 metre phone sub-bands.

1950-1951 brought still further changes; 1.800-1.825, 1.875-1.925 and 1.975-2.000 mc/s were added with A1 on the latter two sub-bands.

In 1951-1952 the 75-m phone sub-band was lowered to 3.725-4.000 mc/s.

In 1952-1953, 50 kc/s was lost from the high end of 20 metres with the band edge becoming 14.350 mc/s.

In a letter from the Department of Transport of January 2, 1953, Amateurs were advised that "the inception of TV service in Canada poses an additional (interference) problem" and we were enjoined to recognize "the urgent need for reducing to the lowest practical level, all harmonics and other spurious emissions which may emanate from their stations".

About 1954 I changed my call sign to VE3ZS in order for VE3AW to be re-assigned to its original licensee who had returned to active Amateur status.

On the new licence format introduced by the Department of Communications frequency assignments was no longer shown on the individual licence and it is now necessary to refer to the Schedules in the General Radio Regulation, Part II, to determine what frequencies and modes of emissions may be legitimately used.

Oh yes, the file destruction program! That file has now grown by the amount of this screed.

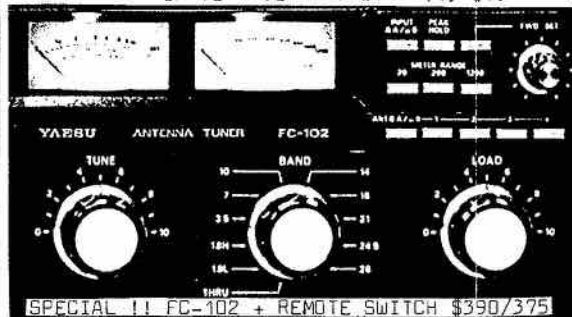
Editors note:

Art has used the abbreviations for the now defunct kilocycles per second, (kc/s) and megacycles per second (mc/s) as they appeared in the old regulations until displaced by kilohertz (kHz) and megahertz (MHz).

INTRODUCING THE FT-980 CAT



YAESU FC-102 1.2kw ANTENNA TUNER LIST \$389
 THIS TUNER IS SO POPULAR EVERYONE IS BUYING IT TO GO WITH OTHER RIGS 20/200/1.2kw Scale 2 INPUTS, PEAK HOLD READING - ONLY \$349/339 OPTIONAL REMOTE ANTENNA SWITCH (4) \$79



CANADIAN LIST PRICE FT-980CAT \$1995 CALL FOR YOUR SPECIAL PRICE !

FT-102 STILL AT THE LOWEST PRICE IN CANADA ! OTHER 102 ACC. SP-102 \$79; SP-102P \$115/110 FV-102DM \$379/369 ALL IN STOCK NOW !!.....

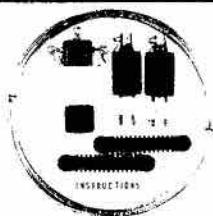
FT-77

FT-77 IS SAME SIZE AS FT-707 AND ALL 707 ACCESSORIES WILL FIT FT-77 !! INEXPENSIVE FT-ONE FILTERS FIT FT-77 ALSO



CANADIAN LIST FT-77 \$799 INTRODUCTORY SPECIAL

ALL ORDERS RECEIVED BEFORE MAY 15, 83. \$699 ORDERS MUST BE PREPAID BY CERTIFIED CHEQUE.....



WORLD'S LEADING HAM BALUN W2AU

the BIG signal!
 For over 10 years, the preferred balun of Hams, Armed Forces and commercial communicators around the world.

- And no wonder —
- Has original lightning arrester
 - 600# pull as an insulator
 - Completely weatherized
 - Developed by a veteran Ham (W2AU)

- KIT CONTAINS —**
- 1 pr. model KW-40 TRAPS (W2VS REYCO)
 - 1 ea. W2AU 1:1 BALUN
 - 1 pr. W2AU END-SULATORS (shatterproof)
 - 120' quality #14-7 strand copper wire

W2AU/W2VS 5-BAND ANTENNA KIT

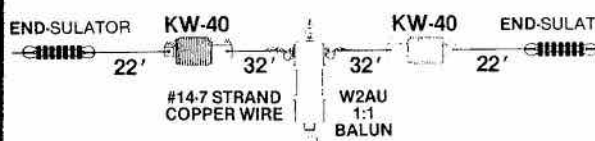
Low SWR 40 & 80 meters Resonant on 10, 15 & 20 EVERYTHING YOU NEED

the OLD reliable™ W2VS REYCO ANTENNA TRAPS

Makes your antenna MULTIBAND
 PRECISION MOLDED COIL FORMS STAINLESS HARDWARE ALUMINUM TUBE IRRIDITE FINISH COATED ALUMINUM WIRE

5 BAND ANTENNA KIT REGULAR \$79 SPECIAL \$59 ADD \$5 S&H

PAIR OF TRAPS FOR 10, 15, 20, or 40M \$36 TRAPS FOR 30M-\$45 ADD \$3/pair S&H



LAST CHANCE FOR SOME OF THESE 901/2 & 101Z ACCESSORIES

\$309/299

\$99

\$249/239

For use only with FT-101ZD above: x x240001 serial numbers

\$155/149

\$399/379

THE FTV-901R WORKS WITH 901(2) 101z and FT-ONE ! USE THE FINE FT-1 TO GO VHF & UHF..

FV-101Z EXTERNAL VFO FTV-901R VHF/UHF/OSCAR TRANSVERTER

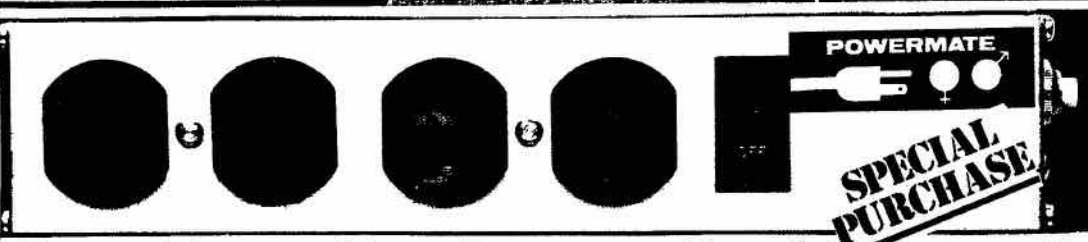
LOOK AT THESE CLEARANCE SPECIALS !!

FT-101ZD Mark III + FV-101Z VFO Was \$1375+279 NOW \$1099 ONLY
 FT-902DM with FM, KEYER, DC-DC Supply Was \$1899 NOW \$1399
 FT-902DM NO FM, KEYER, DC-DC Supply Was \$1695 NOW \$1299
 FT-101ZD Mark III with WARC & Notch WAS \$1375 NOW \$ 999

UNADILLA / REYCO FRG-7700

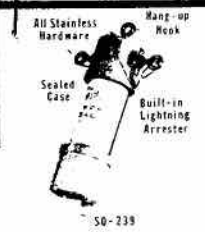


NEW LOW \$629/150k+2-



Four-outlet power strip \$17 INS S&H \$3
 Safely plug business machines, appliances and tools into this power strip. Plugs into one wall outlet. Rated 15A at 125V. Has protective push-to-reset circuit breaker. Includes 6-foot grounded cord. **switch**

Six-outlet cord reel
 you need more outlets for appliances and other electrical equipment. Has six outlets plus a 50-foot extension cord. Grounded and overload protected.
 So handy to have on the patio, at the cottage, in your workshop — wherever
WITH LIGHT



FULL FREQUENCY - 3-40 MHz
FULL LEGAL POWER - 2000 WATTS PEP
 1:1 \$25
 4:1 \$25
 ADD \$3
 INS S&H

A NEW LOW PRICE 999.95
MITSUBISHI CONSUMER ELECTRONICS
 MITSUBISHI HS310 VHS VIDEO CASSETTE RECORDER
 Features 2, 4, 6 & 8 hour recording, 14 day programmability, 16 function wireless remote control including power on/off, remote channel change variable slow motion, still frame, high speed search & more.

ALINCO ELH-230
 ALL MODE 2M LINEAR AMPLIFIER. FM, SSB, CW.
 Nom. Output 30 Watts @ 3 Watts in. Input 2-3 Watts
 Requires 4 amps @ 13.8VDC. Size: 5MALL

CHEQUE WITH ORDER
 PRICE **\$119**
 REG. **\$129**

Ideal for all handling
 FT207, 208; IC2A(T)
 TR2400, 2500 and many more
 SUPER with YAESU FT290R and
 LOW POWER ALL MODE RIGS.....

91mm(W)x28mm(H)x152mm(D)

SPECIAL \$89
 ALL ORDERS RECEIVED FROM APR 1 - MAY 15

INSURED SHIPPING & HANDLING:
 Ont & East \$2.50
 Man & West \$3.50

USED GEAR

- KENWOOD TS-820S+CW Filter \$849
- KENWOOD VFO-820 \$149
- ATLAS 215X 160-15M 12VDC \$299
- YAESU FT-720RVH 2M 25W FM \$249
- YAESU FT-230R 25W 2M FM \$299
- HAMMOND AT-1500 TUNER \$229
- DRAKE TR-6 6M VE1ASJ's \$499
- YAESU FRT-7700 ANT TUNER \$59
- YAESU FRV-7700 VHF Convtr \$99
- BEARCAT BC-350 ALPHA DSPL \$499

10 Day FULL REFUND GUARANTEE ON ALL USED EQUIPMENT (EX S&H)

SPECIAL THIS MONTH
ASTRON RS-7A POWER SUPPLY
 7amp FOR 25W 2M RIGS WAS \$95
 APR 1 - MAY 15 \$75 + \$5 S&H

BY THE TIME YOU READ THIS WE WILL HAVE RETURNED FROM OUR FAR EAST TRIP. SOON YOU WILL NEW ITEMS IN OUR ADS. CALL US NOW (APR 19) WE'RE BACK...

HAND MOLDABLE PLASTIC COAX-SEAL
SEALS COAX FITTINGS FROM MOISTURE AND CORROSION

- Stays Flexible At Any Temperature
- Permanent-Long COAX Life ... Provides Years of Protection
- Insures Low SWR
- Forms and Seals Over Odd Shaped and Difficult COAX Fittings
- Fast-Easy Seal for All Antenna Connections
- Non-Contaminating
- Non-Conductive

60"x1/2" roll \$3.00 with any other order. Add \$1 S&H if by itself..
 Commercial roll 50"x1/2" \$19.95+\$3

Bearcat
CLEARANCE !!

- BC-150 10 channel \$255
- BC-160 16 channel \$289
- BC-210XL 18 channel \$339
- BC-250 50 ch SEARCH&STRE \$399
- BC-350 50 ch TOP OF LINE \$599

Larsen

LM-K HOLE MOUNT \$48	LM-TNB TRUNK MOUNT \$53	LM-MM MAG MOUNT \$57	LM-GC GUTTER MOUNT \$57	LM-TLM LIP MOUNT \$56
----------------------	-------------------------	----------------------	-------------------------	-----------------------

ABOVE PRICES FOR COMPLETE 2M 5/8 COIL MOUNT AND WHIP. SHIPPING INCLUDED !!
 LARSEN - THE COMMERCIAL CHOICE !! !!

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 64¢ STAMP.....

ATLANTIC HAM RADIO LTD.

HOURS: MON-FRI 6pm-11pm
 SATURDAY 1pm-5pm
 SUNDAY 1pm-5pm
 ATLANTIC TIME PLEASE MINIMUM CHARGES \$50

P.O. Box 755
 Saint John, N.B.
 Canada E2L 4B3
 (506) 652-5753

Life on the ocean wave

Bill Deacon, VE3 BDO

The second great thrill for me after receiving my first ship assignment was to receive my first deep-sea assignment. For some, of course, the two birds were killed with the same stone; but in my case, my first deep sea assignment was my third ship.

I received a phone call from the Superintendent of the Canadian Marconi Co. five days after my eighteenth birthday, asking me in a casual tone (knowing very well what my reaction would be) if I felt I would like to join the SS Chief Capilano for a voyage to Shanghai departing the next day. I'm sure he was smiling at the other end of the phone at the excited and rapid affirmative response he received. No drug addict could experience the euphoric and elated state in which I existed for the next 24 hours. I was going to the mysterious Orient! I was going to that city so famed for its dens of iniquity! I was going to cross the great, wide Pacific Ocean! I was going on the great adventure! What more could an 18 year-old ask for?

The Chief Capilano was, at that time, the largest freighter afloat. It was owned by Melville Dollar at Vancouver, son of a very famous shipping magnate in the U.S., Robert Dollar, who, after World War 1 developed a fleet of ships into a round-the-world service that later became the President Line. Its flagship was the SS Robert Dollar, and this now was

named the Chief Capilano. It was a 4-master, which was out of the ordinary — most vessels (apart from sail) being two-masters. This ship had been built in Germany, and was given to the U.S. as part of war reparations after WW1.

On the voyage which was about to commence, it carried what was, at that time, the largest load of grain ever shipped from Canada — 449,000 bushels. This was to be discharged at Shanghai, following which we were to proceed to Vladivostok to deliver the ship to the Russians, who had agreed to buy it from the Melville Dollar Co.

On January 6th, 1931, SS Chief Capilano, gross tonnage 10,893, displacement tonnage 27,000, cast off her lines from the pier at Vancouver, manoeuvred in the harbour to point her bow for the First Narrows (now called the Lions' Gate), and set off on voyage #13 Westbound to Shanghai. The Wireless room was efficiently manned by Chief Operator A.S. (Art) Hudson and Junior Operator William (Bill) Deacon. Japanese marine law required that a ship of our tonnage provide 24-hour radio coverage. The way to do this, it seemed, notwithstanding Board of Trade regulations that provided for 4 hours on, 8 hours off per officer where 24-hour coverage was required, was to have two operators work 6 hours on, 6 off. Keeping in mind that one is not able to sleep a full 6 hours in between watches, you

can imagine what a drag it was to sleep in two 4-hour (more or less) snatches.

The equipment was a 1½ KW quenched gap transmitter — the most efficient of spark rigs. The receiver was a regenerative job with honeycomb wound coils for plate, grid and antenna circuits. The coils plugged in to each of three sockets on the front of the receiver, the two outer sockets being moveable through a horizontal arc. Regeneration was controlled by swinging the grid coil nearer to or farther away from the plate coil. In other words variable coupling in its most elementary form. Likewise, coupling to the antenna was accomplished by the same technique. Through the use of plug-in coils, the receiver could cover from about 1.5 mhz to practically DC.

The receiver operated on dry batteries — A batteries for the filaments and a B battery for the plates. This, of course, covered emergency requirements in addition to normal service. One thing to be said for battery operation was that it eliminated the noise and drift that sometimes was experienced in using the ship's "mains".

Anyway, we are now heading through the Straits of Georgia towards Race Rock at the southern tip of Vancouver Island, where we drop off the pilot and proceed onward up the Straits of Juan de Fuca to meet the broad Pacific just off Cape Flattery.



Ready for shore in Shanghai harbour

in revolt at being forced to endure the slings and arrows of an angry North Pacific that has been disturbed by the gales indigenous to that area.

I existed on tea and half slice of toast for about 3 days, following which my frame decided that this stubborn rebellion was achieving nothing but further discomfort. Now my body decided that this sensation of whooping around in big seas had some degree of exhilaration, and it became a pleasure to stand on the lower bridge and feel the deck rising and falling like a high speed elevator under one's feet. It also was a marvel to watch those massive seas moving in on the bow like liquid mountains. It always seemed incredible when in a trough to look up at the crest of an oncoming wave so unbelievably high above one, so that it seemed impossible that the ship would not be totally swamped by the massive brute. The pitch of the ship and the wave-tops frequently got out of synch, at which time the bow would come down just as the wave-top was arriving. There would be a mighty flood of water over the forecabin, together with a great tremor throughout the hull that left the ship literally quivering for a few seconds. This is the kind of thing that springs rivets on a poorly constructed hull.

We now were headed on a great circle course for the Tsu-

As we sailed up the Straits, we found ourselves facing into a pretty good gale, and the ship began to pitch. This was most disconcerting to me, as my coasting trips thus far had been in relatively calm and sheltered waters. Now the deck was heaving up, down and around in a slow, deliberate motion. With each heave a wave of nausea surged through my miserable frame, and there was a tingling sensation around the hinge of the jaw-bone. Slowly, my enthusiasm for deep-sea sailing was waning, and as we entered the

Pacific into a moderate gale, with the ship pitching about with no regard for my physical sensitivities, my desire for sailing disappeared entirely, along with part of my last meal. I fervently wished I could just ask the skipper if he wouldn't mind returning and picking up some other Junior Operator with a more rugged constitution. I was certain I would be totally inoperative for the balance of this voyage. No greater misery has been endured than that of trying to conduct watch keeping in a small, stuffy cabin while one's entire being is

garu Straits that separate the Island of Honshu from the Island of Hokkaido. From there, we would proceed down through the Sea of Japan, past Korea, to Shanghai. The approximate distance from Vancouver to the Tsugaru Straits is of the order of 4000 miles. Our course took us up just skirting the southern fringe of the Aleutian Islands.

Watch keeping was very routine. Our own traffic was very light, discounting the press and weather reports we copied. The press was not formal traffic, and we copied it for the benefit of our crew of the 15 Causcasians (officers and engineers) on board. The majority of the crew was Chinese. Incidentally, this was a Hong Kong registered vessel; and its call sign was VPBL. We usually picked up noon position reports from vessels in the North Pacific for the information of the Bridge. Not only was it handy to know who may be on approximately the same route, but it was useful to receive the reports on winds and seas. If a ship were to be transmitting on CW in a heavy sea, one could hear the variation in frequency as the antenna/ground capacity varied with the rolling of the vessel.

Gale force winds continued throughout all but the last part of the crossing. The weather reached whole-gale conditions off the Aleutians, and we started to develop cracks in the sheer strakes. There was great concern on the part of the Captain, Chief Officer and Chief Engineer over the risk of water entering into the holds and causing the grain to swell. That would have created a real crisis. In any case, the storm became so severe, and the risk of enlarging the cracks in the sheer strakes became of such great concern that we were hove to for over 24 hours. The ship was pitching so heavily that the screws were coming out of the water as the stern rose. Consequently, it was necessary for the

engineer on watch to constantly ride the throttles of the two engines, backing off steam when the revs began to rise, and, of course, increasing throttle when the screws were where they were supposed to be. At the same time, we in the radio room had to stow the chair under the desk and stand throughout the watch braced against the bulkheads. Sleep was very difficult, since we had to lie on our stomach with elbows braced against bulkhead and bunk-side to keep from being rolled out of the bunk.

One morning, just before breakfast (I had just come off watch at 6 a.m.) I was sitting in the small "library" which was located immediately over the galley. In one heavy lurch of the ship, I heard a crash, followed by some frenzied utterances from the galley crew. I went down to the galley to see that our ½ case of eggs that was sitting on a table preparatory to cooking breakfast had fallen over; and the galley deck was a gooey mess of egg yolks and whites. All of the eggs were destroyed. Breakfast from then on was fried herring!! Perhaps I should have mentioned earlier that the Company was in dire financial straits, and we had nothing lavish for our menus; and just enough food to get us to Shanghai.

To add to the Captain's concerns, a Chinese fireman died from 3rd degree syphilis. We wanted to bury him at sea, but the crew would have none of that, since the dead man's spirit could not get back through the water to China. Finally, the carpenter was allowed to put together a pine box; and this was placed on the poop deck for later disposition. Later on, we radioed ahead to our Shanghai agents to have a junk meet us in the Yangtze River before we got to quarantine so that the coffin could be off-loaded before we cleared Quarantine inspection. In this way, all the fuss of clearing

up the death to the satisfaction of the bureaucrats could be bypassed.

Finally, on a cold January morning (temperature 25°F), the coast of Japan appeared on the horizon. It was a bright crisp clear day, and as we entered the Tsugaru Straits I was really taken with the beauty of that country. With a host of tiny mountains, it was like looking at the Rockies through the wrong end of a telescope. As we got closer to shore, we could see here and there on the hills one of those shrine entrances painted in bright red. You know the one that looks like a goal post with the cross bar extending beyond the uprights. These were on the Island of Hokkaido, where most of those big Sumo wrestlers come from. I understand that the northern Japanese are substantially bigger than their southern compatriots.

The rest of the voyage to the Yangtze River was routine, but as we neared the quarantine station at Woosung, the fun (?) began.

We met the junk we had requested, and the task of unloading the coffin started. Of course, we had to slow down to nearly a full stop, which made it very difficult to steer the ship. Coordination (?) of the transfer was handled by our chief bos'n (a Chinese) and the captain of the junk. The Chinese are very independent people, and they much prefer to do things in their own way rather than be directed by some other ignoramus. This was the situation here. The bos'n and the captain couldn't agree on the procedures, and while all this hassling was going on, we were still sort of drifting slowly along and getting closer to the shore line. Finally, we ran aground on a sand bar, at which point the problem became very quickly settled and the junk moved off with its load. Meantime, we are very firmly aground, and our engines are not able to free us.

We radioed our Shanghai agents to send a tug down SAP, and one showed up an hour or so later. The tow line was taken aboard, and the tug let out about 1500 feet of cable before it started to take a pull. This put it right across the channel by which ships entered and left the Whangpoo River, on which Shanghai is situated. It is appropriate to note at this point that Shanghai in those days was the second busiest port in the world. Consequently, the tug would hardly start pulling before their would be a whistle blast from a ship going to or from Shanghai, so that the line would have to be slackened off, and the tug moved out of the way. After the passage of the ship, there was again the tedious process of taking up the slack and moving into position for another pull.

All the time that this was happening, we could see a thick bank of yellow fog rolling slowly up the Yangtze toward us. By the time we finally were freed from the sandbar, the fog was enveloping us, the end result being that we remained anchored at that spot for three days. I mentioned earlier about the loss of the eggs and the weak financial position of the company. Food supplies had been calculated so tightly that, with the delay caused by the gales, we had very little food left; and we lived mainly on tinned kidnevs for the 3 days at Woosung. Thank goodness I was raised in the English tradition and so liked kidney. We finally arrived at Shanghai on Feb. 1st, 1931, tied up to #42 buoy for those who know Shanghai. For those who don't it means that we were one heck of a way down the river from the big city, and we could only get ashore by hailing a sampan to take us to a nearby

landing stage, where we would pick up a ricksha to carry on.

The trip from Woosung up to Shanghai on the Whanpoo River was intensely interesting, and those on the bridge had to be really alert. Traffic on that river at almost any time is like rush hour in big cities, the compacts and tractor-trailer rigs of the city being replaced by assorted sizes of junks, freighters, passenger and warships. Junks were the bane of a ship pilot's existence. A junk "captain" is very independent, and he will move to where it pleases him without any regard for protocol or consideration for other vessels. As a result, we had

some close shaves with some of these vessels — "close" meaning as near as 3 feet. One can't manoeuvre a large vessel with the same ease as a large car.

Now the task started of unloading the grain. It was destined for a mill on Soochow Creek, which was several miles away from our anchorage. The grain was bagged on board our ship, and then loaded into lighters alongside. After about 6 lighters were loaded, they were towed away in one long string up to the mill. It was left to the lighter owner to skull his vessel all the way back to our ship to pick up his next load.

After about 2 days of discharg-



*Near miss
in harbour rush hour*

ing, an argument broke out between the checkers and some other stevedoring types (all Chinese) over procedures. This could not be resolved, so all walked off the ship in high dudgeon, and we were left to contemplate the banks of the Whangpoo in idleness.

Another 2 days elapsed before the problem was resolved and work resumed. Then Chinese New Year arrived, and all work stopped for some 5 days of revelry or whatever the celebrants chose to do to welcome the new year, causing more idleness and frustration.

This work having resumed, the lighter owners announced that they did not find it profitable to travel such long return trips from the flour mill, and until the Company could find a spot closer to Soochow Creek, the lighter-men's services would be withheld. Another few days delay ensued until a dock could be found on the bank of the river opposite Hongkew and much closer to the Creek. From then on, the only interruption to the operation was a brief flurry one day when a "bagger" lay on the bottom of a hold smoking and fell asleep, setting fire to the bags and wheat chaff on the deck of the hold, so that heavy smoke started pouring out the hatch. It did no damage of any consequence, but it did create a bit of panic for a while until the nature of the fire had been identified.

As soon as we had entered port, Art's and my jobs had finished until we left port again. As a result, I wanted to get ashore at the first opportunity to get my first look at one of the Orient's most famous cities. Art and I set off in a sampan for the shore from our #42 buoy, and it was quite a shock to look back at the ship and see those big cracks in the sheerstrakes. I hadn't really appreciated how very serious our situation had been until now.

At the small quay at which we landed, there were 3 or 4 rickshas waiting for passengers, so we selected two drivers and were on our way to the centre of Shanghai. It was a strange feeling to ride a ricksha for the first time — a feeling of great guilt at being pulled along by a human being whose feet were covered with thin straw sandals on this cold February day. He coughed and panted as he struggled along Yangtzepoo with his human load. It seemed very cruel in a way, yet this was the way things were, and if I were not to use him, he simply would lose that much revenue. I understand that the rickshas were rented daily. So the driver was much concerned about earning at least his rent, plus a few cents to exist on.

At the end of the ride, we went through a routine that was to occur unfailingly every time we used one of these vehicles. The driver would complain, after being paid whatever we thought was reasonable, that either it was not enough or that the money was "brass". The quickest way to end that argument was to take the money back and walk off, at which point the matter was quickly settled by paying him what you already had established as being fair. There were some established "rules" regarding the appropriate fare for the distance travelled, and you earned no thanks or respect for anything substantially over that amount. It seemed to me that you simply got classified as a "patsy" on which the driver may then feel encouraged to try some other smart tricks to get still more. It was at this time that Communism was just starting to stir up interest, and one of the favorite targets for them were "foreign devils".

Art and I had a lunch (known there as "tiffin") at the Astor Hotel on the bank of Soochow Creek in Hongkew. After the very poor food aboard, particularly the very poorly made bread, it

was a great sensation to eat slice after slice of beautiful white, crusty French bread with large gobs of butter on it. We practically made an hors d'oeuvres of the bread alone. The waiter must of wondered what kind of weirdos we were, although I guess they were never very surprised at the pecadillos of the "foreign devils". Anyway, the lunch put us in great shape for a cruise down the Bund, which is a large avenue along the shore of the Whangpoo, and which contains some fine big buildings, in which to house the more prosperous companies in Shanghai. To the best of my recollections, we then went along Nanking Road and visited a couple of large and well-known department stores. We ended this tour with a visit to another large hotel for a couple of snorts of Scotland's finest.

On either the first or second night of our arrival, a group of the boys took me on a long-promised tour of the seedy side of the city. Each of us had a rickshaw, and we started out at a dance hall that was staffed by White Russian girls. The term "White" distinguished them from "Reds". In other words they were members of the Russian bourgeois who had escaped from Russia in the Communist takeover of the Czarist regime. They were, of course, hard pressed for money, so some of the girls took to taxi-dancing to earn a living. Whether or not their services extended beyond that I did not explore.

After leaving that place, we were surprised to find that our ricksha boys had been waiting outside all this time, ready to take us to wherever else we planned to go. As we proceeded along, the places got seedier and seedier. Some of the women were in appalling condition both physically and in their dress. I remember watching with great disgust a fight breaking out be-

tween two seamen or firemen of a British ship over the favors of a Russian woman whose hair was matted and dirty; whose face was a caked mixture of powder and dirt; and whose clothes would not be fit even for a mop. While it was sickening to see, it was sad to later reflect on what situations or conditions brought her down to his level of human misery. After seeing this, and having in any case had more beer than I was used to, I announced that I would be only too happy to return shipside. The boys agreed, and our fleet of rickshas proceeded to a jetty where we could pick up a sampan to return to our anchorage.

It was a rainy night, and the five of us were under cover in the sampan, listening to the steady scrape of the scull in its lock. Eventually, I got curious and lifted the front hood of the sampan to check our progress. To my great shock, I found we were headed in another direction up a small canal. It was apparent that the sampan man had assessed our condition as being fit to be "rolled" by some of his friends. I had a blackjack up my sleeve, and I immediately dashed to the stern flourishing the blackjack and ordering the man to proceed forthwith to the ship. The rest of that trip, needless to say, was conducted under close monitoring. That was enough for me of Shanghai's night life. They could have it!!

I made several excursions ashore on my own during our stay in Shanghai. I always carried a small blackjack up my sleeve. This was used when a ricksha driver got a bit too rough about fare disagreements. It was only necessary to shake the blackjack out and look menacing with it to bring a rapid end to the argument.

On one shopping trip, I found an interesting curio shop, so I commenced negotiating for a pair of very interesting carvings of old Chinese men. The eyes and teeth were ivory insets. The first asking price was \$15 (Chinese), and then the haggling started. After my third trip out the door (I had been called back with new offers before I was through the door on the first two moves), I was some 10 yards down the street when the shop keeper came running after me with a new offer. I got that lovely pair of carvings for \$5, and he threw in a pair of silk lampshades.

On that shopping trip I had not carried the blackjack, and I was about to return to the ship from away up town. Consequently, I was looking for a ricksha boy who didn't look too tough to deal with. I was being pestered to death by scores of drivers who instantly recognized a stranger, and, hopefully, a sucker. I picked one who seemed to be OK and directed him to the jetty. This driver's sandals were really worn through, and he stopped several times on Yangtzepoo Road to pick things out of his feet. For some reason that I still cannot

fathom, each time he did this, people walking along the side of the road would close in on the ricksha. With some fear I kept urging the boy to go "chop chop", and he would look back at me with a withering stare of scorn, then slowly pick up the shafts and carry on.

When we arrived at the jetty, I piled my parcels under one arm and felt through my pocket for the appropriate payment of 40 cents. He put this in his pocket and spoke to me sharply and menacingly in his own language.

I didn't know the words, but I got the drift. Being a very stubborn man, I had no intention of giving in to him if I could at all avoid it, so I brushed him aside and headed toward a sampan at the edge of the jetty. The ricksha driver darted around in front of me and bunted me backward with his chest, obviously hostile words being hurled at me simultaneously. I tried the same manoeuvre again with the same result. A group of about 5 other Chinese were a few feet away watching this with great interest. I looked over to them and asked "Can anyone here speak English?" . . . no response. More pushing and shoving ensued, and I didn't want to put the parcels down and threaten the ricksha driver with fists, since he would simply have picked up the parcels and dashed off. I called to the group once again, and one man came over and announced in fairly good style that he could indeed speak English. I said: "Ask him what he wants". The response was that the driver hadn't been paid enough and wanted more. I said "Tell him I've spent all my money on these parcels". The driver pointed to one of my pockets and chattered out something. The interpreter said "He wants to know how much you have in that pocket". That pocket was bulging with some paper money and some Mexican silver dollars. I reached in and



Six hours on. . .

pulled out what I thought was a 50 cent "shin plaster" and stated that that was all I had and that I needed it for the sampan. The instant my hand brought forth the 50 cents, the driver snatched it from my hand and picked up his shafts and was off.

Now I got into the sampan and ordered the man to proceed shipside. He pulled the usual stunt of asking for payment first. This is a favorite manoeuvre. After taking the payment and getting well away from the shore, he would announce that he wanted more money, otherwise he wouldn't move. The experienced traveller knows enough to withhold any payment until arrival. I wanted no more nonsense, and, being on the boat, I could lay the parcels down, go up to the man and threaten him with my fist unless he proceeded. He gave up quickly and we terminated that little jaunt with a safe arrival plus mutterings of discontent from the sampan man over his fare. To heck with it . . . I was safe on board.

When we were at the dock in Pootung, many kids used to gather along the dockside and plead for money of "cumsha". One of our favorite pastimes became to change a couple of dollar bills into pennies, then stand at the rail and toss them overboard one at a time, and watch the scurry and flurry while the kids garnered their harvest. In short order, an individual would appear on the scene with a charcoal brazier on one end of this pole and a container of other things at the other end. Very soon he would have the brazier in operation and would have some kind of batter frying in oil over the fire. The kids, of course, had a ball buying all that good stuff at the expense of the rick "foreign devils".

Word got around that the Russian sale of the ship was cancelled, so that we were to

return to Vancouver. In the meantime, doubling plates had been riveted over the four cracks in the sheerstrakes. The doubling plates looked rather inadequate, being about 1 inch thick and about 3 ft by 1 ft in size. Anyway, we finished our discharging on Feb. 28th and sailed the next day to a Japanese coaling port of Nishi-Karatsu, somewhat north of Nagasaki on Japan's west coast. We had burned oil on the way out, but since we were returning "light ship", and since coal was much more economical, and also there was no urgency about our return, it was decided to use coal. No additional firemen were hired for the coal operation because we wouldn't be operating at full speed (13 knots).

We anchored at Nishi-Karatsu, and then lighters full of coal were towed alongside. A human escalator of Japanese men and women in black garments established itself from the lighter to coaling chute in the side of the ship. Small wicker baskets were loaded with coal at the lighter and passed from person to person in a continually flowing chain to be dumped into the chute. That is, the coal was dumped and the baskets tossed down to the deck of the lighter. This went on for lighter after lighter throughout the day, with only a break for food. As soon as the coaling was finished, we lifted anchors and were on our way back to Vancouver.

A day after we had left Japan, we received a message from the owner advising that it was imperative we reach Vancouver by March 16th to pick up another load of grain. Otherwise we would lose the contract. This called for more speed, hence more steam, hence more coal-shovelling. Since we did not have a full firing staff on board, this placed a great strain on the engine room crew, and there were some threats of mutiny. I don't know how the problem was re-

solved, but we did get more speed.

In the meantime, another gale sprung up around us, and the ship with its patched sheerstrakes took another pounding. There was great concern now over how we would stand up to the pounding at the speed at which we were operating. Anyway, the gale abated and we continued on to Vancouver without further ado, arriving as ordered on March 16th, 1931.

I was asked to remain signed on for the next voyage, but I felt that there were better ways to live than on that miserable, underfed ship. Two of its sister ships had gone to the bottom in the North Pacific, and I couldn't help but feel that the Company's luck was running a bit thin. 1931 was a tough year for a junior operator like me, the depression being in full swing, etc., but I preferred that to a rather tenuous future on the Chief Capilano.

I was not able to follow its subsequent history closely, but I do know that it was sold to Philippine interests and renamed the Don Jose. I did see it once in Hong Kong some years later looking much the worse for wear.

So ends the fourth episode in Deacon's Chronicles.

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

HQ staff publishes book

The HQ staff has always wanted to publish an Amateur reference publication. However, we did not want to duplicate the work in the publications already available. We also did not want to publish a book which would be out of date every year. We also did not want to publish a book which would provide information you did not need but had to purchase to get the book. We thus decided to publish a book which would hold any other CARF publications. The result was the **Canadian Amateur Reference File**.

The Canadian Amateur Reference File is a 2" Commercial quality "O" ring binder. It has a fold under cover, pocket on the inside cover and clear identification pocket on the spine. Inside you receive 5 dividers and a general information section. The general info section contains info on CARF officials, publications, contests, awards, and services. It also contains a repeater and HF NET Directory. This section can be updated from TCA or by forms printed at CARF Headquarters. Thus, you are always current!

In addition, you may purchase any of the other sections we publish. It may appear more expensive, but if you purchase only what you need; you save money. Also, updating is cheap since we only need to reprint selected pages or detail. You end up with a book which suits you. In addition, we can publish a section on anything which you, the Amateurs need. You save money by not having to buy a whole new book and we save money by not having excess copies of outdated books. Another way in which CARF tries to watch your budget.

The list which follows is the complete set of available sections. We encourage your suggestions as to what we should print and we are always happy to receive offers to write for CARF. Those wishing to write a section should contact our General Manager Art Blick VE3AHU at CARF Headquarters.

Canadian Amateur Reference File (Commercial O ring binder 2") \$9.50

(Dividers)

(General Information Section)

SECTIONS —

BASIC ANTENNAS - VE3AHU - All you need to know on basic dipole, wire and vertical antennas. \$2.50

DX - VE3KKB - A basic guide to working DX from TCA's

DX Editor \$2.50

ESTABLISHING AN AMATEUR RADIO STATION — VE3UD — A guide for new Amateurs so they can get started properly (This was written by Bud Punchard before his death and CARF publishes it as a tribute to this noted Amateur.) \$2.50

OPERATING PROCEDURES — VE2ZP — \$2.00

AMATEUR BANDS CHARTS — VE2ZP — \$2.50

CONTESTING — VE2ZP — A guide to the new or experienced contester for your TCA Contests — Editor! — \$2.00

MONITORING AND REFERENCE FREQUENCIES — VE3IDW — A list of Amateur and non-Amateur frequencies used for weathery public service, code practice etc. — \$4.00

(In the work) — EMERGENCY COMMUNICATIONS!

Note:

1. Prices include postage and handling.
2. Also, if you order more than one section or if you order other sections with the Reference File, deduct 50 cents per **additional** section from your cost. This is the result of our saving mailing and handling costs.

e.g. order 2 sections save 50 cents

order 3 sections save \$1.00

Binder and one extra section save 50 cents.

This is another way CARF is attempting to serve the amateurs of Canada.

Student station alive and well

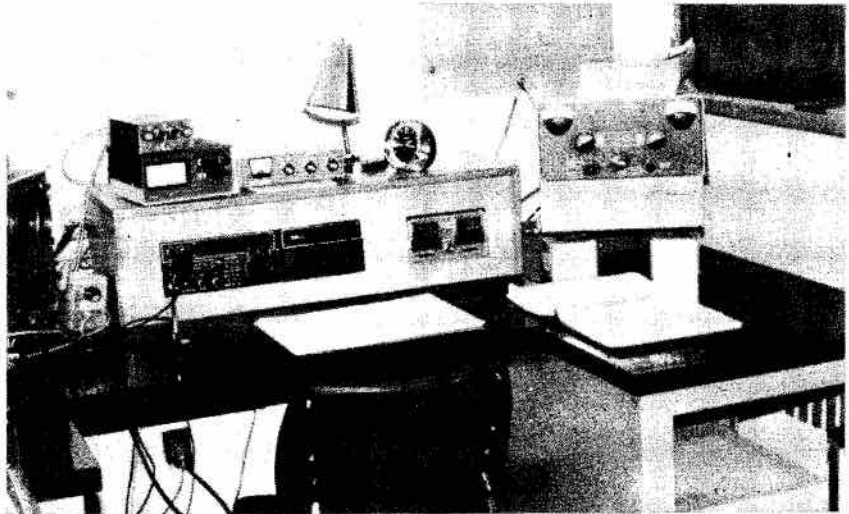
Ross Gallinger VE7CXC

In the early 1930's the University of British Columbia Amateur Radio Society was formed by a couple of Electrical Engineers. The early call was VE7ACS, which is now the call of the Vancouver area autopatch link! Around 1959, the call was changed to VE7UBC. During these early years, the club was quite active on H.F. and RTTY. In those days, equipment was quite expensive, so many people did not own their own equipment (especially poor students). Being able to operate the club's Collins S-line provided a chance to get on the air. Apparently, there were many weekly operating events and the club was quite active in contests.

By the '70s, new, relatively inexpensive equipment was being introduced. Most amateurs had their own equipment, so club operation was not as popular. The U.B.C. station had not changed drastically since 1960. We had a Collins S-line (which needed alignment) and a Henry linear amplifier. Antenna's consisted of inverted vee and slopers for 80 and 40 meters, and beams for 10, 15 and 20 meters. Club activity had dwindled dramatically since most members had a better station at home than that of U.B.C.

In 1978, a group of new club members decided there had to be a change in order to revive the club, Ve7's, COR, CKK, CML, CMN, CXC, CNY, ARR, CMK and BCK (now MT) began to make needed improvements. The beams, which should have been horizontally polarized were vertically polarized! These were lowered, repaired and new hardware, and remounted on the tower.

Next, something had to be done with the H.F. equipment. We managed to get a loan from



The station at VE7UBC.

the student society for the purchase of some new equipment. We had the Collins S-line repaired and sold it. This was replaced with an Icom IC-701. Other equipment also added were a phone patch, electronic keyer, and proper metering equipment.

The first major test of the refurbished station was the 1979 CQ WW WPX Contest. The station seemed to work okay as we

placed first in North America and 7th in the world. The WPX contest has now become almost as permanent as exams for the student amateurs of VE7UBC!

In 1981, VE7UBC managed to place first in the Can Am contest for multi-single phone. The score was enough to win the combined trophy that year (see photos). H.F. operating is not the only activity of the club. In 1979,



Operators at 1981 CanAm Contest. Left: Dennis Pekral, VE7CXN. Right: Ross Gallinger, VE7CXC, Club President.

VE7UBC placed first in the ARRL VHF Contest.

Further VHF interests continued with the idea that the club should have its own repeater. With the help of Dan, VE7DES, and other helpful local amateurs, our repeater, VE7RHS was realized. It is made up of an old Marconi VHF tube rig. Like all new repeaters, there were problems with our machine, but now it is a fairly good campus repeater, which cost us less than \$100.

The club is also active in campus events. We supply the communications for the annual Arts' 20 marathon race. Other events also receive our assistance when needed.

The club has seen a decrease in membership over the past couple of years and has become a bit financially troubled. The club only survives on its membership



VE7CXC operating RTTY at VE7UBC.

dues — it is not financed by the UBC Student Society.

Presently, the club has the following equipment: Icom IC-701, Henry 2KL, 3 element Bean for 10-15 meters, 4 elements for 20 meters and wire antennas for 40, 80 and 160 meter bands. Equipment for RTTY is Model 15 baudot teletype, ASR-100 for ASCII, Icom 22S for 2 meters, repeater and an antique pop machine which manages to cool beer quite well!!

I enjoy talking to EX-Club members and would like to hear from anyone who is interested in the club. Although there isn't much to VE7UBC, it has a colorful history and will continue to be a powerful station on the West Coast of B.C.

Dayton or bust (and bust we did)

by Tom Van Den Elshout VE3LNT

Through the excellent efforts and organizational talents of John Illiffe, VE3CES, the York North Amateur Radio Club in Newmarket embarked on an ambitious scheme to organize a trip to Dayton, Ohio, in order to visit the 1982 version of the world-famous flea market. After much deliberation and fact-finding on John's part, the choice was made to go by bus.

The following schedule was adopted: the bus was to leave Newmarket on Friday, April 23rd at 10 p.m., to arrive in Dayton at 8 a.m. This would give us ten hours to do what we took the trip for, as the plan was to leave Dayton again at 6 p.m. on Saturday. Personally I thought this was a bit masochistic — two nights on the road, with maybe 40 winks, right after a normal Friday working day for most of us, plus what was expected to be a tiresome day on Saturday. It must be that "hams" will put up with every inconvenience in the book to enjoy their hobby (including myself, hi hi).

After the tickets (\$65) were put on sale, the club directors, and in particular VE3CES, went through a tense period of time. Would the club be able to attract 45 passengers or so to fill the bus? Indeed we did. Ticketholders even included non-hams, like my son Bastian and Brian VE3MK0 with his XYL. The ages of the passengers ranged from 19 to 75.

Friday, April 23rd arrived and all who were to board in Newmarket had assembled, including Larry VE3ILK and his friend James who came all the way from Sudbury. The bus left Newmarket on

time and arrived at the Yorkdale Shopping Center at about 10:45 p.m., and left again at 11 p.m. Next stop was to be London, where more Amateurs were to join us. The spirit among the passengers was high and everybody was looking forward to their day in Dayton.

Shortly after leaving the Yorkdale Plaza, I heard a little bang against the underside of the bus. I disregarded this as a piece of gravel, and apparently so did the driver. Bangs were heard occasionally but no importance was attached to them until Brian, VE3MK0, came out of the washroom with the message "There must be something wrong with the tires — it smells like burned rubber in there". This message was relayed to the driver, who assured us that the bus had recently been inspected, and had checked out 100% OK.

A few miles past Woodstock, and just east of the Ingersoll exit on Highway 401, an enormous bang was heard and felt against the undercarriage of the bus, followed by severe vibrations. A voice yelled out "Now do you believe us???" (I am sure that it was Brian VE3MK0 doing the yelling.)

The bus came to a halt on the shoulder at about 12:15 a.m. Saturday morning. The cause of our problem was quickly diagnosed as the separation of a large chunk of tread from the left rear inside tire. There were three handheld 2M rigs on board. Much effort was spent in trying to raise somebody on 2 metres, but with no success. It did not help matters much that the bus was parked between two fairly steep hills on either side of the 401.

...bussed & bust

Cec, VE3HEV, and Jim, VE3HCS, managed to climb the hill to see if they could get through to anybody. They came back disappointed and very cold. No contact was made. I suggested that most hams were either sound asleep, enroute to Dayton, or still socializing, but that they surely were not QRV.

In the meantime, a yellow truck from the Department of Highways stopped, but could not be of assistance to us. No cars, and, what surprised me most, no trucks, would stop to help. Instead, we were shaken pretty good every time an 18-wheeler passed us.

Finally the O.P.P. from the London detachment showed up, but they too were of no help whatsoever. They even refused to take the driver to their station so that he could phone for assistance. Rescue finally came through Tony, VE3JFE, via the OHR repeater. However, all of his efforts ended up with either a no answer or an answering service — no contacts there. At last a serviceman from Goodyear was located. He arrived about 3:15 a.m.

Jacking up the bus was no problem. Trying to remove the rear tires proved to be something else. After much banging with the sledgehammer the outermost tire was removed. However, the inside tire could not be persuaded to come off. The serviceman jacked the bus up some more to see if he could remove the offending tire from the underside of the bus. After two bangs with the sledgehammer, a much louder bang was heard, followed by much shaking and a

falling-down sensation!! The bus had fallen off the jack!!

The serviceman was knocked out cold, but lucky for him, the tire still had not come off. Now we were able to stop some traffic and in no time flat the O.P.P. returned to the scene. An ambulance was also called. In the meantime, a very quick cool-headed Amateur student, Charlie Alleyne, had raised the bus up again on the jack and was able to remove the serviceman from underneath the bus. Time now about 4 a.m.

After the serviceman was transported to the hospital, the O.P.P. finally relented and took the bus driver to headquarters. A few phone calls produced assurances that a second bus would be dispatched posthaste from Brantford, while a new service team from Goodyear would also be sent out. So shortly we would be mobile again.

At about 6:15 a.m., the next Goodyear repair truck showed up and the offending tire was changed in short order. Meanwhile, John VE3CES, our super organizer, had produced a breakfast of juice, honeybuns and XYL homemade muffins, which was greatly appreciated by all.

A very important decision was now to be made: push on to Dayton, arriving there about 4 p.m. at the earliest, where the flea-market would close at 6 p.m.?, or return home and see if we could get a refund for a trip that lasted 12 hours but got us nowhere?? The decision to return home was arrived at by democratic vote of the passengers, and about 45% voted to go home.

That the minority ruled, as

stated by one individual, was mainly due the driver commenting that if we wanted to spend 1 or 2 hours in Dayton, that was fine with him, but we had better wait until the second bus came, as there was no way he could drive that long without sleep. So back we went, although there was still some noticeable vibration from the rear. When the second bus caught up with us, the driver found it advisable for us to transfer.

After that, the trip home became a very boring uneventful happening, hi hi. Comments from the passengers were very favorable. The consensus was that, had Murphy stayed home, the trip would have been a terrific success. It was decided then and there that Dayton, Ohio better watch out for us in 1983 — we will try it again.

If any readers are interested in joining us, please get in touch with: John Iliffe V3ECES, 387 Selby Cres., Newmarket, Ontario L3Y 6E2, telephone 898-4875. You can also reach him on 2 meter RTTY, 24 hours a day on 147.57 simplex.

We will this time have a closer look at the passenger list and refuse any and all with a name like "Murphy".

Once again, John, congratulations on a job well done. Also thanks to all who tried to help when the serviceman was injured, and a special thanks to the great bunch of guys and gals who were our passengers, in keeping up the great spirits.

In conclusion, I would like to report that the serviceman was released from the hospital with scrapes and bruises, and no major injury was sustained.

TECHNICAL SECTION



A two metre antenna experiment

John Iliffe, VE3CES

One thing about a postal strike, you can get all your outstanding projects finished and start some new ones! This was the case with the two meter antenna that I am about to describe.

But to start at the beginning, I am not an antenna experimenter. In fact I would be much happier if my station would work without an antenna. So would my neighbours, and, I expect, the town council. However, if you must you must, and so it came to pass that in July I was researching cheap, small, effective, antennae. I have quite a library here, as the wife reminds me each flea market season, and I figured it would take a few hours to find out the dimensions, feed method, and construction techniques I needed. How naive I was!

Every book I read, every maga-

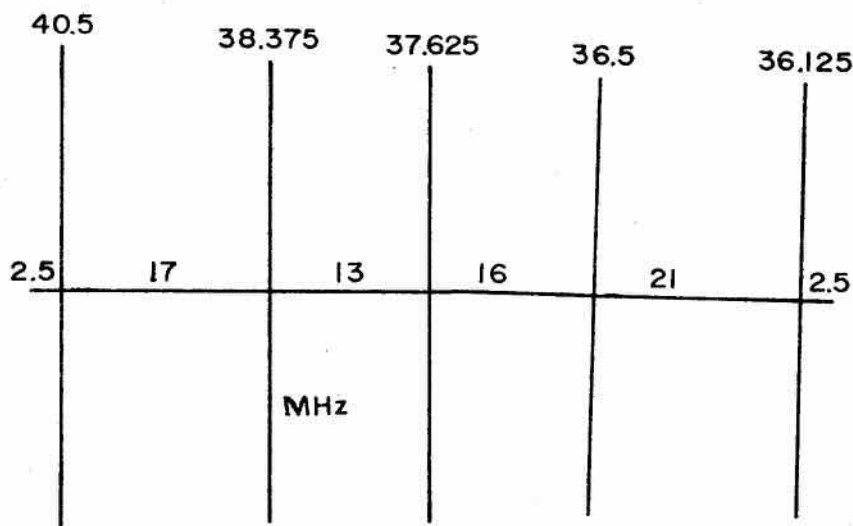


Fig. 1 Dimensions (in inches) for 5-element Yagi

zine article, was different. I nearly gave up.

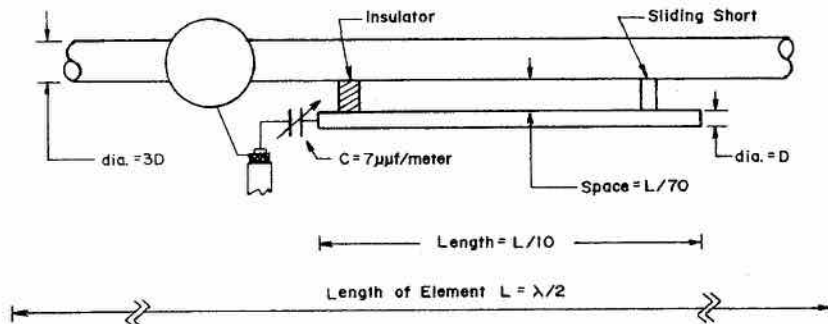
What I am about to report is the details of how I designed and tuned an antenna. I doubt it is original, I hope it is correct. I believe it is the first detailed de-

scription of how to go about it.

Finally, screwing up my courage, I built the five element beam described in the Handbook for 1976. The dimensions are in figure 1. The first results, fed with a delta match as described in the book were awful. The SWR was about infinity to one, and the rig's final oscillated. Seems the Heath HA201 is not happy with a complex load.

Next, I looked in Bill Orr's classic Radio Handbook (15th edition, 1962). There is a formula for the length, spacing, and diameter of a gamma match. (See figure 2). This formula needs a gamma rod $\frac{1}{3}$ the size of the antenna element for a 50Ω match, which I could not do with

Fig. 2 Gamma Match Dimensions



the aluminum I had.

I used the same size and proceeded to tune. First, you have to eliminate the reactance with the series capacitor, then match a pure resistance using the sliding short. Doing things the other way around will lead to advanced frustration and stamp collecting as a hobby.

The best I could do was 3.5:1 SWR so I lengthened the gamma rod to 6¼" and got down to 1.5:1. If I had a longer piece of aluminum, I expect I could have been able to get 1:1.

Now let's stand back a moment and consider where we go from here.

The antenna is design centre on 147.57 MHz for RTTY, vertically polarized. I do not want the mast in the field, so some sort of stacking is needed to get out to the side.

If I stack, in phase feed is the easiest to implement, from a 50Ω cable I can either use two 25Ω antennae in series or two 100 ohm antennae in parallel.

The SWR is resistance (because

I can't lower it with the series capacitor) and either $1.5 \times 50\Omega$ or $50\Omega/1.5$. That is, either 75Ω or 33.3Ω. Since the direction of improvement was to move the sliding short away from the boom (gamma rod longer) I suspected 33.3 but you can prove it as follows:

Take a "T" connector and feed the antenna through it. Measure the SWR. (1.5:1).

Now put the dummy load on the other arm of the "T", in parallel with the antenna. Measure the SWR. (2.3). Since the SWR went up as we lowered the resistance, it must have been below 50Ω to start with. (For the purists, I worked it out. See appendix A).

The result of this is that we have a 33.3Ω antenna pair to feed with a 50Ω cable. The easiest way to match this is with a transmission line transformer because as the frequency varies, the reactance of the line and antenna vary in opposite directions, increasing the bandwidth. Besides, I had lots of short pieces of coaxial cable. The formula is $(Z_c)^2 =$

$\sqrt{Z_1 Z_o}$ where Z_c is the cable impedance, Z_1 is the feed impedance, Z_o is the load impedance. This applies to quarter wave transformers with resistive loads.

Using 50Ω line, I could invert the impedance from 33.3Ω to 76Ω. Using 75Ω line would give 152Ω. Not much to pick and choose so I used 50Ω line.

The next problem was to calculate a quarter wavelength. For RG58U the velocity factor is .66 so a quarterwave is 13¼". (20.08" free space quarter wave at 147.57, times .66).

Now how far to stack? Well, the two handbooks, the antenna book, and several magazine articles varied from ½ wave to 1 wave, with ⅝ and ¾ also suggested. Take a wild guess?

As I suggested, I'm no experimenter, so let's consider.

If I feed in-phase, then the distance from one driven element to the other must be such as to cancel so the side lobes are suppressed. Thus they should be ½ wave apart. One wavelength should give huge side lobes, ⅝ seems to

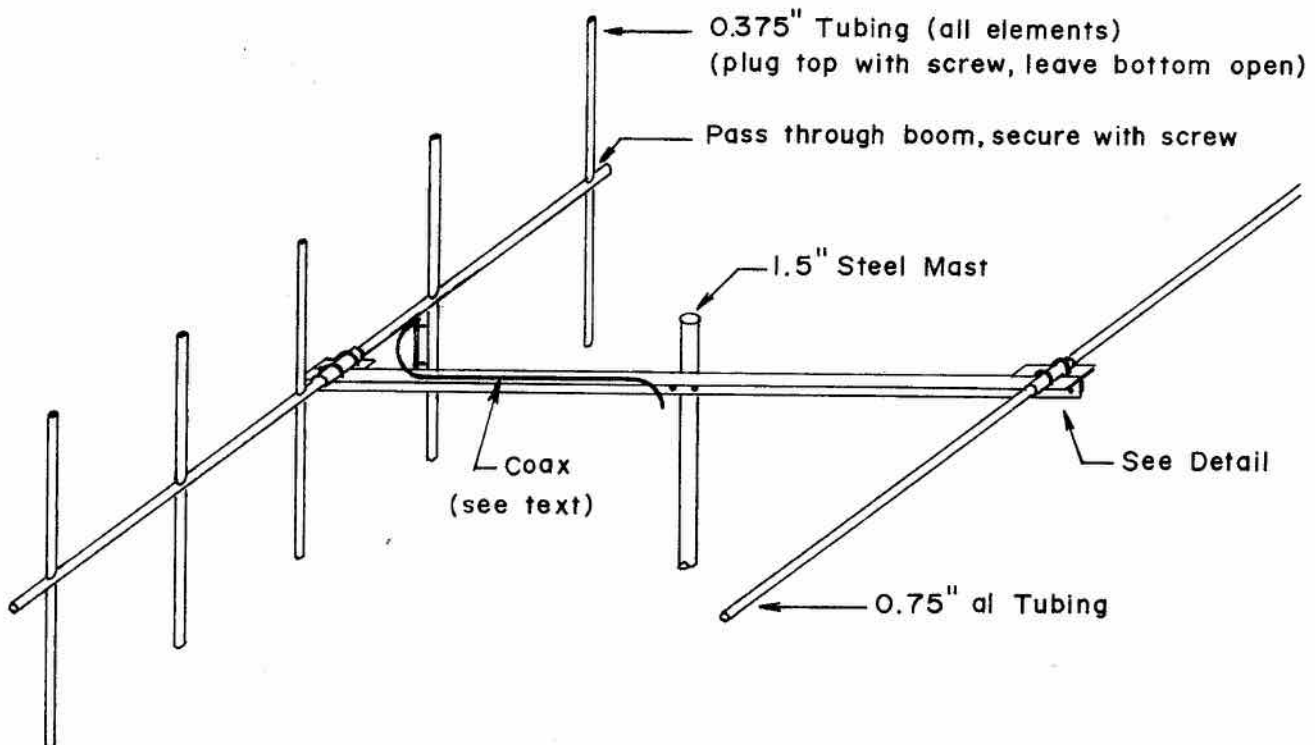


Fig. 3 Final Configuration

be left over from a mobile whip dimension, and $\frac{3}{4}$ wave leads to the conclusion that the upper antenna was driven from the lower, not by an in-phase harness. ($\frac{3}{4}$ wave of cable plus $\frac{3}{4}$ wave free space delay leads to $1\frac{1}{2}$ wave total, or half wave effecting spacing. This could maybe lead to a better antenna. Maybe someone will try it and write it up.) In front the distance to any point on axis is equidistant from either driven element, so the signal adds, giving a strong frontal lobe. At the other angles, all I have to say is that it works okay.

The free space length of $\frac{1}{2}$ wave is about 40" at 147.57 MHz ($492.f \text{ (MHz)} \times 12$). The two antennae were mounted on a length of aluminum angle 40" apart. The phasing harness was made $\frac{3}{4}$ wavelength to be able to reach the driven element, which is the same as $\frac{1}{4}$ electrically, and the whole thing was mounted in the back yard on a ladder, pointing up so the various metal objects nearby didn't affect the tuning.

Now we come to the next unexpected problem. The antennae lie well within each other's field. Thus tuning one affects the other. Also the impedance at the feed point changes.

I had each yagi tuned up before, so I marked the tuning points on the capacitors and gamma rods, and proceeded to create mayhem. Keep in mind that you have six variables here, two gamma rods, two variable

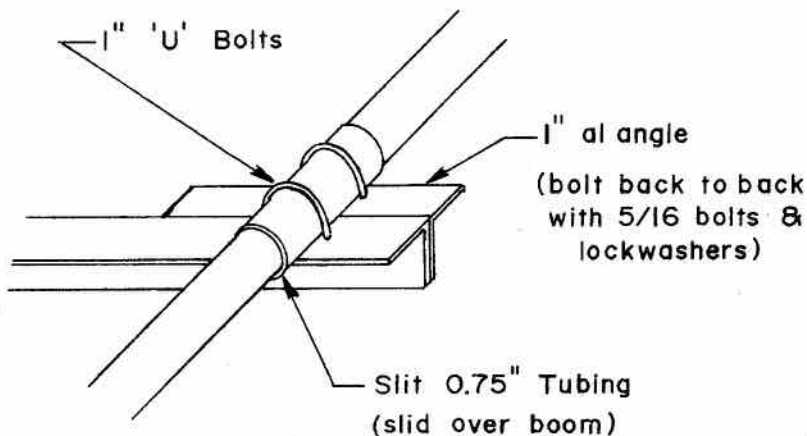


Fig. 4 Boom Support Detail

capacitors, and both halves of the phasing harness. The first think I did wrong was disconnect one series capacitor and try to tune the other antenna. The SWR was out of sight, the final was oscillating, and I couldn't make any difference with the tuning, except I found a point where the rig behaved itself. Thinking about it (I like thinking, especially in the summer sun on the patio, with a cool beer. The longer the thought the better I like it.) the reason is elementary my dear Watson. The unused quarter wave stub is open. That impedance reverses to a short. Thus the cable has a better short across it than if you connected the centre conductor to the shield! I quickly reconnected.

By patience, I found the lowest point of SWR that the capacitors would set. This had to be a resis-

tance point. I had very little trouble with the gamma rod settings, which I was surprised to discover were much shorter ($2\frac{7}{8}$ "). This implies a very low input impedance to the antenna.

All that remained was to put it on the tower. With a little help from my friends and a replacement director when the antenna got caught it is now 60 feet up the tower and looking for RTTY QSO's on 147.57 autostart.

My thanks to Ted, VE3FDN for the use of his VHF SWR bridge, and Stan, VE3IOI for his assistance on the tower.

APPENDIX

SWR of antenna was 1.5 by itself. Thus impedance was either 3.33 of 75 ohms.

With 50Ω dummy load in parallel, SWR = 2.3. Thus the impedance was either: $50 \times 2.3 = 115$ ohms or $50/2.3 = 21.74$.

By ohms law, (assuming no reactance) the antenna and dummy load in parallel are:

$$50 Z_a/Z_a + 50$$

which give one of two possible impedences

$$50Z_a/Z_a + 50 = 115$$

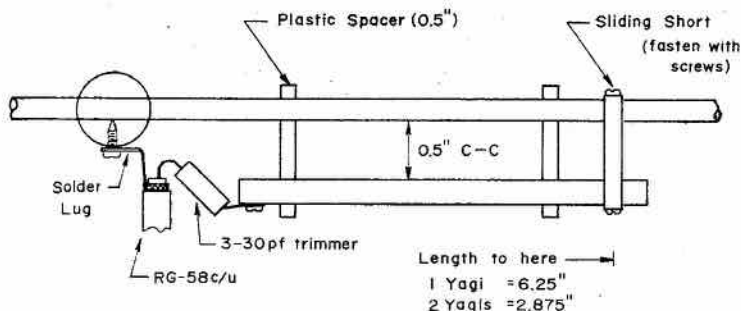
OR

$$50Z_a/Z_a + 50 = 21.74$$

which gives $Z_a = 88.46$ or $Z_a = 38.46$.

Given the problems of reading an SWR bridge to good accuracy, 38.46 seems close to 33.3 so 33.3 must be the right answer.

Fig. 5 Detail of Gamma Match



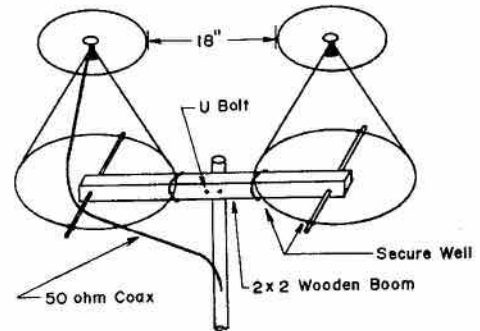
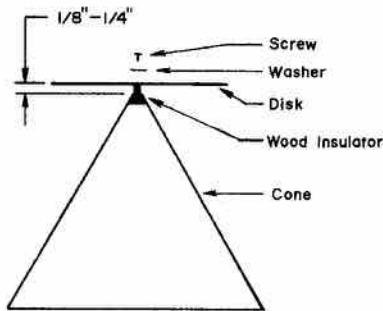
A two metre discone array

by Bob Muzzin VE3 MLM

In search of a more efficient yet inexpensive method of getting that signal out, most amateurs have dismissed the discone — either from lack of knowledge, or because of its sheer physical hulk at H.F. However, at VHF and UHF, the picture changes completely. As well, many articles have been written on various types of antennas in the popular amateur magazines and a common factor I've noted in many is a definite lack of confidence in the manufacturers' claimed specifications.

My particular location calls for an omni-directional antenna with a bit of bi-directional gain. I don't have a tower for my amateur gear (nor does the xyl want one) so any VHF antenna must go up above the T.V. antenna. At this point, t.v.i. enters the story as well. Therefore radiation must be at very low angles so as not to impair the family's favourite viewings on the "boob tube."¹ I won't say the discone solved my problem but it certainly reduced it to a more bearable level.

The first discone I assembled was taken straight from an article in QST.² The results were more than satisfactory. SWR remained below 1.4:1 across the entire 2 metre band and apparently it re-



mains that way to the 440 MHz band. In addition, the gain of the discone stays flat across its entire useful frequency range.³

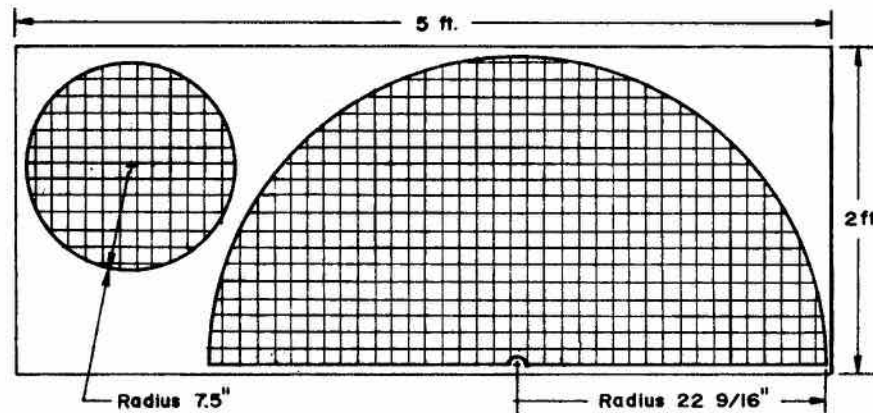
Construction details are shown in the insert. My discones were made from rabbit cage mesh with 16 gauge wire having 1 inch squares forming the grid.⁴ The supporting insulator between cone and disc is a piece of varnished hardwood shaped to fit inside the top of the cone. The distance between the disc and cone is not especially critical — 1/8 to 1/4 inch for a cut off frequency just below the 2 metre band.

Further experimentation led to an array of two broadside discones as shown in the diagram. One is fed directly — the inner conductor to the disc and the shield to the cone, with the coax running up through the cone itself.

Make sure to solder all connections and seal well with silicone rubber. The other discone is a resonant parasitic element spaced at 18 inches (between discs). Both discones are mounted on a piece of 2x2 about 40 inches long with a 3/4 x 26 inch dowel centred at each end.

Gain and directional characteristics must be determined "on the air" since any difference in construction between the cones will determine whether the parasitic cone will act as a director or a reflector. This time the SWR reached 1.5:1 at its highest point and again an excellent match was provided across the entire band.

I imagine an array of 3 discones will have even more intriguing results. It is our privilege as amateurs to find out!



¹ In some instances t.v.i. might become a problem. The discone is so broadband that a rig putting out harmonics, will have these harmonics radiated just as well as the output signal!

² QST, Dec. 1978, "An Inexpensive Multiband VHF Antenna, page 28, D. Geiser WA2ANU.

³ ARRL Antenna Book, The Discone Antenna, page 298, 3rd edition.

⁴ A finer mesh should produce a more stable feed impedance. The WA2ANU model uses 1/4 inch hardware cloth.

Check
list
for



ANTENNA MAINTENANCE

Bill Wilson VE3NR

Here is a check list you may want to keep for reference when you do your tower or mast maintenance. It is based on CSA Recommendations for Maintenance appended to Standard S37 augmented by tips I have picked up when working with riggers in my early years in radio.

While Amateurs seldom use towers or masts that are as high or carry the same loads as do commercial towers and masts, the things to be checked are every bit as important.

Your inspection should include the:

Foundation. Check the concrete for cracking, spalling and other deterioration. Check especially to see if the foundation has tilted and if any of the tower components, i.e. base plate, vertical anchor members, anchor bolts, have been bent, broken or torn as a result.

Guy Anchors. These should be checked for rusting and other corrosion that would weaken them to a depth of at least 18 inches below ground. The unseen failure of guy anchors below ground has brought many a good mast down.

Now, before you go climbing your tower to continue your inspection, get and use an approved safety belt. Also give your tower a careful visual inspection from the ground and

shake the guys to be sure some of them are not loose.

Alignment. Each leg of your tower, or the pipe if it is a pipe mast, should be checked to be sure it is straight by sighting along each member from ground level. Included in this should be a check for tower twist, especially if you are using a beam antenna and rotator.

Verticality. The tower or mast should be checked for this from two directions as close to 90 degrees apart as possible. A transit should be used for this test if one is available. Alternatively, a heavy plumb bob suspended from the top centre of the tower on a fine nylon fishline can be used on a day when there is no wind. If yours is a pipe mast then you can rig a temporary bracket on the side at the top and suspend the plumb bob from it. If the plumb bob tends to swing too much it can be hung in a bucket of water or a pot of old engine oil to dampen the motion. The above are very important as if the mast or tower is not straight and vertical the members will be prestressed and the whole structure seriously weakened.

Guys. These need to be checked for broken strands, slippage of guy grips and clips, cracked insulators and missing hardware. Turnbuckles should be free of rust and properly greased so that they can be properly adjusted. If you have to replace a guy or any part of one, (including a part underground at an anchor) be sure to rig a temporary guy while the work is being done otherwise the remaining guys may just pull the mast over.

Guy Tension In the absence of specific information on guy tensions, guys should be adjusted to not more than 10% of the breaking strength of the guy at 10°C for

masts located south of latitude 55° and 0°C for those north of latitude 55°. If there is no horizontal or "head pull" on the mast or tower, the guys should be adjusted to equal tension with the structure vertical and properly aligned. If there is a strong head pull the back guy should be of stronger material or consideration should be given to a supplementary back guy. Once the guys have been properly adjusted the turnbuckles should be fitted with preventers so they will not untwist when the guys are vibrated by the wind.

Tower. The tower itself should be examined for corrosion, cracked welds, loose bolts and rivets and for missing hardware.

Grounding. The lightning rod and ground wires on the tower should be checked for electrical continuity. It is a good idea too, to verify that the tower's grounding system is in good shape and that it is not corroded below ground and is non-existent. A poorly grounded tower or mast is a dandy lead-in to the shack for lightning!

The recommended interval for the maintenance of guyed structures is 4 years while for self-supporting structures it is 6 years. However, bearing in mind that Amateurs often use light structures, I would recommend that these intervals be adjusted to take into account the thickness of metal and guys in your structure and of their galvanizing or other protective coatings as well as of the corrosive nature of the environment. I remember living near a paper mill where the rain corroded every kind of metal with amazing rapidity. Had I owned a tower in that environment, I would have made the above checks every 2 years at least.

Studying for the Digital Ticket: Part V

John Blommers, VE6BAA

In this installation of my ongoing tutorial series on the Digital Ticket, I am not doing the question and answer routine. There is a lot of printed material on Packet Radio out there in the world that's worth reading. Much of it appears in back issues of various hobby magazines,

some in the professional literature. There are lots of books available that cover various aspects of data communications, information and queueing theory, and computers. Follows is a fairly comprehensive list of study material that should be available through your local Amateur radio club or the library. Happy bookworming!

(01) Digitized Speech Part I, QST Jan./79, pp. 30-32.

(02) Digitized Speech Part II, QST Feb./79, pp. 35-37.

(03) Pulse Modulation — A New Look at Old Theory, QST Mar./74, pp. 44-45, 63.

(04) A Prototype Pulse-Code Modulation System, QST Jan./77, pp. 24-29.

(05) Code Conversion Techniques for Digital Transmission, Computer Design Aug./78, pp. 103-111.

(06) Digital Voice Communications, Electronics World, Oct./70, pp. 27-30, 78.

(07) PCM: Advantages and Basic Principles, Electronics Sept./66, pp. 142-143.

(08) Advances in Packet Radio Technology, Proceedings of the IEEE, Vol. 6, No. 11, Nov./78, pp. 1468-1496.

(09) Marcogram. Official Publication of the Montreal Amateur Radio Club, Inc., June/78 (entire issue).

(10) An Introduction to Packet Radio, Ham Radio, June/79, pp. 64-67.

(11) The Packet Radio Revolution, 73 Magazine, approx. July/79, pp. 192-193.

(12) Packet Radio Using an 1802, Ipso Facto, approx. May/79, pp. 6-9.

(13) The New Digital Experimenter's Licence, ETI Canada, Dec./78, pp. 35-37.

(14) Digital Data Communications, TCA, Sept./78, pp. 35-36.

(15) Packet Radio in a Packet, TCA, May/78, pp. 21-24.

(16) What is Packet Radio? TCA, June/78, pp. 25-28.

(17) Packet Satellite Techniques, Computer Design Nov./79, pp. 8-11.

(18) Computercation, Amateur Radio News Service bulletin June/79, pp. 15-16.

(19) The Making of an Amateur Packet-Radio Network, QST, Oct./81, pp. 28-30.

(20) Personal Computers in a Distributed Communications Network, Byte, Feb./78, pp. 80-101.

(21) CIE Net: A Design for a Network of Community Information Exchanges Part 1: The Beginnings, Byte, Feb./78, pp. 14, 138-145.

(22) CIE Net, A Design for a Network of Community Information Exchanges Part 2: Protocols, Byte, Mar./78, pp. 152-164.

(23) CIE Net, A Design for a Network of Community Information Exchanges Part 3: Other Considerations, Byte, April/78, pp. 168-176.

(24) Five reprints of various and sundry material gathered by CARF and mailed to interested folks for \$5.00 during 1980.

(25) The packet, published by the Vancouver Amateur Digital Communications Group, 818

Rondeau St., Coquitlam, B.C., V3J 5Z2. Issues 1-6, 1980-1981.

(26) Throughput of Unslotted ALOHA Channels with Arbitrary Packet Interarrival Time Distributions, Deepak Sant, IEEE Transactions on Communications, Aug./80. Vol. COM-28, No. 8, pp. 1422-1425.

(27) A Useful Tool in the Theory of Priority Queueing, Girelio Barberis, IEEE Transactions on Communications, Sept./80, Vol. COM-28, No. 9, pp. 1757-1762.

(28) An Adaptive Retransmission Scheme for Use in a Slotted ALOHA Channel, N.B. Meisner et al, IEEE Transactions on Communications, Sept./80, Vol. COM-28, No. 9, pp. 1776-1778.

Reference Books

(01) NCR Data Communications Concepts, prepared by NCR, published by E&L Instruments Inc., 61 First Street, Derby, Conn., 06418.

(02) Computer-Communication Network Design and Analysis, Misca Schwartz, Prentice-Hall Inc., 1977.

(03) Handbook of Data Communications, The UK Post Office, NCC Publications, 1975.

(04) Proceedings of the IEEE, Special Issue of Packet Communications, Nov./78.

(05) Computer Communications, edited by Paul Green and Robert Luckey, IEEE Press, 1975.

(06) Communications Channels: Characterization and Behavior, edited by Bernard Goldberg, IEEE Press, 1976.

(07) Information & Coding Theory, Franklin M. Ingels, Intext Educational Publishers, 1971.

(08) Analog-Digital Conversion Notes, edited by Daniel Sheingold, Analog Devices Inc., 1977.

(09) An Introduction to Microcomputers, Volumes 0, 1, 11, Adam Osborne Associates, 1977, 1966, 1966.

(10) Packet Radio, R. Rouleau VE2PY & I. Hodgson VE3BEN, Tab Books (#1345), Blue Ridge Summit, PA. 17214.

BOOKS

In search of the lost current path

HOW TO TROUBLESHOOT AND REPAIR AMATEUR RADIO EQUIPMENT

by Joseph J Carr, K4IPV (published by TAB Books Inc., Blue Ridge Summit, Pa. 17214. 448 pages.

Approximately \$15.95 in Canada).

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

I've communicated, experimented, and modified, all to

some degree of success but repair — never! Well, that's not true. Once the wire from the battery pack of my Kenwood TR 2400 broke so I got out the soldering iron and managed to reconnect it in what I thought was a professional job. It took me three weeks, though, to get back on the air — that was the amount of time I needed to find the choke I had burned out. So it was with some hesitation that I opened **How to Troubleshoot and Repair Amateur Radio Equipment**.

Carr, K4IPV writes that "all electrical circuit troubleshooting involves one of two activities: 1) finding a lost, but required path

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

Carr's introduction summarizes troubleshooting in four steps: 1) determine what the problem is **not** (in other words, make sure the equipment is plug-

Building the better HF antenna

H.F. ANTENNAS FOR ALL LOCATIONS

by Leslie A. Moxon G6XN

Perhaps the one area of Amateur Radio left to us to experiment with, the design and construction of antennas, is certainly a source of much controversy. Les Moxon has been concerned with this subject for more years than he cares to count, and now he has provided the Radio Society of Great Britain with a work that will rank among its best sellers for many years.

This popularity does not come from carefully picking his way around the different views, so as to contradict no-one and to give all the chance to use his text to give credence to their favourite design. Quite the contrary.

In a carefully structured book, he first puts the theory of antennas into uncomplicated language (whilst still keeping to the proper technical terms — no baby talk here) and then goes on to put his theory into practise. Many old favourites are shown to be totally inadequate; some to be miraculous if they put out a signal at all. Yet others are shown to be superb workhorses deserving greater attention.

This is not a book written for those with the space and finances to erect full-sized beams at 100 ft., ignoring those less fortunate. It is above all, a practical book covering invisible indoor and single element antennas as well. Nor is it a book that should not grace the workbench of class B licensees.

Even if you have no intention of ever using the HF bands the theory of antennas and the constructional details are useful. One word of warning, though. This is not a book that you can just dip into if you fancy a new antenna. It is carefully structured and one should take note of the underlying theory before getting involved with particular designs. A second word of warning, once you start reading you won't want to put it down. At only 4.25 (British pounds) from the Radio Society of Great Britain, it is one of the best single investments that you can make for the enjoyment of our hobby.

BOOK REVIEW by Kevin Sadat in the Radio Society of Harrow News Letter.

ged in); 2) locate the defective stage; 3) locate the bad component; 4) if analysis techniques fail to locate a defective component, shotgun the stage (that is, replace all of the components in that stage).

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

Following the preceding topics, Carr gets down to repair: Troubleshooting the Power Supply; Receiver Rf Amplifiers and AGC Related Troubles; Receiver Detector Problems (AM, FM, SSB, PLL, Digital); Troubleshooting Distortion Problems; Troubleshooting the Dead Oscilloscope; Solid State Amplifiers; Troubleshooting Internal Noise Problems (oscillations, noisy transistors); Mobile Noise Problems (antenna and radio grounding, auto electrical systems, inductive and capacitive pick up);

Operational Amplifiers; the Phase-Locked-Loop; Servicing Untuned Amplifiers (biasing, dual supply operation, Darlington pairs); Testing Tuned Circuits; Measuring Frequency and Period; Receiver Measurements; AM and FM Receiver Alignment (phase modulation, CW, AM, FM, Nonswept and basic IF alignment); Antenna and Transmission Line Measurement; Testing Radio Transmitters; Troubleshooting FM Transceivers; Rejuvenating Old Equipment; Scanners; Transistor Substitution; and Troubleshooting Single-Sideband Gear.

Carr's text is easy to read and doesn't overburden the reader with extraneous data. While it is true that for people like me, elec-

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

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

BOOK REVIEW by Hersh Sax
VE3 JBU P.O. Box 913 Stn B,
Ottawa K1P 5P9


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

**Swap
Shop**




JOIN THE CROWD!

Join the crowd
of successful businessmen
who reach their market each month in TCA— The
Canadian Amateur. Our rates are reasonable, and we
cover the whole country... And each and every reader
has a specific interest in Amateur Radio!



For more information, contact
Don Slater VE3BID
RR 1 Lombardy, Ont. K0G 1L0
(613)-283-3570

TCA



The Canadian Amateur

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

HAWKES



Licensed since 1966, Leigh Hawkes, VE1ZN, has taken an active part in Amateur affairs since he started on the air, serving on the Dartmouth club executive and on the VE1DAR repeater group. Originally licensed as VE1AUC, Leigh has represented the Nova Scotia Amateur Radio Association at two of the CARF National Symposiums. At the last one he drew national attention to the problems which Amateurs face and will face, with cable television interference.

As senior radio technician with CN/CP Telecommunications in Halifax, Leigh has the knowledge to tackle the other problems which Amateurs will encounter

ATLANTIC

with the rapid growth of new electronic gadgets in the radio world. He started the investigation into cable TV QRM in the Halifax area and was on the team which produced a brief for the CRTC which resulted in the removal of the interfering cable signals. The brief is being used as a model by other clubs which are now taking action on this problem.

Professionally, Leigh has experience in instructing on-the-job training classes for his company; — experience which would prove useful in the current CARF proposal for Amateurs to undertake the administration of exams.

Home-brewed equipment, VHF repeater and NF CW DX are among his interests plus one which many Amateurs find interesting — short wave listening.

Situated in Dartmouth, Leigh is in a good central location to contact and visit Amateurs in the Atlantic region and as one of the "do-ers" in the hobby, he would ably represent members in his region. His experience and energy would make an excellent contribution to the work of the Federation.

PIERCEY

Keith Piercey, VO1AE, is nominated for Atlantic Region Director. Keith lives in Corner Brook, Newfoundland, and works for CBC Radio/TV there. Currently an announcer/operator, he has also had experience in sets and design, newsroom, film library, and in technical areas: the operation of audio and visual equipment, and the supervision of overseas audio for the 1976 Olympics in Montreal.

Keith is an Advanced Amateur. He is active in the Humber Amateur Radio Society, having been secretary, treasurer, and president, as well as a member of various committees. At Grenfell College in 1981, he taught the Amateur Radio course. For two years he served as net controller for the 80M net of the Society of Newfoundland Radio Amateurs.

An enthusiastic DXer, Keith has won several contests and awards.

PENNY

No information was submitted by Nate Penny VO1NP (incumbent) as of the March 1, 1983 deadline. Nate has held the position of Atlantic Director since the early 1970s.

STUBBE



Nominated as Pacific Region Director is Walter Stubbe, VE7EGR, of Westbrook, British

PACIFIC

Columbia. An electrician by trade, Walt is an active volunteer as well. Previous positions include B.C. Vice-President of the Consumers Association of Canada, member of C.S.A.'s committee on the performance of electrical products, and service on the Central Okanagan Social Planning Council.

Currently Walt belongs to the Orchard City Amateur Radio Club, and helps operate VE7OGO during field days and special events. Kelowna's class of

'82 received Walt's instruction. He obtained his Advanced Certificate in September 1981. The Stubbe station, in action in CW, SSB and RTTY, is shared with wife Donna, VE7EHO. The station includes a micro-computer, reflecting an interest in programming for Amateur Radio.

As a CARF member, Walt is concerned with promoting more CARF activities in Western Canada, as well as increasing the distribution of Amateur-related information to more Amateurs.

DRIESSEN

Dr. Peter F. Driessen VE7AB

- incumbent Director for the Pacific region since 1976
- currently works in a small hi-tech company specializing in radio and data communications
- professional musician, play piano, pipe organ and trombone
- Amateur 1970, Advanced 1971, Digital 1978
- active on all bands 1.8 - 450 MHz, CW and SSB, primarily contesting, DXing, keeping skeds and ragchewing
- operates two beacons for propagation studies (VE8AA on 28.225 MHz and VE7TEN on 28.250 MHz), involved with

- packet radio, and likes to experiment with antennas
- activities as CARF Director since 1976 include:
 - visited many radio clubs throughout the Pacific region as special guest speaker
 - created a weekly information net on two meters (VE7RPT) and acted as net control for almost two years. This net continues to be very popular.
 - created the CARF CANADAWARD for working all provinces and territories
 - created two CARF contests: the July Canada Day Contest and the December Canada Contest.
 - participated in the preparation of WARC documents

- asking for new Amateur bands at 10, 18, 24 and 900 MHz.
- instrumental in obtaining phone privileges in the 40 meter DX band 7050 - 7100 KHz in response to requests by many Amateurs. As a result Canadian Amateurs can now work the European, African and Asian stations which are not allowed above 7100 KHz.
- visits Ottawa at least twice a year to discuss Amateur Radio matters with senior DoC officials and to attend CARF meetings and symposia.
- always available for consultation by letter, phone, or on-the-air schedule.

In the May TCA:

**Amateur Crossword
Patching for the Services
Regular Columns
and much more . . .**

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.

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: Yaesu Transceiver FTDX-400 with matching VFO FV-401 and Landliner Speaker/Phone Patch, manuals included — one package, \$550.

WANTED: In good condition — Complete Hustler Mobile System using bumper mount. For both above, contact Brian Kohlsmith, VE3NEW. 519-744-2167 at 30 Sheldon Avenue North, Kitchener, Ontario, N2H 3M2.

FOR SALE: Drake R-4C receiver with 2 CW filters installed, plus FS-4 Synthesizer for continuous receive coverage, plus Drake T-4XC Transmitter with 28.0 MHZ crystal installed, plus AC-4 Power Supply, plus MS-4 Speaker, all in mint condition, complete with all Patch Cords, Manuals and Covers, in original cartons. Price \$1,400.00. Ken Smith, VE3GQV, 22 Ballantyne Ct., Islington, Ontario, M9A 1W9. Call 1 p.m. to 10 p.m.: 1-416-233-8018.

FOR SALE: Heathkit SB200 linear, new finals, \$300; Heathkit SB614 Station Monitor, almost new, final check and alignment by Heathkit, \$350; Slinky all-band antenna, new, \$35; BC 221 frequency meter, good condition, \$15. George Rilkoff, VE3KZG, 15 Anglesey Blvd., #316, Islington, Ont., M9A 3B2.

FOR SALE: Kenwood R-820, \$600.00. TS-5205, \$600.00, also Wanted TS 130V, VE2AFM. (514) 769-6537.

FOR SALE: Mobile 2 meter AZDEN PC 3000. Full memory, scan, touchtone, mobile bracket. Cost \$500, now \$250, as new. Yaesu all band communications receiver FRG7700, includes memory option, \$625. Both units less than one year old and includes manuals. Bill Lum, VE7CEL. 1149 W. 26th Ave., Vancouver, B.C. (604) 738-9606.

FOR SALE: Kenwood 830s, VFO 230, SP 230, AT 230, CW Filter, Deluxe Phone Patch, EV Mike, Spare Driver and Finals. Workshop manual as well as all Owners Manuals orig. boxes, new condition, \$1,800.00, complete package. Will sell minus Phone Patch-Mike.

Lee Singer, VE6ARM, 616-12 Ave., Calgary, Alta., T2E 1B1. 1-403-276-7537.

FOR SALE: FRG7 \$300.00, FT101E \$675.00, FL101 \$500.00, FT221R \$450.00, YC221 \$100.00, Heath HX30 six meter transmitter with a receive convertor \$150.00. All of the above in good to excellent condition. Drake TR4 noise-blanker — new in the box \$120.00. Two new Tandon 40 track disk drives in the case with a power supply for TRS-80 \$750.00. Roger Granbois VE7LB, 20352 40A Ave., Langley, B.C. V3A 2Y8 (604) 530-4551.

**For
Atlantic Director
Vote
Leigh Hawkes VE1ZN**

An Active Amateur
Willing to represent
your views
Look after your
Inquiries and complaints

**FOR AN ACTIVE
ACCESSIBLE — AMATEUR
VOTE FOR
LEIGH HAWKES VE1ZN
FOR YOUR NEXT C.A.R.F.
ATLANTIC DIRECTOR**

PAID ADVERTISEMENT

**To All Members in the
Pacific Region**

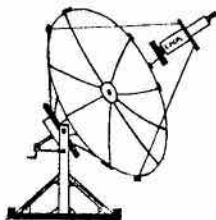
If you wish to have a Regional Director who is:

- 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



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



HY-GAIN SUPER SPECIALS!

ROTATORS:		TH3MK3S	\$ 365
CD45II	\$ 159	TH2MK3S	\$ 229
HAM IV	\$ 296	TH7DXS	\$ 639
T 2 X	\$ 369	TH6 Con. Kit	\$ 229
ANTENNAS:		BN-86 Balun	\$ 28
TH3JRS	\$ 265	12 AVQ	\$ 69
HQ2S	\$ 445	14 AVQ/WBS	\$ 89
TH5MK2S	\$ 525	18 AVT/WBS	\$ 149

Ontario residents add 7% Prov. Sales Tax. Balun BN-86 recommended for all yagi-antennas.

TERMS OF PAYMENT: Cash, VISA, MasterCard, Money Order or Certified Cheque.

Credit Card purchasers please indicate:

VISA or MasterCard, Card-No., Issuing Bank, Expiry Date, MasterCard Bank-No., Signature. Please write clearly and give full postal address, including your postal code. TNX!

SHIPPING POLICY: All items are new with factory warranty. Three Service Centers in Canada. YES, we do have all advertised items in stock. All orders received by 12:00 noon shipped the same day. We'll bill insurance, postage or freight or ship collect. New postal regulation makes it possible and you save, because we're in the middle of Canada.

WANT MORE INFO? Send \$ 1 for catalogue or call 1-807-767-3888 and ask for Ed, VE 3 LML.

Check TCA January 1983 advertisement and see part of our large stock. We are mailorder pros for 20 years and have served thousands of hams worldwide. NOW, it's your turn! TRY US!



Garant Enterprises, Dept. CF
227 County Blvd., THUNDER BAY, Ont., P7A 7M8
ORDER-HOT-LINE: 1-807-767-3888 Mon. - Friday
from 8.00 am to 10.00 pm. Prices with tax, shipping.

THE GUELPH AMATEUR RADIO CLUB VE3ZM PRESENTS

THE 9th ANNUAL

CENTRAL ONTARIO AMATEUR RADIO FLEAMARKET

AND COMPUTERFEST

SATURDAY, JUNE 4, 1983

8:00 A.M. to 4:00 P.M.

AT

“REGAL HALL”

340 WOODLAWN ROAD WEST — GUELPH, ONTARIO

ADMISSION — — — \$2.00

VENDORS — additional \$3.00

CHILDREN 12 YEARS AND UNDER — FREE

DOORS OPEN TO VENDORS **ONLY** FROM 6:00 A.M.
QUANTITY OF TABLES (3' x 8') AVAILABLE FOR RENTAL AT \$5.00 EACH

- ★ COMMERCIAL DISPLAYS, SURPLUS DEALERS ★
- ★ COMPUTER SOFTWARE & HARDWARE ★
- ★ INDOOR & OUTDOOR DISPLAYS, NO WEATHER PROBLEM ★
- ★ REFRESHMENT CONCESSION ★
- ★ DOOR PRIZES DRAWN THROUGHOUT THE DAY ★
- ★ Special Tickets On Sale At Fleamarket For Handheld ★

FOR FURTHER INFORMATION CONTACT:

AL KRIST VE3KVI
1-519-821-4337

HENRY CHRISTIANSEN VE3BYU
1-519-743-9022

OR VE3ZM P.O. BOX 1305, GUELPH, ONT. N1H 4M9

UNADILLA



Just a few of our 400 dealers
around the world.

- Argentina
Multiradio
- Australia
Scalar
- Canada
Ham Traders
Atlantic Ham Radio
- Chile
Solfersons CIA Ltd
- England
AmComm Services
- Holland
Nipshagen BV
- Mexico
La Casa del Radioaficionado
- Republic of South Africa
J. Lieberman Electronics Ltd
- Spain
North Africa Electronics
- United States
Amateur Electronic Supply
N & G Distributing

DEALERS!

Handle Unadilla/Reyco's line of full power antenna accessories.
Famous around the world. Preferred by amateurs,
armed forces and industry for 20 years.
Call Bonnie toll-free and get started!



World Famous
W2AU Balun



Antenna
Kits



“Old Reliable”
Reyco Trap

WE ALSO MAKE:

- Lo-Pass Filter 2000 W
- Quad Parts
- Baluns/Traps
- Insulators
- Antenna Wire

HAMFEST MANAGERS—

Unadilla cooperates!
Call us.

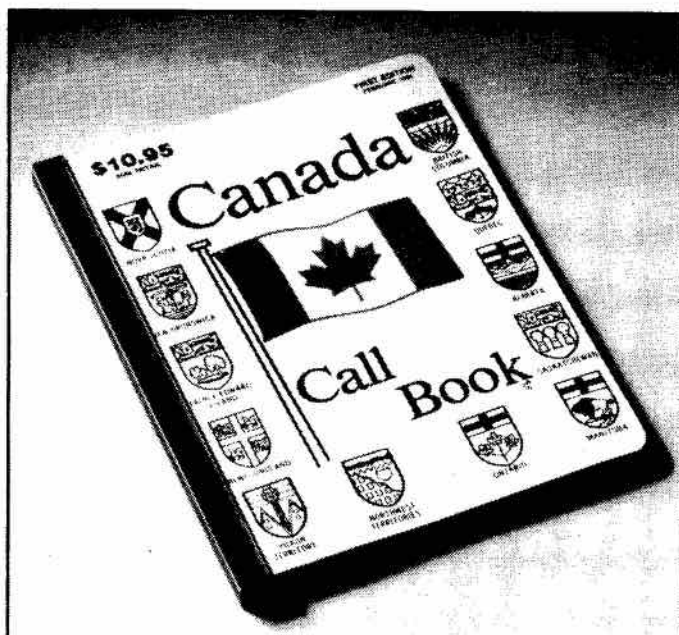
HAMS—call for our
free catalog PC-81 with
worldwide dealer list.

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



UNADILLA/REYCO

A Division of Microwave Filter Company, Inc.



**All
New
and
Available
Now!**

Canada Call Book

(FIRST EDITION, FEBRUARY 1983)

Canada's only complete listing of Amateur Radio Operators. An alphabetical listing of Amateur Call Signs of 23,454 Amateurs in all 10 provinces plus the Yukon and Northwest Territories.

Plus complete listings of all Canadian Repeaters, Band Chart, Banned Countries List, Reciprocal Licensing Agreements and Third Party Traffic Agreements. In all, over 300 pages (8-1/2" x 11") of up-to-date, useful and easy-to-read information.

- quality paper
- high-contrast lettering
- large type and spacing
- vinyl binder can be snapped off for insertion in a standard 3-ring binder

Available from:

Canadian Amateur Radio Federation Inc.

By mail order:

P.O. Box 356

Kingston, Ont. K7L 4W2



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 Pennes, 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. Luce, 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	Correct Postage
CARF National QSL Bureau P.O. Box 66 ISLINGTON, ONTARIO M9A 4X1		
Use this address NOT Box 356 Kingston		

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.

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 _____

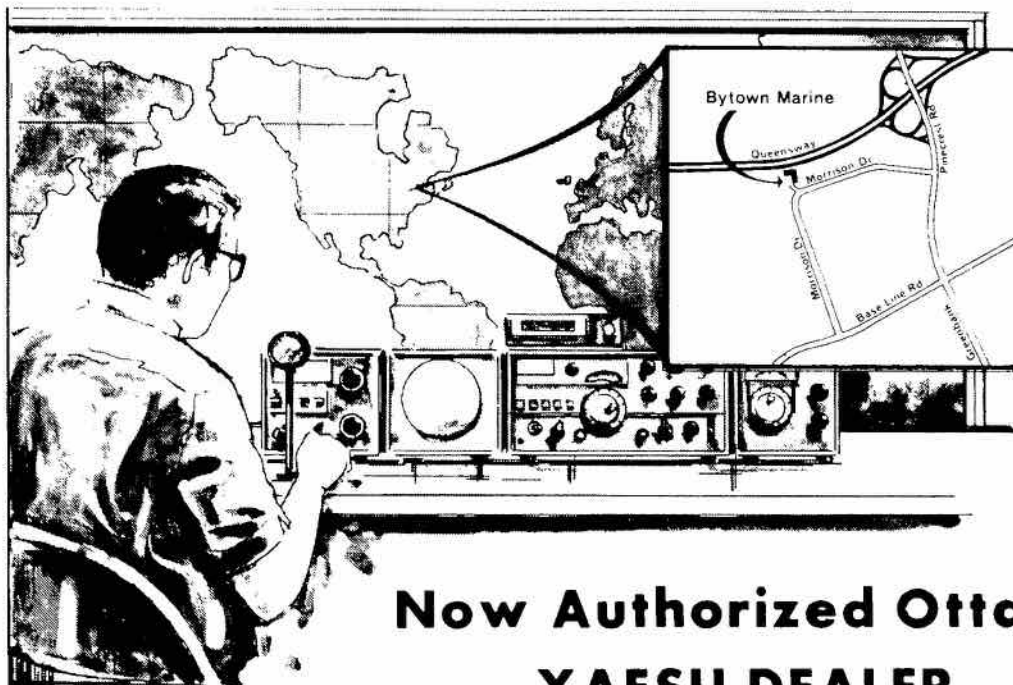
POSTAL CODE _____ DATE _____

* 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



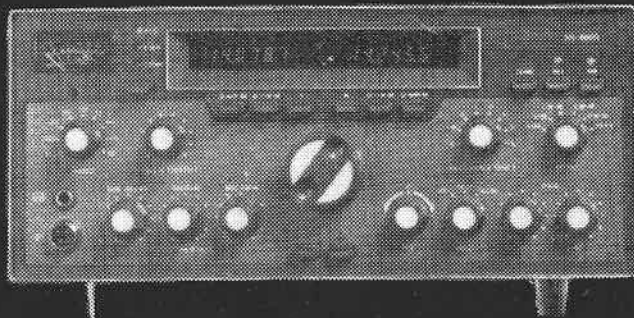
LEISURE TIME COMMUNICATIONS
SPECIALISTS AMATEUR • CB • MARINE

1140 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



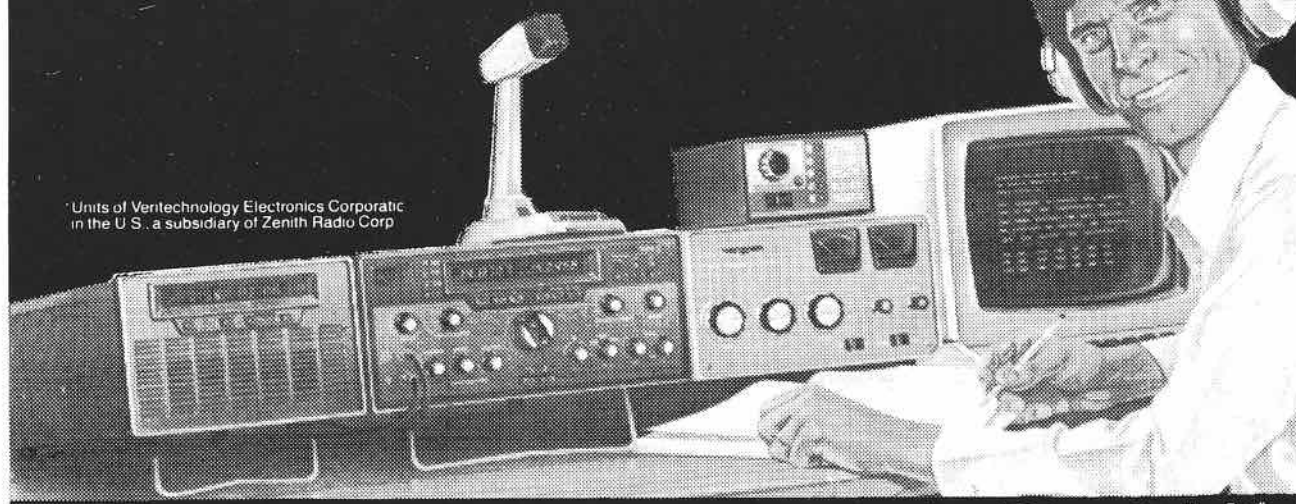
AM-429

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