

Second Class Mail Registration
Number 5073

\$1.50

TCA



SEPTEMBER
1983

The Canadian Amateur Radio Magazine

1983 National Amateur Radio Symposium

October 14, 15

Hotel Nova Scotian, Halifax, N.S.

Your comments and observations are solicited on the following and other topics of interest to the Canadian Amateur Radio Fraternity. Address them to Leigh Hawkes, VE3ZN, Box 864, Armdale, N.S. B3L 4K5.

1. AMATEUR EXAMINATIONS AND RECRUITMENT

- TRC-24
- Development of a training syllabus for clubs and individuals.
- Institution of a no-code above 30 MHz license.
- Mandatory SWL period.
- Restoration of "Experimental" status to the Amateur Service.
- Re-institution of examination fees.

2. SPECTRUM PLANNING AND MANAGEMENT

- U.S. phone band expansion(s); VE response and requirement.
- "Gentlemen's Agreements" vs legislated sub-bands.
- Banned countries list. Enforcement responsibility.
- Call signs — Opening up of additional permanent call sign blocks — e.g.: "VA", "VB" . . . "VF".
- Computer — Spread spectrum communications in the H.F. bands.
- Bandwidth limitations and requirements
- Six metres for repeater linking purposes.

3. INTERFERENCE AND REGULATIONS

- Enforcement of regulations — by DOC by Amateurs. How and what can be done to improve existing conditions where enforcement is required.
- CATVI — Possible changes required in BP-23 to tighten up leakage specifications and provide more responsive action to leakage complaints: Changes required to protect the Amateur Service (the most vulnerable service).
- Industrial noise in the radio spectrum. Latest DOC policy. Does it go far enough? Can it be adequately enforced?
- Interference to/from electronic devices; e.g., cordless telephones.

4. EMERGENCY COMMUNICATIONS

- Communications at the community level.
- Training for Amateurs.
- Tone Alert Systems; a national-international standard.
- In-band repeater linking during emergency situations.

— — VE3ZN

KENWOOD

TS-430S

HF TRANSCEIVER



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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.

TCA Newslines Number is (613) 824-3467

IT'S ALL HERE!

Canadian Amateur Reference File

Contests:
Radiosport

What is a contest?

Contests are organized operating events, usually 24 or 48 hours in length, where the general objective is to try to make as many contacts as possible. These contests are all competitions and, just like sporting events, they serve to put your skills as an operator and the competence of your equipment to the test.

Canadian Amateur Reference File

Routine Daily Operating
on the Amateur Bands

Introduction

Many new Amateurs, having just obtained their license, often wonder just exactly how it should be used. They have gained the privilege of operating a radio station within the Amateur bands. This section is written to help new

Canadian Amateur Reference File

The Amateur Bands

Radio Amateurs have been very fortunate in that we have been allocated a great deal of spectrum, in many different parts of the radio spectrum. The Radio spectrum itself is divided into many bands, with many different definitions and reasons for these divisions. One of the most general divisions of the spectrum divided bands by general propagation characteristics. Although developed over 30 years ago, this system is still valid, and commonly used today. The entire radio spectrum was divided as follows:

- Very Low Frequencies (VLF): 10-30 kHz
- Low Frequencies (LF): 30-300 kHz
- Medium Frequencies (MF): 3-30 MHz
- High Frequencies (HF): 3-30 MHz
- Very High Frequencies (VHF): 30-300 MHz
- Ultra High Frequencies (UHF): 3-30 GHz
- Super High Frequencies (SHF): 30-300 GHz
- Extremely High Frequencies (EHF): 30-300 GHz

The Amateur Radio Service has been allocated frequencies in each of these bands, except for the VLF and LF bands. Our bands have been allocated to us by international agreements, and by the regulatory authorities of our own countries. With few exceptions, Amateurs all over the world can use roughly the same frequencies. In this chapter, each of the Amateur bands will be presented, with the general usage plans of each band explained. The way of operation for each band has been put in to have been decided by a sort of general agreement that has evolved over the years. In countries like Canada, where we have regulations dividing up CW, RTTY and some modes, a good deal of these sub-bands are well known, as part of the conditions of holding a license. In most other countries, Amateurs are left to govern themselves inside their own bands. One very important influence Amateurs are made to operate under in the world operate, are the regulations Amateurs are made to operate under in the United States. USA Amateurs are the most active and numerous in the world, so their sub-band regulations provide a good guide to where most Amateur activity is. While a great deal of what will be described in this chapter is ruled by consensus, not regulation, it is important to observe these conventions, and select the frequency you plan to operate on, so that it does not conflict with other interests. Labels such as DX CIV and DX SSB are intended to show the areas where you are generally likely to find DX working on SSB or CW. Canadians are fortunate in that we are allowed to operate wherever DX stations are, with some exceptions.

The Canadian Amateur Reference File is now available for the first time!

Everything you want to know about Amateur Radio Operating can be found here.

In a totally new concept, the Canadian Amateur Radio Federation has published the Reference File as individual sections. Buy them all or one at a time... get the whole set or just the topics of your specific interest.

All Sections three-hole punched for standard binders. Start out with the Canadian Amateur Reference File, which consists of a CARF Binder and General Information Section, with lists of CARF officials, provincial societies, ITU prefixes, callbook sources, World Time Information, repeater and net directories, and more!

Now Available for Instant Delivery!

1. CARF Reference File General Information Section with Binder & Index Sheets \$9.50
2. Basic HF Amateur Antennas \$2.50
3. Contests: Radiosport \$2.00
4. The Amateur Bands..... \$2.50
5. Routine Daily Operating on the Amateur Bands \$2.00
6. DX \$2.50
7. Establishing an Amateur Station \$2.50

Further Sections to come!
8. MONITORING & REFERENCE \$4.00

Canadian Amateur Radio Federation

P.O. Box 356, Kingston, Ont. K7L 4W2
613-544-6161

FORMIDABLE LINE-UP FROM KENWOOD



TS-930S \$2349

The TS-930S is a superlative, high performance, all-solid state, HF transceiver keyed to the exacting requirements of the DX and contest operator. It covers all Amateur bands from 160 through 10 meters, and incorporates a 150 kHz to 30 MHz general coverage receiver having an excellent dynamic range.

Among its other important features are, SSB slope tuning, CW VBT, IF notch filter, CW pitch control, dual digital VFO's, CW full break-in, automatic antenna tuner, and a higher voltage operated solid state final amplifier.

TS-830S \$1249

Now most Amateurs can afford a high-performance SSB/CW transceiver with every conceivable operating feature built in for 160 through 10 meters (including the three new bands). The TS-830S combines a high dynamic range with variable bandwidth tuning (VBT), IF shift, and an IF notch filter, as well as very sharp filters in the 455-kHz second IF. Its optional VFO-230 remote digital VFO provides five memories.



TS-530S \$989

The TS-530S SSB/CW transceiver is designed with Kenwood's latest, most advanced circuit technology, providing wide dynamic range, high sensitivity, very sharp selectivity with selectable filters and IF shift, built-in digital display, speech processor, and other features for optimum, yet economical, operation on 160 through 10 meters.

TS-130SE \$939

An incredibly compact, full-featured, all solid-state HF SSB/CW transceiver for both mobile and fixed operation. It covers 3.5 to 29.7 MHz (including the three new Amateur bands!) and is loaded with optimum operating features such as digital display, IF shift, speech processor, narrow/wide filter selection (on both SSB and CW), and optional DFC-230 digital frequency controller. The TS-130S runs high power and the TS-130V is a low-power version for QRP applications.



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Not all items listed stocked in depth, many one of a kind.**YOUR ONE STOP SOURCE FOR VACUUM CAPACITORS**

Jennings Vacuum Capacitors:		JCS 250pf, 10Kv, fixed	\$15.00
VCCE 250pf, 20Kv, new fixed	\$25.00	UCS 375pf, 10Kv, variable	\$42.00
UCSVH 35pf, new variable	\$36.00	UCS 300pf, 7.5Kv, new variable	\$42.00
UH 75pf 20Kv, variable	\$25.00	UCS 300pf, 7.5Kv, variable	\$36.00
UCS 200pf, 15Kv, new variable	\$36.00	UCSF 400pf, 15Kv, new variable	\$60.00
UCSF 250pf, 10Kv, variable	\$36.00	UCSX 700pf, 7.5Kv, new variable	\$75.00
JCS 500pf, 10Kv, fixed	\$25.00	UCSXF 1500pf, 10Kv, variable	\$100.00

Phone/mic sets. New, sealed boxes N.E. type consisting of headband, 15A single earphone, 52 boom mic, 6 ft. cable, on/off switch and double phone plus

\$4.50

Foundation units for scope. Panel 6 x 7½, chassis 11 deep. With 3RP1 CRT, shield and position, intensity, focus controls. No power supply. Made by N.E. with copy of schematic . . . \$10.00. Some units with CRT burn spots @ \$5.00

Turns counters, Groth type front of panel mounting, 2 x 4. Large 2¼" fluted knob with 3 inch skirt. ¼ inch shaft.

\$5.00

Receivers, SP600, last of current stock. Require cleaning and some mechanical repair.

While they last only

\$75.00

Test sets, military TS62A. Aluminum metal case 18 x 6 x 10, removeable cover. Contains tuneable cavity, two N coax connectors, 3" Weston meter, attenuator, cables etc.

\$11.00

Tuneable bolometers made by HP, Model 1475B.

\$25.00

Slide screw tuners by HP, Model X870A, 8.2-12.4Ghz. Used to correct standing waves in systems. Corrects to 1.02 or better with mismatch as high as 20:1. Micrometer head for probe insertion

\$25.00

Military UPM 12A test sets. 11 x 11 x 18 aluminum chest, hinged cover, for measuring VSWR in the 10GHz range. One section with 4" VSWR meter removeable. Power supply (110v 60Hz) remains in chest. Accessories in lid with schematic

\$35.00

Fluke 800 series VTVM. Measures by nulling voltage on zero centre 4" mirrored meter. Decade switches for readout. Extremely accurate. Size 10 x 12 x 13 deep, portable case.

\$15.00

Large Olivetti Copia III photocopy machine, uses roll paper plus processing fluids. Large lens, mirrors, lots of motors, relays etc. Pickup only suggested.

\$15.00

Military UPM-4 test sets used for IFF equipment. Excellent condition. Consists of three units. 3" oscilloscope, wave meter, signal generator etc. in one cabinet 22 x 18 x 18 deep; power supply 22 x 9 x 18 deep and aluminum chest with cables, accessories, manuals etc.

\$75.00

Transco RF coax relays, Model 14300. Three pole, 4 throw, type N fittings. Operates on 28VDC. Each circuit operates with its own 28V solenoid. 1 ckt energizes to open, remaining 3 require energizing to close.

\$25.00

Roller coils, 34 turns of 14 wire on 6½ x 3½ coil, gear driven slider. Overall 9 x 6 x 4. Removed from equipment. Coil form, end plates appear to be good grade brown plastic/bakelite

\$10.00

Plessey single channel HF rcvrs, Model PR51C. Uses plug in coil assemblies to cover the range 1.6-24MHz in 6 bands. Xtal oven, rack mounting 19x5x13 deep. With one set of coils, no selection as to bands. Copy of manual can be supplied with set purchase at \$5.00. Sets

\$20.00 each

All items used surplus unless indicated otherwise. FOB Smiths Falls. Ontario residents include 7% Sales Tax. Any queries phone or write. Save on calls, phone anytime before 8AM or after 6PM and take advantage of reduced rates.

★ ★ HOBBYTRONIQUE inc. ★ ★

Formerly: D C Electronics



Dear friends,



September is the first anniversary of HOBBYTRONIQUE INC. (formerly D C ELECTRONICS), and I would like to thank all those amateurs with whom we have had the pleasure of doing business. In our first year of operation, I don't think we have had one unhappy customer! On the other hand, our customers have also been good to us. I think perhaps that Amateur Radio is the only field where business could be such a pleasure.



Expansion is our priority in our second year. We opened a new retail store in Montreal, and it should be in full operation for the first of August. We are also expanding our product line to include most of the major manufacturers of amateur radio equipment.



In addition, we now carry a complete range of Satellite Earth Station systems starting at \$2995 for a basic system using a 10' antenna.



Once again, thank you for a successful first year, and I look forward to an even better second year.



- 73 -



Mel Martin,
VE2DC.



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INTRODUCTION

We have been supplying crystals for nine years to commercial and private customers in Canada, many of whom have been with us the whole time. As a Canadian company, we hope to develop any crystal business which might go outside the country for want of knowledge of our service.

Most of our work is with repeat customers, for whom our regular delivery is 2 - 3 weeks on average, for custom crystals. There is no premium for rush orders, and crystals in stock are sent out immediately.

HOW TO ORDER

Give us at least the information suggested in the sample order below. If we need more information, we will request it. In most cases, this is enough to proceed.

QTY	XTAL FREQ	T/R	CARRIER	Make and/or model Additional data
1		T	146.34	INOUE IC22
1		R	146.94	"
3		T	157.845	GE ROYAL EXEC
3		R	152.585	"

PRICING

If the pricing is obvious, total the amount, add \$1.00 for First Class mail, and send in your money order, or cheque, with the order.

If there is any doubt about the formula and/or price, send in the order without the money. We will price the order and inform you by return mail. In the meantime, your order will be made up and shipped on receipt of your payment.

In the example, the amateur band crystals are \$8.00 each, and the custom or commercial crystals are \$9.50 each. The total is \$73.00 plus \$1.00 = \$74.00. Ontario residents add 7% sales tax.

1983 PRICES

	HC-6/U	HC-25/U
<u>AMATEUR</u>		
Amateur bands	8.00	8.00

CUSTOM

6 - 55Mhz	9.50	9.50
5 - 5.9	10.55	12.75
4 - 4.9	11.60	16.95
3 - 3.9	12.75	16.95
Below 3	16.95	-
55 - 100	12.75	12.75

MODULES

Mocom 70	31.75
Mocom 35	24.85

REWORK MODULES to new frequency

Generally	19.95
More difficult	
MT500, MX, Wabco	29.95

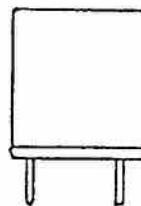
COMMON HOLDERS

MIL Designations

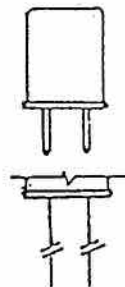
3/4 x 3/4 x 5/16
approximately
HC-6/U 050 pins

HC-17/U .093 pins

HC-33/U wire leads



1/2 x 3/8 x 1/8
approximately
HC-25/U .040 pins



HC-18/U wire leads

The above holders accommodate the majority of requirements. We list requirements for most sets.

new Amateur SWL Commercial Antennas

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2 - 30 MHz Model AC-2-30

• SWR Max 2:1, 1.4:1 average from 2 - 30 MHz
 • Can be installed in approximately 80 foot space
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 • Can be used to 1.8 MHz with small loss
 • Handles 1 KW, 2 KW PEP ICAS
 • Higher power models available on special order. Contact your dealer or factory.

\$239.95

CONTINUOUS COVERAGE ANTENNA
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 • Complete assembled. Balun terminated with standard SO-239 connector
 • Only 90 feet long
 • Power capability 1 KW - 2 KW PEP ICAS. Higher power model is available on special order.
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Model ASW-49 SEVEN BAND TRAP ANTENNA

• Only 40 ft. long
 • Resonant on the 11, 13, 16, 19, 25, 31 & 49 meter bands
 • Patented high efficiency traps
 • SO-239 connector for coax feed

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PATENTED

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Hear more stations with this outdoor antenna!
 Fully assembled - not a kit!

- 100 ft. long
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- 50 ft. insulated lead-in wire
- 25 ft. nylon guy rope
- insulator



Model AV-25 SIX BAND VERTICAL
 for 80, 40, 30, 20, 15, 10 meters with NO TRAPS

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- Only 25 ft. high
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- Only loading coil is high up on 80 M element
- Radials required

AR-25 Radial System for AV-25 antenna. Four multiwire radials that are resonant on each of the six bands. \$31.95

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Ideal for Apartments - Motels - Vacations

- Quick simple installation
- Operates on 2, 6, 10, CB, 15, 20, 30 & 40 meters
- New heavy duty 40 meter coil
- Only 22 1/2 inches long - Weighs less than 2 lbs.
- Complete with coil coils and 10 foot RG-58 Coax - Whip extends to 57 inches
- Handles up to 300 watts
- VSWR - 1.1:1 when tuned

BW Amateur Antennas for Limited Space

Model AS-80/SHORT 80-40 DIPOLE, INVERTED VEE
ONLY 60 FT. LONG!

\$94.95

- Low SWR on both bands
- No traps, weatherproof
- Only 30 feet each side of center connector
- 2 KW PEP

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 25 FT. NYLON GUY AT EACH END

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120 FT. LONG!

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2:1 Bandwidths
 160 - 30 KHz
 80 - 110 KHz
 40 - 300 KHz

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 40M TRAP
 LARGE LOADING COIL
 END INSULATOR

Get on 160 with this efficient antenna. It's less than half-size!



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New

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- 12VDC Operation
- Fluorescent Display

ICOM is proud to announce the most advanced amateur transceiver in communications history. Based on ICOM's proven high technology and wide dynamic range HF receiver designs, the IC-751 is a competition grade ham receiver, a 100KHz to 30 MHz continuous tuning general coverage receiver, and a full featured all mode, solid state ham band transmitter, that covers all the new WARC bands. And with the optional

internal AC power supply, it becomes one compact, portable/field day package.

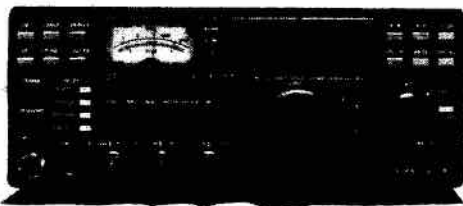
- 105dB Dynamic Range
- 70.4515MHz First IF
- Deep IF Notch
- RIT With Separate Readout
- Low Noise Preamp
- Low IMD Transmitter
- 100% Duty Cycle
- 12VDC Operation
- Quiet Relay Selection of LPFs
- Monitor Circuit
- Full QSK
- Dual VFO With Data Transfer
- 32 Tunable Memories
- Internal Memory Backup

\$ 1794
\$ 1999
(incl. p.s.)

Scanning • Digital I/O For Computer Control • Mode Scan • Full Function Metering • Squelch • FM • Multicolor Fluorescent Display/Options (external)

Options: Voice Frequency Readout. External frequency controller, external PS-15 power supply, internal power supply, high stability reference crystal (less than 100Hz, -10°C to +60°C), HM12 hand mic, desk mic, filter options:
SSB: FL30
CWN: FL52A, FL53A
AM: FL33

IC-271A 2 Meter/FM/CW/SSB



\$ 896

- 25 Watts
- Built in Subaudible Tones
- 32 Memory Channels
- 12VDC
- Internal Power Supply Option
- Fluorescent Display

ICOM presents the most advanced all mode, two meter base station available today... the IC-271A, 25 watts of power from 12VDC or from 117VAC with the optional internal power supply/32 full function memories/multimodes/subaudible tones/PLL locked to 10Hz/high visibility, multi-color fluorescent display/RIT readout/scanning/dual VFO's new size.

- 25 Watts
- 32 Full Function Memories that hold frequency, offset, offset direction, mode, and subaudible tone. Frequency, tones and offset are selected by rotating the main tuning knob. 7 year lithium memory backup.
- Subaudible Tones are selected by rotating the main tuning knob and may be stored into memory.
- PLL locked to 10Hz
- ICOM's new high visibility, multi-color display gives easy to read at-a-glance display of frequency, mode, offset, VFO in use, memory channel, and RIT offset direction and amount.
- Scan Memories, programmable sections of the band, or modes.
- Mode-5 Scan is a mode scan and can be used to scan memories with a particular mode.
- Dual VFOs. ICOM's dual VFO system is now even more versatile with the ability to transfer from memory to VFO.
- New Size. Only 11¼" W x 4¾" H x 10¾" D the IC-271A is styled to look good and engineered for ease of operation.
- Computer Interface.

IC-471A 430 — 450MHz/FM/CW/SSB



\$ 1025

- 430 — 450MHz
- Fluorescent Display
- 32 Memories
- PL Tones
- 12 VDC Operation

Full 20MHz coverage 430 — 450MHz.
32 Memories. Each memory holds frequency, mode, offset direction, offset frequency and subaudible tone for easy return to an oft used frequency or for remembering a new repeater or simplex frequency.
Subaudible Tones. Subaudible tones are selected

by rotating the main tuning knob. These tones may then be stored into memory along with the frequency, offering ease of operation.

Phase Lock Loop. Extremely low noise and good signal to noise ratio PLL design allows the IC-471A to lock to 10Hz for extreme accuracy.

New Display. ICOM's new easy-to-read two color fluorescent transceiver situation display shows frequency, mode, offset direction, VFO in use, memory channel, and RIT offset direction and amount.

Scanning. Scanning of memories, programmable band scan, and mode scanning are available and easy to use.

New Size. Only 11¼" W x 4¾" H x 10¾" D the IC-471A is styled to look good and engineered for ease of operation.



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MC-60A Desk Mike.....	109.00
TS-830S HF Transceiver.....	1229.00
TS-530S HF Transceiver.....	979.00
TS-130SE HF Transceiver.....	899.00
TS-430S HF Transceiver.....	1199.00
SP-230 External Speaker TS-830.....	89.00
VFO-230 Matching Digital VFO.....	419.00
VFO-240 VFO for either 830S-530S.....	239.00
PS-30 pwr supply 130S.....	189.00
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TR-7930 2 mtr. mobile FM 25 watt.....	499.00
TR-7950 2 mtr. mobile FM 45 watt.....	549.00
TR-9130 2 mtr. mobile all mode 25 watt.....	695.00
TR-2500 2 mtr. handheld.....	399.00
SMC-25 Speaker mike for TR-2500.....	45.00
TR-7730 2 mtr. mobile 25 watt.....	449.00
R-600 communications receiver.....	519.00
R-1000 S.W.L. receiver c/w/clock.....	639.00
R-2000 Super deluxe S.W.L. radio.....	795.00
HC-10 Digital world ham clock.....	179.00
P.C.1A & PC-1 phone patch.....	89.00
MC-50 50K & 500 ohm desk mike.....	59.00

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R-600 as new \$439.00 Wilson



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 610.00	449.00
MPK-3 TA-33 jr. conversion kit...	129.00
RV*4C & RV-8C 10-80 mtr. vertical	169.00
D1-6 6 mtr. ground plane.....	79.00
D1-2 2 mtr. ground plane.....	49.00
Mosley BW-144 2 mtr trunk mount % antenna complete mount, spring, etc.	55.00



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
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Features and Specifications

The HD-73 rotator incorporates all the features that contribute to strength, durability and ease of installation without special tools or equipment as well as simple foolproof operation of the control box. The HD-73 rotator is constructed of heavy duty aluminum castings selected for their excellent strength capability and favorable weight characteristic, contributing to ease of erection and resistance to severe wind and adverse weather conditions for antennas up to 10.7 sq. ft. of wind load area. The HD-73 unit is factory lubricated with a lifetime high quality lubricant that will withstand temperature ranges of 120 degrees Fahrenheit to -20 degrees Fahrenheit.

The HD-73 mast support bracket design permits a centering procedure for in-tower application without shims or difficult trial and error adjustments and the base design permits easy four bolt in-tower mounting without spacers. The mast support bracket design also provides a positive drive no-slip option. The HD-73 has an improved automatic brake action for simplified operating procedure which also reduces risk of antenna damage by sudden stops imposing high inertia stresses on the antenna, tower and rotator. The HD-73 control unit features DUAL-SPEED rotation with one five-position switch. This presents a one revolution per minute speed for rotating over an extended arc and a slower speed for adjustment of, say, several degrees one way or the other for fine adjustments for the best signal on receiving and transmitting.

Max. vertical load - 1000# (vertical balanced)

Max. wind load bending moment - 10,000 in-lbs. (side-thrust overturning)

Starting torque - 400 in. lbs.

Brake torque (windmilling) - 1,600 in. lbs.

Hardened steel drive gears

Bearings - 100-3/8" diameter (hardened)

Mast mounting size range - 1-3/8" O.D. to 2-1/2" O.D.

Cable - 6 conductor

Voltage input - 117 volts A.C. 60 hertz
± 12 volts

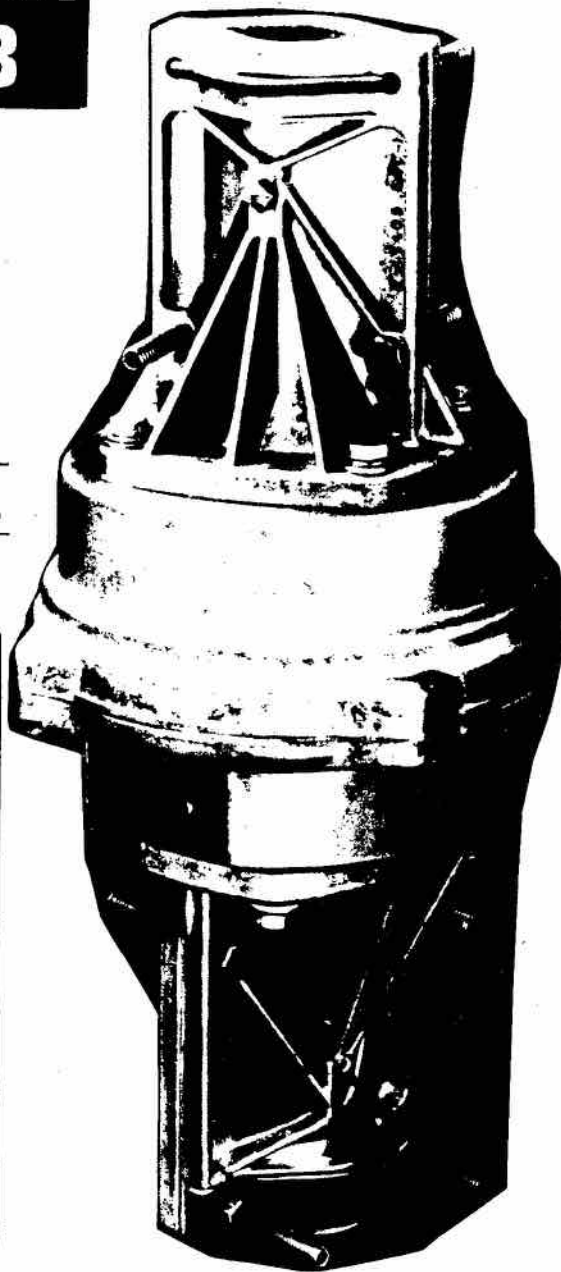
Shipping weight - 17 lbs.

Motor - capacitor split phase, reversible

Motor voltage - 20 volts A.C.

Meter - D.C. D'Arsonval, taut band

Meter scale - S.W.N.E.S. and incremental scale



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*The Model 800C does not receive SSTV pictures. A scan converter is necessary for this.



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SOCIETY OF
ONTARIO INC.

1983 RSO CONVENTION September 23, 24, 1983 Inn on the Park, Toronto

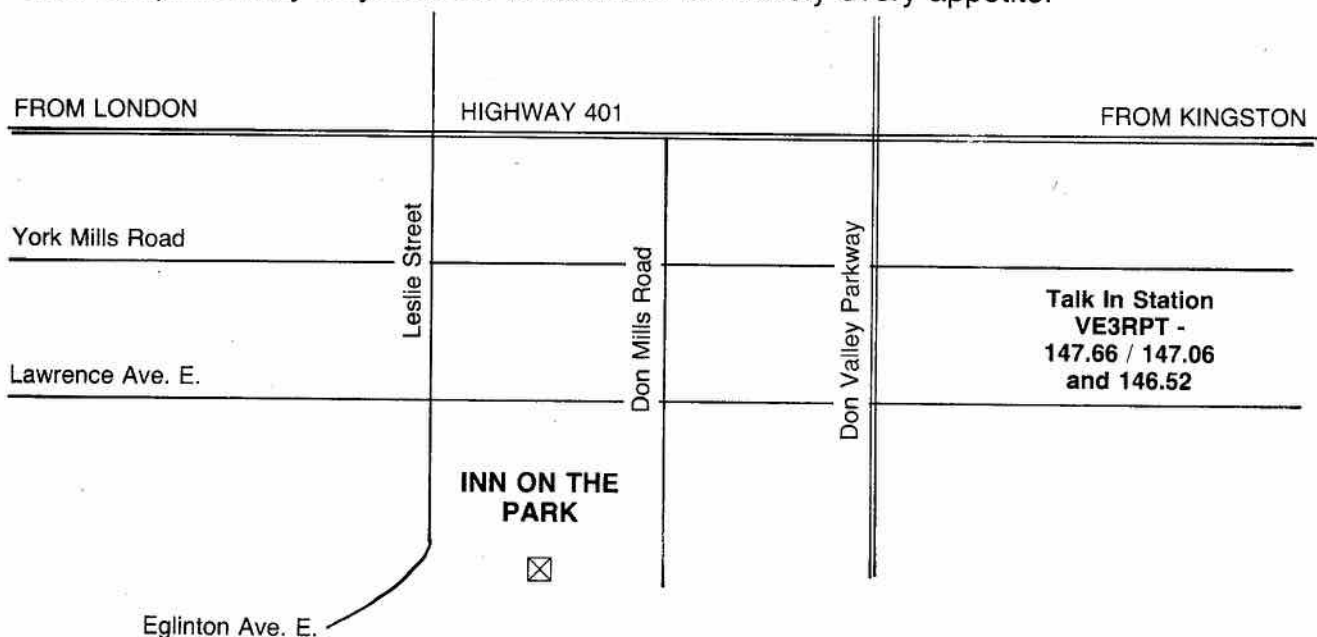
Reserve the week-end of September 23 to attend the 15th Annual Radio Society of Ontario Convention. The site of this year's festivities is Toronto's internationally known Inn on the Park.

- Commercial dealers displays — we expect several major amateur radio equipment dealers to set up displays with the latest equipment, often sold at special convention rates.
- Technical forums — we are planning a variety of different talks, including South Pacific Expeditions, Amsat's latest Phase III developments and other Oscar news, Packet Radio, interfacing your home computer with your amateur station, and computer controlled repeaters.
- Throughout the day, drawings will be made for the smaller prizes, and at the banquet the major prize draws will be made.
- Friday night has been set aside as a chance for eyeball get togethers. No formal program is planned for this night, however a cash bar will be available.

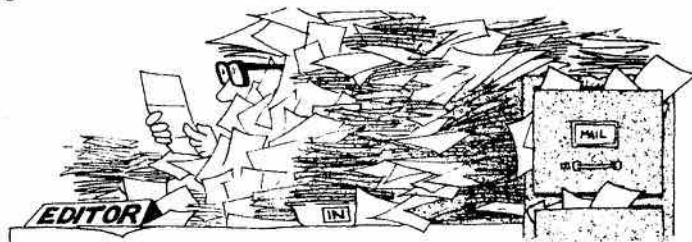
Saturday Special Ladies Luncheon by the Trilliums

- Saturday night banquet — an enjoyable evening is being planned with good food, music and dancing.

The Inn on the Park is a resort hotel situated adjacent to over 500 acres of parkland right in Toronto. Enjoy the peak of autumn colours, with swimming, racquet sports, walking trails and complimentary bicycles. Six restaurants will satisfy every appetite.



LETTERS



DOC TO CONTINUE EXAMINS

The lack of any widespread interest in the DOC request for input on possible Amateur participation in the Amateur exam procedure has led the Department to conclude that "the majority of the Amateurs who chose to offer comments are in favor of the Department continuing to administer the Amateur examinations", according to a letter to CARF earlier this summer.

While the number of replies to the DOC's questions was a poor effort on the part of the 22,000 licencees in the Amateur Service, the quality of the thirty-two comments received by Carf, was fairly good. Too many, however, digressed from the questions asked about the exam procedures and go all wound up with unsolicited comments on the exams themselves. In May, the Department had already set up a meeting with CARF and other organizations for September to discuss the examination questions. The objectives were to determine if they are in the proper certificate category, to delete inappropriate and obsolete questions, consider new questions and to ensure that they conform with the new syllabi outlined in the new TRC-24 bulletin. (Incidentally, from present indications, it should be available early this fall.)

Although the outcome of the matter has been that DOC will not "proceed any further with the proposal that Amateur volunteers conduct examinations or portion of examinations", it has noted "a general willingness for Amateurs to assist departmental examiners with the administrative aspects of the examination process (handing out papers, set-

ting up locations, organizing facilities, etc." and DOC "would be pleased to accept such help and have advised (its) regional offices that individual Amateurs may be contacting (its) district offices in this regard".

While it is unlikely, judging from the original response to the questionnaire, that DOC offices will be besieged by eager Amateurs it might be an idea to have local clubs undertake to locate volunteers and then have their executives advise DOC to call them if assistance is required. This would help to ensure that the district offices were not bothered if they did not require any assistance and if they did, that they would have a reasonable assurance that the Amateur volunteers were responsible and capable.

The letter from DOC is reproduced in full below.

— VE3 CDC

June 13, 1983

Dr. Mr. Slater:

This letter is to acknowledge receipt of your submission of May 27, 1983 that provided the comments of the Canadian Amateur Radio Federation and a recommendation on the subject of amateurs becoming involved in the amateur certificate examination process.

The Department has reviewed all of the submissions received from individual Amateurs and those received from the two national Amateur organizations. Our study indicates that the majority of the Amateurs, who chose to offer comments, are in favor of the Department continuing to administer the Amateur examinations. Consequently, the Department will not

be proceeding any further with the proposal that Amateur volunteers conduct examinations or portion of examinations. We note, however, a general willingness for Amateurs to assist departmental examiners with the administrative aspects of the examination process (handing out papers, setting up locations, organizing facilities, etc.). We would be pleased to accept such help and have advised our regional offices that individual Amateurs may be contacting our district offices in this regard.

Your submission also included a number of suggestions about the examination questions. These will be given further study by the Department and if necessary they may be discussed at our planned meeting in September. As you know, the meeting has been rescheduled to September 17 at 9:30 a.m. in Room 1210, Journal Tower North, 300 Slater Street, Ottawa, Ontario. Since our banks contain approximately 400 questions it may be necessary to extend the meeting to the 18th.

It is evident from the contents of your submission that you and your members spent a great deal of time and effort on its preparation. Such input enables the Department to respond in the best interests of the Amateur service. On behalf of the Department I would like to take this opportunity to thank the Federation for its submission on the volunteer proposal.

Yours sincerely,

M.K. Nunas,
Manager,
Spectrum Management
Operations Division,
Telecommunication
Regulatory Service.

expect me to utilize the CARF QSL service shortly.) I'm enjoying the hobby immensely.

Lastly: I would like to thank the following instructors from the South Pickering Amateur Radio Club for their time and patience — Tom Rosebush VE3 KZE, Pat O'Neal VE3 MKK, Bob Young VE3 ETE, Bob Skelsey VE3 BFS.

Regards

Ken Pyke
VE3 OGM

BURNABY CLUB REBUKED

Dear Editor:

I read with a good deal of amusement the Burnaby Club letter, June issue of TCA, indicating their *conditional* support for CARF.

Since 150 Amateurs represent less than .7 of 1% of current Canadian licenses, I question their use of the term "substantial". Their remarks concerning a "united front" seems better suited to a Yasser Arafat address. Apparently we have not yet ratified what "Canadian" means. I fail to see, that a Connecticut based group can represent the best interest of Canadian Amateurs. It is not unreasonable to suppose that the contingency of CRRL membership to receive QST is the "raison d'être" for swelled CRRL ranks.

If we must have two conflicting Amateur factions in Canada, let us at least follow established political dogma and base one in Vancouver and the other in Ottawa and argue about Western Canada Amateurs having the short end of the stick.

This would be no more fatuous, than the present CRRL/CARF situation.

Let's keep it ALL Canadian.

Henry Traue
VE7 BYP

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

BIG GUNS, LITTLE PISTOLS AND THE LOST CAUSE

Are you a BIG GUN? Now a lot of intangibles go into designating an Amateur as a Big Gun or even a Little Pistol. If you're not quite sure if you or someone else belongs in one of these categories, this guide may be of help. In fact, it may make a dandy item for a club meeting to see how many guess who really is who! Thanks to K2VV, KB0HA, WB6 BJH and the Northern California DXer.

BIG GUN

Clears throat in a pileup and receives a 40 over 9 report.

LITTLE PISTOL

Is last W0 to get through and is 40 minutes late for work.

LOST CAUSE

Wastes 4 hours calling with no luck, finds cat strangled by irate neighbour with TVI.

Is immediately called by name by DX station.

Usually has to spell name 4 times phonetically.

Is called colorful names by DX station for interrupting phone patch.

Writes critiques of technical articles in Ham Radio.

Had a letter to the editor printed in QST once.

Has a lifetime subscription to 73.

Knows beam heading of every DXCC country.

Knows roughly where Japan and Europe are.

Turns 2 meter beam toward the other guy's house when working him through the repeater.

Has made high claimed scores list in last 8 ARRL DX contests.

Was highest scoring Novice in section in first ARRL Sweepstakes.

Tied for fourth place in NYS in last Rhode Island QSO party.

Speaks 14 languages well enough to get a QSL.

Picked up a few dirty French words in WW II; uses them to insult others on 75 mtrs.

Has been spelling "Amateur" wrong all his life.

Receives QSL shipments from bureau via UPS.

Receives QSL shipments by first class mail.

Still gets QSL samples from little print shop.

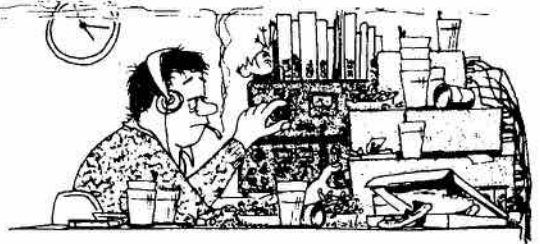
— (As reprinted in the CLARION, the Canadian Ladies' Amateur Radio Association)

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TCA NEWSLINE
(613) 824-3467
Anytime!

CONTEST

by Dave Goodwin
VE2 ZP3
1-285 Metcalfe St.
Ottawa, Ont. K2P 1R8

SCENE



Contests Calendar

- Sept. 10-11 European DX SSB
17-18 Can-Am SSB
17-18 Scandinavian
Activity CW
24-25 Can-Am CW
24-25 Scandinavian
Activity SSB
- Oct. 1-2 VK/ZL/Oceania SSB
8-9 VK/ZL/Oceania CW
15-16 CLARA AC/DC
15-17 CARTG RTTY
- Nov. 5-7 ARRL SS CW
- 19-21 ARRL SS SSB
26-27 CQ WW DX CW

I apologize to all for being so poor at keeping you supplied with contest information over the past few months. A number of non-Amateur Radio related things have taken precedence, (yes there is a world outside) but at last things are somewhat more ordered, and I should be able to get a column into every issue from here on in.

As you may have noticed above, my address has changed, and I have moved across the river to Ottawa, where I will be for a few years at least. As well, I have condemned myself to living in an apartment building, which is hardly conducive to building competitive antenna systems, but as the building superintendent is quite a gullible fellow I should be on the air with some sort of antenna for some of the fall contests.

As you have doubtlessly read in this and the summer issue of TCA, the annual CAF Symposium is going to be held in Halifax on 14-15 October. Among the issues to be discussed three are of interest to Contesters. The expansion of the USA 20 metre phone

band has had some sizeable impact on the world outside the USA, but so far this move has met with no palpable response. Halifax will give us a good opportunity to reassess our position regarding sub-banding.

Near and dear to my heart, the subject of special or new prefixes and new callsign formats will be discussed.

Finally, the question of the ludicrous and ineffectual 'Banned Countries List' will be addressed, hopefully with some change in DOC policy as a result.

I would like to share some of my views on these subjects, and hopefully provoke some thought and input to the symposium.

Sub-bands

The expansion of the USA 20 metre phone band does not pose any special problems to contesters as contesters, but as some of the most active members of the larger Amateur community, we should have something to say worth hearing. I have long felt that Canadian Amateurs, like Amateurs in most parts of the world could be completely self-regulating as regards defining our phone/CW/RTTY etc. sub-bands. In almost every country, Amateurs divide various kinds of activity on a band by a system of gentlemen's agreements, which are given authority and promulgated by national Amateur societies. The IARU Region I band plan very closely reflects our regulated sub-bands, or rather our regulations closely reflect the IARU Region I plan. I propose the elimination of regulated sub-bands, and the adoption, where possible, of IARU Region I recommendations. This will not mean any great changes

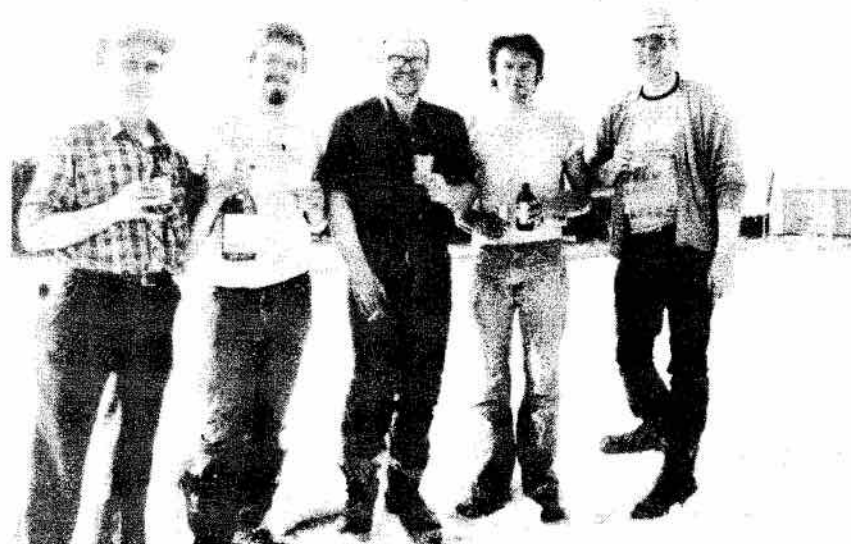
to the way we use the bands, but it will put Amateur Regulations in the hands of Amateurs, where they belong, and allow as the possibility of, in the words of one American statesman, the opinion of 'flexible response' to change in global patterns of activity.

Callsigns

The whole issue of unusual prefixes and callsigns has been a hobby-horse of mine for a few years now. I honestly believe that a short callsign is a better callsign. Myshosnd to be more distinctive, easier to remember, and they take less time to get across. All these are valuable assets to a contester or DXer. Unusual or rare prefixes are also an asset. First there is the 'where is that from?' response which helps one's QSO total, and in some contests, the total number of prefixes worked is used as a multiplier. Someone with an unusual prefix therefore has a bit of an edge.

What I propose is to open up new callsign blocks for 2 by 1 callsigns (eg. CF1A, VY7X, etc.) using all of the other 21 callsign blocks allocated to Canada. Only those who wanted such callsigns and were willing to pay a one-shot fee designed to recover DOC's administration costs would take advantage of the opportunity. Once issued, such a callsign could be renewed in the normal manner, as with any conventional Amateur callsign. Calls could be issued on a first come, first served basis, with applicants indication any preferences they may have.

Contesters, DXers, and whoever else could have a short distinctive call of their choosing. DOC would not have to divert



money from other activities, as this service would be paid for by those who wanted to take advantage of it, and anyone who didn't want to would not have to change his call.

Banned countries

This should be exposed for the farce it really is. Most of the countries on the list do not licence Amateurs, so there is no one to avoid. Of the rest, those who do licence or tolerate Amateur Radio haven't bothered to keep up with their ITU paperwork. Y11 BGD for example is operating with all sorts of official sanction, but Iraq remains on the banned list.

Most people active in chasing DX even casually have worked a TA or two, and feel little guilt or

concern about it. DOC cannot be bothered to listen to our bands unless there are specific interference problems to be resolved, and are unwilling to allocate the funds to maintain Canadian Regulatory discipline, as if it was necessary in the first place. It seems improbable that they would take any steps to prevent Amateurs from.

Finally, as things are still not in top-drawer order around here, I have no rules for the contests in the calendar, but I do have a picture of the fellows involved in the VE7 ZZZ Multi-Multi operation in the WPX SSB way back in March. From left to right: Mike VE7VX; Tom VE3 EEW; Bill, VE7 ENF; Bob VE7SK; and Frank VY1DD. Thanks to Frank for the picture.

CONGRÈS RAQI

Les 12, 13 et 14 Août derniers avait lieu le 33 ième congrès de RAQI (Radio Amateur du Québec Inc.). Cette année cette activité se déroulait à Compton, petit village des Cantons de l'Est, situé près de la ville de Sherbrooke.

Regroupant plus de 600 radio-amateurs, le congrès de RAQI constitue l'activité la plus importante organisée par l'association provinciale avec la collaboration des clubs régionaux.

Pour souligner l'importance de l'année des communications, ainsi que les bonnes relations existant entre le gouvernement du Québec et les radio-amateurs, le ministre des communications, monsieur Jean François Bertrand ainsi que le directeur général de la protection civile, monsieur Lambert étaient présents lors du banquet du samedi soir.

Plusieurs autres activités ont aussi eut lieu, notamment des conférences et un hamfest pendant lequel CARF-FRAC a tenu un kioske d'information et recruté plusieurs nouveaux membres.

Plus de détails sur le congrès paraîtront dans le numéro d'Octobre de TCA.

Robert Sondack VE2 ASL

NEWMARKET FLEAMARKET

The York Region ARC will hold its seventh annual "Newmarket Fleamarket" on Saturday 05 November from 08:00 to 14:00 at the Newmarket Community Centre, NEWMARKET, Ontario. The town of Newmarket is just north of Toronto and is very accessible via various highways.

General admission is \$2.00 and this includes a draw ticket for various door prizes. Children accompanied by parents will be admitted free of charge. Refreshments will be available at the site which is indoors.

Vendors will be charged general admission plus a rental charge of \$2.00 per table. Doors will open for vendors only at 06:30.

Talk-in on 146.52 MHz simplex and on the local repeater, VE3 YRC, 147.825 MHz input/147.225 MHz output.

For further information or table reservations, please contact Geoffrey Smith, VE3 KCE, at 7 Johnson Road, AURORA, Ontario, L4G 3H7. Telephone (416) 727-6672 evenings.

PIONEER AMATEUR RADIO CLUB (OTTAWA) PROVIDES COMMUNICATIONS FOR THE GLOUCESTER THIRD INTERNATIONAL SOCCER TOURNAMENT

For the third consecutive year on the weekend of 16 and 17 July 1983, the Pioneer Amateur Radio Club (Ottawa), PARC (Ottawa), provided communications for the Gloucester Third International Soccer Tournament.

This tournament is sponsored by Gloucester Soccer and this year involved 98 teams playing in two divisions divided into categories as follows:

Atom	9-10 Pee Wee	13-16 Junior	17-18
Mosquito	11-12 Bantam	15-16	

This involved the playing of 150 games plus 10 final games to determine the winners in the two divisions and five categories.

Teams came from the following locations:

Aylmer	Gloucester	Lynwood	Ottawa	Toronto
Beaconsfield	Granby	Malton	Pierrefonds	Trinidad
Blackburn	Hull	Nepean	Pointe Claire	Two Mountains
Brampton	Kanata	Niagara	St. Lambert	West Gatineau
Brockville	Kingston	Oakville	Scarborough	Wexford
Brossard	Lachine	Orleans	Streetsville	
Burlington	London	Oshawa	Thornhill	

Gloucester Soccer has ten playing fields on Bearbrook Road at a location called the Hornets Nest. In order to accommodate all the above games, they obtain the use of playing fields from other communities and schools as follows:

Tauvette Field in Blackburn	2 fields	Colonel By High School	2 fields
Cairine Wilson High School	1	Carriere Park	1
Terry Fox School	1	St. Mathews School	1
Ecole Secondaire Garneau	1	North Vineyard Park	2

This means that games are in progress in nine different locations at the same time. The need for communications is a must in order to provide: • fast response in cases of injury • rulings from headquarters • information on late arrivals — both the referee and the teams • information on missing nets and corner flags and the status on replacements • scores to headquarters at the completion of each game • etc.

This year, there was an injury which required the calling of an ambulance. During the playing of a game on Sunday morning, one of the competitors fell and dislocated his ankle. Richard Jestin VE3 K1Y at control called his XYL Marge VE3 CAM at home and she phoned for the ambulance. This procedure is necessary as there are no convenient phones at any of the playing field locations. Many thanks Richard and Marge for a well handled situation. Our thanks also go out to VE3 JVL, a visitor, who offered to assist by running down to the furthest south field at Hornets Nest to be with the young lad and to keep us in radio contact. In the heat of the situation we forgot to get his name.

The PARC (Ottawa) organizer this year was Wayne Gethchell VE3CZO. He was assisted by the following Amateurs working at the locations shown:

Location	Saturday, 16 July 1983		Sunday, 17 July 1983	
	a.m.	p.m.	a.m.	p.m.
Hornets Nest (Headquarters)	Wayne Gethchell VE3 CZO		Richard Jestin VE3 3YJ	
Cairine Wilson High School	Alex Milne Jr. VE3 K1Y Alex Milne Sr.		Joe Blanchett VE3 BAD	
Ecole Secondaire Garneau	Bill Westbrook VE3 EKA		Alex Milne Jr. VE3 K1Y Alex Milne Sr.	
Carriere Park	*	*	Alex Milne Jr. VE3 K1Y	
Terry Fox School	Ted Carron VE3 MHC			
St. Mathew School	*	*	*	
North Vine- yard Park	*	*	Bill Westbrook VE3 EKA	
Colonel By High School	Nick Krauchuke VE3 FFW	Art Childerhose VE3 CGD	Wayne Gethchell VE3 CZO	
Tauvette Park	Stu Glen VE3 MHZ			

*The club was unable to obtain operators for these times and locations.

Communications were handled over the PARC (Ottawa) 2 metre repeater VE3 TEL. Operators located at the Hornets Nest (Headquarters) used the club call sign VE3NA and acted as the network control station.

Many thanks go out to those who assisted with communications in this worthwhile endeavour.

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- DIAL ... Band scanning. Limits, memories 5 & 10.
- M-CH ... Memory scanning. Channel Nos. displayed.
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Just set SCAN switch to BUSHY to find a busy channel and OPEN to find a vacant channel. When located, flick switch to center (-) position and start transmitting.

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HI - 25 watts, LO - 5 watts

- A multi-function triple switch with co-axial knobs to:
1. Dial frequencies,
 2. Select memories, LED display shows memory numbers,
 3. Select memories, display shows memory frequency,
 4. Select CALL memory,
 5. KIT control in 1KHz increments, and
 6. Memory WRITE by pushing on DIAL knob.



DIAL

FUNCTION ring



COMBINATION VOLUME CONTROL, POWER AND MEMORY MODE SWITCH

Black knob controls volume. Push ON, push OFF power switch leaves volume setting unchanged. No need to re-set volume level each time transceiver is switched on. Silver ring sets memory modes as follows:

- A + B ... Select and scan 10 memories, 1 - 10.
- A ... Select and scan 5 memories, 1 - 5.
- B ... Select and scan 5 memories, 6 - 10.
- A x B ... Duplex using memories. Receive on memories 1 - 5 and transmit on memories 6 - 10. Scan 5 memories, 1 - 5.

REVERSE BUTTON

Use to monitor transmit frequency (Repeater input) during duplex operations. Functional for duplex using memories (A x B mode) and offset switch. Also functions during RIT use.



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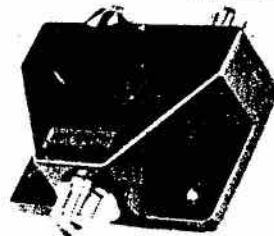
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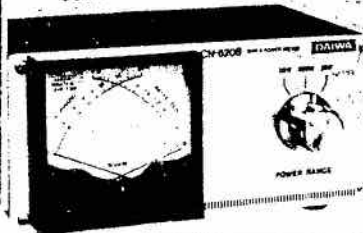
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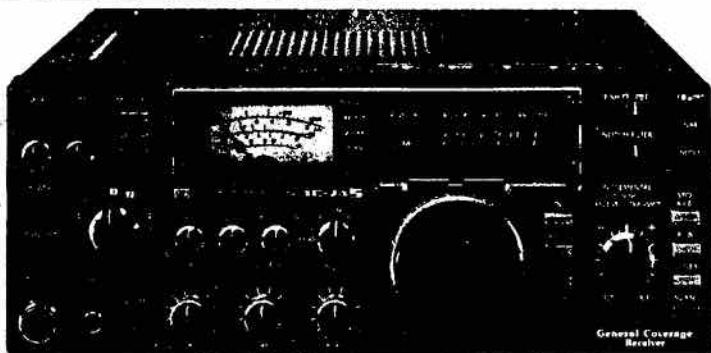
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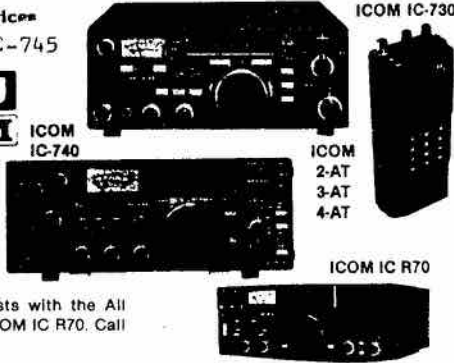
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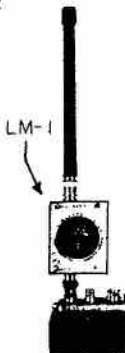
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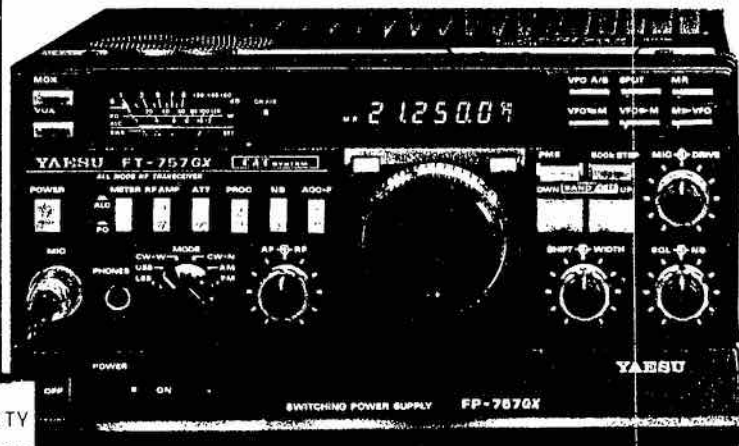
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Pioneer Amateur Radio Club (Ottawa) at the Kars Fair

Alex
VE3 KIY

The 21st annual Kars Fair was held in the Recreation Association Grounds in Kars, Ontario on the weekend of 15, 16 and 17 July 1983. Kars is a small farming community about 30 km. south-west of Ottawa.

The fair started Friday evening with a parade down the main street and continued on Saturday and Sunday with horse shows, dog shows, handicrafts, a midway and other attractions.

One of these attractions was an Amateur radio display which was organized by Erik Christensen VE3 K1H with the assistance of members of the Pioneer Amateur Radio Club (PARC) (Ottawa) and other local Amateurs.

- Joe Blanchett VE3 BAD supplied a teletype machine and interface for the radio teletype demonstration.
- Barc Dowden VE3TT provided a telescoping mast for the antennas.
- Ruth Soucy VE3 DZH (Smith Falls Amateur Radio Club) provided time and talent on Saturday to demonstrate the operation of an Amateur station.
- Richard Jestin VE3 EYJ and Alex Milne VE3 KIY provided moral support for part of Sunday after finishing their stint at the Gloucester Soccer Association Tournament where PARC (Ottawa) provided the communications.

About 100 people visited the display. This was a good attendance considering that the display was tucked away in a corner of the grounds, there was no mention of it in the program and there were no signs directing people to it, all due to it being a late addition to the program.

This, hopefully, will be an annual part of the program and with increased exposure should become another highlight at the Kars Fair.

Many thanks go out to those who contributed. Let's organize for an even better display at the 22nd annual Kars Fair.

73

Morse Code in the 1980's

Wayne Green, W2NSD/1, publisher and editor of 73 magazine is a long-time ham (over 30 years), and one who has been in the forefront of major developments in the hobby of ham radio over the last quarter century. His interests have been focused on many different facets of our hobby, including: HF, VHF, RTTY, building, CW, DX'ing, etc., etc. He has forecast a number of major developments having great impact on our hobby. He has always been an independent thinker and sometimes controversial. Thus, when Wayne makes a statement or takes a position, a lot of people in North America sit up and take notice. Some agree, other's don't. Sometimes years are required to allow situations to unfold so as to enable evaluation of Wayne's ideas. In a surprising number of cases, his ideas turn out to be basically right. Let's examine one of Wayne's latest points.

That point is that CW is an outmoded method of communication; that it has largely out-lived its usefulness.

A great many people in the ham community have sharply disagreed with Wayne on this one. Many Amateurs, both old and young have expressed a real admiration for CW and feel it should remain as a requirement for new Amateurs.

On the other hand, serious consideration is being given in the U.S. to a no-code license.

Then too, we know that Japan has had a no-code license for some time.

Those who advocate retention of the code claim the passing of the code exams represents a real accomplishment after a certain amount of dedicated and diligent practice to achieve required levels of proficiency; that it gives hams a unique language more or less their own. There is also a great amount of feeling that "We had to learn it, why should they not learn it too?"

In spite of all, there really are many Amateurs who really do honestly enjoy CW, and would not want to give it up for anything. We all know such people.

But let's look at why Wayne feels CW is an outmoded method.

First, I guess from a military standpoint, times seem to have changed. To the best of my knowledge, the military would no longer need large numbers of CW operators in event of a war emergency. (I would like to get an authoritative statement on this from the military.)

Next, let us address the question of the speed of transmission of data. Even if we use a rate of 20 wpm, which is above present Canadian advanced licensing requirement, the rate of data transmission must be considered quite slow, even compared to RTTY (Amateur) at about 60 wpm, or ASCII code used by some Amateurs at around 100 wpm.

However, if we compare the rate of data transmission using Morse code with the rate possibly under modern technology, we really get a shock.

First, if we use voice transmission, we find it is about 3 or 4 times as fast as Morse code. Yet, let's consider the possibilities using modern digital systems. These presently start at about 100 wpm and can easily go into the thousands of words per minute. Wayne reports that with some experimentation, we can easily go into the thousands of words per minute.

Next we should take a look at the number of expert ham oper-

ators which would be needed to transmit data by Morse code in a time of real emergency. "One rig passing traffic at 1,000 wpm (about 1,200 BAUD) can do the work of two hundred trained hams using 200 rigs and 100 channels on CW"^a

Packet radio, the newest and rapidly developing mode of communication in Amateur radio can transmit data at slightly less than 120 bytes of data per second.^b

These things are indeed thought-provoking.

At one time, Amateur radio was right on the leading edge of advancing Technology, that probably has changed, even the

Canadian government has dropped the term "experimental" and now calls it the Amateur radio service. Wayne says we are 50 years behind.

The purpose of this article is not to say whether Wayne Green is right or wrong when he says communication by Morse code is an outmoded method. Rather, it is to present a few thoughts to get us thinking about a subject which promises to demand some of our attention in the future.

Bill Rook
VE3 MBF

^a 73, June 1983, p. 6

^b Ham Radio, July 1983, p. 14

ATLANTIC REGION — MEMBERS

The Atlantic Regional Director herein announces the establishment of a CARF Atlantic Regional net. All members and non-members are invited to participate. CARF News Service Bulletins will be read and discussed as will issues of concern to the Amateur service. The results of these discussions will be used to guide your elected representatives on your behalf. Initial meeting will be held:

Sunday, November 6, 1983
2100 GMT on 3.740 MHz

At that time, future net hours and frequency will be determined. It is anticipated that this net will therein be held on a monthly basis.

73, Leigh Hawkes VE1ZN

Col. W.C. Borrett, VEIDD

Broadcaster, Author, Corps Founder, Dies at 89

Submitted
by
Bret Faden
VE1FQ

July 18/83

Colonel William Coates Borrett, broadcaster, author and founder of the Nova Scotia Division of the Canadian Corps of Commissionaires, died Monday in Camp Hill Hospital, Halifax. He was 89.

Besides being the founder of the first commercial broadcasting station in Nova Scotia, Col. Borrett is probably best known as an author of eight books on Nova Scotian history published between 1942 and 1957.

"Tales Told under the Old Town Clock" is one of his better-known works, and was broadcast on the CBC radio network.

This book also brought attention to the clock on Citadel Hill as a national symbol and eventually the clock was restored to its historic status as part of Citadel Hill.

Col. Borrett was also an advocate for the preservation of historic sites in Canada, particularly Citadel Hill. In 1951, he was appointed honorary superintendent of Citadel Hill and supervised the reconstruction of the Hill until 1962, when he became honorary commandant.

A pioneer in the development of radio in Canada, he was a Canadian representative at the founding of the International Amateur Radio Union of radio amateur experimenters in Paris in 1925. In 1926, he founded CHNS in Halifax and presented a Sunday radio show during the 1940s and 1950s on local history. He was honored with a Beaver Award for his contribution to radio in Canada.

He was commandant of the Nova Scotia division of the Corps of Commissionaires for 30 years, during which time the force grew from 23 men in 1938 to 800 in 1968. During this period, the Corps restored an historic stone structure, the Black-Binney House near Gov-



ernment House, for use as its headquarters.

He was director of the Dominion Council last Post Fund in the Maritimes for over 30 years. He served in the Canadian Army during the First and Second World Wars. He was made a life member of Somme Branch, Royal Canadian Legion.

His other honors included the decoration of Officer Brother by the Order of Saint John for contributions to St. John Ambulance. In 1969, he was presented with a certificate of recognition by the department of Indian affairs and northern development for his contributions to the restoration of national historic sites.

He is survived by a number of nieces and nephews, including Alberta Premier Peter Lougheed and Thomas W. Bauld, Halifax.

He was predeceased by his wife, the former Muriel H. Bauld, in 1976.

COLONEL WILLIAM COATES BORRETT, O.St.J., V.D.

Colonel Borett was born in Dartmouth, N.S. in 1984.

He served with the P.L.F. in Canada and Overseas in World

War I and with the Royal Canadian Army Pay Corps during World War II.

Colonel Borrett was one of the pioneers of the radio, having represented Canada at the formation of the International Amateur Radio Union of Radio Amateurs Experimenters in Paris in 1925. He established the first Broadcasting Station in Nova Scotia, CHNS, in Halifax, in 1926.

In 1937 Colonel Borrett was one of the founders of the Nova Scotia Division, Canadian Corps of Commissionaires. He retired as Secretary-Treasurer and Commandant in 1969, having served over 30 years in that capacity but is still an active member of the Board of Governors.

Colonel Borett's medals include:

1914-20 British War Medal, Canadian Volunteer Service Medal
1939-45 War Medal
1952 Coronation Médal Officers, Volunteer Decoration (Colonial Auxiliary Forces Decoration), Officer of The Order of St. John of Jerusalem, Canadian Corps of Commissionaire 1st Class Medal with 30 year Bar.

Colonel Borrett is perhaps best known as an author having written seven books about Nova Scotia history. His "Tales Told Under The Old Town Clock" has been widely broadcast both locally and over C.B.C. Network.

He was also in charge of reconstructing The Citadel from 1951 to 1962 when he was made Honorary Commandant of Halifax Citadel.

Wm. C. Borrett, VEIDD, of Halifax, became involved in experimental radio in the 1920's. Amateurs did not use telephony at that time, as a matter of fact their licenses did not allow them to do so on the wave lengths that were used for international two-way

communication between Amateurs. If one dabbled in phone work he had to go up on a higher wave where he would not interfere with the other Amateurs operating on telegraphy. Bill Borrett says that his thrill of a life-time came on a night in December, 1923. The celebrated French Amateur, Leon Deloy of Nice had just returned home from a visit to the United States and had made special tests on a wave length of about one hundred meters with the American Radio Relay League (A.R.R.L.), and on a certain night they had arranged to try two way communication. Most of the work up to that time had been on two hundred meters, and it was doubted at that time as to the chances they had of success. Mr. Borrett happened to be home on the night that they were to make the test. He was preparing to go out; as a matter of fact he was shaving when the telephone rang. It was Arthur Greig, CIBQ, to say that he had just turned in on a Frenchman calling U.S.A. He said that the Frenchman was on about one hundred meters. What excitement! Mr. Borrett rushed to his receiving set and tore off turns and turns from the secondary coil of his receiver and stuck it back in the set. He had no idea how many turns he would need to receive on the unheard-of wave length of one hundred meters. Luck was with him, however, for as soon as he stuck the coil in and gave the secondary condenser a slight turn he heard that never to be forgotten 25 cycle fluttery note of F8AB calling U1XW. That evening was the start of much work and alteration on his radio sets. While they were glad to hear the Frenchman, both Mr. Greig and Mr. Borrett were determined to get hold of an Englishman as soon as possible and they spread the news to the other Halifax Amateurs, who considered them as something above the ordinary. It wasn't long before they were all tearing their sets apart and the race began. Mr. Greig, CIBQ, won the race in the matter of a few days when he had two way communication with Mr.

E.J. Simmonds, G2OD, of Gerards Cross, England. Mr. Borrett's persistence was rewarded when was answered by Mr. Gerald Marcuse, G2NM, of Queens Park, Caterham, who reported that his signals were strong. During the succeeding nights the following were heard: Mr. Partridge, 2KF, of London, Mr. Goyder, 2SZ, Mill Hill School, Mr. Ryan, 5BV, of Wimbledon and Mr. Hogg, 2SH of London.

By March, 1924, five out of ten Amateur stations in Halifax district had held two way communications with the Old Country, and as a mark of distinction they formed a society called the Royal Order of Trans-Atlantic Brasspounders, or R.O.T.A.B. for short, of which only those who had held two-way communication across the Atlantic could become members. Each member was allowed to put the word ROTAB on his QSL cards.

Other Amateurs prominent in the Halifax-Dartmouth area were Joe Fassett, C1AR, Cecil Landry, C10AR, who broadcast music and local talent in the early 1920's. Art Crowell, IDQ, was S.C.M. (A.R.R.L.) for the Maritimes Section, for about 28 consecutive years. George Sandoz, whom we met earlier, was issued a license and call sign 1AH, dated April 1, 1921, signed by the Deputy Minister of Naval Service. A later license issued for him contained the following frequencies: 1CW or TEL 150-175-200 meters, or CW 125 to 150, 175, 200, to 225 meters, power ½ kw.

William C. Borrett, organized the A.R.R.L. activities in the Halifax area and was the Canadian representative at the formation of the International Amateur Radio Union in Paris, in 1925.

Credit Unknown

INTERVIEW WITH MAJOR W.C. "BILL" BORRETT — VE1DD

Today I met a fine gentleman — Major W.C. "Bill" Borrett, VE1DD, who was one of those early Hams who took part in the founding of International Amateur Radio Union. Bill, now 80 years old and en-

joying good health, represented Canada at those important meetings.

Having served in both World Wars, he retired as a Major after World War II. He was one of the early broadcasters in Canada (Radio station CHNS Halifax) and retired in 1950. He is a vice-president of CHNS.

His accomplishments include the writing of seven (7) books — he has a tremendous knowledge of the early days of radio. As well he was responsible for building the Halifax division of the Canadian Corps of Commissionaires from a group of about 50, to a body of over 800! He is the Lieutenant Colonel of this organization at this time. He was also responsible for the rebuilding of the famous Citadel Hill in Halifax. Having taken over the project when there was nothing but a pile of rubble, the site is nearing complete restoration, and houses one of the finest military museums in Canada.

From his 19th floor apartment, he is entertaining the idea of some day getting back on-the-air. Says he is looking for a compact transceiver and suitable antenna. The Major drives his car — but prefers city driving as the drivers on the highways are too unpredictable!

As the Canadian representative at the I.A.R.U. meetings, he crossed "the pond" with Lloyal Reid of St. John's, Newfoundland. Reid was a member of the well-to-do family who built the railway line across the Island. Maj. Borrett says Reid represented Newfoundland (then a separate country) on his own as an excuse for a trip abroad!

He knew Hiram Percy Maxim personally and very well. At the I.A.R.U. he remembers being recognized as the official "interpreter" for translating "American" to English — he jokingly says he spoke English and could understand American!

"Bill" told me of one time when he made a rectifier by cutting up his late XYL's new aluminum kettle — used the pieces to attach to wires in glass jars to get "25 cycle" DC from 25 cycle AC. Tells of fran-

tically taking turns of wire off coils to get some rare DX (on 200 metres). Also, he remembers the PA0 who, not being allowed to transmit by law, covered his antenna with his XYL's wash in the day time, so it could become his

antenna at night . . . those were the days, says he.

A real thrill — meeting in person, a man who has made history. He does not see fit to stop. He continues to leave his mark. 40-50 years ago it was radio; in 1972,

Citadel Hill is a magnificent contribution to Canada.

Thank you Bill Borrett for your contribution, to Ham radio, especially.

John C. Tessier
V01FX

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**The Canadian Amateur
Radio Magazine**

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What's happening in Canada is happening in TCA

1983 National Amateur Radio Symposium

October 14, 15

Hotel Nova Scotian, Halifax, N.S.

Your comments and observations are solicited on the following and other topics of interest to the Canadian Amateur Radio Fraternity. Address them to Leigh Hawkes, VE3ZN, Box 864, Armdale, N.S. B3L 4K5.

1. AMATEUR EXAMINATIONS AND RECRUITMENT

- (a) TRC-24
- (b) Development of a training syllabus for clubs and individuals.
- (c) Institution of a no-code above 30 MHz license.
- (d) Mandatory SWL period.
- (e) Restoration of "Experimental" status to the Amateur Service.
- (f) Re-institution of examination fees.

2. SPECTRUM PLANNING AND MANAGEMENT

- (a) U.S. phone band expansion(s); VE response and requirement.
- (b) "Gentlemen's Agreements" vs legislated sub-bands.
- (c) Banned countries list. Enforcement responsibility.
- (d) Call signs — Opening up of additional permanent call sign blocks — e.g.: "VA", "VB" . . . "VF".
- (e) Computer — Spread spectrum communications in the H.F. bands.
- (f) Bandwidth limitations and requirements
- (g) Six metres for repeater linking purposes.

3. INTERFERENCE AND REGULATIONS

- (a) Enforcement of regulations — by DOC by Amateurs. How and what can be done to improve existing conditions where enforcement is required.
- (b) CATVI — Possible changes required in BP-23 to tighten up leakage specifications and provide more responsive action to leakage complaints: Changes required to protect the Amateur Service (the most vulnerable service).
- (c) Industrial noise in the radio spectrum. Latest DOC policy. Does it go far enough? Can it be adequately enforced?
- (d) Interference to/from electronic devices; e.g., cordless telephones.

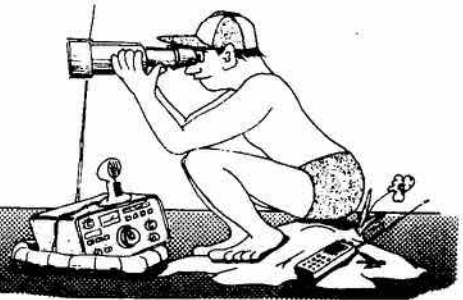
4. EMERGENCY COMMUNICATIONS

- (a) Communications at the community level.
- (b) Training for Amateurs.
- (c) Tone Alert Systems; a national-international standard.
- (d) In-band repeater linking during emergency situations.

— — VE3ZN

DX

D.W. Griffith, VE3KKB



In their infinite wisdom, DOC has removed the requirement for Amateurs in Canada to maintain a log of their contacts. While it may be o.k. for those of us who will maintain one anyway (since it's pretty hard to obtain a QSL card otherwise), I think that the abolition of that legal document called the station log will rise from the ashes to haunt us, and the DOC for years to come. Why? Think of the last time you had a neighbour complain to you about RFI, and you had not been operating for some time. All you had to do was show your log to that individual, and point out that since it was a legal requirement for you to log all activity on the HF bands, and since you had not logged entries for the timeframe in question, it was not you. If they chose not to believe you, and still managed to get a response from an inspector, generally speaking, it has been my experience that the Radio Inspector would believe your log (since it is a legal representation of your Amateur activity). I suspect that it will mean far more visits from the DOC for Canadian Amateurs, and an increased work load for an already overworked, and understaffed department.

1983 has proven to be a rather rough one on the DX community. Two separate expeditions to Heard Island back in January came as near to disaster as anyone ever wants to come. Both fought fierce storms, one in a vessel low on fuel, and water, only to arrive and find propagation extremely poor, and weather even worse. I is only by good fortune that people did not die in the attempt to provide a contact with a very rare DX country. Less

fortunate were the Germans who attempted to activate Spratly in early April of this year. DJ3NG, DJ6SI, DJ4EI, and DF6FK, accompanied by the owner of the catamaran Sidhartha, and his wife were fired upon by Vietnamese shore guns on April 10, 1983, off Amboyna Cay, in the Spratly group, and the 51 foot vessel was sunk. Diethelm Mueller, DJ4EI, was killed outright in the initial attack, and Gero Band, DJ3NG, died of exposure, only a few hours before the survivors were rescued. The rest of the group had to be hospitalized, and treated for exposure, and dehydration. It was off this same island that the 1979 Spratly expedition was fired upon, but fortunately with less disastrous results. We all mourn the death of two of our comrades, and I think we also should re-examine the dangers inherent in any operation of this kind. After all, it's only a hobby, and NO hobby is worthy a human life.

Bits and Pieces

Ivan Payne, VE3 INQ, still publishes "Canadian Top Band

News" twice annually, in the Spring, and Fall. It is free for anyone who is interested in 160m, and copies may be obtained by writing to:

Ivan Payne, VE3 INQ,
P.O. Box 276, Station "A",
Weston, Ontario,
Canada,
M9N 3M7.

The newsletter is extremely informative, and very comprehensive. Ivan is to be congratulated on his tremendous effort.

By October, Turkey will be licensing its Amateurs. Congratulations to the Turkish Radio Amateur Society for their years of effort to gain official recognition, which has finally payed off. Of course this means that at some point in the future, TA will be removed from the official "banned countries" list.

HKO — Malpelo . . . To commemorate the 50th anniversary of the Colombian Radio Society, they will activate HKOTU from Malpelo Island for 5 days in October. The operation will be multi-band, multi-mode, and QSL's will go to HK3 DDD.

QSL INFORMATION

Station	QSL Via
3B8FK	
4K1F	UQ2 GDW
4N9WC	YU4 GYZ
4S7 TZG	ON6TZ
5N6 PDC	K6EDV
5N9GM	I8XIU
TR8TV	HB90P
5W1DD	OE2 DYL

Direct QSL Address

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5H3FNP.O. Box 9112, Dar es Salaam
Tanzania, Africa.

5V7WIP.O. Box 1499, Lome, Togo,
Africa.

BIRTLE NEWS

7P8BQ
7X2HM
80Q0A
9G2XX
9H4P
9LIEX
A22BT
A22BW
A22ED
A35DB
A35MC
A35ZZ
A4XGY
A6XJC
A71AU
A92Z
AH2E
AH9AA
AJ60/KHO
AP2KD
C6ARD
CO2QQ
CO2RX
CR9EL
CR9T
CR9Z
CT2DF
CT2EF
DU4 RLC
EA6IT
EA8OR
EA9EU
EL2AT
EL2T
FK8DV
FK8DZ
FL7H
FO8IQ

K9KXA
I8YCP
I2AXC
AK3F
N2DO
LA2EX
DJ0FZ
DKEKD
K4EBY
W7XN
WA1 YDJ
K0CS
K2RU
PE0 MGM
DJ9ZB

Box 26855, Bahrein.

N9AVY
KW6HF
W6TAG
JJ1TBB
K2HFX
KB7SB
KB7SB
OE2 DYL
WA4 1KZ
JA1 ELY
N8BKB
W4PKM
VE2 FGS
WB1 DQC
DJ6JI
I8UDB
N4VV
W3HNC
F6EWK
F6BFH
OE2UF

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H44KR
H44MB
H44TA
HR1 RCT

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Honduras.

J28DG
J28DL
J28DM

F6FGN
F6ESH

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Africa.

J28DM
F2GA

See address if
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K4BF/CN8
LA2EX/3X1

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W2AYJ
K4CEB
LA2EX

The adventures of HAM RADIO sure are something to wonder at, with so many variables that control the hobby, over which we have so little control. Propagation for the last while was something to be desired, 1982 was the most active in sun spots activity in over a decade, and the top dogs don't really know why.

One thing it has been good for is radio sales as each ham tries to get something better, something that he can hear a signal when there is none, something that will push his signal to all ends of the earth when even a string tied to the signal could not drag it there. Vanity, oh vanity and we think the YL's are trying the impossible.

However it is this constant struggle that improves the equipment, improves the hams using the equipment, encouraging them to know more about the new developments. We are after all experimenters so our licenses tell us.

It is this imaginative awareness that has been the fore-runner of many innovations that are with us today. Encouraged by governments we can ride our satellites piggy back on rockets that the Amateurs could not afford. It is through our ingenuity that we put the technology to work for us.

I would like somebody in the knowhow to put in a computer page for the radio Amateur. Even if I can't afford one, it would be nice to know what I am missing.

73's
Max VE4 ACX

Credit ARLM

P29JM
T30AT
T30KC
T32AL
T32AM
T4A
T70A

G3XZF
W5RBO
WB7SIC
WB7SIC
ZS6AK

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TT8AD
TU2LS
VP8ML

HB9 CLA
K3GYD

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Marino, 47031.
Box 484, Libreville, Gabon, Africa.

Charles McKenzie, Port Stanley,
Falkland Islands.

VQ9TO
V46KY
YB4 AEP
ZD9BZ
ZS1OU
ZY1JF

KC40K
NE5C
N5COP
KA1DE
KA3 FIB
PY1 DOQ

LORAN-A

The Danish government was planning to terminate LORAN-A transmissions from its Frederiksdal, Greenland station on December 29, 1977. However, approval has been obtained for Canada to fund the Danish government to maintain the Frederiksdal transmissions. The arrangement has continued on a yearly basis since then. It is now planned to terminate LORAN-A service on rates 1L2 (Frederiksdal-Battle Harbour) and 1L3 (Bonavista-Battle Harbour) December 31, 1983.

This should help in removing the 160 metre band restrictions.

Ron, VE3 IDW

Better than ever!

The Canadian Amateur Certificate Study Guide has built a strong reputation as Canada's Amateur examination text book. But the world of Amateur Radio has continued to grow and change with the times... and CARF has moved to meet the challenge.

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Completely rewritten
and revised for
the new TRC-24



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The Guide

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TRC-24 Update

A joint submission by CARF and CRRL was made to DOC on the changes required in the "draft" version published on 1 April 1983. Both organizations prepared a detailed list of changes they considered required and the meeting held determined that there was mutual concern over major items and agreement was speedily reached on items of minor importance.

The CARF submission to DOC was a complete rewriting of the Technical sections for the Amateur and Advanced Amateur certificates while the CRRL submission took the form of written changes to the existing document. Both submissions were judged to have the same information and it will be up to DOC to decide whether to rewrite or to amend these sections with both organizations recommending that the rewritten form was preferred.

The new TRC-24 is expected to be published around 1 September 1983 and to take effect sometime in 1984. Publication of new Study Guides must necessarily wait until this document is produced.

VE3 AHU

The Changing Times

During the past decade much has been written and many hours have been spent in discussion of the Canadian Amateur radio licensing system. With the exception of the Amateur digital radio operator's certificate it remains virtually unchanged. Meanwhile, Amateur radio operating and radio equipment is vastly different from that of the 1960 and 1970 era.

The past several decades have seen an unparalleled change in electronic technology. Changes affecting the traditional methods of circuit design, operation, and manufacturing are all examples. Point to point wiring has given way to the printed circuit board, analogue methods to digital, and now computers are aiding in the design and manufacture of many items. Even traditional communication modes themselves have not been untouched by this revolution.

The development of integrated circuits, microprocessors, new materials from the Space Program, calculators, computers, are a few examples of the revolution that is changing the lives of mankind. It would be difficult indeed to find a household not directly influenced by or incorporating much of this new technology. Individual lifestyles are constantly changing as all manner of uses of new technology are developed and incorporated into the very elements of our civilization.

What once attracted us yesterday, has been replaced by today's technology. Computers, keyboards, digital interfaces, replace the old mechanical devices. Split screen and buffered memory banks are making the old hand key obsolete; tune across the bands, listen, see and hear for yourself.

The days of the M.O.P.A. transmitter, the five tube super HET receiver are long ago replaced by today's latest computer-aided and designed and manufactured transceiver complete with its computer interfacing adaptability and with features undreamed of by Amateurs of past decades. No longer is it possible or desirable to the average Amateur to build or make extensive repair to his gear as it once was.

When the Amateur digital certificate was introduced several years ago, its purpose was to attract those individuals involved in computers and provide to them a medium for intercommunications via Amateur radio. It recognized the new technology and the changing times. Unfortunately, to a large extent this certificate has not succeeded in its original goal. Yes, a number of persons hold a digital certificate. Many of these had already held Amateur or advanced Amateur certificates and looked upon the new certificate as a challenge. They did not really intend to become digital operators. There are very few Amateurs who hold only the digital certificate. There is good reason for this. The examination is far too difficult for the average beginner. Somehow, somewhere, the "Amateur" got left out of the requirement and the exam become something like "Professional".

The original idea behind the digital certificate was a good one. If Amateur radio is to be alive and well into the 21st century it must more effectively adapt itself to the changing times. It is essential to the future survival of Amateur radio to attract young blood, young minds, to the hobby. These individuals will go on to become the next generation of

professionals, the engineers, the politicians, the policy makers of the nation and the world.

What better way to guarantee Amateur radio's future than to have these people included in its ranks! A person who knows Amateur radio from the inside, whose life and perhaps vocation have been shaped by it, cannot help but be sympathetic and supportive of it.

Just as technology has changed, so too is it now time for the Canadian Amateur radio licensing system to change, to stay in step. The change can be made very easily.

Take the present "Amateur Certificate". It consists of three elements: theory, regulations, and code. The proposal is this:

A candidate for the Amateur certificate upon passing the theory and regulations portion of the current exam would qualify for all the privileges of the present Amateur certificate but only *above 30 MHz*. Upon passing the code portion (or option) full Amateur certificate privileges would be awarded.

The advanced Amateur certificate would remain unchanged.

The Amateur digital certificate could be abolished as it effectively replaced by changes in the Amateur certificate.

In countries where a similar Amateur radio licensing system is followed, for example Great Britain and Japan, the Amateur population and band usage is well and growing.

Radio frequency spectrum is a valuable resource. There is no question that which Amateurs don't fully use they are going to lose. We are only kidding ourselves to think otherwise.

In Japan alone, there are over 800,000 no-code licencees compared to approximately 110,000

(Continued next page)

other classes including a novice license.

Much more needs to be discussed concerning this proposal. Additional thoughts and opinions are required.

Perhaps a special prefix — say "CF" could be assigned to the VHF only Amateurs being exchanged for the traditional "VE" upon passing of the code exam and awarding of HF privileges.

Increased exam emphasis on operating procedures and knowledge of gentlemen's agreements concerning band usage may also be considered. The current endorsements available to the Amateur certificate holders would have to be re-examined and possibly modified.

It is expected that this proposal will form part of the basis of one of the forums to be conducted at

the 1983 CARF-DOC symposium being held this year in Halifax, N.S. Written ideas, and comment or personal presentation is encouraged from the Amateur radio operators of Canada, as well as all concerned parties.

(Let's hear from you on this, write to L. Hawkes, VE1ZN, Regional Director, C.A.R.F., P.O. Box 864, Armdale, N.S. B3L 4K5.)

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How to Contact W5LFL/Space Mobile

On September 30th, when the U.S. Space Shuttle Columbia rockets into orbit, it will be carrying more than just the European Space Agency's Space-lab and its crew. In fact, it is what one member of the crew will have with him and what he will do with it that will mark the beginning of a new chapter in the annals of Amateur Radio. The crew member, Dr. Owen Gariott, is W5LFL, and he will have with him a 5 watt FM transceiver for operation on the 2 meter band; in one of the windows of the Columbia will be mounted a "split ring" antenna. It is with this combination that Dr. Gariott will become the first Radio Amateur ever to operate a station from space.

Ground stations won't really need anything special in the way of equipment to contact W5LFL either, although a rig with programmable offset, or separate receive and transmit VFO's will be necessary. In lieu of this, 2 different radio can be utilized: one each for transmitting and receiving. The need for this comes about due to the choice of uplink and downlink frequencies that will be used by W5LFL during the mission. At this writing, it will be other than the more common 600 kHz standard split, normally used for terrestrial repeater operation. Ground stations will be transmitting to Owen on frequencies between 144.91 and 145.49 MHz, with W5LFL acknowledging call signs he hears on a frequency between 145.51 and 145.77 MHz. While some of the uplink frequencies will obviously fall on repeater output channels in the USA, ground stations are requested not to transmit through repeaters in an attempt to contact W5LFL. In fact, it might be wise for repeater licensees/trustees/control stations of affected systems to voluntarily shut down their operations a few minutes per day as

W5LFL/space mobile passes overhead.

The maximum time of acquisition from any given geographic point to the time of loss of signal (LOS) to that same point will be approximately 8 minutes for a pass directly overhead. Access time will be shorter if the spacecraft passes closer to the horizon at your location. The adoption of the frequencies above was based on international considerations, and not just the needs of U.S. repeater operators. Exact frequencies will be announced within the next few weeks.

Unless you are adept at satellite tracking, you should probably avoid using highly directional antennas. The forward speed of the shuttle will be approximately 17,000 mph, so unless your rotor system can operate under computer tracking control, use of a highly directional

antenna array will be more of a hindrance than a help. The engineering crew at AMSAT strongly recommends that Amateurs who are unfamiliar with the intricacies of satellite tracking utilize omni-directional antennas, with the "turnstile," or crossed dipole array deemed the best choice. Since there is no commercially available turnstile marketed directly for the Amateur Service at this time, you'll probably have to "roll your own." The antenna is quite inexpensive and easy to construct. Consult antenna specialty books for information.

Dr. Gariott, AMSAT and the ARRL all request that high power amplifiers be avoided. According to AMSAT, a 10 watt output FM signal into a turnstile type antenna will be more than adequate to reach W5LFL. High power will add little to your chance of making contact.

The Westlink Report

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P.O. BOX 10, KING CITY, ONTARIO L0G 1K0**

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Reply by letter only initially. Resumé must include education, antenna and other relevant experience, age, work goals, references, etc. Replies will be acknowledged and will be kept confidential on request.

**ELDER ENGINEERING INC.
P.O. BOX 10, KING CITY, ONTARIO LOG 1K0**

Interview with W5LFL

by Roy Neal,
K6DUE

NBC News correspondent Roy Neal interviewed Dr. Owen Gariott, W5LFL, for the Amateur Radio press the 3rd week in July. Here is a transcript of that meeting:

N: Can you give us some idea as to how stations will find and contact you?

G: We will have the frequencies and timetables published in a variety of ways, with this information disseminated before flight. I'll be transmitting on essentially one or two frequencies only, so they won't have to hunt for me. I'll be receiving on a split frequency, some 10 or 20 different frequencies also widely disseminated. This way they can spread out across the band and not have to pile up on one location.

N: Will you be working to a timetable of any kind?

G: Very definitely I will. First of all, it's set by our ground track. We will know precisely when it is we will pass over the United States or South America or Europe, so that will pin down the possible times. In addition to that, there will be only certain passes when I will be off duty, so we will know rather precisely what times to expect me to pass over, say, the western United States. I'll try to transmit on every even minute, and after 1 minute, listen on all of the odd minutes. In those odd minutes I'll be listening for as many different hams as can get on the air and call me on 1 of these 10 or 20 frequencies.

N: When will we know the precise frequencies and timetable?

G: We expect to know them within the next month. Then it will take a little time to get them disseminated, so I would say late August or sometime in September. I might be getting close to the last minute, but they will be within the standard (2 metre)

ham band, and all you will need to do is to get your transceiver programmed or moved over to the selected location.

N: What kind of equipment do you recommend for hams trying to contact you?

G: If it were me, I would go with what I already have. If you have a single monopole (vertical antenna) it could turn out to be a very desirable type of antenna because it has a fairly good radiation pattern at low elevations. Even though it has a null overhead, that's at your minimum

range, and it's very seldom that we will pass directly overhead anyway. A high gain antenna would, of course, have some advantages, but then you have to get far more involved in tracking the spacecraft and knowing just where it is. (Ed. note: STS-9 will be traveling with a forward orbital velocity of 17,000 mph, and a computerized antenna tracking system would be needed for optimum results with a highly directional array.) For the average ham, I would suggest a simple linear antenna of some sort.


N: You will be launching around the end of September?

G: September 30th is our launch date, and at this point, we expect to stay right on schedule.


The Westlink Report

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(613)-283-3570

TCA  The Canadian Amateur

Coaxial Connectors

de VE2 FSM

The need to interconnect system equipment brought about standardization of connectors during World War II. Although early connectors provided mechanical compatibility, later demands for higher frequency operation and lower reflection coefficients caused design modifications and completely new designs. Even today, more modifications and new designs are being proposed. The evolution shows no sign of stopping.

The number of RF connector styles available is largely due to design tradeoffs between high frequency operation, low reflection coefficient, and cost. High frequencies require small size because the average circumference of the coaxial line is limited to about one wavelength. If it were larger, other wave-guide-type modes could propagate between the conductors. Such multi-modal propagation would result in erratic reflection coefficients, power losses, and signal distortion.

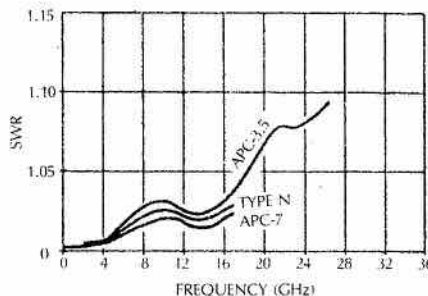
The manufacturing tolerances of any connector pair cause unavoidable discontinuities along the transmission line. Such discontinuities cause reflections that tend to get larger with frequency and are proportional to the size of the step relative to the size of the connector. Thus small connectors, for the same manufacturing tolerances and at the same frequency, tend to have larger reflections than large connectors.

The Type N (Navy) 50 ohm connector was originally designed for military systems during World War II and was mainly used below 4 GHz. Until the mid 1960's there were many attempts to improve performance with varying success, although operation to 10 GHz was accomplished. Some of these improvements, when mated together, could damage each other. Merely tightening the

mechanical tolerances of the original design resulted in fairly large steps.

Now, specification MIL-C-39012 defines mechanical dimensions and tolerances of a Type N connector for field use. Some of the stated dimensions have a minimum or a maximum value. When a minimum-sized connector of one sex is mated with a maximum-sized connector of the other sex, a low reflection connection is obtained. This allows the manufacturer to make the cost/performance trade-off according to his application.

The Type N connector is the most popular general purpose measurement connector for the 1 to 18 GHz frequency range. The dimensions and tolerances of the Type N 50 ohm connectors on HP equipment suit the accuracy of the instrument. They all interconnect and all mate with any Type N connector built in accordance with MIL-C-39012. The highest performance HP connectors have a SWR like that shown in the graph.



There is a continuing effort at Hewlett-Packard to further improve the performance of Type N connectors for the most precise applications. Current data on an Automatic Network Analyzer indicates that the reflection coefficient of a mated pair repeats to within ± 0.003 up to 18 GHz.

Those HP components that have 75 ohm Type N connectors have specially sized center conductors to achieve the 75 ohm impedance.

The APC-7 (Amphenol Precision Connector-7 mm) offers the lowest SWR, most repeatable connections up to 18 GHz, and is primarily used for very accurate 50 ohm measurement applications. The coupling mechanism is sexless so any two connectors of this type may be interconnected. This eliminates accuracy and calibration problems that often occur when the unit being tested has identically sexed connectors on each end. Such cases require adapters that partially obscure the device properties being measured.

The development of what is now the APC-7 connector was begun at Hewlett-Packard in the mid 1960's and improved upon by Amphenol who now manufactures the connector. The SWR of a typical mated pair is shown in the graph. Current data from HP's Automatic Network Analyzer shows that the reflection coefficient of a mated pair repeats to within ± 0.001 up to 18 GHz.

The SMA (Sub-Miniature A) connector was originally designed by Bendix Scintilla Corporation but was popularized by Omni-Spectra Inc. as the OSM connector. This connector, manufactured by many companies, is seldom used above 24 GHz because of higher order modes. The main application for SMA connectors is on components used in microwave systems. Because SMA connectors are mainly used for semi-permanent connections, they tend to be inexpensive, somewhat fragile, and cannot be reconnected many times. HP makes some SMA connectors out of beryllium copper to make them more rugged. The SMA connector is often attached to rigid cable of 0.141-inch diameter where the center conductor of the cable is used as the center pin of the connector.

The APC-3.5 (Amphenol Precision Connector-3.5 mm), largely

developed at HP but now manufactured by Amphenol, provides repeatable connections even after hundreds of connect/disconnect operations. The graph demonstrates the low SWR of a typical mated pair. Either sex of this 50 ohm connector mates with an SMA connector of the opposite sex. When so mated, the SMA/3.5 mm pair has about the same SWR as a mated pair of SMA connectors. All these properties makes the APC-3.5 a good connector for equipment that tests devices with either another 3.5 mm connector or the SMA connector. This connector design also works to 34 GHz.

The BNC (Bayonet Navy Connector) was originally designed for the military during World War II. The BNC works well to approximately 4 GHz; above that it tends to radiate energy. It accepts flexible cables up to 1/4 inch in diameter and is the most popular general purpose connector used under 1 GHz. Both 50 and 75 ohm versions are available.

The TNC (Threaded Navy Connector) is merely a threaded BNC. The threads tend to sop radiation so it is usable at higher frequencies (12 GHz) than the BNC.

The SMC (Sub-Miniature C) is a 50 ohm connector that is smaller than the SMA and is used exten-

sively inside many RF instruments. It is manufactured by Sealecto Corporation and will accept cables up to 1/8 inch in diameter. It works up to about 7 GHz. It is even more fragile than the SMA type and is generally used only in internal systems applications where recon-nections are few.

Source: Hewlett Packard Coaxial & Wave Guide "Measurement Accessories".

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DOC Pushing for RFI Rejection in TV, Radio and Stereo

A revision to DOC's study and proposed standards for rejection of radio frequency interference, "Electromagnetic Compatibility Advisory Bulletin Number 1, Issue 2" has been available for some time.

Popularly known as "EMCAB 1", it describes the radio environment in which most electronic equipment has to operate in terms of frequency and field strength. For example, it shows that Amateur stations can create field strength up to 15 volts per metre at distances of 20 to 100 metres.

It was written to guide equipment designers and manufacturers in building much-needed immunity into their electronic products but to be really effective it needs to be backed up by regulations. The DOC recognizes this by noting that if industry does not adhere voluntarily to standards developed with government, the "... more stringent methods (would) be required. ..." in the form of legislation.

In the U.S., Congress has done just this in the form of recent amendments to its Communica-

tions Act. It now decrees that "... minimum performance standards for home electronic equipment and systems to reduce their susceptibility to interference. ..." will be established. This should give some incentive to the EMC committees of the Canadian Standards Association and DOC to develop Canadian minimum standards as quickly as possible. Unless we have standards in place by the time the U.S. develops theirs, this country could be a dumping ground for sub-standard home entertainment equipment with the resulting interference problems for Amateurs.

B. Dryden VE3TT represents CARF on the CSA committee involved.

Copies of EMCAB, 1, Issue 2, have been mailed to CARF-affiliated clubs. They may also be obtained from DOC offices or by sending a self-addressed, stamped (45¢ please), 9 1/2" x 4" envelope to CARF Inc., Box 356, Kingston, Ont. K7L 4W2. (Specify English or French version).

— VE3CDC

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An error in the story concerning U.S. phone band expansion in the June issue was not an attempt to re-write history but resulted from a short circuit in the writer's memory recall circuit. It was mistakenly noted that the last time that the FCC expanded the U.S. phone bands that CARF asked for and got a DOC okay for us to go down to 3725 KHz . . . that should have read 3700 and DOC unfortunately could not see its way clear to extend the band because at the time it had more important fish to fry with the FCC. The move to 3725 KHz was actually a unilateral action away back in the late 50's or early 60's by the DOC to compensate for some changes in the U.S. Amateur allocations.

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Due to an error of filing on my part, some of these swap shop items should have appeared earlier. Check with the seller or buyer and see if the items are still available.

For Sale: Bearcat 220 Scanner 375.00; Robot 400, ft interface for TV, B&W Camera with tripod 625.00; KLM ECH070 432 Transceiver CW&SSB 260.00; Henry Radio 6N2 2000 WATT 6 & 2 Metre Amp, extra new 8874 950; 2 Meter Amp, dual 4CX250's 1200 watt PEP, 2000v 1 Amp Arcos HV Supply, extra pair tirals 1100.00; VHF ENG 6m RPT 20 watt XTALS 5201 & 5301, 52.525 & 52.760, 6m Ringo Ronger Ant. All manuals 390.00; Motorola MH10 low band handheld, desk charger, extra nicad battery carrying case, 3 pairs xtuls 390.00; Take both handheld and repeater for 650.00. Bob Morrison, VE1 BPY, 276 Coronation Ave., S' Side, P.E.I., Canada C1N 2E7 902-436-3513.

Wanted: 4-1000A Tube. Will swap for TB4-1250 Philips or pay cash. Syd VE3 EGO, 531 Victoria Ave., Belleville, Ont K8N 2G6, (613) 966-8670.

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FOR SALE: Hammarlund HQ 170, Mint, \$100.00; Heathkit HW 202, Mint, \$175.00. M. McNaughton, Mitchell, V3E EQQ, H018, Box 507, Mitchell, Ont. K0K 1N0

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For Sale: Heathkit SB303 receiver, extender boards manual CW filter TR switch, \$350 F.O.B. Gerard F. Piette, 283 Eastern Ave, Sault Ste. Marie, Ont P6A 4R5 (705) 942-2413, VE3 GWN.

For Sale: YAESU FRG-7 general coverage communications receiver (0.5-29.9MHZ). Excellent condition, \$300.00. Inquiries to D.B. Vaughan, 108 Isabella St. Apt. 416, Toronto, Ontario M4Y 1N6 (416) 921-0345.

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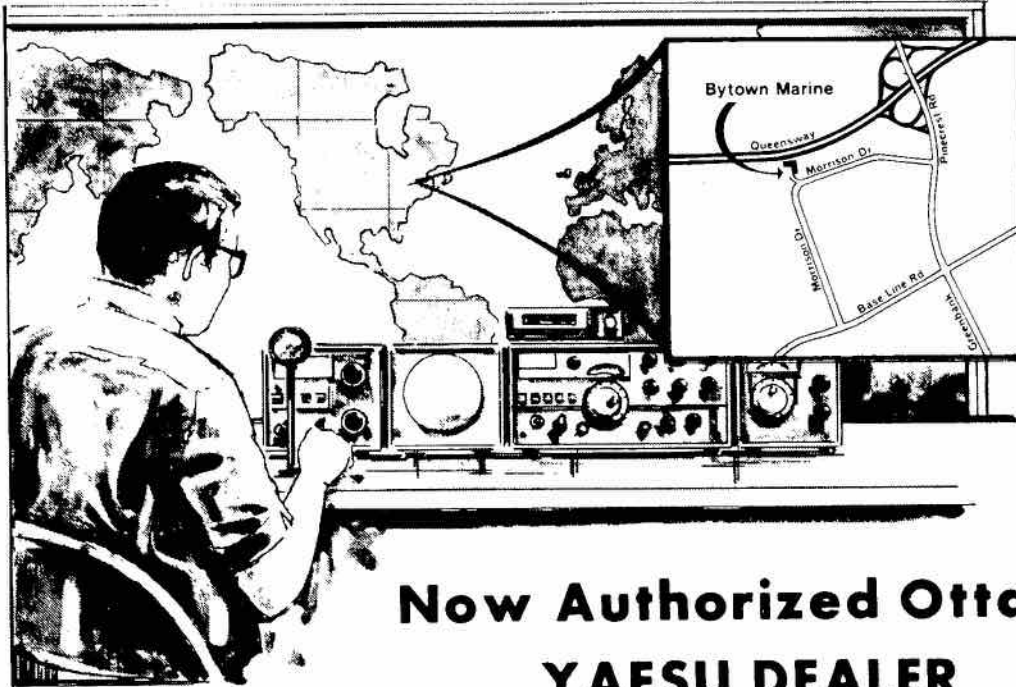
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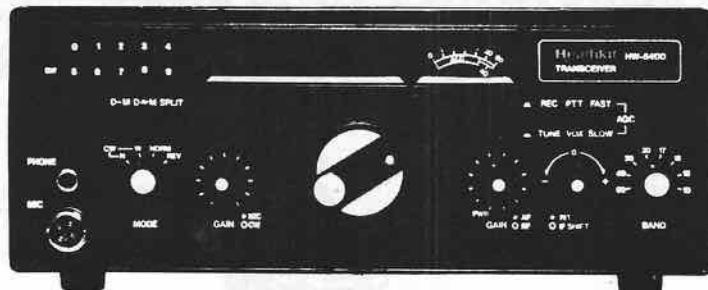
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