Second Class Mail Registration
Number 5073

TCA

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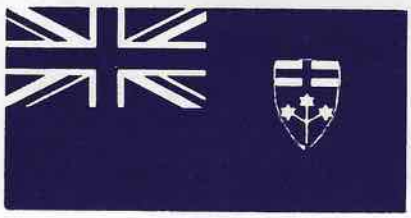
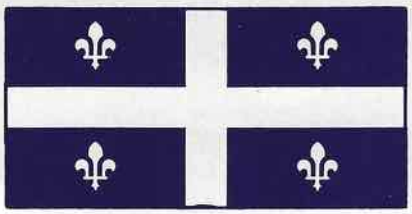
NOVEMBER
1983

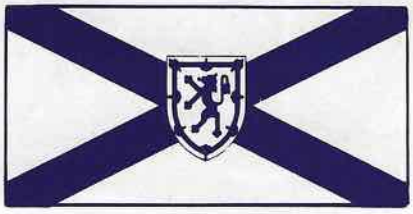
The Canadian Amateur Radio Magazine
La Revue des Radio Amateurs Canadiennes



Ontario
Ontario
1867
VE3



Quebec
Québec
1867
VE2

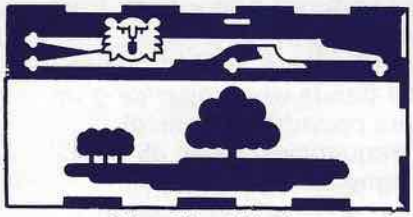


Nova Scotia
Nouvelle-Écosse
1867
VE1

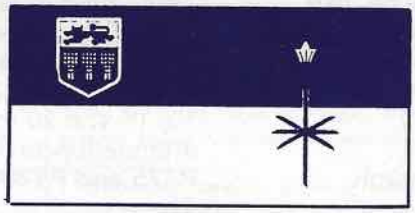
New Brunswick
Nouveau-Brunswick
1867
VE1

Manitoba
Manitoba
1870
VE4

British Columbia
Colombie-Britannique
1871
VE7



Prince Edward Island
Île-du-Prince-Édouard
1873
VE1



Saskatchewan
Saskatchewan
1905
VE5

Alberta
Alberta
1905
VE6

Newfoundland
Terre-Neuve
1949
VO1 **VO2**

Northwest Territories
Territoires du Nord-Ouest

VE8

Yukon Territory
Territoire du Yukon

VY1

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Introducing a great new line of Viewstar components.

These quality engineered passive components have been designed by engineers who, like you are highly demanding amateur radio operators. Only the best components and state-of-the-art technology have been used to build them.

VS 1500A Transmatch
This Transmatch is designed to match virtually any receiver, transmitter or transceiver in the 160 to 10 meter range, (1.8 to 30MHz) with up to 1500 watts RF power to almost any antenna. A 1:4 balun is built in for connection to balanced lines. Circuit uses the series parallel capacitor connection for improved harmonic attenuation. Units use the highest quality ceramic roller inductors and switches.

VS 300A Transmatch
This unit contains high quality components and is designed for lower power equipment up to 300 watts. It will match any receiver, transmitter or transceiver in the 160 to 10 meter range, (1.8 to 30MHz) with up to 300 watts RF power to almost any antenna. A 1:4 balun is provided for connection to balanced lines.

PT 1000 LP Lowpass filter
This unit eliminates spurious conduction from transmitters operating below 30 MHz. It effectively eliminates 2nd and 3rd harmonics appearing in the TV bands when operating on 10, 15 and 20 meters providing excellent attenuation to TV frequencies above 36 MHz.

PT75 and PT300 Highpass filters.
These units suppress spurious conduction from transmitters operating below 30 MHz. They provide low loss in the TV pass band 52-400MHz. PT 75 is designed for cable TV use. PT 300 is designed for off-air antenna use.

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47A Colville Road, Toronto 15, Ont.

ISSN 0228-6513

TCA

THE CANADIAN AMATEUR

NOVEMBER, 1983 Vol. 11 No. 10

Contents

THIS MONTH'S COVER: The flags are arranged more or less in the order in which the provinces joined Confederation. Top to bottom, left to right; Ontario 1867 (VE3); Quebec 1867 (VE2); Nova Scotia 1867 (VE1); New Brunswick 1867 (VE1); Manitoba 1870 (VE4); British Columbia 1871 (VE7); Prince Edward Island 1873 (VE1); Saskatchewan 1905 (VE5); Alberta 1905 (VE6); Newfoundland 1949 (VO1, VO2); Northwest Territories (VE8); Yukon Territory (VY1).

VE3VCA (The Voice of Canadian Amateurs), is the Canadian Amateur Radio Federation's head office station in Kingston, Ontario.

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

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

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Second Class Mail Registration Number 5073

C.A.R.F. EXECUTIVE

C.A.R.F. President
Don Slater, VE3 BID
R.R. 1,
Lombardy, Ontario
K0G 1L0
(613) 283-3570

Past President
Bill Wilson, VE3NR
1427 Cavendish Road,
Ottawa, Ontario
K1H 6C1
(613) 733-2205

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Fred Towner, VE6XX
123 Rundleridge Close
N.E.
Calgary, Alta.
T1Y 2L2
(403) 280-0074

Vice President
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VE7 EGR
P.O. Box 513,
Left Bank, B.C.
V0H 2A0
(604) 768-5220

Vice President
Ron Walsh, VE3 IDW
10 Nicholson Cres.,
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K7M 1X1
(613) 389-3301

Vice President
Doug Burrill,
VE3 CDC
151 Fanshaw Ave.,
Ottawa, Ontario
K1H 6C8
(613) 733-7108

General Managers
Art Blick, VE3 AHU
11 Manitou Cres. East,
Kingston, Ontario
K7N 1B1
(613) 389-2697

Secretary
Dave Goodwin, VE2ZP/3
1-285 Metcalfe St.
Ottawa, Ontario
K2P 1R8

Treasurer
Lorna Hill VE3 IWH
154 Colborne St.
Kingston, Ontario
K1K 1E2

Legal Council
Gary Warren
157 McLeod St.,
Ottawa, Ontario
K2P 0Z6
(613) 236-0852

Maritime Director
Leigh Hawkes, VE1ZN
P.O. Box 864
Armdale, N.S.
B3L 4K5
(902) 445-3579

Quebec Director
Robert Sondack,
VE2 ASL
260 Bellerive
Ils Ste Helene
St Luc, Quebec
J0J 2A0
(514) 348-9425

Ontario Directors
John Iliffe,
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Newmarket, Ontario
L3Y 6E2

Geoff Smith, VE3 KCE
7 Johnson Rd.,
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L4G 2A3
(416) 727-6672

Mid West Director
Norm Waltho, VE5AE
1547 Glendale St.,
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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 bocy 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 Newsline Number is (613) 824-3467

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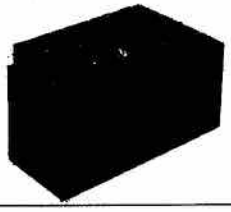


SPECIAL: Collins RF pwr output modules from military ARC38 equipment. Has variable 12.4uh roller coil of 27 turns of 14 wire rotated by 115v 400Hz selsyn motor. With 3/6159 tubes, ceramic rotary switch, 850 series capacitors, chokes etc. Size 11x5x6, wt. 10 lbs $9.00

SPECTRUM ANALYZERS

Military UPM-84 made by Lavoie. 5" CRT. 10MHz to 40.88GHz, with accessories and manual $300.00

Singer Metrics Panalyzor Model SB12bs consisting of RF7A tuning head, REC-1 range extending converter and spectrum analyzer SSB-4. 5" CRT. With probe and manuals. Covers 100Hz to 40MHz $300.00

Polarad Model TSA spectrum analyzer, 5" CRT. With plug-ins STU-1, STU-2 and STU-3 covering the range 10 MHz to 22GHz. With manuals $300.00

Pocket aneroid compensated barometers with adjustable altitude scale calibrated in feet. Pocket watch style with case. Brass and or aluminum construction $15.00

Recording chart barometers, 7 day spring-wound chart drum, ink stylus. Made by Short & Mason in glass table top case. All 5 glass sides bevelled plate glass. Black and chrome finish. Size 12x6x9 high $85.00

Recording chart barometers as above except made by Casella and 5 sides of case plain glass. Finished in white and blue $75.00

Recording temperature units made by Casella. 7 day spring-wound mechanism. Overall size 5x6x10. White enamelled finish, 0-100°F with supply of paper. Ink stylus. Glass on three sides of chart compartment $75.00

Military DC power supplies, Type CPP-2. Input 90-130V 60Hz. Output 12VDC 22 amps or 24VDC at 11 amps continuous. With load control adjustment and indicator lights. Size 11x18x10 ..... $50.00

Sony TV camera lenses. Zoom model 12.5 to 75mm f1.8. Standard "C" mount $75.00

Kern or Wild rt. angle optical eyepieces. Originally used with their theodolites. In wooden or leather cases, two eyepieces to a set ..... $5.00 per set while they last

Sony portable colour video recorder model AV8400. Approx. 12x12x6 ..... $130.00

Sony portable black and white video recorder, model AV3400, size approx. 12x12x6 ..... $50.00

Tektronix scope dollies model 500/53A with drawer and 2 plug-in storage compartments $100.00

Large stock of variable and fixed Jennings Vacuum Capacitors. Refer to previous issues of "TCA".

Moving coil meters, 3" square, basic movement 0-1ma. Various scales $3.00

Aircraft receivers Model ARC30 (similar to military ARV59) 190 MHz-1750KHz in 3 bands. Size 4x4x10 ..... $10.00

Tower sections, military welded lattice triangular sections 7" on a side. 10ft long. Built in locking cams on each leg to fasten to next section $15.00

New tubes, 4PR1000B ..... $100.00 each

Military receivers, Collins manufacture, R390 ..... $200.00

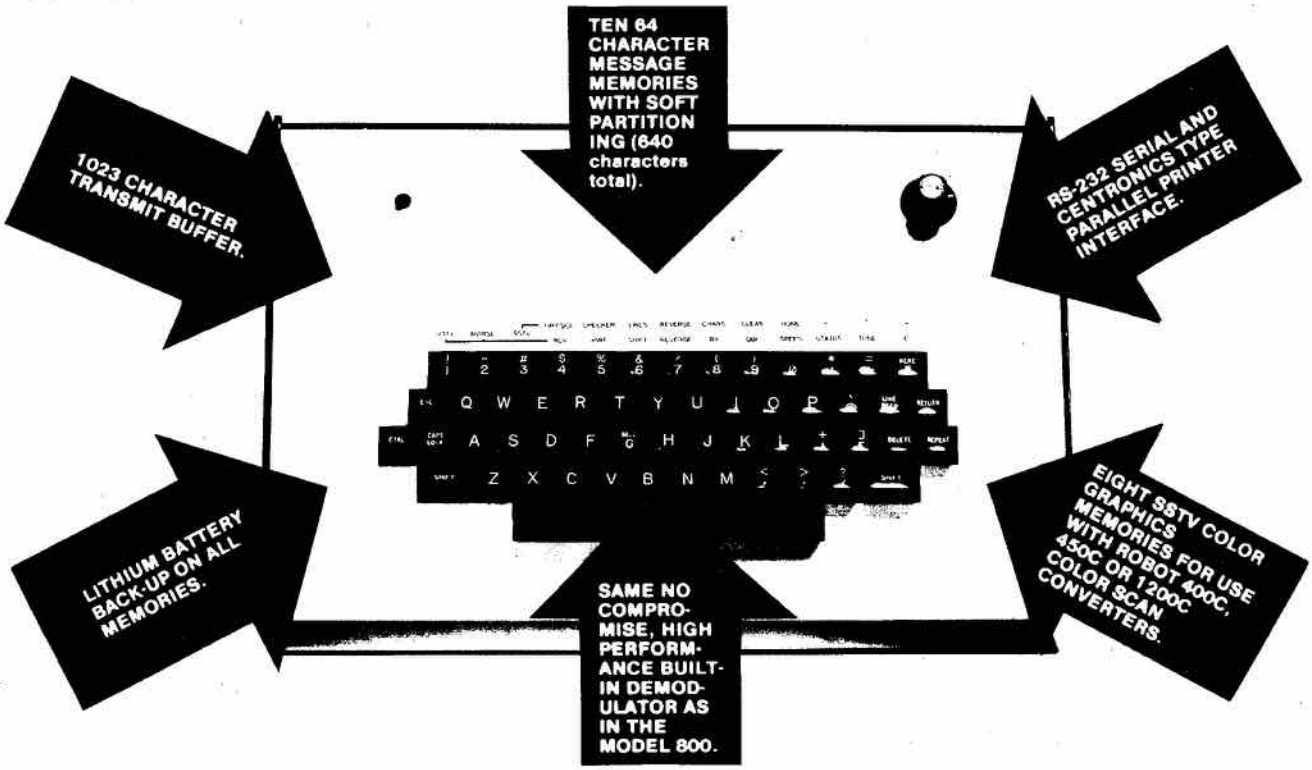
Westinghouse 1600 video display terminal, 7x9 CRT, capacity 1600 characters, 80 per row USASCII, memory MOS, baud rates 110-9600, parity insert/check, 73 key keyboard plus 11 numeric pad, status lamps, RS232 interface, size 14x18x22, wt. 50 lbs. With manuals, 115 or 230V 60Hz input 100W $250.00

General Radio Variacs, 0-130V at 5 amps. Model V5 with dial plate and knob $20.00

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

IMPORTANT: For more surplus odds and ends refer to previous issues of TCA.

THE NEW ROBOT MODEL 800C SUPER TERMINAL!



The new Model 800C offers the same fine quality construction, high performance, and outstanding features as the popular Model 800, plus the many new operating features shown above. It is a complete specialty mode communications terminal offering unmatched ease of operation. The 800C is designed expressly for amateur radio and nothing else! By focusing our attention on this simple concept we are able to provide a product that works better, costs less and is easier to operate than systems that try to do "everything" and do nothing very well.

OUTSTANDING BUILT-IN DEMODULATOR

The Model 800C has the same high quality demodulator acclaimed by thousands of users of the Robot Model 800 in daily use world wide, with its ability to copy those weak signals that you usually give up on. The demodulator employs separate active two-tone discriminator filters for optimum demodulation of RTTY signals. It is available with the IARU standard "low tone" frequencies or "high tones" for use on VHF-FM.

BAUDOT/ASCII OPERATION

Split screen display. Autostart. Programmable WRU and SELCAL. On-screen status line and tuning indicator. Programmable narrow shift CW ID.

MORSE CODE OPERATION

Autotrack on receive. Side tone oscillator. Morse code trainer. On-screen speed indication.

SSTV OPERATION

Full color SSTV graphics capability when used with Robot's new color scan converters plus stand alone black and white SSTV graphics transmission. Eight color graphics memories available for CQ, QTH and special messages.*

ATTENTION ROBOT MODEL 800 OWNERS: All of the "new" features found in the Model 800C are available by adding the Model 800C Update Kit to your unit. All necessary parts and hardware are included for an easy single evening installation.

For complete information on all the Robot 800C's features write for literature or visit your Robot dealer.

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

ROBOT

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NEW! ICOM IC-745 Worth Celebrating!

9 HAM BANDS! GENERAL COVERAGE RECEIVER! 16 MEMORIES! SCANNING! PASSBAND TUNING! VARIABLE NB & AGC!

What's the celebration about? The IC-745 . . . a new all ham band HF transceiver with SSB, AM, CW, RTTY and an FM option . . plus, a 100KHz — 30MHz general coverage receiver.

And . . . the IC-745 has a combination of features found on no other transceiver at such an incredibly low price.

Compare these exceptional features:

- 100KHz — 30mHz Receiver
- 16 Memories
- Full function Metering with a built in SWR Bridge
- IF Shift and Pass Band Tuning
- 10Hz / 100Hz / 1KHz Tuning Rates with 1MHz band steps
- Optional Internal AC Power Supply
- Adjustable Noise Blanker (width and level)
- Continuously Adjustable AGC with an OFF position
- Receiver Preamp
- 100% Transmit Duty Cycle

Other Standard Features:

- 100 Watt Output Transmitter with exceptionally low IMD
- VOX
- Speech Compressor
- Tunable Notch Filter
- RIT and XIT
- All Mode Squelch
- Scanning
- ICOM System Compatibility

Optional Accessories:

- IC-PS15 External Power Supply
- IC-PS740 Internal Power Supply for the ultimate in Portability
- IC-2KL Linear Amplifier
- IC-SP3 External Speaker
- IC-MB12 Mobile Mounting Bracket
- IC-AT100 Antenna Tuner (100W)
- IC-AT500 Antenna Tuner (500W)
- IC-BC10 Memory Backup
- IC-EX241 Marker Module
- IC-EX242 FM Module
- IC-EX243 Electronic Keyer
- IC-FL52A 500Hz 455KHz CW Filter
- IC-FL45 500Hz 9MHz CW Filter
- IC-FL54 270Hz 9MHz CW Filter
- IC-FL53A 250Hz 455MHz CW Filter
- IC-FL44A 2.1KHz 455KHz SSB Filter
- IC-SM6 Desk Mic
- IC-HM12 Hand Mic

The IC-745 is the only transceiver today that has such features standard . . . the number of options and accessories available . . . and such a low price.

ICOM is *...Simply the Best* in quality built ham equipment today. See the IC-745 at your local authorized ICOM dealer or contact ICOM for more information.

$ 1280

NEW 440 MHz Repeater

$ 1280

cabinet $319

IC-RP3010 FM Repeater

Now a 10 watt 440 MHz FM repeater from the leader in VHF communications. The IC-RP3010 features high stability crystal controlled channels, CTCSS system, ID'er, remote control through a DTMF decoder and microprocessor controlled circuitry.

ICOM

The World System

Dollard's Radio · West

New

IC-751

HF Transceiver/General Coverage Receiver

- *160-10M*
- *100KHz — 30MHz Receiver*
- *CW/SSB/ AM/RTTY/ FM*
- *Microprocessor Controlled*
- *12VDC Operation*
- *Fluorescent Display*

$1794

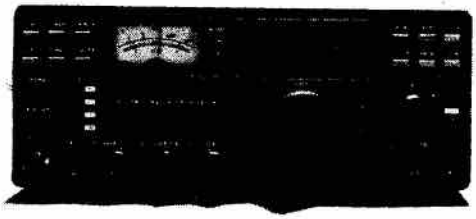
$1999 (incl. p.s.)

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 • 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 flourescent 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-S 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 4⅜"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.

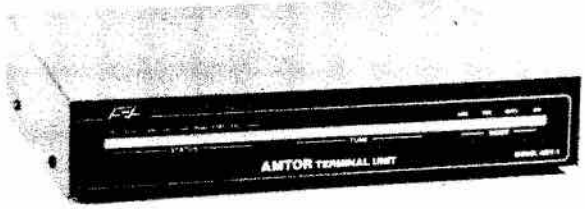
Scanning. Scanning of memories, programmable band scan, and mode scanning are available and easy to use.

New Size. Only 11¼"W x 4⅜"H x 10¾"D the IC-471A is styled to look good and engineered for ease of operation.

Dollard's Radio·West

810 S.W. Marine Drive, Vancouver, B.C. V6P 6E3
Telephone: 321-1833

AMT-1 Amtor Terminal Unit by AEA



What is AMTOR?

AMTOR (Amateur Teleprinting Over Radio) is a micro-processor controlled error correcting data communication system. It allows virtually error free data transmission between suitably equipped amateur radio stations. This is possible even under conditions of severe interference and fading. Sometimes, error free communication is possible, even though signals are not discernible to the human ear through noise and QRM.

Based on CCIR recommendation 476 and adapted for amateur use by G3PLX, AMTOR is now permitted by many national administrations. Some hundreds of stations are currently active, mostly on 20 meters — where the characteristic CHIRP of AMTOR ARQ signals may frequently be heard.

On the H.F. marine bands, SITOR (the marine equivalent of AMTOR) is used extensively for error free ship-to-shore telex communication.

AMTOR CODE DEFINITION

Unlike standard 5 unit RTTY, AMTOR uses synchronous transmission of a 7 bit code. This 7 bit code provides 2⁷, or 128, possible code combinations. 35 of these codes are constant ratio combinations which have four positive and three negative elements. The ratio is tested on each received character. If it is incorrect, the received character is rejected as erroneous.

Of the 35 available constant ratio codes, 32 are used as alphanumeric teleprinter codes. The remaining three are assigned as special function codes.

Data transmission is at 100 Bauds, which corresponds to a character length of 70ms. If a code combination is received which does not correspond to a 4:3 positive/ negative ratio, the code is rejected at the receiving end and is not sent to the terminal.

AMTOR MODES

ARQ

In this automatic error correcting transmission mode, the sending station transmits three characters as a block in 210ms. It then pauses for 240ms, during which the receiving station transmits a single acceptance code. If the information has been received incorrectly, a "request for repeat" (RQ) code is issued. On receipt of an RQ, the sending station repeats the three character block until the receiving station finally transmits an acceptance code, after which the next block of three characters is sent. A third control character is also available to cause the direction of sending to be reversed, allowing the receiving station to reply.

By its very nature, ARQ mode can only operate between two mutually synchronized stations. ARQ transmissions between two other stations can, however, be monitored by the AMT-1, when set to ARQ listen mode.

ARQ demands reasonably fast transmit/receive and receive/transmit switching times at both transmitting and receiving stations. Because ARQ transmissions have a 50% duty cycle, most transceivers do not have to be operated at reduced power levels, unlike normal RTTY.

FEC

This mode allows transmission to several stations simultaneously, and is an excellent mode for CQ calls. It does not incorporate the full error correcting capability of ARQ, but each character is transmitted twice, and the receiving station can pick out the good character in a pair if the other one is mutilated. The received error rate is thus significantly lower than normal RTTY. If both transmitted characters in a pair are mutilated, no character is printed by the receive terminal unit.

The second character in a pair is separated by 350ms from the first. This enables the system to handle bursts of interference of up to 350ms with no printed errors. The transmitter must operate at 100% duty cycle.

ARQ Listen

This mode allows the AMT-1 to monitor an already established ARQ transmission between two other stations. This mode may need a few moments, or some assistance from the operator, to synchronize, but nevertheless is an extremely useful feature which is unique to AMTOR.

The AMT 1 TERMINAL UNIT

Description

The AMT-1 Terminal Unit contains everything that is needed to convert an amateur radio station and personal computer (or ASCII terminal) into a fully operational data communications system with optional error correcting facilities. It contains modern (AFSK modulator/ demodulator) circuitry together with a microprocessor which handles AMTOR data transmission and also translates between AMTOR code and 8 unit, ASCII code.

An ASCII, RS232 interface has been chosen for the AMT-1 because of the extra CONTROL and ESCAPE code flexibility which this allows. Additionally, home computers and data terminals with ASCII interfaces are now available at very reasonable prices.

$ 775

AEA Computer Patch™ Interface model CP-1

Now you can easily convert your personal computer and transceiver into a full function RTTY station with the new CP-1 Computer Patch™ interface by AEA and appropriate AEA software and cabling. The CP-1 is a professional quality RTTY/CW terminal which cuts no corners on sensitivity, selectivity, and reliability. Software packages include split screen operation and large type-ahead and message (brag) buffers at all the common RTTY and CW speeds.

The CP-1 Computer Patch™ is easy for an inexperienced RTTY operator to hook up and operate, but will still appeal to the more experienced and sophisticated RTTY user. The CP-1 is a moderately priced, high performance, feature packed unit, which utilizes reliable innovative design in the style you have come to expect from Advanced Electronic Applications. It is priced competitively with other popular units, but includes many extras not offered by them.

With the tremendous price drop in personal computers, your total system cost is far below that of dedicated RTTY/CW systems which offer few, if any additional features. No computer programming knowledge is required to use the CP-1 with your computer and you will still have the opportunity to use your personal computer for a variety of unrelated functions.

The CP-1 demodulator provides greatly improved performance compared to popular single channel RTTY detectors. An easy to use AEA magic-eye bargraph tuning indicator gives the closest thing to scope tuning, but separate Mark/Space scope output jacks are also provided. A state-of-the-art multi-usage active filter is incorporated offering pre and post limiter filtering. Floating comparator (automatic threshold) circuits give the best possible copy under fading and weak signal conditions.

Additionally, the CP-1 offers a variable receiver shift capability for any shift from 100 to 1000 Hz with a NORMAL/REVERSE tone selector switch on the front panel.

A function generator chip is utilized for clean, stable sine wave AFSK tone output to the transmitter. Both plus (+) and minus (-) keyed output jacks are provided for CW keying of virtually any popular transceiver. Automatic transmit/receive switching is available under computer control or from a front panel manual transmit button. Output and computer control signals are available in the usual TTL levels (or RS-232 format with an optional low cost RS-232 kit).

Power requirement for the CP-1 is 16 VAC which is provided by a 117 VAC wall adaptor unit supplied with the CP-1. The CP-1 Computer Patch™ is housed in an attractive all-metal enclosure with extensive R.F. filtering for minimal R.F. susceptability or radiation far exceeding Part 15, subpart J, FCC requirements. The CP-1 measures 10" wide x 2¼" high x 8¼" deep and weighs approximately 1 pounds.

$ 295

Morse Keyers & Trainers by AEA

AEA produces the finest Morse keyers and trainers in the world. All AEA keyers operate with any standard keyer paddle and offer selectable monitor tone, selectable dot and dash ratios, full weighting and selectable dot and/or dash memory. In addition, all our keyers offer full, semi-automatic or straight key modes. The keyers and trainers are keypad controlled which significantly reduces the complexity of operation for all the features offered. Each keyer has separate + and - keyed outputs for keying any modern transmitter. All keyers and trainers operate from 12 VDC (or 117 VAC with optional model AC-1 wall adaptor) which makes them ideal for portable operation. AEA microcomputer-based products are all subjected to a full burn-in and test prior to shipment, as well as being designed for maximum R.F. immunity.

NEW BT-1 **$ 125**

The BT-1 Basic Trainer is a hand-held computerized unit which teaches the code one character at a time at 5 to 20 words per minute. The BT-1 contains a self-paced training program that allows serious students the possibility of learning Morse to 20 wpm in as little as one month! Each character represents a separate practice session in which the character is first introduced by itself, and then presented 50% of the time along with all previously learned characters. There are no tapes to memorize, wear out, or break. No programming skills are necessary, the BT-1 is very easy to use. The tone oscillator can also be keyed for sending practice. An earphone jack is provided for private listening. The BT-1 will go as high as 99 WPM in 1 WPM increments. A battery operated version, the BT-1P, is available with wall charger and internal NiCAD batteries.

NEW KT-3

$ 179

The **KT-3 Keyer-Trainer** unit uses the teaching program used in the BT-1 trainer. In addition, the KT-3 features a full function Morse automatic keyer for keying any modern transceiver, or for sending practice. Speed range is 18-99 wpm for transmitting and 1-99 wpm for training.

KT-2 Keyer Trainer

The **KT-2 Keyer-Trainer** is a computerized keyer with all the features shown above, plus a Morse proficiency trainer. It is designed to increase your existing code as quickly as possible. The unit can be set for beginning practice speed, ending practice speed, and duration of practice. The microcomputer does all the rest by gradually increasing the speed during the practice time selected. You can even select between fast code (Farnsworth) or slow code methods. The characters are sent in 5 letter groups or random word lengths. Two levels of difficulty can be selected, common Morse characters or all English Morse characters. A 24,000 character answer book is provided for the 10 separate starting positions. There is also random practice mode for which no answers are available.

$179

The **CK-2 Contester™ Keyer** is the lowest cost automatic keyer available featuring an automatic serial number generator for contesting. The CK-2 keyer features a large 500 character message memory that can be soft-partitioned into as many as 16 sections. An exclusive AEA edit mode makes it possible to correct mistakes made while entering messages or to insert words into previously established messages. Two different speeds can be set for fast recall in addition to a stepped variable speed control. The CK-2 features an automatic message repeat mode with variable delay-before-repeat for automatic CQ transmissions or TVI testing.

CK-2 Contester™

$ 219

MM-2 MorseMatic™

The **MM-2 Morsematic Keyer** represents the most sophisticated paddle keyer ever designed and features two powerful microcomputers. The Morsematic incorporates virtually all the features (except the preset and stepped variable speeds) of both the CK-2 and KT-2 shown above. In addition, the MM-2 offers an exclusive automatic beacon mode which is invaluable for meteor scatter, moonbounce scheduling, or beacon operation.

AEA Brings you the Breakthrough!

$ 259

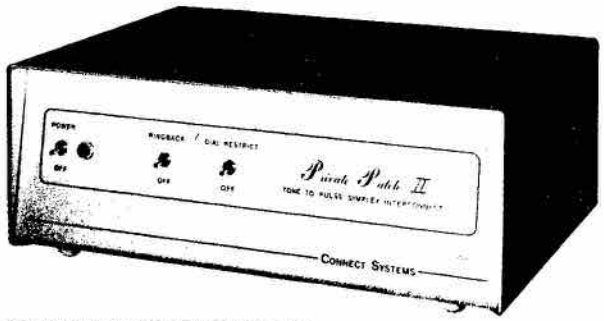
MasterCard VISA

Dollard's Radio · West

Connect Systems
PRIVATE PATCH II

TONE TO PULSE SIMPLEX INTERCONNECT

When connected to your base FM transceiver, **Private Patch II** will yield commercial quality mobile telephone communications to your vehicle and handheld radios. **Private Patch II** is compatible with both tone and rotary exchanges. Can operate tone or pulse, your choice! You can both initiate and receive telephone calls, without operator assistance. Either simplex or through a range extending repeater. Our dial restrict switch and five-digit access code protect your phone bill and prevent unauthorized use.



$ 750.00

- *OPERATES SIMPLEX*
- *TOUCH TONE™ OUTPUT*
- *FIVE-DIGIT ACCESS CODE*
- *SPEED DIALING COMPATIBLE*
- *RECEIVE INCOMING CALLS*
- *DIAL RESTRICT SWITCH*
- *TONE TO PULSE*
- *NO TIMING ADJUSTMENTS*
- *SIX-MINUTE TIMER*
- *CW IDENTIFICATION*
- *NO MODIFICATIONS TO BASE FM TRANSCEIVER*
- *OPERATES THROUGH REPEATERS*
- *LOW POWER CMOS DIGITAL LOGIC*
- *NO TONE ENCODERS NECESSARY*
- *BUSY CHANNEL RINGBACK INHIBIT*
- *ATTRACTIVE DESK TOP ENCLOSURE*
- *HIGH QUALITY CIRCUIT BOARD*
- *SELF-CONTAINED 115VAC POWER SUPPLY*

Dollard's Radio · West

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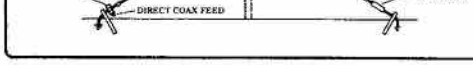
new Amateur SWL Commercial Antennas

CONTINUOUS COVERAGE ANTENNA FOR COMMERCIAL SERVICE
2 – 30 MHz Model AC-2-30

$ 227.95

- SWR Max 2:1, 1.4:1 average from 2 - 30 MHz
- Can be installed in approximately 80 foot space
- Ideal for commercial services for multi frequency operation without the need for antenna tuners or additional antennas
- 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

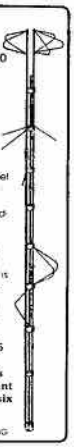


Model AV-25 SIX BAND VERTICAL for 80, 40, 30, 20 15, 10 meters with NO TRAPS

$ 152.00

- Only 25 ft. high
- Three parallel steel elements in a rugged tower
- Capacity hat loading for wide band width
- Direct coax feed with low SWR
- Only loading coils 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.

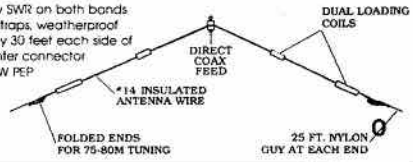


PATENT PENDING

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

$ 90.00

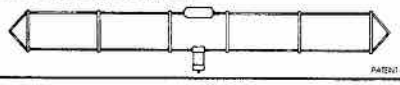
- Low SWR on both bands
- No traps, weatherproof
- Only 30 feet each side of center connector
- 2 KW PEP



CONTINUOUS COVERAGE ANTENNA
3.5 – 30 MHz Model 370-15

$229.00

- SWR less than 2:1 from 3.5 to 30 MHz
- 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
- Designed for 50 ohm feedline
- Weather proof balun and balancing network

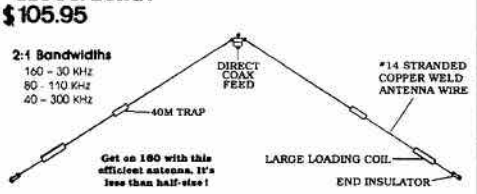


PATENT PENDING

Model AS-160/Short 160, 80, 40 M DIPOLE or INVERTED VEE
120 FT. LONG!

$105.95

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

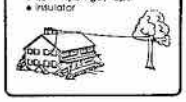


Model ASW-100 LONGWIRE SHORTWAVE LISTENER'S ANTENNA

$ 43.00

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

- 100 ft. long
- #14 copper-coated steel antenna wire
- 50 ft. insulated lead-in wire
- 25 ft. nylon guy rope
- Insulator



Model ASW-49 SEVEN BAND TRAP ANTENNA

$57.00

- 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

PATENTED

B&W BARKER & WILLIAMSON

Dollard's Radio · West

Lesmith Limited

RADIO CRYSTALS FOR THE COMMUNICATIONS INDUSTRY

P.O. BOX 703
OAKVILLE, ONTARIO L6J 5C1
TELEPHONE: (416) 844-4505
TELEX: 06 982348

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	G.E 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.

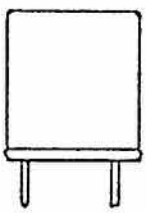
1983 PRICES

	HC-6/U	HC-25/U
AMATEUR		
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

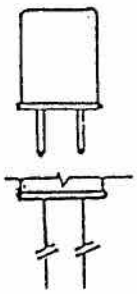
COMMON HOLDERS
MIL Designations



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.

2 Meter/FM/800 Channel

The **IC-22U** is ICOM's VHF mobile providing superior performance at a budget price.

Based on the design of the IC-225, the **IC-22U** is designed with expanded capability to cover the 800 channels of the 2-meter FM band.

The **IC-22U** provides ease of operation via a convenient pushbutton frequency selection, high/low power push button, Touchtone® mic available, and convenient hookups included for sub-audible tone or continuous tone control squelch system. Repeater inputs may be monitored at the flip of a switch.

ICOM performance includes 5 helical resonators for outstanding selectivity, continuous duty, rugged 10 watt transmitter, and excellent receiver sensitivity.

The **IC-22U** is versatile, easily set up for MARS and CAP use. It contains a 9 pin undedicated accessory socket, and has a remote frequency selection option available, the EX199.

The **IC-22U** is a high performance radio at a budget price.

Some Specifications.

■ **Frequency coverage:** 144.00 — 147.995 MHz ■ **Frequency resolution:** 10 KHz steps +5 KHz shifts with SHIFT switch depressed ■ **Power supply requirement:** 13.8V DC +15% (negative ground) 2.5A Max. ■ **Current drain:** Transmitting - high (10W) Approx. 2.3A, low (1W) Approx. 0.9A, Receiving - At max audio output Approx. 0.5A, Squelched Approx. 0.3A ■ **Transmitter Output power:** 10W (high), 1W (low) ■ **Emission mode:** 16F3 ■ **Microphone:** 1.3K ohm dynamic microphone with built-in preamplifier and push-to-talk switch ■ **Operating mode:** Simplex, Duplex (+600KHz from indicated frequency, Tx or Rx) ■ **Receiver Intermediate frequency:** 1st 16.9 MHz, 2nd 455 KHz ■ **Receiver Sensitivity:** More than 30dB S+N+D/N+D at 1uV, Less than 0.6uV for 20dB Noise quieting ■ **Receiver Selectivity:** More than ±7.5 Khz at —6dB point, Less than ±15 KHz at —60dB point

Suggested Retail Price: **C$339**

IC-22U MOBILE

- *4MHz*
- *Digital PLL*
- *Pushbutton Frequency Selection*
- *12 VDC*

VHF

2 Meter/FM

The IC-2A is ICOM's extremely popular handheld. This reliable, field-proven 2-meter series has become the most successful handheld on the market.

Here are a few reasons why: Its high versatility...3 sizes of battery pak easily slide on, slide off providing other power outputs and operating cycles...Extremely compact...Fits in the palm of your hand...Only 2.6" × 1.4" × 6.5" with 800 channels transmit and receive...Synthesized...Excellent audio quality...Separate speaker and mic built in...Output power 1½ watts high with BP3, .5 watt battery saving on low...Touchtone® pad on the 2AT is provided as standard.

Each 2A and 2AT comes complete with BP3 NiCd pak, AC wall charger, flexible antenna, earphone, wrist strap and belt clip. All standard at no extra cost.

Options for the **IC-2A** include the CP1 cigarette lighter cord, BC30 battery charger, IC-HM9 speaker microphone, leather case, BC25U wall charger, IC-DC1 regulator, IC-BP2, BP3, BP4 and BP5 battery paks, and the ML1 amplifier giving 10 watts of output power.

Some Specifications:

■ **Frequency coverage:** 144.100 — 148.000Mhz ■ **Frequency resolution:** 5 KHz steps ■ **Frequency control:** Digital PLL synthesizer, with thumbwheel switches ■ **Power supply requirement:** DC 8.4V with attendant power pack IC-BP3 negative ground is acceptable ■ **Current drain (at 8.4V DC):** Transmitting - High (1.5w) approx. 700mA, Low (0.15w) approx. 300mA Receiving - At max. audio approx. 170mA, Squelched approx. 22mA ■ **Dimensions:** 116.5mm (H) × 65mm (W) × 35mm (D) without power pack ■ **Attendant power pack IC-BP3:** 49mm (H) × 65mm (W) × 35mm (D) ■ **Weight:** 470g (IC-4AT: 490g) including power pack, IC-BP3 and flexible antenna ■ **Transmitter Output Power:** High 1.5w (at 8.4v), Low 0.15w (at 8.4v) ■ **Emission mode:** 16F3 ■ **Receiver Receiving system:** Double conversion superheterodyne ■ **Receiving Mode:** 16F3 ■ **Receiver Intermediate Frequency:** 1st 26.8 MHz, 2nd 455 KHz ■ **Receiver Sensitivity:** Less than 0.5 uV for 20dB noise quieting. More than 26dB S+N+D/N+D at 1 microvolt ■ **Receiver Audio output power:** more than 400mW ■ **Audio output power:** 8 ohms

Suggested Retail Prices:
IC-2A C$279/IC-2AT C$309

IC-2A(T) HANDHELD

- *Easy to use*
- *Affordable*
- *Digital PLL*

430 — 450MHz/FM/CW/SSB

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 4⅜"H x 10¾"D the IC-471A is styled to look good and engineered for ease of operation.

Some Specifications:

■ **Frequency Coverage:** 430 — 450MHz ■ **Frequency Resolution:** SSB 100Hz steps, FM 5KHz steps, 1KHz steps with TS switch turned ON ■ **Frequency Readout:** 7 digit fluorescent display / 100Hz readout / RIT ■ **Frequency Stability:** ±10 PPM (-10°C to +60°C) ■ **Memory Channels:** 32 Channels, any inband frequency programmable ■ **Usable Conditions:** Temperature: -10°C — 60°C (14°F — 140°F) ■ **Power Supply Requirement:** 13.8V DC ±15% (negative ground) 4A Max or 117V AC ±10% ■ **Current Drain: (at 13.8V DC):** Transmitting: SSB (PEP 10W) Approx. 3.5A; CW, FM (10W) Approx. 3.5A; FM (1W) Approx. 1.6A Receiving: At max. audio output Approx. 1.0A; Squelched Approx. 0.8A ■ **Dimensions:** 111mm(H) x 286mm(W) x 274mm(D) ■ Transmitter Output Power: SSB 1 — 10W PEP (Adjustable), CW 1 — 10W (Adjustable), FM 1 — 10W (Adjustable) ■ **Modulation System:** SSB Balanced modulation, FM Variable reactance frequency modulation ■ **Max. Frequency Deviation:** ±5KHz ■ **Microphone:** 600 ohm electret ■ **Operating Mode:** Simplex, Duplex ■ **Receiving Mode:** SSB (A3J, USB/LSB), CW (A1), FM(F3) ■ **Sensitivity:** SSB, CW: Less than 0.5 microvolts for 10dB S+N/N; FM: Less than 0.6 microvolts for 20dB Noise quieting ■ **Selectivity:** SSB, CW: More than ±1.2KHz at -6dB point, Less than +2.4KHz at -60dB point FM: More than ±7.5KHz at -6dB point, Less than ±15KHz at -60dB point ■ **Audio Output Power:** 2.0W ■ **Audio Output Impedance:** 8 ohms ■ **RIT Variable Range:** ±9.9KHz

Suggested Retail Price: **C$1025**

UHF

IC-471A BASE

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

ICOM VHF

New

IC-271A BASE

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

2 Meter/FM/CW/SSB

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 flourescent 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-S 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 4⅜"H x 10¾"D the IC-271A is styled to look good and engineered for ease of operation. • Computer Interface.

Some Specifications:
■ **Frequency Coverage:** 143.8000 — 148.1999MHz ■ **Frequency Resolution:** SSB, 10/100 Hz Steps/FM 5KHz steps, 1KHz steps with TS button depressed ■ **Frequency Readout:** 7 digit fluorescent display 100Hz readout w/RIT ■ **Frequency Stability:** ±10 PPM (-10° — +60°C) ■ **Memory Channels:** 32 channels, any inband frequency programmable ■ **Usable Conditions:** Temperature: -10°C — 60°C (14°F — 140°F) Duty cycle: continuous ■ **Power Supply Requirement:** 13.8V DC ±15% (negative ground) 6A max. or 117V/AC ±10% ■ **Dimensions:** 111mm(H) x 286mm(W) x 274mm(D) ■ **Transmitter Ouput Power:** SSB 25W (PEP), CW 25W, FM 1 — 25W (Adjustable) ■ **Emission Mode:** SSB (A3J, USB/LSB), CW (A1), FM (F3) ■ **Modulation System:** SSB: Balanced modulation, FM: Variable reactance frequency modulation ■ **Max. Frequency Deviation:** ±5KHz ■ **Microphone:** 600 Ohm (IC-SM6 optional base mic available) ■ **Operating Mode:** Simplex, Duplex (any inband frequency separation programmable) ■ **Receiving Mode:** SSB: (A3J, USB/LSB), CW (A1), FM (F3) ■ **Sensitivy:** SSB, CW: Less than 0.5 microvolts for 10dB S+N/N, FM: More than 30dB S+N+D/N+D at 1 microvolt ■ **Selectivity:** SSB, CW: More than ±1.2KHz at -6dB point, Less than ±2.4KHz at -60dB point; FM: More than ±7.5KHz at -6dB point, Less than ±15KHz at -60dB point ■ **Audio Output Power:** 2 Watts ■ **Audio Output Impedance:** 8 ohms ■ **RIT Variable Range:** ±9.9KHz

Suggested Retail Price: **C$896**

New

IC-25A/H MOBILE

- *45 Watts/ 25 Watts*
- *5 Memories*
- *Scanning*
- *Microprocessor Controlled*
- *12 VDC*

2 Meter/FM

Try to imagine 45 watts, 5 memories and 2 scanner systems in a 2" high, 5½" wide and 7" deep 2-meter transceiver! The **IC-25A/H** is a full-featured FM transceiver for the space conscious operator.

The **IC-25A/H** is no lightweight when it comes to features: 5 memories...Priority channel...25 or 45 watts high...1 watt battery saving low...Touchtone® mic (included standard at no extra cost)...Full band scan or programmable scan (set your own limits)...and, Memory scan...all with automatic resume after pre-set delay or carrier drop (user selectible).

The **IC-25A/H** also boasts: 2 VFOs with data transfer...2 tuning rates (5 or 15 KHz), a normal reverse switch and a memory backup power supply option.

The **IC-25A/H** is truly a step forward in 2-meter transceivers and its compact size and affordable price make it the best buy in 2-meter HF mobile.

Some Specifications:
■ **Frequency Coverage:** 143.800 — 148.195MHz ■ **Current Drain (at 13.8V DC):** Receiving squelched approx. 0.4A; receiving max audio approx. 0.6A; transmit at 1 watt approx. 1.3A; transmit at 25 watts approx. 4.8A, 45 watts 6.5 A ■ **Dimensions:** 140mm(W) x 50mm(H) x 177mm(D) ■ **Weight:** Approx. 1.5kg ■ **Transmitter Output Power:** 25W or 45W (high), 1 W (low) ■ **Emission Mode:** 16F3 ■ **Microphone:** 1.3k ohm dynamic with built-in preamplifier and PTT switch, Touchtone® encoder built in ■ **Operating Mode:** Simplex or duplex with ±600KHz, or splits. Programmable in 100KHz increments ■ **Receiver Receiving System:** Double conversion superheterodyne ■ **Receiver Intermediate Frequency:** 1st: 19.6MHz; 2nd: 455KHz ■ **Receiver Sensitivity:** Less than 0.6uV for 20dB noise quieting, less than 30dB S+N+D/N+D @ 1 microvolt ■ **Receiver Selectivity:** More than ±7.5KHz at -6dB, less than ±15KHz at -60dB

Suggested Retail Prices:
IC-25A C$429/IC-25H C$489

IC-290H MOBILE

- *2 Meter Multimode*
- *25 Watt*
- *Green LED*
- *Microprocessor Controlled*
- *12 VDC*

2 meter/FM/CW/SSB

The **IC-290H** is the latest state-of-the-art in an all mode 2-meter mobile. Providing 5 memories, priority scan and squelch on side band, the **IC-290A** gives the operating features that operators desire the most: Ease of operation on FM is provided by 5 memories plus 2 VFOs...Priority channel...

Programmable offsets...5 or 1 KHz tuning. CW and SSB can be used equally conveniently with features such as squelch on sideband, 2 VFOs with equalizing capability for marking your signal frequency...1 KHz or 100Hz tuning...CW sidetone...RIT...AGC selectible...and, noise blanker for pulse-type ignition noises on SSB.

The **IC-290H** incorporates a full capability scanning system which allows scanning the whole band, part of the band, or the memories. Automatic stop and automatic resume after carrier drop or predetermined adjustable delay is selectible by the user.

The ICOM **IC-290H** features provide: Remote tuning from the optional HM10 microphone...Digital frequency display...Hi/lo power switch...LED indicators...LED bar meter...Touchtone® microphone standard...and, offsets are variable in 100KHz increments.

Some Specifications.
■ **Frequency Coverage:** 143.800 — 148.195 MHz ■ **Power Supply Requirement:** 13.8V DC ±15% (negative ground) 3.5A Max. ■ **Current drain (at 13.8V DC):** Transmitting - SSB (PEP 10W) Approx. 2.2A; CW, FM (10W/1W) Approx. 3.2A/1.6A; Receiving - at max. audio output Approx. 0.9A; Squelched Approx. 0.7A ■ **Transmitter Output Power:** SSB High 25W (PEP)/ Low 1W (PEP), CW High 25W/Low 1W, FM High 25W/Low 1W (Variable 1-25 Watts) ■ **Microphone:** 1.3k ohm dynamic microphone with built in preamplifier ■ **Receiving System:** SSB, CW single conversion superheterodyne; FM double conversion superheterodyne ■ **Receiver Intermediate Frequency:** SSB, CW 10.75 MHz; FM 10.75 MHz; 455KHz ■ **Receiver Sensitivity:** SSB, CW Less than 0.5 microvolts for 10dB S+N/N, More than 3-dB S+N+D/N+D at 1 microvolt Less than 0.6 microvolts for 20dB noise quieting:

Suggested Retail Price: **C$599**

ICOM HF

New

IC-751 BASE

- *160-10M*
- *100KHz — 30MHz Receiver*
- *CW/SSB/ AM/RTTY/ FM*
- *Microprocessor Controlled*
- *12VDC Operation*
- *Fluorescent Display*

HF Transceiver/General Coverage Receiver

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 • 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

Some Specifications:

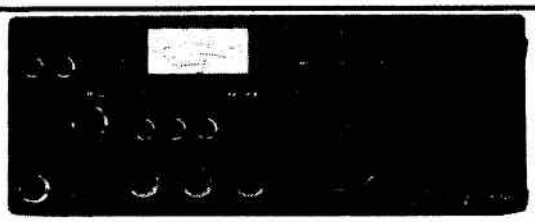
■ **Frequency Coverage (Ham Band):** 1.8MHz — 2.0MHz, 3.45MHz — 4.1MHz, 6.95MHz — 7.5MHz, 9.95MHz — 10.5MHz, 13.95MHz — 14.5MHz, 17.95MHz — 18.5MHz, 20.95MHz — 21.5MHz, 24.45MHz — 25.1MHz, 27.95MHz — 30.0MHz, General Cover (Receive Only), 0.1MHz — 30.0MHz, Thirty 1 MHz Segments ■ **Frequency Control:** CPU based 10Hz step digital PLL synthesizer. Independent transmit-receive frequency available. ■ **Frequency Readout:** 6 digit 100Hz flourescent readout, with RIT readout. ■ **Frequency Stability:** Less than 500Hz after switch on 1 min. to 60 mins. and less than 100Hz after 1 hour. Less than 1KHz in the range of -10°C to +60°C. (Optional high stability crystal). ■ **Power Supply Requirements:** DC 13.8V ±15% negative ground current drain 20A max. (at 200W input) Internal or external AC power supply is available for AC operation. ■ **Antenna Impedance:** 50 ohm unbalanced ■ **Dimensions:** 115mm(H) x 306mm(W) x 349mm(D) ■ **Transmitter RF Power:** SSB (A3J) — 200 watts PEP input, CW (A1), RTTY (F1) — 200 watts input. Continuously adjustable output power — 10 watts Max. AM (A3) — 40 watts output, FM — 100 watts. ■ **Microphone:** Impedance 600 ohm ■ **Receiving Mode:** A1, A3J (USB, LSB), F1 (output FSK audio signal), A3, FM ■ **IF Frequencies: 1st: 70.4515MHz, 2nd: 9.0115MHz, 3rd: 455KHz, 4th: 350KHz, with continuous bandwidth control** ■ **Sensitivity:** Less than 0.25uV for 10dB S+N/N ■ **Selectivity:** SSB, CW, RTTY ±2.3KHz at -6dB (Adjustable to ±0.4KHz min); 4.0KHz at -60dB ■ **Audio Output:** 3 watts ■ Audio Output Impedance: 4 — 16 ohms ■ **RIT Variable Range:** ±9.9KHz

Suggested Retail Price: **C$1794**

New

IC-745 BASE

- *160-10M*
- *SSB/CW/ AM/RTTY*
- *FM Option*
- *Microprocessor Controlled*
- *12 VDC Operation*



HF Transceiver

ICOM's **IC-745** has features to fine tune received signals and ignore interference. ICOM delivers 100dB dynamic range plus these standard features:

• All Solid State • 100% Duty Cycle • Dual VFO's/Split Operation • 16 Memories • Adjustable Noise Blanker • Adjustable AGC With OFF • Squelch on Call Modes • IF Shift and Passband Tuning • Notch Filter • Automatic Sideband Selection • Speech Compressor • Tone Control • CW Sidetone • Lithium Battery Memory Backup • 12 Volt Operation

Some Specifications:

■ **Frequency Coverage:** 0.1MHz — 30MHz, 1.8MHz — 2.0MHz, 3.45MHz — 4.1MHz, 6.95MHz — 7.5MHz, 9.95MHz — 10.5MHz, 13.95MHz — 14.5MHz, 17.95MHz — 18.5MHz, 20.95MHz — 21.5MHz, 24.95MHz — 25.1MHz, 27.95MHz — 30.0MHz ■ **Frequency Control:** CPU based 10Hz step Digital PLL synthesizer. Independent Transmit-Receive frequency ■ **Frequency Stability:** Less than 500Hz after switch on 1 min. to 60 min., and less than 100Hz after 1 hour. Less than 1KHz in the range of -10°C to +60°C ■ **Power Supply Requirements:** DC 13.8V±15% Negative ground Rx Current 1.5A. Current drain 20A MAX. (at 200W input) ■ **Antenna Impedance:** 50 ohms Unbalanced ■ **Weight:** 8.5Kg ■ **Dimensions:** 111(123)mm (H) x 286(304)mm (W) x 355(383)mm (D) ■ **RF Power:** SSB (A^3J) 200 Watts PEP input; CW (A^1), RTTY (F^1) 200 Watts input; Continuously Adjustable Output; Power (10 — 100W); AM (A^3) No Transmit; FM(F^3) 200 Watts input (Option) ■ **Emission Mode:** A^3J SSB (Upper sideband and Lower sideband); A^1 CW; F^1 RTTY (Frequency Shift Keying); F^3 FM (±5KHz — FM Option) ■ **Receiving Mode:** A^1, A^3J (USB, LSB) F^1, (output FSK audio signal), A^3, F^3 (FM Option) ■ **IF Frequencies:** 1st: 70.4515MHz, 2nd: 9.0115MHz, 3rd: 455KHz with continuous Bandwidth Control ■ **Sensitivity:** SSB/CW/RTTY for 10dB S/N: 0.1 — 1.6MHz Preamp Off 1uV, 1.6 — 30MHz Preamp Off 0.3uV, 1.6 — 30MHz Preamp On 0.15uV. AM for 10dB S/N: 0.1 — 1.6MHz Preamp Off 4.5uV, 1.6 — 30MHz Preamp Off 0.7uV, 1.6 — 30MHz Preamp On 0.35uV. FM for 12dB Sinad: 1.6 — 30MHz Preamp On 0.3uV ■ **Selectivity:** SSB, CW, RTTY: 2.2KHz at -6dB, 4.5KHz at -60dB. CW AF Filter: Passband Tuning will narrow to 700Hz. AM: 4KHz at -6dB, 15KHz at -60dB. FM: 15KHz at -6dB, 30KHz at -60dB. Audio Output: 2.8W. RIT Range: ±1.5KHz. IF Rejection Ratios - Image: 70dB, IF Freq: 60dB. Notch Filter: 30dB

Suggested Retail Price: **C$1280**

IC-730 MOBILE

- *80-10M*
- *SSB/AM/CW*
- *Microprocessor Controlled*
- *Small size*
- *12 VDC Operation*

HF Transceiver

ICOM's **IC-730** is the "go anywhere HF rig for everyone's pocketbook". This compact size HF transceiver for the amateur band will fit in extremely small spaces, measuring only 3.7" × 7½" × 10.8" deep, the unit is perfect for car, airplane, boat or suitcase portable operation. Convenient to use features such as 3-speed tuning with tuning rates of 1KHz, 100Hz or 10Hz, electronic dial lock, 1 memory per band, and dual VFO's are built in at no extra cost.

The **IC-730** is full featured: 200 watts PEP input, receiver pre-amp, VOX, noise blanker, large RIT knob, speech processor, IF tuning standard, fully solidstate broadbanded tuning, automatic protection circuit for high SWR conditions, digital readout, and selectible AGC.

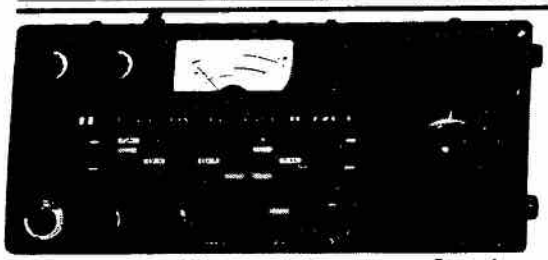
Options include up/down microphone, marker oscillator, LDA unit, CW audio filter, SSB filter, and CW narrow band filter. Accessories available are the IC-PS15 base power supply, the IC-2KL linear amplifier, the IC-AH1 mobile antenna, IC-SM5 base microphone, IC-HM10 scanning microphone, IC-SP3 external speaker, and IC-MB5 mobile mount.

The **IC-730** is truly a superior grade transceiver at an affordable price.

Some Specifications:

■ **Frequency Coverage:** 3.5MHz — 4.0 MHz, 7.0MHz — 7.3MHz, 10.0MHz — 10.5MHz, 14.0MHz — 14.35MHz, 18.0MHz — 18.5MHz, 21.0MHz — 21.45MHz, 24.5MHz — 25.0MHz, 28.0MHz — 29.7MHz ■ **Power Supply Requirements:** DC 13.8V ± 15% Negative ground Current drain 20A ■ **Weight:** 6.4 Kg ■ **Dimensions:** 94mm (H) × 241mm (W) × 275mm (D) ■ **Transmitter RF Power:** SSB (A^3J) 200 Watts PEP input, CW (A^1) 200 Watts input, Continuously Adjustable Output power, 10 Watts—Max (SSB-CW), Am (A^3) 40 Watts output, Continuously Adjustable Output power, 10 Watts—40 Watts (AM) ■ **Microphone:** Impedance 1300 ohms, Input Level 120 millivolts typical, Dynamic or Electret Condenser Microphone with Preamplifier ■ **Receiver IF Frequencies:** 1st 39.7315MHz, 2nd 9.0115MHz, 3rd 455 KHz, 4th 9.0115 MHz with continuous IF shift control ■ **Receiver Sensitivity: (Pre-amp):** SSB, CW Less than 0.3 (0.15) microvolts for 10 dB S+N/N, AM Less than 0.6 (0.3) microvolts for 10dB S+N/N ■ **Receiver Selectivity:** SSB, CW 2.4KHz at - 6dB, 4.8KHz at - 60dB, 6.0KHz at - 6dB, 18.0KHz at - 60dB, CW-N (With optional crystal filter installed) 600Hz at - 6dB, 1.5KHz at - 60dB (With optional AF filter installed) 140Hz at - 6dB, 800Hz at - 40dB

Suggested Retail Price: **C$995**



HF Transceiver/General Coverage Receiver

ICOM's **IC-720A** is a superior quality HF transceiver. Whether you are a radio amateur, a shortwave listener, or a mariner, you will find the **IC-720A** has features that no other transceiver offers in such a small, compact size.

Built into the **IC-720A** are CW, AM, single sideband, and RTTY modes. Two VFO's, data transfer between the modes, receiver incremental tuning, selectible AGC, capability for Simplex or Duplex operation between the VFO's and pushbutton control of the band in use, plus general coverage reception of 0.1MHz to 30MHz.

ICOM's digital tuning system gives the **IC-720A** a choice of three tuning speeds, 1 KHz per increment, 100 Hz per increment, and 10Hz. This corresponds to dial rotations of 100KHz, 10KHz, 1KHz.

ICOM's exclusive direct feed mixer system allows the best in receiver performance over nearly 30MHz of operation, and ICOM's proven transceiver construction transmits a quality signal that will get you rave reports.

When used with the IC-2KL broadband linear and the IC-AT500 automatic antenna tuner, the **IC-720A** system provides fingertip control for transceiver operation on all the amateur bands, including the new WARC bands at 10, 18 and 24 MHz.

Some Specifications.

■ **Frequency Coverage (Ham Band):**
1.8MHz — 2.0MHz
3.5MHz — 4.1MHz
6.9MHz — 7.5MHz
*9.9MHz — 10.5MHz
13.9MHz — 14.5MHz
*17.9MHz — 18.5MHz
20.9MHz — 21.5MHz
*24.5MHz — 25.1MHz
28.0MHz — 30.0MHz
(* New Band)
■ **General Cover:** (Receive Only) 0.1MHz, 30.0MHz, Thirty 1 MHz Segments. ■ **Frequency Control:** CPU based 10Hz step Digital PLL synthesizer, Independent Transmit-Receive Frequency available on same band. ■ **Power Supply Requirements:** DC 13.8V ± 15% Negative ground ■ **Weight:** 7.5Kg ■ **Dimensions:** 111mm × 241mm × 311mm (H × W × L) ■ **Receiver IF Frequencies:** 1st 39.7315MHz, 2nd 9.0115MHz, 3rd 10.75MHz, 4th 9.0115MHz, with continuous bandwidth control ■ **Sensitivity:** Less than 0.25 microvolts for 10dB S+N/N ■ **Selectivity:** SSB, CW, RTTY ±1.2KHz at - 6dB (Adjustable to ±0.4KHz Min.) ±2.1KHz at - 60dB, CW-N ±250Hz at - 6dB, ±750Hz at - 60dB (with optional FL32 filter installed) AM ±3.0KHz at - 6dB, ±9.0KHz at - 60dB, ±2.6KHz at - 6dB, ±6.0KHz at - 60dB (with optional narrow FL34 filter installed) ■ **Transmitter RF Power:** SSB (A^3J) 200 Watts PEP input, CW (A^1), RTTY (F^1) 200 Watts input, continuously Adjustable Output Power, AM (A^3) 40 Watts output ■ **Microphone:** Impedance 1300 ohms, Input Level 120 Millivolts typical, Dynamic or Electret Condenser Microphone with Preamplifier

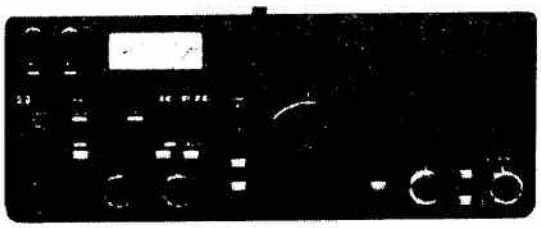
Suggested Retail Price: **C$1495**
With IC-P515 AC Power Supply: **C$1670**

IC-720A BASE

- *160-10M*
- *100KHz-30MHz Receiver*
- *CW/SSB/AM/RTTY*

HF

- *Microprocessor Controlled*
- *12 VDC Operation*



HF General Coverage Receiver

Listen to the world of HF with the R70, a 100KHz to 30MHz commercial grade receiver designed by ICOM Incorporated, the leader in advanced receiver design. Built from knowledge gained by designing receivers for commercial, marine, and amateur use, the R70 surpasses other receivers on the market...even receivers costing more than twice as much.

Utilizing ICOM's DFM (Direct Feed Mixer), the R70 is a receiver which in normal usage is virtually immune to intermodulation distortion or cross modulation, yet still maintains superior sensitivity. Whether you are a SWL (short wave listener), Ham (amateur radio operator), maritime operator or commercial user, the R70 provides the features you need.

The R70 is an ideal general coverage receiver to complement any ham shack. Use it with your existing transmitter or transceiver to provide dual receiver capability.

The R70's built-in monitor system lets you listen to your own transmitted audio and a mute input automatically protects the R70's receiver from your signal.

An option for FM allows listening to the 10 meter FM activity.

As an additional plus to ICOM IC-720A owners, the R70 has an optional interface that will allow the R70 to control the transmit frequency of the 720A for the ultimate in hamming versatility.

For the short wave listener, the readout section of the R70 gives all the information for logging a station to be returned to at a later time. Frequency, mode, VFO, signal strength are all displayed. A dial lock prevents accidental loss of a signal.

A front mounted speaker provides 3 watts of crisp clear audio. A record jack allows easy attachment of a tape recorder.

Like all ICOM HF products, the R70 fits into the ICOM system concept of accessories allowing you to use previously purchased accessories such as the HP1 headphone, SP3 external speaker, and AH1 auto bandswitching antenna.

Some Specifications.

■ **Frequency Coverage:** 100KHz — 30MHz ■ **Receiving Modes:** SSB (A3J); CW(A1), RTTY(F1), AM(A3), *FM(F3) ■ **Receiver Type:** SSB, CW, RTTY, AM - double conversion superheterodyne *FM - Triple conversion ■ **IF Frequencies:** 1st - 70.4515MHz; 2nd - SSB - 9.0115MHz, CW, RTTY - 9.0106MHz, AM, *FM - 9.0100MHz, PBT - 455KHz; 3rd - *FM - 455KHz ■ **Sensitivity:** SSB, CW, RTTY - 0.16uV for 10dB S/N (100KHz-1.6MHz = 1 uV for 10dB S/N); AM - 0.5uV for 10dB S/N; *FM - 0.32uV for 12dB SINAD (1.6 -30MHz only) ■ **Selectivity: SSB, CW, RTTY** 2.3KHz @-6dB/4.2KHz @-60dB; **CW -N, RTTY-N** 500Hz @-6dB/1.5KHz @-60dB; **AM** 6KHz @-6dB/18KHz @-60dB; **FM** 15KHz @-6dB/25KHz @-60dB ■ **Stability:** ±500Hz over - 10° to +60°C, ±250Hz from 1 min. to 1 hr. after turn on, ±50Hz thereafter ■ **Spurious Responses:** - 60dB down ■ **Dynamic Range:** 100 dB @500Hz IF Bandwidth ■ **PBT Range:** SSB, CW, RTTY ±1.8KHz; AM ±3.3KHz ■ **RIT Range:** ±800Hz from center position. ■ **Notch Depth:** 30dB ■ **Audio Power:** 3 watts into 8 ohms with 10% distortion (5.8 watts into 4 ohms) ■ **Power Supply:** Built in AC type for 100, 117, 220 to 240 volts ±10% (50/60Hz), 13.8V±15% DC supply capability optional. ■ **Weight:** 16.28 lbs. ■ **Size:** 11.25(11.92)"Wx4.33(5.0)"Hx 10.86(12.56)"D ■ **Antenna Impedance:** 50 ohms (100KHz - 1.6MHz a long wire is used - terminal is provided). ■ **Ground:** Chassis is at ground potential, ground lug provided. ■ **Power Consumption:** AC, Volume minimum 24VA (20W); AC, Volume max. 30VA (25W); DC, Volume min. 0.7A; DC, Volume max. 1.0A ■ **Operating Temperature Range:** -10° to +60°C.

Suggested Retail Price: **C$949**

IC-R70 BASE

- *100KHz - 30MHz General Coverage Receiver*
- *FM Option*
- *Microprocessor Controlled*
- *110/220 VAC*
- *12 VDC Option*

ICOM
The World System

ICOM AMERICA, INC.
2112-116th Ave NE, Bellevue, WA 98004 (206) 454-8155
3331 Towerwood Drive, Suite 307, Dallas, TX 76234 (214) 620-2780

ICOM CANADA
810 SW Marine Drive, Vancouver, B.C. (604) 321-1833

CARF

Past, Present, Future

Past

Since its creation in 1967, the Canadian Amateur Radio Federation has been very actively involved in the national Amateur scene. CARF has been standing behind Canadian Amateurs, studying, working and solving problems. Every aspect of Canadian Amateur Radio has benefitted from their work: from Antenna Rights to Repeaters to Equipment Tariffs to National Symposia to helping establish the Canadian position for the international WARC '79.

Present

CARF is still faced with local, national and international problems on a daily basis. CARF knows what Canadian Amateurs want, and their needs are represented in every action. Ongoing discussions with the Department of Communications help keep everyone informed. And CARF makes sure Canadians know what's happening in the pages of TCA, the National Amateur Radio Magazine, always packed with fresh information and updates.

Future

Being in touch with the current Amateur Radio scene, CARF is always looking ahead to a shining future in Canada. CARF is always involved in upcoming changes to exams and regulations, and in new developments in Amateur Radio technology.
There are dozens of ways to benefit from a CARF membership... including a subscription to TCA and a FREE QSL Service.

JOIN NOW!

by filling out the form at the back of this issue.

CARF

Canadian Amateur Radio Federation

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

Always working for the Canadian Amateur

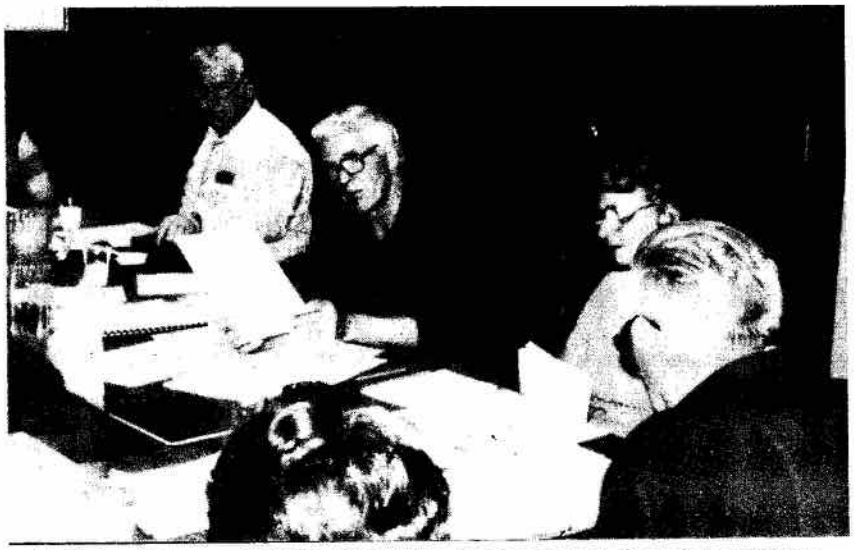
Some words (quite a few!) from the prez, VE3BID.

Don Slater, VE3BID

Why are every one of Canada's 23,000 Amateurs receiving a copy of "TCA MAGAZINE" this month? Because it's time that those who are not already members of the Canadian Amateur Radio Federation (CARF) get a look at *one* of the benefits of being a member . . . a subscription to Canada's only magazine for Canadian Amateurs.

It's time too, that we brought to the attention of non-members the fact that we in CARF need *you* . . . and with today's fast expanding electronic technology bringing problems as well as benefits, we *all* need a strong national organization more than ever. As the all-Canadian national Amateur society, CARF credibly presents your views and requests to DOC and keeps us informed of the Department's intents and actions concerning our hobby. As a wholly-financed Canadian organization, responsible only to Canadian members, CARF is in a unique position to represent you to our Government.

To do this we need money and numbers. The more members and thus the more money, the better the job of representation and the more activities benefitting our hobby. The present membership of more than 5,000 is a little less than a quarter of the Amateur licensees. The work and the funds of these supporters benefit both members and the other three-quarters of the Amateur population alike. We are asking that those who are not already members join CARF now. Besides TCA, there are other benefits . . . like the free outgoing QSL service for members which has flourished now for 12 years . . . plus an incoming service as well.



(L-R) Fred Towner VE6XX, CARF Vice President and Don Slater VE3BID, President of CARF presiding over the CARF AGM.

TCA MAGAZINE is also part of CARF membership. Published eleven times a year, it brings you news, technical articles, DX and contest columns, repeater news and directories. It has a stimulating letters-to-the-editor feature where you can air your beefs or comments on current issues.

How much will TCA and a CARF membership cost?

If you act *now* it's all for $15.00 a year! As of the first of the year, however, due to the spiralling costs of postage, printing and other activities, we, like other organizations, will have to raise the fee by $5.00. Despite inflation, it's the first rise in more than a year-and-a-half. Right now, however, it's still only $15 a year; or as the salesman says, "ONLY $1.25 a month". A cheap price to pay to protect your hobby.

As a matter of fact, if you just send out only four cards a month by the CARF free QSL service you will recover your money on the postage saved in a year . . . and that's only at *today's* rate of 32 cents and how long will that last?

Now, isn't that a deal?

As if that isn't enough, look at other CARF activities on your behalf;

— CARF officials and committees work for you at the provincial and federal level. Eight officers and committee chairmen in the Ottawa area effect first-hand liaison with DOC. These include former senior DOC officers and well-qualified professional engineers.

— CARF represents Amateur interests on the interference committees of the Canadian Radio Technical Planning Board and the Canadian Standards Association.

— CARF originated and sponsors the Canadian Repeater Advisory Group (CRAG) . . . a central clearing house for information

El Presidente blessing the masses under the watchful eyes of Craig Howey VE3HWN.

on repeater activity. CRAG compiles the Canadian Repeater Directory which is published in 'TCA'.

— CARF publishes study guides and handbooks geared to the new TRC-24. French ,editions, with the assistance of the DOC, should be available in 1984.

— CARF, some years ago, was first to publish a regular radio news bulletin; now bi-weekly, it is sent to more than 50 news stations and nearly 200 clubs.

— CARF sponsors the annual National Amateur Radio Symposium where Amateurs from across the country get together to come up with new ideas, work out old problems and meet with senior DOC officials. At the first symposium, back in 1977, CARF played a major part in the introduction of the Digital license.

—.CARF sponsors the CANADA-WARD and the CANADA DAY contest.

— CARF organized a committee in 1978 to develop a WARC 1979 brief which was totally Canadian. Its chairman, the late Bud Punchard, VE3UD, was subsequently appointed by the DOC as the Amateur representative on the Canadian delegation to Geneva.

— CARF presented briefs and attended hearings of the Tariff Board, which eventually removed the duty on major items of Amateur gear.

— CARF, at DOC request, consolidated and codified the regulations affecting Amateurs. The result has been accepted as the basis for future changes.

— CARF initiated the discussions and prepared briefs on the revamping of the requirements for the Amateur exams. This resulted in DOC's new TRC-24 bulletin.

These and other activities are on *your* behalf . . . to protect *your* interests we need *your* support . . . Give the volunteers who operate the Federation a vote of confidence. Give them more muscle and money to continue to work on *your* behalf.

The Canadian Amateur Radio Federation is ALL-Canadian, financed only by Canadians, run by Canadians for Canadians.

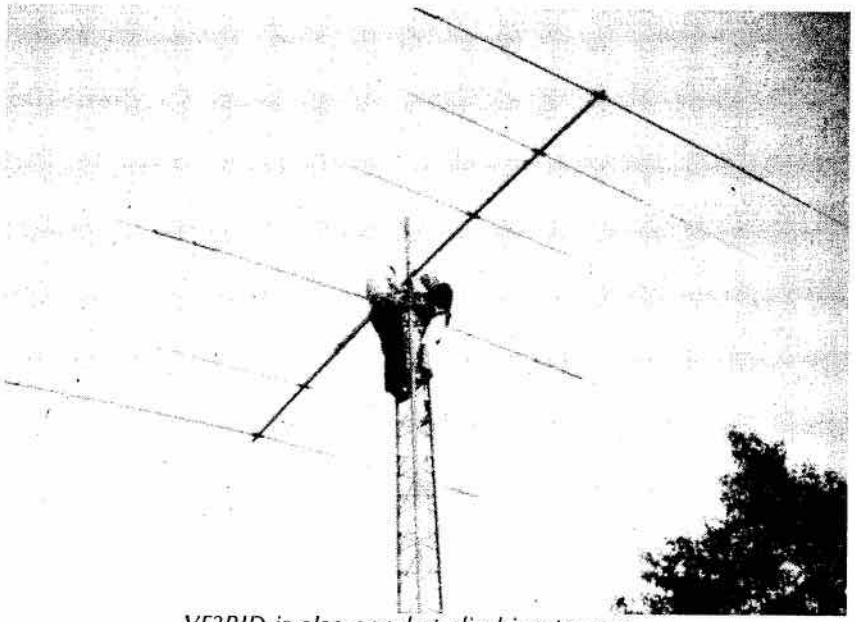
CARF is *you* and *your* fellow Amateurs.

Send in your fifteen bucks now! (and beat the raise in 1984).

And now for a personal note. I want to thank CARF members and those working as officials in the past three years since I have been president. I'm really more the chairman of the board . . . many others do the work . . . club reps, Regional Directors and Assistants, the officials and the Kingston office staff who keep the gears grinding week-in-and-week-out . . . these are the CARF people who have helped, in a dozen short years, to realize the dream of our own home-grown national Amateur radio society to serve Canadian Amateurs.

Again, to all CARF members across Canada, my heartfelt thanks for your encouragement and participation and, although it may be rushing the season just a bit, . . . "A Merry Christmas to you, one and all!"

73



VE3BID is also good at climbing towers.

Editor's Comments

I hope you will enjoy this special issue of TCA. It has taken a considerable amount of time and effort on behalf of many Amateurs and non-Amateurs to see than it is as enjoyable and informative as possible. As your editor, I am happy to be able to bring TCA to you eleven times a year with up to date news and views, comments on the issues concerning Amateur radio in Canada and advertising that shows you what new products are available. My staff of writers and columnists strive to provide special interest groups with the best of information available. Class serials such as Bill Deacon's "Life on the Ocean Wave" supply interesting narratives on Radio, past and present. We hope to have more articles such as these in the pages of TCA.

This issue is especially large this month as it is being distributed to every Amateur in Canada. This is a membership drive for CARF and I can think of no better way of supporting Amateur Radio in Canada but to support your Canadian National Amateur Radio organization, **CARF**. We need your support to continue the fight to protect our hobby. Yes it is a fight, but we are winning it and with your help, we can better represent the best interests of Canadian Amateurs at the National and International levels.

Most of the legislative and administrative activities affecting the Amateur Service are the responsibility of the Operations Branch of the DOC's Telecommunications Regulatory Service. R. W. (Bob) Jones has just recently been appointed as director of that branch, at DOC head office in Ottawa. Bob is well qualified to deal with the Amateur Service as he has held a license for a number of years.

We asked him if he would like to address some remarks on the DOC and the Amateur Service and he was kind enough to reply with the following letter.

Government of Canada
Department of Communications

Gouvernement du Canada
Ministère des Communications

Journal North Building
300 Slater Street
OTTAWA, Ontario
KIA 0C8

Your file Votre référence

Our file Notre référence

October 5, 1983

Mr. Don Slater, VE3BID
President
The Canadian Amateur Radio Federation
R.R. # 1
LOMBARDY, Ontario
K0G IL0

Dear Mr. Slater:

It is indeed a pleasure for me to extend, on behalf of the Department of Communications, my personal greetings to the readers of your November issue of TCA which I understand is being distributed to all radio amateurs in Canada. As you know, I only just last month returned to the Department from a two-year assignment with the International Telecommunication Union (ITU) in Geneva. While new to the position of Director of Operations in the Telecommunication Regulatory Service, prior to joining the ITU I occupied various positions in the Department's policy sector, the most recent one being the post of Director of Spectrum and Radio Systems Policy.

I would like to take this opportunity to express my appreciation for the continuous and close working relationship between the Amateur Community and the Department. As spectrum utilization continues to grow in this country, the need for thorough public consultation involving licensees in the Amateur service and indeed in all radio services becomes even more critical to effective spectrum management. The inputs received from both individual amateurs and associations such as CARF have proven invaluable over the years in ensuring sound regulatory policies and procedures. I certainly look forward to continuing this dialogue. This is not to say that all decisions which have to balance a wide range of considerations will be greeted enthusiastically by all but it is important that decisions are based on complete and correct information.

I would like to conclude by thanking you for this opportunity to address Canadian radio amateurs and I wish you and your association every success in the months and years ahead.

Sincerely,

R.W. Jones

R.W. Jones
Director of Operations

Canada

The CARF Office

Previous to 1976 the CARF Office was located in the shack of the President CARF and, with the aid of many local Amateurs and a friendly Computer Centre, looked after the administration of the organization. In 1976 the Kingston Old Timers Amateur Radio Association (KOTARA) was formed and took on the supply of a staffed office for CARF use functioning under the direction of the General Manager.

Art Blick - VE3AHU

With the continued growth of the Federation the Office has been expanded and is now located in a suite of rooms in the Stella Buck building of the J.K. Tett Memorial Complex on Morton Street, Kingston, Ont. KOTARA became dormant in 1982 and the Office is now fully managed and staffed by CARF.

Today the staff consists of Hazel Holland, the Office Manager and Brian Juniper, VE3CTE with additional persons employed for part time as found necessary. The work of the Office is considerable and diversified and is mainly concerned with membership records, forwarding publications, answering general queries and keeping of financial records. All mail received through Box 356, Kingston goes to the Office and this amounts to an average of 40 pieces of mail per working day. Note that all mail is opened unless it is marked "Personal" when it is forwarded directly to the official concerned. Mail is sorted using a pigeon-hole system with rapid attention given to new, renewal, change, etc of membership and the forwarding of publications requested. Mail for forwarding to officials outside the Kingston area is cleared at least weekly.

The staff uses two computer systems. One, a KAYPRO 4, handles CARF administration, financial records, word processing, etc, and is a recent addition to ease the Office work load. The other is a CRANNOG, programmed to handle membership records. Due to a recent change in postal requirements this system is in the process of redesign and programming by the General Manager with the "new" system scheduled for installation by the end of 1983.

It should be noted that the new programme does away with the present system of membership numbers — an alpha digit plus three numeric digits (e.g., A123). The new system will use an alpha digit corresponding to the first digit of the member's postal code plus four numeric digits (A1234).

Brian Juniper - VE3CTE

Hazel Holland

Lorna Hill - VE3IWH
Treasurer of CARF

This will enable the computer operator to more readily locate the required membership data and permit massive growth in membership without drastic changes in the disc files. Full details of this change will be given in future issues of TCA.

There are three CARF Officers in the Kingston area — Vice-President Kingston Affairs, Treasurer and General Manager. The VP Kingston Affairs, Ron Walsh, VE3IDW, is responsible for the administration, etc, of CARF Affiliates, the production of the Canadian Amateur Reference File, the national Amateur

Ron Walsh - VE3IWD

station VE3VCA and, with the General Manager, CARF involvement for the past 5 years in the amendment of TRC-24 and changes in Amateur examinations and procedures.

The Treasurer, Lorna Hill, VE3IWH, is responsible for the financial records and reports of the Federation and production of the annual budget for approval by the Board of Directors. Annual revenue exceeds $100,000.00 but, unfortunately, so does expenses! Strict adherence to the terms of the budget, however, has enabled CARF to weather the recession of the past few years and retain its excellent financial stability.

The General Manager, Art Blick, VE3AHU, is responsible for the overall administration of the Federation, in compliance with the terms of current By-Laws and Regulations, and the efficient functioning of the Office.

Great credit must be given to the Office staff and officials involved in the Office operation for, without their consistent attention to detail and hard work, your national Federation would not find itself in its present position.

Phone Patch Champ

Doug Burrill
VE3CDC

Described as a "little guy with a big voice" by a reporter and known to thousands of Amateurs as "Shorty Mac", Percy MacDonald, VE7AZ, of Port Burnaby, B.C., is even better known to Armed Forces personnel for the more than 5,000 phone patches he has made for them over the years since 1959.

Percy MacDonald in his radio-equipped van.

MacIvor - The Ottawa Citizen

For those in the Forces who won the hardship posting of Weather Station Alert, only a few hundred miles from the North Pole, Shorty's phone patches to VE8RCS keeps them in touch with home and family. Many other operators help Canadain peace-keeping personnel in such far-away places as Alert, Suez, Cyprus and Israel keep in touch with home via phone patches but few if any, can beat his record.

Shorty is rather unique in another way, too. He is one of the active Amateur elders in this country, being 83 years young.

Surviving World War I as a very youthful soldier overseas, Shorty returned to Moose Jaw, where he grew up, became active in the militia and got into Amateur Radio. The outbreak of the second round in 1939 saw him joining the air force but being somewhat over the age limit for more active service he ended up as a guard at a prisoner-of-war camp in the west.

Shorty and Don Finlayson, VE7FGK, recently drove east in his well-equipped van for the Royal Canadian Corps of Signals re-union and 80th anniversary celebration in Kingston, meeting and talking with scores of air friends along the way.

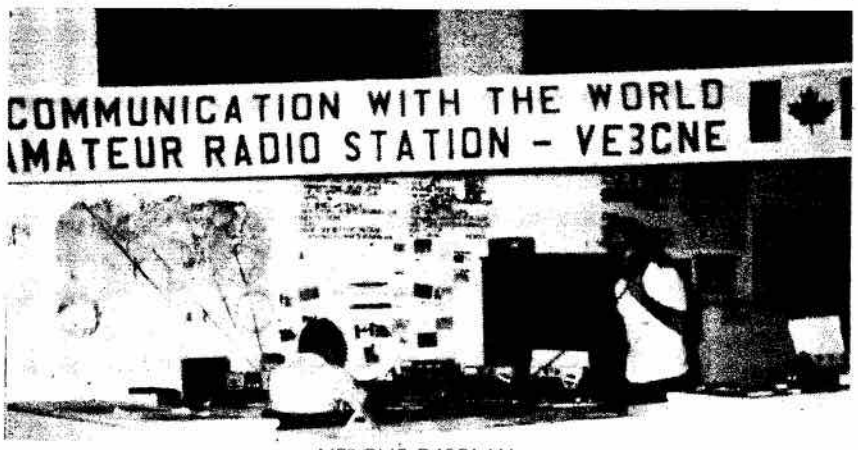
Twenty metres is his favorite band and one can usually find him phone-patching or shooting the breeze on 'his' frequency, 14.1475 megahertz.

Shorty at the Sigs Re-union in September. *VE3ANL*

VE3CNE — The '83 "Ex"

By Geoff Smith
VE3KCE
Ontario Director

VE3KCE



VE3CNE DISPLAY
VE3MBL at right, was the Chairman of the Organizing Committee.

"The best display at this year's Ex" — this was the assessment of the Amateur Radio display at this year's Canadian National Exhibition by one of the Directors of this famous annual event. His enthusiasm may have contained just a touch of bias (the director is also a Ham) but he was not far off the mark. Up until 1982 the display had been operated by various clubs in the Toronto area, most recently the Metro ARC, with Norm Dennis VE3ZH, doing the lion's share of the organizing and supervising. When Norm decided not to take on the chore for another year, the Presidents' Council, a steering committee comprising the presidents of Toronto area Amateur Radio clubs, decided to assume sponsorship. From the Council emerged a planning group with Jerry Slattery, VE3MBL as chairman. Meetings commenced in early April and the first order of business was funding. Thelma Woodhouse, VE3CLT, wrote letters to all clubs within a two hour drive of Toronto soliciting financial support and operators to man the booth. This campaign resulted in donations from all but two clubs in the Metro area, plus donations from clubs in Hamilton, Guelph, and North Bay. In addition CARF, RSO, and CRRL provided financial support plus large quantities of materials to hand out to visitors.

As the "Ex" was to run for some twenty days (17 Aug - 05 Sept) securing enough operators was a major problem. In June a call went out via the various 80M nets, ONTARS and CJ in particular, asking for volunteers. Bill Birchall, VE3FQV, the Net Manager for ONTARS was most supportive, reading the request twice daily. To Evan Herriott, VE3IND, fell the task of scheduling operators. Some days were completely taken over by clubs. Other days the booth was manned by operators from the pool of volunteers. All in all over 200 Hams gave of their time to make this event so successful.

Con Dobbs, VE3MUN, proved to be very persuasive with the suppliers of equipment. From VE Amateur Radio Sales came a Yaesu FT-77 with all the accessories and a set of Drake "Twins", H.C. MacFarlane Electronics Ltd. sent along a Kenwood TS-53OS and a Kenwood TR-7940. Commodore lent us two VIC-20 computers and Mitsubishi lent us a large television projection unit. The CNIB sent along an HW-12 set up for Braille operation. Our sincere thanks go to the suppliers of equipment.

The money was used for renting space at the CNR (a new policy this year), insurance on the equipment and liability insurance, and for the rental of counters from the main supplier to the CNR of booth equipment. Jerry, VE3MBL, made a deal with Sail Loft to make the banners, the only catch being that someone would have to cut out the letters. Mary Hedges, VE3COH, commandeered her family's free time one weekend and cut out the letters and numbers which were returned to the sailmaker and sewn on.

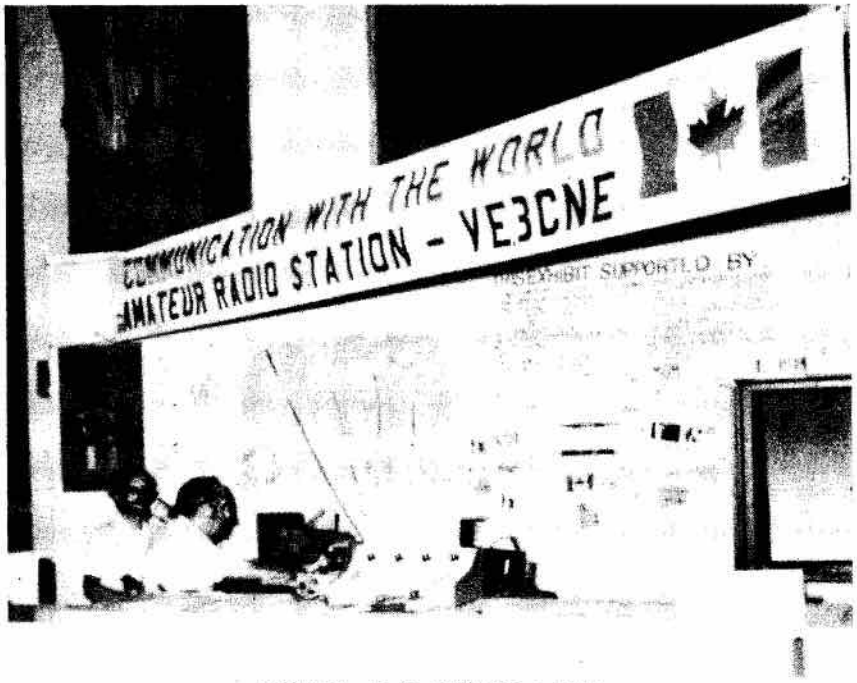
The booth was set up on Tuesday 16 Aug. when the commercial suppliers put the counters in place and set up our tables. The booth was located in the Arts and Crafts building at the west end of the "Ex". On top of the building is a commercial-grade tower, complete with a 2M vertical, triband beam and rotor, and dipoles for 40M and 80M. These are all connected to the booth area by runs of coax which terminate in a box on the back wall of the booth area, complete with coax connectors. AC power came from sockets in the floor, and even a telephone came with the booth, although we are still not sure if the CNE had intended to provide us with one. Short

lengths of coax were run from the terminal boxes to the tables, the rigs unpacked, fired up, and the SWR checked for each band. In cases of high SWR, tuner settings were determined and logged so that future operators could get on the air without any fuss. The large projection television unit arrived in the van of Peter Arnoldi, VE3NTK, and various Hams risked hernias moving this tremendous device into place at the back of the display.

On Wednesday 17 Aug. 83 the "Ex" opened officially with a parade down University Avenue. Hams with handhelds were scattered throughout the parade on various floats and in the ambulance at the end of the parade. This was something new this year and proved to be most fortuitous as the ambulance was able to deal with an emergency during the parade thanks to communications provided by Hams.

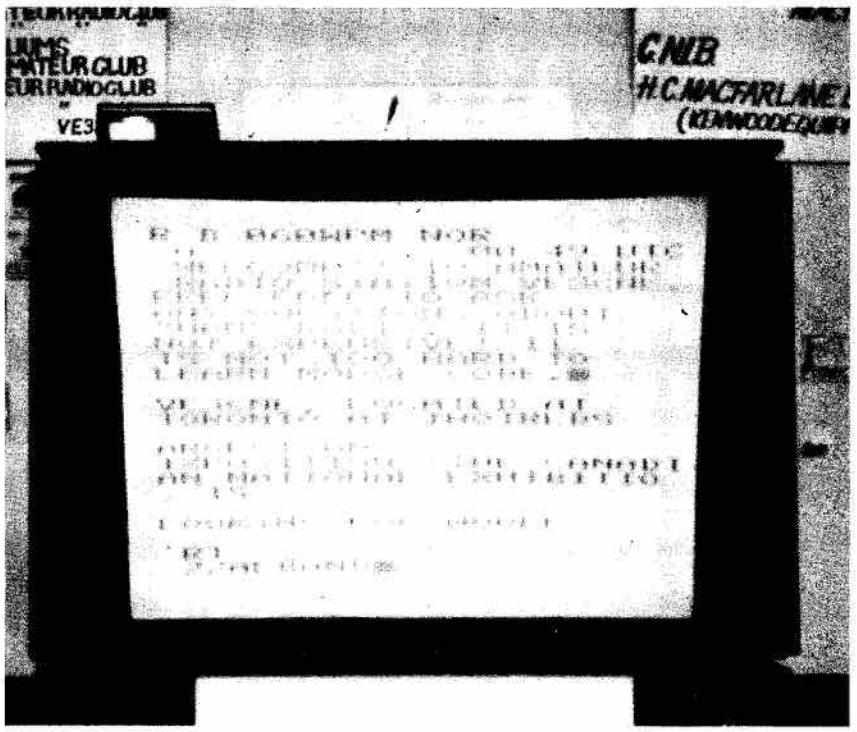
From the first Wednesday to the last Monday the display was manned from 10:00 am to 10:00 pm. Operators took turns acting as spokespersons or putting the equipment on the air. The rigs for 80M and 40M were in constant use as booth personnel filled in on ONTARS or checked into other nets on phone or CW. The other HF rig was hooked up to the VIC-20 with a suitable interface and RTTY was received and displayed on the large screen of the television projection unit. Members of the public were fascinated by the teletype messages they saw flashing across the screen. The autopatch facilities of VE3GER and VE3TRO were used to demonstrate 2M and the sophistication of the 2M repeater systems in Toronto drew a lot of comment. Another "Crowd Pleaser" was a CW keyboard keyer which visitors could play with.

Available at the booth was a variety of literature which was given out to those visitors who seemed to be genuinely interested. Each visitor was given the name and next meeting date of the nearest club, and if this was not available, the name of a Ham in his or her community who might be contacted for further information.



VE3MBL at left, VE3NIT at right.

Mounting this display took a lot of time and effort, but it did show that various clubs could work together in harmony. From all the organizers to all the volunteers a hearty "well done" and we hope to see you next year at the "Ex". And to all Hams who took the time to touch base with VE3CNE, the QSL cards will be going out to you via the CARF QSL Service.



Computer-decoded RTTY on the large screen TV projection unit.

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Because of it's light weight and compact size, the LA-2035 can be mounted under the dash, under the seat or any other convenient location.
This is a LINEAR amplifier suitable for FM, CW and SSB. It is one of the few small amplifiers that have a relative power output meter.
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Coax cable with BNC supplied
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RX-110G 144-148MHz, 15dB min gain, 13.8VDC 100ma $ **99.95**
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Place directly into the antenna line. RF activated T/R switch

Reliable VHF/UHF Ga-As FET design for outstanding sensitivity and low noise. Can be placed directly into the antenna feed line.
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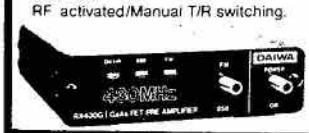
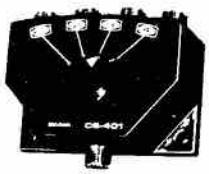
GAIN	15 dB min	13 dB min
IMPUT.OUTPUT IMPEDANCE	50 ohm	
RF POWER BYPASS RATING	30 W CW (FM)	
POWER SOURCE	13.8 V DC 100 mA	
DIMENSIONS (W x H x D mm)	90 x 25 x 92	





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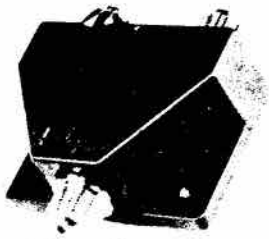

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CN-720B $239.95

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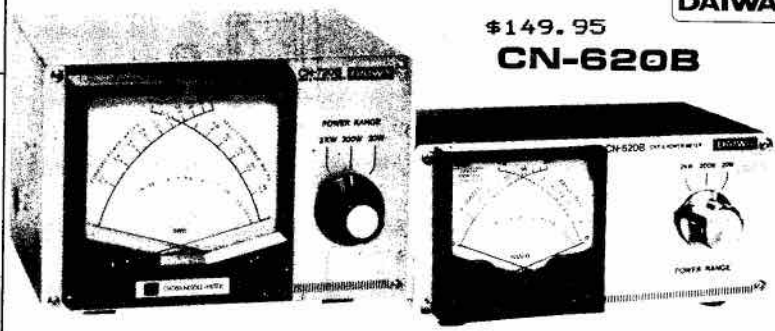

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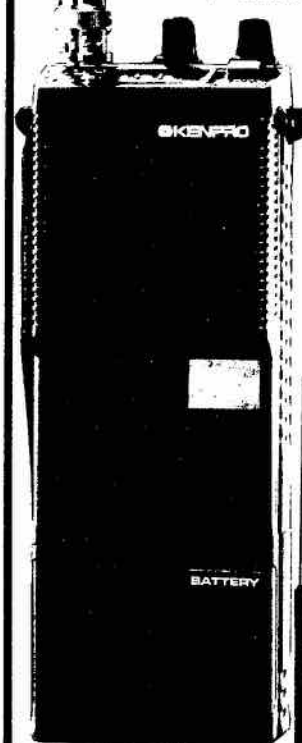
SPECIFICATIONS:

	CN-620B	CN-720B
Frequency	1.8-150 MHz	1.8-150 MHz
Input/Output Impedance	50 ohms	50 ohms
Ratio of FWD/REF Power	5 : 1	5 : 1
Power Range - Forward	20W/200W/2kW	20W/200W/2kW
- Reflected	4W/40W/400W	4W/40W/400W
Tolerance (at full scale)	+/- 10%	+/- 10%
SWR detection sensitivity	4W min	4W min
Input/Output Connectors	SO-239	SO-239
Dimensions - Cabinet	180W 85H 120D mm	180W 120H 130D mm
- Meter	70W 70H mm	115W 115H mm

NEW 2M HAND-HELD FROM KENPRO

Frequency coverage: **140.000 to 149.995 MHz.**
Power Output - High 1.5 Watts - Low 150 mWatts
Current Drain - Tx H 550mA; L 220mA; Rx 18mA Sq; 130mA Max audio.
Size, features, and operation similar to ICOM 2A(T)



THIS IS A PREVIEW OF A NEW HAND-HELD.
AVAILABILTY IS EARLY 1984.

KT-200E(T) & ACCESSORIES

KT-200E incl Nicad, Charger, Rubber Duck $259.95
KT-200ET as above with TT Pad——$289.95
KT-BP extra Nicad Pack——$ 35.00
KT-SM Speaker Microphone——$ 39.00
KT-BA Case for dry cell batteries——$ 13.00
KT-BMC Mobile Charge Cord——$ TBA
KT-LC Leatherette case——$ 15.00
KT-BC Extra Wall Charger——$ 11.00
ALL KENPRO ACCESSORIES FIT ICOM AND ALL ICOM ACCESSORIES FIT KENPRO !! COMPARE PRICES !!

CW PRACTICE OSCILLATOR

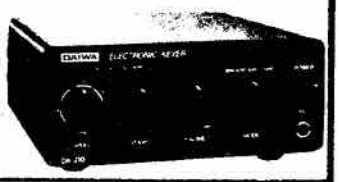
KENPRO TRX3 OSCILLATOR $19.95

With built in 9V battery, Tone control, Record and Earphone jacks.

DAIWA ELECTRONIC KEYERS

DK-200 8-50WPM, 9-15VDC @100ma——$ 99.95
DK-210 with LED Speed Indicator, 200ma$119.95

DAIWA makes CW easy with these Keyers. Features include semi-automatic, automatic, and tune modes as well as dot/dash memories, 8-50 WPM capability, an LED Speedmeter (210 only), and both Grid Block and Direct keying outputs to suit almost any Xceiver. A variable (500-3000Hz) frequency sidetone oscillator is also included.



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OPTIONAL ACCESSORIES: 430MHz Board, 440MHz Board, 6M Board. SOON: Duplex Option, HF Boards.

YAESU FT-726R TRIBANDER

NEW GALAXIES OF PERFORMANCE ON VHF AND UHF

The New Yaesu FT-726R Tribander is the world's first multiband, multimode Amateur transceiver capable of full duplex operation. Whether you're interested in OSCAR, moonbounce, or terrestrial repeaters, you owe yourself a look at this one-of-a-kind technological wonder!

Power Source: 115VAC or 13.8VDC (built-in supply)

Multiband Capability
Factory equipped for 2 meter operation, the FT-726R is a three-band unit capable of operation on 10 meters, 6 meters, and/or two segments of the 70 cm band (430-440 or 440-450 MHz), using optional modules. The appropriate repeater shift is automatically programmed for each module. Other bands pending.

Advanced Microprocessor Control
Powered by an 8-bit Central Processing Unit, the ten-channel memory of the FT-726R stores both frequency and mode, with pushbutton transfer capability to either of two VFO registers. The synthesized VFO tunes in 20 Hz steps on SSB/CW, with selectable steps on FM. Scanning of the band or memories is provided.

Full Duplex Operation
The optional SU-726 module provides a second, parallel IF strip, thereby allowing full duplex crossband satellite work. Either the transmit or receive frequency may be varied during transmission, for quick zero-beat on another station or for tracking Doppler shift.

High Performance Features
Borrowing heavily from Yaesu's HF transceiver experience, the FT-726R comes equipped with a speech processor, variable receiver bandwidth, IF shift, all-mode squelch, receiver audio tone control, and an IF noise blanker. When the optional XF-455MC CW filter is installed, CW Wide/Narrow selection is provided. Convenient rear panel connections allow quick interface to your station audio, linear amplifier, and control lines.

Leading the way into the space age of Ham communications, Yaesu's FT-726R is the first VHF/UHF base station built around modern-day requirements. If you're tired of piecing together converters, transmitter strips, and relays, ask your Authorized Yaesu Dealer for a demonstration of the exciting new FT-726R, the rig that will expand your DX horizons!

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- 10 Memories
- Two VFO's
- LCD Readout
- 25W Out
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VHF/UHF Multimode Portables

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FT-290R 144Mhz.....
FT-790R 430Mhz.....

FT-208R 2mtr HT.....
RF Out: 300mw/2.5W

FT-708R 440Mhz HT....
RF Out: 200mw/1.0W
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- Up/Down and Memory Scanning
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5/8 Wave Telescoping Antenna
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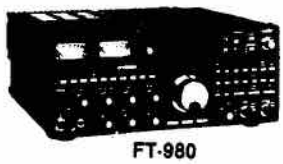
FT-ONE

GENERAL COVERAGE—ALL MODE
DELUXE SOLID STATE TRANSCEIVER



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FT-77

New 80-10mtr Compact HF Transceiver
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  External VFO, Antenna Tuner Available

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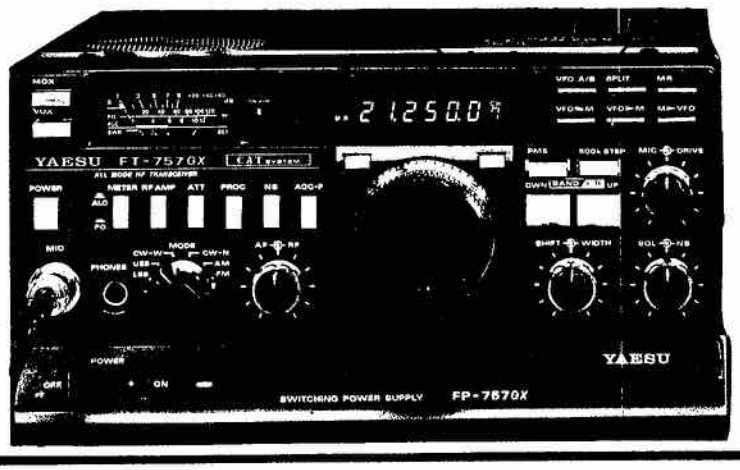
All Mode Digital Communications Receiver .15 to 29.999Mhz—Receives SSB/AM/FM/CW, Built-in S Meter, Speaker, Noise Blanker, Timer, FM Squelch, AC Supply and More!

MEET THE NEW YAESU FT-102



THE NEW YAESU FT-757GX TRANSCEIVER

A New All Mode General Coverage Transceiver with all possible options. Receiver 500kHz-30MHz, built-in AM, FM modes, 600Hz CW Filter, Iambic Keyer, 25kHz marker, IF Shift and Width Filters, Speech Processor and an effective Noise Blanker. It is compatible with the CAT System. The remarkable new heatsink allows 100% Transmitter Duty Cycle. The FT-757GX has 8 memories and allows memory or programmed Band Scan
ACCESSORIES: FP-757GX one inch high, switching Power supply.
FC-757AT fully automatic Antenna Tuner.
COST: Not Yet Firm - Vicinity $1000
SEND $100 DEPOSIT FOR THE ORDER. REFUNDABLE IF FINAL PRICE NOT OK.

INSURED SHIPPING AND HANDLING: Ont. and East add 2% MIN $3.50, Man. and West add 3% MIN $4.50 UNLESS OTHERWISE STATED. IF TWO PRICES ARE SHOWN THE FIRST PRICE IS THE REGULAR PRICE WHICH ALSO APPLIES TO CHARGES, THE SECOND PRICE APPLIES TO ORDERS ACCOMPANIED BY CHEQUE OR MONEY ORDER. FOR INFORMATION OR PRICE REQUEST, SEND 64¢ STAMP —

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GIFT CERTIFICATES

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A PERFECT ALTERNATIVE WHEN YOU CANT DECIDE !!

THE GIFT CERTIFICATE COMES WITH AN ATTRACTIVE GIFT ENVELOPE !!

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Deluxe Model: $99

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VIBROKEYER

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We recently took the distinctive look, quality and craftsmanship of Vibroplex and molded them into the finest Iambic paddle anywhere. The dual paddle allows operators to utilize automatic dot/dash insertion and other unique features of the modern electronic keyer. Vibroplex distinction for the modern operator.

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FREE ENGRAVED CALL LETTERS - 4 WEEK DEL.
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24 HOUR CLOCKS

Model 173DM
Dual, independent clocks/Solid walnut case/ Functional and beautiful
~~$119~~ (plus $3.00 shipping)

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Model 173B
Internal backlight/Aluminum and Poly case/Portable
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~~$69~~ $59 DUAL 24 HOUR LCD MFJ-104

Two independant 24 hour LCD displays! Read both GMT and local times at a glance.
Six digit main display has seconds readout. Four digit auxiliary. Switch reverses main/aux.
Alarm plays 4 selectable melodies. Alarm "ON" indicator. Snooze button.
Quartz timing. Synchronizable to WWV.
Flip-top cover serves as stand.
Night light. Forward/reverse, fast/slow set buttons. Lock function prevents mis-setting. Display main time only, main/auxiliary or main/alarm time. Includes battery. 4x2x1/2 inches.

Independent Military Option

Military time format clocks by **Benjamin Michael.** Independent of power lines these units are energy efficient, secure, and free to provide accurate quartz controlled time in any setting. Used by the Military and U.S. government agencies as well as many municipal law enforcement and public safety departments, these units won't quit just because commercial power did.

Exercise your independent military option now.

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Quality you can feel!

Best for beginners—preferred by pro's—smooth, adjustable action that means cor large, goldplated silver contacts for crisp finished in handsome black-wrinkle bake

$43

Model SSK-001

$4

ASTRON Power Supplies

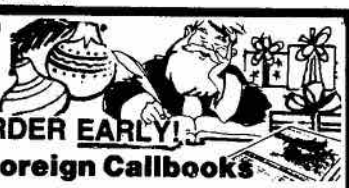
Solid-state; Electronically Regulated with Fold-back current limiting; Crowbar Over Voltage Protection; Heavy Duty Heat Sink; Chassis Mounted Fuse; Three Conductor Power Cord; One Year Warranty; U.S. Made.

Switchable volt & Amp meter on RS-12M, 20M, 35M & 50M; Separate Volt & Amp meters and front panel voltage adjustment 5-15vdc on VS-20M, 35M & 50M.

105-125vac input - 13.8vdc output (within 0.05 volts) internally adjustable 11-15vdc; Ripple Less than 5mv.

Astron Model	Cont. Amps	ICS Amps	Size (") h×w×d	Ship. Wt.	PRICE	S&H
RS-7A	5	7	7×6½×9	9	$ 95	$ 5
RS-10A	7.5	10	4×7¾×10¾	11	$119	$ 6
RS-12A	9	12	4½×8×9	13	$129	$ 6
RS-20A	16	20	5¾×5×10½	18	$169	$ 7
RS-35A	25	35	5×11×11	27	$249	$ 9
RS-50A	37	50	6×13¼×9¾	45	$369	ASK
w/Switchable volt and Amp meter						
RS-20M	16	20	5×9×10½	18	$199	$ 7
RS-35M	25	35	5×11×11	27	$279	$ 9
RS-50M	37	50	6×13¼×11	46	$419	ASK
w/Variable output & separate volt/Amp meters						
VS-20M	16	20	5×9×10½	20	$239	$ 8

ORDER MUST BE POSTMARKED BEFORE NOV 30 FOR THE SPECIAL LISTED BELOW.



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Set of 1984 U.S. & Foreign Callbooks

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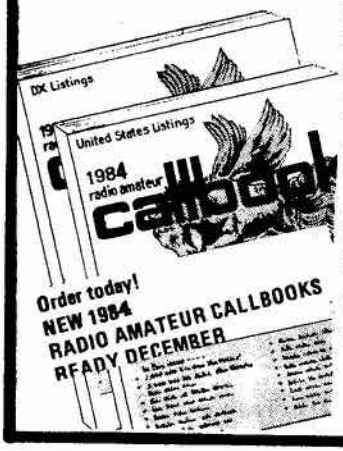

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NEW 1984
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READY DECEMBER

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UNTIL DEC 31/83:	$12	S&H $2
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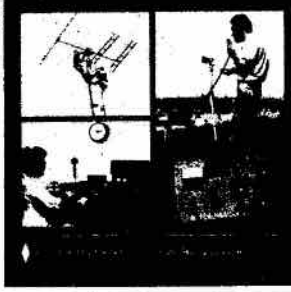
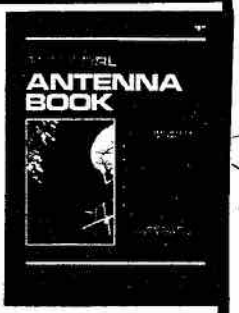
ANTENNA HANDBOOK	$10	S&H $2
FM & REPEATERS	$ 7	S&H $2

IDEAL CHRISTMAS GIFTS FOR EVERY AMATEUR !!!

1984 HANDBOOK





BUTTERNUT New HF6V

HF6V 10-80+30M	$189	+ $9
TBR-160HD 160M	$ 79	+ $4
STR II RADIALS	$ 42	+ $4
RMK II ROOF MNT	$ 65	+ $7
2MCV 2M COLINR	$ 69	+ $6
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ICOM SP-4 $28
MAGNETIC SPEAKER FOR YOUR MOBILE RIG

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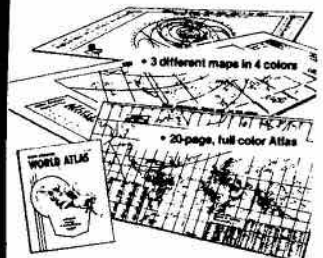

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hey give you that sure, confidence! All feature with die-cast zinc bases

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popular new SPEED-X as a "stay put" heavy die-cast base and fea- an isolated contact as- keeps the keying circuit rom the base, the key ly and all exterior metal gold-plated silver con- justable-action key arm nob.

JEEZE KEY

Standard $ 65
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- Full range of adjustment in tension and contact spacing
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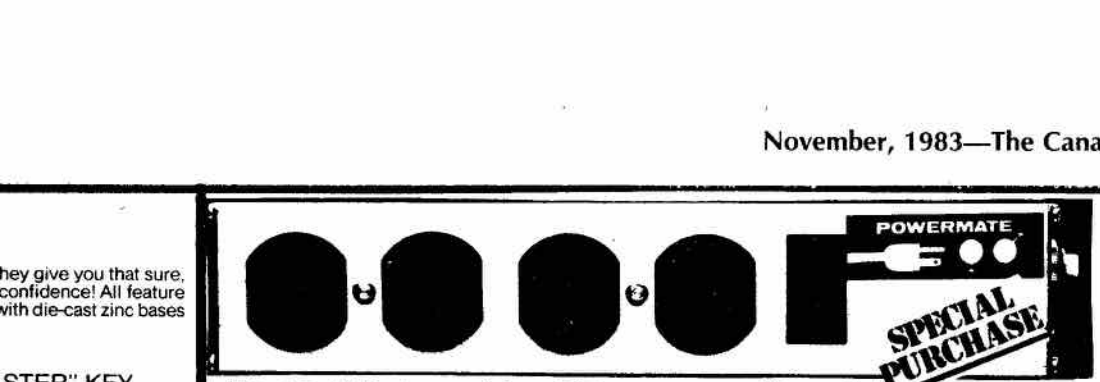


Four-outlet power strip **$17** INS S&H $3

Safely plug business machines, appliances and tools into this power strip. Plugs into one wall outlet. Rated 15A at 125V. Has protective push-to-reset circuit breaker. Includes 6- -foot grounded cord.

10amp RATING $45
15amp RATING $49
S&H $5

Six-outlet cord reel

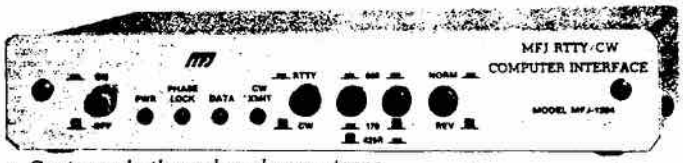
So handy to have on the patio, at the cottage, in your workshop — wherever you need more outlets for appliances and other electrical equipment. Has six outlets plus a 50-foot extension cord. Grounded and overload protected.

WITH LIGHT

MFJ DRY DUMMY LOADS 300W$40 1kW$95 30sec.

MFJ RTTY / ASCII / CW COMPUTER INTERFACE

Lets you send and receive computerized RTTY/ASCII/CW. Copies all shifts and all speeds. Copies on both mark and space. Sharp 8 Pole active filter for 170 Hz shift and CW. Plugs between your rig and VIC-20, Apple, TRS-80C, Atari, TI-99, Commodore 64 or most other personal computers. Uses Kantronics software and most other RTTY/CW software.



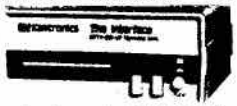
- *Copies on both mark and space tones.*
- *Plugs between rig and VIC-20, Apple, TRS-80C, Atari, TI-99, Commodore 64 and most other personal computers.*
- *Uses Kantronics software and most other RTTY/CW software.*

$159

MFJ-1224

RECEIVE ONLY MFJ-1225 $109

KANTRONICS Interface



A complete transceiver-to-computer modem capable of decoding and transmitting Morse code and all the necessary AFSK tones for RTTY, CW ID, and ASCII. An active filter at 2295 Hz for RTTY and 750 Hz for CW, and an LED bar graph for easy tuning.... $209/199

HAMSOFT - Software designed to be used with the Interface, allowing reception and transmission of CW, RTTY and ASCII. Provides Split Screen Display; Status Display; 1024 Character Type Ahead Buffer; CW ID; (10) 256 Character Message Ports & Printer Compatibility. For APPLE - $49 ATARI, VIC-20 - $79; TRS-80C - $95; TI-99 - $149

HAMTEXT - Software with additional features that include VIC Serial Printer Compatibility; Store received messages to tape or disk; Variable buffer sizes; Edit received information for retransmission; Transmit time on 24 hr clock. For VIC-20, COMMODORE 64.. $149 & apple

A.E.A. INTERFACE CP-1

A.E.A. CP-1 Computer Patch Interface with Tuning Eye, AC Adaptor——$295

AC Adaptor for MFJ or Kantronics-$15

ALL OF THE ABOVE INTERFACES WILL OPERATE ON KANTRONICS SOFTWARE

Commodore 64, Vic-20, C2N Datasette at very special LOW prices, CALL

Hear Police/Fire Weather

on 2 Meter Handhelds with this MFJ VHF Converter.

Scanning Handhelds become Police/Fire Scanners

MFJ-313 **$65**

New MFJ VHF converter turns your synthesized scanning 2 meter handheld into a hot Police/Fire/Weather band scanner.

144-148 MHz handhelds receive Police/Fire on 154-158 MHz with direct frequency readout. Hear NOAA weather, maritime coastal plus more on 160-164 MHz.

Mounts between handheld and rubber ducky.

Feedthru allows simultaneous scanning of both 2 meters and Police/Fire bands. No missed calls.

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

Bypass/OFF switch allows transmitting. Won't burn out if you transmit (up to 5 watts) with converter on. Low insertion SWR. Uses AAA battery. 2¼x1½x1½ in. BNC connectors.

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

Police/Fire/Weather Band Converter for 2 Meter Mobile Rigs.

MFJ-312 **$95**

MFJ-312, like MFJ-313 but for mobile 2 meter rigs. Transmit up to 40 watts thru converter without damage. SO-239 connectors. Mobile mounting brackets. Rugged. "ON" LED. Use 12 VDC or AAA battery. 3x4x1 in.

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PCS-4000 $469 IN STOCK

ALL HF BANDS! $79.00

The SLINKY DIPOLE® Antenna

A broadband, low SWR dipole that really works in apartments, small yards, attics, anywhere a small antenna is a must. Indoors or out, you can work ANY HF BAND, including 10 MHz. No gimmicks or add-ons. Imagine 80M in as little as 24 ft.! Complete kit and instructions.

KIT INCLUDES EVERYTHING BUT COAX
50' $10; 100' $20 INCLUDING CONNECTOR

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PT-1000A 1kW HF Linear Amplifier 160-10M complete with single 3-500Z tube and chimney——LIST-$1395
PT-2000A 2kW HF Linear Amplifier 160-10M complete with two 3-500Z tubes and chimneys——LIST-$2035
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PT-1000LP Low Pass Filter, 2kW PEP——$ 49
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LIKE ADDING 30W TO YOUR HANDIE 5/8 WAVE TELESC

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KDK FM-2030

SIMPLE SCAN CONTROL

FUNCTION ring selects type of scanning as follows:

DIAL ... Band scanning. Limits, memories 5 & 10.
M-CH ... Memory scanning. Channel Nos. displayed.
M-FR ... Memory scanning. Frequencies displayed.

Just set SCAN switch to BUSY to find a busy channel and OPEN to find a vacant channel. When located, flick switch to center (-) position and start transmitting.

SIX IN ONE CONTROL

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. RIT control in 1KHz increments, and
6. Memory WRITE by pushing on DIAL knob.

HI/LO POWER BUTTON

HI - 25 watts, LO - 5 watts

DIAL

FUNCTION ring

LATE FLASH!

NEW KDK FM 2033

Available early January

$389.00

Incl. T.T. Mic

Has LCD display and stores offset in memory
142 - 150 MHz Coverage
All other features same as 2030

$ 379.95

WITH TM-2 UP/DOWN SCAN TOUCH-TONE MIKE

CLEAROUT FM 2030 $349.

ATLANTIC HAM RADIO LTD. is the Canadian Distributor for the lines on this page. Contact your favourite Dealer for these items, or you may order direct.

CANADIAN DEALERS TO DATE:

DC ELECTRONICS (514) 427-2563
BOX 308, STE MARTINE, QUEBEC.

SWR POWER METER
MODEL FS-5S

This model is an easy to operate compact Power & VSWR Meter. This model consist of independent Power meter and SWR meter adaptable to 50 –52 ohm coax cable. Power meter can be measured for 0 – 1000 watts and SWR meter for 1 – 5 VSWR on antenna circuit. Equipped "On the Air" LED light up in accordance with the output power.

Specifications: $79.95

Frequency Range	1.8 – 150MHz	
Power Range	0 – 20, 200, 1000 watt – 3 ranges	±10%
VSWR	1:1 – 1:5	
Impedance	50 – 52 ohms	
Punctual Power	3.5 – 30MHz – 1000 watt	
	50 – 150MHz – 50 watt	
Connector	M TYPE (SO-239)	
Accessories	Connector cable for illumination lamp. Magic Fastener x 2, pcs.	
Dimensions	180(W) x 75(H) x 90(D) mm	
Weight	800 g	

Hansen

Available for shipment NOV 15, 1983

BOTH HAVE LIGHTED METERS WITH 12VDC

SWR POWER & FS METER
MODEL SWR-3S

This model is a compact through-line type Power SWR & FS meter designed for the wide frequency range measurement for the amateur radio station. Equipped "On the Air" LED light up in accordance with the output power. Reversible two antenna systems or antenna and dummy load by easy switch operation.

Specifications: $49.95

Impedance	50 – 52 ohms	
Frequency Range	3.5 – 150MHz	
Power Range	0 – 20, 200W – 2 ranges	±10%
SWR Measuring Range	1.1 – 1:3	
Punctual Power	3.5 – 30MHz (HF Band) 200W	
	50 – 150MHz (VHF Band) 50W	
Meter Sensitivity	100 uA F.S.D.	
Connector	M Type (SO-239) 1 x TX, 2x ANT	
Dimensions	150(W) x 65(H) x 70(D) mm	
Weight	400 g	
Accessory	Bar Antenna 1pce.	

ANT

LM-1

THROUGH POWER

FOR 2M & 440MHz

THE IDEAL GIFT FOR THE HAM WITH A HANDHELD

LM-1

FREQ	: 145/430MHz
POWER	: 0.5~5.0W
Zo	: 50ohms
VSWR	: 1.15
ACCURACY	: MS± 10%
ATTNUATOR	: ——
OUTPUT	: ——
CONNECTOR	: BNC
SIZE	: 55×96×48.5mm
WEIGHT	: 120 g

THIS IS NOT A TOY LIKE SOME LOOK-ALIKES. PROFESSIONAL QUALITY AND MATERIALS THROUGHOUT.....

KURANISHI

DUAL BAND
LINEPASS METER

LM-1 0-5 Watt Power Meter, 2M & 440MHz----------$ 79.95

LM-1 + SK-1 includes 'S' Meter option---------$119.95

Did ever wish you had an 'S' Meter on you Handheld ? Now it's possible. Add the SK-1 option to the LM-1 and presto you have an S/RF Meter. A small 2mm wire connects the Meter to the MC-3357 IC found in most HT's. The wire can be led into the HT through the earphone hole or you can drill a small 2mm hole. It makes your HT ideal for transmitter hunts. The finishing touch for todays HT's.

ICOM IC-745 new

A New Transceiver Worth Celebrating!

9 HAM BANDS! GENERAL COVERAGE RECEIVER! 16 MEMORIES! SCANNING! PASSBAND TUNING! VARIABLE NB & AGC!

What's the celebration about? The IC-745 . . . a new all ham band HF transceiver with SSB, AM, CW, RTTY and an FM option . . . plus, a 100KHz — 30MHz general coverage receiver.

And . . . the IC-745 has a combination of features found on no other transceiver at such an incredibly low price.

Compare these exceptional features:

- 100KHz — 30mHz Receiver
- 16 Memories
- Full function Metering with a built in SWR Bridge
- IF Shift and Pass Band Tuning
- 10Hz / 100Hz / 1KHz Tuning Rates with 1MHz band steps
- Optional Internal AC Power Supply
- Adjustable Noise Blanker (width and level)
- Continuously Adjustable AGC with an OFF position
- Receiver Preamp
- 100% Transmit Duty Cycle

Other Standard Features:

- 100 Watt Output Transmitter with exceptionally low IMD
- VOX
- Speech Compressor
- Tunable Notch Filter
- RIT and XIT
- All Mode Squelch
- Scanning
- ICOM System Compatibility

Optional Accessories:

• IC-PS15	External Power Supply
• IC-PS35	Internal Power Supply for the ultimate in Portability
• IC-2KL	Linear Amplifier
• IC-SP3	External Speaker
• IC-MB12	Mobile Mounting Bracket
• IC-AT100	Antenna Tuner (100W)
• IC-AT500	Antenna Tuner (500W)
• IC-BC10	Memory Backup
• IC-EX241	Marker Module
• IC-EX242	FM Module
• IC-EX243	Electronic Keyer
• IC-RL52A	500Hz 455KHz CW Filter
• IC-RL45	500Hz 9MHz CW Filter
• IC-RL54	270Hz 9MHz CW Filter
• IC-RL53A	250Hz 455MHz CW Filter
• IC-RL44A	2.1KHz 455KHz SSB Filter
• IC-SM6	Desk Mic
• IC-HM12	Hand Mic

The IC-745 is the only transceiver today that has such features standard . . . the number of options and accessories available . . . and such a low price.

ICOM is ...*Simply the Best* in quality built ham equipment today.

NEW!! IC-751

IC-751, ICOM's brilliantly new transceiver, sets a new high standard of comparison with high-tech advancements and the superior quality essential for competitive-grade performance.

An exceptional general-coverage receiver and 9 band, 200W pep input transmitter. Features include 32 memories, scanning capability, passband tuning, notch filter, RIT and XIT, adjustable noise blanker, dual VFO's, full break-in keying and two color (red & white) digital readout. And more!

ICOM HF XCVR PRICES

IC-751-----$1799
IC-745-----$1279
PS-15------$ 175
PS-35------$ 209
SPECIALS:
IC-730-----$ 875
IC-740&PS740$1199
Prices are LIST. Call us for a quote.

ICOM

NEW Ideal for satellite contacts!

IC-271A

2 meter all mode, 25 watts, many new features.

IC-271 LIST $899

IC-471A

NEW

All mode, 430-450 MHz coverage. Features not previously available.

IC-471 LIST $1029

NEW ICOM with free HM-14 TouchTone Mike!

IC-25H

Now available with 45 watts and easy to read green display.

IC-25H LIST $489

IC-25A, 25 watt version available for $429
With FREE TouchTone Mike

ICOM IC-290H

25 Watts of Power. A full 25 watts in all modes gives extra communication range in the IC-290H

Green LED Readout. For improved readability in bright sunlight

Dual VFO's. Provide ease in marking frequencies. Tuning rates are 5KHz in FM, 100Hz in CW and SSB, and 1KHz with the tuning speed button pushed.

Priority Channel. Any memory channel can be monitored for activity on a sample basis, every 5 seconds, without disruption of a QSO conducted on a VFO frequency.

Adjustable Power Levels. Both the hi and lo power levels are independently adjustable for meeting simplex or amplifier input requirements.

Squelch in All Modes. Standard noise squelch in FM and AGC derived squelch for CW and SSB reduce fatigue factors and allow scanning silently while looking for band openings or satellite signals.

Multimode Capability. FM, SSB, and CW modes provide solid communication modes for repeater, simplex, satellite or the CW enthusiast. Sidetone is provided on CW.

Adjustable Duplex Splits. Offset may be changed from its initial value by pressing the priority button while in VFO mode, then rotating the main tuning knob. The offset is displayed on the frequency readout.

Scanning (S/S). Memory scanning and full or programmable band scan are standard features. Internal switches select busy/empty modes, adjustable delay or carrier operated resume, and full or program band scan.

Memory Backup. The optional, heatsink mounted, BU1 memory backup battery option provides retention of memory when moving the transceiver from one power source to another.

Touchtone® Microphone Supplied. Each unit comes with a touchtone® microphone as the standard unit microphone.

ICOM IC-290H

2M ALL MODE TRANSCEIVER
25 Watts Output
FM CW SSB
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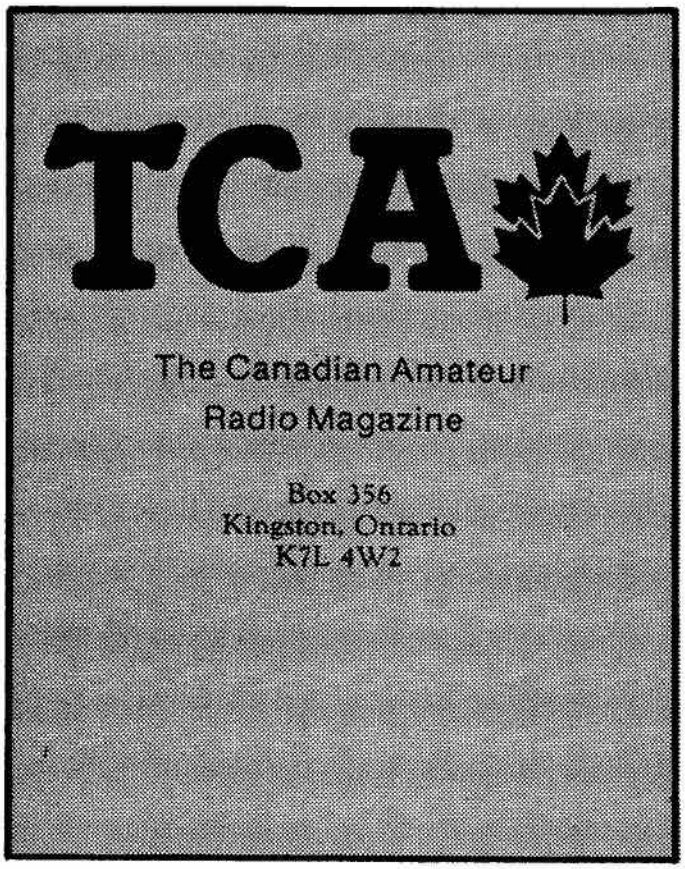

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CONTEST SCENE

By Dave Goodwin, VE2ZP
1-285 Metcalfe St.,
Ottawa, Ontario
K2P 1R8

Contests Calendar

November

5-7	ARRL Sweepstakes CW
12-13	European DX RTTY
19-21	ARRL Sweepstakes SSB
26-27	CQ WW DX CW

December

2-4	ARRL 160m
10-11	ARRL 10m
18	**CARF Canada Contest**

To those of you who may be reading TCA and this column for the first time, welcome. I hope you like what you see, and will be tempted to join the Federation.

The purpose of this column is to try to bring details of contest happenings and activity to the attention of all who may be interested, to provide rules for some of the contests likely to attract Canadian participation, and to encourage Amateurs who may not have tried to look at contesting as a part of their activity. I have been interested in contesting since I first became licenced in 1975 at the age of 15, but only became active in contests around 1977. My own station has always been modest, especially now that I am living in an apartment, but the fun of contesting has always been a draw. The fast-paced excitement of the major DX Contests, the thrills of pursuing a successful strategy, and the opportunity to use the real-life laboratory of a contest for testing new antennas, equipment, etc are what drew me to the field. There are also the satisfactions of putting in a good performance, and competing with your peers to be enjoyed. Even if you only play around with contests on a casual basis, there is a lot of fun to be had.

With this column, I am including complete results of Canadian entries to the CQ WW DX SSB contest, one of the world's premier contests, which takes place every October, on the last weekend of the month.

This year's contest was very well attended by Canadians, and conditions were quite good. Only one new Canadian record was set, reflecting lower levels of sunspot activity. Dave VE3BVD set a new Single op, all band record, just short of 4 million points. Other records were under attack. VE3BMV on 14 MHz single band, was third high in the world, and just 3k short of a new Canadian record on 7 MHz, VO1CV came within a few thousand of the long standing record, as did VE1BNN on 1.8 MHz. The next few years should see these lower-frequency records overturned as conditions improve on 160, 80 and 40 metres. In QRP action, VE8DX was first in the world or 14 MHz, as was VE3CKR on 3.5 MHz. Multi-op action saw VE1DXA come within 300k of the MS record set by CZ6ZT. Other scores of note are VE7CVM's fine showing on 28 MHz despite poor condition on that band, very good scores from VE6OU and VO2CW on 21 MHz, and a very interesting race on 3.5 MHz. VE2FOU led the pack, and was followed by three Ontario stations, VE3s CPU, EEW and IPR who made scores within 4% of each other. There were even three Multi-multis in this year's show, with VE7ZZZ leading the way.

A new addition to the ream of statistics to keep in mind with this contest is a new box for single op. all band winners by Zone. The only Canadian to show up was Dave VE3BVD as the Zone 4 winner. Congratulations, Dave.

I am keeping this brief, as this special issue has a good deal of material in it, but I would like to draw the attention on new readers to the upcoming CARF Canada Contest, a very popular contest on 18 December this year. Rules appear elsewhere in this issue. This a good place to start working on your five-band Canadaward, which you read about in the Canadaward Report in this issue.

ARRL Sweepstakes

Period: CW: 2100z 5 Nov. to 0300 7 Nov.; **SSB:** 2100z 19 Nov. to 0300 21 Nov. All stations may operate a maximum of 24 hours.

Classes: Single operator, high and low power (greater than or less than 200w), and multi-op.

Bands: 160 through 10m, excluding 30m.

Exchange: In the form of a message preamble. Send, in order, QSO number, Power level (A for low power, B for high), your call, the year you were first licenced, and your ARRL section. Ex. NR 001 A VE2ZP/3 75 QNT.

QSOs: Work only other Canadian or USA stations. Each station may be worked only once regardless of band. 2 pt/QSO.

Mulitplier: Total of ARRL sections worked, regardless of band. Max. 74.

Awards: Certificate to top single operator in each power class in each section, and to top multi-op in each ARRL division.

Entries: Must be accompanied by log sheets, dupe sheets (if more than 200 QSOs are made) Entries should be sent within 30 days of the contest to: ARRL Sweepstakes (indicate whether CW or SSB entry) 225 Main St., Newington, Ct., 06111, USA.

CW WW DX CW Contest

Period: 0000z 26 Nov to 2400z 27 Nov.

Bands: 160 through 10 metres, except 30m.

Classes: Single op, all bands, single op single band, (and single op. QRP categories) Multi operator single or multi-transmitter.

QSOs: 0 points for QSOs with other Canadians, 2 pt for QSOs in other North American Countries, 3 pt for QSOs with stations on other continents. Each station may be worked once on each band.

Multipliers: Total of CQ WAZ Zones and DXCC/WAE countries worked on each band. Add band totals of multipliers together.

Awards: Certificates are awarded to high scorers in each class in each call area. In the CW contest, trophies will be awarded to the top scoring single op. all band, and single op single band entrants. CARF is the sponsor of the single band trophy.

Entries: Official entry forms are available from CQ Magazine. Entries should be postmarked before 15 January and sent to: Bob Cox, K3EST, 6548 Springvalley Dr., Alexandria, VA., 22312, USA.

ARRL 160m Contest

Period: 2200 2 Dec to 1600 4 Dec.

Classes: Single or multi-op.

Band: 160 metres CW only. Please remember the DX windows at 1825-1830, 1850-1855 and 1907-1913 kHz. North American stations should listen for DX here. DX will indicate where they are listening for calls.

Exchange: RST and ARRL Section. or DXCC Country.

QSOs: 2 points per QSO with Canada or tye USA, 5 pt/QSO with DX.

Multiplier: Total of ARRL Sections and DXCC countries worked.

Entries: Dupe sheets must be used if more than 200 QSOs are made. Entries should besent within 30 days of the contest to: ARRL 160m contest, 225 Main St., Newington, Ct., 06111, USA.

ARRL 10m Contest

Period: 000z 10 Dec. to 2400 11 Dec. A maximum of 36 hours may be operated.

Classes: Single op. single or both modes; Multi-op. both modes only.

Exchange: RST and Province. Stations outside Canada and the USA will send a QSO serial number.

QSOs: 2pt/QSO. 4pt/QSO with USA Novice or Technicien class stations. These stations will identify themselves by sending /N or /T after their calls, and operate CW on 28.1 to 28.2 MHz. Each station may be worked once on each mode.

Multiplier: Total of Canadian call areas, USA states and DXCC countries worked, regardless of mode.

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

CARF Canada Contest

The rules for this contest appear in the October issue of TCA. This is one of the most popular Contests in Canada, and is an excellent introduction to contesting.

CQ WW DX SSB Contest, 1982
Canadian Results

Class	Call	Score	QSOs	Zones	Countries
A	VE3BVD	3,918,826	2443	129	372
A	VD3GCO	2,196,920	2148	122	318
A	VE7BTV	1,891,812	2188	128	234
A	VE2AYU	695,100	872	90	241
A	V01QU	618,540	1270	46	149
A	VE3GP	564,575	862	80	195
A	VE3KZ	339,404	568	85	159
A	VE4RP	221,760	562	61	115
A	VE2PD	136,188	306	59	135
A	VE3DYB	134,106	253	52	134
A	VE2JO	91,609	233	50	111
A	VE2FUY	76,840	226	43	93
A	VO1AW	76,575	288	25	50
A	VE3FEA	62,784	166	53	91

Canadaward Report

By John Brummell, VE3JDO
Box 208, Stittsville, Ontario K0A 3G0

Late last year, it was my pleasure to assume the duties of Canadawards Manager. This post had previously been held by Dave Goodwin VE2ZP. Dave, under the combined pressures of the Contest and Awards Committee, school plus his most recent appointment to secretary of C.A.R.F. requested (begged would be more like it) that I take over the Canadaward. So here I

A	VE2FTU	31,878	101	48	78
A	VE2DRN	30,752	107	49	75
A	VE2GWM	27,100	122	32	68
A	VE8XO	736	28	7	9
28	VE7CVM	290,466	1650	27	54
28	VE3KOY	109,384	394	28	85
28	VE2DVI	83,076	391	25	59
28	VE2NBE	60,300	244	23	67
28	VE4AIY	40,596	296	22	46
28	VE2FSU	15,180	95	21	45
28	VE4AEX	4,664	41	17	21
21	VE6OU	697,186	2156	33	100
21	VO2CW	440,368	1355	32	104
21	VE1TG	275,651	808	80	113
21	VE2EVO	96,900	328	29	85
21	VE3JTQ	33,348	145	26	58
14	VE3BMV	895,712	2035	38	146
14	VE7AVU	89,870	449	27	59
14	VE1CAN	81,969	405	24	65
14	VE4CCC	74,008	312	49	67
7	VO1CV	131,860	594	22	73
7	VE1BCZ/3	38,913	374	16	35
3.5	VE2FOU	64,790	527	18	44
.35	VE3CPU	53,838	487	15	39
3.5	VE3EEW	51,615	712	12	25
3.5	VE3IPR	51,184	465	17	39
3.5	VE1LI	26,825	370	12	15
3.5	VE1AIH	5,863	56	10	31
3.5	VY1DD	1,152	49	6	6
1.8	VE1BNN	24,886	271	12	34
1.8	VE7BS	6,048	70	8	7
1.8	VE3BBN	5,936	192	7	9
1.8	VE3ABG	4,662	169	7	7
1.8	VE3INQ	2,688	104	7	7
1.8	VE5XU	680	72	3	2
QRP 28	VE2AEJ/3	12,050	93	18	32
QRP 28	VE5ACY	3,060	73	11	9
QRP 14	VE8DX	13,431	148	14	23
QRP 3.5	VE3CKR	9,180	261	7	11
MS	VE1DXA	6,347,732	4920	134	420
MS	VE3PCA	4,139,190	3158	139	416
MS	VE3CYX	3,256,126	2185	150	430
MS	VE5GF	1,268,730	1808	106	227
MS	VO2WL	447,372	1181	54	118
MS	VE6AO	93,012	267	56	82
MM	VE7ZZZ	3,036,195	4204	110	217
MM	W8OK/VE2	2,097,622	3369	93	205
MM	VE3UM	345,060	520	79	164

am and I look forward to hearing from many of you over the coming months and years through your applications for the Canadawards.

I was licenced in January 1977 and upgraded to advanced amateur in November of the same year. I am active on all HF bands and am particularly proud to be a member of the VE3PCA contest group.

Introductions aside, I am pleased to present the Annual Canadaward Report. The Canadaward underwent another excellent year with major growth in all bands, most notibly so, 21 and 14 MHz.

There were some exceptional Canadaward achievements this past year with the most outstanding being the awarding of the first 160 Mtr. and satellite Canadawards. These were presented to Harold Gordon VE5XU. Good work Harold! Now onto 5 band Canadaward? In the 5 band Canadaward category, Bert Morgan VE3XK recently completed his 7 MHz. award which qualifys him to be the fifth recipient of this prestigious Canadian award. Special mention also goes to Victor Doty VE3LNX for being the first VE3 recipient of the 50 MHz. Canadaward.

Applications from Japan, Germany and South America increased greatly this year and I am looking for even further increases in the interest shown by our foreign amateur community.

Award Qualifications

I must first commend all applicants for the minimal amount of mistakes in their applications or the QSLs sent in. In order to earn this very attractive award, a contact with each province on a single band is required. Proof can be in the form of QSL cards or photostated copies of same.

Contacts must be made with all twelve provinces and territories. (VO1 through VY1). Application forms are available from me at Box 208, Stittsville, K0A 3G0 or

The Canadaward post office box at P.O. Box 2172, Station "D", Ottawa, Ontario K1P 5W4. The award is free for CARF members and $2.00 for non members. CARF members please include your CARF membership number. All applicants should include return postage for their cards and awards. Make cheques or money orders payable to "Canadawards" or "CARF". Please send SASE for application forms.

In recognition of the difficulties some of you have in collecting the necessary cards, credit will be given for QSO's made during the Canada Day, Canada and CARF Phone Commonwealth contests, provided logs are received by both stations. That is, if you manage a Canadaward during the contest period, and both you and all the 12 stations you work submit logs, then credit will be given for all QSO's. You can pull QSO's out of any running of any of these three contests. When you make applications, be specific about which QSO's from which contests you wish to claim, including QSO serial numbers sent and received.

If logs are received by you and the stations you worked, then credit will be given. This should help those of you who are especially keen on some of the low band or 5 band awards, or who are rather poor QSL'ers yourselves.

SSB endorsements still out distance the CW with as yet no applications for RTTY. I look forward to receiving some applications for the QRP mode which is increasing in popularity among Canadian amateurs. QRP endorsements will be given to any station whose application was made while running 5 watts DC or 10 watts PEP input or less. A note accompanying your application with details of how your power was maintained at QRP level will suffice. If you and the twelve stations you work were running at QRP levels, then you can ask for a two-way QRP endorsement. QSL cards received should show that the other station was running QRP.

Satellite Canadaward

When the award was first conceived, each distinct Satellite transponder mode (A,B,J) was considered as separate bands. After consulting with some Satellite fans, it became clear that this was much to restrictive. Later, we changed the requirement so that all Satellite activity would be considered as if on one band. Each transponder mode could be an endorsement, but you can collect the twelve necessary QSO's on any combination of satellite modes to earn the award.

Special Marconi Issue Stamps

All Canadawards applied for during 1983 will have the award affixed with a special MARCONI Commemorative Stamp. We give special thanks to Bruno Molino VE2FLB for supplying us with these stamps marking this anniversary year.

The awards program is a major success thanks to all who have applied for the award and all those who have been good enough to make QSO's and hand out useful QSL cards. I hope to see more interest in 160, 80, 40, 15 RTTY or QRP on any band. I would appreciate any comments you have on how the award may be improved. Again, a final reminder, information about the award can be obtained through the Kingston office, myself directly, or via P.O. Box 2172, Station "D", Ottawa, Ontario K1P 5W4. Good luck and Good Awards hunting.

Awards issued to June 1983

CANADAWARDS

3.5 MHz

1. VE3GCO SSB
2. VE7IX SSB
3. VE3XK SSB
4. VE3JPJ SSB
5. K2MF SSB

7 MHz

1. VE3GCO
2. VE3JPJ SSB
3. VE3IPR
4. W0JIE SSB
5. VE3XK SSB

14 MHz

1. VE3ET SSB
2. VE3GCO SSB
3. VE2QO SSB
4. W9VWV SSB
5. W6BZ CW
6. K6UY CW
7. WB8YXT
8. WD8CYR CW
9. VE3IUE
10. WD9ACQ
11. DA1HO SSB
12. VE6PW SSB
13. W3TUB CW
14. VE7CNE CW
15. VE3ITU
16. VE3JIJ
17. VE3DMC
18. VE3IPR
19. WA8VDC
20. VE3JPJ SSB
21. VE3HLL SSB
22. WA4SKE
23. VE3DZT SSB
24. EP2LI SSB
25. VE7IX SSB
26. VE3KK CW
27. 7X2LS SSB
28. VE7DEN SSB
29. VE7MH CW
30. PI1PT CW
31. VE7BAK SSB
32. I8YRK SSB
33. JH1VRQ
34. OE5AHL CW
35. VO2CW
36. VE3CZJ
37. HI8XGF SSB
38. HI8XJO SSB
39. K8EK SSB
40. VE3DIJ SSB
41. DL7CS CW
42. VE3YE SSB
43. VE3OCU SSB
44. WA2FUM SSB
45. WA7GVM SSB
46. VE3AHB CW
48. VE3GRW SSB
49. VE3JPP
50. VE3JPJ SSB
51. VE3LWL CW
54. K2MF
55. VE3KUC CW
56. G4CNT SSB
57. VE1BWP CW
58. KD6LB SSB
59. VE5ADO SSB
60. YS9RVE SSB
61. VE3MFP CW
62. VE2ZP CW
63. VE7CRU SSB
64. K0LST CW
65. VE5AE
66. KA6CJL
67. K9AYK CW
68. VE3LRB CW
69. KC0AM
70. VE3LCZ
71. KA2APZ SSB
72. VE3LQJ SSB
73. WA4NEU CW
74. VE3MRX
75. WD9GQV SSB
76. VE5AE SSB
77. VE3CKR SSB
78. VK3CIW SSB
79. VK2DEJ SSB
80. VE3HRC SSB
81. JA2AH SSB
83. W0JIE CW
84. VE3MSA
85. DK4SY
86. DU9RG SSB
87. VE7DYX

21 MHz

1. VE3GCO SSB
2. 9H4G SSB
3. WA2FUM SSB
4. VE3JPJ SSB
5. KA0FAR CW
6. G4CMT SSB
7. VE2ZP CW
8. VE1BWP CW
9. VE3XK SSB
10. JG1RDD
11. JF1SEK SSB
12. DL8QS SSB
13. JA1FVE SSB
14. JH2PYX SSB
15. WA4NEU CW
16. W3TVB CW
17. W0JIE CW
18. DK4SY

28 MHz

1. VE3GCO SSB
2. WB9WFZ SSB
3. VE1BNN SSB
4. VE6KZ SSB
5. WB7UCK
6. WB0WAP
7. WB2RLK/VE1 SSB
8. VE7CER SSB
9. VE3KXE SSB
10. WARQMQ SSB
11. VE6CEU SSB
12. WB5RQM SSB
13. VE3KIF SSB
14. PA0PCA SSB
15. DA1QR SSB
16. VE3DAX SSB
17. VY1BR SSB
18. VE7DRI SSB
19. DA1MH SSB
20. VE3HOM
21. VE7CUF SSB
22. VK2NSE SSB
23. VE3KRX SSB
24. VE1BNN CW
25. VE7DOG SSB
26. JA7GB SSB
27. WA3FUM SSB
28. VK2NOG SSB
29. VE1BBS SSB
30. VE4AFO SSB
31. W2JBZ SSB
32. K8IXU SSB
33. VK2NYI
34. PA0SMU SSB
35. N6BOI SSB
36. N4BBY SSB
37. WB3DKY SSB
38. VY1AL SSB
39. WA4NOM SSB
40. VE3JPJ SSB
41. G4FXS SSB
42. JH1IFS SSB
43. JG1FJT SSB
44. VE4ABJ SSB
45. VE3IPR SSB
46. VE7FAO SSB
47. VE7EDA SSB
48. WD9FOE SSB
49. K6PKO SSB
50. WB0PPR SSB
51. WA1YRB SSB
52. KC4OH
53. AJ1L SSB
54. KB6CO SSB
55. WD6DRM SSB
56. KA8ECT SSB
57. K6CID SSB
58. W8BCE SSB
59. VY1AU SSB
60. VY1BF SSB
61. PA0MA SSB
62. VK3NXQ SSB
63. VE7FCK SSB
64. VE6AYA SSB
65. VE2AJX SSB
66. VE3GTB SSB
67. VE6CKD SSB
68. G4CMT SSB
69. VE3LCJ SSB
70. VE1CAW SSB
71. VE1BWP SSB
72. JA7EPO SSB
73. JA2MTM SSB
74. WD4SII CW
75. VE2PD SSB
76. VE5ADA SSB
77. VE2FSU SSB
78. WA6DTG SSB
79. VE3KHI SSB
80. VE3KOY SSB
81. XE3FP SSB
82. WB9TNQ SSB
83. DF2NJ SSB
84. K2MF SSB
85. VE1BKC SSB
86. WB2DND SSB
87. K9VIQ SSB
88. JA1EF SSB
89. VE2ZP CW
90. K4KYI SSB

Cont'd on page 50

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Par Bruno Molino, VE2FLB

Dirigeants de F.R.A.C.

President
Don Slater, VE3BID
RR 1
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K0G 1L0
(613) 283-3570

Directeur
Robert Sondack, VE2ASL
260 Bellerive,
Ils Ste Helene,
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J0J 2A0
(514) 348-9425

Assistant Directeur
Bruno R. Molino, VE2FLB
26, rue Des-anciens
Gatineau (Pt), Québec.
J8T 3T2
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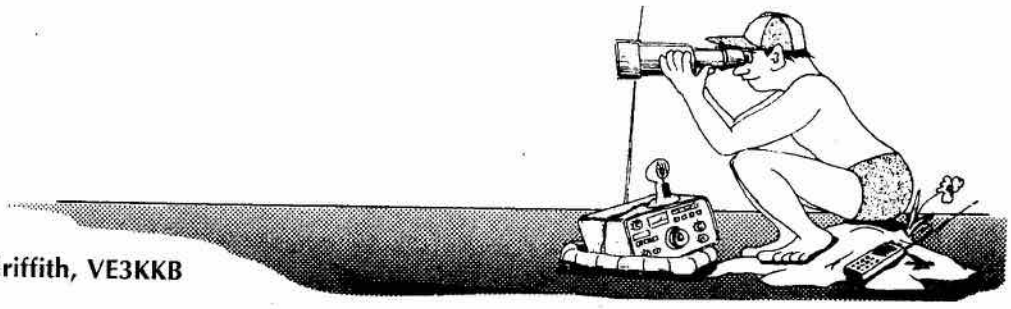


DX

D.W. Griffith, VE3KKB

I would like to extend a welcome to all the new readers of the DX Column and TCA. Because "The Canadian Amateur" is a monthly publication, and diverse in content, it is impossible to print as much timely DX information as is feasable in a weekly, or bi-weekly bulletin, dedicated exclusively to DX. Therefore, what I have done, is broken the column into three (and as of the last issue — four) distinct subsections: The first is more or less editorial in content. This is where I get a chance to sound off on a topic which is of particular interest to me, or where I make a subjective statement on something which I think has ramifications affecting Canadian amateurs in general. This is usually the lead-in portion of the DX Column. It is also in this first section where "How To" type articles would be written, eg. "The Fine Art of QSL'ing", or "The Technique of Grey-Line DX'ing".

The second section I call 'Bits and Pieces", and it is here where general tidbits of information on things like special prefixes, DX'peditions, and as much timely DX information on DX station activity, from especially rare spots is found.

The third area, which has only recently been included, is entitled 'propagation'. This section of the column examines such phenomenon as solar flux, sunspot numbers, and more importantly, what they mean to the amateur in terms of band conditions. Also, there are sunrise, and sunset times for five Canadian cities, and many various geographic regions throughout the world, for each month. In addition, MUF plots from Canadian East, Central, and Western regions to these same DX areas are given. These data should be of considerable use for those working towards 5BDXCC, or 5BWAZ awards, or for contesters.

The final section is 'QSL Information', and QSL managers, and direct addresses for between 70-100 DX stations are given each month. The December issue usually includes a compendium of QSL data for the year. (I say 'usually' because sometimes my computer gets a bit cantankerous).

For those who read this column regularly, all of the preceeding is old hat, but I did want to present an overview of the DX column this month, since this special issue is being circulated to all Canadian amateurs, and it will allow many who have never read the magazine, or this column, previously to get an idea about what it is all about.

Many feel that DX'ing may be termed "the quickie" of amateur radio, and since these individuals prefer a little more substance in a QSO than: "DX1DX, you are 5 by 9, QSL?", "VE3KKB, you are also 5 and 9, '73 . . . QRZ", tend to be somewhat turned off by DX at large. Another common complaint levied against the DX community is the high level of QRM generated by the sudden appearance of a rare station on the band, or the arrival of an expected DX'pedition on the air. The often heard "These damn DX'ers take up too much of the band, and leave nothing for those of us who only want to have a quiet chat with an amateur in another country!" is unfortunately too close to the truth. The disorder, and cacaphony heard on 50-75 Khz of 20m while a major DX'pedition is working split, is perhaps NOT the best endorsement for our particular little segment of the hobby.

Well, by definition, DX is that aspect of amateur radio which deals with long distance communication, but more coloquially, means communication with someone in another country (although I don't think that any of us considers the United States as DX). Unfortunately, too many of us have bastardized the definition of DX and the art of DX'ing into that 'quickie' QSO, and that all important QSL from a new DXCC country, to the point where we have lost sight of any original meaning. The amateur who chats regularly with people in other countries is truly a DX'er, but may fail to realize it himself, and certainly would not be recognized as such by the true, died-in-the-wool, hard-nosed DX fanatic, and it is in this lack of recognition, both by self, and peer, that I feel the true tragedy lies. We have lost something. How often have you heard another amateur say "I'm not on the air much these days because I've worked 306 countries, and there's just nothing around that I need". "I keep my eyes on the bulletins, and when something comes up, I'll be there!". I've found that I am guilty of this fault, and I am actively trying to change my habits. It is time that we stopped working DX JUST for that all-important new country, and re-examined the real meaning of

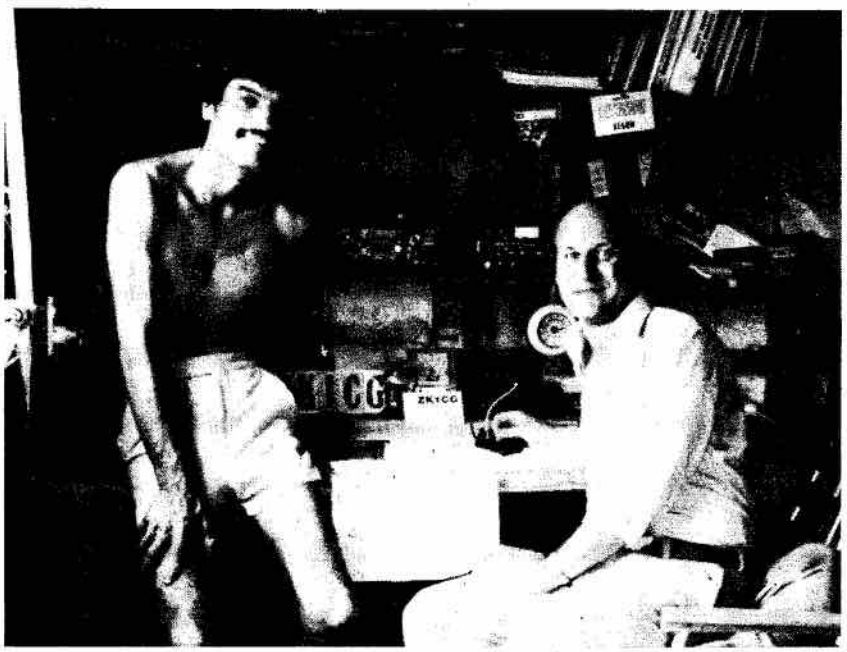


Photo 1 — IC-701 blew finals.

DX'ing. It is time that we got back to COMMUNICATING with amateurs in other countries rather than merely COLLECTING them.

The enclosed photos are from Victor Rivera, ZK1CG, who lives on Rarotonga, Cook Is. Victor uses an Icom IC-701, barefoot, to a 6-el. tribander up at 45 feet. He also uses a 80-10m vertical, and dipoles on 80m, and 160m. Victor advises that there is no bureau on Rarotonga, so QSL direct to:

Victor Rivera,
P.O. Box 618,
Rarotonga, Cook Islands,
South Pacific.

Use 3 IRC's with your SAE. He also sends stamps with each QSL, and they are beautiful. Photo 1 shows ZK1CG on the left, and Bob, W2TK seated, at the operating position of ZK1CG.
Photo 2 is above the shack, with Victor on the right, and ZL1SO on the left.

Many thanks to Victor for his letter, and photographs.

Most of us get in a bit of extra air time when we have a day off during the week due to one of the many statutory holidays we get during the year. Have you often wondered what days people in other countries have off? It would be a good time to be on the air if you needed a particular country, and knew that they had a holiday (because they just might be more active).

Here is a list of countries that have holidays during November, and the appropriate dates:

Day	Country
1	7X
3	HP
7	UA
8	UA
18	A4X
22	OD
24	9Q
25	PZ
28	5T
29	YU
30	8P6

BITS & PIECES

1A0KM . . . S.M.O.M. . . . If this one did not show up in October, then it is a good possibility for November. They usually work all bands, both CW, and SSB.
5X5BJ, 5X5FS . . . UGANDA . . . 14.180-14.190, about 2000-2030Z. May have been legit, or may not. The political climate tends to blow hot and cold, 'vis a vis' amateur radio, in Uganda, and so it's hard to tell. Work it first, and worry about whether it counts or not, later.
5Z4MX . . . KENYA . . . Will be in Kenya for 3 years. Quite active on CW. Try 21.020, 7.004 & 3.501

Photo 2 — ZL1SD Robin above my shack.

Mhz. QSL's go to SM3CXS.
4K1GDW . . . S. SHETLAND IS . . . Try 7.007 about 0330-0400Z. QSL via UQ2GDW.
JX5DW . . . JAN MAYEN . . . 'Till mid-1984. Listen on 7.025, abt. 0300Z; 14.025, at 2300Z. QSL to 8013 Jan Mayen Is., Norway.
T77C . . . SAN MARINO . . . Formerly M1C. Try 14.020-14.030 from 2100Z. QSL to CBA.
UA7YAN . . . Zone 23, TUVA . . . Try 14.045-14.050 about 2300-0000Z. QSL to Box 88, Moscow.
VK9ZS . . . WILLIS IS . . . Until December 1983. QSL to VK6YL.
VK0GC . . . MACQUARIE IS . . . Mondays, 1000-1100Z, 14.180, 14.225, 14.135Mhz.
VP8ANT . . . ANTARCTICA . . . Try 7.006 at 1030Z. QSL to G3ZAY, P.O. Box 146, Cambridge, England.
XU1SS & XU1KC . . . Khymer Rep., or Kampuchea, (Cambodia) . . . or whatever they are calling themselves this week! . . . Reported on 21.295 at 0300Z and 21.026 at 0000Z. Also 14.026 at 8-1000Z. QSL via JA1HQG.
ZL/K . . . KERMADEC IS . . . Jim Smith, VK9NS, late of Heard Is. fame, appears to have been given the nod for a DX'pedition in conjunction with a scientific junket to this rare island (Where have I seen this formula recently?). Early November has been set as the target date, but no further details are available at this time. Keep your ears open, and good hunting.
ZL3HI/A . . . CAMPBELL IS . . . Listen on 3.800 Mhz from 0700Z. QSL to ZL2QW.

QSL Information

Callsign	QSL Via:
3X4EX	N4CID
4K1B	UK6LAZ
4X4MS/5N0	DL8MAE
5Z4CI	PA0ADC
5Z4GM	GW4KYN
5Z4PS	DL4ZAZ
5Z4RK	K4YT
6W8HL	WA4VDE
6W8JI	WA4VDE
7P8CT	G4GEE
C31XS	F6CQU
C6ABA	G3AMR
CX7BY	W0IJN
EI2VNE	ON6NW
FBB8WH	F6BFH
FB8ZP	K6KNO
FK8CE	K2RDR
F08IW	K1CC
FO8JP	F1BBD
HC1BP	N4BPO
HL9AH	N5ASD
HL9BS	WD5EPX
HL9KE	K4WSB
IO9VDQ	IT9VDQ
J3AVT	W8UVZ
JT1AN	W7PHO
JX6RE	LA9RE
K2BDY/DU7	K4PT
KA4EIN/TI0	N5BQR
KC7UU/5N6	K6EDV
LU2MM	K1MM
LU5ZA	LU2A
OJ0MA	OH0NA
P29CF	VE5AAC
P29SO	VK3BSO
PP8ZAT	KC8YW
PY1ZFF	KA9KUH
R4ASB	UK4AAB
SM0CCE/OY	SM0CCE
SV0AA	N2OO
SV7WD	WB4LFM
T2ETA	OE2DYL
T2VEL	OE2DYL
T30BF	OE2DYL
T30BG	OE2DYL
T30CH	W9SLT
T32AB	N7YL
T32AF	KH6UR
TG9GI	I0WDX
TG9NX	N4FKZ
TG9RB	W1WLW
TG9XML	K5BDX
TI5EWL	AG1K
TJ1AF	N4IAM
TL8ER	K6GQK
TO5RV/FC	F5RV
TR8DR	W2PD
TR8GM	F6ESH
TR8JL	K6VNX
TR8MYA	JA8ATG
TU2GA	K9KXA
TY9NX	N4FKZ
TZ8DC	DL8DC
UJ8JCQ	WB2OHD
V2AN	WB8SSR
VP2VDG	W4KA
VP5LDX	WB8LDH
VP8AQU	K0JW
VS6YY	K5YY
XT2AW	KN1DPS
YB0ADI	WA2DWE
YB3ARK	PA3BTZ
YB8ARM	PA0EBC
YJ8DX	JL1KDX
YS1LSR	VE3MFP
ZD8JT	G4MRO
ZD9YL	W4FRU
ZK2EL	OE2DYL
ZK2TA	OE2DYL
ZS4PB	N7RO

QSL Information: Direct Addresses

Callsign	Direct Address
3V8PS	Box 473, Tunis, Tunisia.
5B0JE	Box 1723, Limasol, Cyprus.
C21BD	Box 225, Republic of Nauru, South Pacific.
C21FS	Box 83, Republic of Nauru, South Pacific.
C21RK	Box 139, Republic of Nauru, South Pacific.
EA9OI	Box 260, Melilla, North Africa.
FR7BX	Box 50, Reunion Is., Indian Ocean.
OA4JR	P.O. Box 2473, Lima, Peru, S.America.
P29JM	P.O. Box 1205, Arawa, Bougainville, Papua-New Guinea.
PJ7ARI	Box 142, St. Maarten, West Indies.
PZ1DT	Box 2163, Paramaribo, Surinam.
SV8RX	Box 45, Zante Island, Greece.
T30DB	Box 457, Betio, Tarawa, Kiribati, Central Pacific.
VK9WC	P.O. Box 27, Norfolk Is.
VS5HG	Box 980, BSB.
YB2BLI	Box 27, Yogya, Indonesia.
YB3AC	Box 22, Surabaya, Indonesia.
YB4FN	Box 76, Bangka, Indonesia.
YB9VA	Box 422, Jayapura, Irian Jaya, Indonesia.
YC5AK	Box 132, Padang, Indonesia.
Z21GO	39 Coull Drive, Mt. Pleasant, Harare, Zimbabwe.
ZB2GR	# 19 Keuhley House, Gibralter.

PROPAGATION

The sunrise/sunset time program seems to be working O.K., but the alog. for MUF is so slow that it is driving me to "/$%??&¾%%$''''''."-?$''(if you know what I mean). I have included a few MUF plots, and in the next few weeks, I'll compile the MUF plot program, and see if I can get it running a bit faster (otherwise this writer may be in a local sanitorium).

The plots are labelled A, B and C. A is from the East coast, B from Central Canada, and C, from the West Coast.

As you probably know, the MUF is the "maximum usable frequency", and is a physical phenomenon that cannot be circumvented by big antennas, or big amplifiers. DX'ers should be interested in the MUF characteristics of certain paths, because the closer to the MUF one operates, the more efficient the communication between points on these paths become.

SOUTH AMERICA

MONTH 11	SUNSET	SUNRISE
1	2115 Z	0836 Z
5	2116 Z	0835 Z
9	2118 Z	0834 Z
13	2120 Z	0834 Z
17	2122 Z	0834 Z
21	2125 Z	0834 Z
25	2127 Z	0834 Z
29	2129 Z	0835 Z

ALASKA

MONTH 11	SUNSET	SUNRISE
1	0057 Z	1812 Z
5	0043 Z	1827 Z
9	0030 Z	1841 Z
13	0018 Z	1855 Z
17	0006 Z	1909 Z
21	2354 Z	1923 Z
25	2344 Z	1936 Z
29	2335 Z	1948 Z

WESTERN EUROPE

MONTH 11	SUNSET	SUNRISE
1	1614 Z	0654 Z
5	1608 Z	0700 Z
9	1603 Z	0706 Z
13	1559 Z	0712 Z
17	1555 Z	0718 Z
21	1552 Z	0724 Z
25	1550 Z	0729 Z
29	1548 Z	0734 Z

EASTERN EUROPE

MONTH 11	SUNSET	SUNRISE
1	1416 Z	0506 Z
5	1410 Z	0513 Z
9	1405 Z	0520 Z
13	1400 Z	0526 Z
17	1356 Z	0532 Z
21	1352 Z	0538 Z
25	1350 Z	0544 Z
29	1348 Z	0549 Z

NORTH AFRICA

MONTH 11	SUNSET	SUNRISE
1	1640 Z	0623 Z
5	1636 Z	0627 Z
9	1633 Z	0631 Z
13	1631 Z	0635 Z
17	1629 Z	0639 Z
21	1627 Z	0643 Z
25	1626 Z	0647 Z
29	1626 Z	0650 Z

CENTRAL AFRICA

MONTH 11	SUNSET	SUNRISE
1	1819 Z	0634 Z
5	1819 Z	0635 Z
9	1819 Z	0636 Z
13	1819 Z	0638 Z
17	1820 Z	0639 Z
21	1821 Z	0641 Z
25	1822 Z	0642 Z
29	1823 Z	0644 Z

SOUTH AFRICA

MONTH 11	SUNSET	SUNRISE
1	1518 Z	0425 Z
5	1515 Z	0428 Z
9	1514 Z	0431 Z
13	1513 Z	0434 Z
17	1512 Z	0437 Z
21	1511 Z	0439 Z
25	1511 Z	0442 Z
29	1511 Z	0445 Z

MIDDLE EAST

MONTH 11	SUNSET	SUNRISE
1	1435 Z	0407 Z
5	1432 Z	0411 Z
9	1430 Z	0415 Z
13	1427 Z	0419 Z
17	1426 Z	0422 Z
21	1425 Z	0426 Z
25	1424 Z	0429 Z
29	1424 Z	0433 Z

INDIAN OCEAN

MONTH 11	SUNSET	SUNRISE
1	1216 Z	0032 Z
5	1216 Z	0033 Z
9	1216 Z	0034 Z
13	1216 Z	0036 Z
17	1216 Z	0037 Z
21	1217 Z	0039 Z
25	1218 Z	0040 Z
29	1220 Z	0042 Z

CENTRAL ASIA

MONTH 11	SUNSET	SUNRISE
1	1045 Z	2318 Z
5	1044 Z	2319 Z
9	1043 Z	2321 Z
13	1043 Z	2323 Z
17	1043 Z	2325 Z
21	1044 Z	2327 Z
25	1044 Z	2329 Z
29	1045 Z	2331 Z

JAPAN

MONTH 11	SUNSET	SUNRISE
1	0734 Z	2113 Z
5	0731 Z	2117 Z
9	0728 Z	2121 Z
13	0726 Z	2125 Z
17	0724 Z	2129 Z
21	0723 Z	2133 Z
25	0722 Z	2137 Z
29	0722 Z	2140 Z

SOUTH PACIFIC

MONTH 11	SUNSET	SUNRISE
1	0806 Z	1943 Z
5	0807 Z	1943 Z
9	0809 Z	1943 Z
13	0810 Z	1943 Z
17	0812 Z	1943 Z
21	0814 Z	1944 Z
25	0815 Z	1945 Z
29	0817 Z	1946 Z

AUSTRALASIA

MONTH 11	SUNSET	SUNRISE
1	0825 Z	1852 Z
5	0828 Z	1849 Z
9	0832 Z	1847 Z
13	0836 Z	1845 Z
17	0840 Z	1843 Z
21	0843 Z	1842 Z
25	0847 Z	1841 Z
29	0850 Z	1841 Z

HALIFAX

MONTH 11	SUNSET	SUNRISE
1	2051 Z	1109 Z
5	2047 Z	1114 Z
9	2042 Z	1119 Z

13	2039 Z	1125 Z
17	2036 Z	1130 Z
21	2033 Z	1135 Z
25	2032 Z	1139 Z
29	2030 Z	1143 Z

OTTAWA

MONTH 11	SUNSET	SUNRISE
1	2136 Z	1156 Z
5	2131 Z	1202 Z
9	2126 Z	1207 Z
13	2123 Z	1213 Z
17	2120 Z	1218 Z
21	2117 Z	1223 Z
25	2115 Z	1228 Z
29	2114 Z	1232 Z

REGINA

MONTH 11	SUNSET	SUNRISE
1	2317 Z	1407 Z
5	2311 Z	1414 Z
9	2306 Z	1420 Z
13	2301 Z	1427 Z
17	2257 Z	1433 Z
21	2253 Z	1439 Z
25	2250 Z	1444 Z
29	2248 Z	1449 Z

EDMONTON

MONTH 11	SUNSET	SUNRISE
1	2342 Z	1452 Z
5	2335 Z	1500 Z
9	2329 Z	1508 Z
13	2323 Z	1515 Z
17	2318 Z	1522 Z
21	2314 Z	1528 Z
25	2311 Z	1535 Z
29	2308 Z	1540 Z

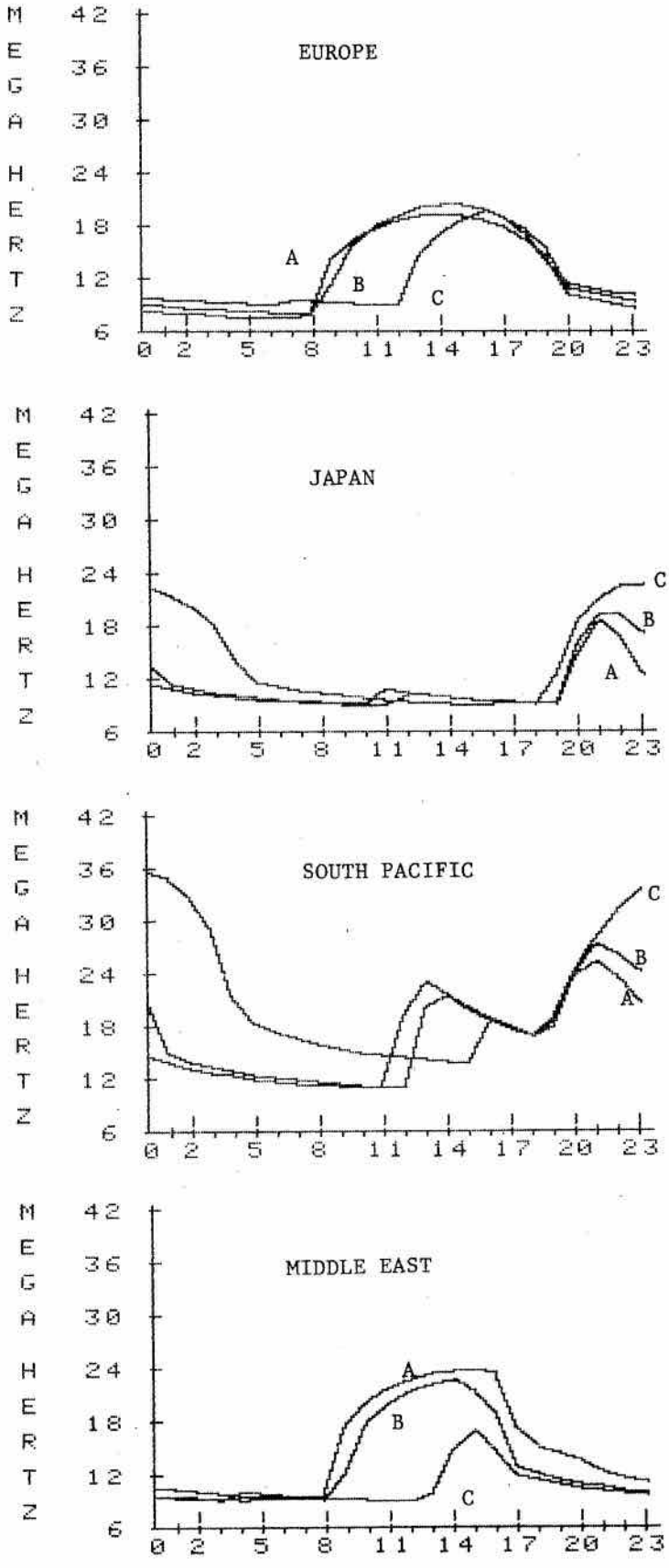
VANCOUVER

MONTH 11	SUNSET	SUNRISE
1	0039 Z	1521 Z
5	0033 Z	1528 Z
9	0028 Z	1534 Z
13	0023 Z	1540 Z
17	0019 Z	1546 Z
21	0016 Z	1552 Z
25	0014 Z	1557 Z
29	0012 Z	1602 Z

I would like to thank CQ Magazine, Long Skip, Vic Rivera, ZK1CG, VE3IAT, and many anonymous sources for much of the material appearing here
73

Doug, VE3KKB

A from East Coast; B from Central Canada; C from West Coast.



EmCom: Emergency Communication

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

The name of this column is EmCom, short for ***Em****ergency* ***Com****munications.*

The purpose of this column is to stimulate a positive dialogue between Amateur Radio operators across Canada to develop concepts for Amateur Emergency Communications at all levels of participation — local, regional, provincial and federal. This column can be a forum for these concepts. If ***you****, as an individual or as a spokesman for the group, have ideas that you think could be of benefit, by all means send them to me by mail. All thoughts and ideas are welcome and, if used, will be attributed to those who suggested them.*

The thoughts put forth in this column are not necessarily those of CARF.

Amateur Radio Emergency Communications — Is it time to implement a second phase?

In my previous series of articles, I talked about emergency communications, basically, at the local level.

This column can be a forum for discussion about the merits and pitfalls of a concept put forward as a position paper presented at the CARF symposium held in Halifax, Nova Scotia on October 14 and 15, 1983.

Your written comments and observations are welcome.

Now is the time to institute a Radio Amateur Communications Emergency Service — RACES in Canada.

Background

In the late 50s and early 60s, Emergency Measures Organization Canada was spread out across Canada and had an extensive network of radio communications equipment to permit coast-to-coast government communications in time of civilian emergency such as flooding and earthquake.

With the changing times and the change of government priority, EMO Canada was reconstituted as Emergency Planning Canada, with a change in mandate and a change of policy.

Gone were the communications network and the associated cross-Canada communications capability that once existed. Gone was the ability for government emergency communications to be transmitted and received on dedicated government radio communications circuits.

Most provinces, in various ways, attempted to establish their own circuits and their own provincial emergency organizations.

Current Status

Some provinces, such as New Brunswick and Nova Scotia, have established their own provincial communications networks that tie together various provincial agencies that could be used in emergencies, through central control points.

Other provinces, such as British Columbia, Alberta and Quebec have recognized the capabilities of amateur radio to provide reliable emergency communications in their own provinces. This recognition has varied from providing operating space in emergency operations centres, to providing choice locations for the establishment of repeater facilities, to outright purchases of amateur radio equipment for use in emergency operation centres scattered throughout the province.

In Ontario in general, amateur radio operators have provided, through their own resources, equipment and facilities to regional emergency planning officers to provide a provincial emergency communications network. This fact has just been recognized by the Solicitor-General's department and further action is forthcoming.

In the Ottawa area, the hard work of amateur radio and the determination of the regional emergency planning officer have resulted in the establishment of an amateur radio emergency communications room adjacent to the emergency operations centre in the new City of Ottawa police station. Furthermore, an amateur radio emergency communications centre is slated for the new Ottawa-Carleton EMO headquarters. The EMO amateur radio centre is being designed into the new building with forethought for the requirements of amateur radio, not as an afterthought.

The key to the provincial action is that they are, by nature, only PROVINCIAL. There is no *officially* established radio communications link with Emergency Planning Canada headquarters in Ottawa. Each of the provincial activities is independent of the other and there is no *direct* cross-boundary communications capability available for emergencies.

The Canadian Radio Relay League, through its NTS system, can provide communications, by relaying messages from station to station, across North America. But, at peak efficiency of transmission, a question-type message from British Columbia must wait 3½ hours for a reply from Ottawa — slightly slow in time of emergency; and, this is with their net fully geared-up for emergency service.

Additionally, their ARES system is theoretically geared-up for local emergency operations. However, ARES is committed to providing health and welfare communications services to Red

Cross and similar welfare agencies in time of emergency. In time of widespread emergency, that commitment can put a taxing drain on needed manpower and equipment.

Proposal

Amateur radio in Canada, together with Emergency Planning Canada, Communications Canada and with provincial emergency planning agencies from all provinces should strive to establish a national Radio Amateur Communications Emergency Service — RACES for short.

Amateur radio organizations, irrespective of their politics, can and will put aside their differences for the establishment of a national communications network for government for emergency purposes. Amateur radio emergency communications organizations should commence discussions respecting the workings of a RACES system in Canada and their own interface into the RACES system.

Emergency Planning Canada should sponsor a conference at their Arnprior College and invite amateur radio representatives, provincial government representatives and Communications Canada officials to discuss the workings required to establish a framework for future operations.

Communications Canada should permit the RACES operators to use existing available government frequencies in time of emergency to permit sensitive traffic to be transmitted either 'in the clear' or encoded to provide a degree of communications security.

Finally, provincial emergency government agencies should strive to work with amateur radio to provide not only guideline for RACES operations and moral support for the capabilities of amateur radio in time of emergency but also provide financial support for the establishment of amateur radio emergency facilities at government operations centres.

The Western Connection: as it is today

Norm Waltho, VE5AE
Mid-Western Director, CARF

In the west (that's between the great big hills and the tree line in the east) the CARF Western Connection has been starting to increase in great leaps and bounds. When I started to expand this area after taking over from Jim McKenna VE6HO, I started by looking for someone with similar interests in Amateur Radio and ones that were interested in promoting Amateur Radio in their area's. Starting with Saskatchewan as home ground, I immediately recruited VE5WM Bill Munday from Regina and quickly followed with Bill Wood VE5AEJ. I then started to expand the regional assistants to include Vic Allen VE5AEN from Coronach, BJ Madsen VE5ADA from Weyburn in the southeast corner of the province, VE5HG Eric Quiring and VE5BAF Dave Allister from Saskatoon, and finally VE5HF Herb Jacobs wrapping up the northern area around Prince Albert. For the time being I felt that these people would be adequate to cover the province of Saskatchewan. I then started to get some assistants in the province of Alberta by attending the Waterton-Glacier Hamfest in 1982. There I picked up Ken Schneider VE6COH from Barons. With the help of our Vice-President VE6XX Fred Towner in Calgary, I then recruited Toni Fields VE6CCS in Calgary and Jim McKenna VE6SU from Lethbridge. This year I went to work on the eastern area of the mid-west, Manitoba, by attending the Hamfest at the International Peace Gardens and recruited VE4AEE Cecil Fardoe and VE4ACX Max Geras from Brandon and Birtle. After a little bit of arm twisting from my pen, we have signed up Malcolm Timlick VE4MG in the Kelwood area. Also holding up the northern area along with VE5HF is Harvey Wheaton VE4HW in Flin Flon area.

After looking over the great map of the Mid-West Area I see that I am only missing a couple of areas that could have a Regional assistant, the Edmonton area, Winnipeg area and the North West Territories. Can anyone help me in these areas?

Last year I started up the CARF Family Hour which was on 3770 Khz at 0215 Hrs Z on Friday evenings. This informal group headed by myself, read and discussed all of the CARF Bulletins last winter and it seemed that the informal net was a great success. This year I have moved the CARF Family Hour to Wednesday evening on 3770 Khz at 0215 Hrs Z. So far we have had one session and have had the grand total of eleven checkins and from the vox breaks there must have been many more just listening in to the discussion's.

In the near future we are going to try and get to a few different club meetings and promote Amateur Radio, also we will be available on most of the 75 Meter phone nets to answer any questions or querries about CARF. In the hopes of better propagation and band conditions, I am wishing to shorten the gap between the great big hills and the tree line and have checkins to the CARF Family Hour from VE3s and VE7s. This is a great opportunity to voice your opinions to CARF officials.

If there are any questions or concerns you may wish to voice, please feel free to drop your Regional Assistant a letter via his call book address and you will get an answer.

73s

CRAG Canadian Repeater Advisory Group

By Hugh Lines
VE3DWL

Well, the column is back after a long absence. All has not been still though, your editor has just completed building one of the "Apple II Clones" that are proliferating on the market. In fact, this column is being written on the computer using one of the many text editors available.

Some new information has just been passed on from the CARF office in Kingston, and I will try to summarize it here. Jim, VE7DMG, has passed on news of two new repeaters in the B.C. interior; however, no call signs were given. In Kelowna there is a machine on 147.000/146.400 and in Penticton, there is a new one on 147.720/147.120. Also from B.C. via Roy, VE7TG, comes the following; — VE7RNC listed as Alert Bay should be Kelsey Bay (Newcastle Ridge); VE7RNI in Alert Bay is now operating and is linked to VE7VIC in Victoria; VE6RSI listed as Mount Bruce is actually near Victoria and will be changing to 147.920/147.320 very soon; VE7RMT listed as Victoria is actually in Chemanius and is also linked to VE7VIC. VE7RPE in Victoria should read VE7RCU and is linked to VE7ESR in Vancouver and VE7RDP on Blackcombe Mtn which is on 144.570/145.170. A new repeater in Vancouver is VE7FVR on 147.780/147.180 with an autopatch.

From the Halifax Radio Club Bulletin comes news of VE1MAR, temporarily located in Dartmouth on 147.870/147.270. It runs 30 watts with an autopatch and should be in its permanent location by the time you read this.

Bill, VE3JBW, recently wrote in with some interesting questions. I am publishing them in the hope that we can get some interest going on these topics and maybe come up with some recommendations or find out if some groups are actually doing these things. First, "What — if any — is the official standard emergency frequency for initial contact? (similar to 121.5 AIR, 156.8 MARINE and GRS channel 9). If none, have any frequencies been designated for that use by local area or regional agreements? Second. Is there such a thing as a standard mobile calling frequency for vehicles on the road? How about boats? Would it be useful to identify those repeaters whose autopatches are open/closed and for open patches, publish the access/disconnect codes?

(Ed. note. I get some of this information from club bulletins that are forwarded to me, but I have been loathe to publish this sort of information unless specifically told that it would be permissible). Lastly. What — if any — is the standard alarm signal that would alert monitoring operators to emergency situations? What procedures are used, and on what frequencies? Are there any amateur stations presently engaged in monitoring duties using automatic alarm devices?

Any answers from TCA readers would be appreciated. I will publish the information we receive as it comes in.

Finally, I am in the process of completely revamping the CARF/CRAG repeater list. It is now in a data-base type of format, and I can produce listings sorted by (1) Location, (2) Frequency and (3) Call. As well, specific selected types of reports can be generated (e.g., What repeaters in Ontario are on 147.615/147.015? What 6 meter repeaters are in Calgary? etc.). The normal complete repeater list (sorted by location) will be available from CARF HQ in Kingston. Any other specific lists can be obtained from me directly (at a cost of $2.50 for postage). Please note that my address has changed (I haven't moved, it's just that Canada Post has finally seen fit to give us door-to-door mail delivery). My correct address is H. Lines

VE3DWL, 1165 Montrose Rd., Belleville, Ont., K8R 1A9. Any requests for repeater data that come from a repeater council or frequency coordination committee will be handled free of charge (This is so that we can find out who they are !!). A new listing will be published in TCA in the near future.

Canadawards

Cont'd from page 40

91. JA1WVK
92. KF4FO SSB
93. VE7YW SSB

50 MHz

1. VE1AVX SSB
2. KA4AOK SSB
3. N3AHI
4. VE1ASJ SSB
5. W7WKR SSB
6. N7D8
7. KA1BRD SSB
8. W2UTH SSB
9. WA7HQG SSB
10. W7ZTT SSB
11. WB1FVS SSB
12. WD2AKA SSB
13. WA7GCS SSB
14. K8WKZ SSB
15. W2IDZ SSB
16. W7IDZ SSB
17. K7LED SSB
18. VE6CX
19. N4CD SSB
20. K4GOK SSB
21. W2AIM SSB
94. WA2VUY SSB
95. JA2FDC SSB
96. VE3XK SSB
22. WB2WSV SSB
23. K2QIE SSB
24. W4CKD SSB
25. WB7AJP SSB
26. K3QMX SSB
27. K7LYT SSB
28. WB8BKC SSB
29. K8EFS SSB
30. WB8WXZ SSB
31. WA4MCP SSB
32. K2YOF SSB
33. KS2T SSB
34. WA1AYS SSB
35. WA1UQC SSB
36. VE3LNX SSB
37. W2RTW SSB
38. W1QXX SSB
39. N3BBI SSB
40. VE7AFB SSB
41. WD8BRE/8 SSB

Five-Band Canadawards

1. VE3GCO
2. VE3JPJ SSB
3. WA1UVX
4. VE1ASJ

160 MTRS

VE5XU CW

SATELLITE

VE5XU

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

YL News and Views

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

Ever get the feeling our hobby is going to the dogs? I guess things like rare countries and contests etc. bring out the worst in some of us. Remember the formula for the Amateur Code. In other words, mind your manners. Another thing... always ask if the frequency is occupied before you start calling on it. I realize no one owns a frequency, but there is such a thing as common decency. If you know a net meets at a certain time on a certain frequency (give or take due to QRM etc.), DON'T get on THAT frequency and call CQ — just to show them! We are a friendly bunch. Let's prove it.

CLARA Contest

CLARA has a DX-YL sponsorship program where by you can sponsor a DX YL into CLARA as an associate member. They have all the privileges except voting and they receive the Clarion. The idea promotes international YL friendship and gives us a better chance to get to know more about the YL, her family and her country. You don't have to be a CLARA member to sponsor. OMs can also sponsor. Sometimes if you sponsor a YL, she will do the same for you into her club. We keep in contact with each other via radio, letter and sometimes we even get to meet. We exchange ideas in general, work on each others contests and certificates. We exchange hobby and craft ideas, stamps and yes, even recipes. If you would like to sponsor a DX YL into CLARA, just send inquiry or info to Margaret Miller VE7DKC, 162 Corry Place, Penticton B.C. V2A 3S1. She usually has a waiting list or you can sponsor one of your own choice.

Don't forget the AC-DC (Annual Clara Day Contest), October 22 & 23. Check club bulletins.

YLs answer MAYDAY call

Two CLARA members, Muriel VE3LQH and Bobby VE7CBK helped rescue a United States Marine stranded for almost 2 days after his jeep overturned in a remote area of a southern California military base. Muriel and Bobby had been chatting when they heard the call for help. The distress call came from Lance Cpl. Jeff Wright, 20, stationed at Camp Pendleton. Wright said he was lost somewhere in the hills of the sprawling camp after his jeep flipped into a ditch.

Muriel reported the emergency to the Ontario Provincial Police in Lindsay while Bobby continued to talk to the man assuring him they were notifying rescuers. The OPP alerted the Canadian Rescue Centre at trenton who contacted U.S. Military authorities to begin a search for the man. The Sargeant at Camp Pendleton said the two YLs had touched off "an international rescue attempt" that finally located Jeff Wright, at the northern fringe of the camp near the Cleveland National Forest. He was found when military officials checked a crossline of radio calls involving Muriel and Bobby and the members of the military Amateur Radio System to coordinate his position.

A job well done and to Muriel and Bobby a SPECIAL THANKS AWARD.

(More in the Dec. Issue of TCA. Ed.)

In the I'd like to see Dept.

I'd like to see more YLs at the CARF information booths!

I'd also like to see more YL information available at all Conventions and Hamfests.

HELP Department

I would like to hear from those YLs that received their Amateur Radio call during their senior years and the story behind the interest.

Thanks to the OMs that have taken time to read this column and said they enjoyed it.

The following was taken from an old YL Beem (South African) YL club paper and the A.R.N.S. (Amateur Radio News Service).

Seeing is believing:

- Have you ever seen a quarter wave?
- Have you ever seen a volt age?
- Have you ever seen a center tap?
- Have you ever seen a band pass?
- Have you ever seen a net work?
- Have you ever seen an element beam?
- Have you ever seen a negative lead?
- Have you ever seen a filter choke?

Well, have you ever?

That's it for now 73/33/88/ as the case may be.

Cathy Hrischenko
VE3GJH

New Advanced Certificate Requirements

Instructors and Amateurs studying by themselves for the Advanced certificate will be interested in the new syllabus now in the process of being published by DOC, which has a number of changes to the requirements which bring it closer to one for hobbyists rather than electronic experts. The new syllabus, DOC TRS-24 still has the 15 words per minute morse but now includes figures and punctuation marks. These had inadvertently been omitted from the old TRC-24 Advanced requirements although they appeared in the Amateur class test. These include the period, comma, question mark, dash and oblique stroke.

The new TRC-24 is a comprehensive study aid with lots of advice to candidates on how to write and what to expect in exams. In summary it notes that "the Advanced class calls for a good working knowledge of components and devices, including ICs used in typical Amateur power supplies, receivers and transmitters." Block diagrams of CW/AM, SSB/AM/CWW and FM transceivers are required. These are included in the TRC-24.

The following is extracted from the technical requirements or theory part of the Advanced exam.

Technical Requirements for the Advanced Certificate

Candidates for the Advanced Amateur class of certificate are expected to demonstrate a working knowledge of radiocommunication as applied to the high-powered and complex station apparatus used by experienced Amateurs. A knowledge of mathematics and formulae is needed, sufficient to be able to deal with Ohm's law, decibels, frequency, wavelength, impedance, and resonance.

Candidates can expect questions from each of the five subject areas. Answers should be in plain language and calculations should be shown because the correct method is more important than the correct answer. Mathematical tables, slide rules or non-programmable calculators may be used during the examination.

1. Power Supplies

Candidates are expected to have a working knowledge of power sources and the functioning of typical power supplies in Amateur main, portable and mobile stations.

The scope of this subject is indicated by the following key words or phrases:

Main station

(AC operated supplies)

— rectifier circuits: halfwave, fullwave, bridge, voltage doubler;
— filter circuits, bleeder resistor;
— regulator circuits: pass transistor and integrated circuit;
— three-terminal regulators, VR tube and zener diode regulators.

Portable and mobile stations

— use of batteries, generators, alternators, inverters, converters.

2. Receivers

Candidates are expected to have a working knowledge of modern communication receivers.

The scope of this subject is indicated by the following key words or phrases:

— based on standard diagrams contained in this circular, (See appendix B) analyze or describe the operation of various stages or portions of modern receivers;
— explanation of: sensitivity, noise figure, selectivity, stability, distortion, image rejection, intermodulation, spurious responses, quieting, capture effect, carrier re-insertion, de-emphasis, limiting, automatic gain control (AGC), automatic volume control (AVC).

3. Transmitters

Candidates are expected to have a working knowledge of modern transmitters.

The scope of this subject is indicated by the following key words or phrases:

— based on standard diagrams contained in this circular, (See appendix B)
— analyze or describe the operation of the various stages or portions of modern transmitters;
— explanation of: carrier suppression, sidebands, Automatic Level Control (ALC), frequency deviation, pre-emphasis, clipping, narrow band FM (NBFM), wide band FM (WBFM), bandwidth, modulation percentage, speech compression, stability, neutralization, peak envelope power.

4. Antenna Systems

Candidates are expected to have a working knowledge of transmission line and antenna theory as applied to the antenna systems appropriate for the frequency bands allocated to the Amateur service.

The scope of this subject is indicated by the following key words or phrases:

Antennas and Transmission Lines

— theory of isotropic antenna;
— types: dipole, folded dipole, 5/8 grounded vertical, long-wire, yagi, quad, ground-plane, parabolic, helical beam;
— calculation of element length;
— effect of ground reflections, radiation patterns, front-to-back ratio, directivity;
— polarization;
— gain;
— basic characteristic of waveguides and resonant cavities;
— coupling to receiver or transmitter: antenna tuning unit;
— velocity factor;
— impedance matching, use of baluns, quarter-wave transformers, "T" and "gamma" match;
— VSWR measurement and calculation;
— dB, gains and losses in antenna systems, effective radiated power.

5. Test Equipment

Candidates are expected to have a working knowledge of the operations and use of Amateur test equipment and monitoring apparatus.

The scope of this subject is indicated by the following key words or phrases:

— multimeter, transistorized and vacuum tube voltmeters;
— calibration oscillator;
— frequency counter;
— dip meter;
— two-tone oscillator;
— R.F. wattmeter;
— R.F. generator;
— deviation meter;
— oscilloscope to analyze power supply, AF and RF waveforms;
— VSWR meter.

The regulations portion of the exam is still a multiple choice type. The TRC-24 refers to extracts from the General Radio Regulations and the Radio Act as well as the Radio Regulations of the International Telecommunication Union, which are available in TRC-25.

(Author's note: It is recommended that the CARF Regulations Handbook latest edition (1983) used to assist in interpreting governmentese. See CARF ads in this issue.)

The code portion of the exam requires a 100% mark at 15 words per minute for three minutes of sending and the same for receiving but there is some leeway in this. Here are the actual words from TRC-24.

"In both sending and receiving Morse code tests each character that is omitted or that is incorrectly sent or received is counted as one error.

"To allow for a 'correction factor' examiners assign marks in Morse code tests by counting errors as defined (as below)

and giving a mark of 100% where there are five or less, 99% for 6, 98% for 7, 97% for 8, 96% for 9, and so on.

"The passing mark for Morse code tests is 100%, given where there are no more than five (5) errors. These are plain language tests and, in receiving tests, the examiner allows two (2) minutes at the end of the test for candidates to review their copy and fill in or correct wherever possible. . . ."

"A Morse code 'word" as defined in the *Radio Operator Certificate Regulations* consists of letters, accented letters, figures and signs of punctuating counted at the rate of five characters per word with letters' counting as one character each and accented letters, figures and signs of punctuation counting as two characters each.

"Normally Amateurs use only a few of the punctuation marks and do not use accented letters at all. Therefore Amateur Morse Code tests include the period, comma, question mark, dash and oblique stroke or slant, but do not include any of the accented letters."

The syllabus adds a note of real interest in the candidate's success when it says encouragingly:

"**Do Not Stop or Give Up!**" Candidates invariably approach Morse code tests with nervousness and apprehension. Considering that there is a correction factor to be applied, the important thing is not to stop or give up if something is missed or a mistake is made because the factor may allow a pass mark."

All in all the new TRC-24 is a great improvement over those of the past and the DOC is to be congratulated for publishing a comprehensive study guide. Congratulations too, to CARF officials VE3AHU, Art Blick and VE3IDW, Ron Walsh, who labored many months in bringing forth the suggestions and diagrams which they recommended to the Department. These, after a number of discussions with DOC, resulted in a syllabus directed to a hobby level of knowledge rather than the technical level which was instituted some time ago.

TRC-24 and TRC-25 should be available from your nearest DOC District Office by the time this article is printed.

The first exams based on this new TRC-24 will be on February 8. Other dates for 1984 are April 18, June 20 and Oct. 17. Applications to write them must be in DOC District Offices a month before the exam date.

PACIFIC REPORT

By Walter Stubbe (VE7EGR)
Vice-President (West)
P.O. Box 513
Westbank, B.C.
(604) 768-5220

Walter Stubbe - VE7EGR

As usual the summer in B.C. was filled with Hamfests and I had the pleasure to attend the International Hamfest at Oliver, B.C. which was as usual a success although the weekend had its drama.

A total of 4 aircraft went down in crashes on and around the Oliver Airport which is located about a mile from the Hamfest site, and one of the amateur's children had to be rescued from the Okanagan River. All in all not the kind of activities one looks forward to.

The Island Ham happening on Northern Vancouver Island was also reported to be a success although plagued with inclement weather. The activities where moved inside a community center and a good time was had by all.

Hopefully we will find the time next year to attend this one as I normally am fishing for salmon in that area around September.

This year however my summer was spent studying and am happy to report that I received my commercial license and can assure all those that are writing the advanced amateur examination that the questions on the exam are not at the same level as the commercial.

All in all we will be looking forward to increased participation of all CARF members and if there are inquiries please call on the B.C. net at 3758 MHZ at 0200 UTC.

TECHNICAL SECTION

The Maximizer Audio Filter

James Bell, VE3DDY
R.R. #1, Manotick Station
Ontario, K0A 2N0

A Low-Cost, High-Performance Audio Filter Unit, Suitable for Reception of Single Sideband or C.W. Communications.

During the past few years, development of electronics has led to the production of greater sophistication in Amateur Radio equipment. On today's market, the radio amateur has a tremendous selection of equipment that has almost every operating convenience that can be desired. Unfortunately, not everyone has the financial resources that enables him to shell out $800 to $1,000 for one of these ultimate, new rigs.

When I recently traded my old Heath equipment for a more modern Kenwood transceiver, I was left without the facility of a narrow bandpass filter for C.W. use. The 750 HZ fixed-frequency audio filter shown in the A.R.R.L. Handbook performed well enough but was limited in that it was not adjustable in either frequency or bandwidth (Q). As both code and sideband portions of our bands are becoming crowded beyond belief, the newcomer or novice to Amateur Radio is frequently discouraged when he cannot find operating space on the band. Current deliberate interference to many of the contacts in progress takes the form of "tune-up" carriers, heterodynes, whistles, squeals and burps.

The filter described in this article is not the absolute "cure all" for all the above problems, but it is very effective in its ability to process the audio on C.W. or S.S.B. portions of the frequency.

Features of the Filter

Features of the filter are as follows:

1. Adjustable frequency (Peak);
2. Adjustable bandwidth (Q);
3. Adjustable rejection (Notch);
4. Very small size.

Frequency of operation is adjustable from approximately 50 Hz to 3000 Hz. Bandwidth is adjustable from broad bandwidth, suitable for S.S.B. voice signals, down to extremely narrow selectivity required for single signal C.W. The notch feature is tunable over the specified frequency limits and has a maximum depth of null of −50db.

Design

With reference to the Printed Circuit layout and schematic diagram, the filter unit is built on a single-sided P.C. board approximately 1¼" × 1½" (32mm × 38mm) and is designed around a quad op.amp. integrated circuit. Component values are not too critical and are available off the shelf from electronic parts dealers. The two 0.033 uF capacitors must be MYLAR or POLYESTER type. Do not substitute ceramic capacitors in this position. The small size of the filter enables it to be installed inside most modern compact transceivers.

The printed circuit layout is designed for use with the negative type resist of P.C. manufacture. Where black lines are drawn, the copper will be etched away.

Assembly

Parts placement is straightforward. All resistors should be ¼ watt or less to allow breathing space on the circuit board.

Begin assembly by installing the I.C. socket, resistors, capacitors, connecting wire and controls in that order. Install the I.C. after all assembly and soldering is completed. If the individual constructor wishes, the I.C. socket may be omitted and the I.C. soldered directly into the printed circuit board. This should be done after all other assembly work is completed. Do not attempt to solder any connections when power is applied to the circuit. I destroyed three I.C.'s in this fashion. Take care that connections to the dual potentiometer are correctly made otherwise the filter will not work properly.

Installation

Installation into the set or into a separate box is entirely at the discretion of the constructor. The filter must operate into a high-impedence load such as a set of 2000 ohm high-impedence headphones, or the high-impedence input to a receiver audio amplifier. The ideal point is between the receiver's audio preamplifier and the final audio power amplifier. If the filter is used as a station accessory, then it may be plugged into the headphone jack and high-impedance headphones connected to the filter output.

Operation

With the filter correctly installed, apply 12 volt D.C. power and switch the filter to the "PEAK" mode. Adjustment of the frequency control potentionmeter will produce a variation in the tone of background noise. All audio signals will "peak" at this frequency. Adjustment of the "SELECTIVITY"

control will alter the pass bandwidth of the audio and will not affect the frequency to which the filter is tuned.

Accurate use of the "Notch" facility is obtained by initially peaking up on the offending signal then switching to the notch mode. Careful tuning at this point may depress the signal strength to even deeper levels. The greatest rejection notch occurs with the adjustment of the BANDWIDTH or "Q" control at the tightest selectivity position. Maximum depth of notch was measured in excess of −47db.

Test Data

The filter was connected to the receiver and tuned to peak up on the receiver calibrator signal. Voltage at the output of the filter was measured with a digital voltmeter and the following data recorded:

Operation	Voltage Reading
Filter Off	1.13V
Filter On (Peak)	1.36V
Filter On (Notch)	5 mV

NOTCH DEPTH db

$$= 20\text{LOG}_{10}\ \frac{V1}{V2}$$

$$= 20\text{LOG}_{10}\ \frac{1.13 \times 1000}{5}$$

$$= 20\text{LOG}\quad 226$$

$$= 20 \times 2.354$$

$$= -47\text{db}$$

By selecting and matching components, this figure can be depressed greater than −50db.

Conclusion

This filter design is currently being used in several applications. The most popular being RTTY, Director Conversion Receiver Audio and, of course, a QRM filter in the home transciever.

The cost of constructing this filter depends upon the health of your "junque box" or your ability to scrounge parts from obliging friends.

A semi-kit of parts, consisting of P.C.B., ingegrated circuit, resistors and capacitors, is available from the author at a cost of $20.00. The constructor must supply the two potentiometers and two switches as well as jacks, mounting hardware and other materials.

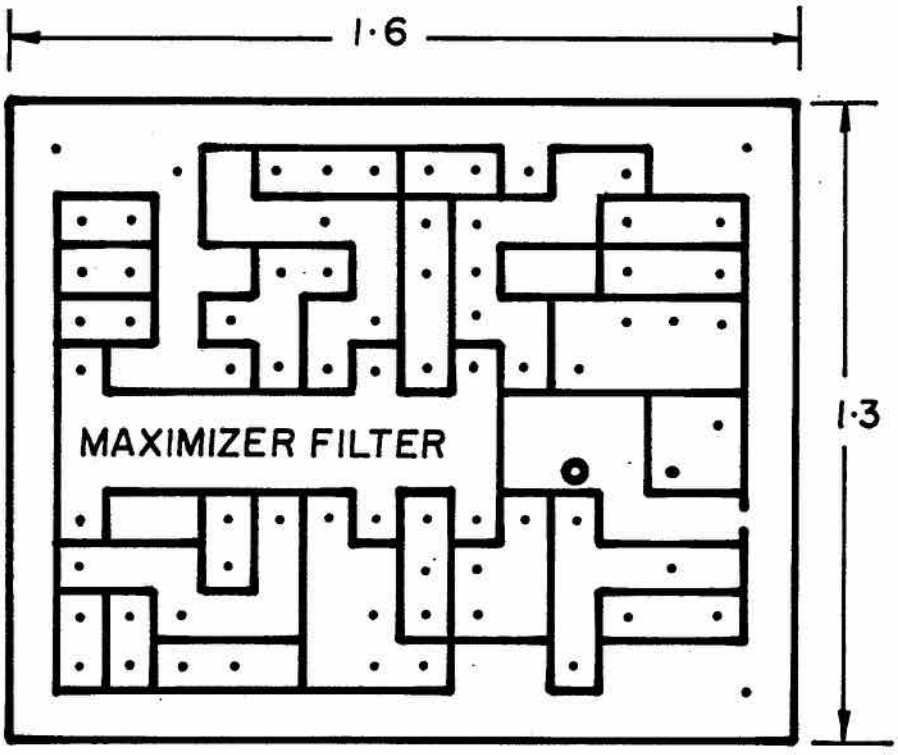
Separate country status for St. Paul and Sable Islands

Here's news for both the government of Nova Scotia and for Amateur wallpaper collectors. Two islands belonging to the province are now separate countries, at least for the ARRL DX countries list. According to a DOC source, to meet a request a permanent prefix and two different suffixes have been assigned to St. Paul's and Sable Island. These are for the use of those hardy souls who venture there on DX expeditions. The permanent prefix for both is now CYØ instead of VE1 and guess what suffix was bestowed on St. Paul's Island?... none other than the obvious 'SPI'... while Sable Island has been graced with the abbreviation... 'SAB'.

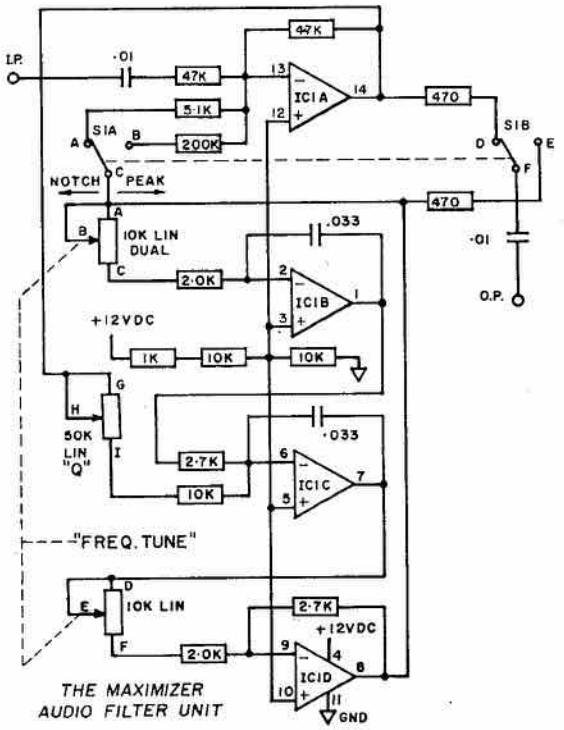
With its plethora of islands, Canada could prove a real boon to the ARRL's list... like what's next?... Baffin Island?... Ellesmere Island?... most of the Arctic archipelago would qualify. Bear Island in Hudson's Bay would be a prime candidate. The only trouble is that it could prove as fatal as Spratly Island because its habitants too, are dangerously hostile, especially during the mating season. Then too, Vancouver Island has, in the past indicated disenchantment with the British Columbia mainland. How about some of the uninhabited Thousand Islands... you know, where they make the salad dressing?

Who knows where it could all lead?... and closer to its home the ARRL could lobby with its own government and try for separate country status for Staten Island and Catalina Island, and if memory serves right, Rhode Island was once a separate entity... why not again!

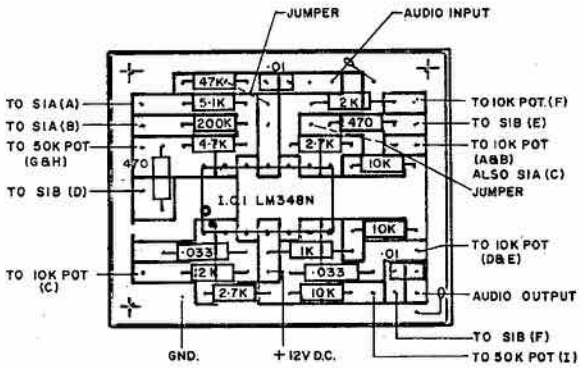
Doug Burrill
VE3CDC



PRINTED CIRCUIT LAYOUT BY VE3DDY



THE MAXIMIZER
AUDIO FILTER UNIT
BY VE3DDY



COMPONENT LAYOUT
MAXIMIZER AUDIO FILTER BY VE3DDY

Yaesu FT-101 on 30 Meters

The following modification should satisfy the many owners of Yaesu 101's who would like to try their hands on 30 meters. It is within practically any amateur's ability, is quick and very simple. Parts needed are two short pieces of insulated wire.

Proceed by removing all covers to expose the band selector switch, labelled S1 on schematics. On wafer S1G, the seventh wafer from the front of the rig, solder a jumper from the 20-meter position to the WWV position. These positions can be determined by noting which contact is engaged by the tab on the selector when the desired position is selected.

On wafer S1M, the rearmost wafer, solder a jumper from the WWV position to the 40-meter position.

This completes the modification, the rig is now operational on 30 meters. On the rigs I have converted, the preselector tunes between 4 and 5 and the plate dips between 8 and 10, depending upon the antenna used. Output is clean, spurious products seem to be within acceptable limits.

This modification is usable on models from the 101 to the 101EE and should provide access to the 30-meter band for many amateurs who don't have the money to invest in a new rig.

Hope to work you on 30 soon.

Bill Richardson
VY1CW
Site 20, Comp 63
RR1, Whitehorse
Yukon, Y1A 4X6

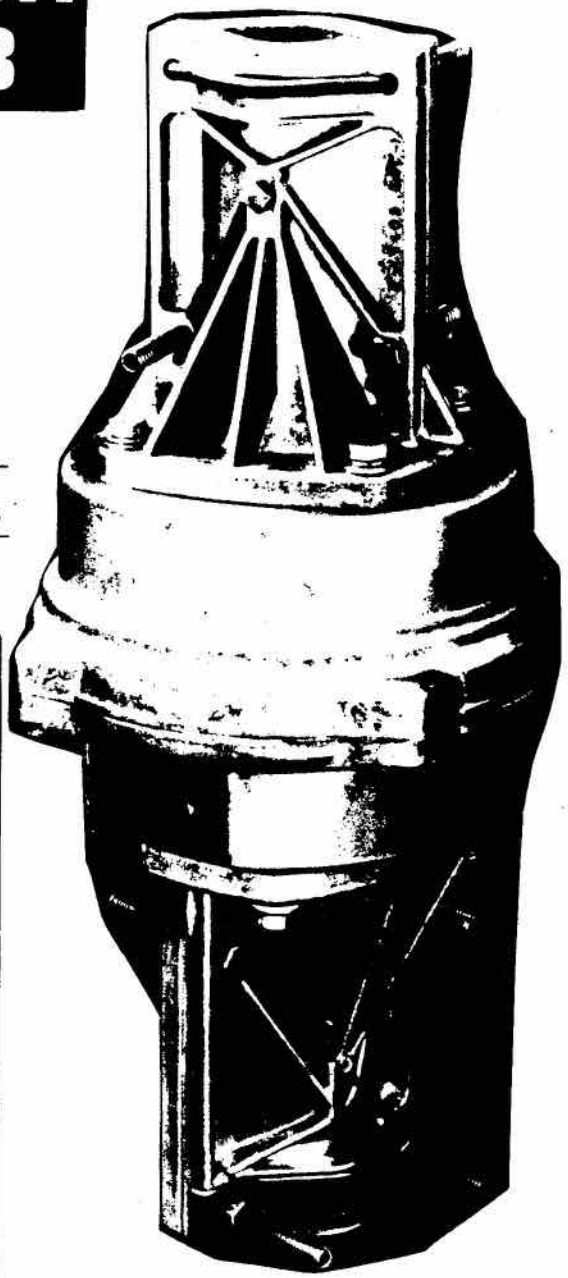
Ontario Directors Change

It was with regret that the CARF Board of Directors accepted the resignation of Ontario Director Craig Howie, VE3HWN, who has accepted a position with an electronics firm in Calgary. Craig was a familiar face at Ontario flea markets and hamfests where he worked hard and long to promote the Federation. The Board extends its thanks to Craig and wishes his all success in his new job.

To fill the vacancy the Board has appointed John Iliffe, VE3CES to carry on with Ontario co-director Geoff Smith, VE3KCE. John's address is 387 Selby Crescent, Newmarket, Ontario, L3Y 6E2.

ALLIANCE HEAVY DUTY ROTATOR MODEL HD73

NOW AVAILABLE IN CANADA FROM YOUR LOCAL ECG CANADA INC. DISTRIBUTOR



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

ECG CANADA INC.

Electronic Components and Systems
8580 Darnley Road
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In January of 1983, we at Pen Publishing Co., embarked on a project of introducing to the Canadian Amateur market a new product. This new product was the first edition of the ***"CANADA CALL BOOK"***. Now, only ten months later, with the first edition of 1,600 copies almost sold out, our fears of how this ***"CANADA CALL BOOK"*** would be received by the Amateur fraternity has proved to be completely unfounded. The reception and acceptance of our efforts has been beyond our hopes and expectations.

A great many factors undoubtedly accounted for the success of the first edition of the ***"CANADA CALL BOOK"***. We did our part, by printing the book with large size easily read type on quality opaque book paper and including features such as a complete Canadian repeater directory, Band charts and QSL Bureau information etc. But without the support from our advertisers and our sales outlets, all our efforts would have been of little use.

We would like to take this opportunity to publicly express our sincere thanks to all our advertisers and sales outlets without whom the ***"CANADA CALL BOOK"*** would not have been possible.

Early in 1984 the second edition of the ***"CANADA CALL BOOK"*** will be available containing the latest up to date listings and the features you the user and user tell us you want.

OUR SINCERE THANKS TO ALL

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Life on the ocean wave

We regret that Bill Deacon's 'Life on the Ocean Wave' article was not included in this issue. It will continue in December. (ed.)

Swap Shop

Single insertion is $1.00 (minimum charge) - 10 words and $1.00 for each additional 10 words. To renew, send copy and payment again. Deadline is first of month preceding publication (e.g. Jan 1 for Feb. issue). Put your membership number and call (not counted) at the end of your ad. Print or type your ad and include your address with postal code. If using a phone number, include the area code. TCA accepts no responsibility for content or matters arising from ads. This feature is for use of members wishing to trade, buy or sell personal radio gear. It is not open to commercial advertising. Send to: TCA Swap Shop, Box 356, Kingston, Ont. K7L 2W2.

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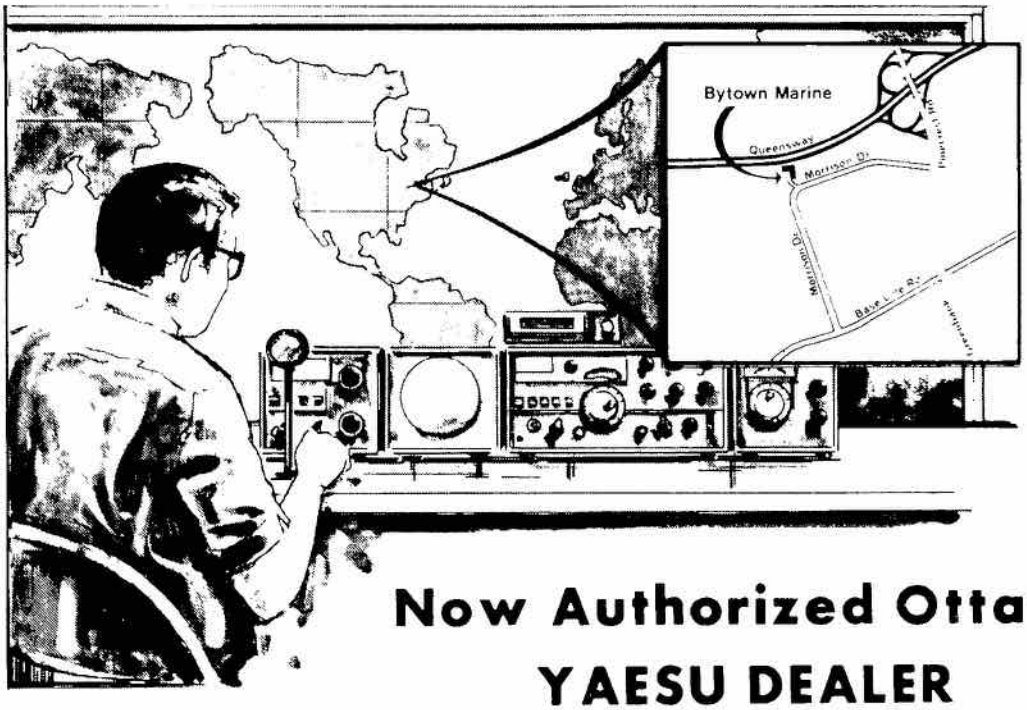

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