

Canada Post
Postage paid

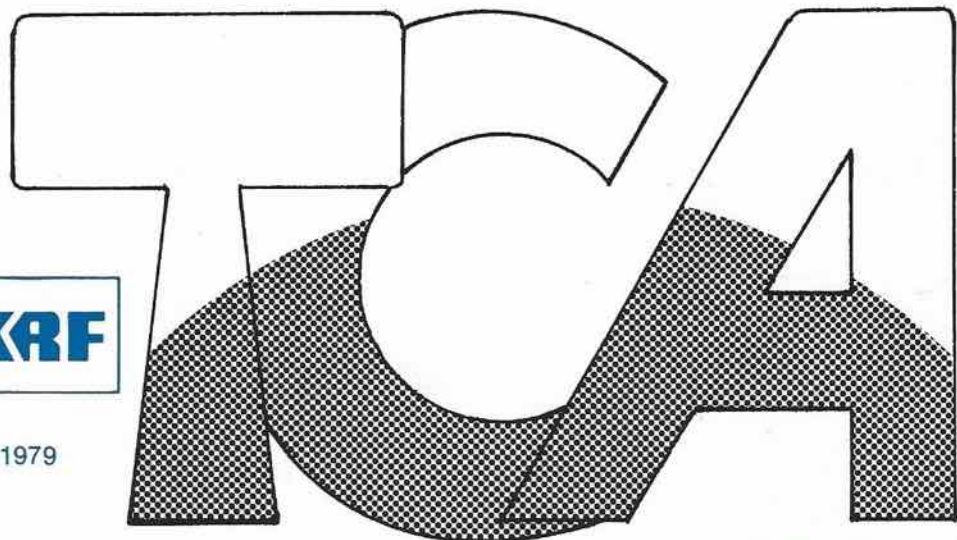
Postes Canada
Port payé

Third class
Troisième classe

PICTON
23



February 1979



THE CANADIAN AMATEUR

Amateurs to aid Coast Guard

Page 13

Boaters, Amateurs to share 220?

Page 15



-PLUS-

NEWS, FEATURES
& TECHNICAL
ARTICLES!

KENWOOD COMMUNICATIONS EQUIPMENT

TS-520



Desk Top Microphone
MC-50



VOX-3
(TS-600)
Voice Control Unit

TR-7400A



TS-820

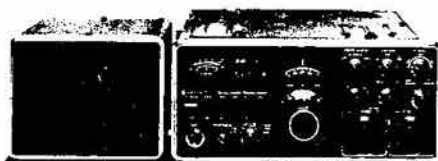


DS-1A
DC-DC Converter

599D SERIES

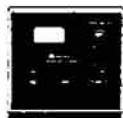


TS-700A



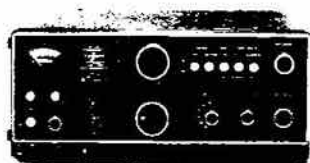
TV-502

TR-2200A



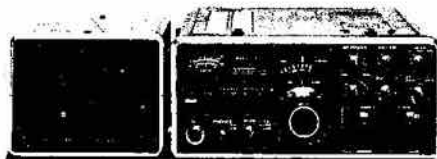
TV-506

R-300



Headset
HS-4

TS-600



Write for Catalogue Sheets
c/c J.H. Williams VE3XY
Wayne Deactis VE3JFV

C.M. PETERSON CO. LTD.

Communications Electronics Division
Head Office C.M. Peterson Co. Ltd.
220 Adelaide St. North, London, Ont. N6E 3H4
434-3204
Toronto Amateur Dept.: 47A Colville Road
Toronto 15, Ont.

From the Publisher

Welcome to TCA!

After months of planning by the production crew and the executive, The Canadian Amateur is now reborn with this landmark February 1979 issue. This issue introduces dozens of changes in the format of the publication that has been presenting the news and views of the Amateur Radio fraternity in this country for years.

From cover to cover, 'TCA' takes on a new look: new logo, glossy cover, contents page, news and feature presentations, technical articles and advertising. All of these changes are the result of close examination and careful planning, all with one intent: To offer the Canadian Amateurs information on the Canadian Amateur Radio scene in a more appealing way.

Some of the changes you will notice -- News stories are now gathered at the front of the publication in a 'News Round-up' section to give you the fast-breaking news in a concise form; the Technical Section is located in the centre spread, and may be pulled out and entered in your filing system if desired; Feature stories appear in the back pages, and have been allocated more space for easy reading.

The advertising now appears in the front and back of every issue and, for easy reference, an Advertiser's Directory is supplied at the back of each TCA. Our new Advertising Representative, Don Slater VE3BID, has already met most of our advertisers, and is looking forward to contacting many more in the future.

Of course, this doesn't mean that TCA won't keep changing and improving, but we believe we've put together a solid foundation for further growth. Now we're waiting to hear from you!

TIM'S SALES & SERVICE

633 ENFIELD RD., UNIT 10,
Phone: 681-0847
Telex: 061-8228

BURLINGTON, ONTARIO, L7T 2X9

Mobile JW7-6545 - Hamilton

DISTRIBUTOR FOR



YAESU

Henry Radio



ICOM

BIRD THRULINE® *KLM* electronics

LEADER
Instruments Corp
Communications Div. 502

SWAN
ELECTRONICS



BARKER & WILLIAMSON, INC.

SPECTRONICS INC.

**PALOMAR
ENGINEERS**

Edgecom Inc.

Wilson Electronics Corporation

Vhf engineering
DIVISION OF BROWNIAN ELECTRONICS CORP.

ATRONICS



hy-gain
Amateur Radio Systems.

Mosley

 apple computer inc.

ROBOT
ROBOT RESEARCH, INC.

EXCLUSIVE CANADIAN DISTRIBUTOR FOR ROBOT SLOW SCAN TV
CALL TODAY OR DROP-IN FOR A DEMONSTRATION.

Drop by for a coffee and see some of our lines.

Hours: Mon. thru Friday 6. P.M. - 10:30 P.M.
Saturday 9. A.M. - 6:30 P.M.

TIM'S SALES & SERVICE

633 ENFIELD RD., UNIT 10,

Phone: 681-0847

Telex: 061-8228

BURLINGTON, ONTARIO, L7T 2X9

Mobile JW7-6545 - Hamilton

ANNOUNCES

THEIR NEW STORE OPENING AT
633 ENFIELD ROAD, UNIT 10
BURLINGTON, ONTARIO

Drop by for a coffee and see some of our lines.



YAESU

Henry Radio



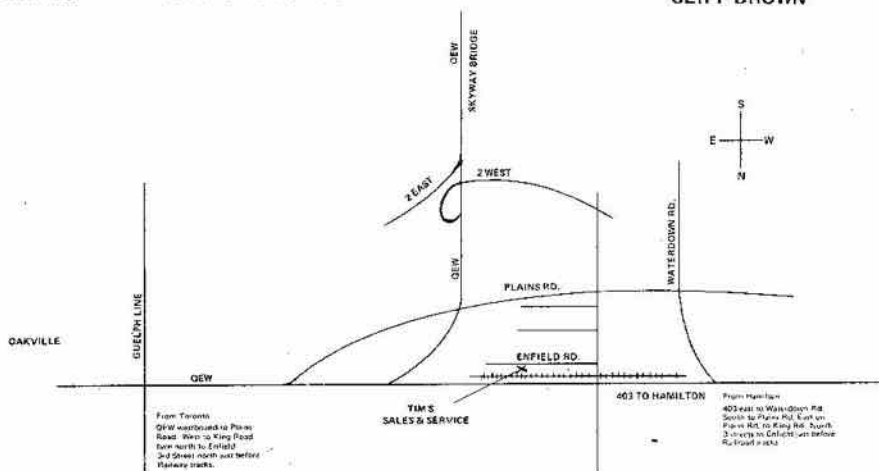
ICOM

LINDSAY, BIRD, KLM, LEADER, PALOMAR ENGINEERS, SWAN, HAL, B&W, SPECTRONICS
AMPHENOL, EDGECON INC., JERSY CABLE, WILSON, FDK, VHF ENGINEERING, ATRONICS
NYE VIKING, MOSLEY, ANTENNA SPECIALISTS, ROBOT, APPLE COMPUTER INC., AMMCOM

and meet some of our friendly staff

Hours; Mon. thru Friday 6. P.M. - 10:30 P.M.
Saturday 9. A.M. - 6:30 P.M.

TIM MOLYNEUX WAYNE MONTEGUE VE3EFJ
CLIFF BROWN

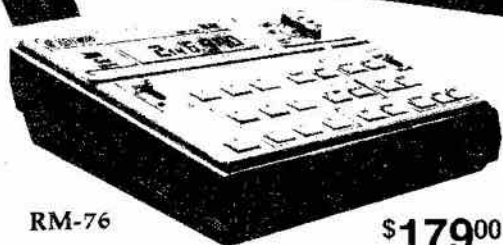


ALL YOUR RADIO REALLY NEEDS!

Kenwood's TR-7600 with optional RM-76



TR-7600
\$599⁰⁰



RM-76 \$179⁰⁰

TR-7600 WITH RM-76

- Store frequencies in six memories.
- Scan all memory channels.
- Automatically scan up the band in 5 kHz steps.
- Manually scan up or down in 5-kHz steps.
- Set lower and upper scan frequency limits.
- Reset scan to 144 MHz.
- Stop scan (with HOLD button).
- Cancel scan (for transmitting).
- Scan for busy or open channel.
- Select repeater mode (simplex plus transmit frequency offset, minus offset, or one memory transmit frequency).
- Select transmit offset (± 600 kHz/ ± 1 MHz).
- Operate on MARS (143.95 MHz simplex only).
- Display indicates frequency (even while scanning) and functions (such as auto-scan, lower scan frequency limit, upper scan limit, error, and call channel).

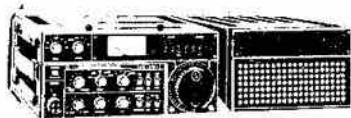
TR-7600 (only)

- Memory channel...with simplex or repeater (plus or minus 600 kHz transmitter offset) operation.
- Mode switch for operating simplex or for switching the transmit frequency up or down...or for switching the transmitter to the frequency you have stored in the TR-7600's memory (while the receiver remains on the frequency you have selected with the dual knobs).
- Select any 2-meter frequency.
- Even without the optional RM-76, the TR-7600 gives you full 4-MHz coverage (144.000-147.995 MHz) on 2 meters; 800 channels; dual concentric knobs for fast frequency change (100 kHz and 10-kHz steps); 5-kHz offset switch, and MHz selector switch...for desired band (144, 145, 146, or 147 MHz).
- Digital frequency display (large, bright, orange LEDs).
- UNLOCK indicator...an LED that indicates transceiver protection when the frequency selector switches are improperly positioned or the PLL has malfunctioned.
- 10 watts RF output (switchable to 1 watt low power).

GLENWOOD TRADING COMPANY LTD.

278 East 1st St., North Vancouver, B.C. V7L 1B3

If you have not yet received our latest catalogue write for your free copy, today.



ICOM IC-701 HF transceiver

The NEW IC-701 features: • Solid-state • RF speech processor • 100 W continuous on all bands, all modes • USB, LSB, CW, CW-N, RTTY operation • Double balanced Schottky Diode Mixer used in both RX/TX • Dual built-in digital VFO • Price includes mic & power supply.

2195.00

THE ULTIMATE



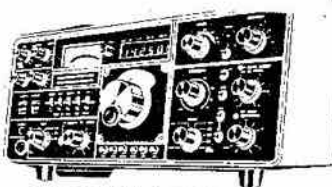
IC-280

629.00

ICOM

IC-280 Specifications: □ Frequency Coverage: 143.90—148.11 MHz □ Operating Conditions: Temperature: -10°C to 60°C (14°F to 140°F), Duty Factor: continuous □ Frequency Stability: ±1.5 KHz □ Modulation Type: FM (F3) □ Antenna Impedance: 50 ohms unbalanced □ Power Requirement: DC 13.8V ±15% (negative ground) □ Current Drain: Transmitting: 2.5A HI (10W), 1.2A Lo (1W), Receiving: 0.650A at max audio output, 0.450 at SQL ON with no signal □ Size: 58mm(h) x 156mm(w) x 228mm(d) □ Weight: approx. 2.2 Kg □ Power Output: 10W HI, 1W Lo □ Modulation System: Phase □ Max. Frequency Deviation: ±5 KHz □ Spurious Output: more than 60 dB below carrier □ Microphone Impedance: 600 ohms dynamic or electrical condenser type, such as the SM-2 □ Receiving System: Double superheterodyne □ Intermediate Frequency: 1st: 10.695 MHz, 2nd: 455 KHz □ Sensitivity: 1 μV at S+N at 30 dB or better, Noise suppression sensitivity 20 dB (1.6 μV) or less □ Selectivity: less than ±7.5 KHz at -6 dB, less than ±15 KHz at -60 dB □ Audio Output: More than 1.5W □ Audio Output Impedance: 8 ohms

324.00



YAESU FT-901DM HF transceiver

Check these: • Reject tuning • Variable IF band width tuning • Audio peak frequency tuning • Digital LED frequency display w/memory for TX & RX, no external VFO required for split frequency operation • Built-in Curtis keyer • Rugged GE 6146B final tubes • 160 thru 10 meter coverage & much more!

2275.00

ICOM IC-215 2m FM transceiver

• 2 meter FM • 3 WPEP • 15 channels, 12 by selector, 3 by function switch • Dual power level, 3 W HI for long distance, 0.5 W LOW for local • Dial illumination for night use • Power pilot lamp • Frequency range: 146 to 148 MHz



449.00

ICOM IC-225 transceiver

• Frequency range: 146 to 148 MHz • Preset any 15 KHz channel in the frequency synthesizer by diode matrix board • Output: 10 W HI, 1 W LOW • Excellent spurious attenuation • 22 channels

165.95



CDE Ham III antenna rotor

Snap action switched wedge brake & rotational controls brings accuracy to any directional beam. Features pre-brake and lock-in place action. Ideal for in-lower mounting

LIMITED SUPPLY

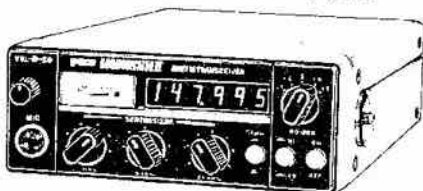


HY-GAIN 18AVT/WB 80-10M vertical

Self-supporting 25 ft. omni-directional antenna. Low angle radiation, automatic band switching, SWR 2:1 or less, Impedance 50 ohms, Max legal power 10-40 meters, 50-230 connector

119.00

NEW! Synthesized FM two meter mobile by FDK



529.00

THE ALL-NEW MULTI-TYPE II FULLY SYNTHESIZED 25 WATT 2-METER MOBILE



LUMITIME CC-24 24 hr. digital clock

The CC-24 is the perfect addition to any ham shack. Large 2 in. digital display makes telling time easy at a glance. The 24 hr. alarm with 8-10 min. snooze button can also be used as a station ID buzzer, 110 volts A/C operation.

39.95

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE
ALL PRICES F.O.B. TORONTO

CHARGE IT! MASTER OR VISA



1 Skyridge Rd., West Hill, Ont. M1E 4N7
Udo Franz, VE3EFA (416) 284 7388

CANADIAN COMMUNICATIONS COMPANY

FREE LARSEN WITH PURCHASE OF ANY 2 METER MOBILE TRANSCEIVER

JUST A PART OF OUR HUGE STOCKS FOR IMMEDIATE DELIVERY



CANADA'S ONLY REAL AMATEUR RADIO STORE

NEW HOURS MON THRU FRI 9:00 AM TO 8:30 PM SAT 10:00 AM TO 1:00 PM

NEW EXPANDED PREMISES

NEW ADDED HAM LINES AND ACCESSORIES

NEW FULL TIME SERVICE DEPT. (ASK FOR BRAD VE3KQS)

THE LARGEST STOCKS IN CANADA
FOR IMMEDIATE DELIVERY
AND OUR PRICES CAN BE DISCUSSED

Dentron
Radio Co. Inc.

 **YAESU**

 **HYGAIN**

 **ATLAS
RADIO**

Henry Radio

 **SWAN**

 **BW**

ALL OTHER MAJOR
HAM LINES - RIGS
AND ACCESSORIES AVAILABLE
TOWERS AND ROTORS ETC

 **DRAKE**

 **ICOM**

VE AMATEUR RADIO SALES
3768 BATHURST STREET
DOWNSVIEW, ONTARIO

OFFICE (416) 636-3636
NIGHT (416) 486-0101
JACK VE3GMT

JACK VE 3 GMT HAS BEEN AT THIS LOCATION FOR OVER 18 YEARS.

The Age of Affordable Personal Computing Has Finally Arrived.

Ohio Scientific has made a major breakthrough in small computer technology which dramatically reduces the cost of personal computers. By use of custom LSI micro circuits, we have managed to put a complete ultra high performance computer and all necessary interfaces, including the keyboard and power supply, on a single printed circuit board. This new computer actually has more features and higher performance than some home or personal computers that are selling today for up to \$2000. It is more powerful than computer systems which cost over \$20,000 in the early 1970's.

This new machine can entertain your whole family with spectacular video games and cartoons, made possible by its ultra high resolution graphics and super fast BASIC. It can help you with your personal finances and budget planning, made possible by its decimal arithmetic ability and cassette data storage capabilities. It can assist you in school or industry as an ultra powerful scientific calculator, made possible by its advanced scientific

math functions and built-in "immediate" mode which allows complex problem solving without programming! This computer can actually entertain your children while it educates them in topics ranging from naming the Presidents of the United States to tutoring trigonometry all possible by its fast extended BASIC, graphics and data storage ability.

The machine can be economically expanded to assist in your business, remotely control your home, communicate with other computers and perform many other tasks via the broadest line of expansion accessories in the microcomputer industry.

This machine is super easy to use because it communicates naturally in BASIC, an English-like programming language. So you can easily instruct it or program it to do whatever you want, *but you don't have to*. You don't because it comes with a complete software library on cassette including programs for each application stated above. Ohio Scientific also offers you hundreds of inexpensive programs on ready-to-run cassettes. Program it yourself or just enjoy it; the choice is yours.

Ohio Scientific offers you this remarkable new computer three ways.



** Challenger 1P \$519

Fully packaged with power supply. Just plug in a video monitor or TV through an RF converter to be up and running.

** Superboard 2 \$419

For electronic buffs. Fully assembled and tested. Requires +5V. at 3 Amps and a video monitor or TV with RF converter to be up and running.



** Challenger 1P Disk \$1,779

Complete mini-floppy system expandable to 32K RAM. (16K RAM Standard config.)

Standard Features

- Uses the ultra powerful 6502 microprocessor
- 8K Microsoft BASIC-in-ROM
Full feature BASIC runs faster than currently available personal computers and all 8080-based business computers.
- 4K static RAM on board expandable to 8K
- Full 53-key keyboard with upper/lower case and user programmability
- Kansas City standard audio cassette interface for high reliability
- Full machine code monitor and I/O utilities in ROM
- Direct access video display has 1K of dedicated memory (besides 4K user memory), features upper case, lower case, graphics and gaming characters for an effective screen resolution of up to 256 by 256 points. Normal TV's with overscan display about 24 rows of 24 characters; without overscan up to 30 X 30 characters.

Extras

- Available expander board features 24K static RAM (additional), dual mini-floppy interface, port adapter for printer and modem and an OSI 48 line expansion interface.
- Assembler/editor and extended machine code monitor available.

ORDER TO D.C.B. ELECTRONICS

333 Denison St. Unit 3
Markham, Ontario
Canada, L3R 2Z4
416-495-1599

Interested in a bigger system? Ohio Scientific offers 15 other models of microcomputer systems ranging from single board units to 74 mega byte hard disk systems. Call OMEGA Computing Ltd. 416-425-9200 for detail informations.

** These prices include import duty, federal sales tax & 90 days full warranty service by D.C.B. Electronics. Ontario residents add 7% Sales tax. Price subject change without notice.

Palomar Engineers

SUMMER 1978 AMATEUR RADIO CATALOG

R-X NOISE BRIDGE.



\$73 +\$2 S&H

The Palomar Engineers R-X Noise bridge tells you if your antenna is resonant or not and, if it is not, whether it is too long or too short. All this in one measurement reading. And it works just as well with ham-band-only receivers as with general coverage equipment because it gives perfect null readings even when the antenna is not resonant. It gives resistance and reactance readings on dipoles, inverted Vees, quads, beams, multiband trap dipoles and verticals.

VLF CONVERTER.



\$79 +\$2 S&H

The Palomar Engineers VLF Converter converts the 10-500 KHz band to 3510-4000 KHz so it can be received on your 80 meter receiver. Covers the 1750 meter band where transmitters of one watt power can be used without FCC license. Also covers navigation radiobeacons, standard frequency broadcasts, ship-to-shore and the European low frequency broadcast band. Crystal controlled conversion oscillator. Multipole filter to cut broadcast and 80 meter feedthrough.

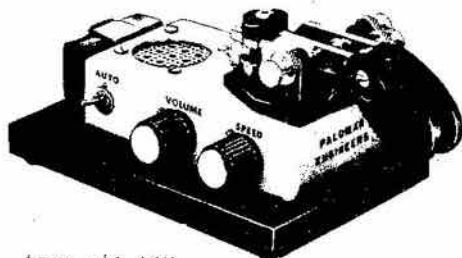
LOOP ANTENNA.



A low-noise receiving antenna for the lower frequency bands. Rotates and tilts for deep nulls. Self-contained amplifier boosts signal and matches loop to your receiver. Consists of a Loop Amplifier and Plug-in loops. Plug-in loops available for: 1600-5000 KHz (160/80 meter amateur bands), 550-1600 KHz (Broadcast Band), 150-550 KHz (VLF, 1750 meter band), 40-150 KHz (WWVB, Loran), 10-40 KHz (Omega).

Loop Amplifier..... \$99 +\$2 S&H
 Plug-in Loops..... \$69 +\$2 S&H

IC KEYS



\$139 +\$2 S&H

Palomar Engineers is the world's oldest manufacturer of electronic keyers. All the desirable features are built into this compact self-contained unit. Sends manual, semi-automatic, dot memory, squeeze, and iambic. Speeds 5-50 wpm. Built-in sidetone, speaker, speed and volume controls. Keys any transmitter. Grid-block, cathode-keyed, plate-keyed. Curtis IC, Ham-Key mechanism, 3 1/2-lb steel base combine to give unexcelled performance.

NOW IN STOCK

AT.....



W S I SALES COMPANY

SWL RADIOS - HAM RADIOS - ACCESSORIES

18 SHELDON AVENUE NORTH

KITCHENER, ONTARIO N2H 3M2

Telephone (519) 579-0536

shipping cost is \$2.00 per
 1st item-\$1.00 additional
 for 2nd..3rd..etc items
 on the same order.

EDITOR

Doug Burrill VE3CDC
151 Fanshaw Ave.
Ottawa, Ont. K1H 6C8
(613)-733-7108

DESIGN & PRODUCTION

Steve Campbell
RR#2 Bloomfield,
Ont. K0K 1G0
(613)-399-2209

ADVERTISING
REPRESENTATIVE

Don Slater VE3BID
3 Kirkstall Ave.
Ottawa, Ont. K2G 3M2
(613)-825-1686

TECHNICAL EDITOR

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

PRINTED IN CANADA

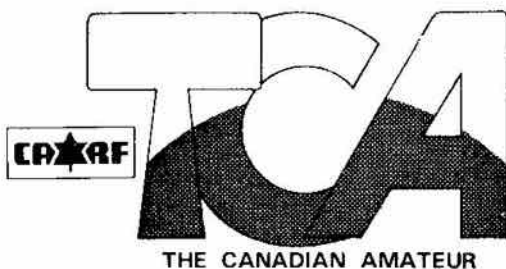
'TCA - The Canadian Amateur' is published in Canada 11 times per year to provide Radio Amateurs, those interested in radio communications and electronics and the general public with information on matters relating to the science of telecommunications.

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

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

'TCA - The Canadian Amateur' is published by the Canadian Amateur Radio Federation Inc., P.O. Box 356, Kingston, Ontario K7L 4W2. It is available for \$7.00 per year or 75¢ per copy. A signed article expresses the views of the author and not necessarily those of the Federation.

Indexed in the Canadian Periodical Index; ISSN 0318-0867.



THE CANADIAN AMATEUR

February 1979

Vol. 7 No. 2

Contents

From the Publisher	1
Attention DX Ops	12
No word on Tariff Decision	12
Amateurs to assist Coast Guard	13
Hooray for the Post Office	13
Bell objects to cable plan	14
Boaters, Amateurs to share 220?	15
Check your TCA label	15
VE3RSO repeater	16
No-code tickets again? Why?	17
New phones being tested	17
Space Age comes of age	19
Report available	19
Amateur stations	19
It Bugs Me!	20
Canadian EME Experiments	29
ITU CCIR on-the-air in Japan	30
Spark Hazards to electronics	32
Must our Hobby be justified?	34
Geraldine the Radio Operator	36
Handling Emergency Traffic	38

Departments

Letters to the Editor 10, CRAG Column 12, News Briefs 14, DOC News 16, From the Clubs 18, Swap Shop 39, Advertiser's Directory 40, CARF Infosection 46-8.

Technical Section

A 40, 15 & 10 M Tilt-over	
Vertical Antenna	21
Safety First for jumper starts	24
The Junkbox 2 QRP Transmitter	25
Fox Hunting	28

LETTERS:

Iraq

"We are confused! Iraq "YI" is a banned country and is shown as such in your list in TCA.

Therefore (Canadians) should not be involved in any net with any station from Iraq.

Any comments?"

M. Gladden VO1FG
Carbonear, Nfld.

Confusion reigns supreme. While the Iraqi government noted last year that there was no Amateur activity permitted by Iraqi stations, YI1BGD was on the air ... and in those countries you don't get on without official sanction of some kind. Then too, it takes many months for the wishes of governments to be communicated to the ITU and for the ITU to get the dope to member nations. All we can say is that no Canadians will be beheaded for working Iraqi stations and that the list we publish is the official ITU one and may lag by many months any changes made by ITU member governments.

Special Calls

The Jonestown horror story was brought to mind again when we received a facsimile of a QSL from WB6MID/8R3 sent to VE3GCO, Gary Hammond. On a lighter side, Gary, who is a freak call collector writes:

"The use of CH3 and CF3 ends today and with my eight GCO call prefixes I've made a DXCC with each one. I have now worked 107 different Canadian prefixes! (The smoke you smell is from the DOC computer ... Ed.)

To rub it in to the call sign allocation process, Gary adds, "that doesn't count VZ2HK and VGW-211" ... two of the better known recent goofs in special and oddball calls. Gary continues; "I can't seem to QSL a 3C0 from 1967 and would like to ask your readers if anyone could help me locate 3B2GA/3C0 which I worked October 6, 1967 on 14 MHz SSB. The operator was Harry and was at the time somewhere in Hudson's Bay".

feb 79 - page 10

CARF Operations

First the bouquet:

"Was very pleased to become part of your membership. Here at last is a truly Canadian publication for Canadian Amateurs ..."

Then the brick:

"At Amateur meetings and over the Amateur bands one gets the feeling that CARF is not promoting Amateur Radio across VE land but only what a few around the Ottawa area feel is needed..."

Last, the bucks:

"I am renewing my subscription to continue to support a Canadian spokesman for Amateurs."

J. Herb Jacobs VE7AIX

Thanks for the bouquet, bricks and bucks, Herb. Well, as for the comment about the Ottawa concentration of officials and officers we should point out that they operate under the direction of a Board of directors ... of which there are four out of nine in Western Canada, two in Ontario, two in Quebec and one for the Atlantic region.

The concentration of the president and vice president and of eight committee chairmen in the Ottawa area is a distinct advantage to our members because, like it or not, we are regulated by the federal government and Ottawa is where the action is with DOC. We maintain day-to-day liaison with DOC and other federal departments in response to the needs of our members as expressed directly or through our directors. In turn we try to keep members posted on events through these columns. All of this is voluntary and takes many hours per week from us here in Ottawa and it racks up expenses too ... so thanks for your comments ... we need direct communications such as yours and your financial support as well.

Publications

Enclosed is a cheque for renewal of membership. May I take this oppor-

TCA welcomes Letters to the Editor. For speedy processing, send correspondence directly to Doug Burrill VE3CDC, Editor TCA, 151 Fanshaw Ave., Ottawa, Ont. K1H 6C8.

tunity to offer congratulations to CARF for marketing such fine study guides. Both were a great help in passing the Advanced exam. Please pass my thanks to the authors -- they are not only obviously experts in the field but also have the talent to pass on the necessary knowledge in a most effective way.

Seth C. Spencer VE7DIF

Thanks Seth, will do.

Thanks to all the CARF people for putting Canada on the map as far as Amateur radio is concerned. Each month TCA gets bigger and better. Your technical articles are the latest 'goodie'. Articles on new technology for some of us older Amateurs are just the ticket. Maybe an article, in simple terms, on packet radio systems, etc.

Keep up the good work for Canadian Amateurs.

John Chown VE3EYD
Scarborough, Ont.

CBers are Hams...

VE2PY's November article, 'CBers are Hams; Hams are Amateurs', has successfully focussed a problem we have in our identification in the minds of people not conversant with our hobby. I find difficulty in explaining in simple, recognizable terms why my car licence plate is different from the 'norm'. "Do you work for the government?" questioned one gas station attendant!

Our problem, I think, stems from the use of the word 'Amateur' by the 'in' crowd as a pronoun when the rest of the world knows it to be an adjective. We will obviously not change the rest of the world, so perhaps we might consider changing our own nomenclature. I'm not sure that any legal change would be

necessary either and put forth the suggestion that 'Radio Experimental Operator' might be the all-encompassing phrase that we are looking for.

'Ham' is a peculiar word that we from the 'in' crowd have a sentimental attachment to. But I believe that the time has come when, in defense of our identity, its use should be dropped. As the 'outside' group remain mystified by it and do not have the time or curiosity to find out about its origin, let's drop it altogether.

To me, there are three key words to be used: 1) Radio, 2) Experimenter, 3) Operator.

Somehow these three words or their derivatives should condense into a title that says what we are, what we do and what we are connected with.

P. Robertson VE3QT
Mississauga, Ont.

LARC Net

Thank you for the write-up you gave the LARC slow speed net which resulted in a number of letters.

The net is designed primarily as a place to check in and then go off frequency and have a QSO.

I found that VE3's were hard to find and that I often wanted to have a follow-up QSO with an Amateur but never had a standardized frequency on which I could meet him.

Amateurs are monitoring the frequency in order to get their code to 10 wpm. Also, new aspiring Amateurs are using the net as a code practice device (CW on 3765 kHz, 1930 EST Monday to Friday.)

Dick Reiber VE3IBV
London, Ont.



Glen Gorham VE5GG, Regina, writes to tell us that a local "New Horizons" group has received a grant from the Department of National Health and Welfare and plans on the installation of two more repeaters in southern Saskatchewan, along the Trans-Canada highway. This will then provide coverage from one side of the province to the other.

Not to be outdone by the VE5 crew, CARF Director Jim McKenna, VE6HO,

writes to tell us that the Porcupine Hills Amateur Radio Transmitting Society (that makes an amusing acronym, Jim!) has applied for a New Horizons grant to put up a repeater in the Porcupine Hills to give complete coverage from Calgary south to the U.S. border, Lethbridge and Medicine Hat to the east and hopefully to Crow's Nest Pass in the west. Operation is scheduled for early spring.

Attention DX Ops

DOC has just announced extensive changes in the reciprocal licensing and third party traffic agreements along with some changes received from the ITU concerning banned countries.

In addition to those already listed, Mexico now permits third party traffic with Canada and negotiations are under way with Australia, Haiti, Jamaica, and Liberia.

DOC is negotiating reciprocal licensing arrangements with Haiti, Italy, Liberia and Spain.

The reciprocal licensing agreements have been extended to include Austria, Barbados, Bermuda, Costa Rica, Honduras, India, Indonesia, New Zealand, Phillipines, Sweden and the United Kingdom. As a general rule DOC will consider licensed Amateurs of Commonwealth countries eligible for reciprocal privileges in Canada if the other country does the same.

On the banned countries list, the out-of-date footnote about XV5AA, XV5AB and XV5AC authorized by the former Saigon regime, has been like the regime, eliminated. From the look of the political situation in Indochina the footnote about the XU1AA in the Khmer Republic (formerly Cambodia) may be somewhat redundant, too. The DOC notice also states that the calls 7OA to 7OZ are assigned to the Peoples Republic of Yemen, although it is a banned country.

It should be remembered that these lists are made up from ITU notifications to member countries and notices lag the events by a considerable time.

No word on tariff decision

No word yet on the decision of the Tariff Board on the briefs asking for relief from import duties on Amateur equipment. A bit of old correspondence which surfaced during a house cleaning in the editorial office, dated 1973, notes that Australia permits entry of five band transceivers without duty. Nice precedent for Canada?

It's an ill wind that blows nobody good ... the recent decision of the Australian government to phase out CB on eleven metres and starting it on 470 MHz has resulted in a good transceiver being put out by Phillips and VK Amateurs are hoping to convert the rigs to populate the 450 band. This note from Tom O'Donnell VK2OD, who also says that the QCWA is active in "down under" in the form of a VK chapter. Tom visited Canada a couple of years ago and met many of the people he had worked over the years.



Amateurs to assist Coast Guard

The Ministry of Transport Search and Rescue operations will be assisted by five new Coast Guard Auxiliary units now in the planning process. Auxiliary communications will be supplied by Amateur and CB operators.

The Ministry is in the process of forming five voluntary Coast Guard Auxiliary units to assist the West Coast, Central Canada, the Laurentian, Maritimes and Newfoundland Regional Coast Guard and Search and Rescue units.

For communications, the reserve units will rely heavily on Amateur radio communications, both HF and the repeater systems. These volunteer units will be incorporated federally and will sign agreements with the Ministry formalizing their role with the regular Coast Guard. Individual Amateurs who wish to assist, especially those who are boaters, may get in touch with MOT Regional of-

fices at Vancouver, Toronto, Quebec, Dartmouth or St. John's.

CARF has offered to assist MOT in publicizing the new units and in bringing together both individuals and organizations interested in this work. Heavy reliance on repeaters will feature the West Coast operations as well as elsewhere.

The new volunteer groups will be known as 'Canadian Marine Rescue Auxiliary Units'.

Just to make the bond between Coast Guard and Amateurs more binding comes word that 14 of the cadets at the Coast Guard Academy at Sydney, N.S. have started class instruction for their Amateur tickets ... off on the right foot, they have ordered the CARF instruction manuals. More details on this interesting community emergency service will be in the next issue.

Hooray for the Post Office!

QSL Bureaus look large in the activities of a large number of Amateurs and over the next few issues we will tell you something about the volunteers who labor long and efficiently to bring you those rare DX cards or the neighbourly greeting from your own or another Canadian call district.

The CARF National QSL Bureau personnel have often expressed their thanks to the post office people who help them out with advice and assistance in running "Box 66". It is therefore a pleasure to print this note from the QSL Bureau gang signed by Ken Rolison VE3CRL:

"Our friends at Islington Post Office recently bade goodbye to only Amateur

among their number, George Owen VE3 CTO. After a long career in the public service, in the Navy, the old DOT radio service and for the past 17 years in the Post Office, George finally decided to come out from behind the counter (and behind Box 66) and take a well-earned retirement.

"We hope George will find more time to devote to Amateur Radio and will now help fill Box 66 from the other side. The thanks and best wishes of the CARF National QSL Bureau staff on behalf of all Canadian Amateurs are extended to George and his XYL for a happy retirement."

Ken, VE3CRL

Bell objects to cable plan

In a story headed 'Cable Plan Rings Bell's Alarm', the Ottawa Journal notes that in a recent application before the Canadian Radio-Television Commission a local cable TV company wants to enter into two-way service to customers which would set up a home security package utilizing a home computer terminal wired to fire, police and medical alarms.

Another company in the CTV business has applied for permission to sell customers an information retrieval system which displays news, airport train schedules and other information on the home screen on request. A second application by Canadian Cablesystems Ltd. is a home security system using a foreign system developed in the U.K. and U.S. which poses a competitive threat to the DOC fostered Videotex (now Telidon).

Bell Telephone and other telecommunications objectors were out in full force at the hearings, demanding that the

newcomer's applications be held under the CRTC telecommunications mandate the same as Bell, and not under the broadcasting mandate.

Bell's alarm also rang at a recent Supreme Court decision which has been dubbed the 'Canadian Carterfone case' and which now requires Bell to permit equipment manufactured by the Harding Company to be connected to the Bell system. In effect the Harding case, like the decision for the Carterfone company in the U.S. the implication is that so-called 'foreign attachments' (i.e. non-Bell equipment) may be attached to Bell lines. Anyone who wants to tackle the telephone companies on this score had better reflect, however, that both Carterfone in the U.S. and Harding in Canada lost their corporate shirts in the legal battle. "The operation was a success but the patient died", might be applicable here!!

news briefs

VE3DSP and VE3HWB in the Hamilton area are preparing to experiment with packet radio. The communication link will allow voice and packet radio (digital) transmission for initial testing and experimentation. The data rate is 4800 baud, which is 100 times faster than ordinary RTTY. It uses a bandwidth of 10 kHz with ADCII or 8 bit bytes data.

VE1MTA the station on Sable Island which got off to an "irregular" start (in the words of the red-faced federal officials involved) as VGW-211 is now "de-activated".

DOC announces that "non-programmable" calculators may be used at all future sittings of the Amateur examinations.

George Collins, VE3FXT, our roving Amateur ambassador in African countries, is due back home in February and has promised some interesting stories for us. He has recently been piling up DX contacts from the Transkei, using the call S8FXT and from Bophuthasawana as H5FXT.

A new offer to affiliate clubs is made by the CARF QSL Bureau, run by Jean Evans VE3DGG and her hard-working crew. Clubs operating a special club station can have their QSL cards handled by the CARF Bureau. Two clubs who had a gigantic task on hand found the Bureau assistance invaluable. It handled thousands of cards for the Northern Alberta ARC for its Commonwealth Games station CG6A and for the Metro ARC in Toronto for its station at the Canadian National Exhibition.



Boaters, Amateurs to share 220?

Word was received in early December that the United States will propose to WARC '79 that the 220 - 225 MHz band be reallocated to the Amateur and Maritime Mobile Radio Services, both sharing it with the marine mobile on primary basis and relegating Amateur service to a secondary use. The band is presently allocated to the Amateur and Radiolocation Services, on a primary basis but in this case it is little used if at all by radiolocation (radar). This is the first really significant threat to the future of Amateur Radio in the VHF spectrum in the Americas.

When Citizens' Band use in the United States boomed, many owners of small power cruisers and sailboats equipped their craft with CB only to find that it was hopeless as both a regular and safety communications medium. The same thing has happened in Canada and while it has not occurred to the same extent, some fishermen who put their trust in the General Radio Service (CB) lost their lives on the East Coast. This has been a constant concern of the Coast Guard services in both the United States and Canada.

The disenchanted in the United States then sold their CB gear and bought VHF maritime mobile equipment operating in the 156.00 - 162.05 MHz band and began to compete for frequencies with commercial shipping who use this band, worldwide, in accordance with the frequency plan set out in the ITU Radio Regulations, Appendix 18. This plan specifies the frequencies to be used for distress, safety and calling, port operational, intership, public correspondence, etc.

The huge number of recreational boaters, their use of CB procedures and their complete disregard for orderly radio communications and for the safety needs of big ships has been a very serious hazard to commercial shipping.

Apparently the commercial shipping interests have made their weight felt in the regulatory agencies of the United States and the idea now is to try to provide another band for small boat communications.

This U.S. proposal directly concerns Canadian Amateurs because there may be a great deal of pressure to have Canada adopt the same allocation so that Canadian and American small-boat communications will be compatible along both coasts and the Great Lakes and St. Lawrence River.

Check your TCA label

Several hundred CARF members will have noticed that there has been a change in the first line of their address label. This change has been made to handle the membership records more efficiently on the CARF Office Computer.

The new coding consists of 4 groups of digits/letters such that:

Group 1 - A001 to Z999

Group 2 - 7801 to 9912 or LIFE

Group 3 - identification by call sign (less prefix) or by first 4 letters of last name.

Group 4 - membership status

Sample coding: A001 7901 1-FG F

Group 1 (A001) gives membership number; Group 2 (7901) gives expiry date of current membership (Jan. 1979); Group 3 (1-FG) denotes call; Group 4 denotes status (F - Full, A - Associate, W - Family).

Details of the new CARF Office Computer will be appearing in future issues of The Canadian Amateur.

No-Code tickets again? Why?

After spending considerable time and effort to persuade Canadian WARC '79 planners to drop their original proposal to have Article 41 of the ITU regulations changed so that various governments could give out 'no-code' licences on any band, guess what? ... the FCC in its latest U.S. WARC '79 proposals fools around with that same Article 41 proposing to take out the requirement for code, leaving it only as 'recommended' for the Amateur Service. The FCC said this would permit governments to develop their own licensing requirements. The Japanese preliminary WARC '79 draft also effectively cut out the code requirements.

In the U.S., CB sales are sliding; according to 'Electronics' magazine, a dollar drop from 1977's \$375 million to \$297 million in 1982 is expected. On the other hand, 'Electronics' sees a growth in Amateur sales from \$54 million last year to \$76 million in 1982 ... with other sources saying that it will be \$100 million or more.

Applying a little logic to the situation, one comes up with a scenario in which both the U.S. and Japanese equipment manufacturers eye the Amateur market to offset the slowing CB business. To expand the Amateur market, what better way than to push for a cheapie all-band 'no-code' Amateur ticket? This new FCC proposition would permit the U.S. or any other jurisdiction to do just that!

It's more than passing strange that, while no reference to Article 41 appeared in previous FCC proposals, this ringer should appear in its locked-in proposal to the U.S. WARC '79 delegation.

Or are we just a bit oversuspicious that the Amateur Service is becoming the next target of a hungry electronics

industry.

CARF beat this unlimited 'no-code' bit in Canada. Now let's see how U.S. Amateur organizations meet this one.

-VE3CDC

New phones being tested

A new electronic telephone, ranking with the dial telephone as one of the major advances in basic phone system design since famed Canadian Alexander Graham Bell patented the electromechanical set in 1876, is being given field trials by Bell Canada.

Since last August, 1,000 'e' phones have been on an eight month field trial. If results are satisfactory, the company will gradually phase out the present subscriber sets because the 'e' phone is less costly and has better performance than the standard type.

The conventional electromechanical parts have been replaced with silicon ICs; even the carbon mic is replaced by an 'electret' type mic.

Further refinements in design could lead to a complete telephone circuit on a single chip within the next few years, say Northern Telecom and Bell-Northern Research engineers.

When replying
to
advertisements

CARF

SAY YOU
SAW IT IN TCA!





from the clubs

The editor of the P.E.I. ARA Newsletter has some rather definite opinions on everything and regarding packet radio sez that it "looks like we will yet hear packy-wacky on our walky-talky". Commenting on the possibility voiced by DOC that there may be a new 900 MHz CB band, and MP Crawford Douglas' remarks that the GRS (CB) would evolve into "a sophisticated technology which would be integrated with telephone and computer systems," Editor VE1BCN writes, "Some of these government people are so dim that they can't chew gum and walk at the same time ... south of the border the CB are getting into phone systems and have been told by the phone companies to stop or face prosecution ... this affects Amateurs; if the phone companies really get their backs up say goodbye to your touchtone pad, surplus phone company gear and a few other goodies".

The closing of the DOC monitoring station at Montague, P.E.I. brought forth the following: "The monitoring station at Montague is being closed after enough switches in staff back and forth to Charlottetown to prove, without any doubt, that the DOC doesn't know what it is doing. If they were right to move," he concludes with unrefutable logic, "they were wrong to move back; if they were right to move back, they were wrong to close down!"

The Charlottetown ARA's new prez is Dr. Bill Mooreside VE1BIE.

The Canadian Ladies' Amateur Radio Association (CLARA) has members not only in Canada but in many parts of the globe, such as Vickie ZL1OC, Carol ZL1AJL, Bibi LA5IS, Ellen LA5HS, Karen OZ1AV, Diana G4EZZ, Mary G4GAJ and Lynn DJ0NT/VE2DZN.

The South Pickering ARC has detailed the steps necessary for incorporating ... a move that many clubs, with today's complex operating environment find prudent ... in a recent bulletin:

INCORPORATION IN ONTARIO

Unlike a person, a group of people is not a separate legal entity. A club cannot make legal commitments with defined accountability. Although each member may benefit from the group's endeavors, each is also held personally liable for its actions.

With incorporation, a club becomes a separate legal entity. Liability is limited to the corporate assets and legal commitments can be made. In return, to assure the public trust, objectives must be committed, directors identified and formal procedures maintained.

The artificial entity is created by issuing of Letters Patent for incorporation without share capital. Its activities must be carried on without the purpose of individual gain. Any profits are to be used in fulfilling the corporate objectives.

Initially, a name search (\$10 fee) ensures a unique name. Subsequently, the notarized (\$5 fee) application for incorporation is filed (\$20 fee) with an agreement to dissolve the existing club. The 10 applicants must include all directors and provide some personal information.

Upon issuance of the charter, the old club is dissolved and the new corporation organized. Bylaws are enacted to control the conduct of business.

Thereafter, regular meetings are to be held with proper records and financial statements. Periodic returns of information to the provincial government are to accompany a \$5/year tax.

A seal may be obtained for \$20-25. It is optional, the primary requirement being that contracts legibly identify the corporation. A minute book (\$20-25) may be replaced by a loose-leaf binder to hold bylaws, minutes, registers and other records of the business.

A legal fee was unnecessary as the club processed its own application.



Space Age comes of age

The space age has now come of age... it was 21 years ago when the first satellite was launched. Canada counts itself as one of the old timers. Our first satellite -- Alouette I -- was launched in 1962 giving us the distinction of being the third country in the world, after the Soviet Union and the United States, to design and build its own satellite.

Ten years later we established another precedent when Telesat launched Anik I. Canada became the first country in the world to have a geostationary domestic satellite communications system. Our latest satellite, Hermes, a Canadian designed and built high-powered communications technology satellite, is the forerunner of direct broadcasting satellites. Canada now has eight successful scientific and communications satellites in orbit.

Computer fans:

COMPUTER FANS! If you want your club to get plugged in to an information net on a national basis have your executive give their names and addresses to CARF Inc., Box 356, Kingston, Ont. K7L 4W2. Info on computer hobby activities and the new Digital Operator certificate will be a new CARF service. The DOC will be using CARF news media for information on the new Digital Op certificate operations. Expansion into the world of microprocessors is dictated by the fact that a survey of some computer clubs revealed that about 50% were already holding Amateur or Advanced Amateur Certificates. We need articles for beginners in the microprocessor hobby as well as stories on the experiences of those who manage to get the Digital Op's ticket.

Report available

The full official report on the deliberations and recommendations of the CARF National Amateur Radio Symposium, held in Calgary at the beginning of October, has been mailed to all participants and to interested national and provincial organizations. Copies may be obtained by sending \$1.00 cheque or money order payable to CARF Inc. Box 356, Kingston, Ontario, K7L 4W2.

Murphy again

J.L. Mason VE3KFH gleaned this corollary to Murphy's Law from 'Electronics Design':

"When, after long and arduous experience, you have finally grasped the manifold implications of Murphy's Law and have learned to anticipate and avoid all potential pitfalls, you will be replaced by someone who can get things done faster."

Amateur stations

Amateur Stations, November 2, 1978.

DOC Region	Amateur	Repeater
Pacific	3098	39
Central	3122	24
Ontario	7522	81
Quebec	3381	88
Atlantic	2249	35
Total	19372	267



Canadian Amateur Radio First

It Bugs Me!

VE2PY Bob Rouleau
in the 'Marcogram'

In which the author ventures into Amateur Radio's verbal jungle ... and finds that it's not all "fine business"!

What bugs me?

This bugs me. Guys who say "I am destined; -- desolated, decimated, debilitated, okay, but "destinated" nooo way!

Secondly those who seek to further the art of voice communication by using abbreviations such as "Affirmative" when they mean "yes" -- any dummy knows that "affirmative" is a shortform of "yes". This is TRUE, but the rest of us who could be considered reasonably intelligent realize that "affirmative" having four syllables is exactly four times longer than plain old "yes". Likewise for those who say "negative" or, even worse, "negatory" when they mean "no".

How about the editorial "we". This one drives me up the wall. Never fails whenever I have a passenger in the car who expresses some interest in Amateur radio, I come across one of those guys who call themselves "we". "We are playing solitaire," or "we are here all alone in the car." Dear sayers of "we", message number one informal from VE2PY: "we" is okay under many circumstances, such as I have to go we we, or weeee our team just scored another goal, or God forbid that anybody be able to tolerate your presence, "we are here", meaning there are at least two of you, if not more. End of Message.

Next, stand by for a barrage laid on the subject of "fine business", now it is
feb 79 - page 20

okay to say that General Motors runs a fine business, but to say, as is so often heard, "fine business on breaking your leg falling from your roof and fine business on having your car stolen" is absolute drivel. In this context, "fine business" is nothing more than meaningless noise. And, if you want to make meaningless noises there is another band made just for you. 10-4 good buddy? If you really think about it, all "fine business" means is that you listened to whatever the other guy said, and you need a preamble which sounds better than, "I was paying attention this time". Well, I trust you, I believe that you were listening to what I had to say and need no additional assurances of your ability to remember, so, please spare me the "fine business" on every thing you just said! Note that "fine business" used this way can also be interpreted to mean, "I wasn't really listening to what you said, but I haven't got the guts to tell you, so I'll just say "fine business" and change the subject.

Lastly, my tirade coming to an end for now, those of you who use the forms just described probably don't know how dumb you sound, so maybe reading what you say will help you understand. Typical QSO: Fine business old man (who is old, he is talking to a kid) on falling off the roof while tuning the old antenna (old? it's brand new) and fine business on never being able to walk again!!!!), etc.

A 40, 15 & 10 M

Tilt-over Vertical Antenna

VE1BCN Doug Cormier

Got no money? Need an antenna? Don't know nothing? Feel trapped at the mention of traps? Do coils make you go around in circles? Read on my friend, and don't despair. This antenna could be for you. With a little frigging this vertical antenna works well on 40, 15 and 10 meters, unless you are an expert, in which case it won't work on 10.

Being a bit wobbly on theory, inclined to be tight with the buck, and not overly bright, the author decided to put up a vertical. It works well and stands up to high winds. Parts are easy to find and you can't do anything wrong that can't be easily fixed; besides, your neighbours will think that it is a very nice flag pole.

Excuse the measurements being in feet and inches. You can convert to metric by taking a centipede 2.54 times to make an inch. First let's figure where to put this work of art. I made my radials 33.5 feet each and the more the better (or the less the worse). See Diagram 'A'. (Best use of existing space can be made by the use of moonlight; used correctly it can add many feet to your radials ...dead on.) To lay a radial put a loop in the end of the radial leading to the ground ring (Diagram 'B') Shove a nail in the loop and stretch the wire to where you want the radial and push the nail in the ground. Run a knife 2 to 3 inches deep in the ground along the radial. Use a forked stick to shove the radial in the slit you have made. Tramp down the grass. There will be no mark to show where the radial is, and after a week you will not remember which radial went where. When I reached the boundaries of my lot some radials still

had from one to three feet to go. Now for the moonlight. Remembering an ancient Chinese proverb by confusion about the magical powers of moonlight, I waited until dark. On my hands and knees I extended the slit under the fence, pushed the wire under with a forked stick, pushed the sod back in place, and sighed with relief. Just then my neighbour's back light came on. As it would take too much explaining as to what I was doing on my hands and knees in the dark with a knife in my mouth, a forked stick in one hand, and a wire and nails in the other, and in my neighbour's back yard, I took the easy way out. "Here Rover", "Here Rover", "Here Rover". The lights went out again.

You should have about 330 feet of radials and they need to be stripped of insulation. To get the wire, wear your oldest and scruffiest clothes and go to a scrap dealer. They usually have wire surplus from the phone co. etc. The heavier the better, but light wire also works. After the scrap dealer tosses the bundle of wire on the scales and before he figures a price, stand with a \$2. bill in your hand and a look of the most uttermost astonishment on your face. Tell him you only want the copper wire and not the insulation. Expect him to glare at you as if you just crawled out from under a rock, snatch your two bucks, shove it in his hind pocket and walk away. This indicates that negotiations have been completed. You have a deal. You could grow old waiting for a receipt.

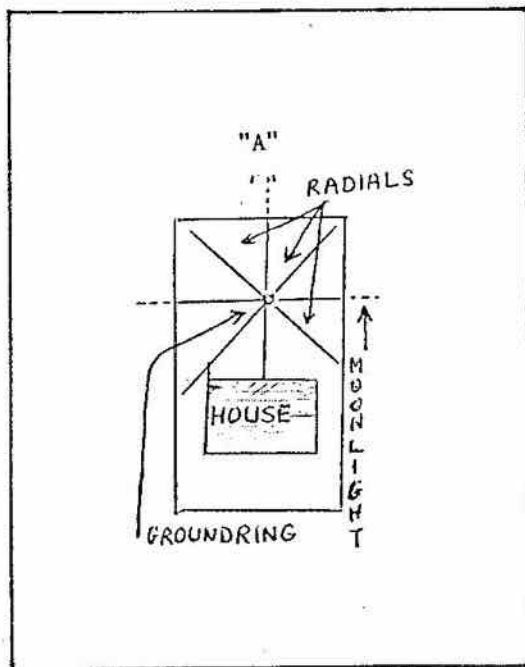
How do your outside doors close? Tell your wife "them pneumatic door closers don't last forever ya know". Take the old ones apart and throw out

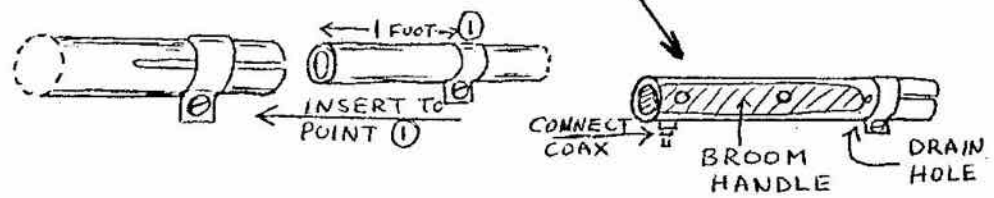
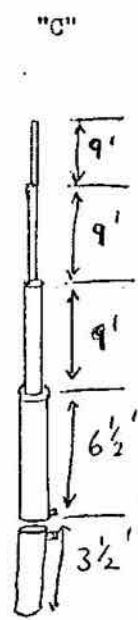
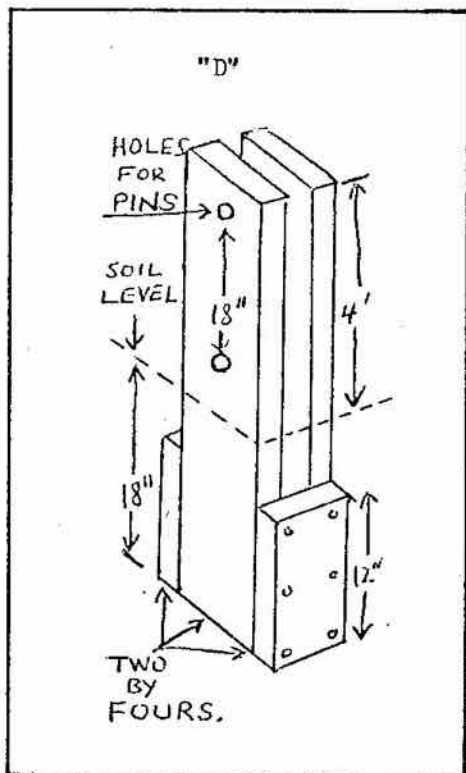
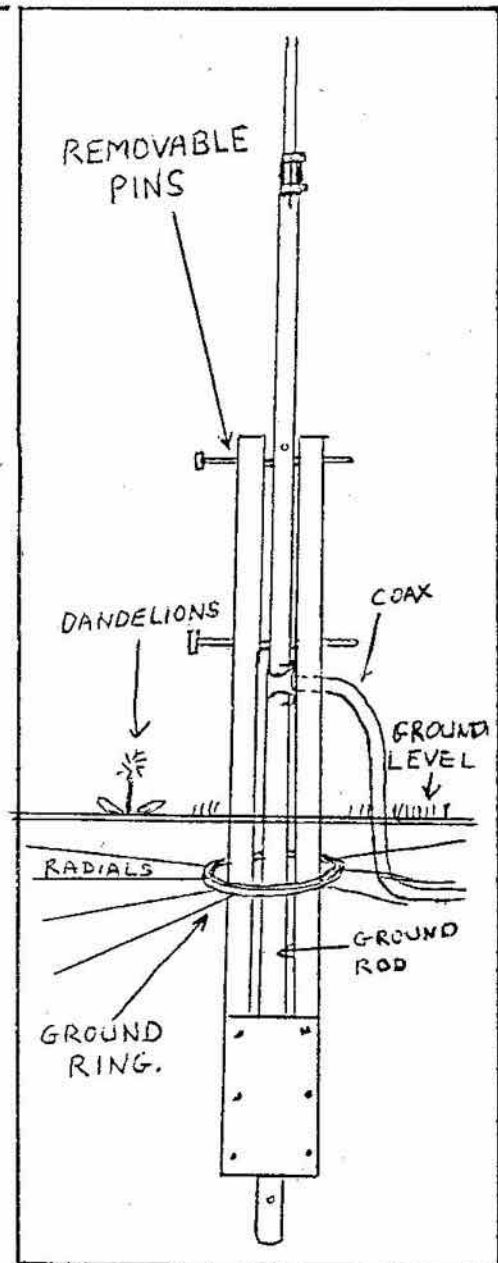
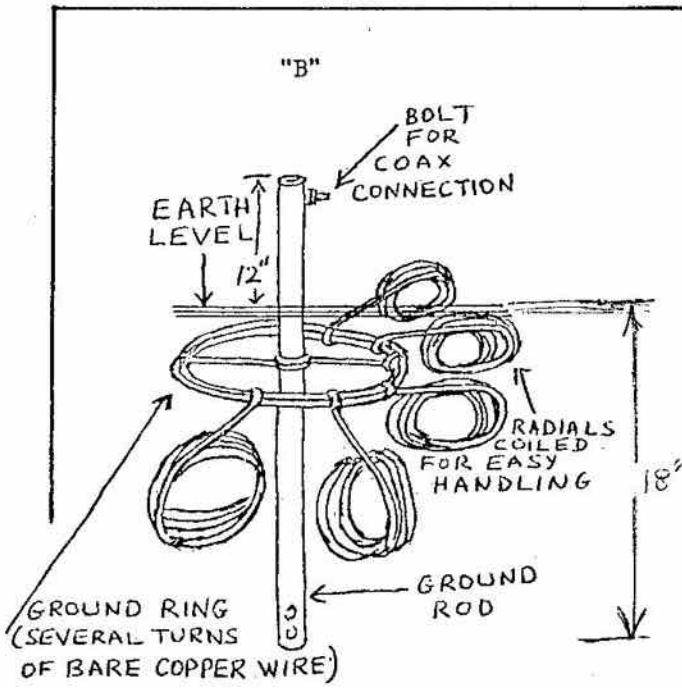
everything except the long rods inside. These make the pins for your tip-over vertical.

Other construction hints: Get four ten-foot pieces of thin wall conduit of different sizes from an electrical supply store. Before you leave the store see that all four fit inside one another. See diagram 'C'. They must go inside one another or mission impossible. Some fit so tight that a little sand-papering is necessary. Don't force these in at the store or you might never get them out. Cut Slots 3 inches long in one end of each. Use two blades together in the hack-saw as this will give a wider slot. Get six stainless steel radiator hose clamps from Canadian Tire or a similar store. The weakest part of the antenna will be near the two pins. A broom or rake handle sashed with glue and rammed up the bottom section strengthens up this spot. As this also makes a waterproof plug, drill a small hole in the conduit to let the water out (water trapped there would freeze and split the conduit). When drilling or sawing metal a little penetrating oil makes the work go faster and produces smaller blisters. Plug the very top of the antenna by taping a penny over the hole. Use a quarter if you want a more expensive antenna (deluxe model). When adjusting the antenna just tighten the clamps that are not on the slotted ends. These clamps stop the sections from dropping down inside one another. The clamps on the slots give strength and rigidity.

To tune your antenna try loading up at about 28.6 on the 10 meter band when it isn't busy. Take S.W.R. reading as quickly as possible. They don't need to be too accurate. Tuning too long with too high a S.W.R. can cause a vacuum that will suck your finals right up the antenna. If the S.W.R. doesn't start to drop until you are way up the band the antenna is too short. If the antenna is too long the lowest S.W.R. was 4 to 1 at the high end. I loosened a clamp and dropped the pipe another 3 inches farther inside the next pipe. The shortened antenna gave the following readings; on 10 meters 1.4 to 1, on 15 meters 1.1 to 1, on 40 meters 1.8 to 1. The antenna proved to be very broadbanded and has a low radiation angle which is good for DX.

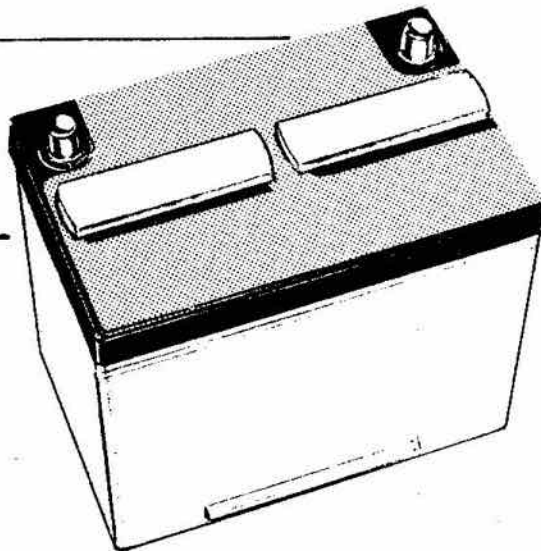
Construction proceeded as follows; Dig a hole 2 1/2 feet deep and one foot in diameter. Build a wooden support as in diagram 'D'. Place the wooden support in the hole. Place the ground rod and ground ring with radials attached in the hole. Hold the ground ring about 2 inches below ground level while filling in the hole. Water and tramp down the soil in the hole. Unwind the radials and lay them in slots about 1 to 2 inches below ground level. Put the bottom pin through the wooden support and through the antenna. Tilt the antenna straight up and place the second pin in place. The coax braid goes to a bolt at the top of the ground rod. The center conductor of the coax goes to a bolt at the base of the antenna just above the ground rod. If these two bolts are lined up you have a nice connection to the coax. When dropping the antenna you only need to disconnect the center connector and pull the top pin. In this way the braid can be soldered securely to the bolt and the coax can be well coated with bathtub caulking or plastic rubber (moisture in your coax you don't need, now moisture in the soil is a different thing. If your S.W.R. gets the hots during a dry summer try watering your ground system ... no moonlight required).





Safety First for jumper starts

An odd topic for the Technical Section? Well read on and see how many things you've been doing wrong all these years.



Having on two occasions seen car batteries explode, we pass along a procedure which minimizes this risk when 'jumpering' car batteries to start a vehicle with a 'dead' battery.

1) Do not try to start a car which has a frozen battery.

2) Make sure the cars are not touching. Shift both cars into neutral or park and set the parking brake. Turn off ignitions and all accessories.

3) Make sure the batteries are the same voltage.

4) Remove filler caps of both batteries and place a cloth over the vent holes.

5) Identify the positive terminal of both batteries. These are coloured red or have a '+', 'P' or 'pos' written on the battery case, post or clamp.

6) Attach one jumper cable between the two positive terminals. *

7) Attach one end of the second jump-

er cable to the negative terminal of the booster battery and the other end to some part of the engine being started. This final connection should be at least a foot from the dead battery (to avoid sparks which could cause an explosion) and must make a good contact.

8) Try to start the dead engine. If it fails to start immediately, start the car holding the booster battery so it will not run down.

9) After the car with the dead battery is running normally, remove the cable connection at the engine block first, then the other end of the same cable from the booster battery. Remove the second cable by disconnecting from the booster battery first.

* NOTE: If you have an imported car or an older Canadian or American car, it may have a positive ground. (The cable from the positive terminal of the battery will be attached to the car body.) In

feb 79 - page 24

this case, reverse the jumping procedure connecting the negative terminals first. Then connect the positive terminal of the booster battery to the engine block of the car with the positive ground.

The 'Junkbox 2'

QRP Transmitter

By Stan Hill, VE3DQ

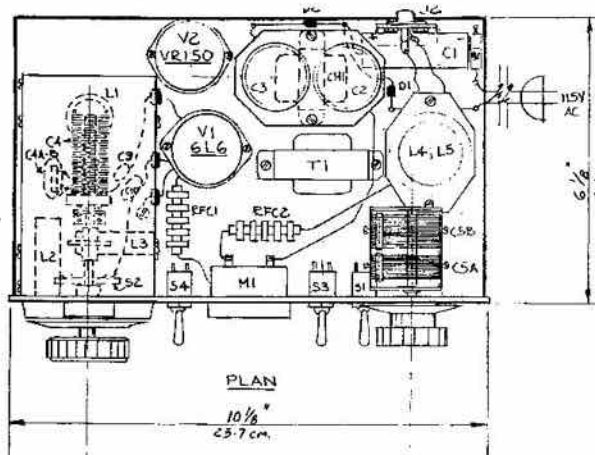
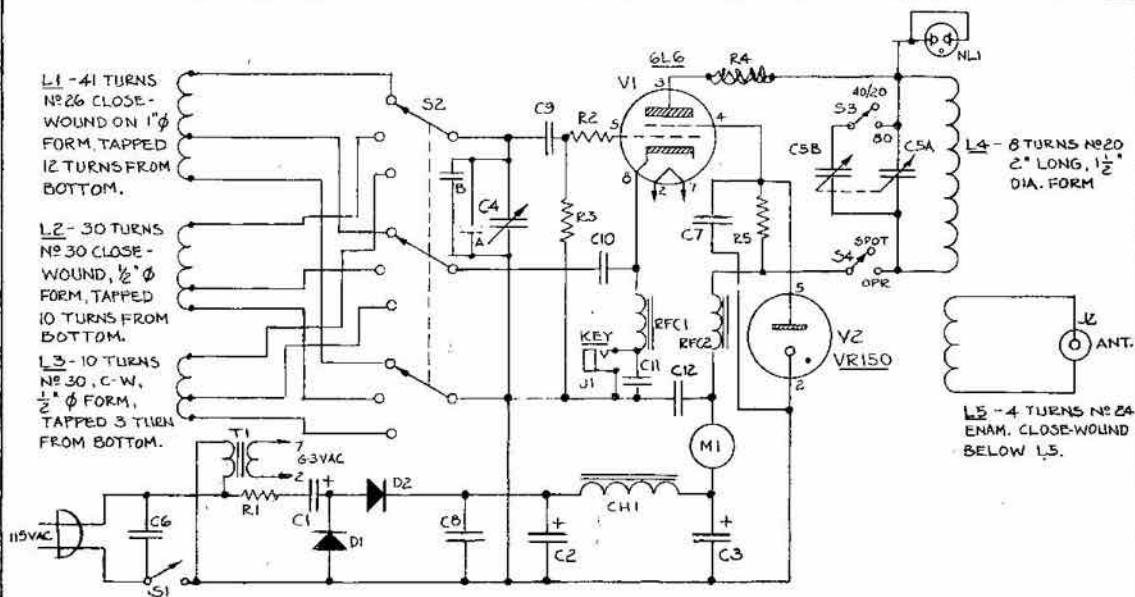
If you glance through the current radio Amateur magazines, you will note that there is a superfluity of product evaluation reports and very little meat for the home constructor. Due to this, and also due to the availability of manufactured "plug-it-in-and-blast" appliance-type rigs, the Amateur has very little incentive to build his own gear, with the result that envious services are coveting our frequencies, claiming that we are no longer inventors, innovators and builders, but merely station assemblers and operators.

In the spirit of attempting to alleviate this situation a bit, this little project is offered for the budding Amateur who wants an economical, easy-to-build first rig, or for the old-timer who wants to flex his soldering-gun muscles and build something for a welcome change. The end product can be used as a local ragchew CW rig or an emergency rig that can be pressed into service while the innards of the big rig are being unscrambled at the factory. I leave the "obsolete" tube - versus - "state of the art" solid state technology arguments to the purists in this age of the transistor. I have no absolute prejudice against or preference for either; the name of the game here being convenience and economy.

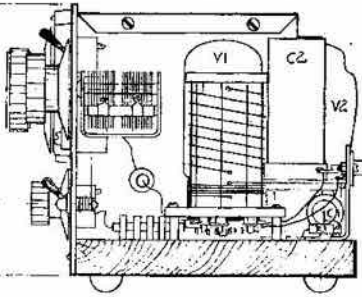
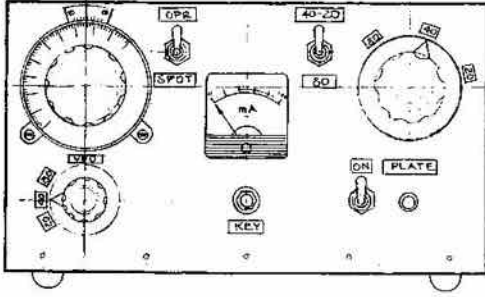
The genesis of this little rig was the W5LET "bare essentials" transmitter described in the March, 1968 Electronics Illustrated. I just could not believe that a transformerless transmitter and its

power supply made from 6 capacitors, 5 resistors, 2 diodes, one trimmer, one crystal, one 50C5 tube and a pill bottle mounted on a 10" x 6" wooden board would produce a readable signal on the bands. Smitten with curiosity, I tangled the thing together one morning and that noon worked VE2DLU in Quebec City on 40 metres, who, by sheer coincidence, also had built the same rig! Both our signal reports were 577C but truthful reports would have given a tone report of zero, because Jean-Pierre's rig sounded like a baritone sax with a bum reed and he described my signal as "tres mal". For me, the circuit on the wooden plank became a sort of test bed as I tried this and that to improve the signal and added circuitry to attain convenience, until I arrived at the concoction shown in the circuit diagram.

Some of the alterations were: Replace the xtal circuit with a VFO; provide bandswitching to permit operation on 3 bands; replace the 50C5 with a 6L6; add a filament transformer; add a filter choke and more capacitance to the power supply; add a VR tube to screen circuit to eliminate chirp. add an "operate/spot" switch; nail a front panel to the wooden plank, and add a millimetre. The rig as it now stands puts an acceptance 10 watt CW signal on 80/40/20. So by copious use of the ubiquitous junkbox (it seems to me that "free" junkbox parts are seldom really "free", but never mind!) and an additional outlay of \$6.64, most of which went for the meter,



- PARTS LIST**
- C1 - 40 MFD, 150 WVDC, ELECTROLYTIC.
 - C2 - 125 MFD, 350 WVDC, "
 - C3 - 140 MFD, 350 WVDC, "
 - C4 - VARIABLE CAP. 100 PFD.
 - C4A - 270 PFD. N.P.O.
 - C4B - 25 PFD. 5 M.
 - C5A-B - DUAL SECTION VARIABLE CAP. FROM EDCST. RCVR.
 - C6, 7, 8, 11 - .002 MFD. 500V.
 - C9 - 50 PFD. 5 M.
 - C10, 12 - .005 MFD. 500V.
 - L1, 2, 3, 4, 5 - SEE SCHEMATIC.
 - RFC1, 2 - 2.5 MH.
 - CH1 - FILTER CHOKE, MINIATURE, 5-10 HY. 50 MA.
 - S1, 3, 4 - OPST TOGGLE SWITCH.
 - S2 - WAFFER SWITCH, CERAMIC, 3P3T.
 - D1, 2 - DIODE, SILICON, 350V RATING.
 - T1 - TRANSFORMER, FILAMENT, 115/6VAC, 1.2A.
 - J1 - KEY JACK, OPEN CIRCUIT.
 - J2 - RCA AUDIO TYPE JACK.
 - M1 - MILLIAMETER, 0-100 MA.
 - R1 - 10 OHMS, 2 WATT, 10%.
 - R2 - 47 OHMS, 1 WATT, 5%.
 - R3 - 47K, 1 WATT, 5%.
 - R4 - 47 OHMS, 1 WATT, 10%.
 - R5 - 33K, 2 WATT, 10%.
 - NLI - NE2 NEON LAMP.
 - V1 - 6L6. V2 - 0D3/VR150.



MISCELLANEOUS
CHASSIS IS 10" x 10" x 3/4" BOARD.
PANEL IS 1/8" HARD BOARD NAILED TO CHASSIS BOARD.
THE POINTS ARE PLATED 3/4" BRADS, DRIVEN INTO BOARD.
VERNIER DIAL ON VFO IS PLANETARY TYPE FROM FAR EAST. 6/1 RATIO.

THE
JUNKBOX-TWO
GRP TRANSMITTER
BY: STAN HILL, VE3DQ DRAWN: Stan Hill
1978

I have a handy-dandy little rig that has worked Europe and South America occasionally and provided hundreds of rag chews over all of this continent.

Referring to the circuit diagram, the cathode-grid-screen VFO circuit operates on the fundamental frequencies of 160/80/40 metres and the plate circuit doubles to the output frequencies in the 80/40/20 metre bands. The frequency determining components of the VFO are enclosed in a 4 3/4" x 4 1/2" x 2 3/4" homebrew aluminum minibox to provide temperature and feedback isolation, and to isolate the circuitry from hand capacitance. The VFO components must be securely mounted and the turns cemented to the coil forms to obtain mechanical stability. Voltage stability is obtained from high capacitance and choke CH1 in the power supply filter section, and the VR tube in the screen supply. C2 and C3 are from junk TV's and are mounted on an aluminum plate, which is raised above the breadboard with standoffs, to permit CH1 to be mounted underneath. The dual variable tuning capacitor in the plate circuit is from a junked radio. With S3 open only the smaller section (C5A) of the capacitor is in circuit, tuning it to 20 metres near minimum mesh and to 40 metres at about half mesh. Closing S3 cuts in C5B and puts the plate circuit on 80 metres. Four turns of No. 30 wire are wound around the body of R4 and soldered to the leads at both ends to make a parasitic filter. Opening S4 removes voltage from the

plate circuit permitting the VFO circuit only to be spotted on the desired frequency. Either the meter M1 or the neon lamp NL1, or both, may be used to indicate resonance of the plate circuit. Eliminate M1 and you save yourself five bucks but then it gussies up the appearance of the front panel pretty good. The NL1 by comparison costs 15¢.

Now I am not about to declare that this rig is the greatest thing since sliced bread! A simple, single-stage rig such as this does have some drawbacks. For one thing, your antenna must be stretched bar tight, otherwise your frequency will shift with movement of the wire. A swinging antenna gives you a swinging signal. For another, on my rig at least, the note is rough and the frequency unstable when the plate circuit is tuned to exact resonance. Backing off the plate tuning slightly to the low frequency side of resonance, about 100 kHz, smooths out the note and corrects the instability and permits excursions of your VFO frequency of about 50 kHz on either side without having to touch up the plate tuning. Also a rig such as this is often prone to harmonics and other spurious emissions. I have not detected problems of this sort. But, if you have harmonics, a harmonic filter in the antenna circuit will correct this. If you have other spurious emissions, put a metallic shield around the rig. So you see, the success or failure of the rig greatly depends upon the care and skill of the operator.

WANTED:

Technical Articles

Each issue, TCA includes a Technical Section in the centre spread consisting of articles of interest to a considerable number of Amateurs.

Naturally, with our increasing use of such articles, the TCA Technical Committee is always seeking new, original material from our readers. TCA will pay the author for all technical articles published with the exception of items occupying less than half a printed page.

Manuscripts should be typewritten and drawings ready for the printer; however, we will accept anything we can decipher. Please include your name and call (if licenced), plus your full mailing address. We would also appreciate receiving copies of any club or society bulletins which have technical content.

Please send all material to CARF Technical Committee, P.O. Box 356, Kingston, Ont. K7L 4W2.

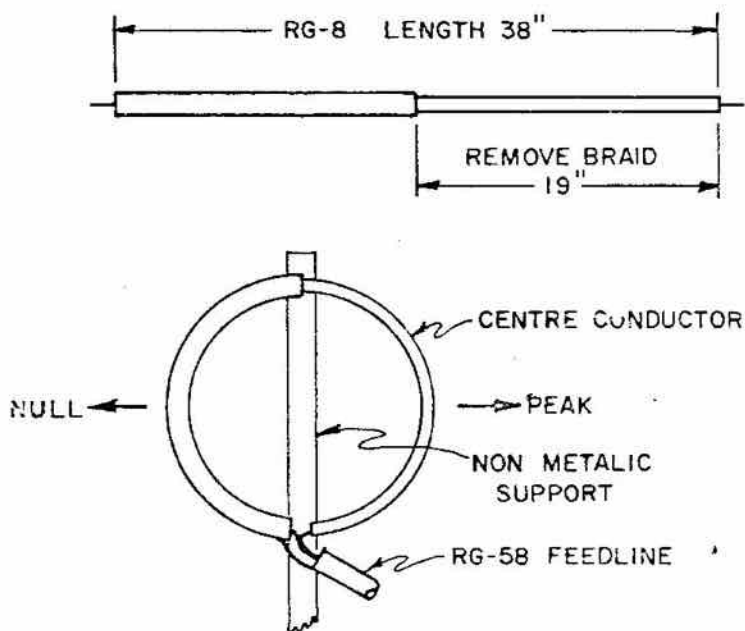
Fox Hunting

A popular feature with many clubs and hamfests is a transmitter or "fox" hunt. The hidden transmitter normally operates about 20% of the time. Hunters take a bearing during the "on" time then move to a new location (hopefully closer to the transmitter) and wait for the signal to return to get a new bearing.

The VHF DF loop described here is of unidirectional design. Use RG-8 solid dielectric co-ax. Remove 19" of the outer braid, but leave the insulation on the cable except where the two ends will be joined. Bend the co-ax in the form of a circle and solder the two ends of the

centre conductor together. Attach a feed-line as shown and mount the completed loop on a piece of dowel or broom handle using tape, and run the feedline down this support. If the loop is properly constructed, it will exhibit a null off the back and a peak to the front. Use it with a receiver that has a signal-strength meter. Now all you have to do is stick it out the car window, watch the meter as you turn the antenna, shift gears, and stay out of the snow banks, ditches, etc. Good luck!

Tx Lakehead ARC



Canadian EME Experiments

VE7BBG

Earth-Moon-Earth communication is one of the more exotic forms of Amateur experimentation. Author VE7BBG outlines his operating procedures.

Out on the West Coast VE7BBG is carrying on one of the more exotic forms of Amateur experimentation -- earth-moon-earth communication, known as EME or 'moon-bounce'. He writes of his 432 MHz experiments.

At present as far as I know I'm the only active station on EME on any band in Canada. Other stations that have capabilities are VE4JX on 432 and VE2DFO and VE7BQH on 2 metres. As I'm mostly familiar with 432 MHz activity I'll give you an outline of activities, requirements and operating procedures used on EME. Since 1972 I've been active on 432 EME and make up a monthly schedule list for active stations. This list is sent to K2UYH who includes it into a monthly 432 EME newsletter, distributed worldwide to some one hundred plus stations. I also sent a copy of the schedules to the VERON (Holland) VHF bulletin where it is also distributed worldwide.

Monthly scheduled weekends are picked to coincide with high moon declination, perigee and where possible convenient operating times. All continents are active every month with many QSOs mode. The state of the art has advanced rapidly on 432, especially in receiver noise figures. Several years ago a 'gigantic' antenna was a 'must' for EME but many of those required dbs have been replaced by receivers with lower noise figures.

With receiving devices presently available to Amateurs, antennas gain

requirements to hear moon reflections have dropped to about 22 db above a dipole. CW is still the mode with some SSB where antenna gain permits. The path loss which equipment must overcome to reach to the moon and back is 260 - 262 db. The receiver takes the majority of that. Power, needless to say has to be high. One quickly realizes that dbs in antenna gain become very costly above times 26 db and a fifty dollar solid state low noise receiving device is not as bad as it had initially seemed. Power tubes for 432 are still easily available, most times surplus, and attaining the legal power limit can be done at reasonable cost.

Oscar B has brought a lot of stations to EME as they found only some additional antenna gain was keeping them from hearing the stronger EME signals.

Since 1972 I have worked 33 States, 16 countries plus WAC on 432 MHz EME. The equipment I use is an A2, EL mounted 20 feet homemade dish with a gain of 26.5 db on 432 MHz. Power is supplied from a 4CW800F water cooled homemade amplifier running at 1000 watts. The receiver is a GaAs FET low noise amplifier (0.85 db noise figure) mounted at the antenna feed. Receiver bandwidths usually used are 500 Hz and 2.1 kHz. My own 2 1/2 second delayed received echos run from 10 - 15 db > noise in a 500 Hz bandwidth with moon perigee.

ITU CCIR

John Gilbert, VE3CXL

The XIVth Plenary Assembly of the CCIR, The International Radio Consultative Committee of the International Telecommunication Union (ITU) was held in Kyoto, Japan from June 6 - 23, 1978. Included in the pre-conference documentation was a notice that the Japan Amateur Radio League (JARL) would be operating a station at the Assembly and inviting delegates to bring a copy of their Amateur licence with them. The privilege for non-JAs to operate in Japan has been granted only rarely, most recently at the boy Scout Jamboree. I was, therefore quite eager to take advantage of the opportunity, and as soon as the formalities of registration at the Assembly were disposed of I followed the signs to the JARL room, licence in hand. Just as I arrived, officials of the Japanese Ministry of Posts and Telecommunications were just completing their inspection of 8J3ITU and were granting the necessary authority for the station to go on the air. Within a few minutes Nao, JH1VRQ, JARL Overseas Liaison, had obtained permission for me to operate and I was soon occupying one of the four main 8J3ITU operating positions.

The station was made up of an impressive array of equipment including Kenwood, ICOM and Yaesu gear in the main HF positions. There were three main HF positions and a VHF station. For those more inclined to the microwave bands, there was also a 10 Giga-hertz dish pointing up to a distant hill. In the same room as the station, Japanese manufacturers had on display just

about every imaginable type of equipment ranging from keyers to slow scan television.

My first QSO from 8J3ITU was, appropriately enough JA8AA, Mr. Takeo Hama who had been my very first JA contact from my days as VE8OW back in 1956. I had good reason to remember his call, but I was quite surprised when he came right back with the full details of our QSO of 22 years ago -- an excellent retrieval system especially considering that Takeo is one of Japan's most active Amateurs.

It had been some years since I had worked my way through a JA pile-up (VE3s don't get much opportunity!) and I had to relearn the ropes very quickly to handle the dozens of stations calling me once I had completed the JA8AA QSO. Thirty minutes later, having worked more stations than I normally do in a month, I turned the position over to another visitor. Ten minutes later I was invited to one of the other positions where a short CQ netted, of all things, JT0DJT in Zone 23 with a 599 signal -- the ultimate DX from VE3 land and a fitting end to the first of many days of operating.

8J3ITU was in operation from June 6 - 23 every week day from 0830 to 1700 local time. It was manned by a team of operators from the Kyoto Amateur Radio Club as well as by a number of visitors, delegates to the CCIR Assembly like myself. The JARL room became, for the duration of the Conference a gathering place for Amateurs from many

on-the-air in Japan

parts of Japan and from several countries of the world.

Two meetings were of particular interest to me. The first was the occasion of meeting Tac, JH3CXL who I had worked on two bands from the home station. There were several photographs taken of the two 'CXLs' one of which, along with JH1VRQ has since graced the pages of the Japanese journal CQ Ham Radio. The second was the chance to meet Toru, JA3CMD and some of the members of the very active Kyoto DX Club. I had often wondered how so many JAs suddenly appear in a rare DX pile-up, but after hearing of the very efficient DX alerting system among the club members I need wonder no more.

Associated with the JARL activity at the Assembly was a special Amateur reception on June 12th which was hosted by Mr. Shozo Hara, JA1AN, President of JARL and attended by many JARL officials and guests. Among the many well known Japanese Amateurs attending was Mr. Kankichi Kusama who was licensed as JXAX in 1927 as the first radio Amateur in Japan and who now signs JA3HAM. There seemed to be no end of DX present too including HS1BR, SP5JR, P29BH, LA3SB, DL3SO, HP1GJ, HP5VV, CM2RZ, G3CGZ, CK1WI and Peter Barnes, VK3GH. Peter commanded a large audience with his description of some of his experiences operating VK3 GH/MM in his 1 1/2 year long voyage sailing solo from the United Kingdom to Australia. The more formal part of the reception was most interesting. Mr. M.

Mili, Secretary-General of the ITU recognized the contributions of JARL and Amateur radio, a theme which was further expanded by Dr. Richard Kirby, W0LCT, Director of the CCIR.

Shortly after the reception, JE3JWA mentioned to me that 8J3ITU would be fully operational during the weekend of June 17-18 for the Phone section of the All Asian Contest. What with sight-seeing and sampling the fare at one of Kyoto's fine restaurants, it was 2200 on Saturday night before I found my way out to the station to lend a hand. I expected to be back to the hotel by 0100 but that was not to be. The bands were wide open, 15 meters to Europe and 20 to North America, and I was able to experience some of the most interesting contest operating ever. Around 0100 I took a short break to sample rice and plum sauce and to view the video-tape of the 1976 Okino Tori-shima 7J1RL DXpedition. Then back to operating until 0400 when propagation started to change. It was a truly exhilarating experience to participate in the 8J3ITU contest effort, even for a died-in-the-wool CW man like myself, and it will be interesting to see their final score.

JARL went to a very considerable amount of effort to ensure that 8J3ITU was a success and that Amateur Radio was reflected in the most positive way to the CCIR delegates. All in all a job well done and an experience which will be long remembered.

(John is on the staff of DOC HQ in Ottawa.)

Spark Hazards

Static electricity discharges can damage sensitive electronic equipment. Recent investigations at Bell-Northern Research have led to better preventive measures. Here are excerpts from a recent article in "Telesis" published by Bell-Northern Research.

During the Canadian winter the air is very dry and static discharge is at its worst. People get electric shocks by simply shaking hands and touching door handles, or other metal objects. These shocks can be a very real hazard for sensitive electronic equipment.

Integrated circuits and other semiconductor components are affected by minute amounts of charge at high voltages. As integrated circuits did not really come into widespread use until the late 1960s, the problem is a comparatively recent one. A relay or vacuum tube suffers few ill effects from the static charges normally encountered, but an integrated circuit can be destroyed, or its functions can be upset. The operation of a digital circuit, for example, depends on recognition and processing of pulses, and the presence of a pulse-like spike of noise.

Without proper preventive measures, static can produce adverse effects: computer system can be shut down simply because someone builds up a static charge walking across the carpet and touches a metal switch on the equipment; a computer display terminal can go blank when someone walks by on a dry day; a pocket calculator can be destroyed when a 'charged' person uses it, especially if a ground path exists through its connection to the power mains.

These examples show why electro-

static discharge is a real threat for modern electronic equipment. It would be impossible to eliminate static buildup everywhere that this equipment is used, so ways have to be found to prevent static discharge from causing harmful effects.

There are three notable points about these static discharges: the very high voltage of the source, the very short time involved (less than a microsecond), and the small, but still appreciable, amount of energy transferred.

This energy can affect electronic equipment through current flowing directly into circuits, or through radiation which induces 'noise' voltages in circuits. The discharged energy can be conducted to ground through various metallic paths, including input or output leads and power or ground wiring.

On a properly grounded metal surface, adverse effects will be minimized. However, contact with an ungrounded surface can cause serious problems, such as insulation breakdown, and the resulting inrush of current can cause failure in integrated circuits. If the energy is high enough, sensitive semiconductor junctions at the heart of the device may be destroyed.

Advancing technology and miniaturization in the semiconductor industry have resulted in MOS structures and small geometry devices that are quite susceptible to electrostatic discharge.

A direct path to ground may exist even if the insulation remains intact: for example, when connectors and terminations are exposed, or when someone plugs a printed circuit board or module into an equipment frame. Even if the discharged energy is low enough

Modern electronic equipment has a higher susceptibility to electrostatic discharges than earlier units. Bell-Northern Research outlines their continuing investigation of spark hazards.

not to cause physical damage to a device, it can still generate a 'false pulse' of noise on the ground connections. This could, for instance, garble the contents of an entire computer memory if the circuitry was not adequately protected.

The spark discharge can travel to ground through many different pathways, and may jump across insulated sections, and flow through equipment frames or along cables, tracks on printed circuit boards, power signal and ground lines, etc. Its route is almost unpredictable. For example, the path of the spark itself between a person's finger and a toggle switch depends on, among other things, the relative humidity and ionization of the air, the shape of the switch and the finger, the nature of the surfaces on each, and how fast the finger moves towards the switch.

The direct coupling problem can be solved by proper design practices, such as the complete grounding of all exposed metal surfaces, or the total electrical isolation of all areas for the man-equipment interface.

The radiation effect, however, is less well documented and is more likely to cause trouble for the unwary. The radiation, which is produced by an electrostatic discharge on the equipment itself or even on nearby objects, has both magnetic and electrical field components. The magnetic field induces transient voltages in low-impedance signal and supply line loops, while the electric field is coupled into circuits with high-impedance inputs.

PROTECTIVE MEASURES

The lessons learned so far have led to corrective measures which can be

implemented to meet the specific needs of the equipment under consideration.

The primary methods for fighting electromagnetic interference - such as shielding, grounding, bypassing and filtering - should be used for protection against transients. It may be necessary to provide additional insulation, to improve the grounding of sensitive circuits, to bypass the current using transient protection networks, or improve circuit layout to minimize magnetic or electric coupling.

We have formulated design rules for:

Selection and application of transient-suppressing devices (such as metal-oxide varistors and avalanche diodes)

Shelf and rack grounding and bonding requirements

Proximity of sensitive circuits to equipment structural members that are likely pathways for electrostatic discharge

The size of apertures in equipment enclosures which are near sensitive circuits

Insulation performance requirements for products with plastic enclosures or components.

As telecommunications systems use greater quantities of sensitive integrated circuits, it becomes more important to minimize the effects of electromagnetic interference. For overall electromagnetic compatibility, measures to prevent EMI and static discharge must be closely coordinated so that the measures applied for one do not negate those for the other. For example, an all-plastic enclosure precludes electrostatic discharge but offers no protection against radiated electromagnetic interference.

Must our Hobby

James D. Park VE7IW

I am not so much interested in attacking the article by Ted King, VE1PW, in the September 1978 edition (p.29, "Can you Justify Your Hobby?") as in encouraging Amateurs to take a broader look at the entire question.

Why not begin by examining the question posed, itself? Must our hobby be justified? How many hobbies carried on by Canadians are justified? Fishing, hunting, photography, astronomy, boating, collecting, drinking, gambling, wife-swapping, etc. A close look at almost any hobby shows at once that the activity itself is almost always carried out purely for the personal pleasure of the participant and very seldom can be 'justified' on the basis of its benefit to society as a whole.

It would be very difficult to justify the blowing apart of animals with high-speed projectiles, the burning of energy-rich fuels to push speedboats back and forth over lakes or racing cars over race tracks. Can you justify piloting your own aircraft for pleasure? All these things require scarce energy sources, money and space, plus government infrastructure for regulation and control. Surely the primary benefit in each case is to the participant, in the form of his enjoyment.

This is not to decry or discourage the highly laudable goal of being able to combine public service with private pleasure, but let's be sure we examine our hobby against the background of man's total activities! (Can you justify smoking? What are the benefits to society? Then why not prohibit it? How about the value of 'game shows' on TV?)

As to the balance of the article -- "I look at my FT-221 -- and wonder why anyone should be foolish enough to try

feb 79 - page 34

to re-invent the wheel. The answer is that no one should have to." That's precisely what a great number of Amateurs are doing these days. Looking at their two-metre rigs and then quietly turning them off and going out to the garden where they can still have some significant involvement. Sure, your first attempt at going on two metres with homebuilt gear, twenty years ago, was time and space consuming and required a considerable investment of thought and energy. What in the world was wrong with that? What in the world is wrong with doing a little thinking, working and experimentation, in this time of attempted 'instant gratification' of everybody's wishes? Wasn't the design and fabrication fun at the time? More fun than passing dollars over a counter for the latest product of a radio-engineer's mind and a Japanese technical-worker's fingers; a product that you only dare operate? My Radio Station Licence still has a Service Category of 'Amateur - Experimental'. How about yours?

Is the re-invention of the wheel any less pleasant for the second person who does it, or the tenth, or the hundredth? There are only so many truly original inventions and perhaps it is a little foolish to think we can each take part in making one. But what is wrong with repeating a little already-done experimentation in pursuit of a hobby? What is wrong with learning by doing? What is wrong with enjoying that most satisfying of human activities, creating -- whether it be an all-band, SSB-CW, solid-state rig, or a one-tube audio oscillator? How sad to hear Amateurs discussing whether they dare to attempt to replace the power amplifiers of their commercial rigs, with the same serious-

be justified?

ness with which we used to contemplate the experimental construction of a new transmitter.

Is there really some powerful reason why we should be striving for ultra-compact, ultra-reliable, ultra-expensive equipment in the average Amateur station?

The research and development of state-of-the-art electronics has long been out of the reach of the average Amateur. This is even truer with the current approach of -- Ph.D. -- Engineers -- Technologists -- Technicians team, assisted by computers. So what? Amateurs are not part of the military-motivated rush to mutual annihilation, or are we? Perhaps there is still something to be said for the enjoyment of learning to use some test equipment and old parts to create something with our own hands, eyes and minds, no matter what the degree of complexity.

Perhaps simple enjoyment is sufficient justification.

Perhaps the fact that we are not hurting anyone or anything, while amusing ourselves, is sufficient 'justification'.

I do not believe that Amateur experimentation as such holds much promise for contribution to society through technical discoveries. I do believe that Amateur experimentation holds great promise for contribution to society by the changes it makes in the personality of the experimenter. What price the learning of the joy in creativity, even if it does come about while 're-discovering the wheel'? How valuable the learning of patience, perseverance, development of imagination, learning of logical thinking and procedures, acquisition of manual dexterity, learning to innovate and be

flexible? Don't these traits once learned carry over into other aspects of life? What price simply having fun without polluting our environment or using up more than our share of the world's resources? Do you really think our main purpose in being alive on this earth and in pursuing a hobby is to exist as the cutting edge of a particular technology?

If you must ask, "Can you justify your hobby?" tell me how many hobbies consider the exchange of greetings and good will as the apex of their structure? In a world seemingly dedicated to the most efficient and modern means of locating and destroying our fellow man, with electronics playing a major part in the process; what price the radio contacts that Amateurs engage in daily around the world, with their fellow man, friendly in intent and without regard to their race, religion, or politics?

Beyond price? I should think so.

One of our few frail hopes to assist in the survival of the human race? Quite possibly.

Isn't it time we started getting the whole thing in perspective? Isn't it time once again to realize, also, that in a democracy the citizens are the government. Tyrants and bureaucrats over the centuries have had to be reminded of this single most important principle of our political system. We will be in real trouble, and so will our hobby, when we forget this.

Let's all take a look at what we are doing under the 'hobby' of Amateur Radio, and let's decide how much is being directly or indirectly dictated by commercial, military, or bureaucratic interests, and how much by our own desire to pursue a fascinating and often joyful interest in our own way.

Geraldine

Some days are more difficult than others. One of the most difficult days of my life was the day we went to the DOC office for Geraldine to take her Ham Radio licence test. As we walked in the door the Inspector informed me that dogs were not allowed in the office. Upon being informed that this was no common dog, her name was Geraldine and she was the applicant for the licence examination the Inspector just laughed.

To the casual observer I will admit that this would seem to be a rather ridiculous situation. It all started about a year ago. To provide a little background it should be clearly understood that Geraldine is NOT just a dog with fleas. She certainly has no fleas. And why should she? She sleeps right next to our bed in her own little crib. Well anyway, it is a converted TV shipping carton. To get back to the story -- about a year ago I noticed that Geraldine began to show an uncommon interest in my Amateur Radio CW (code) operations. As just about anyone will tell you, this is most unusual for a ten-year old boxer. During periods that I was on the air Geraldine would come in the "shack" and listen intently.

One day as an experiment I seated Geraldine in my captain's chair and I pushed her nose up to the keyer switch. With a little practice I found that by pressing into the switch handle she could "wiggle" some elementary CW characters with her nose. As everyone well knows, dogs do not talk. That is not to say that they do not understand what is said. For a long time I had suspected that Geraldine had an unusually keen understanding of words and simple statements. Over the years it had become

apparent that her vocabulary must be at least 200 words -- which is quite unusual for a dog.

By some inner dog-sense Geraldine knew that this was the method of communications that she could use to "talk" to me. At first she had to learn to control her nose to form the characters. This, in itself, was no mean task. We are quite accustomed to using our arms and hands with the jolly old opposing thumbs. Dogs are just not built that way. To shorten the story somewhat, Geraldine soon learned that she is a D-O-G (in code) and that I am a M-A-N. In about three weeks she had mastered the code to the point that she could send H-E-L-L-O I A-M-G-E-R-A-L-D-I-N-E A-N-D I A-M 1-0 Y-E-A-R-S O-L-D. For quite a while her "fist" was a bit doggie but with practice there was an improvement.

It seems that by some unspoken law that there is nothing without problems. My wife also had been learning the code in preparation for that August day when she also might be licenced. Now that Geraldine was learning the code this was the last straw. Of course I love my wife. No, I don't think more of that silly dog than I think of my wife. That's right -- the XYL just could not see the fascinating part of the situation. The better the dog became at the code the less interest my XYL had in getting her licence.

To make the situation somewhat worse -- upon coming home from the shop one day the XYL greeted me with an unusually dull "hello". She informed me that "my" prodigal was in the shack listening to some CW operators. Quietly tiptoeing into the shack I found Geraldine listening to a CW QSO. In a minute she

the Radio Op

moved up to the tuning knob and with her nose in the spinner hole she changed to another QSO. Actually, I could hardly blame her because the first QSO was real lid-stuff. At that moment she sensed my presence and she turned around and gave me her usual enthusiastic welcome. She even tried to bark in code but that did not work out too well. After jumping down from the chair she came over to me and nibbled on my ear. At this point about all I could do was point out to her that she really should turn off the receiver when she was done with it. Much to my amazement she jumped back up on the chair and very carefully turned the AC on-off switch off with her teeth.

At this point it must be readily admitted that I surely am a first-class nut. Quickly we found that we could "converse" with Geraldine by my whistling code to her and she could reply with the keyer and a code practice oscillator. To be sure it was rather difficult to make much sense of her conversation at first but I am sure that she had problems also.

In one of our longer conversations one day Geraldine told me that she wanted to operate the rig. That is what started the flap. Brother, if you think that you have problems teaching your wife enough code and theory to pass the test just try teaching a (pardon the term) dog. Geraldine had a great deal of difficulty in comprehending what skip is and the idea of current flow is still a bit fuzzy. But then, my nose isn't very keen for smelling. Really, the amazing thing is that Geraldine did learn. After working with the XYL to these many months this was a change.

After a period of intensive theory pounding Geraldine's code was becoming



very good. In fact, she is much better than most of the operators on 20-metres. The idea of a licence for Geraldine was, at last, beginning to become a practical reality to me. Perhaps there was a chance that Geraldine could get a Ham ticket. Now the training took on a more serious tone as this became truly the challenge of a lifetime. Most evenings were now spent working with Geraldine. We could hardly expect a dog of such unexpected talent to sleep in a mere TV cartoon so

I was able to find a nice second hand crib at the auction and now Geraldine has her own bed in the crib with a nice wool blanket.

The big discussion at the shop became about the best way for Geraldine to get her much coveted Ham licence. Some suggestions were good but somehow I could not really expect the Prime Minister to be of much assistance. Slowly but surely the plan evolved in my mind. I would make an appointment at the DOC office and then play it by ear.

After the Inspector had laughed himself hoarse I explained the situation to him. From the usual initial attitude of disbelief gradually the Inspector began to take an interest in our 'problem'. Not wishing to place himself or the Department in a position of discriminating against Geraldine, we began to discuss ways that she might pass the test. There was no discussion about Geraldine drawing schematic diagrams. We were able to effect a compromise in that her code speed would have to be solid for five minutes at 35 wpm. We agreed that the text that she would be sent would have simple questions for her to answer and that she should answer the questions at 35 wpm. Frankly I suspect that the Inspector did not believe that she could copy 35 wpm. Anyway, she did it in first-class shape. By this time all the Inspectors were supervising the operation with varying attitudes of belief.

During this trial Geraldine was holding up admirably. She always responded to a pat on the head with a nice liquid 'kiss' on my ear. Finally five o'clock came and something had to be done to wrap this matter up one way or the other. The Inspectors decided that they should confer in private for a few minutes. After considerable deliberation and some desk-pounding the Supervisor came in the room to tell us that Geraldine had passed and would be issued a licence. Needless to say, we were wild with happiness. Geraldine jumped up and down barking all the time. At that moment another Inspector came in the room to tell us that they could assign her call right now. One call that they had never been able to assign before could, at last, be used. Geraldine's call is VE7 DOG.

In truth, all of our lives have changed. Geraldine now eats at the table with us and if I am lucky I can squeeze in an operating period of an hour or so when the band is dead. I must admit that in more jaundiced moments I have wondered about the wisdom of the entire matter. In this manner our lives progressed for several months until one evening upon arriving home I heard my teleprinter running open. Sure enough as I went into Geraldine's shack (it used to be my shack) I saw her in front of the printer. In life there is no shortage of challenges. Is there, is there, is there

Handling Emergency Traffic

To report an aircraft or marine emergency contact the nearest Canadian Forces Search and Rescue unit. The procedure is to dial 'O' for operator and say "This is an emergency. Please connect me with the Search and Rescue unit at ... (your nearest one)." Such calls are paid for by the Canadian Forces. Make your information concise and accurate.

The SAR units and their telephone numbers are:

Vancouver (604) 732-4141
Victoria (604) 388-1543
Edmonton (403) 475-3611
Trenton (613) 392-2811 ext 3870
Halifax (902) 426-4730

feb 79 - page 38

If you become involved in traffic having to do with an international emergency such as an earthquake in a foreign country, the government contact point for traffic directed to or from it or concerning the welfare of Canadian citizens in the disaster area is the Department of External Affairs in Ottawa. A collect call to (613) 996-8885 should contact the Department's duty officer.

If your Amateur radio station is involved in the sort of traffic noted here you must accurately log the incident and report it to your nearest DOC office.

Swap * Shop

Single insertion is \$1.00 (minimum charge) for 10 words and \$1.00 for each additional 10 words. To renew, send copy and payment again. Deadline is first of month preceding publication.

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

Send to CARF, Inc., Box 356, Kingston, Ont. K7L 4W2.

FOR SALE: Heath HD-10 Keyer (Electronic) \$35; Vibroplex - Vibro-keyer \$40; Hickok Variable P.S. with manual: 0-40 VDC 1 Amp, 0-400 VDC 250 MA, \$100; Couvier P.S. 13.8 VDC 2 Amp \$35; Progress EDU-Kit (New) cost \$45, Sell \$30; Graymark AM Radio Kit (New) cost \$18, Sell \$12. Charles R. Kilgour VE3HPR, R.R. # 1 Grafton, Ont. K0K 2G0. Ph: (416) 349-2036.

WANTED: Collins 30S-1 for personal use. VE2 ATK, 7526 Mountbatten Rd., Montreal, Que. H4W 1J9.

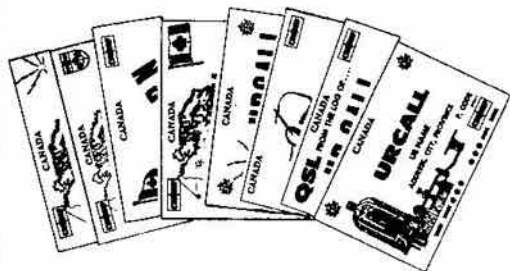
FOR SALE: KW2000B 160-10 metre CW/SSB xcvr with remote VFO and power supply. \$400. Dave Goodwin VE2DZE, 4 Victoria Place, Aylmer, Quebec J9H 2J3, 819-684-6173.

FOR SALE: FT-221, FT-301, FP-301. WANTED: SB-104A, HP-1144-a SB-604. May consider deal. D. Butcher VE1AAV, 287 Portland Street, Dartmouth, N.S. B2Y 1K3.

USE THE TCA
SWAP SHOP

"QSL'S SINCE 1965"

CANADIAN QSL'S



QSL CARDS WITH A DISTINCTIVE CANADIAN MOTIF, PRINTED IN 1, 2 OR 3 COLOURS ON 7 DIFFERENT STOCKS. CARF, ARRL, RSO, R5GB, ETC. LOGOS AT NO EXTRA COST. BE SURE TO SEE THE NEW ONE-SIDED QSL'S AND THE NEW WILDLIFE SERIES FEATURING SOME OF CANADA'S MAGNIFICENT BIRDS AND ANIMALS. CUSTOM QSL SERVICE ALSO AVAILABLE. SEND 25¢ FOR SAMPLE PACK TO:

CANADIAN QSL'S, BRUCE MCCOY - VE3GDZ
1128 BRYDGES ST., LONDON, ONTARIO, N5W 2B7

CANLON

MODEL	FUNCTION
144/28RC	2m to 10m receive converter
432/28RC	70cm to 10m receive converter
432/144RC	70cm to 2m receive converter
434/28RC	70cm to 10m receive converter
434/144RC	70cm to 2m receive converter
432 + 434/28	Dual band 70cm to 10m receive converter
432 + 434/144	Dual band 70cm to 2m receive converter
144PA10/40	10W input, 40W output linear amplifier
144PA10/40P	As above, but with internal receive pre-amplifier
144PRE AMP	2m receive pre-amplifier module
144PA2/45	2W input, 45W output 1m amplifier
144PA2/45P	As above, but with internal receive pre-amplifier
144/432VT	2m to 70cm varactor tripler
BUCCANEER	10m to 2m 15W linear transverter
COBRA	2m to 70cm 1m transverter
28/144 2SS	10m to 2m 2W linear transverter

- AVAILABLE -

DETAILED INFORMATION ON ANY OF THE ABOVE ITEMS



CANLON

ELECTRONICS (LONDON)

P.O. BOX 65
KOMOKA, ONT. N6L 1R0
(519)-471-8731

Advertiser's Directory

For the convenience of our readers we list those advertisers who appear in this issue. Our thanks to those businesses which have made this new look for TCA possible through their positive response to the efforts of our new advertising representative, Don Slater, VE3BID.

Heath Company.....Back Cover
 C.M. Peterson Co. Ltd...Inside Front
 Bytown Marine Ltd.....Inside Back
 Tim's Sales & Service2, 3
 Glenwood Trading Co. Ltd.4, 41
 Canadian Communications Co.....5
 VE Amateur Radio Sales6
 D.C.B. Electronics.....7

WSI Sales Company..... 8, 40, 43
 H. Peters..... 41
 Canlon Electronics.....39, 42
 Canadian QSL's..... 39
 Mapleaf QSL's..... 42
 Hamtraders..... 42
 Microwave Filter Company..... 43
 H.C. MacFarlane Electronics..... 45
 Comm/Plus..... 44

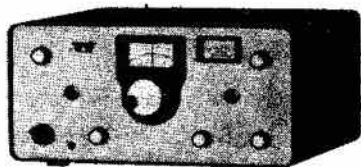
\$429.00 + \$8
 S&H

YOUR TEN-TEC HEADQUARTERS

IN STOCK FOR
 IMMEDIATE
 DELIVERY

CENTURY 21

A 70-watt, 5-band CW transceiver that combines excellent performance, reliability, simplicity of operation and low cost.



1978 US & DX CALLBOOKS NOW
 CLEARING @\$10 each +free ship!!
 WRITE FOR YOUR FREE WSI CATALOG
 ATT-DOUG WISMER VE3EHC

WSI SALES COMPANY

SWL RADIOS - HAM RADIOS - ACCESSORIES
 18 SHELDON AVENUE NORTH
 KITCHENER, ONTARIO N2H 3M2
 Telephone (519) 579-0536

FREE
CATALOG

**SEND
 TODAY!**

DRAKE
 TEN-TEC
 SWAN
 BARLOW
 WADLEYS
 MCKAY DYMEK
 24 HR CLOCK
 NYE KEYS
 GLOBES
 PALOMAR
 ENGINEERS

WSI SALES COMPANY
 SWL RADIOS - HAM RADIOS - ACCESSORIES
 18 SHELDON AVENUE NORTH
 KITCHENER, ONTARIO N2H 3M2

Attention-Doug Wismer VE3EHC

NAME- _____
 CALL- _____
 ADDRESS- _____
 TOWN _____ IGLOO _____
 POSTAL CODE- _____

DUAL RANGE 432-434MHz & 434-436MHz CONVERTER

TYPE: MMC432/28-S & MMC432/144-S



FEATURES

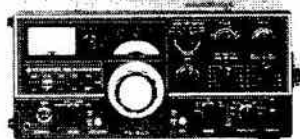
- ★ Extra Range (434-436 MHz) For Satellite Reception
- ★ Ultra Low-Noise First RF Amplifier Stage
- ★ Highly Stable Zener Diode Controlled Crystal Oscillator and Multiplier Stages.

H. Peters

Electronics Ltd.

Box 6286, Station 'A'
 Toronto, Ontario M5W 1P3
 (416)-423-9446 after 1700 EST

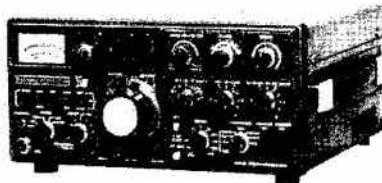
 **KENWOOD**



KENWOOD Transceiver TS-520S
160 thru 10M



KENWOOD FM/SSB
TS-700SP



KENWOOD Transceiver
TS-820S 160 thru 10M



KENWOOD
TL-922



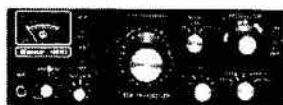
KENWOOD 2M FM
TR-7400A



KENWOOD 2M FM
TR-7600

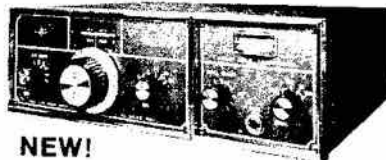
SWAN

SWAN 100MX
80 thru 10M
1 KC readout
built-in noise



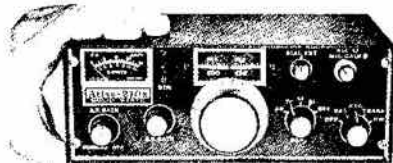
blanker and VOX

ATLAS



NEW!

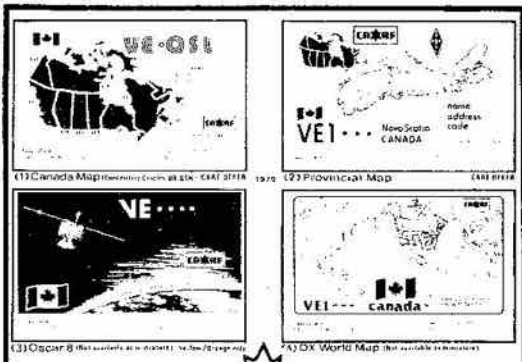
RX-110 Receiver
 TX-110-L Low Power transmit module.
 TX-100-H High Power transmit module



210X 80-10m solid state Xcvr

IN STOCK at GLENWOOD TRADING COMPANY LTD.

278 EAST 1st St., NORTH VANCOUVER, B.C. V7L 1B3



PRESENTING NEW QSL DESIGNS FOR
 RADIO AMATEURS. PRINTED ONE SIDE
 AND IN BLACK ON SPECIALLY SELECTED
 BACKGROUND COLOURS: Gold, Blue, Gray,
 Oscar 8, - - (in Yellow/Or. only.)

CARF Offer with membership number only
 Canada Map or Provincial Map .(1), (2) BLUE.
 • 250 cards, \$12.50 • 500 cards \$21.00

YOUR PHOTO, by your Rig, QSL!
 Send clear contrasting B and W
 print 3x5 (no polaroids) for appraisal
 with Mapleleaf's Screenprint Photo.
 For more information, sample QSL's
 and order form, send 25¢ in coin to:

Mapleleaf QSL's, RR 412-7, Rothesay, E0G 2W0, New Brunswick.

CANLON

UNIVERSAL RF SPEECH CLIPPER

Still unmatched after two highly successful years, the "Datong r.f. Clipper" is used the world over by serious DXers and professionals.

- ★ Comparable to a linear the Datong r.f. clipper introduces negligible distortion while raising your average radiated power. ★ Gives true r.f. clipping. Simply connects in series with microphone. ★ Works with virtually any make of transmitter. ★ Equally effective for FM and AM as well as SSB.

Also available

Fully aligned and tested P.C. Module, RFC/M.

FREQUENCY AGILE AUDIO FILTER

MODEL FL1

Fast becoming a classic, Model FL1 delights and amazes all who hear it in action. This unique product improves any receiver and is installed simply by connecting in series with the receiver's loudspeaker. It offers the following advanced features:

- ★ A notch filter which tunes itself for fully automatic removal of unwanted whistles in phone reception. With Model FL1 in circuit you can ignore tune-up whistles.
- ★ Fully variable bandwidth tailoring for enhancing phone reception in the presence of interference and sideband splatter.
- ★ Band pass filtering with fully variable centre frequency and bandwidth (1,000Hz to 25Hz) plus a.f.c., for the kind of CW reception which you would not have believed possible.

Free data sheets on any product are available on request.

CANLON

ELECTRONICS (LONDON)

P.O. Box 65
 Komoka, Ont. N0L 1R0
 (519)-471-8731

WE SELL SERVICE QUALITY SELLS ITSELF

SERVICE. FIRST AND FOREMOST. BEFORE AND AFTER THE SALE. COME INTO OUR SHOWROOM. THE FIRST THING WE DO IS PUT A CUP OF FRESH COFFEE IN YOUR HANDS. THEN YOU ARE FREE TO BROWSE THROUGH ONE OF THE LARGEST AMATEUR RADIO STORES IN CANADA. TRY OUT ANY PIECE OF EQUIPMENT YOU CARE TO . . . ON THE AIR IF YOU WISH (IF YOU HAVE A TICKET). AND YOU ARE ASSURED THAT WHATEVER YOU DECIDE TO PURCHASE AT HAMTRADERS IS NOT ONLY COVERED BY THE EQUIPMENT MANUFACTURER'S WARRANTY BUT IS BACKED BY OUR OWN WARRANTY. AND OUR WARRANTY IS BACKED BY ONE OF THE BEST EQUIPPED SERVICE DEPARTMENTS IN THE COUNTRY. SO WHY JUST BUY A RIG WHEN YOU CAN BUY SERVICE? ASK AROUND. OUR REPUTATION SPEAKS FOR ITSELF.



45 BRISBANE ROAD, UNIT 18, DOWNSVIEW, ONTARIO. (416-661-8800)

WE SERVICE WHAT WE SELL!

WRITE FOR YOUR FREE CATALOGUE TODAY

THE **BIG** SIGNAL
UNADILLA
"W2AU" Baluns

DEMANDED BY
PROFESSIONALS
WORLD-WIDE
OVER 12 YEARS

- The Original Lightning Arrest
- 650# Strength
- Stainless Hardware
- Sealed
- GUARANTEED



FULL-POWER, QUALITY
HAM ANTENNA PARTS

AT YOUR DEALER

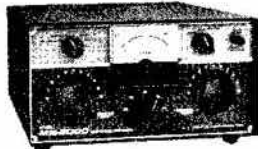
- BALUNS - TRAPS - INSULATORS
- QUAD PARTS - ANTENNA KITS
- BOOM/MAST MOUNTS - WIRE
- CABLE - CONNECTORS

WRITE FOR FULL CATALOG
[Enclose 30¢ Stamps]

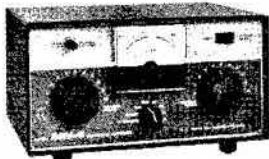
MICROWAVE UNADILLA/REYCO DIVISION [Dept. C]
FILTER COMPANY INC.
6743 KINNE STREET EAST SYRACUSE NEW YORK 13017

DEALERS WANTED - OVER 300 WORLD-WIDE

IN
STOCK!!



MN-2000 (Model No. 1509)



MN-4 (Model No. 1507)

MN-4 @\$169.00 +

\$5 S&H +7% OST on
\$174.00

in stock!

**Drake
MN-4 & MN-2000
Matching Networks**



MN-2000 @\$329.00

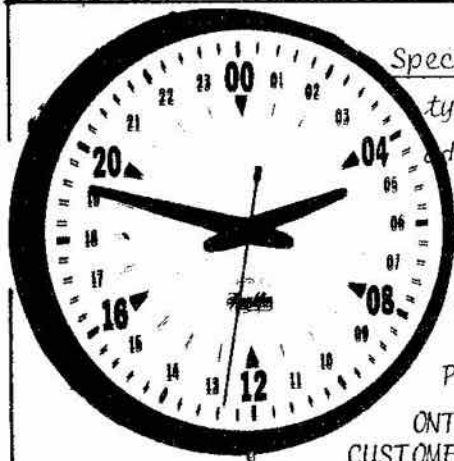
+\$6 S&H +7% OST

on \$335.00

- Integral Wattmeter reads forward power in watts and VSWR directly; can be calibrated to read reflected power • Matches 50 ohm transmitter output to coax antenna feedline with VSWR of at least 5:1 • Covers ham bands 80 thru 10 meters • Switches in or out with front panel switch • Size: 5 1/2" H, 10 3/4" W, 8" D (14.0 x 27.3 x 20.3 cm), MN-2000, 14 3/8" D (36.5 cm).
- Continuous Duty Output: MN-4, 200 watts; MN-2000, 1000 watts (2000 watts PEP) • MN-2000 only: Up to 3 antenna connectors selected by front panel switch.

W S I SALES COMPANY

SWL RADIOS - HAM RADIOS - ACCESSORIES
18 SHELDON AVENUE NORTH
KITCHENER, ONTARIO N2H 3M2
Telephone (519) 579-0536



Specifications-14" o.d.--quiet--accurate---
typically plus or minus 30 seconds per 6 mo.
adjustable time from the front--white face--
plastic lens-----attractive chocolate
brown rim that blends in with most ham
shack wall panelling---in use one year at
VE3EHC with no problems-----made in USA
PRICE-\$47.00 +\$3 S&H(double boxed)

ONTARIO

CUSTOMERS ADD
7% ON \$50

14" SUPER CLOCK by Franklin
IN STOCK IN LARGE QUANTITIES

W S I SALES COMPANY

SWL RADIOS - HAM RADIOS - ACCESSORIES
18 SHELDON AVENUE NORTH
KITCHENER, ONTARIO N2H 3M2
Telephone (519) 579-0536

COMM/PLUS

Division of 86235 Canada Ltd.,
3680 Côte Vertu,
St. Laurent, Quebec. H4R 1P8
1-514-337-7255



SERVING AMATEURS EVERYWHERE



YAESU

FT-301 & FP-301 Pwr Supply	\$1325.00
FT-7 & FP-4 Pwr Supply	\$ 835.00
FT-227R with AED Scanner	\$ 595.00
FT-202R 2M Hand Held	\$ 279.00

ALL PARTS & ACCESSORIES AT BEST PRICES

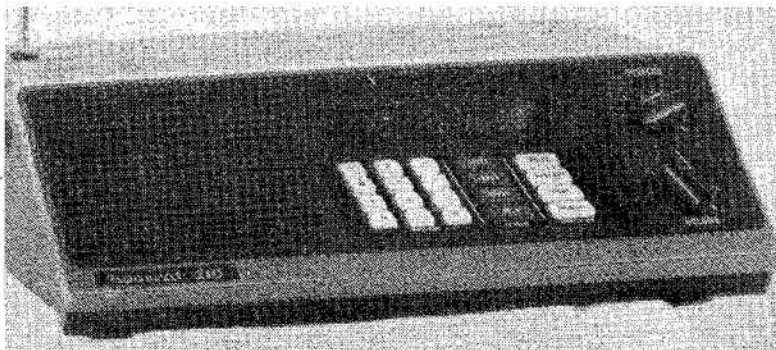
CUSHCRAFT

A147-4	— 2 mtr, 4 element 9.0 DB	\$ 29.95
A147-11	— 2 mtr, 11 element 11.3 DB	\$ 44.95
ARV-2	— Ringo Ranger 6.0 DB	\$ 49.95
ATB-34	— Tribander 7.5 DB	\$319.95
ATV-3	— 10/15/20 Vertical	\$ 69.95
ATV-4	— 10-40 Vertical	\$119.95
ATV-5	— 10-80 Vertical	\$149.95
A144-10T	— Oscar Twist 2 mtr	\$ 54.95
A432-20T	— Oscar Twist 432 MHZ	\$ 69.95

TELE-TOW'R	— SELF SUPPORTING/BREAKOVER 55'	\$725.00
CDE HAM III	— ROTOR, 10 sq. ft. rated	\$199.95
COVERCRAFT	— VINYL DUST COVERS FOR ALL RIGS.	\$ 6.95
C.E.S. TT. MIC	— 230A, TACTILE PAD, CARRIER HOLD.	\$ 64.95

HAMTRONICS/NYE VIKING/BARKER & WILLIAMSON
A.R.R.L. PUBLICATIONS/C.A.R.F. PUBLICATIONS/SHURE
LARSEN KULROD/A.E.D. ELECTRONICS/MICROWAVE FILTER

Bearcat 210 -
\$389
Bearcat 250 -
\$569



PROGRAMMABLE SCANNERS

Bearcat[®] 210 Features

- **Crystal-less**—Without ever buying a crystal you can select from all local frequencies by simply pushing a few buttons.
- **Decimal Display**—See frequency and channel number—no guessing who's on the air.
- **5-Band Coverage**—Includes Low, High, UHF and UHF "T" public service bands, the 2-meter amateur (Ham) band, plus other UHF frequencies.
- **Deluxe Keyboard**—Makes frequency selection as easy as using a push-button phone. Lets you enter and change frequencies easily . . . try everything there is to hear.
- **Patented Track Tuning**—Receive frequencies across the full band without adjustment. Circuitry is automatically aligned to each frequency monitored.

- **Simple Programming**—Simply punch in on the keyboard the frequency you wish to monitor.
- **Space Age Circuitry**—Custom integrated circuits . . . a Bearcat tradition.
- **UL Listed/FCC Certified**—Assures quality design and manufacture.
- **Rolling Zeros**—This Bearcat exclusive tells you which channels your scanner is monitoring.
- **Tone By-Pass**—Scanning is not interrupted by mobile telephone tone signal.
- **3-Inch Speaker**—Front mounted speaker for more sound with less distortion.
- **Squelch**—Allows user to effectively block out unwanted noise.
- **AC/DC**—Operates at home or in the car.



Bearcat[®] 250 Features:

ALL THE FEATURES OF THE Bearcat[®] 210
PLUS

- **Non-Volatile Memory**—No batteries required to retain memory, even when unit is unplugged.
- **Auxiliary**—On/Off control of auxiliary equipment (tape deck, alarm, lights) when transmissions occur on programmed channels
- **Speed**—Choice of either 5 or 15 channels per second scan speed for closer monitoring of desired frequencies.
- **Limit**—Sets upper and lower frequencies of search range.

- **50 Channels/5 banks**—Program 50 frequencies from infinite frequency combinations. Designate certain banks for specific types, i.e., 1-10 Police, 11-20 Fire, 21-30 Emergency, etc.
- **Search/Store**—"Hands-off" automatic search operation that locates and "remembers" active frequencies.
- **Search/Recall**—Used in conjunction with search, displays frequencies found in search/store sequence.
- **Priority**—Samples programmed priority frequency on channel 1 every 2 seconds regardless of other scanner operations—important for professionals who must monitor certain frequency.
- **Time**—Brilliant digital LED clock—hours, minutes and seconds.
- **Count**—Automatically counts number of transmissions on each channel to determine most active frequencies.

Also in Stock - Mosley, Cushcraft antennas,
CDE Rotors, Delhi Towers

H.C. MacFarlane Electronics LTD. RR No. 2 Battersea, Ont.
Phone (613) 353-2800
VE3BPM

CARF

Publications:

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

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

OFFICERS

President	VE3NR	Bill Wilson
Imm. Past Pres.	VE2DNM	John M. Henry
Vice-President	VE2NM	Fred Towner
Secretary	VE3FVO	Joan Powell
Treasurer	VE3NB	Bernie Burdsall
General Manager	VE3AHU	Art Blick

BOARD OF DIRECTORS

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

- VE7BBQ Peter Driessen, 1946 York Ave., Apt. 203, Vancouver, B.C. V6J 1E3. 604-732-3298.
VE6VF Stella Broughton, Ellersleid, RR3 South Edmonton, Alta.
VE6HO Jim McKenna, Box 703, Ft. McLeod, Alta. T0L 0Z0.
VE5YY Martha Pankratz, 1212 Temperance St., Saskatoon, Sask. S7N 0N9.
VE3GCP Fred Robinson, 126 West 19th St., Hamilton, Ont. L9C 4H6.
VE2RA Gene Lajoie, RR 2 Perkins, Que. J0X 2R0.
VO1NP Nate Penney, Box 10, Shoal Harbor, Nfld. A0C 2L0.
VE2PY Bob Rocleau, 1050 Churchill, Mount Royal, P.Q. H3R 3B6.

* Canadian Amateur Radio Regulations Handbook - up-to-date interpretation of Canadian Amateur Radio Regulations written in language you can understand, plus more useful information concerning the operation of a station in the Canadian Amateur Experimental Service.

* The Canadian Amateur Certificate Study Guide - contains the technical and operating information necessary to successfully pass the latest DOC Amateur examinations.

* If you Club is running classes, the new Instructors Package is now available to go along with the Canadian Amateur Certificate Study Guide. Lesson plans, hints on teaching Morse, large diagrams suitable for making overhead transparencies or slides, typical exam questions, and more ... all compiled by professional electronics teachers. Only \$2.50!

A 35 mm slide package with diagrams is also available for \$5.00!

* Advanced Certificate Study Guide - the companion to the original Study Guide for passing the latest DOC Advanced Amateur examinations

* COMING SOON! The Canadian Amateur Operator's Handbook ... Information on Operating, Bands, DX, Contests, Message Handling, QSLs, Specialized Operating, Technical Data, Repeaters, and much more!

Logo Stickers

New CARF Logo Adhesive Labels are now available from CARF, Box 356, Kingston, Ont. K7L 4W2. Two sizes are available: 6 x 2 1/2 and 3 x 1 1/4. Both sizes are 35¢ each or 4/\$1.00.

Name Badges

Hot stamped foil logo in vivid Royal Blue on a White background with your name and call in contrasting Black. Size: 3" by 1 1/2".

Infosection

CANADAWARD

The Canadian Amateur Radio Federation Inc. is pleased to announce the following awards available to all Radio Amateurs, worldwide.

CANADAWARD -- A colourful certificate will be issued to any Amateur who confirms two-way QSO's with all Canadian Provinces and Territories. All Separate awards are issued for each band on which the applicant qualifies. (12 cards per band - see list below) A Mode endorsement is available if all QSO's are made on the same mode (CW, SSB, RTTY, SSTV). Contacts made after 1 July 1977 only will count for this award. Submit the 12 cards with One Dollar (\$1.00) Canadian or US funds or 10 IRC's plus sufficient funds for return postage. CARF members need send only funds for return postage.

5 Band CANADAWARD -- A special plaque will be issued to any Amateur who confirms two-way QSO's with all Canadian Provinces and Territories on each of five separate bands. (total of 60 cards - 12 cards per band - see list below) Contacts made after 1 July 1977 only will count for this award. Submit the 60 cards with Seven Dollars (\$7.00) Canadian or US funds or 70 IRC's plus sufficient funds for return postage. All CARF awards are FREE to CARF members. CARF members need send only

funds for return postage.

6 Band CANADAWARD, 7 Band CANADAWARD, etc. -- Special endorsements to the basic 5 Band CANADAWARD will be issued to any Amateur who confirms two-way QSO's with all Canadian Provinces and Territories on more than 5 Bands. Submit the additional cards with sufficient funds for return postage.

LIST OF CANADIAN PROVINCES AND TERRITORIES

VO1/VO2 Newfoundland/Labrador

VE1 Prince Edward Island

VE1 Nova Scotia

VE1 New Brunswick

VE2 Quebec

VE3 Ontario

VE4 Manitoba

VE5 Saskatchewan

VE6 Alberta

VE7 British Columbia

VY1 Yukon Territory

VE8 Northwest Territories

NOTE -- VO2, Labrador, is part of the Province of Newfoundland and counts for Newfoundland.

All Amateur bands may be used. Each distinct satellite mode (432in/144out, 144in/29out, 144in/432out, etc.) will count as a separate band.

Mail all applications for the CANADAWARDS to: P.O.Box 76752, Vancouver, B.C., Canada, V5R 5S7.

Free QSL Service

1. Sort QSLs by prefix and stack face up in a single stack.
2. Keep weight of one parcel under one pound. Parcel carefully and seal securely.
3. Put your name, call, etc. in upper left corner
4. Put your CARF membership no. in lower left corner.
5. Send to CARF QSL Services, P.O. Box 66, Islington, Ont. M9A 4X1.
6. Do NOT register parcel. This causes delay.
7. Check with Post Office for requirements if sending by Third Class Mail
8. If receipt required, enclose SASE with cards.

These lists are the official ITU lists. No changes are made unless and until official notice is received by CARF from DOC that the ITU has so officially notified the Department.

BANNED COUNTRIES LIST

Iraq, Khmer Republic**, Libya, Pakistan, Somalia, Turkey, Viet-Nam*, Peoples Democratic Republic of Yemen.

*-Stations XV5AA, XV5AB and XV5AC were authorized to exchange communications with Amateurs of other countries by the former Saigon regime.

**-Station XU1AA has been authorized to exchange communications with Amateurs of other countries.

THIRD PARTY TRAFFIC AGREEMENTS

Bolivia, Chile, Columbia, Costa Rica, Dominican Republic, Guyana, Honduras, El Salvador, Israel, Nicaragua, Peru, Trinidad, Tobago, U.S.A. (Territories and Possessions), Guatemala, Uruguay, Venezuela.

RECIPROCAL LICENCING AGREEMENTS

Belgium, Brazil, Columbia, Dominica, Dominican Republic, France Ecuador, Federal Republic of Germany, Guatemala, Israel, Peru, Luxemburg, Netherlands, Norway, Nicaragua, Poland, Portugal, Republic of Panama, Senegal, Switzerland, U.S.A., Uruguay, Venezuela, Denmark, Iceland and Finland.

Note: all Commonwealth countries are eligible for reciprocal operating privileges to Canadian Amateurs.



Order Form

Please send Certificate, The Canadian Amateur, with free QSL service, as a CARF:

Full Voting Member *

\$7-yr. \$30./ 5 yrs.

Family Membership

\$1- yr. extra per person

\$15- for LIFE

Associate Member

\$7-yr. \$30./ 5 yrs.

(Foreign Call Sign Holders and non-licensed supporters)

Life Member

(FULL or ASSOCIATE)

\$100-

CHECK QUANTITY REQUIRED:

CANADIAN AMATEUR CERTIFICATE STUDY GUIDE

\$5-

CANADIAN AMATEUR RADIO REGULATIONS HANDBOOK

\$4-

ADVANCED AMATEUR CERTIFICATE STUDY GUIDE

\$4-

THE CANADIAN AMATEUR OPERATOR'S HANDBOOK

\$5-

INSTRUCTOR'S PACKAGE

\$2-50

INSTRUCTORS 35mm Slides

\$5-

CARF LOGOS (6"x2 1/2") adhesive sticker window decal 4/\$1-

CARF NAME BADGE

\$2-50

(Ontario adds 7% sales tax)

Print name and call desired

MONEY ORDER or CHEQUE TOTAL

*

IF RENEWING MEMBERSHIP NO IS:

MY CALL _____ FAMILY CALL(S) _____

NAME _____

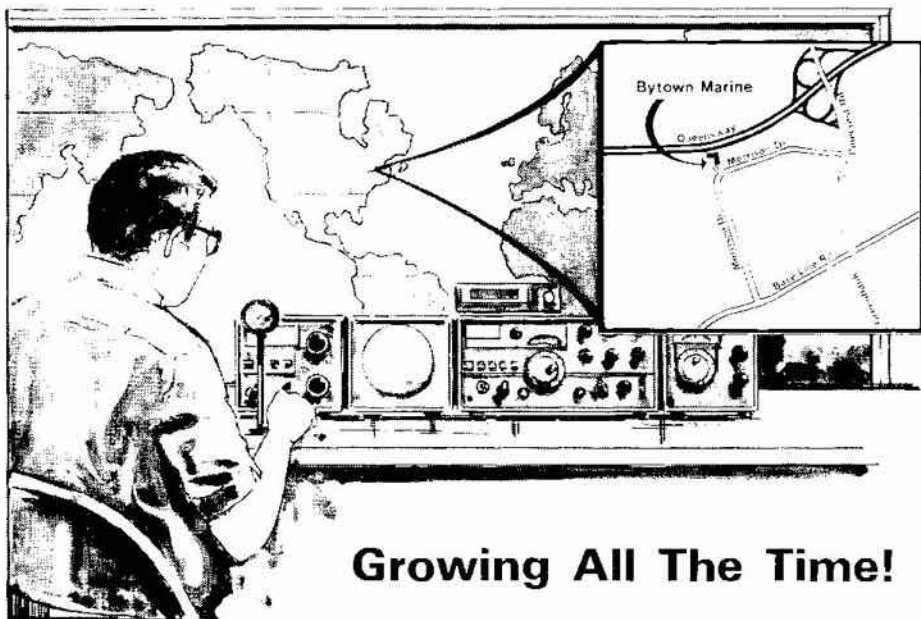
ADDRESS _____

POSTAL CODE _____ DATE _____

Canadian Amateur Radio Federation Inc.

P.O. BOX 356, KINGSTON, ONTARIO, CANADA K7L 4W2

Ottawa's Newest Ham Store . . .



Growing All The Time!

MANUFACTURERS

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

PRODUCTS

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



LEISURE TIME COMMUNICATIONS
SPECIALISTS AMATEUR • CB • MARINE

1140 MORRISON DRIVE, OTTAWA, ONT.

TELEPHONE 513-820-6910



The HEATHKIT SB-104A

good enough to measure up...to you!

In choosing the SB-104A you join a pretty select fraternity of fellow Amateurs. They're individuals whose imaginations were fired by the looks, feel, and reputation for outstanding performance that, since its inception, has become the trademark of Heath's entire line of famous SB series Amateur equipment.

You've joined a group of people who want state-of-the-art perfection, still insist on building their own to insure handcrafted quality, prefer to do their own maintenance and service, and above all want a rig that's good enough to measure up to their abilities, standards, and the reputations they've built for themselves.

Heath's SB-104A, it's the only choice when you're ready for a transceiver that's good enough to measure up....to you!

**Heath Amateur Radio Gear....
....the quality that measures up!**

FREE Heathkit Catalog

Catalogues also available at our 6 Heathkit Electronic Centres located in Montreal, Ottawa, Mississauga, Winnipeg, Edmonton and Vancouver, where Heathkit products are displayed, sold and serviced.



HEATH
Schlumberger

HEATH COMPANY
Dept. 1178
1480 Dundas St. E.
Mississauga, Ont. L4X 2R7

Gentlemen, please send me my free Heathkit Catalog
I am not on your mailing list.

AM-372A

Name _____

Address _____

City _____ Prov. _____

Prices and specifications subject to change without notice. Code _____