Second Class Mail Registration
Number 5073

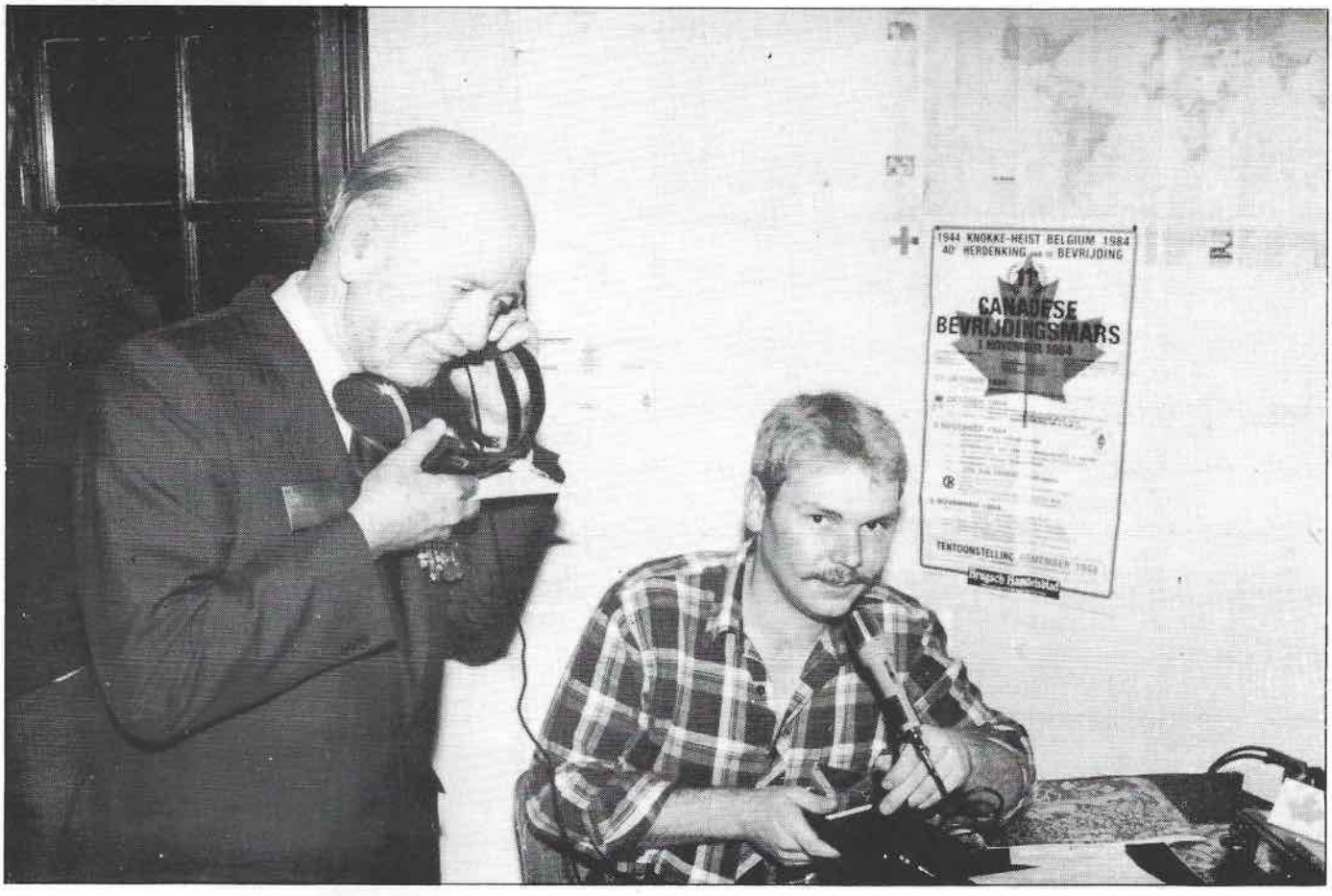
TCA

MAY 1985

The Canadian Amateur Radio Magazine

La Revue des Radio Amateurs Canadiens

The Canadian Liberation March



The Hon. Alan McKinnon, leader of the delegation of Canadian veterans, listens in as Chuck Cwikowski VE3MNQ, at the mike of ON4CLM, calls home. *Story page 31.*

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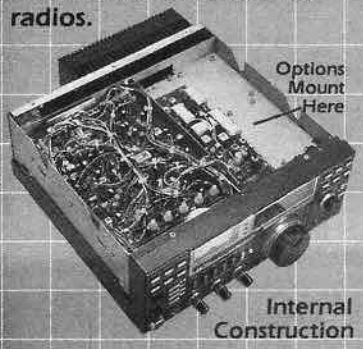

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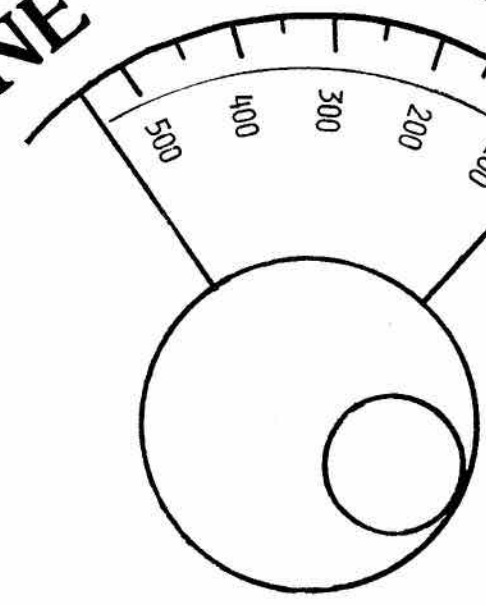

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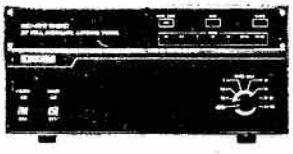

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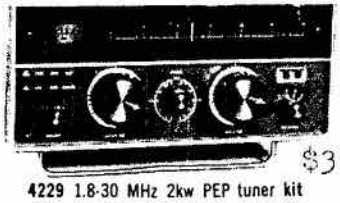

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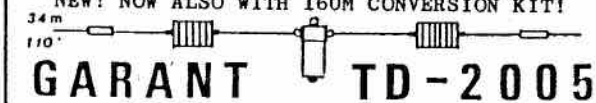

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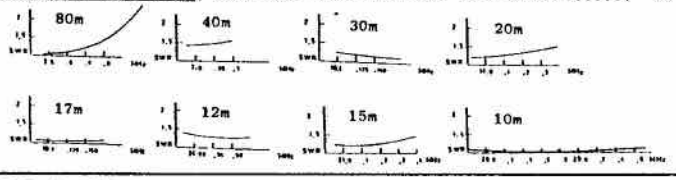

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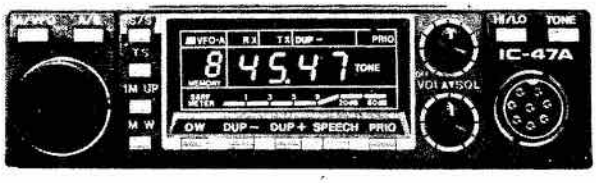

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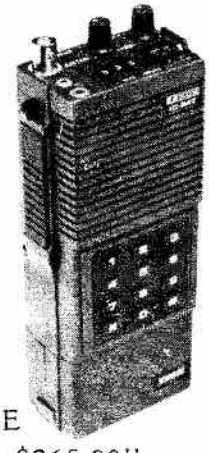

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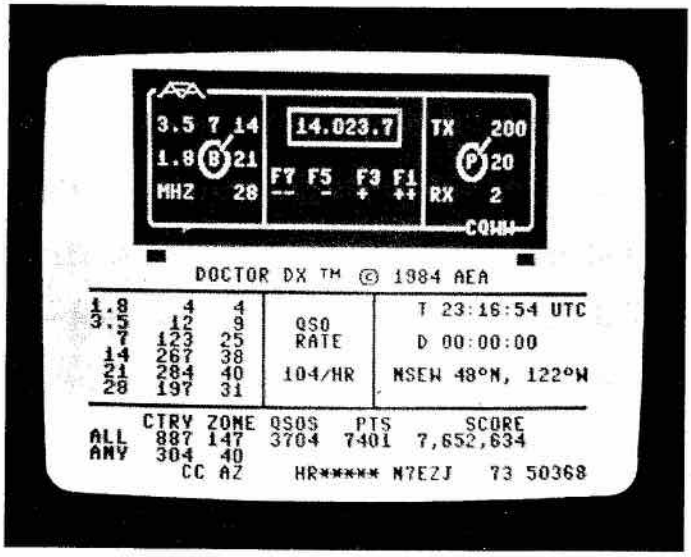

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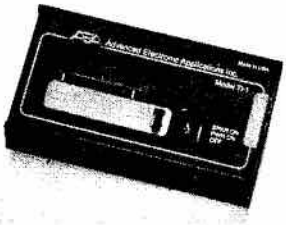

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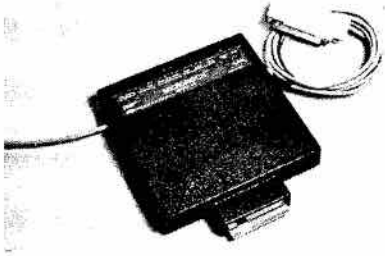

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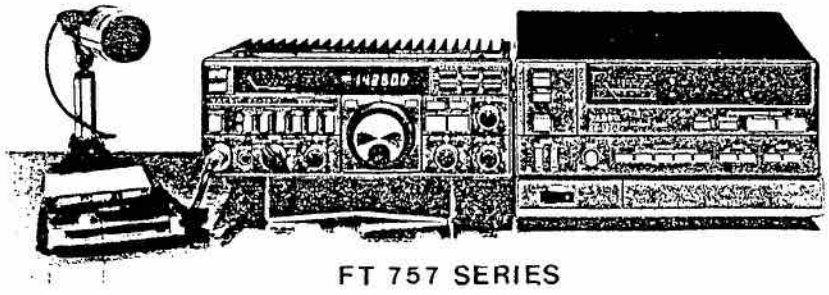
PA-3	DC/DC Car Adapter/Trickle Charger
MMH-21	Mobile Hanger Bracket
NC-15	Quick Charger/DC Adapter
FNB-4	12V, 500 mAh NI-Cd pack
CSC-11	Soft Case for FT-209R/RH w/FNB-4



FT 757 SERIES

CROSS NEEDLE METER DAIWA

YAESU

B&W BARKER & WILLIAMSON

MIRAGE

TELEX hy-gain

Hansen

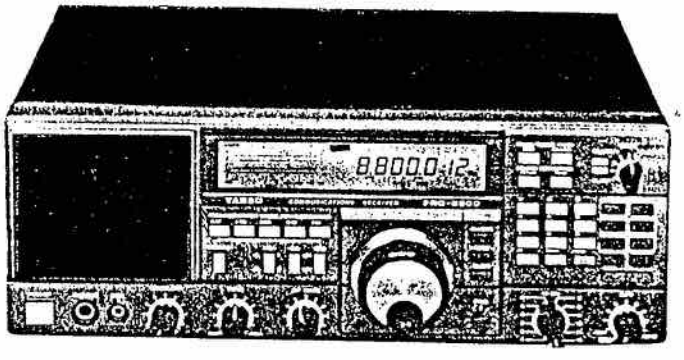
AMIDON Associates

DRAKE

NyeViking

FRG 8800

GENERAL COVERAGE



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TELEPHONE (416) 844-4505
TELEX: 06 982348

INTRODUCTION

Since it's incorporation in 1973, LESMITH has been known for it's extensive knowledge of crystal requirements for amateur, commercial, and military equipment. We maintain data on old and new models, and are willing to work with you on any requirements, commercial or experimental.

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

HOW TO ORDER

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

QTY	XTAL FREQ.	T/R	CARRIER	Make & Model Additional data
1		T	146.340	INOUE IC22
1		R	146.940	11
3		T	157.845	GE ROYAL EXEC
3		R	152.585	11

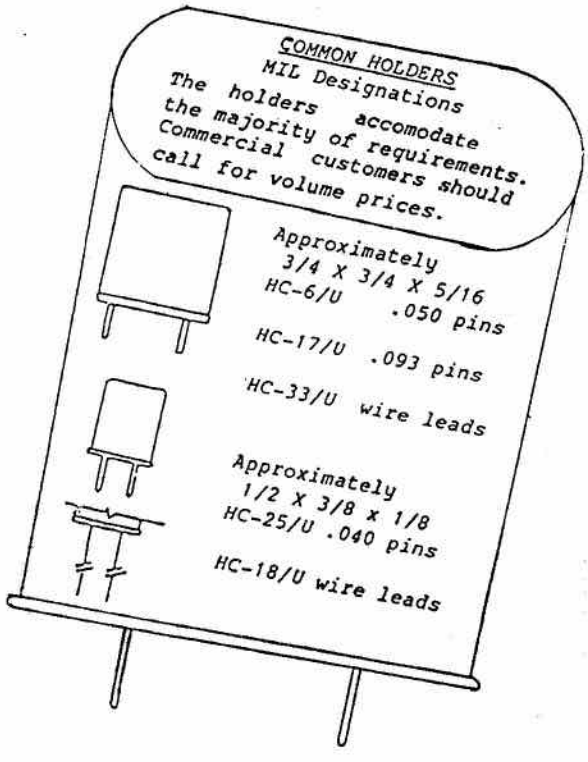
PRICING

If the pricing is obvious, total the amount, add $1.00 for First Class mail, and send in your money order, or cheque, with the order. If there is any doubt about the formula and or price, send in the order without the money. We will price the order and inform you by return mail. In the meantime, your order will be processed and shipped on receipt of your payment.

In the example, the amateur band crystals are $8.25 each and the custom or commercial crystals are $9.85 each. The total is $75.60 plus $1.00 = $76.60. Ontario residents add 7% sales tax.

1985 PRICES

	HC6/U	HC25/U
AMATEUR		
Amateur bands	8.25	8.25
CUSTOM		
6 - 55 MHz	9.85	9.85
5 - 5.9	10.90	13.50
4 - 4.9	12.00	17.50
3 - 3.9	13.15	17.50
Below 3 MHz	17.50	-
55 - 100 (fifth)	13.50	13.50
MODULES		
Mocom 70	25.80	
Mocom 35	22.70	
REWORK MODULES to new frequency		
General	20.65	
Hybrids	35.50	
MT500 MX300		



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Trylon ABC Towers

Whenever the application calls for lightweight, high-performance towering, the answer's as easy as ABC . . .

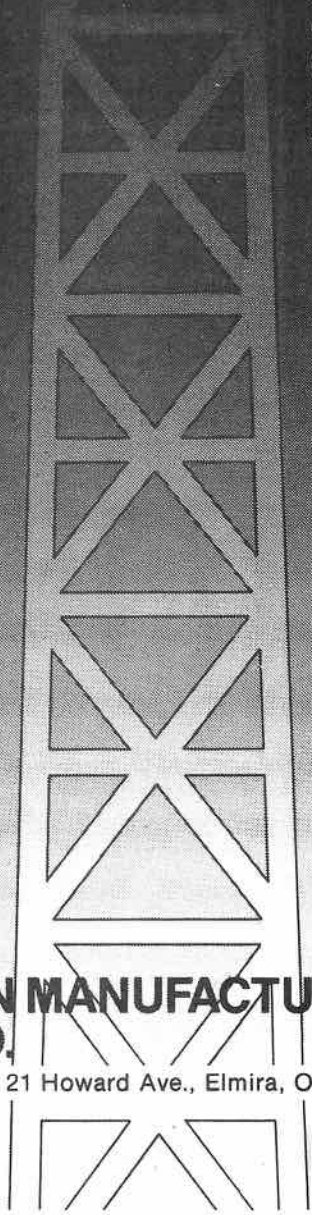
TRYLON ABC Towers have been proven effective for a wide range of lighting, navigational and broadcast applications. Clean, uncluttered lines and rugged all-steel construction make ABC the multi-purpose tower of choice for hobbyist and pro alike.

TRYLON ABC Towers are designed to make life easier. They're easy to transport, easy to assemble, easy to erect – and easy to look at once they're up. Best of all, they're easy on the pocketbook.

TRYLON ABC Towers come ready-to-use in convenient 8' modular sections for fast assembly and erection – and they're virtually maintenance free.

TRYLON ABC Towers. A single line for a lot of markets.

Call or write today for product, performance and pricing.



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TS-830S Transceiver	$1279.00
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TR-9130 2 mtr. all mode mobile	$719.00
TR-780S VHF/UHF all mode	$1389.00
TW-4000 VHF/UHF mobile	$849.00
TM 201A compact 2M mobile	$469.00
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R-1000 SWR RX and clock	$699.00
R-2000 Deluxe SWR RX	$849.00
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TL922A 10-160M linear	$1489.00
SM220 monitor scope	$559.00
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MC-60A Deluxe desk mike	$116.00
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Larsen 5/8 whip & Coil c/w mag mount $59.50

MFJ RTTY / ASCII / CW COMPUTER INTERFACE

Lets you send and receive computerized RTTY/ASCII/CW. Copies all shifts and all speeds. Copies on both mark and space. Sharp 8 Pole active filter for 170 Hz shift and CW. Plugs between your rig and VIC-20, Apple, TRS-80C, Atari, TI-99, Commodore 64 or most other personal computers. Uses Kantronics software and most other RTTY/CW software. $155.00

Vic 20
Commodore 64

FREE SOFTWARE!

MFJ-401 Econo keyer 11	$89.00
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MFJ-482 Keyer c/w memory	$159.00
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MFJ-949B Super deluxe tuner	$219.00
MFJ-962 1.5KW versa tuner	$339.00
MFJ 1229 Interface	$295.00
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BY-1 black base	$69.00
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HUSTLER

M0-2 or M0-1 whip	$50.00
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RM-20S super resonator	$46.50
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RM-75S super resonator	$83.50
RM-80S super resonator	$83.50

YAESU

FT-77 HF transceiver	$769.00
FT-757GX HF & RX	$1039.00
FT-726 all mode 2 mtr.	$1129.00
FT-209R 2 mtr. H.Held	$389.00

SPRING SPECIALS

Mosley H.F. Mobile antenna c/w 80,40&20 mtr. resonators	$169.00
Bearcat #210 programable scanner Regular $589.00	special $389.00
PT-1000LP low pass filter	$37.50
Telex C-610 headphones	$23.50
Opto-7000 10 hertz - 600MHZ frequency counter	$199.00
Luxor 9540 deluxe satellite receiver with downconverter etc.	$1089.00
Yaesu FT-707 HF mobile with WARC bands (new set warranty)	$779.00
Yaesu FT-902DM	$995.00
FV 902 Scanning VFO	$295.00
IC22A	$165.00
Yaesu FT-77 HF mobile as new c/w new set warranty (used)	$669.00
Kenwood TS-520 HF base AC/DC c/w remote VFO (used)	$550.00
Kenwood TR-75000 2 mtr. 200 channel synthesized(used)	$225.00
Kenwood TR-7400 2 mtr. 800 channel synthesized(used)	$275.00
Realistic DX-302 Quartz synthesized SWL receiver(used)	$489.00
Realistic DX 160 Communications Receiver	$175.00
BC-221 Frequency meter with calibration charts etc	$98.50

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DELHI Medium, Heavy Duty Ham Towers

DMX-HD-32 $395.00
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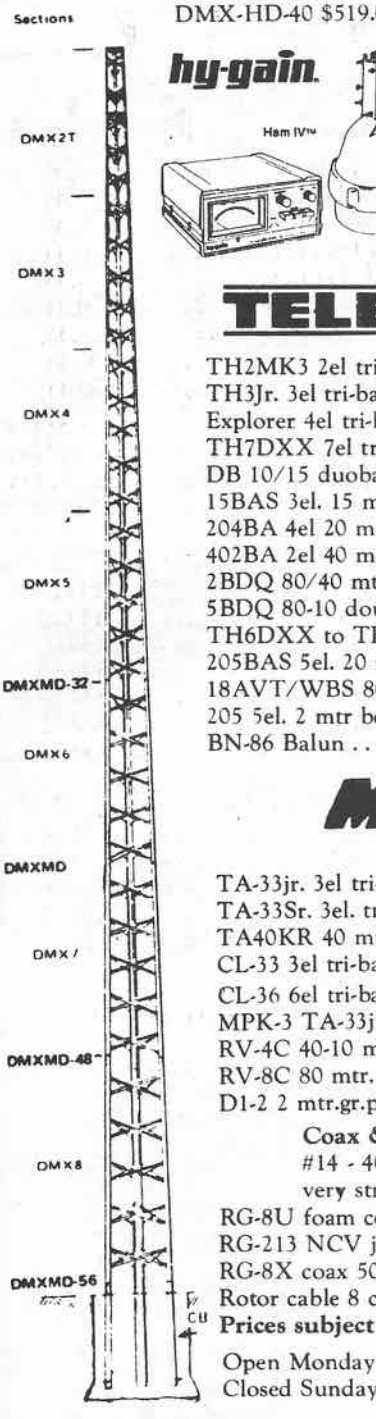

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CD-45 11 $209.00
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TH2MK3 2el tri-band	$295.00
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Explorer 4el tri-band sale	$459.00
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DB 10/15 duobander	$399.00
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BN-86 Balun	$35.00

Mosley

TA-33jr. 3el tri-band	$319.00
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CL-33 3el tri-band	$489.00
CL-36 6el tri-band	$589.00
MPK-3 TA-33jr.conv.kit	$139.00
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RV-8C 80 mtr. conv	$79.00
D1-2 2 mtr.gr.plane	$59.00

Coax & Antenna Wire...
#14 - 40% copperweld antenna wire, very strong, 11¢ per ft.

RG-8U foam coax cable	75¢ft.
RG-213 NCV jacket 50 ohm	75¢ ft.
RG-8X coax 50 ohm	25¢ ft.
Rotor cable 8 cond.	45¢ ft.

Prices subject to change

Open Monday to Saturday 7:30 a.m. to 9 p.m.
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A3 3el Tri-band	$449.00
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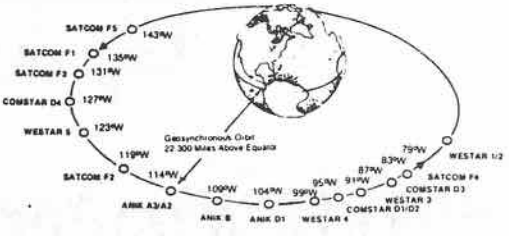
AV5 10-80mtr. vertical	$189.00
FM ANTENNAS	
ARX-2B Ringo 2 mtr.	$79.00
A147-4 4el beam	$59.00
A147-11 11 el beam	$95.00
A-147-22 22 el beam	$269.00
A-147.20T twist	$159.00
AFM-4D "four pole"	$159.00
BOOMERS	
214FB 145.5-148	$169.00
214B 144-146 MHz	$169.00
32-19 deluxe 16.2DB	$219.00

B&W

370-1 all band traps	$58.50
370-15 folded dipole c/w WARC Reg. $269.00	$179.00
573 3 pos switch	$37.50
575 5 pos switch axial connectors	$42.00
576 5 pos switch radial connectors	$42.00
595 6 pos swich deluxe	$49.00
Deluxe all band trap antenna c/w balun etc.	$109.00
Super 40 mtr. quad loop c/w 1/4wave stub etc	$59.00

TUNE INTO THE WORLD OF SATELLITE TV



Complete Package from $1995.00
Receivers-Luxor, Sat-Tec, Astron, Toki, Satellite America, Anderson Scientific Chaparral Polorators, M/A Com L N A's Spun Alum dishes, Coax etc...

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PHONE: (604) 298-4720

What you DO get is one compact package that TURNS ON *RTTY READY* — No program load, "SYS" commands, or rats nest of external wiring to enjoy the best in CW/RTTY operation. (AMTOR too, if added.)

The simple, uncomplicated design and ease of operation are not to imply mediocre performance. On the contrary, Microlog's years of software and hardware experience combine in the AIR-1 to provide a level of performance found only in much more expensive dedicated systems. Compare for yourself or ask an AIR-1 owner, they're our best salesmen!

- Computer-enhanced detection means extensive use of software digital filtering techniques for noise and bandwidth that track the operating speed and code.
- Full speed RTTY 60 to 132 WPM, CW to 150 WPM, & 110/300 Baud ASCII.
- Choice of full- or split-screen display with large type ahead text buffer and programmable memories.
- On-screen tuning indicators mean you never have to take your eyes off the video for perfect copy tuning. RTTY "scope" cross-hatch and "red-dot" signal acquisition monitor right on the screen.
- Keyword or manual control of VIC or Parallel printer and receive buffer storage.
- Convenient plug-in jacks for all connections.
- Single board design contains TU & ROM software that does not require external power.
- Full one-year warranty.
- WRU, UNshift On Space, Word wrap-around, Test "Quick Brown Fox" & "RYRY" in ROM. Break buffer, Random Code generator, Handkey input, Real-time clock, sturdy metal cover and more.

AIR-1 for VIC-20 or C-64$295 (with AMTOR$405)
-add $5 ea. shipping

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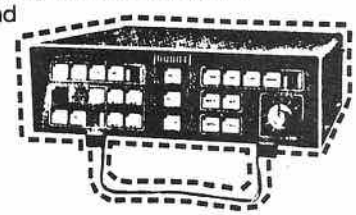
YOU ALREADY OWN 75% OF A COLOR VIDEO STATION

It's true. With your transceiver, antenna, television set and audio tape recorder, you already have 75% of what's required to receive and send color video world-wide!

SSTV



Add a ROBOT™ Video Transceiver and your station is complete.

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CANADA'S EXCLUSIVE SUPPLIER OF QUALITY RTTY & SSTV EQUIPMENT HAS NOW JOINED US AT SKYWAVE .....
YOU CAN TOO!!

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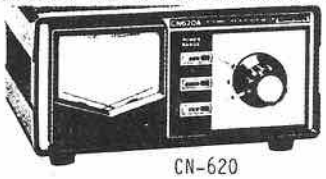
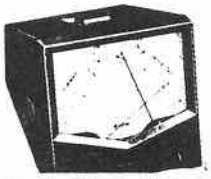
SWR & POWER METERS

DAIWA cross needle meters make SWR and Power measurement quick and easy. Why bother with the inconvenience of the "older type" meters? With DAIWA there is only one meter to read and no tedious sensitivity adjustments to make - ever! DAIWA cross needle meters indicate forward and reflected power simultaneously. The SWR is read directly at the point where the two needles intersect. DAIWA quality insures reliability and accuracy. Once you've used this meter, you'll wonder how you ever managed without it in the past. The DAIWA SWR/Power meters cover a wide range of frequencies from 1.8 MHz to 2.3 GHz in either the compact model CN520 or the standard model (see below).



CN-620

CN-720B



CN-520

		$99.95	$159.95	$219.95	$299.95	$259.95
		CN-520	CN-620B	CN-630	CN-650	CN-720 (B)
FREQUENCY		1.8-60 MHz	1.8-150 MHz	140-450MHz	1.2-2.5GHz	1.8-150MHz
INPUT/OUTPUT IMPEDANCE		50 ohm				
POWER	FWD	200/2kW	20/200, 2kW	20/200W	2/20W	20/200/ 2kW
	REF	4/400W	4/40/ 400W	4/40W	0.4/4W	4/40/ 400W
SWR DETECTION SENSITIVITY		4W min			0.4W min	4W min
TOLERANCE (full scale)		±10%			±15%	±10%
CONNECTORS		SO-239		SO-239	N type	SO-239
DIMENSIONS (W×H×D mm)		72x72x95	165W x 75H x 97D	180x85x120		180x120x130

PRE-AMPLIFIERS

Reliable VHF/UHF Ga-As FET design for outstanding sensitivity and low noise. Can be placed directly into the antenna feed line.
RF activated/Manual T/R switching.

RX-430G

$119.95 $159.95

	RX-110G	RX-430G
FREQUENCY	144 - 148 MHz	430 - 440 MHz
GAIN	15 dB min	13 dB min
IMPUT/OUTPUT IMPEDANCE	50 ohm	
RF POWER BYPASS RATING	30 W CW (FM)	
POWER SOURCE	13.8 V DC 100 mA	
DIMENSIONS (W×H×D mm)	90×25×92	

Electronic Keyers

CW is one of the most enjoyable modes of amateur radio communication. DAIWA makes CW easy with the DK200/DK210 electronic keyers. These keyers do most of the work for you by eliminating fatigue and improving your "fist". Features include semi-automatic, automatic, and tune modes as well as dash/dot memories, 8-50 WPM capability, an L.E.D. speedmeter (DK210 only), and two types of keying outputs to suit almost any transmitter. A variable frequency sidetone monitor is also included. If you like CW, you'll love DAIWA'S DK200/DK210 electronic keyers.

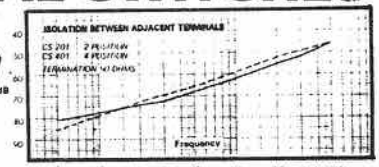
DK-210

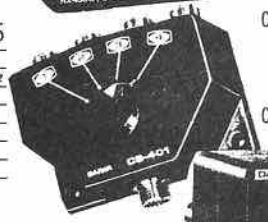
$129.95 $109.95

	DK-210	DK-200
SPEED	8 WPM - 50 WPM	
SIDE-TONE OSCILLATOR FREQUENCY	500 - 3000 Hz	
KEYING OUTPUT CIRCUITRY	GRID BLOCK -100 V 10 mA max DIRECT +300 V 100mA max	
POWER CONSUMPTION	13.8 V DC (9-15 V) approx. 100 mA (DK-200) 200 mA (DK-210) (or 9 volt battery can be installed inside cabinet)	
DIMENSIONS (W×H×D m/m)	150×62×150	
LED SPEED INDICATOR	DK-210 only.	

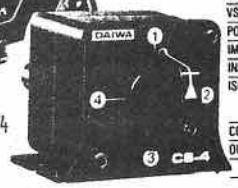
COAXIAL SWITCHES

CS-201





CS-401

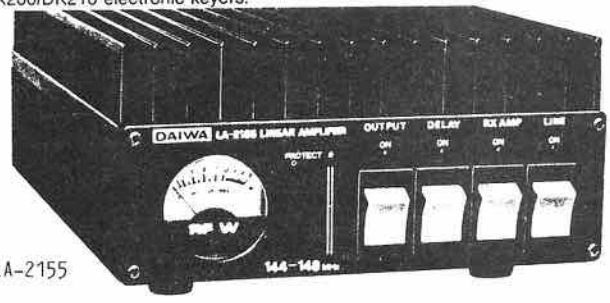


CS-4

$39 $59 $109 $49

	CS-201/CS-201G	CS-401	CS-4
FREQUENCY	600MHz	800MHz	1500MHz
VSWR	below 1 : 1.2		
POWER RATING	2.5kW PEP 1kW CW		500W PEP 250W CW
IMPEDANCE	50 ohm		
INSERTION LOSS	Less than 0.2dB		
ISOLATION	better than 50dB at 300MHz better than 45dB at 450MHz adjacent terminal		better than 60dB
CONNECTORS	SO-239 (N type)	SO-239	BNC
OUTPUT PORT	2	4	4
	"Unused terminals grounded"		

LINEAR AMPLIFIERS



LA-2155

DAIWA amplifiers are designed for use with hand-held or other transceivers in either mobile or fixed station configurations.
Because of it's light weight and compact size, DAIWA linear amplifiers can be mounted under the dash, under the seat, or in any other convenient location.

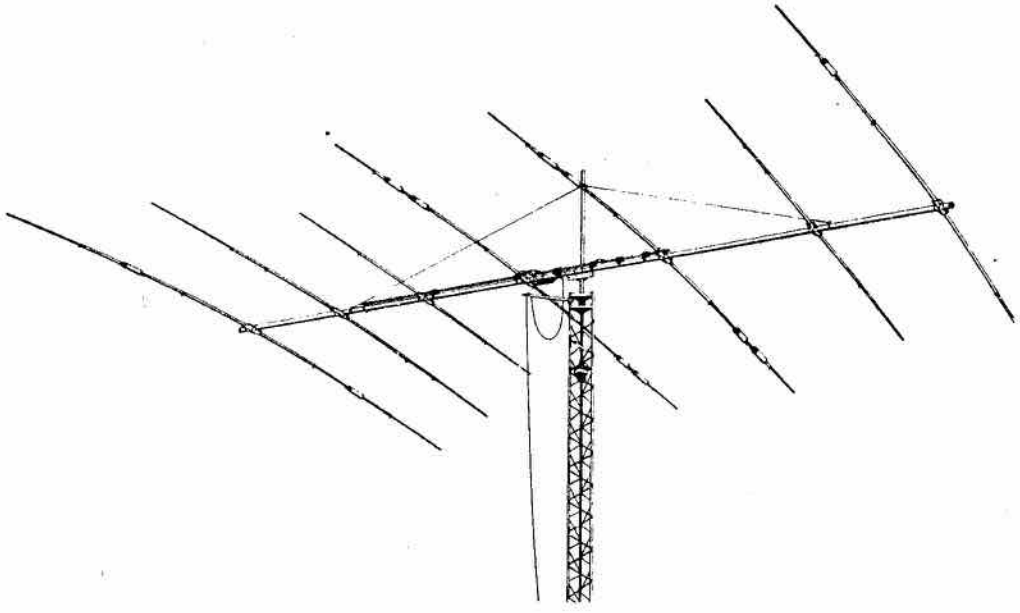
The DAIWA linear amplifiers are equipped with RF activated stand-by circuitry.

Easy operation. Simply connect your antenna and your hand-held/transceiver to the linear amplifier.

Connect a DAIWA linear amplifier to a suitable power supply and go!

	$379.95	N.A.	$179.95	$109.95	N.A.	N.A.	$229.95	N.A.
	LA-2155	LA-2065	LA-2060	LA-2035	LA-2030	LA-4040	LA-4030	LA-4015
BAND	144-148MHz					430-450MHz		
MODE	FM/SSB/CW				FM	FM/SSB/CW		FM
INPUT POWER	25W	10W	0.5-3W		0.15-0.3W (Model A) 0.3-0.6W (Model B) 1.5-2.5W (Model C)	10W	0.5-3W	0.15-0.25W (Model A) 0.3-0.6W (Model B)
MAXIMUM OUTPUT POWER	150W plus	60W plus		30W plus	30W plus/High position 15W plus/Low position	35W plus		15W plus
POWER CONSUMPTION	13.8V DC 24A max	13.8V DC 10A max	13.8V DC 12A max	13.8V DC 4.5A max	13.8V DC 6A max		13.8V DC 10A max	13.8V DC 4.5A max
INPUT PLUG/CONNECTOR	SO-239	PL-259	BNC-BNC (Cable)	BNC	BNC-BNC (Cable)	PL-259	BNC-BNC (Cable)	
OUTPUT CONNECTOR	SO-239							
DIMENSIONS (W×H×D mm)	170×79×250	100×41×170		100×35×125	90×45×125	100×41×170		100×35×125

HF Tribanders World Famous Thunderbirds

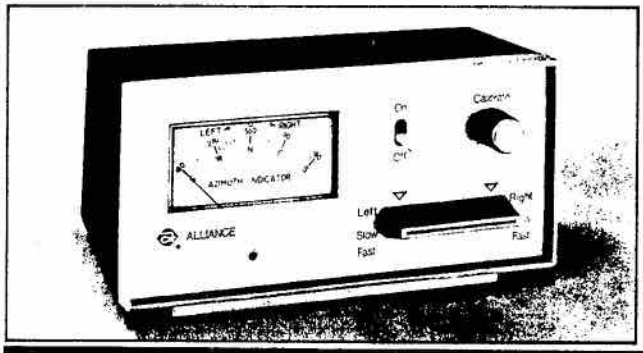


TH7DX

7-Element, Broadband Triband Beam

This amazing new tribander, using a dual driven 7 element system on a 24' (7.3 m) boom maintains a VSWR of less than 2:1 on all bands, including ALL of ten meters. No compromise on gain performance was needed to achieve this efficiency. A unique combination of trapped and monoband parasitic elements produces a front-to-back ratio of 27 dB. In a parasitic array such as this, high efficiency traps are used rather than parallel stubs. These Hi-Q traps are capable of handling the maximum legal power with a 2:1 safety margin, and are superior to parallel stubbing for ease of assembly and maintenance. The TH7DX uses stainless steel hardware for all electrical—and most mechanical connections plus taper swaged 6063-T832 thick wall aluminum tubing. The antenna includes exclusive, die-cast aluminum, rugged boom-to-mast clamp, and heavy gauge element-to-boom brackets. The TH7DX comes complete with a Hy-Gain BN-86 balun.

Alliance Heavy Duty Rotator Model HD-73



Features and Specifications

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

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

The rotator not only has a readily accessible externally located fuse for total unit protection, it also has an internally mounted automatic reset thermal protector for the motor and transformer against shorts or possible connection error or prolonged operation.

Max. vertical load - 1000# (vertical balanced)
Max. wind load bending moment - 10,000 in-lbs. (side-thrust overturning).
Starting torque - 400 in. lbs.
Brake torque (windmilling) - 1,600 in. lbs.
Hardened steel drive gears
Bearings - 100-3/8" diameter (hardened)
Mast mounting size range - 1-3/8" O.D. to 2-1/2" O.D.
Cable - 6 conductor
Voltage input - 117 volts A.C. 60 hertz
± 12 volts
Shipping weight - 17 lbs.

C.M. PETERSON CO. LTD.
Communications Electronics Division
Head Office: C.M. Peterson Co. Ltd.
220 Adelaide St. North, London, Ont.
N6E 3H4 519-434-3204
Toronto Amateur Dept.:
1862 Kipling Ave., Toronto
416-247-5437

TCA

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QUA CARF

Zero Beat & In Phase

February's *TCA* article "What are we going to do?" by VE3LAR hit a familiar note. I headed to the basement file, drew out my copy of September 83 *TCA* to re-read an article "The Changing Times" which I had written myself. This matter was addressed at the 1983 Symposium. As VE3LAR suggests, there are many who say, "I had to do it so you have to too." The topic proved too weighty to be adequately researched, studied and addressed at that Symposium along with the many other issues on the agenda. Consequently, it faded away. I am happy to see it readdressed.

I believe that if the Canadian Amateur community took a serious look at the matter of the aging of its ranks, the recruitment of new Amateurs, and the population growth of the Amateur Service, and then compared this to the growth of the various other radio frequency spectrum user services, there could be no denying that Amateur Radio is going to be in for some tough times unless we take action now! On this point it is likely Canadian Amateurs would find themselves **zero beat**.

Having reached this state, we have one more thing to accomplish—that of looking at the alternatives, boiling them down and presenting an **in-phase** *solution to our licencing authority, the DOC.*

There will likely be few other topics on which the Canadian Amateur will have so many opinions, ideas and suggestions. As VE3LAR suggests, the solution should not involve what would amount to an increased administration burden to the government. But, neither should the solution allow the substitution of quantity for quality.

If you value Amateur Radio, have enjoyed its privileges, and wish to preserve and pass it along for future generations to enjoy, then this matter deserves your concern and attention. Without input from the Amateur community, our licencing authority will likely either leave the Amateur Service as it is, or bow to public pressure and institute changes that some of us will find unacceptable.

Finally, no Canadian Amateur should be left out of this discussion. If necessary or desirable, a joint working group of both the CRRL and CARF should be formed to melt down the input and submit a ZERO BEAT AND IN-PHASE proposal for DOC consideration.

Leigh VE1ZN.
CARF Regional Director
Atlantic

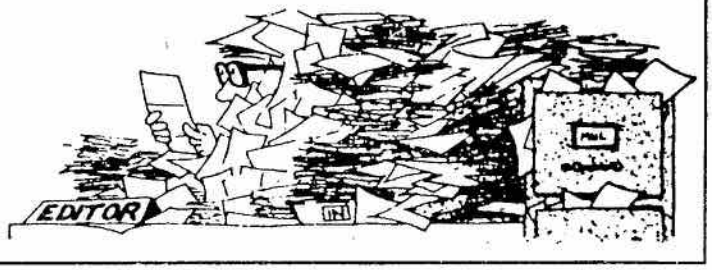
TARIFFS

At the moment, our Amateur radio tariff exception does not include packet radio equipment or parts thereof. CARF is trying to have the tariff brought up to the "state of the art" level it should be.

ANNUAL MEETING

CARF's Annual General Meeting and Board of Directors Meeting will be held in the Park Lane Hotel, Ottawa, Ontario, on June 14, 15, 16.

LETTERS



GUINNESS CORNER

All right, we've heard about the youngest Amateur in Canada, Steve VE3OOS. Gary VE3CK and Tom VE3CX are curious if they are the youngest two letter call holders in Ontario. We are both 26 years old, are there any challengers?

TCA has been getting better all the time, and it is always a welcome sight in the mailbox.

73 & DX! Gary VE3CK

AMATEUR RADIO EMERGENCY SERVICE

Recognition of Amateur Radio by all levels of Government has been accomplished more by our public service, both emergency and non-emergency, than any other facet of our existence. Where else can governments get an emergency communications service in this country? Staffed by skilled operators using their own equipment and ready to provide service anywhere, any time, at no cost to the public?

When we are concerned about losing parts of our 'traditional' operating frequency bands, maybe we should be thinking about ways of perfecting our emergency preparedness. This could be involving more operators through a concerted effort to cover the nation with a very efficient Amateur Radio Emergency System.

That is the way to obtain more recognition from Governments as a service not to be tinkered with, including the reallocation of our frequencies to other services simply because they can make a 'good case' for that change.

The suggestion has been made that unless we bring many more newcomers into the Service we could lose it entirely. There may be some justification for this opinion, and I am all for the training of new operators and as many as we can get, but I still think that when it comes to protecting Amateur Radio, a highly efficient Amateur emergency system would be making Governments an offer they could not refuse.

73 David VE3WC

Not just province-wide, David, Canada-wide. And you read about it in TCA! --Ed.

TCA Delivery problems aren't always our fault!

Vancouver, 9 January 1985

750 Cambie Street
Vancouver, B.C.
V6B 4V5

Canadian Amateur Radio Fed. Inc.
Office Manager
Janet Teepie

Dear Mrs. Teeple,

I work for the Canada Employment and Immigration Commission in Vancouver, B.C.

On December 31, 1984 I receive a box delivered by the Post Office, the box was mailed from Ottawa-Ontario and contained material which we use in this office. Also we found this material of yours in very bad condition, our material was very badly damaged also.

According to your covering letter your material was mailed from Kingston-Ontario, I am curious to know how the Post Office managed to ship your material in a box which was mailed from Ottawa.

Sincerely,

Joan Ferguson

Joan Ferguson
Clerk of the Board of Referees

SSB ON 30M

Henry Thel (*TCA* March) asked why there is no SSB on 30 metres. This was agreed to by the vast majority of the member societies of IARU. Most of the 'rugged individualists' who fired up on SSB regardless have slackened off now. He's right on his other two points, though.

73, Bob

TWO QUESTIONS

My membership number is no longer on my *TCA* label. What does K2928 8412 mean to me?

On another subject, when I stand by after calling I often hear an S9 + 30 signal on top of my QSO, so I QSY or QRT. Wish I had a 1000 watt rig! What if we all had to have a 500 or 1000 watt station by law? That would be equality of opportunity.

73, Reg Argyle VE3DTU

Answer to question 1: Computer programmers work in mysterious ways. The number means to you that the QSL bureau will handle your cards. To question 2: Far more sensible would be a maximum power of 50 or at most 100 watts on HF. We'd all work a lot more DX.— Editor. Δ

DOC DOINGS

A report from the Ottawa ARC EMI Committee

Cross Waves No. 3

In a case of TVI, the complainant had cable and lived next door to the Amateur.

Fortunately, the Amateur had avoided provocation by limiting operation to the small hours. Even operation at 2 a.m., however, resulted in an acknowledgement that he had been heard.

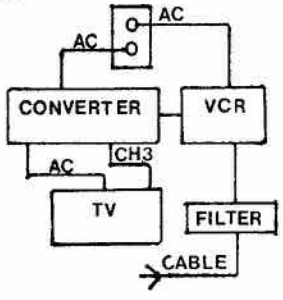
While driving to investigate cases, I always monitor 145.25 MHz, as any cable leakage shows up. Leakage in the vicinity of a complaint could be of help in resolving how the interference is occurring. It became very strong in the Amateur's driveway.

The Amateur's equipment was nearly new, solid state, 100 watt. Antennas were conventional dipole and inverted vee. Interference started to occur last Fall and a filter for FM-TV had been given to and installed by the complainant. The Amateur's rig was well grounded and antenna tuner, rig and low pass all had copper strapping bonds. Interference occurred on most bands. After looking at the installation I guessed where the problem lay.

The only minor complaint I could make was about the length of coax running from the rig to the low pass filter. It is advisable to keep the length of coax between the LP filter and the transmitter short.

On ten metres, coax cable can have appreciable reactance, difficult to tune out with the average tuner, especially with much VSWR. It is also frequency sensitive. In addition to reactance the harmonics of the fundamental will propagate very well on the sheath of short lengths of coax. The filter should see the correct load. It is advisable to clamp the filter to the rear of the rig with copper strap. Ensure that a good metallic bond is made. Some of the newer compact transceivers offer a challenge in this regard, because of their size. It may pay to shop around for a smaller, lower power filter. Not everyone runs a kW (Thank Heavens).

A quick call to the complainant had us talking and discussing interference. I examined the TV installation. Here's what I initially found:



The TV-FM filter provided by the Amateur to the complainant had been installed by the latter. It was meant to act as a bandpass filter. It looked as if it would reject frequencies below 88 MHz(FM) and pass the band up to Channel 13. Because of its construction, I would have been surprised if it worked at UHF at all. Reception seemed poorer with the filter installed. I could see why.

The filter was incorrectly installed in the cable feeding the VCR. If needed at all, it could have gone between the converter and the TV set. Actually, the interference was apparent with the cable disconnected and it was fairly weak. With the cable on a slight 60 Hz beat could be heard when keying with CW.

If RF was coming via the power cord, the best place to install a toroid would be at the input to the converter. It only took six turns of the power cord around a toroid core and the TVI completely disappeared. Voila succès!

Next month we look at microwave ovens from the standpoint of susceptibility to RF.

Ralph Cameron VE3BBM
Chairman, EMI Committee

NEW PREFIX

VE5 Amateurs may use CH5 from July 28 to August 10 to salute Saskatchewan's 80th anniversary of entry into Confederation and the centennial of the N.W. rebellion.

Gordon Murray VE3JSJ is CARF National Coordinator for Parks Canada celebrations. Write him at 22 Lyall Street, Ottawa K2E 5G8 or phone 613-237-1374 (24 h).

VE6 licence plates are now available. The plates are FREE to Alberta Amateurs. Contact Western Director Norm Waltho VE6VW for information.

Responses to the March questionnaire show that some Amateurs coast-to-coast received their March *TCA* in February, as they should have done. If some *TCA's* can be delivered on time in a province, all should be. If your *TCA* was delivered later than March 1st, complain to your MP.

B.C. MEETING

A meeting between DOC personnel and local club representatives was held in Victoria B.C. last February.

The meeting greatly imporved communications between DOC (Victoria) and Amateurs and improved Amateurs' understanding of the function of DOC and of the limitations and restraints placed on DOC by the Radio Act and Regulations.

If any Amateur finds himself in dispute with his local DOC, he should immediately get in touch with his CARF director and send a note to CARF's representative, Art Stark. Calls and addresses from the front of any *TCA*.

Following some problems encountered with DOC last year. Victoria Amateurs have set up a regional council of local Vancouver Island Clubs to meet regional DOC representatives and discuss matters of mutual interest four times a year. They have asked CARF to assign a representative to this council.

More CARF discussion papers

On increasing our numbers

By Gagetown ARC, VE3NHT,
VE3FXQ, Timmins ARC,
VE1BC and others

A CW only ticket

By Brian Upton VE1CGV
54 Hawkins St.
Fredericton E3A 1P3

There has been a lot of talk about relaxing the requirements for prospective Amateurs, so as to increase our numbers.

We at CFB Gagetown ARC discussed this situation at our meeting of March '85. We fully agree that something has to be done to attract more to the service. But, we must maintain the high level of courteous and 'professional' Amateur radio practices.

To do this we feel the technical information required for the operator's ticket should be retained at its present level with the emphasis on station set-up, antennas, propagation, basic circuitry and most important good Amateur radio practices.

These must be retained for simple reasons: knowing how and why radio works, how the signal gets to another Amateur so the new Amateurs will understand what happens when they get on the air. Also for safety reasons, theirs and everyone else's, and interference reasons, for their protection and their neighbour's.

We do agree that the code aspect should be relaxed somewhat to get new people involved. To do this we propose that code requirements for the operators ticket be lowered to 5 wpm sending and receiving, using the present three minute testing format.

CW only

This operator's ticket would allow new Amateurs to go on 20-80 *CW only* and allow NO PHONE PRIVILEGES on any of the Amateur bands. To obtain 10, 160 metre and VHF phone privileges, the new Amateur would be required to pass an endorsement test of 10 wpm sending and receiving as at present.

This endorsement could be written at any regular testing date, including the first examination, no time requirements from the passing of the original operator's ticket. The advanced ticket requirements would remain the same as today with no changes.

We feel this relaxing of the code requirements of the basic operator's licence would be sufficient to attract new people into Amateur radio. After being involved in courses over the past several years, we have found a lot of students drop out because the code gets them down.

They seem to reach a barrier at 7 wpm. With code relaxed, the students could spend more time studying theory and regulations and take a lot of the pressure off.

Once on the air, the 10 wpm would come even more quickly and by not allowing phone privileges would insure a code standard along with giving the new Amateur an easy goal to strive for, and then on to the advanced licence.

Please be advised, that at a meeting of the Timmins Amateur Radio Club on March 7, 1985 a motion was carried to inform CARF that this Club suggests a no code Amateur licence valid for 50 Hz and above for the purpose of encouraging new Amateurs into the hobby.

The examination requirements for this licence would be the present Amateur licence requirements in theory and regulations only.

73, Brian VE3KAS.

Remember that first QSO...

We all remember the hours spent practicing on our code and the studying for that first examination. It was not easy and took a lot of determination and will power, as at times it seemed out of reach. All of us remember the satisfaction we felt when passing the operator's ticket, because the time spent, paid off. Remember that first CW contact, the thrill of knowing you could communicate around the world, yet never speak a word?

For myself the next year went very fast and the advanced examination was no problem. Remember that first HF phone contact, another achievement? This is what makes Amateur radio such a great avocation, once into it you can keep working towards another goal.

Whichever it be, increasing CW speed, advancing to a new ticket, DXCC, satellite communications, contesting, RTTY, television, moonbouncing, emergency communications and so many more, this wide range of possibilities will just keep on growing. But one must have the basics and more important the desire to be an active and good Amateur radio operator.

We need more Canadian Amateurs and we will continue to grow in numbers, but each of us has to do our share to help those wanting to become Amateur radio operators. Remember those Amateurs who helped each of us along the way: we owe the new students that same kind of help.

Let's not just grow in numbers but also mature at the same time.

--Gagetown ARC

Quality before Quantity

During the past ten plus years, there has been an almost constant drive to introduce a beginner's class of licence to our service. We hear people talking about it and read articles suggesting its implementation. I just hope the people supporting this licence realize both the damage, as well as the good, that a low level entrance exam into ham radio could do.

During the 70's, CB (GRS) was the craze. A no-exam entrance into the world of personal radio. Practically everyone admitted it produced problems galore.

During this time many clubs put a great deal of effort into helping many of these individuals get their licences. The problem that we faced later was that most of these new GRS Amateur conversions had a different attitude toward Amateur radio than we did.

A different attitude

Their attitude was something like, "Please help me get my licence so I can get away from GRS and operate in your bands." Fine, and we were ready, willing and able to help them achieve their goal. After we helped them, most were never seen again. Few stayed on to help us with the next new group. The attitude that we had, that they didn't, was that of being willing to help others and help the progression of Amateur radio.

I am not out to blame the GRS conversions for this problem, but in the entire history of Amateur radio we have not seen such a lack of interest in helping out fellow Amateurs since the GRS craze.

A beginner class could produce similar problems now, especially if it were allowed to use the popular Amateur bands like two metres.

FOC si, LID no!

If those with this new class are given too easy an exam and too easy access to the popular channels, they may have too little appreciation, or respect, for what those before them have worked so hard to produce. This may sound rather cruel but let's not be so anxious to get more people that we will open the doors and let just anyone in. One of the things that a tough entrance exam does is help separate those who are really interested from those to whom Amateur radio is just a passing interest.

If we want this new class to accomplish something worthwhile we must carefully examine all of its pluses and minuses before we petition for it. This includes the licence requirements and its on-air privileges.

220 and up

If we want them to help us justify frequency space, they will have to be assigned to frequencies not presently used, e.g. 220, 902 and up for voice as well as data. We should allow them the facilities for computer style communicating as most young people are more interested in computer communications than they are in straight voice communicating. However we should allow them to use perhaps 80 and 40, CW and RTTY, to help them up-grade to the Amateur class.

There should also be no time limit to getting the next licence.

As a matter of incentive to go for higher licences, and to add continuity, those licenced under the present Amateur and Advanced could get together with the beginners and help them establish repeaters as well as crossband links to other repeaters. They should be allowed access to our systems but one that we have control over.

Anything less, e.g. allowing them to use 2 metres, will be like opening up these bands to a new version of 27 MHz. Only then they will now have *our* toys to play with and our desire to open up the unused bands will be virtually lost.

We mean business

By restricting them to the unused bands we will be showing them, the DOC, ourselves, the ITU and equipment dealers, that we mean business concerning our desire to open up the unused bands.

To help us out, our regulations could be modified to suit the development of new bands. As a particular band becomes more used and congested then our beginner phone band's bottom limit would climb up the spectrum. This would ensure that even ten, 20 or 30 years from now you would have to go to unused bands to achieve voice privileges early in your ham career.

Another way to put it, if folks want to get into Amateur radio the easy way, they should have to pay the price of drastically reduced privileges. Of course if they want to get on the popular bands right away, using voice, they could pass the present Amateur exam and jump over the beginner's band restrictions altogether.

Another Approach

During the past ten years or so, we have realized no real band use growth since the development of the Amateur repeater and 2 metres. We have seen technical growth in terms of integrated circuits and transistors replacing tubes. However we have seen very little take place in terms of band openings, and I don't mean the DX type.

One of the reasons we are having so much trouble opening up our unused bands above 144 MHz is one of our regulations. Our present regulation concerning the lower limit at which our

Continued on Page 26 ▷

I believe Russ Pastuch VE3FSN hit the nail on the head in the *TCA* March issue. I would rather lose some frequencies and still be associated with responsible Amateurs who have worked hard enough to earn that right than lower the standards for CBers. The exams have already been watered down and as long as the DOC will hand out old exams to people there should be no problem getting a ticket. I know, because that is how I came about mine.

I don't see why we have to change or compromise just to interest some lazy people.

73, Dean VE3NHT

YAESU SPECIALS

ATLANTIC HAM RADIO LTD. has purchased YAESU JAPAN's remaining stock of 2M FT-208R's. This extremely popular 2M Handy was our best seller for over 2 years. Now available at a CLOSEOUT PRICE of $279.00 Ins S&H add $8.00.

LIMITED SUPPLY !!

FT-208R

$279

2M Handy with 2½ Watts output. 143.5-148.5MHz LCD display 10 memory 16 button TT®Pad Keyboard freq. entry Band and memory scan

FT-208R Accessories still available:
NC-8 Deluxe Desk Charger/Adapter--$99
NC-7 Standard Desk Charger--------$49
PA-3 DC-DC Adapter----------$32
FNB-2 Nicad Battery----------$42
YM-24A Speaker Microphone---------$39
FBA-2 Sleeve (Charges FNB-2/NC-7/8$10
Service Manual----------$20

LAST CALL ON SOME OF THESE ACCESSORIES:

XF8.2HSN SSB Filter FT-102--------$45
XF8.2HC 600Hz CW Filter FT-102----$45
XF8.2HCN 300Hz CW Filter FT-102---$45
AM/FM Board for FT-102----------$99
XF8.2GA AM Filter FT-102----------$39
SERVICE MANUAL FT-102----------$20
FC-102 1.2kW PEP Antenna Tuner---$299
FAS1-4R Remote Switch Option-----$115

The following XF8.9 filters will fit FT-901/2 FT101ZD FT-707 FT-107 FT-980

XF8.9HC 600Hz CW Filter----------$55
XF8.9HCN 300Hz CW Filter---------$55
XF8.9GA AM Filter----------$55

FT-901/2 FM Board----------$99
FA-9 Fan for FT-901/2 FT-101/E/ZD-$29

XF8.9KC 600Hz CW Filter FT-ONE/77-$35
XF8.9KCN 300Hz CW Filter FT-ONE/77$35
XF8.9KA AM Filter FT-ONE---------$35
XF10.7KC 2nd IF CW Filter FT-ONE--$29
Keyer Board FT-901/2 980 ONE------$55

ICOM SPECIALS

IC-45A $399

ATLANTIC HAM RADIO LTD. does it again !! We have purchased the remaining stock of IC-45A's and offer you this bargain.....

IC-45A $399.00 Ins S&H $10

This once popular 440MHz FM rig is now available at this special CLEAROUT price The IC-45A covers 440-450MHz has 10Watts output and comes with a TT® mike. It also has 2 VFO's and 5 memories. The IC-45A scans the memories or the band.

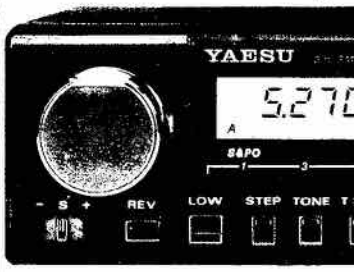
LIMITED SUPPLY !!

NEW FROM ICOM

The all new IC-735 will be introduced at Dayton on April 26th. Icom plans to have the first units available in May.
Standard features are as follows:
* General Coverage Receiver
* Dual VFO's for split operation
* 12 Memories
* SSB/CW/FM/AM Tx & Rx
* Built in CW Keyer
* FL-32 500Hz CW Filter
* HM-12 Scanning hand mike
* plus much much more.....

* RESERVE YOUR IC-735 NOW !! !!

The NEW YAESU FT-270R
Call or write for you



45 Watts 10 Memories (Rx
FT-270R 25 Watt version

CLEAR OUT -- OUT THEY GO !!
ICOM IC-02A $299/$309

NEW IN MAY

DAIWA LA-20
Handies wil
LA-2035/5W
input from
5 Watt rigs

LA-2035 up
LA-2035/5W-
Output for

ow in stock LIST $599.00
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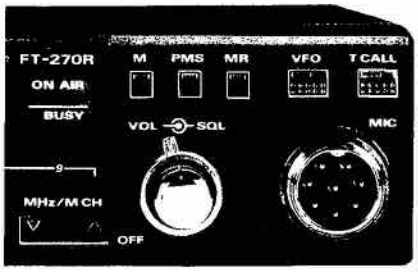


r 1-8) TT®Mike all standard.
vailable at LIST $549.00

-TORQUE ANTENNA ROTOR FROM DAIWA

hese Features:

ator frame can house up to 4 motors to increase the and load capacity of your antenna system.

otor is equipped with a Super Wedge and Clutch brake which works independently from the main frame gear

um brake power is 16,300 lbs/in when 4 motors are d. The main frame and reduction gear train have been ed to withstand maximum wind loading.

otor unit can be dismantled easily for maintenance if d.

to 2½" diameter can be installed and aligned easily with ator center.

oltage (24VAC) motors are used to ensure safety during ation work on the antenna tower.

ost 6-wire control cable can be used for the low voltage

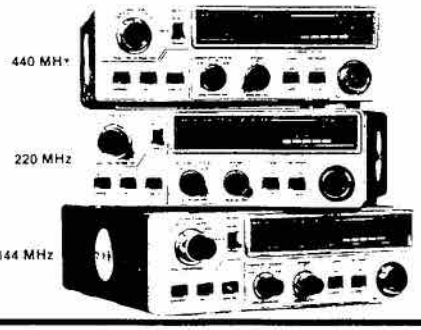
ontrol panel can be removed easily for calibrating the on indicator.

ed type control knobs have quick lock mechanisms on ides.

dvanced Super Wedge and Clutch brake system (Slip type) provides exceptional holding power and protects ator mechanism from excessive torque.

KDK

MAXPAC STACK



QUALITY -- VALUE -- PERFORMANCE

KDK presents TWO NEW MODELS to join the popular FM-2033. KDK has one model for each of the amateur bands from 2M to 440MHz. The popular FM-2033 is for 2M, the FM-4033 is the NEW radio just about everybody has been waiting for on 220MHz, and the NEW FM-7033 is the NEW 440MHz model. All these fine radios are models of simplicity of operation. One-hand single-knob tuning and memory recall provide the most convenient method of operating FM mobile. All models have automatic recall of the repeater offset from memory, small size for easy mounting (but big enough to be comfortable to use). The KDK-2033 and KDK-4033 are both 25W and the KDK-7033 is 10-W output. The NEW KDK's are the most value packed line of FM mobile available.

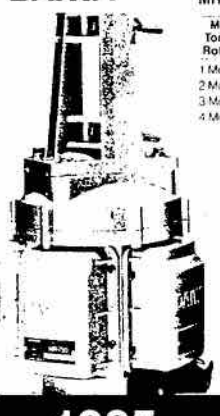
ALL MODELS COME WITH UP/DN SCAN TOUCHTONE® MIKE

FM-2033 $389; FM-4033 $419; FM-7033 $449

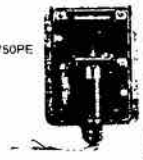
DAIWA

MR-750E/MR-750PE

Multi Torque Rotator	Output Torque lbs/in	Brake Power lbs/in
1 Motor	610	5,200
2 Motors	1,200	9,600
3 Motors	1,800	13,900
4 Motors	2,400	18,300



MR-750U Motor For use with MR-750E and MR-750PE Standard Rotators



AVAILABLE LATE MAY:
MR-750E with ONE motor $399
MR-750PE wth ONE motor $439
MR-750U Extra motor----$129

Compare Torque & Brake with Ham IV and Tailtwister.....

On multi-motor systems the torque is shared by all the motors instead of being at one spot on the ring gear !

MR 750E Rotator Standard Model (58 sec/rotation)

MR 750PE Rotator For use with Pre-Set Controller (58 sec/rotation)

CR-4 Manual Controller for use with MR-750E

CR-4P Controller with Pre-Set function for use with MR-750PE Rotators

ASTRON POWER SUPPLIES

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SPECIAL FEATURES

- SOLID STATE ELECTRONICALLY REGULATED
- FOLD-BACK CURRENT LIMITING Protects Power Supply from excessive current & continuous shorted output.
- CROWBAR OVER VOLTAGE on all Models except RS-4A
- HEAVY DUTY HEAT SINK. • CHASSIS MOUNT FUSE
- THREE CONDUCTOR POWER CORD
- ONE YEAR WARRANTY • MADE IN U.S.A.
- VOLT & AMP METER ON MODELS RS-12M, RS-20M & RS-35M.
- Separate Volt and Amp meters, with Voltage adjustable from 5-15 Volts on VS-20M and VS-35M.

MODEL VS-50M

RS50A $369; RS50M $425; VS-50M $459
RS35A $249; RS35M $279; VS-35M $325
RS20A $169; RS20M $199; VS-20M $239
RS12A $129; RS10A $119; RS- 7A $ 95

RS-4A $69

PERFORMANCE SPECIFICATIONS

- INPUT VOLTAGE: 105-125 VAC
- OUTPUT VOLTAGE: 13.8VDC ± 0.05 (Internally Adjustable: 11-15 VDC)
- RIPPLE: Less than 5mv peak to peak (full load & low line)
- REGULATION: ± 0.5 volts no load to full load & low line to high line

Models	Continuous Duty (amps)	ICS* (amps)	Size (in.) H × W × D	Shipping Wt. (lbs.)
RS-50A, RS-50M, VS-50M	37	50	6 × 13¾ × 11	46
RS-35A, RS-35M, VS-35M	25	35	5 × 11 × 11	27
RS-20A, RS-20M, VS-20M	16	20	5 × 9 × 10½	18
RS-12A	9	12	4½ × 8 × 9	13
RS-10A	7.5	11	4 × 7½ × 10¼	11
RS-7A	5	7	3¾ × 6½ × 9	9
RS-4A	3	4	3¼ × 6½ × 9	5

*ICS - Intermittent Communications Service (50% Duty Cycle)

INSURED SHIPPING AND HANDLING: Ontario and East add 2% - MINIMUM $3.50; Manitoba and West add 3% - MINIMUM $4.50; UNLESS OTHERWISE STATED..... IF TWO PRICES ARE SHOWN THE LOWER PRICE APPLIES TO ALL ORDERS WHICH ARE PREPAID BY CASH, CHEQUE, MONEY ORDER, OR BANK TRANSFER. THE HIGHER PRICE APPLIES TO ALL OTHER ORDERS INCLUDING COD, CREDIT CARDS, CHARGES, ETC... FOR INFORMATION OR PRICE REQUESTS PLEASE SEND 64¢ IN STAMPS. THANK YOU..

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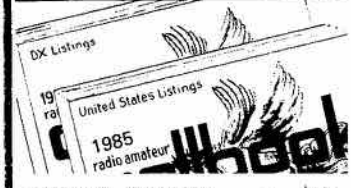
s 30-35 watts

DUAL CONE ISOPOLES -- ISO-144 $75 ISO-440 $109 USED ON MANY REPEATERS

AEA 144 MHz
AEA 440 MHz
ANTENNAS

1985 CALLBOOKS



1985 U.S. CALLBOOK---------$28
1985 FOREIGN CALLBOOK------$27
BOTH CALLBOOKS-------------$50
MAP LIBRARY & ATLAS--------$12
1985 ARRL HANDBOOK---------$20
ARRL ANTENNA BOOK----------$12
ARRL SATELLITE HANDBOOK----$13
ARRL FM & REPEATERS--------$ 8
REPEATER DIRECTORY---------$ 3
ARRL LOG BOOK--------------$ 3
PEN PUB CANADA CALLBOOK-$10.95
INS S&H $3 First Book, $1 Add.

NEW! Special North American Edition

As an added bonus, the 1985 U.S. Callbook also lists the amateurs in Canada and Mexico! You get the complete and accurate U.S. listings (prepared by our own editorial staff), all the usual up-to-date Callbook charts and tables, PLUS Canada and Mexico. Now that's real value!

The best just got better!

Of course, Canadian and Mexican amateurs are also listed in the 1985 Foreign Callbook. Don't delay! The great new 1985 Callbooks were published December 1, 1984.

▷ *Continued from Page 23*

first licence can use voice is very much out of date.

Years ago it took quite a bit of effort to get any range out of VHF communications. Depending on terrain and your equipment, communicating across a large, spread-out city would almost be considered DX. Now, with the use of the repeater, both cross-town and inter-city communicating, even with a low power handheld radio, is frequently done. As a result most hams have an HT rig and a 2 metre radio but few have equipment for any of the other bands. The results: no exposure to the other bands and few new band openings.

What would help us dramatically, even though it would be a very unpopular move, would be to have our Amateur licence lower phone band limit moved from the 50 MHz limit (50.1) to 220 MHz (220.1). Every so often, through the advice of groups like CARF, the DOC would raise this lower limit to the next band up. This would stimulate us to open up the VHF, UHF and higher bands so our new Amateurs could use voice and have someone to talk to.

As a method of protecting the Amateur from buying a radio, then discovering two months later he couldn't use it because the limit was raised, there would be a protection clause. The change would only affect those who were licenced after each change occurred.

In conclusion: One of the reasons that we, and many other people, have so much respect for this service is the high standards that we have set for ourselves. Whether it be technical, social, public relations activity, operational or whatever, we seldom settle for less than our best effort. Let's not lower our standards for the sake of getting more people into this service. Let's keep quality ahead of quantity.

--VE3FXQ

(Tell TCA what **you** *think— Ed.)*

Amateur Radio more visible?

I read with interest the three discussion papers on expanding our numbers. I've taught Amateur Radio for a few years, and I'm not so sure I would agree to any expansion if the future Amateur cannot join our ranks via the present certificates.

I've tried to compare the age factor. The teenagers seem unimpressed, I have no idea why except that there appears to be so much for them today. Those older seem to give up so easily when I know they could make it simply by sticking with it. They seem to be afraid of failure.

I honestly believe Amateur Radio should be more visible. Good club stations with computers, open to the high school student. Has any club given free membership to any high school student? What was the result? More than four or five per high school would surprise me. △

73, Spud VE1BC

40 years ago

To all ships, VE Day

THIS STATION WASCANA PARK OFFICE OF ORIGIN LONDON
CK DATE TIME FROM BY
63 8-5-45 2326 NSS K.H.
OPERATIONAL PRIORITY
FROM ADMIRALTY
BRITISH BAMS LETTERED
MESSAGE QK
GERMANY HAS SURRENDERED UNCONDITIONALLY. CEASE FIRE HAS BEEN ORDERED FROM 2201Z EIGHT MAY. PENDING FURTHER ORDERS ALL EXISTING INSTRUCTIONS REGARDING THE DEFENSE, SECURITY AND CONTROL OF MERCHANT SHIPPING ARE TO REMAIN IN FORCE.
MERCHANT SHIPS AT SEA WHETHER IN CONVOY OR SAILING INDEPENDENTLY ARE TO CONTINUE THEIR VOYAGES AS PREVIOUSLY ORDERED.
081324Z

WASCANA PARK LONDON
138 8-5-45 2352 NSS K.H.
PRIORITY FROM COMINCH
THE GERMAN HIGH COMMAND HAS BEEN ORDERED TO GIVE THE FOLLOWING SURRENDER ORDERS TO U BOATS; TO REMAIN ON THE SURFACE FLYING A LARGE BLACK OR BLUE FLAG BY DAY AND BURNING NAVIGATION LIGHTS BY NIGHT TO REPORT THEIR POSITIONS IN PLAIN LANGUAGE ON 500 KCS EVERY 0 HOURS AND TO MAKE FOR SPECIFIC POINTS UNDER ALLIED CONTROL. U BOATS APPARENTLY COMPLYING WITH THESE INSTRUCTIONS ARE NOT TO BE ATTACKED BUT SHOULD BE GIVEN A WIDE BERTH. REPORTS ARE TO BE MADE IN PLAIN LANGUAGE IN THE FOLLOWING FORMS-- A NUMBER OF (100) (101) U BOATS B POSITION C ESTIMATED COURSE D ESTIMATED SPEED, IF HOWEVER U BOATS COMMIT A HOSTILE ACT OR OTHERWISE DIVERGE FROM THESE ORDERS REPORTS ARE TO BE MADE BY NORMAL DISTRESS PROCEDURE AND ALL APPROPRIATE DEFENSE MEASURES TAKEN.
081237Z △

CHARGE IT!

It is now more convenient than ever to join CARF and to order CARF publications... just use your Mastercard or Visa card. When ordering, simply send your name, address, card number and expiry date, with your signature.

SEND US A LETTER

Send Letters to the Editor to Box 855, Hawkesbury, Ontario K6A 3C9. They're always welcome!

Eighth National Amateur Radio Symposium

Kelowna, British Columbia
October 27, 1984

Summary

This eighth annual National Symposium on Amateur Radio once again gave us an opportunity to discuss ideas and problems with representatives from the Department of Communications, and form recommendations concerning our service for presentation to DOC.

Welcoming remarks and explanations of the day's procedures were given by CARF President, Joan Powell VE3FV0.

Participants then proceeded to the workshop of their choice for the morning session. All four workshops ran concurrently.

Results of these workshops were presented at the Plenary session, which took place in the afternoon with all in attendance. After discussion, recommendations were completed for presentation to DOC.

Workshop No. 1
CABLE TELEVISION INTERFERENCE
Moderator— Bob Smits VE7EMD

A draft procedure, developed by CARF (see *TCA*, Feb '85) was presented at the workshop. With a couple of minor changes (as indicated), and the addition of sections g, h, i and j, this proposal was presented to the plenary session.

Recommended:

- the attached resolution regarding Cable Television Interference (CATVI) Procedure be presented to the Advisory Committee on Cable Television (chaired by DOC), for its consideration.
- CARF approach the Minister in an attempt to encourage DOC to take stronger action under existing legislation regarding cable TV interference.

Workshop No. 2
VHF AND UHF BANDS
Moderator— Daryl Collen VE7CVI

DOC will soon have proposals released for public comment on their reorganization of the Amateur Service.

A suggestion that the Frequency Repeater Councils/ Groups should establish and maintain close liaison with one another was put forth.

Interference from many sources (paging systems, light dimmers, etc.) was noted as a problem.

Recommended:

- in view of threat by U.S. commercial users on the 220 MHz band, CARF should request DOC to submit an appropriate protest.
- CARF study the proposal by Craig Howey VE6DT on the 430-450 MHz band and make recommendations to DOC based on it.
- the DOC plan for 902-928 MHz go ahead, but with at least a portion of this band being designated exclusive Amateur primary.
- 911 to be used on repeaters with autopatch as the standardized code for emergency dialing where 911 is established by phone companies as the emergency number.

ACKNOWLEDGEMENTS

The Canadian Amateur Radio Federation wishes to thank all those who made the 1984 National Amateur Radio Symposium a successful and rewarding event:

- to those Amateurs across Canada who provided input,
- to those who gave of their time and money to attend personally,
- to the Department of Communications for its support and the participation of its officials,
- to the Moderators of the Workshops

Bob Smits	VE7EMD
Daryl Collen	VE7CVI
Gordon Gilmour	VE7CIG
Al Saunders	VE7JW

- to the Secretaries of the Workshops,
- to the Kelowna ARC for their sponsorship,
- to Murray Brown VE7EIW for his excellent assistance.

Workshop No. 3
AMATEUR EXAMINATIONS
Moderator— Gord Gilmore VE7CIG

The teaching of Amateur Radio leaves room for improvement and a more standardized system is desired. A more personal touch from DOC, although its unfeasibility is understood, would be appreciated by the Amateur fraternity.

CARF is requested to look into the production of video tapes to accompany the written instructional material for Amateur Radio courses, and to constantly review and improve the Question Bank, as is presently being done. Other items were discussed at this workshop.

Recommended:

- If DOC is considering a lower grade of Amateur licence, it should enable students to obtain practical operating experience prior to issuance of the current level of station licence. Such licence would require the student to have an Advanced Amateur as sponsor, demonstrate proficiency in knowledge of regulations and operating procedures, in morse code at 7 wpm, minimal theory. Such a licence to be issued for one year, be non-renewable, and have no telephony privileges.

Workshop No. 4
BAND PLANNING
Moderator— Al Saunders VE7JW

It was requested that more

Continued on next page ▷

lead time and publicity be given by CARF before making suggestions to DOC, and further co-operation between CARF and CRRL be attained. DOC may consider adding a section for Radio Amateurs to its electronic mailbox for our information.
Recommended:

- Previous Symposium recommendations made to DOC regarding the deregulation of HF bands be withdrawn. (Out of 51 delegates present, only 23 expressed an opinion; with 16 voting for the recommendation and 7 against.)
- All HF subbands remain as is, with the exception of 80 metres where phone privileges should be lowered to 3675.
- DOC be more restrictive and selective in the issuance of special prefixes and calls to ensure that only truly important events are commemorated.

Thanks were expressed to CARF, its President, the Clubs involved and all those in attendance. Appreciation to those in attendance, the DOC, moderators, secretaries, Clubs and particularly Murray Brown VE7EIW, was extended by CARF President, Joan Powell VE3FV0. Δ

United Way Run

South Pickering ARC assisted in the second Annual United Way 10 k run in Ajax.

Bob VE3ETE, Jim VE3KUN and Robert VE3NTE patrolled the course while VE3HAA operated from race headquarters in the auditorium. Peter VE3JPP was net control from his car. Bob VE3VFS deserves the special mention for his endurance under rain without a raincoat. Bob was liaison with the course marshal.

There were no incidents. Race organizer Rose Parrish was impressed with how much easier it was with the Amateurs and how calm they all were.— Sparc-Gap December 1984.

The North York antenna zoning regulation has been amended to permit the erection of radio antennas to a height of 16.6 metres (50 feet). Note: this restriction shall not apply to federally licensed installations.

A long career

FB and CW

By Marshall Killen VE3KK

Part V

While his studies curtailed his radio Amateur hobby, Cecil still managed to carry out quite a lot of experimenting. While at London University, he developed a new circuit that became well known to Amateurs on both sides of the Atlantic. This was the Goyder-Lock system which was a special circuit for operating crystal control with existing Amateur transmitters, giving control of large powers simply and inexpensively. He brought his morse speed up to 30 words per minute which he considered quite an accomplishment. In 1925, the technical press reported that he had constructed and operated the first quartz crystal controlled Amateur station in Europe, cutting the quartz crystal by hand from a piece of quartz purchased in London.

Cecil made radio his life-long career. On graduating from university, he worked for ITT in London and then in Paris before joining the BBC in 1934. He was with the BBC research department when in 1936, following an urgent appeal to the BBC from the Indian Broadcasting System, he was lent to the latter as Chief Engineer, All India Radio. He remained in India for ten years during which he was responsible for the development of the Indian broadcasting system which included training over 300 Indian engineers and the establishing of broadcasting stations, transmitting installations and receiving centres in eight Indian provinces. For his work, which left India with one of the finest broadcasting systems in the world, Cecil was appointed CBE by his Majesty King George in 1946.[8]

On his return to England, Cecil stayed with the BBC for just one year as, after being so long in India, he found the English climate hard to take. In 1947 he joined the University of Florida at Gainesville doing research work in connection with electrical and seismic disturbances. In 1950, the emerging United Nations took him on as its first officer in charge of communications responsible for the design, installation and systems testing of all electronic installations, including the famous multi-language interpreter network at the new UN permanent headquarters in New York City. The Korean conflict saw him posted to Korea to establish the independent UN communication facilities. On retiring from the UN, Cecil was invited by the British Overseas Airways Corpation to design and supervise the installation of its passenger computer. This he did so successfully that the system was afterwards sold by BOAC to the Japanese Airlines.[9] Dr Goyder retired in 1971 and resided at Princeton, N.J. until his death due to a motor accident near his home Feb. 7, 1980.

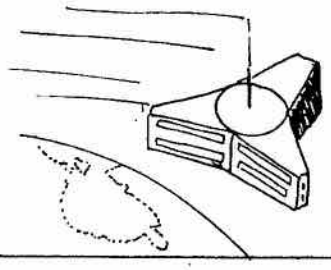
Author's note: Cecil Goyder G2SZ and Ernest Simmonds G2OD eventually became good friends. G2OD passed on the ROTAB trophy to G2SZ at a RSGB ceremony in London Dec. 17, 1926. The Royal Order of Transatlantic Brasspounders originated with Major W.C. Borrett 1DD, Dartmouth, N.S.

I am indebted to Claude Goyder, Cecil's brother, who with his wife resides in Waterloo, Ontario, next door to Charlie VE3NV and Jack VE3VO. Claude has placed at my disposal his brother's personal papers and press extracts assembled over the years. These include many letters from Frank Z4AA. Frank, now a Silent Key himself, in one letter commented how fitting were both their initials. His FB and Cecil's CW. --these stories first appeared in the Kitchener-Waterloo *Kilowatter*

[8] *International Press. Planters Journal, Calcutta, India. Sept. 1, 1936.*
[9] *London Times. Feb. 15, 1980. Dr Goyder's obituary.* Δ

AMSAT NEWS

By Gordon Wightman VE5XU
Regina, Saskatchewan S4T 1M4



Prior to the formation of the AMSAT organization satellite launchings were begun by the Project Oscar (Orbital Satellite Carrying Amateur Radio) group with Headquarters in Sunnyvale, California. These pioneers, Amateur radio club members of Lockheed, Philco, Ampex and Eimac were instrumental in building and launching the first satellite Oscar I on Dec. 12, 1961 followed by Oscar 2 on June 2, 1962. Almost every pass of these two was recorded and taped by your scribe as VE2UQ at the time in Dorval, P.Q.

AMSAT Formation

In March 1969, AMSAT (Radio Amateur Satellite Corporation) was formed with Headquarters in Washington, D.C., to take over the coordination and management of all Oscar activities. The first launch of the newly-formed organization was Oscar 6. Its 2 to 10 metre transponder was a great success and continued for almost five years before battery failure. AMSAT is supported by the ARRL, NASA and by private aerospace industry. Funding also comes from member dues, donations and private sources. Memberships now stand at about 5500 worldwide. As well, AMSAT has spread with the formation of AMSAT-DL, AMSAT-UK, AMSAT-ITALY and Netherlands. Organizations also exist in Canada, Mexico, Japan and Australia. In addition to this, many countries have Overseas Country Coordinators who keep in touch with AMSAT-HQ in Washington. North America has coordinators in almost all U.S. states and Canadian provinces. We are all linked by international and domestic nets. Also directly on Oscar 10. An excellent magazine, *ORBIT*, is published. Updated information is speeded more quickly by AMSAT's Newsletter ASR (Amateur Satellite Report) published bi-weekly.

DX

AMSAT, with ARRL support, have now agreed to issue a non-endorsing DXCC certificate for Oscar 10. Several stations are close to this number, our own count stands at 78 without serious chasing. WAC does not count but does, and represents a real DX challenge to accomplish on the RS birds. It is geographically impossible to achieve from some world areas including Western North America. At this station, WAC represents all Mode A and the most westerly in North America. In fact, DX is a greater challenge on the RS Satellites than Oscar 10 simply because some countries, and in fact continents, may only present a 15-30 second window opportunity a couple of suitable passes per month. For Canadians, suitable passes for DX over the pole to Europe and Asia occur regularly. Generally, it's a real hello-goodbye effort with the sweep second hand and disappearing satellite urging you on. It's the true yardstick of DX— the degree of difficulty involved. ARRL issues WAS certificates for satellite operation any mode. To date, 115 have been issued with Canada represented by VE3HD, VE3KXF, VE2QO and VE5XU. VE2LI holds the only other Canadian WAC and was first to accomplish this feat.

The bugaboo of high noise levels, skip, HF blackouts and solar flare anomalies are left behind on HF. Oscar for the first time offers solid Canadian East-West communications, something any HF operator knows is difficult at our high geomagnetic latitude.

AMSAT is asking all Amateurs to cooperate in not conducting terrestrial communications in the following satellite passbands: 29.3-29.5 MHz, 145.8-146.0 MHz, and 435.0-435.5 MHz. Let's give them room! △

Social Events

CELEBRATION CONJOINT

A signaler que le Reseau des Emetteurs Français (REF) et l'IARU (International Amateur Radio Union), associations nationale et internationale de radioamateurs, commémoreront les 60 ans de leur création, (1925-1985), lors du congrès annuel du REF, à Chateauroux (France), les 25, 26 et 27 Mai 1985.

Une exposition philatélique sur les thèmes radio amateur, radio-télécommunications... aura lieu durant ces trois jours. Des exposants sont recherchés sur ces thèmes.

Des souvenirs philateliques seront emis a cette occasion.

Renseignements, commandes (il est prudent de réserver) (paiement d'avance), sont à faire à Mr. Raymond AUPETIT 14, Résidence Bois Boutin, 16340 L'ISLE D'ESPAGNAC, FRANCE. Détails des souvenirs philateliques du rédacteur *TCA*.

Okanagan International Hamfest

July 27 & 28, 1985
Oliver Centennial Park, Oliver.
Registration: Sat. 9 a.m. Activities: Sat. 1 p.m.-Sun. 2:30 p.m.
YLs: Bring your Hobbies, crafts, flea market items for Sale or display. Potluck Supper: Sat. 6 p.m. Entertainment.
Talk-in Freq.: 146.34/94-OKN RPT, 76/76
Further Info: Lota Harvey VE7DKL, 584 Heather Rd., Penticton, B.C. V2A 1W8 (604) 492-5768.

SORT Fleamarket

The annual SORT fleamarket will be held Sat. May 25 at Medway High School, Medway Raod, just east of Highway 4, Arva, Ont. 9 a.m.-2 p.m., admission $2 per person. Write SORT Inc., P.O. Box 73, Hyde Park, Ont. N0M 1Z0 or call Dave VE3GYQ (519) 672-0270.

CALENDAR

May 11: Ontario Trilliums 20th Anniversary Dinner, Howard Johnson's Hotel, Progress Court, Scarborough.
May 11: Halifax-Dartmouth ARC's fourth annual fleamarket. St. Andrew's School, Halifax. Details April *TCA*.
May 19: Southern Ontario Repeater Team Fleamarket, Medway High School, Arva.
Mai les 25, 26, 27 May: REF and IARU Convention, Chateauroux, France. Congrès annuel du R.E.F. auquel l'IARU et le REF commémeront les 60 ans de leur création.
June 19:DOC licence examination.
June 21, 22, 23: RCN Reunion, Hotel Nova Scotian, Halifax. Write P.O. Box 297, Dartmouth B2Y 3Y3. Details January *TCA*.
June 27-30: YLISSB Convention, Sugarloaf/U.S.A. Write P.O. Box 805, Presq'ile, ME. 04769. Details January *TCA*.
July 27-28: Okanagan International Hamfest, Oliver Centennial Park, Oliver, B.C. Details May *TCA*.
July 27 and 28: 33rd Annual Pacific North West DX Convention, Richmond Inn, Richmond B.C. Details April *TCA*.
Aug. 2, 3, 4: Saskatchewan Hamfest '85. Details June *TCA*.
Sept. 27-29: RSO/CRRL Convention, London, Ontario. P.O. Box 73, Hyde Park N0M 1Z0. Details January *TCA*.
October 16: DOC licence examination.
Publicize your get-together here. Write the Editor, TCA, Box 855, Hawkesbury, Ontario K6A 3C9.

JOINT CELEBRATION

The REF (Reseau des Emetteurs Français, the French Radio Amateur's Society) and IARU (International Amateur Radio Union) will be commemorating their 60 years' existence (1925-1985) during the national meeting of REF in Chateauroux (France), May 25, 26, 27, 1985.

A philatelic exposition featuring Radio Amateurs and radio telecommunications will be held during these three days. Philatelic exhibitors would be welcome.

Please send payment in advance and any queries to: FE 1335 Mr. Raymond AUPETIT 14, Residence Bois BOUTIN, 16340 L'ISLE D'ESPAGNAC, FRANCE. Details of the philatelic pieces from Editor *TCA*.

WORLD WHEELCHAIR TOUR

Rick Hansen, a Canadian world-class wheelchair marathoner, will wheel around the world to complete the first ever world tour. He will be helped by Amateurs and will carry a symbolic torch of inspiration to six continents. The tour began in March in Vancouver and will end in August 1986 at the Vancouver World Exposition.

National Amateur Radio organizations in each country are asked to provide communications for Rick's caravan. Two mobiles will be needed to accompany him, together with a circuit to transmit situation reports to 'Man in Motion' headquarters in Vancouver.

Robert Smits VE7EMD, 202-13640, 67 Avenue, Surrey, B.C. V3W 6X5, is looking for contacts round the world willing to provide this service, including the province-by-province tour of Canada.

When did you last enjoy a pusser red lead and bacon breakfast, whatever that may be? One will be served at the RCN reunion June 21, 22, 23. Δ

Canadians at Belgian Ceremonies

ON4 Canadian Liberation March

By Chuck Cwikowski VE3MNQ

Forty years ago, on Nov. 1 1944, Knokke, Belgium, was liberated by Canadians.

Every year Knokke commemorates the liberation, honouring the Canadians who fought, and remembering those who fell. Since 1984 was the fortieth anniversary of the liberation, the Canadian Ambassador and a delegation of Canadian Veterans led by the Hon. Alan McKinnon attended.

Radio Amateurs contribute each year by operating special event station ON4CLM. Last year, the station was on the air from Oct. 29 to Nov. 3, and was operated by a large, active club, the UBA, Knokke section.

Several members of the UBA were pre-war Amateurs who kept their rigs in operation clandestinely during the occupation, at great risk.

The Knokke club got in touch with the Lahr Amateur Radio Club at CFB Lahr, inviting participation. Joe VE3LYJ, Bob VE5AFA and Chuck VE3MNQ took a week's leave and set off for Belgium.

The station was ceremonially opened on Oct. 29 in the town hall. A Kenwood TS430S and a 530S were operated on the HF bands through a three element tribander on the town hall chimney and a 40/80m zepp strung to the café across the road.

Of 897 contacts, 80 were made with Canada despite poor conditions. VE5AFA worked VE5AFT/5N8 (Nigeria). Dan ON4AEN, a Knokke club member, was worked on a ship in the Red Sea.

Oscar ON5ME, the fastest key in Belgium, visited the station with a group from the Belgian Air Force.

The annual Liberation March between Knokke (in Belgium) and Hoofdplaat (in Holland), the route by which the Canadians advanced in 1944, was held on Nov. 1. The Belgian Amateurs helped in the coordination of the March. Several of them with handhelds accompanied the 2000 participants. Others operated mobile with the Red Cross, Belgian and Dutch police forces.

The Canadian forces were represented on the march by a group from the 4 Combat Engineer Regiment from Lahr.

Wreaths were laid at several War Memorials near Knokke, one by ON4UM on behalf of the Amateurs.

Next year the Knokke Amateurs plan to operate ON4CLM from the new Cultural Centre. They plan to invite Amateurs from the Belgian Armed Forces, and they hope propagation will be good to Canada.

Undoubtedly Knokke Amateurs will continue to be in the forefront of this yearly tribute to the young Canadians who liberated their city. △

Above: Joe Guy VE3LYJ working VE3CBG in St. Catharines from ON4CLM on 20 M.

Right: The fastest key in Belgium dropped by the shack. Oscar ON5ME works CW at +80 wpm.

De 23 Canaux à 23 Pays

By Jean Louis Huard
VE2IG (XM52-331)

Il y a trois ans, mes petit-fils, touchés comme bien d'autres par la CiBiomainie s'achetèrent un vieux poste de 23 canaux et tentèrent, eux aussi de se trayer un chemin à coup de gueule à travers la jungle qui existait alors dans la bande de 27 MHz.

Ils n'avaient malheureusement pour porter leur signal qu'une modeste antenne d'un quart de longueur d'onde mais ...ils écoutaient un certain marché aux puçes (pas le nôtre) et ils y entendirent mentionner qu'un CéBéiste désirant se tenir à la fine pointe du progrès, voulait se départir de son antenne 5/8 de 23 canaux pour la remplacer par une "super-forty" lui permettant d'obtenir une onde stationaire aussi basse que 1 à 1 sur les 40 canaux de la bande.

Après un peu de marchandage, les jeunes héritèrent de l'antenne pour une chanson... c'est vrai qu'elle était démodée! Ensuite, avec l'aide à 80% de leur père, ils l'installèrent...dans le clair à 10 pieds au dessus de la cheminée. Ça faisait quelque chose d'impressionnant à montrer aux amis de l'école et franchement... d'en bas, ...on ne voyait pas la différence avec une 40 canaux.

Leur fièvre de CB était pratiquement passée lorsqu'un peu plus tard je décidai de déménager mes pénates de St-Léonard à St-Hubert juste en dessous de la fameuse antenne avec sa petite rosette tout en haut.

Pas de horizontale

Une fois installé, la démangeaison de la radio amateur me reprit (elle date de 50 ans déjà). Pour passer sa démangeaison et la crier aux autres par dessus les océans du monde, çà prend une antenne et malheureusement dans les angles ou j'aurais pû tendre une belle horizontale, il y avait les fils de l'Hydro, puis ceux du téléphone, puis ceux du télécable. La solution était verticale! ...et juste au dessus de ma tête.

Ma décision prise, je coupe, à la hauteur du balcon du 2ème, le coaxial qui descend au rez-de-chaussé. J'installe un sélecteur pour que les jeunes puissent encore bavarder avec leurs chums de l'école. J'entre un autre bout de coax dans mon studio, je le branche à mon transceiver.

Puis premier essai sur 28050 KHz, T.O.S. de 2 à 1. C'est pas mal et en dedans des normes de beaucoup d'installations commerciales; et comme mon final est à lampes, pas de problême! La bande étant ouverte, deux petits CQs en CW et voilà un F6... en anglais comme d'habitude. Je lui reviens par: Je vs recoi 579 chr ami... il continu alors en français.

Après ce premier QSO, je monte dans la bande fonie. Un court essai et le T.O.S. monte lui-aussi; 2.5 à 1. J'entends un autre F6 qui, lui en BLU, parle dans sa langue. Dès qu'il termine, je l'appelle. Il répond et me donne 57 avec QSB que je traduis par FADING puisque, parait-il, c'est le terme juste.

Une fois la communication terminée, j'insère mon petit tuner d'antenne entre le coax et le transceiver et j'obtiens aisément un T.O.S. de 1.2 à 1. Çà ne change rien à l'antenne mais l'étage final de l'émetteur est heureux et le bloc d'alimentation ronronne comme un jeune chat chaque fois que je mets la porteuse en ondes.

Puis, 15m

Par la suite, je suis allé me promener dans la bande de 15 mètres et comme la tige verticale de l'antenne mesure 21 pi., c'est facile de la faire résonner dans cette bande de fréquences et même sur 20 mètres comme on le verra plus loin.

Après quelques ajustements, même succès de DX sur 15 mètres que sur 10 surtout en CW. Jusqu'à 5 japonais en une demi-heure et les cartes QSL sont là pour le prouver. Ici, je me permets de mentionner un petit truc qui rapportera des dividendes. C'est celui, en CW, d'opérer dans le bas de la bande entre 21005 et 21025 KHz.

Ceux qui sont surs de la fréquence indiquée sur le cadran de leur appareil peuvent même descendre jusqu'à 21002. C'est là que se trouve le vrai DX et c'est aussi là que vous aurez le moins de QRM de la part de nos très nombreux voisins du sud vu que ce sont seulement ceux qui ont le permis ADVANCED qui ont le droit d'y aller et ils sont clairsemés.

Je tiens cependant à vous avertir que la vitesse moyenne dans ce coin est de 20 mots p. min.; mais comme le dit le proverbe bien connu; Aux âmes bien nées, la valeur n'attends pas... etc.

De Japon à Brésil

Lorsque j'ai travaillé le Japon, j'ai remarqué que j'entendais aussi très bien les stations du Brésil et, curieusement, ils s'adonne que des trois tiges radiales qui partent de la base de l'antenne, il y en a une qui pointe vers chacune de ces deux régions. Comme la troisième pointe en direction du nord de l'Europe, c'est aussi de cette région que j'obtiens les meilleurs résultats lorsque la bande est ouverte du coté Atlantique.

Par contre, L'Australie et l'Afrique sont très faibles. Peut-être que si j'ajoutais des radials dans ces deux directions, la performance serait meilleure. D'ailleurs, j'ai lu quelque part qu'on pouvait, de cette façon rendre une

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LUCKY GRANDPA!

VE2IG's grandsons got bitten by the CB bug, and set up a 5/8 wave CB vertical. Grandpa came to stay, couldn't put up a dipole (power, telephone, cablevision lines), so he tapped into grandsons' feedline.

First try on 28.05 MHz, grandpa finds a SWR of 2:1 and works F6, no problem (tube finals help). In the phone band, SWR 2.5:1. An antenna tuner brings that down to 1.2:1.

Good results on 15 and 20, too, but 40 and 80— no go. So to the metal washing line via the tuner. All bands usable now!

verticale directionnelle. Ici, cet effet semble très évident sur 10 et 15 mètres, mais peu sur 20; probablement parce que les radials de mon antenne C.B. sont plutôt courts pour cette bande.

La performance qui est bonne sur 10, 15 et 20, s'avere nulle ou presque sur 40 et 80 mètres malgré qu'avec le tuner d'antenne on peut obtenir des lectures de T.O.S. aussi basses que 1.5 à 1. Ceci s'explique par le fait que je n'ai pas touché au bobinage de charge qui est à la base de l'antenne et que le centre du coax étant connecté à environ au tiers du bobinage, le coax est pratiquement court-circuité aux fréquences les plus basses.

Une chance que pour 40 et 80 mètres, il y a tout près, la bonne vieille corde à linge en métal recouvert de plastique qui, pour bien faire, mesure 19 mêtres de long. Avec le tuner d'antenne, on peut facilement la marier sur 40 et 80 mètres et obtenir de bon QSOs régionnaux.

Tout ceci pour prouver aux débutants et aux autres qui, pour différentes raisons, ne peuvent se monter une antenne directionnelle (UNE BIME), qu'ils peuvent quand même faire du DX et avoir du plaisir. Pour ceux qui aurient déjà une directionnelle de 27 MHz, il est facile, sur 28 MHz d'en conserver toutes les caractéristiques. Il suffit d'en raccourcir les éléments d'environ 10 cm à chaque bout.

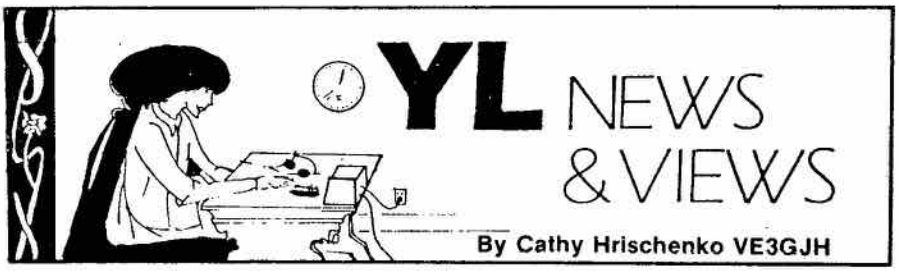
En résumé, à cheval donné ou presque, il ne faut pas trop regarder la bride surtout lorsque notre nouveau transceiver multi-boutons nous a couté les yeux de la tête. A tous et à toutes, 73, bon DX et... à la prochaine. Δ

de UMS Oct. 83

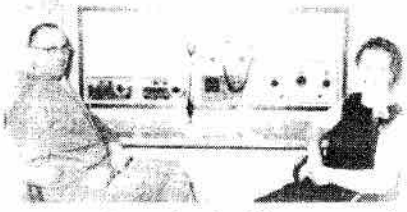
Addresses needed

CARF needs up-to-date addresses for following members:
Peter Draycott VE3KMZ
Brant Brechthold VE3JBF
Irvin Emmons
William Turland VE3MDE
Leon Amadouny VE2DTH
W. Chisholm VE3DJC
Edwin Dyck

Can you help? Call, write or radio Debbie at Box 356, Kingston K7L 4W2, 613-544-6161, VE3VCA.



Sympathy



A his 'n' hers shack. Margaret and Karel's rigs when in VE6.

It is with deep regret that I tell you that Margaret VE7ATI became a Silent Key this past Oct. 13, 1984. I had the pleasure of meeting Margaret (then VE6ABP) and OM Karel. We've kept in touch over the years. Margaret had given some past history and Karel VE7ATH has loaned me her 'Ham Scrapbook' which she had often mentioned. I am enjoying the memories it unfolds and will from time to time pass along some of the human interest Amateur radio news articles.

Margaret received her first licence in 1959 and her Advanced in 1961. She was very active handling traffic and phone patching. Then she got interested in DX and received her DXCC. Margaret got into certificate hunting and had over 200 certificates. She also worked all the U.S. Counties #133 and #2 in Canada. To top that she did it again in the spring of 1984. This time all on 20 metres AND all mobiles! Margaret's enthusiasm in whatever she was doing and her zest for life itself was hard to beat, and that's the way she will be remembered!

CLARA

New slate of officers for 1985

President— Viv Taylor VE3HGA. Viv has been a Radio Amateur since 1974 and attained her Advanced in 1975. She became a member of Nortown ARC and CLARA. She has since become a member of several other Radio Organizations.

She held the position of editor and publisher of the *Clarion* for three years and was treasurer for another three years. She received the CLARA dedicated member plaque #3, in 1978 at the Clara Luncheon in London, Ontario.

Vice President— Muriel Foisy VE7LQH.

Treasurer— Anne Rushford VE6AYR.

Secretary— Susan Barabas.

Don't forget the new 1985 AC-DC 'Mystery' Contest. Tuesday May 28-Wednesday May 29. Check elsewhere for full information.

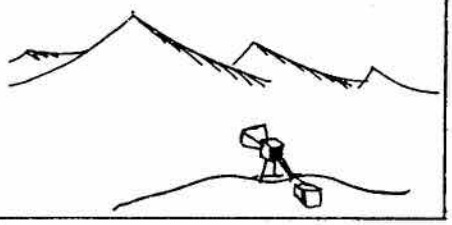
Romance sparks again. Received word that Linda Tang VE3NQZ and Ron Reynolds VE3IHG tied the knot Feb. 2, 1985. Also Beverley Blakely VE3LZU married Dec. 1, 1984 and is now Beverley Ormstrup. Congratulations!

That's it for this time. Remember there is no cure for birth and death, save to enjoy the interval! 73, 33, 88, as the case may be. Cathy VE3GJH. Δ

Can anyone help CARF with addresses for:

Alan Arvid Frydenlund.
Ron Leslie VE1CAS.
J. Spence, VE7AMJ.
D. Porter (Life).

MICROWAVES



By Michael Ross VE2DUB 988 Hudson,
St. Bruno, Quebec J3V 3Y2

Last month we looked at the distances that could be covered using reliable line of sight propagation. For the Amateur with a dish at 50 feet, I must admit the predicted range would be enough to discourage even the most dedicated VHF/UHF enthusiast. Fortunately, summer is coming and with it brings the warm weather and prime VHF/UHF and microwave DX conditions.

There are several non-line-of-sight modes of propagation that can be used to extend station range. Signal enhancement due to superefractive temperature inversions is a familiar occurrence in the mornings and evenings on many of your local two metre repeater frequencies. These inversions occur when the layer of air above is warmer than the layer below. The boundary between the two layers acts as a sort of waveguide, keeping the signal from going off into space as it normally would. This effect greatly increases the distance a signal can travel and provides the best hope for exceptional DX on the higher frequencies.

The Italians use these layers for routine 10 GHz contacts over hundreds of kilometres across the Mediterranean Sea and now hold the world distance record of over a thousand km. Hams on our coasts should be able to take advantage of the same type of propagation at certain times this summer Those living near one of the Great Lakes could also make use of these over water paths to great advantage. For the rest of us there should still be some over-land paths that will produce good results, but then, how would we know?

While on VHF/UHF, there is an abundance of beacons in the form of repeaters that can be used to check for favorable conditions, the availability of a reliable signal on the microwave bands is almost nonexistent. Any possible enhanced propagation at these frequencies goes unnoticed. The relative lack of active stations can mask a real great opening due to the absence of signals.

The obvious solution is to install beacons on the higher bands. They could be placed at locations close enough to the local groups for equipment testing and antenna adjustment and could be used by more distant operators to alert them to band openings.

A 10 GHz beacon, for example, could be constructed from a salvaged microwave motion detector head using the small horn to illuminate a 30 degree or more beamwidth, from an existing Amateur repeater site. These units can easily be tuned into the Amateur band and calibrated using a gunnplexer as a reference frequency source for both beacon and transceiver use.

An extension of the walls of the existing horn could be employed for more gain with little pain or a dish could be added to cover a specific path. With the low cost of discarded motion detectors, several heads could even be ganged to cover many directions on one or more frequencies.

If equipped with receivers, these beacons could be converted to microwave repeaters, linking remote stations blocked by intervening hills, buildings or otherwise limited by the horizon. If nothing else, beacons would be comforting and reassuring companions to the present inhabitants of our microwave bands until their popularity increases to the same extent as the VHF bands.

Microwave motion detectors are used in home security alarms. Units removed from installations are often available at nominal cost from Security Alarm contractors. Try under 'Burglar Alarm Systems' in the yellow pages.

As always, your reports of microwave activity would be welcome for inclusion in this column.

△

CONTEST SCENE

By John Connor VE1BHA

MAY 11-12 CQ-M
25-26 CQ CW WPX
28-29 CLARA AC/DC Mystery Contest
JUN 22-23 Field Day
JUL 13-14 Radiosport
20-21 CQ VHF WPX

The Scene: A ham shack, somewhere in Canada
The Hero: Joe Average Ham, non-contester
The Time: Saturday afternoon during ARRL CW Contest

It was Saturday afternoon when Joe Ham decided to lengthen the wire he had in the attic for 15 metres. He spent an enjoyable half hour puttering around accomplishing this task, and then decided to try it out.

Down to the shack, and flip on the rig. "Fifteen hasn't been too good lately, but seems pretty good today," thought Joe. "Wait a minute. It's just a bunch of Americans calling CQ Test. Ugh. What a mess." Joe tuned around a bit, thinking that he might as well go watch TV. Then it happened. "Hello, who's this? Aha. OH8OS. Good signal. Heck, I might as well give him a call. Couldn't hurt." Joe signed his call. Back came OH8OS right away, with a snappy 599500 report. "Wow, that was easy. And I'm only running 20W, too! Hey, here's VP2EAG. Bet I can't work him that easily." Joe waited for the VP2 to sign, and then gave him a call. Back he came with a 599KW report. "Boy, that was easy too," thought Joe. "Maybe I'll just work one more..."

Moral of the Story

This story, while slightly embellished, is basically true. Joe Ham is in reality none other than Frank Hughes VE3DQB, Noble Editor of *TCA*. The story is based on Frank's report to me of his working OH8OS and VP2EAG on 15M in the ARRL CW Contest, using 20W to an attic antenna. Frank hadn't intended to get involved in the contest, but ended up sending in a check log to ARRL. (A check log is a log sent to the sponsor of a contest for checking purposes, but not for award consideration.) I thought I would tell this story to help convince those who haven't yet given it a try that contesting can be both easy and fun. But it is like swimming in cold water. You have to just jump in.

One word of warning, though. It's that "just one more" feeling which can cause trouble. It starts as just one more QSO. Then it becomes just one more multiplier. Then just one more page. One more contest. Before you know it, you are a contester.

ARRL Contest

I haven't heard any other Canadian results in this year's ARRL contests. Generally speaking, conditions were not too good, especially on the higher frequencies. Some of the comments I heard after the phone contest were along the line of "worst conditions in 20 years." Most of the American Big Guns had only one or two hundred QSOs on 15, and the highest multiplier on ten that I have heard was 15 by N5AU. That's not including a certain VP2M who had a good pileup on ten... on his second harmonic!

WPX Results

Moving along to another contest, the March issue of *CQ* contains the results of the 1984 SSB WPX. The Canadian results are presented here.

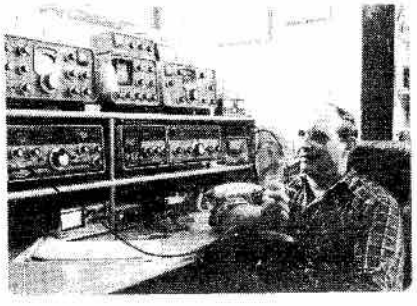
Over the years, Canadians have done very well in this contest, and last year was no exception, with five Canadians making the top ten listings.

VE3LDT took home the trophy for top Canadian single op, all band entry, coming just short of one million points.

On 160M, VE3CDX racked up 206k to set new Canadian and North American records, good for third place world wide. VE3MFA grabbed the number five spot with 91k. Both CDX and MFA beat the old world record.

VE3IY tallied 721k on his way to the third world high 80M score. In the process, he also set new Canadian and North American marks. (Jim's picture also graces page 28 of *CQ*. Obviously he believes in Drake, and his son is a CW man.)

Forty metres saw quite a battle, with VE3BMV coming in second behind T32AF by 170k. Yuri broke the world record, and another 100 QSOs would have given him first place. Though he had 100 more multipliers than 'AF, it wasn't enough to make up for the difference in the average points per QSO between the two. While Yuri had an average of 4.5 points per QSO, T32AF had 5.8.



VE7DSH, all-band entry

This is due to the fact that almost all of T32AF's QSOs would be with another continent, while Yuri of course worked a lot of Ws. In any case, Yuri gets to add another trophy to his collection for his efforts. The third world high on 40M went to VO1CV, who also bested the old world record, turning in a 2.5M score.

On the high bands, VE3EEW turned in the top Canadian 20M score, with 1.3M. Fifteen went to Doug VE3KKB who made a half meg, while Bob VE1YX just topped the one million mark to take ten metres.

Multi-single saw four entries, with VE6OU leading the way, talking their way to 4.4M points.

All in all, a very FB job, and congratulations are in order to all participants.

Last but not least this month, the Canadian Ladies Amateur Radio Assosciatin, CLARA, is holding their AC/DC 'Mystery' Contest on the 28th and 29th of

Continued on next page ▷

May. The rules are outlined below.

CLARA AC/DC 'MYSTERY' CONTEST

Dates: 0000Z to 2400Z Tuesday May 28

Exchange: Name, serial number, RST, QTH and whether or not a CLARA member.

Scoring: For the base score, CLARA members score one point for each non-member, two points for each member, and three points for each CW contact. Non-members can only work CLARA members.

Multiplier: Multiply the base score by the number of provinces/territories worked.

Suggested Frequencies: 3690, 3775, 3900, 7035, 7150, 14035, 14160, 14280, 21035, 21300, 28035, 28488, 28588

"Mystery" Stations: There will be three unidentified mystery stations operating. The contest manager will add ten points to the base score of each log for every mystery station contacted.

Each CLARA station may be worked twice, once on CW and once on phone, or the same mode on two different bands.

Logs must be signed, and should show the full name, call and address of the operator, as well as your final score. Logs must be received before July 15, 1985. Send them to Muriel Foisy VE7LQH, RR 1, Pender Island, B.C., V0N 2M0.

KA7JVW No. 4 on 20 m

CANADA CONTEST 1984

Well, here we go as promised. The results of the Canada Contest '84 have been tabulated and the results follow this write-up. There was quite a bit of participation this year even though the bands were not the best. The new point scheme seems to be welcomed by nearly all who participated and the results show that the U.S.A. and other country entries were

Canada Contest 1984

Call	Total	QSO's	VE-QSO's	Multipliers	Trophy/Certificate
A					
VE5VCA/ADA	127,686	430	249	39	X
VE7VX	100,000	272	212	40	T
VE6CB	50,622	187	91	33	C
VE7GDX	48,060	177	139	30	
AF4K	45,304	212	119	28	C
VE3CWE	41,790	144	93	35	C
VE6VCA/VW	36,772	175	88	29	
NC2V	33,728	139	83	31	
VE3NBE	33,294	135	79	31	
CG4VV	32,952	158	80	26	C
VE2EDK	25,326	193	59	21	C
N4BP	24,732	194	93	18	
VE3ADP	21,150	125	61	25	
W3ARK	16218	132	61	17	
VE3OLN	12,720	92	80	15	
VE1AUU(KB)	12,636	259	58	9	C
NA9J	12,070	111	41	17	
K7LXY/0	11,776	113	44	16	
VE1BBI	10,350	106	41	15	
VE2FPF	9,418	63	45	17	
KS7T	9,240	115	45	12	
VE5BAF	8,866	118	35	13	C
VY1CW	6,732	38	34	17	C
VE7AFY	6,272	45	38	14	
K1BV	5,980	59	34	13	
VO1AW	4,920	38	26	15	C
N8CQA	4,680	52	26	12	
VE7FY	4,448	57	48	8	
VE2GUY	4122	59	37	9	
VE2OHC	3,570	87	31	7	
WO1ZV	3,444	66	38	7	
VE7DSH	3,000	28	23	12	
W8eAO	2,664	40	19	9	
EA5CF	2,296	58	16	7	C
VE3LMG	2,256	30	27	8	
VE1XA	1,956	33	29	6	C
VE3GWN	938	15	9	7	
LU1EWL	700	18	8	5	C
WA3JXW	496	22	6	4	
3.5					
VE7DLM	6,432	102	56	8	C
VE6CPE	5,520	140	84	5	C
VE7EWW	4,800	64	47	8	
VE3LRB	780	29	24	3	C
7					
VE1CCM	7,620	106	55	10	C
KJ9D	7,472	159	43	8	C
VE3OEQ	1,896	55	16	6	C
VE3OOS	1,528	58	25	4	
VE3MGY	1,528	58	25	4	
14					
W5FO	35,238	229	117	21	C
VE7AV	20,400	201	86	15	C
VE3LQJ	7,080	46	38	15	C
KA7JVW	6,528	102	64	8	C
VE4QST/MG	6,220	91	43	10	C
VE3KOY	5,460	88	29	10	
VE6CPP	3,180	104	19	6	C
VE3DWE	2,842	41	37	7	
VE2DTI	2,086	30	23	7	C
VE3NYT	1,246	18	11	7	
YV5JEA	1170	25	19	5	C
VE8PH	216	6	5	4	C
21					
VE3MOL	420	10	10	3	C
28					
VE3MCN	90	9	9	1	C
MM					
VE7ZZZ	113,400	308	188	45	T
VE6CAW	53,136	296	124	27	C
VE2FOT	40,840	235	178	20	C
VE3YRA	30,100	99	64	35	C
VE2CDN	22,572	100	66	27	

Check Logs- NA9J, VE3MOL, VE5VCA.

well received by the contest committee. There seemed to be somewhat of a problem in the tabulation of the individual results (on tabulating a bonus station, they also count as a separate VE contact). In other words, the bonus stations are worth 30 points.

Comments

N4BP— first contest with new TS 430s; VE2EDK— 1st contest, Conditions not very good; VE5VCA— could not even get a single contact out of 160; VE7GDX— Glad to see that you increased the foreign contacts to 4 points; VE3NBE— I like to work this contest. It's short and gives preference to VEs. Would be nice to see more VEs taking part; K7LFY— are there any VE4s? It is a welcome change from other contests; Ed: nice log; VE2FPF— my first contest. I enjoyed it tremendously. See you next year, KS7T— nice way to end the year; VE5BAF— I was out visiting Saturday nite and forgot about contest. ED: OK Dave you didn't miss much on Sat nite; VY1CW— terrible propagation and very few stations looking north; K1BV— contest comes at a good time... between all the other big ones; VO1AW— a heck of a time to start a contest on my wedding anniversary. ED: OK Clarence— next year it's on the 29th; N8CQA— always enjoy this test and eventually will get WAVE/WCAN; VE7DSH— where's the Kenwood TS430S; VE1XA— my quota on 146.520 sure was down but had fun; VE3GWM— small score but had some fun. Americans seem keener about this than Canadians; VE7EWW— only contest I work. Always a good time; VE3MGY— propagation being what it was, this wasn't a contest, it was a slaughter. See you next year; VE3OEQ— this was my first contest but it won't be my last; VE1CCM— this contest may not be the major band-busting, band-stopping, major premier operating event of the year, but it has a lot of character. KA7JVW— I was surprised to have 9J2LG call me in the contest. Wow! a new country for me; W5FO— enjoyed giving points to the VEs. See you next year; VE3DWE— sorry I couldn't operate longer; VE3NYT— I never even got a VE3 multiplier; VE4QST— prefer a Saturday contest to Sunday; ED: I'll get you a VCA call for the next one Malcolm. VE8PH— band conditions in this area bad at this time of year— roll on the rising sun; VE3YRA— right call this time— station was warmer this year; VE7ZZZ— seemed to be a lack of participation by the CARF official stations? ED: I don't think so; VE2CDN— thanks for a good contest. Wish more Canadians would participate in their contest; VE2FOT— we loved the experience. Will probably do it again this year.

Wrapup

That wraps the contests for the '84 season, let's look forward to the new '85 season and, you never know, we may have better propagation for the next contest.

73s Norm VE6VW

P.S.: For those of you that are looking for the Certificates for the past three years, please be patient, I am slowly getting them in the mail and you will be getting them soon. △

Canadian Results 1984 CQ SSB WPX

CATEGORY	CALL	SCORE	QSOS	MULTS
All Band	VE3LDT	997,512	712	467
	VE6CHW	580,108	732	323
	VE4CCC	536,200	628	350
	VY1CW	530,865	815	251
	VY1CC	447,990	631	274
	VE7BSM	376,327	519	259
	CK3CKR	335,342	412	238
	VE4RP	276,640	403	247
	CK3EZU	69,322	194	137
	VE2PTU	68,976	199	144
	VE2EW	36,620	115	102
	VE5AFP	28,785	125	101
	VE8XD	19,224	112	72
	VE2WA/3	12,328	70	67
	VO1AW	3,605	36	35
28 MHz	VE1YX	1,053,352	1316	373
21 MHz	VE3KKB	553,611	614	327
	CK3FEA	325,314	479	279
	VE2PD	45,994	145	122
	VE4AEN	23,000	104	92
14 MHz	VE3KEW	1,288,050	1284	465
	VE6EEP	534,750	819	310
	VO1QU	429,590	576	323
	VE7EIK	421,670	628	298
	VE8IK	57,739	307	181
	VE7EDA	49,724	160	124
	VE2IEH	47,436	165	134
7 MHz	VE3EMV	2,827,440	1369	462
	VO1CV	2,465,850	1232	425
3.5 MHz	VE3IY	721,392	710	266
	CK3IPR	576,114	687	231
	VE3CRG	128,874	227	141
	(Op. VE2ZP)			
	VE7AO	60,802	141	101
	VE1AIH	13,056	62	51
1.8 MHz	VE3CDX	205,824	397	134
	VE3MFA	91,200	254	96
	VE3HEN	28,520	122	62
MS	VE6OU	4,376,820	2776	613
	CK3UOT	3,280,662	1898	594
	VE5ADA	2,145,436	1664	514
	VE7UBC	1,955,898	1640	399

QUA CARF

CARF is reviewing and extending its policies on the following matters:

1) Content of TRC-24 and examinations— what is CARF aiming for?

2) Special prefixes— issued under what circumstances and to whom?

3) Deregulation— status quo; complete deregulation; or deregulation under Ministerial Guide Lines?

4) Band plans for HF— voice, RTT, SSTV. Phone expansion?

5) Band plans for VHF/UHF— repeaters, CW, RTT, satellites, packet Radio, ATV

6) CARF sponsored Contests— freqs used; bonus points.

Let your Director know your views for the guidance of the executive. △

News Briefs

EMERGENCY PROGRAM

Bob Smits VE7EMD announced the appointment of two Amateur Emergency Coordinators for the B.C. Emergency Program Amateur Radio Service. Wayne Merk VE7CI, a member of the Burnaby ARC, and Stephen Vedoy VE7BKL will coordinate the activities of volunteer Amateur Radio Operators in the provision of emergency communications.

SPECIAL CALL

The town of Manotic, Ontario celebrated its 125 year anniversary in 1984. DOC allotted them the call letters XL3 for this. Over 900 QSL cards printed with the special prefix were sent out.

A handout for the general public describing Amateur radio was available during the celebration, and over 300 copies of this were given away.— Information from Bill XL3GPR.

TRANS-ATLANTIC QSO?

A group in Engand is arranging a DXpedition to the Republic of Ireland in order to attempt the first ever direct trans-atlantic QSO on the 2 metre band.

The group intends to use high power to four stacked and bayed long yagi antennas and is currently looking for sked partners able to operate high power located on or near America's eastern seaboard.— see letter, *TCA* February.

AMERICAN NEWSFRONTS

WB5LEU was fined $2000 by the FCC for running over 20 kW on 3895 kHz. Apparently some boors were QRMing a net he approves of.

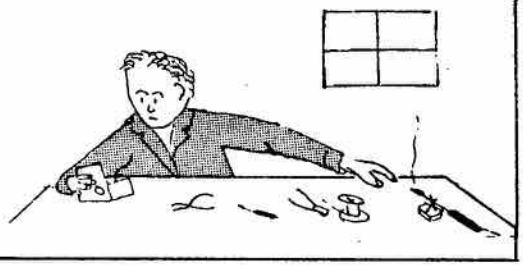
I wonder what weapon he carries when he travels on the New York subway?

SPECIAL EVENTS STATION

To honour the 42nd anniversary of the commissioning of H.M.S. Haida and to commemorate the 75th anniversary of the founding of the Royal Canadian Navy, the Nortown ARC will operate a Special Events station on May 4 and 5, 1985, from the radio room of the vessel under the call sign CF3NAR.

TYRO

By Frank Hughes VE3DQB



The Job Finder Oscillator

Sometimes when my consci— when I cannot sleep, I go to the rig and tune 160 and 80 as the sun rises. I often hear wonderful exotic calls, and reply to their CQs. One morning I had tried this with my usual result— zilch— when, to my astonishment, the phone rang.

"Hi, Frank, could you meet me at the high school in ten minutes? I need your help."

Mark Space, of course. Who else would have the nerve to call at about 0600 local? Suppose I had been asleep?

"Oh, all right, Mark," I said, cursing inwardly the parental guidance which drummed Always Be Polite into me. "I'll get some clothes on and be with you."

A few minutes later we were walking down Skid Boulevard toward the school.

"I saw the light in your shack, so I knew you were up."

"What's this about, anyway, Mark?"

"That," Mark pointed to the school's garbage pile, set out for collection later that morning. "They've thrown out an old desk, and I thought it would be a fine thing for a workbench, put the rig on, and so on."

I don't wonder the school had thrown out the desk. It was a very small typist's desk with a leg missing, empty drawer holes, and someone had been absorbed in carving his initials deeply on the top, while his cigarettes had made a mess of the edges.

As we took the wreck back towards Mark's house, a police cruiser seemed extremely interested in us. Then I appreciated Mark's guile, for seeing me, a solid, mature citizen, on the hinder end of the loot, they did not stop and ask how we came by 'this,' which, had Mark been accompanied with one of the usual punks he hangs around with instead of me, they would undoubtedly have done.

We left the desk in Mark's back yard for the necessary carpentry, and he invited me into his room. He wanted some advice. We picked our way across his floor, avoiding as well as we could the piles of clothing, the football and hockey gear, the schoolbooks and toys of various vintages.

"I'm going to put it here, under the window," the floor at this point was devoted to a large model airplane, which it was vital to tread most delicately round. "I could bring the antenna through the window, then."

"And a ground?"

"Ar." He hadn't given that any thought.

"A ground is vital for safety, proper working of the rig, and avoidance of TVI."

"The water pipe there?"

"Perhaps, but check it first by driving a pipe into the ground outside and measuring the AC resistance between them. Iron waterpipes sometimes have high resistance joints. And be careful and look before you drive the pipe into the ground, to avoid nasty surprises."

"Anyway, it'll be some time before I get a rig, the way things are."

"But you'll soon have a job, I imagine, Mark, then things will look brighter."

"Jobs are hard to get."

"So appraise the situation. How can you increase your chances of getting one?" How can you make yourself stand out from the crowd?"

Mark looked puzzled, and did not reply. "You already stand out to me. You have the self discipline to master code to eight words a minute. That's not common."

He brightened. "I'll tell them I'm a radio Amateur."

"Not to an audience of personnel administrators; radio Amateur means CB to them. There being one Amateur per thousand Canadians, the chances are one in a thousand that you'd get a knowledgeable interviewer. No, take something you've made with your own hand."

"The code practice oscillator."

"Close, but morse code means nothing, either. Put a switch on it, instead of a key jack, and call it an electronic tester. Now you're in the anteroom, someone else is being interviewed. What are your chances of beating him now?"

"Yeh, I'd show 'em..."

"No, Mark. You're dealing with a person whose mind stuck in a rut long ago. You need a spiel, besides the oscillator.

"Mr.— or Mizz— someone will ask you why you want a job. Don't say you want the money. They know that already. It is a character defect in every employee they have. Say instead, 'I am interested in what your Company does, and I want to make a contribution. I have the usual schooling of someone of my age, but more, I have taught myself some electronics. I think I have skills that would interest you.

"For instance, I built this tester. You know that hi fi equipment must be carefully set up"— s/he didn't, but it sounds plausible— "and this little device allows me to test it at various notes up and down the scale. I built it myself."

If you are lucky, s/he'll lift the phone, and say: "Dr. Sparks, I have someone here who might interest you."

"And if you do get this opportunity, have the circuit diagram ready to show, and KNOW it. Be prepared to say: 'This is the

reverse polarity protection diode. This switch selects the coarse frequency .capacitor, this potentiometer is the frequency vernier... and so on, throughout the circuit.

"And if you only get a job sweeping the floor, do it willingly and cheerfully, and keep your eyes and ears open.

"Another thing, Mark," I said, looking round the room, "keep your workplace neat. If the boss comes and wants something, be able to put your hand on it right away. For instance, where's your left skate?"

Mark's right skate was safe in his football helmet. His eyes darted round, then he started to look here and there, then to move piles of debris from one side of the room to the other, and from there onto the bed. After about five minutes, he found it.

"Need I say more?"

"Not really."

"Then I will. Take all of this, make three piles. Things you use every day, things you use sometimes, things you never use at all. Throw away the last two piles."

"Throw away my hockey stuff?"

"No, Mark, don't take it that literally. Keeping fit is an important part of life. Hockey helps there, and also provides the catharsis of giving an elbow to one of those punks from Vankleek Hill."

I left soon after, and went home to find a circuit that Mark might find useful. It is a sine and triangular generator using a 555, and should be a dandy pocket example for him. It wasn't in the file, nor could I find it on the workbench even after I'd lifted everthing off onto the chair and put it back. It wasn't on the desk, either, even though I went through every paper on it, took me an hour. At last I found it, in a pile of old *TCA's* I intend to go through when I get round to it. I went off to Mark's again.

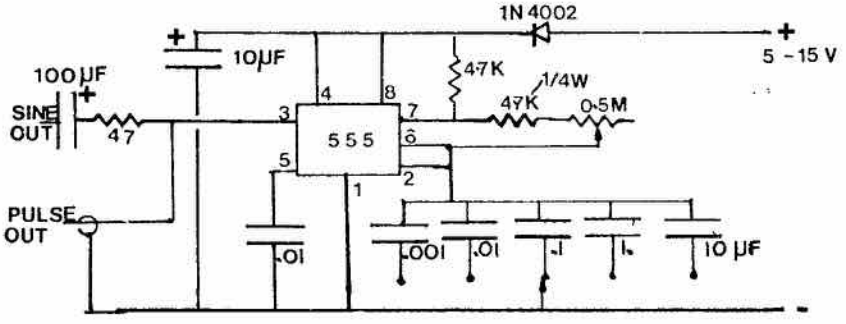
There was no reply to my knock. I opened the door a crack and hollered "MARK!" and got a hurried "Come in" from the direction of his room.

There I found him, ministering to his mother, who had apparently fallen into his chair in some sort of a swoon. He was reviving her with a glass of water.

"How did you manage it, Mr. Hughes?" Mrs. Space asked, when she had been brought round. "I've been at Mark for years to clean up his room, and this is the first time I've seen the floor since he started high school."

"I've done nothing, Mrs. Space. Mark has done this himself. It's a by-product of his Amateur radio."

△



Here's the circuit Mark made up. I filched it from VE6, the Alberta newsletter. With a gain control and a tiny speaker, it gives an impressive range of audio.

SWAP SHOP

LIQUIDATION: Kenwood TS-930/AT $1795.00; MC60A $85.00; Heathkit SB-200 L.A. new 572B's $495.00; $325.00 less tubes, Heathkit Wattmeter HM-102 $40.00; B&W Phonepatch #3002, $125.00, Tentec Keyer Electronic KR-20, $75.00, Icom P/S IC-3PA, $45.00; Atlas Mobile Mount DMK $35.00; Hustler RM-20 20M resonator $30.00; Realistic 'CB' TR7-427 $95.00; TRS80 Color Computer MC-10 16K $150.00; All Items New or Mint Condition; Tubes: 833A, 3-400Z, 4-400A with sockets, 304TL, 304TH, 3RP1A: SB620 Scope CT.: Best Offers will all be answered, Tradeins might be considered on major items. VE20U, 2785 Valcourt St., Ste Foy, QC. G1W 1W2.

FOR SALE: Drake TR4, Mint condition with speaker, Power Supply, Mike, Manual. Used very little, Best Offer. Peter Semotiuk VE8PS, Box 20 Cambridge Bay, N.W.T. X0E 0C0. (403) 983-2357.

FOR SALE: SB401 and SB303 with manuals $350.00. Murray Anderson, P.O. Box 1228, Gravenhurst Ont., P0C 1G0; (705) 687-2386.

TOO MANY RECEIVERS: Barlow Wadley Portable XCR-30 Mark II, like new $200.00; English Built Eddystone Model 830/4 120 kHz to 30 mHz in 9 bands like new $300.00; National HRO-60 complete with 4 coils, cabinet, speaker and manual, a beauty $400.00; R.C.A. CR-91 540 kHz to 32 mHz, cabinet & speaker, very clean $150.00; Marconi CSR-5A 80 kHz to 30 mHz, with A.C. power supply inoperative $50.00, matching transmitter Marconi $50.00; Hammurlund SP-600-JX62, rack mounted (no cabinet) inoperative BFO $100.00; U.S. Navy TCS-12 with A.C. Power Supply 1.5 mHz to 12 mHz $75.00; Max Powell V01HH, P.O. Box 500, Carbonear, Nfld. A0A 1T0, 709 596-5687.

Send your 'Swap Shop' notices to the TCA Swap Shop, Box 256, Kingston, Ont. K7L 4W2. Single insertion is $1.00 minimum (10 words) and $1.00 for each additional 10 words. To renew, send copy and payment again. Please print or type, and put your membership number and call (not counted) at the end of your ad. Include your postal code.

VHF/UHF

By Bob Morton VE3BFM
8 Thornbay Dr., RR 2
Stouffville, Ont. L0H 1L0

The Corkscrew Antenna

More and more Amateur satellites are being put into space, more astronaut Amateurs are taking their rigs with them into space, and more Amateurs are communicating via bouncing signals off the moon. There is one type of antenna which, although isn't a must, is really a nice-to-have item: A Circularly Polarized Directive Antenna.

A Cross-Polarized Yagi will eliminate the 15 to 25 dB drop in signal level that occurs when vertical to horizontal antennas radiate to each other. Anyone listening to the Oscar 10 satellite with a single yagi will definitely hear the loss of signal every half second or so as the satellite rotates. Trying to copy a weak CW signal becomes a real challenge with this additional repetitive type of loss.

Up to now, only a simple loop type antenna has been used (by Owen Garnot W5LFL in the STS 9 Columbia) in Amateur space communications. A circular polarized signal is basically independent of how the space craft is oriented. The 3 dB loss in one polarization by cross-polarizing is a small price to pay for the much greater losses due to cross polarization. Anyone who tried to contact W5LFL during his historic flight knows that only a very few low power stations were able to punch through (more like brute force) all the signals directed at him. Starting off with the 15-25 dB cross polarized handicap, made it even rougher.

Moon bounce (EME : Earth-Moon-Earth) communications is becoming more popular these days, as GaAsFET Technology improves noise figures to less than 0.5 dB at an economical price. Up until a few years ago, the ability to extract weak signals out of the noise was achievable only by the use of huge antenna arrays to obtain more signal to overcome this higher noise level. Today there are quite a few stations who have made successful moon bounce contacts with only a single yagi.

Why the use of a circular polarized signal for EME? Well, Faraday rotation is a phenomenon which can cause a polarized signal to be twisted as it passes through the earth's atmosphere and magnetic field and cause it to come back cross polarized and 15 to 25 dB lower in signal strength. For weak signal work that is game over, since most stations just don't have that fade margin designed into them. A 3 dB loss (halfpower) can be designed in at minimal cost and size to virtually eliminate this effect.

Getting a signal to be circularly polarized is actually a simple matter today, since it is fairly common knowledge and well publicized. Around the early part of 1946, Dr. John Kraus W8JK developed the corkscrew antenna.[1] He built a 7 turn helical antenna about 6" long for 2500 MHz and discovered that a dipole placed in front of the open end could be rotated without a loss in signal strength.

A helical beam antenna[2] (axial mode helix) operates over a frequency bandwidth of about 1.7 to 1. Impedance matching is easy for a smaller operating bandwidth.

The figure shows a helical antenna polarized for right hand circular polarization (RHCP).

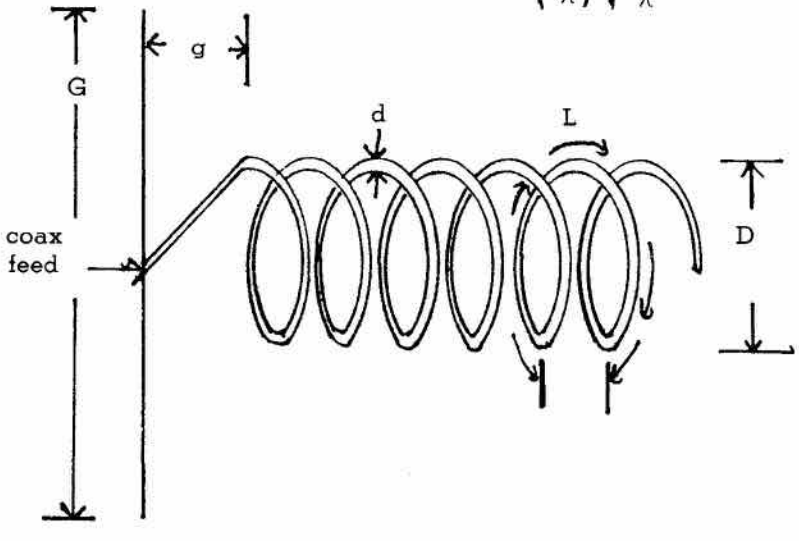
D = Helix diameter
S = Turn-to-turn spacing
L = Length of one turn
n = Number of turns
d = Helix conductor diameter
g = Start of helix from ground plane
G = Ground plane diameter

Building a helical for a specific frequency is almost guaranteed to work if the following design parameters are used, based on a single turn L = 1.0 wavelength.

Diameter D = 0.32 λ
Spacing S = 0.22 λ
Ground Plane Diameter G $\geq$ 0.8 λ
Conductor Diameter d = 0.02 λ
Spacing g = 0.12 λ

The half-power (3 dB points) beamwidth (B) is approximately:

$$\beta = \frac{52}{\left(\frac{C}{\lambda}\right)\sqrt{\frac{nS}{\lambda}}} \text{ degrees}$$



λ = Free space wave length

$$\left(\frac{11811}{(F(MHz)}\right) \text{ inches}$$

The approximate gain for helicals of at least 3 turns is:

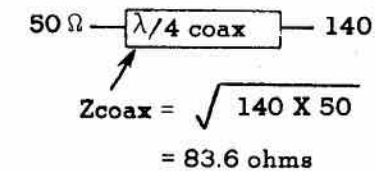
$$G \approx 11.8 + 10 \log_{10}\left[\left(\frac{C}{\lambda}\right)^2 \frac{nS}{\lambda}\right] \text{ dBi}$$

Input impedance $R = \frac{140C}{\lambda}$ Ohms

For $C = 1.0\ \lambda$

$R = 140$ Ohms

A simple $\lambda/4$ coax impedance matching section is



= 83.6 ohms

As usual, what you need is not available, so a compromise has to be made.

Using 75 ohm coax will match the 50 ohms to 112.5 ohms and a VSWR of 1.25 would be achieved.

Using 93 ohm coax will match the 50 ohms to 173 ohms and a VSWR of 1.25 could also be achieved. Both would work quite well.

Properly polarizing a helical antenna (left hand or right hand) is important since cross polarizing helicals will result in the 15-25 dB loss of signal as with crossed dipoles. A helical is fixed in one sense and cannot be made to receive the other sense. Another helical wound the opposite way must be used.

Cross polarizing two yagis and phasing them properly will also result in circular polarization. The advantage of crossed dipoles is that they can easily be switched from one sense to the other. I'll go into details on how to do this in a later article.

Good Luck in building your 'Corkscrews.'

References:

[1]John Kraus 'Big Ear'

[2] Henry Jasik 'Antenna Engineering Handbook' Chapter 7 by Edward Harris 'Helical Antennas'

Δ

Silent Keys

Pam VE3BVG and Bob Gorman believed action speaks louder than words, so it was my duty to clear the 'D' files for them, before I wrote this.

I first heard from Pam Gorman when she was getting Miriam Ryman into an Amateur radio course. As usual with Pam, it came about, and Miriam attended classes at Sunnybrook Hospital 'K' wing's shack VE3SBH.

Pam's next interest was to participate in the QSL bureau work, long before the Ontario Trilliums. Early in 1974, Pam and Bob visited me, took a half file of 'D' calls home with them for a trial period, and a week later came back to pick up the other half. For 10 years they did an excellent job.

They agreed to become consultants to our committee in 1975, and their advice was always carefully thought out, and it was invaluable.

Next Pam got busy in the Open Line Net and became its Assistant Manager. I often heard her on that net and knew she was there in spite of much pain and discomfort.

Through the years, the phrase 'We are all expendable' or 'Everyone can be replaced,' to me has become as false as many other well-known sayings. I know there are many who cannot be replaced. NO WAY. Yes, you can find a substitute but you will never in this little old troubled world replace a person who has time to think of others, and to do something about it.

Pam and Bob Gorman were such people, they will never be replaced, and will always be remembered by many of us who had the pleasure of working with them.

To all the Amateurs with 'D' calls, your cards will be coming along, and please remember Pam and Bob Gorman as the couple who sincerely cared about getting your cards to you.

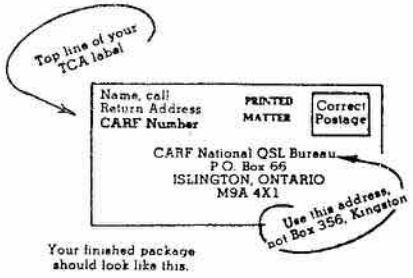
The most meaningful words I can say is, "It was good to know them and we are the better for having known them."

Jean Evans VE3DGG

Free CARF QSL Service

The CARF Outgoing QSL Service will forward your QSL cards to anywhere in the world. This service is **free to CARF members.**

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



Your finished package should look like this.

TECHNICAL SECTION

Section Editor
Frank Hughes VE3DQB

Part 5

Amateur Design of Printed Circuit Boards

By John Iliffe VE3CES

If you are still with me after last month's tour de force on photographically produced circuit boards, here is a potpourri of useful ideas that I hope will make your tasks easier.

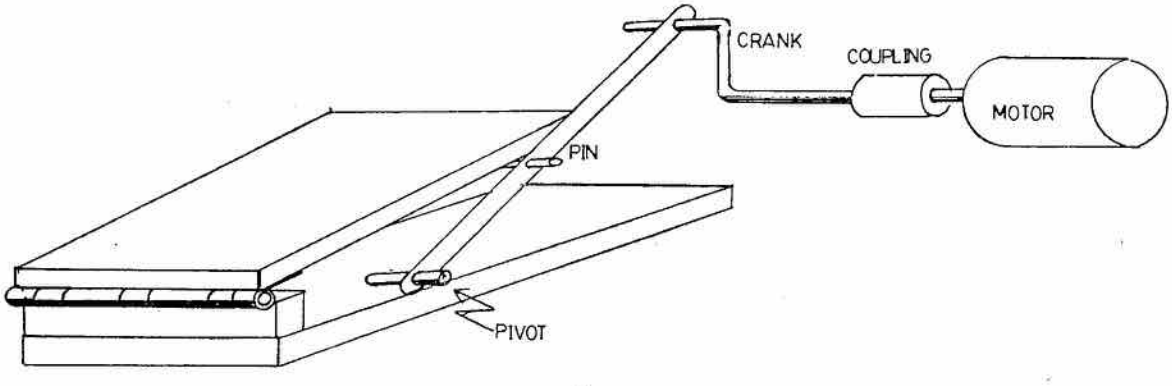
First, on the subject of etching...

The critical requirement during etching is to keep the ferric chloride in motion over the copper board. If this is not done, then some resists may tend to wash off the copper or, in the case of dry transfers, lift off. The etching time will be increased as the etchant near the board surface saturates with dissolved copper, and the traces may start to undercut.

You can keep the etchant in motion by rocking the tray, but as it gets older, and takes longer to work, you may find yourself standing there for an hour or more rocking the tray. Also, the author vividly recalls the time when he, clad in a brand new golf shirt of pristine white, rocked a tray too vigourously while trying to also read a book; and the words used by his XYL, (normally a docile woman of lady-like disposition) when she observed the results. Other than the obvious "wear your old clothes", the moral of this story is to build a tray rocker. Sketch 1 is a tray rocker that I used for some years. The motor was a slow speed one, turning at about 4 RPM, and the crank was from an old Meccano set. This works adequately for one-sided boards and, if you remember to keep moving the board around so you don't get a line from the supporting ridges, on double sided boards too.

A better etcher is the one shown in photo 1 and sketch 2, originally found in an old 73 magazine, I believe. It was brought to my attention by Stan VE3IOI, who also provided the Lexan from which this particular one is made. This bubble bath can be driven from an old fish tank bubbler, or a very low power compressor. The etchant will tend to get under the bottom baffle if the air is turned off before the tank is emptied. As pictured, the tank holds nearly a gallon of etchant, a sizable investment, and will handle two boards at a time, if you can keep them separated. If you do build one of these from scratch, I suggest that you try it first with hot water to be sure it has no leaks

Sketch 1:
Home made tray rocker. The upper board is hinged to the lower at one end, and raised and lowered by the crank. The metal strip from the bottom pivot to the crank allows adjustment of how high the crank will lift the tray. Only about ¼ inch is required. The motor turns about 4 RPM. While shown off the baseboard to clarify the diagram, the actual model had the motor mounted on the baseboard ahead of the tray.



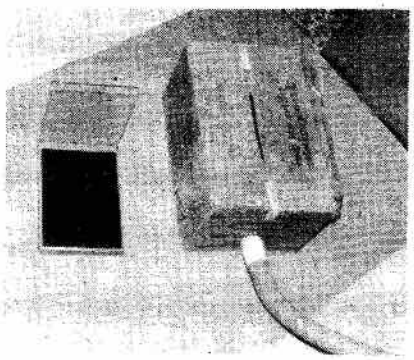


Photo 1:
On the left, a commercial contact printing frame. The glass top locks down to hold negative and board in close contact. On the right, a large cardboard box forms a vacuum frame. The plastic sheet covering is held tightly to the box when the vacuum cleaner is running, which holds the negative tightly against the board.

before putting in the ferric chloride.

This etcher will finish a board in about 15 minutes that would take about 45 minutes of tray rocking. It also tends to reduce undercutting because the copper located away from any tracks is also served with new etchant regularly by the air flow. The boards should be suspended from a wooden or plastic clothes peg so they do not come in contact with the bottom and so you can retrieve them.

Photographic boards lend themselves to a whole host of useful little gadgets. First there is the question of keeping the negative in contact with the board during exposure. As mentioned previously, the negative must be in firm contact with the board to retain fine detail, but the heat from the exposing lamp may curl the negative if it is not cooled somehow. A number 2 photoflood will curl a negative at 10" without cooling, and a reflector bulb of the kind formerly used with home movie sets will do so at 18" or more. (I know, it's happened to me.)

A printing frame can be obtained which has a firm foam backing and a piece of glass at the front. The glass conducts away the heat and holds the negative firmly so it will remain in contact with the board and not curl. These cost a few dollars but are well worth the cost if you are going to make many boards. One is shown in the photograph.

The other item in the photo is a vacuum frame. In this arrangement the idea is to evacuate the space under the plastic cover and use the cover to hold the negative tightly to the board. It is made from a large cardboard box with the flaps tucked in and sealed. A hole is made in the side to insert the suction hose of a vacuum cleaner. Punch a number of small (1/2") holes in the top of the box. When the vacuum is started the air will be drawn out of the box and in through the holes. If you

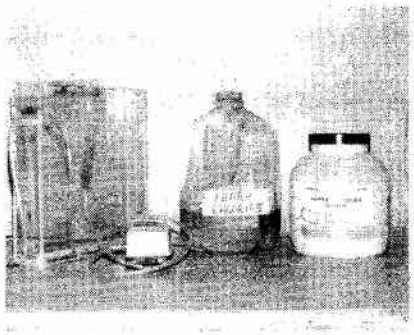
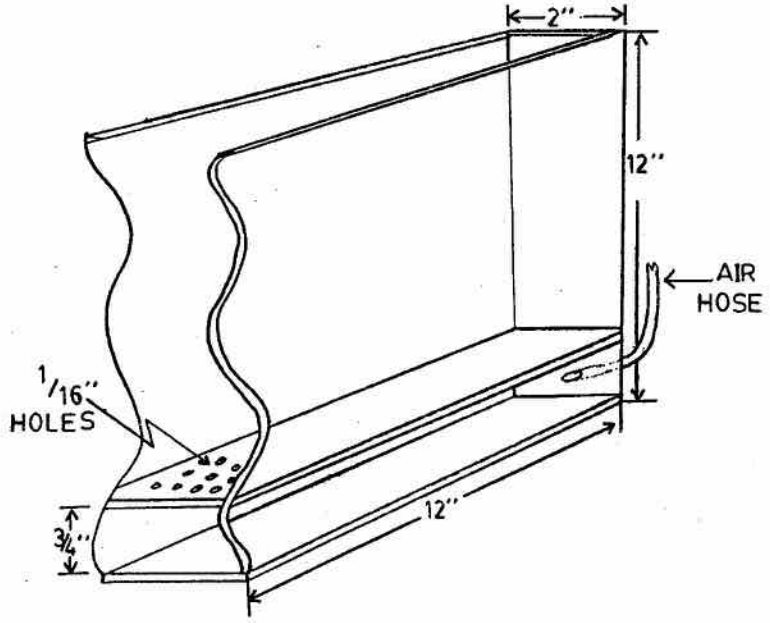


Photo 2:
Materials required to etch a board. The bubble bath is shown on the left. Note the bolt across the top of the tank. It holds a clothes peg which holds the board clear of the bottom of the tank and also allows you to retrieve it from the bath. The air hose is looped near the top of the tank to avoid having ferric chloride solution back up in it when the compressor is off.

place the circuit board with the negative on top of it on top of the box, then a piece of thin plastic sheet (of the type used for vapour barrier in the walls) on top of that, then the whole thing will be tightly held together by the air pressure and the air being drawn in will cool the negative. If you take care that the photoresist is not scratched by the plastic and that the plastic does not have any wrinkles over the board, then an excellent job can result.

One problem you may encounter while making two sided boards is one of registration, that is, the problem of making the pads on one side line up with those on the other. There are two ways I know of to do that. The easiest is to place the top and bottom negatives together so the

Continued on next page ▷



Sketch 2:
Cutaway view of the bubble bath. It is constructed of 1/8 inch Lexan, but any plastic will do. It can be of any size, depending on the maximum board size you expect to make. Air from a fish tank bubbler or small compressor is pumped in under the perforated floor and bubbles through the holes. Don't drill too many holes or you may not be able to pressurize the entire bottom, and only one end will have bubbles.

upper and lower pads line up, then press a few pins through both negatives off the edge of where the board will be. Now place the board in between the negatives with one side up against the pins. This will ensure that the two sides remain in registration during exposure.

The other way is to cut a narrow piece of circuit board of the same thickness as the piece to be etched. Tape the top and bottom negative to the piece of circuit board so they are in registration, and also so that the side of the board will lie against the edge of the taped piece. This ensures that if you make a number of copies of your board each one will lie the same way on the pattern. This point is important if you have a plug-in rack for the boards so the edge connectors, which are fastened to the rack, will mate with the ends of the plug-in boards.

There is an easier way to make a negative for a simple pattern. A material called 'Rubylith' is available which is a sandwich of red and clear Mylar. You can cut the tracks for the pattern you need in the red mylar, then peel it off. The result is a pattern of clear mylar where you want the traces to be and red where you want copper removed. This is your negative. It is useful for producing large areas of copper, which is not easily done with tape on acetate. This is particularily common when making stripline patterns which generally consist of a few wide tracks or simple geometric shapes. This material can be found in drafting supply stores.

Transferring a pattern from a magazine can be done by making a Xerox copy, then tracing it onto the copper board. A material is available, though I have not used it personally, which can produce a negative directly from a magazine pattern. It is available from larger electronics suppliers.

You may be curious how the professionals make a circuit board. For large runs, the cost of a full coppered board is prohibitive. They start with a blank insulating board and drill the holes for the components. A lithography process is then used to place the pattern on the blank board and also in the holes. The pattern is composed of a polymer ink that contains a material more stable, chemically, than copper. A catalyst of formaldehyde is used to allow a copper plating reaction to occur between the ink and a copper solution. The result is a copper trace where the ink was placed, and a plated-through hole. If you want to pursue the chemistry involved, then the full details are in the 'IBM Journal of Research and Development' for January, 1985. It makes heavy reading, and is beyond my total understanding. Chemistry has changed a lot since I went to high school!

I was also asked how to tin plate a circuit board. Professional boards are plated with tin the same way they are soldered, by a wave process. For Amateur purposes, a solution is available that will plate from the solution to copper with no external assistance (such as heat or electroylsis). The solution is available, by mail, from T.K. Enterprises, 17 Pitmann Cr., Ajax, Ont. L1S 3G4, and probably some other places too. The price is about $7 for a lifetime supply.

The material contained in this series will eventually be available as a Canadian Amateur Reference Guide section. For this reason, if you have any further information please drop me a line so the final reference guide section is as complete as possible. There have been some comments already from local Amateurs, and their material will be incorporated. Δ

Lightning Damage

With summer approaching, the thoughts of lightning damage once again becomes a major concern, I would like to mention an incident which may be of some benefit.

Getting prepared to head north to the cottage country I did the usual things to protect my radio equipment. I grounded all antennas, and pulled the main plug leading to the power bar. The following equipment was plugged into the power bar: Transceiver, Linear Amplifier, Electronic Keyer, Video Screen, Computer and Rotor control box.

Satisfied I had taken all the necessary precautions to protect my station I proceeded north. Two weeks later when I returned to the QTH I coupled the antennas, plugged in the power bar and was met with the unmistakeable smell of burnt components, I shut down and looked for the problem.

Before reading on can you find my error? My investigation found the inside of the rotor control box in a charred condition. Lightning took the only path available, down the rotor cable to the rotor control box which was plugged into the power bar then, SAP through the rest of equipment causing extensive damage to a complete station.

In order to remedy this condition I made a simple modification to the rotor control box which I would highly recommend to anyone using a rotor. I removed the eight wire terminal block from the rear of the control box which feeds the rotor cable to the rotor and replaced the terminal block with an eight pin male and female Jones connector which is easily mounted to the rear of the control box. It's now a simple matter of a quick disconnect and isolation between the rotor cable and box. Δ

Gordon Wright VE3ISG
8 Golfview Rd.
Guelph, Ont.
N1E 1A4

FROM THE WORKBENCH

Helpful hint, meters with plastic faces have a tendency to pick up a static charge and the pointer will stick. Just breathe on it, like you would on a pair of glasses and the pointer will zero. --VE7BPN

Send your contributions to 'From the Workbench', Robert Bareham VE7CFK, 3 Howard Ave., Burnaby, B.C. V5B 3P3.

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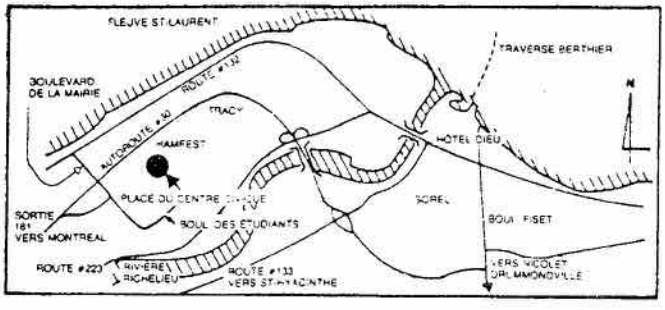

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