Second Class Mail Registration
Number 5073

TCA

$1.50

OCTOBER
1983

The Canadian Amateur Radio Magazine

D.A.R.C. SUPER X

CARF at RAQI Conference
Page 33
More from VE6XX
Japanese Code
Contests, DX, etc. . . .

ISSN 0228-6513

TCA

THE CANADIAN AMATEUR

OCTOBER, 1983 Vol. 11 No. 9

Contents

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Second Class Mail Registration Number 5073

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WHAT IS CARF?

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

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

TCA Newsline Number is (613) 824-3467

TRANSMITTERS — RECEIVERS — TEST EQUIPMENT — LAB EQUIPMENT — COMPONENTS

CARF VE3 KHB ARRL/CRRL

WILLIAM J. FORD
ELECTRONIC SURPLUS

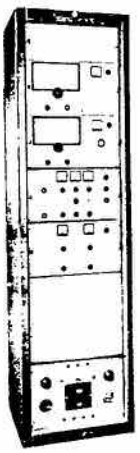
BOUGHT — SOLD

4 MILES EAST OF FRANKTOWN
3 MILES SOUTH OF PROSPECT

DISPLAY AREA OVER 25,000 SQ. FT.

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

IMPORTANT: For more surplus items refer to previous issues of "TCA". Not all items listed stocked in depth, many one of a kind.



Marconi Single Sideband commercial receiver Model HR21. Covers 3-27·5 MHz in 4 bands. Dual channel for SSB or either SB of a DSB transmission. Complete built-in monitoring system. Requires 220v 60Hz. Wt 500 lbs. With manual. $400.00

Receiver, military Collins R392. Mechanical digital freq. readout. Operates from 24-28 volts DC. With Technical Manual. $200.00

TOWERS. . .Towers: We can now supply the quality Canadian Trylon ABC towers manufactured by Trylon Manufacturing Co. of Elmira, Ont. Heights to 96 ft. *FREE* delivery within 100 km of Smiths Falls right to your site.

Hammarlund SP600 receivers. New stock just in, clean appearance. Freq. range 540KHz to 54MHz. Rack mounting. With partial copy of manual. $225.00

Large Marine DF antenna, shielded crossed loops, each loop approx. 3 feet in diameter. With mounting base and cable. $25.00

3" square moving coil panel meters, various DC scales. Basic movement 0-1 MA. Removed from equipment. $3.00 each

Large Leeds & Northrup Speedomax chart recorders. 110v 60Hz. $6.00

Grundig stenorette reel to reel tape recorders, Model Embassy Mark V. Solid state 110VAC. Chrome and black finish case, less microphone, remote control and other plug-in accessories. Size 10×9×3 high. $5.00 each

Collectors, WWII transmitter as used in Lancasters, etc. British Air Ministry R1154 complete with tubes and unmodified. In quite good condition. Companion to the R115 rcvr. $75.00

Active dipole antennas made by Fairchild, solid state, Electro Metrics model PEF 10. Electronics in 2×6 head mounted on 3 ft. mast with adjustable swivel base. Multiconductor output cable and plug. No data available. $25.00

Receivers, Stoddart NM10 LF covering 14-250KHz in 4 bands. Complete with power supply but less cables. Large Wseton panel meter calibrated in uv. Size of rcvr. 7×9×19. Quality construction by Stoddart Aircraft Company. 110VAC input. $75.00

Bell and Howell Model 500 slide projector for 35mm slides. With magazine and case. Size 11×12×9. $12.00

Small xmtr driver units made by N.E. Contain 4C × 300 tube, Eimac socket and chimney, turns counter, var. capacitor, 4 B&W Airdux coils and switch, relay, capacitors, resistors, BNC fittings, etc. Size 14×8×11 deep. $40.00

Tube collectors. 4CX10000 tubes, duds, require cleaning, some rust on steel portions. Good conversation piece. $15.00

Your ONE STOP Source for Vacuum Capacitors

Jennings Vacuum Capacitors:		JCS 250pf 10Kv fixed	$15.00
VCCE 250pf 20Kv, new fixed	$25.00	UCS 375pf 10Kv, variable	$42.00
UCSVH 35pf, new variable	$36.00	UCS 300pf 7.5Kv, new variable	$42.00
UH 75pf 15Kv, variable	$25.00	UCS 300pf 7.5Kv, variable	$36.00
UCS 200pf 15Kv, new variable	$36.00	UCSF 400pf 15Kv, new variable	$60.00
UCSF 250pf 10Kv, variable	$36.00	UCSX 700pf 7.5Kv, new variable	$75.00
JCS 500pf 10Kv fixed	$25.00	UCSXF 1500 pf 10Kv variable	$100

All items used surplus unless indicated otherwise. FOB Smith Falls. Ontario residents include 7% Sales Tax. Any queries phone or write. Save on calls, phone any time before 8 a.m. or after 6 p.m. and take advantage of reduced rates.

New

IC-751

HF Transceiver/General Coverage Receiver

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

$1794

$1999 (incl. p.s.)

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

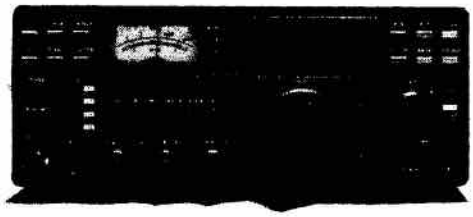
• 105dB Dynamic Range • 70.4515MHz First IF • Deep IF Notch • RIT With Separate Readout • Low Noise Preamp • Low IMD Transmitter • 100% Duty Cycle • 12VDC Operation • Quiet Relay Selection of LPFs • Monitor Circuit • Full QSK • Dual VFO With Data Transfer • 32 Tunable Memories • Internal Memory Backup • Scanning • Digital I/O For Computer Control • Mode Scan • Full Function Metering • Squelch • FM • Multicolor Fluorescent Display/Options (external)

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

SSB: FL30
CWN: FL52A, FL53A
AM: FL33

IC-271A

2 Meter/FM/CW/SSB



$896

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

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

• 25 Watts • 32 Full Function Memories that hold frequency, offset, offset direction, mode, and subaudible tone. Frequency, tones and offset are selected by rotating the main tuning knob. 7 year lithium memory backup. • Subaudible Tones are selected by rotating the main tuning knob and may be stored into memory. • PLL locked to 10Hz • ICOM's new high visibility, multi-color display gives easy to read at-a-glance display of frequency, mode, offset, VFO in use, memory channel, and RIT offset direction and amount. • Scan Memories, programmable sections of the band, or modes. • Mode-S Scan is a mode scan and can be used to scan memories with a particular mode. • Dual VFOs. ICOM's dual VFO system is now even more versatile with the ability to transfer from memory to VFO. • New Size. Only 11¼"W x 4⅜"H x 10¾"D the IC-271A is styled to look good and engineered for ease of operation. • Computer Interface.

IC-471A

430 — 450MHz/FM/CW/SSB

$1025

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

Full 20MHz coverage 430 — 450MHz.

32 Memories. Each memory holds frequency, mode, offset direction, offset frequency and subaudible tone for easy return to an oft used frequency or for remembering a new repeater or simplex frequency.

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

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

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

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

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

MasterCard VISA

Dollard's Radio • West

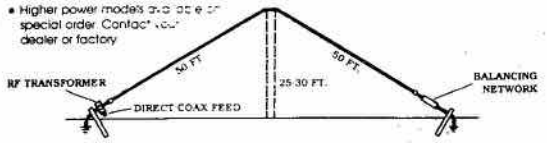
810 S.W. Marine Drive, Vancouver, B.C. V6P 6E3
Telephone: 321-1833

new Amateur SWL Commercial Antennas

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

- SWR Max 2:1, 1.4:1 average from 2 - 30 MHz
- Can be installed in approximately 80 foot space
- Ideal for commercial services for multi frequency operation without the need for antenna tuners or additional antennas
- Can be used to 1.8 MHz with small loss
- Handles 1 KW, 2 KW PEP CAS
- Higher power models available on special order. Contact your dealer or factory

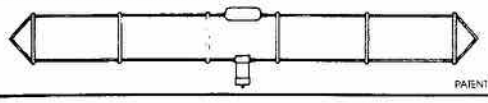
$239.95



CONTINUOUS COVERAGE ANTENNA
3.5 – 30 MHz Model 370-15

- SWR less than 2:1 from 3.5 to 30 MHz
- Complete assembled 8 element mated with standard SO-239 connector
- Only 90 feet long
- Power capability 1 KW - 2 KW PEP CAS, higher power model is available on special order
- Designed for 50 ohm feedline
- Weather proof balun and balancing network

$239.95



PATENT PENDING

B&W New Shortwave Listener Antennas

Model ASW-49
SEVEN BAND TRAP ANTENNA

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

$59.95

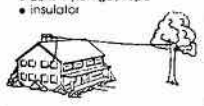
PATENTED

Model ASW-100
LONGWIRE SHORTWAVE LISTENER'S ANTENNA

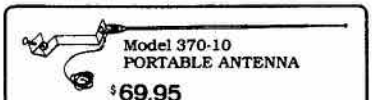
$41.95

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

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



B&W



Model 370-10
PORTABLE ANTENNA

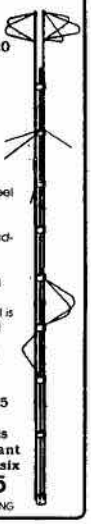
$69.95

Ideal for Apartments – Motels – Vacations

- Quick simple installation
- Operates on 2, 6, 10, CB, 15, 20, 30 & 40 meters
- New heavy duty 40 meter coil
- Only 22½ inches long – Weighs less than 2 lbs
- Complete with all coils and 10 foot RG-58 Coax – Whip extends to 57 inches
- Handles up to 300 watts
- VSWR – 1.1:1 when tuned

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

$159.95



- Only 25 ft. high
- Three parallel steel elements in a rugged tower
- Capacity top loading for wide band width
- Direct coax feed with low SWR
- Only loading coil is high up on 80 M element
- Radials required

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

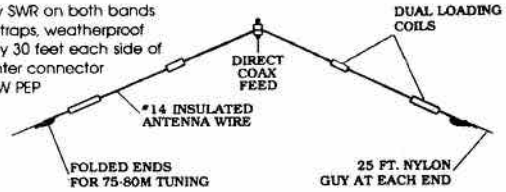
PATENT PENDING

B&W Amateur Antennas for Limited Space

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

$94.95

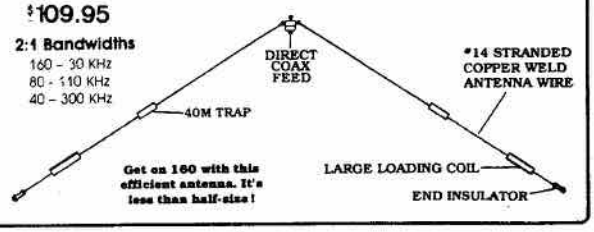
- Low SWR on both bands
- No traps, weatherproof
- Only 30 feet each side of center connector
- 2 KW PEP



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

$109.95

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



Dollard's Radio·West

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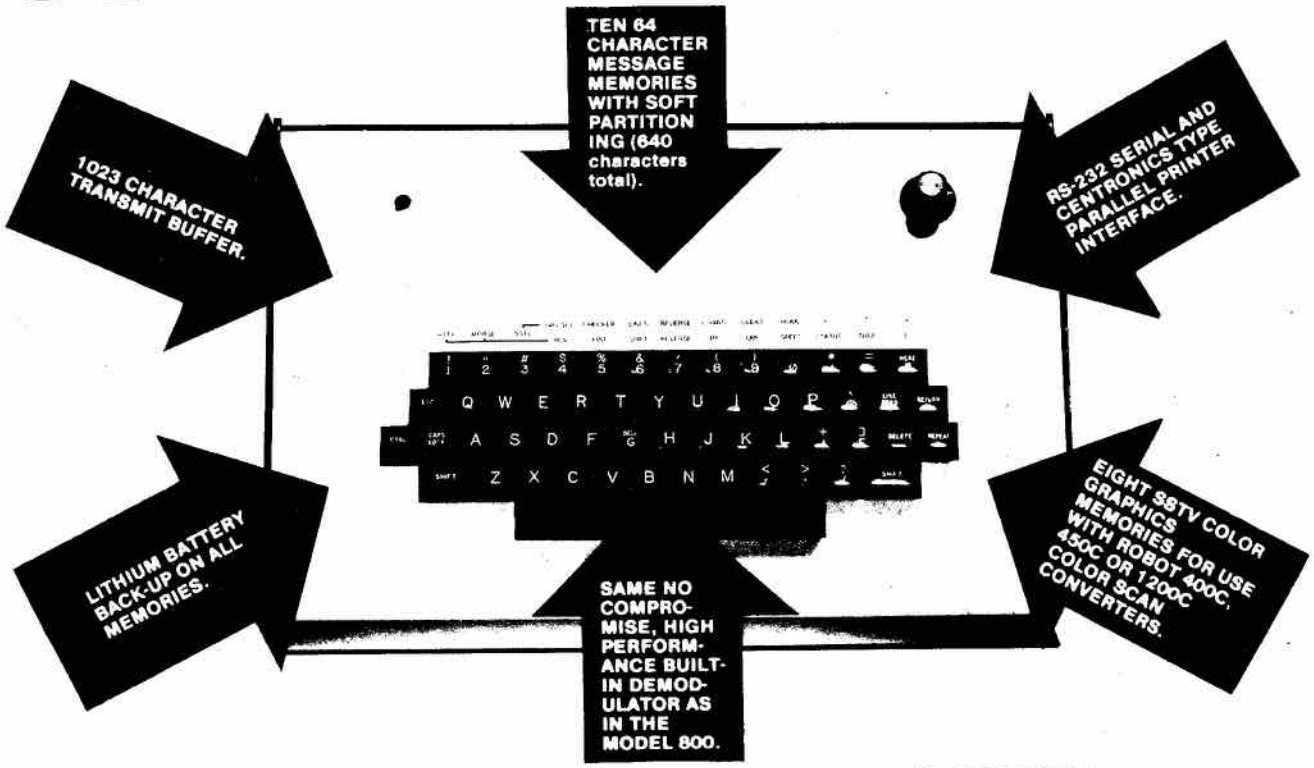
Telephone: 321-1833

THE NEW ROBOT MODEL 800C SUPER TERMINAL!



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

OUTSTANDING BUILT-IN DEMODULATOR

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

BAUDOT/ASCII OPERATION

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

MORSE CODE OPERATION

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

SSTV OPERATION

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

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

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

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

ROBOT

ROBOT RESEARCH, INC.
7591 Convoy Court • San Diego, CA 92111 • (619) 279-9430

World Leaders in SSTV, Phone Line TV and Image Processing Systems.

Lesmith Limited
RADIO CRYSTALS FOR THE COMMUNICATIONS INDUSTRY

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

INTRODUCTION

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

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

HOW TO ORDER

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

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

PRICING

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

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

1983 PRICES

	HC-6/U	HC-25/U
AMATEUR		
Amateur bands	8.00	8.00
CUSTOM		
6 - 55Mhz	9.50	9.50
5 - 5.9	10.55	12.75
4 - 4.9	11.60	16.95
3 - 3.9	12.75	16.95
Below 3	16.95	-
55 - 100	12.75	12.75

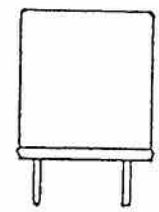
MODULES

Mocom 70	31.75
Mocom 35	24.85

REWORK MODULES to new frequency

Generally	19.95
More difficult MT500,MX,Wabco	29.95

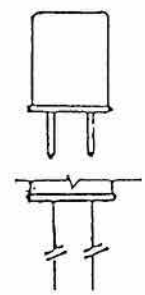
COMMON HOLDERS
MIL Designations



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

HC-17/U .093 pins

HC-33/U wire leads



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

HC-18/U wire leads

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

ONLY $299.

New! FROM TEN-TEC

NEW PRODUCT RELEASE
MODEL 4229 ANTENNA TUNER KIT

NEW 2 KW TUNER KIT ENDS CONSTANT RETUNING, GUARANTEES BEST MATCH!

NEW! **EASY, FUN KIT!**

MODEL 4229 ANTENNA TUNER KIT

The best quality components, best design, and the best value.

Reversible "L" circuit guarantees best possible match and widest bandwidth--you may need to tune only once to cover the higher bands and only two or three times on lower bands. Finest quality parts---ceramic insulators---ceramic inductor form---heavy duty ceramic switch with silver contacts---silver plated roller inductor. Built-in SWR bridge shows ratios from 1:1 to 5:1. Built-in 2 KW dual range watt meter shows power levels from 10 to 2000 watts. Handles 2 KW PEP, 1 KW CW. Frequency range 1.8-30 MHz continuous coverage. Built-in balun--matches variety of antennas, balanced or unbalanced, to 50 ohm unbalanced outputs. Built-in bypass switch. 4 position antenna selector. Coax connectors plus post terminals. Lighted linear dial scale for easy tuning. Black finished aluminum cabinet with stainless steel bail—5-1/2" H x 12-3/4" W x 13-1/4" d. Also available assembled as Model 229

R & S ELECTRONICS LTD.

157 MAIN ST.
DARTMOUTH, NOVA SCOTIA
B2X 1S1

Telephone 902-434-5235

Established 1976

It is a good deal!

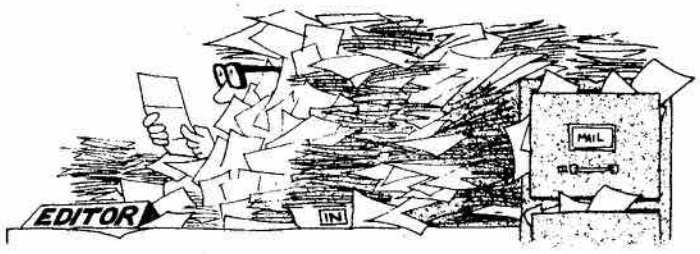
Send your cheque,money order

We'll pay shipping

VISA,Master Card Etc.

(TEN TEC Dealer inquiries invited)

LETTERS



Dear Editor:

For those who are retired and do work the ham bands a lot are beginning to see many changes. Firstly when I became an Amateur I was told it was a gentleman's hobby. That, my friends, has gone by the board. Now in a DX pile-up it sounds like a pack of hungry wolves and the language leaves much to be desired. The fact of band expansion will eventually help no one. It will have a tendency to drive Canadians off the bands, DX will not work in the big pile-ups etc. Now with the news that the FCC or the learned bodies across the border are thinking "No Code" will lead to another glorious CB band and anyone who ever had a CB rig will remember what happened to that and I might say that was planned I'm sure. Give enough rope and you will yourself. What happened to the CBers? Many of them were a very good and dedicated group. Suddenly the bands were so crowded that those that started and were dedicated had to leave the bands and I am very much afraid that is what is going to happen to the ham bands. I hear that the manufacturer is pushing for again "No Code". Personally I think all Amateurs everywhere in the world should start pushing to have the code standards raised so that all Amateurs should have to start with at least twelve or fifteen words to hold a first license. Then and only then can the Amateur himself have any control over the bands.

These are a few thoughts of my own. I know I do not have to omany more years to use the bands but we would like to see future hams, wherever they may happen to be, be proud of the hobby. Band expansion is not the answer as far as I am concerned. A much higher standard for the beginner should be the thought of all. If you really want to be an Amateur Radio operator you won't mind spending a little time learning fifteen words per minute for your first operating license.

Ray Simmons
VE1ATP

Dear Editor:

Recently, the Ontario Government has introduced a new procedure for license plates and their renewal.

Now, they have decided the Amateur Call Plates are to be considered Vanity and are lumped together with such great plate sayings as MACHO, HORNY, ARF 1.

I resent the fact that the Ontario Government has decided to go this route, especially after the Mississauga diaster, where Amateur radio played an important part in emergency communications.

I am of the understanding, that Amateurs were given these plates so that during an emergency or communications problem, they could be easily recognized. Surely, the government does not ask the doctors of our province to pay $100 extra for M.D. plates.

I would now ask the CARF organization to look into, what I feel is, a great injustice to the Amateur community.

VE3OBN — Steve Forcht
11 Ascot Crescent
Markham, Ontario
L3R 3P8
(416) 475-5053

Ruskin, B.C.
26 June 1983

Dear Editor:

Congratulations, June 23 and along comes my June issue of TCA. Hope all continues to come together for you. My thanks to Don Slater VE3 BID who promised us (Re Maple Ridge Hamfest) coverage but certainly outdid himself to our pleasure.

Look forward to the TCA which keeps getting bigger and better. For those working for the CQ Awards please note my change of adress to #7 — 7679 Cedar St. Mission, B.C. V2V 3M6.

Howard "Marty" Martin
VE7AFY

Dear Editor:

On Monday, November 7, I will be demonstrating to the Toronto Color Computer Club applications of the TRS-80C in Ham Radio. I would appreciate it if any of you readers would offer to exchange or lend relevant programs so that the demonstration might be as interesting as possible. For those who might be interested in seeing the demo, it will be at Bloor Collegiate at 7:30 p.m.

All my programs are public domain, having been adapted from published articles or developed by myself. At the moment I am struggling with a rudimentary RTTY program and plan to develop one for SSTV. I have a Morse Code T/R program and one which, when given the name of a country or prefix plus the solar flux from WWV, calculates the beam heading great circle distance and maximum usable frequency.

LETTERS

Thanks for you consideration.
Regards,
Tom Holden
VE3MEO
24 Worthington Crescent
Toronto, Ontario M6S 3P6
Tel.: (416) 766-9829

Dear Editor:

My copy of TCA arrived today — VI #7 July/August issue.

Thought to so advise you, since much is made in the issue of your problems in publishing. Do you know what this issue has gone through? Do you know when it was given to Canada Post?

73
John A. Lester
VE3EMB
Box 136,
Cloyne, Ontario
K0H 1K0

VE3MH gets okay for Roumainian operation

In what may be a spin-off from the recent sale of a Canadian Candu nuclear reactor plant to Roumainia and the resulting warming of diplomatic ties, Keith Jones, VE3MH, who has been posted to Bucharest for External Affairs Department, has received permission from Roumanian government to operate as VE3MH/YO beginning October 1st. He will be on 15, 10 and 20 metres using a vertical until he can get a beam up. The unusual gesture of the Bucharest authorities was a pleasant surprise to Keith, who noted that he was one up of the U.S. Ambassador there who is also a ham but has not succeeded in getting an okay to operate. This permission was one of three "firsts" accorded Canadians for activities usually restricted in Eastern bloc countries. Another Canadian got permission for his favorite recreation . . . a fishing license and the third got the okay to indulge in his hobby . . . parachute jumping!

Keith's good fortune is the result of a special "one-shot" permission as there is no formal reciprocal operating agreement between the two countries.

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

IMPORTANT NOTICE

Plan to attend the
CARF National Symposium
Saturday, October 15, 1983

at the Hotel Nova Scotian, in Halifax, Nova Scotia. This is your opportunity for direct input to DOC at the National level, and it comes only once a year. If you cannot attend, plan to have your club or organization present a brief to the symposium by submitting it by mail. Topics have not yet been chosen, so the door is open to you.

Send your papers to "CARF National Symposium, c/o Leigh Hawkes, P.O. Box 864, Armdale, Nova Scotia, B3L 4K5."

Support your Hobby.

CARF NEWS SERVICE

Directors' News

Mid-West

CARF Mid-West directory: Norm Waltho, VE5AE has taken over the VE5 QSL Bureau in addition to his other activities on behalf of Saskatchewan operators. Included in these is the "CARF Family Hour" on 3770 kHz at 0215 Zulu.

Assisting Norm are CARF Regional Assistants VE6SU, Jim McKenna; VE6 CCS, Toni Field; VE6 COH, Ken Schneider; VE5 ADA, B.J. Madsen; VE5HF, Herb Jacobz; VE5 AEJ, Bill Wood; VE5HG, Eric Quirring; VE5 AEN, Vic Allen; VE4 AEE, Cecil Fardoe and VE4 ACX, Max Geras.

Atlantic

From Leigh Hawkes, VE1ZN, CARF Atlantic director comes word that he will be starting a CARF Atlantic Regional net soon. The net, to meet monthly, will discuss items of importance to Amateurs, hear CARF News Service bulletings and will give Leigh and his assistants an idea of the wishes of the membership on various issues of the day. Leigh also honchoed the CARF National Amateur Symposium in Halifax. A full report of that event will be in a forthcoming issue.

Ontario

Craig Howie, VE3 HWN, who has been a very active Ontario director has moved to Calgary to take employment with NOVATEL Ltd. of that city so he has tendered his resignation as an Ontario director. His new job will be in the new cellular mobile phone design field. With a job like that he may be one of the first of the few on the new 902 MHz bands! Craig will be missed at the various hamfests and auctions which he so diligently attended.

Log-keeping dropped

Keeping a radio station log is no longer necessary except for Amateur class operators who will need logs and QSL cards as proof of operation when applying for 10 metre and 160 phone privileges. DOC promulgated the change on June 22nd. Another change in the regulations made at the same time makes it easier for those with Amateur grade certificates who live remote from exam centres to obtain authorization for Advanced class privileges, good for one year. Logs and QSL cards are also required when applying for this permission. Minor changes have also been made to the titles of the various Certificates of Proficiency.

CARF News Service

Long-proposed changes may be legal soon

If the DOC follows its published agenda the changes to the regs put out for comment away back in January 1982 will probably come into effect before the end of November. These changes proposed repeater operation between 29.50 and 29.79 megahertz, slow scan TV in the HF bands, six meg bandwith for fast scan TV, and would let foreign operators whose countries have reciprocal operating arrangements, use the whole of the two-metre band from 144 to 148 megs. Some power restrictions on 160 metre band operations are to be removed with the phasing out of all but three Loran stations. The DOC policy with regard to foreign operators will be clearly spelled out. When operating in Canada they will adhere to the frequencies and emissions permitted to them in their own country except where these are counter to Canadian regulations. They will also abide by Canadian regulations.

The Department will also soon ask for public comments on special consideration for handicapped exam candidates to be written into the regulations. Also up for comment will be a change to require candidates for the Advanced Certificate Code Test to know figures and punctuation marks. At present these are only required for the Amateur class test. Comment will also be asked on a proposal to drop licensing of scanning receivers, a requirement which has proven practically unenforceable.

CARF News Service

New curbs on industrial QRN proposed

Good news for those plagued with power lines and appliance interference is DOC's intent to proceed with regualtions governing RF noise from these sources. Other regulations to cut the interference from electronic appliances, computers and games are now being drafted by the Department. The regs will include what is termed "digital apparatus" and will be aimed at preventing dumping into Canada equipment which can't meet U.S. standards.

CARF News Service

SIGS 80th anniversary reunion

Some 2,200 people attended the Royal Canadian Corps of Signals 80th Anniversary of its founding, held in Kingston, Ont., on Labour Day weekend. TCA will carry an account of the huge reunion in a forthcoming issue.

CARF News Service

Hey! Wait a minute, who's band is it anyhow, eh?

Fred Towner, VE6XX

At the March 28 regular monthly meeting of the Calgary Amateur Radio Association the guest speakers were the Technical Managers of Calgary's two CATV outlets.

During their presentation to the club, concerning CATV signal leakage into the Amateur 2 metre band, it became increasingly obvious to this writer that the cable industry considers leakage to be inevitable, and they will not consider closing down the offending channels as this could set a precedent and encourage like demands from other services. They also made it clear that they did not consider the leakage to be significant, and that if Amateurs found their legal transmissions were causing interference to users of the cable system, due to ingress, the Amateurs could either move or reduce power to the point where it did not cause interference.

They refered repeatedly, throughout the evenings discourse, to *SHARED SPECTRUM!!* HEY! WAIT A MINUTE, I thought this was our band! I remember distinctly, after WARC, reading in TCA and other journals that the 144-146 MHz band was Amateur exclusive, world wide, and, in so far as North America is concerned, I'm positive I recall it being said that, in our region, the band 144-148 MHz is allocated Amateur exclusive.

What happened? How come we seem to be having the CATV guys saying that, without even a mention in Canada Gazette, we are now in a shared basis on two metres with CATV, and, we now appear to be the secondary users?

D.O.C. Guidelines for maximum allowable radiation permitted from CATV cable plants, in the frequency range 108-174 MHz is 10 uv/m^2 at a distance of 3 metres from the cable plant.

According to the cable engineers, if we assume a receiver sensitivity of 0.3 to 0.5 uv before breaking squelch, and that a half-wave dipole is used for a receiving antenna, a field strength of between 0.9 to 1.5 uv/m^2 at the antenna will break the squelch.

The foregoing is an example used during the meeting by the CATV engineers. From the figures supplied by the CATV people, concerning receiver sensitivity, it can only be assumed the cable companies have not progressed beyond the GE Prog Line, in so far as their communications equipment is concerned. These engineers went on to say that, at a distance of 20 to 30 metres from the plant, the leaked signal should be too weak to break squelch on the "average" Amateur receiver.

Do you know of *anyone*, living in an area served by cable, that lives more than 30 metres from CATV coax? Do you have cable in your own house?

According to the cable spokesmen, the most common cause of cable leakage is loose cable connectors and cracked or damaged cables. They went on to say that, "The major reason for drop damage is people doing excavation work within their own yard." In other words, don't blame us, it's not our fault.

I have a neighbour who cut his own cable drop three times last summer, cutting his own lawn! Investigation revealed that, at the deepest, his cable is buried only 1½ inches below the surface. This cable was apparently "buried" by slitting the sod and stuffing the cable into the slit. What with the action of the grass roots and the frost, many feet of this "buried" cable now lays exposed to the hazards and elements.

The cable spokesman went on to add, "Calgary Cable buried 2,500 of these drops last summer and will bury approximately the same amount this year. It should be noted that the costs for repair is borne by the cable company even though the damage is caused by other parties."

After analyzing the above statement it appears to me that the cable companies are saying, "It's not our fault that the cable system leaks, its all because of the damage inflicted on the plant by others." But, hey fellows, wait a minute here, you're radiating into a band where, by federal law and international agreement, you have *no* right to radiate a signal under *any* circumstances.

We as Amateurs, and, to a large extent, cable subscribers, can sympathize with the problems the CATV companies are having because of third party damage to their system. But, lets get this thing into perspective. Their problems are self-inflicted. They were responsible for the many shoddy installations that are so easily ripped up. They are responsible for the temporary drops that are easily damaged. They are responsible for selecting a "closed" system that utilizes spectrum assigned to others. They are responsible for infringing on Canadian and international law by radiating signals into frequencies assigned to other services.

What would happen to *your* licence if you were found guilty of transmitting on a frequency not assigned to your licence? You would be fined, likely have your licence revoked and your equipment confiscated. I see no such tough action forthcoming as a result of massive, widespread,

illegal radiation from CATV plants.

One final quote from the CATV gang. Read this one and then tell me we don't have a problem!!!!

"If one assumes that a transmitter operating in a residential area will be within 20 metres of a neighbouring TV set then a practical maximum *ERP limitation* (italics mine) for a transmitter operating at or near 145.25 MHz would be approximately 25-50 watts."

HEY GUYS! I THOUGHT THIS WAS *OUR BAND*!!!!

From my point of view someone has a lot of questions to answer on this one. Who gave these guys permission to use spectrum assigned to other services? Who set the permissable radiation levels? What investigation was undertaken to determine the amount, if any, of interference would likely occur? What criteria was used in setting the permitted radiation levels? Who was consulted from the Amateur Service and when? Who is monitoring the radiation levels? How stringently are they being monitored? What action is being taken when a company exceeds the permissible radiation levels?

I could go on for pages with more questions, but I'm sure you catch the idea, and I'm sure you have equally interesting questions to ask.

How many clubs in Canada have contacted their local CATV outlets regarding cable leakage? Of those who have taken some action, have you done any follow up regarding action taken, or did you just lose interest and let it die? How many of you are even aware of the CATV leakage?

If your local CATV company is using "mid-band" frequencies, tune your rig to 145.250 MHz, plus or minus 5 KHz. (In Calgary North the radiated signal is located on 145.245 MHz.) Drive around town with your rig tuned to the "hot" frequency. How much radiation do you hear? Fire up your rig on the offending frequency and check channel 18 or "E", and note the interference on the screen. If you want a more graphic demonstration, use a hand held where you can observe channel 18 and transmit on various frequencies in the two metre band, and note the interference on the screen.

If you effect your neighbours reception to the same extent you are effecting your own who is going to shortly have the quivering finger of rage pointed at them, the real offenders, CATV, or you?

You can bet your sweet bippy it's going to be the Amateur who gets it in the neck. In the case of Calgary there is roughly 200,000 cable subscribers and about 350 active Amateurs. With a ratio like that, when the stuff hits the fan, it will no longer be a technical problem, with all the arguments in favour of the Amateur, it will now become a political problem. Political problems are always solved in the most simplistic way possible, the voters aren't concerned with right or wrong, their only conern is having an annoyance removed without effecting them. As I said earlier, there are about 200,000 cable subscribers, as opposed to about 350 active Amateurs here in Oil City. Anybody care to hazard what sort of a ratio we're looking at nationally? With several million subscribers to a high profile, high profit industry like SATV, and about 22,000 Amateur licenses issued in Canada do you want to take any bets on who would win a showdown confrontation?

The cable companies are just now starting to get established on their mid-band converter channels. We can either commence action now to remove these interlopers from our bands, or, we can stand idly by and watch them take over and control our bands, based on right of possession.

What steps can you take?

1. Monitor 145.250 MHz.
2. If you note interference, report it at once to your local CATV outlet by letter, sending copies to your local D.O.C., your local club, provincial organization and CARF.
3. If the problem appears to be city-wide organize your club to pursue the problem.
4. Take numerous readings of hot spots throughout the city. Pay particular attention to areas near the residence of Amateurs. Try to use equipment calibrated in u/volts, using a 1/2 wave dipole, horizontally polarized.
5. Send copies of your "HOT SPOT" list to the CATV company concerned along with copies to D.O.C. local office, Minister of Communications, Canadian Radio-Television and Telecommunications Commission, and CARF.
6. In two weeks time do a follow up reading of the hot spots. If the areas on your original complaint have not been cleaned up file a formal complaint with your local D.O.C. office, with copies to the local CATV outlet and the others previously noted.
7. Continue to monitor and note clean up progress as well as locating new sources of leakage. Report the new sources as detailed in step 5 and do a follow up as shown in step 6.
8. If leakage cleanup is not prompt and satisfactory, determine when your cable company is due for a license renewal hearing and have your club file an intervention. CARF has complete details to assist you in filing an intervention, and will send your club complete details for a small fee to cover mailing costs.

Sounds like a lot of work? How much work will be required to save our bands and our freedom to use those bands if we do not act now?

Wake up Canadian Amateurs! The writing is on the wall. The CATV industry will be satisfied with nothing less than shared spectrum. The time to take a

stand is now, not at the eleventh hour, when the legislation has already been published in the Canada Gazette.

We cannot afford to be like the kind hearted Arab who let his camel put his head in the tent to keep warm, then suddenly found the camel had taken over the tent, and he was out in the cold.

Don't be in the position of waking up one day and exclaiming, "Hey! Wait a minute, who's band is it, eh?" It will be too late then.

Canada Contest 1983: Rules

The Canadian Amateur Radio Federation is pleased to announce the following contest:

Canada Contest 1983
0000z to 2400z
18 December

This contest is open to all Amateurs. Everybody works everybody on the 160, 80, 40, 20, 15, 10, 6 and 2 metre bands in both CW and Phone.

Classes of entry:

Single operator: all bands; single band; all bands, Amateur Certificate (for Canada); all bands, QRP; single band, QRP. QRP entrants must run no more than 5 watts output. Also, Multi operator, all bands.

Contacts:

All contacts between Amateur stations are valid. The same station may be worked twice on each band, once in CW and once in Phone. CW contacts must take place in the agreed CW-only parts of the bands. No cross-mode contacts are allowed.

Exchange:

Signal Report and consecutive serial number starting with 001. Do not use a separate series of numbers on each band. VE1 stations should also send their province.

QSO points:

10 points for each contact with a station in Canada. 1 point for contacts with stations in other countries. VE0 counts as Canada. 10 bonus points may be claimed for each contact with a CARF official station. These stations use the TCA or VCA suffix (i.e., V01 VCA, VE7 TCA).

Multipliers:

Total of Canadian Provinces and Territories worked on each band on each mode. The Provinces and Territories are: V01/V02; VE1-N; VE2; VE3; VE4; VE5; VE1-PEI; VE1-NS; VE6; VE7; VE8; VY1.

Suggested Frequencies:

1810, 1840, 3525, 3770, 7025, 7070, 14025, 14150, 21025, 21250, 28025, 28500, 50040, 50110, 144090, 146520 kHz. We suggest Phone during even hours, CW during odd hours, z.

Entries:

A valid log must contain log sheets, dupe sheets, and a summary sheet showing claimed QSOs, QSO points, a list of multipliers and calculation of claimed score. Summary and multiplier checksheets are available for an SASE. Entries should be mailed within one month of the contest, with your comments, photos, etc. to CARF Contests, P.O. Box 2172, Stn. D, Ottawa, Ontario K1P 5W4.

Awards:

Certificates will be awarded to top-scoring entries in each class in each province territory, USA call area and DXCC country. If scores are close, second and third place certificates will be awarded. Additionally, trophies will be awarded to top-scoring entrants in some classes, courtesy of the following sponsors:
Single operator, all bands: CARF
Single operator, all bands, Amateur: C.M. Peterson Co. Ltd.
Single operator, single band: Editor of TCA
Multi operator, all bands: Glenwood Trading Company Ltd.

Results:

Will appear in TCA, the Canadian Amateur Journal. Non members of CARF may wish to include an SASE with their entry for a copy of the results.

Notice to Ontario Members

I have taken new employment with NOVAtel Limited in Calgary. As I will be leaving Ontario, I am therefore tendering my resignation as one of CARF's Ontario directors, effective September 5th, 1983.

I do not know how long it will be until I have a permanent address in Calgary so any correspondence may be sent to me via P.O. Box 1562 Brighton, Ont. K0K 1H0.

My new employment brings me into the cellular mobile telephone design field with the former Systcoms group. With access to 800 Mhz equipment I may be one of the first on the 902 Mhz band!

I wish you all and CARF the best in the next few years. I am sure that I will be involved with the federation again once I am established in Calgary.

73

Craig Howey
VE3HWN

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

CANADIAN AMATEUR RADIO FEDERATION INC.
FEDERATION DES RADIO AMATEURS DU CANADA INC.
P.O. Box 2172, Station D, Ottawa, Ont., K1P 5W4

CANADA DAY CONTEST
CONCOURS JOUR DU CANADA

CANADA CONTEST
CONCOURS DU CANADA

CALL
INDICATIF _____

☐ single operator all band
operateur simple, toutes les bandes

☐ single operator single band ____ MHz
operateur simple, une bande

☐ multi operator single transsmitter all band
operateurs multiples, un emitteur, toutes les bandes

SCORE CALCULATION

total QSOs
QSOs totaux ☐

Canadian QSOs
QSOs avec Le Canada ☐ × 10 = ☐ points

other QSOs
autres QSOs ☐ × 10 = ☐ points

bonus QSOs
QSOs bonis ☐ × 10 = ☐ points

QSO points
points de QSOs = ☐ points

multiplier
multiplicateur ☐ (see over for chart)
(regardez au verso)

total score = QSO points × multiplier =
points totaux = points de QSOs × multiplicateur = ☐ points

name
nom _____ call
indicatif _____

adresse
addresse _____

_____

TX/RX
EMITTEUR/RECEPTEUR _____ POWER
POUVOIR _____

antennas
antennes _____

OPERATORS:
OPERATEURS: _____

NATIONAL VOICE OF THE CANADIAN AMATEUR
VOIX NATIONALE D'AMATEUR CANADIEN

date: _____

signature: _____

CANADA DAY CONTEST
CONCOURS JOUR DU CANADA

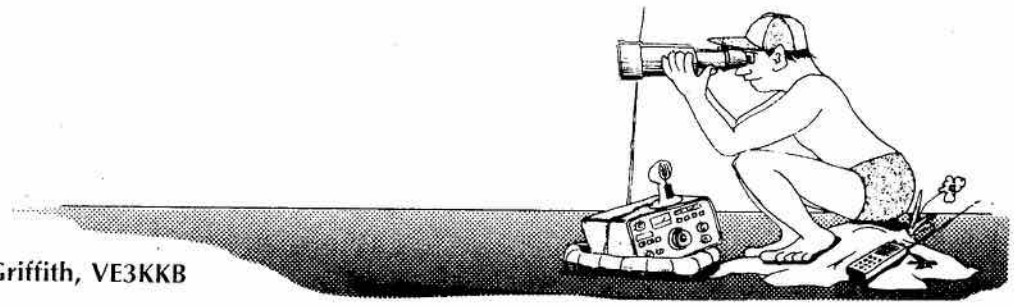
CANADA CONTEST
CONCOURS DU CANADA

MULTIPLIER CHART **CARTE DES FACTEURS DE MULTIPLICATION**

Fill in QSO number sent of each new multiplier in the correct box
Entrez le numero de QSO emis pour chaque multiplicateur nouveau dans le bon boite

Province Province Territory Territoire	VO1 VO2	VE1 NS	VE1 NB	VE1 PEI	VE2	VE3	VE4	VE5	VE6	VE7	VE8	VY1	TOTAL
Bande/Mode Bande/Emission													
1.8 cw													
1.8 phone													
3.5 cw													
3.5 phone													
7 cw													
7 phone													
14 cw													
14 phone													
21 cw													
21 phone													
21 phone													
28 cw													
28 phone													
50 cw													
50 phone													
144 cw													
144 phone													

TOTAL MULTIPLIER =
MULTIPLICATEUR TOTAL =



DX

D.W. Griffith, VE3KKB

The October issue of the DX Column marks the debut of a new subsection entitled "Propagation". It will provide timely information on sunrise, and sunset times, and in months to come, MUF plots, for paths to several major geographic regions throughout the world, which I hope will prove useful to both the experienced DX'er, and neophyte alike. In addition, it will provide sunrise/set times for 5 Canadian cities, from Halifax, in the East, to Vancouver, in the West.

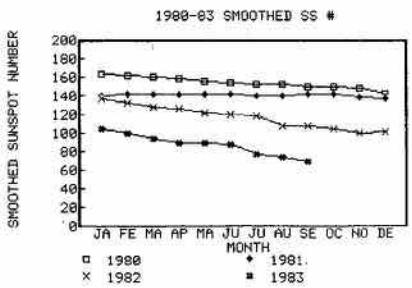
It seemed to be an opportune time to initiate such a section, because these data are particularly useful when pursuing DX on the low (160/80 M) bands, and with the sunspot numbers becoming ever lower, more time will be devoted to these bands in the coming months, and years.

The program used to generate these times runs on an Apple II + computer, and was developed by Tony Ward, VE3IAT, (whom many may remember as ZLIAZV), and now resides in Whitby, Ontario. It is in a fairly rudimentary stage of existance at this point, but works well insofar as accuracy is concerned. If Tony's duties as vice-president elect of Canad-X don't take too much of his time, then a more streamlined version of this program may be available later this year, or early next.

For those of you who do not know what Cadad-X is, it is the Canadian DX Association, and is administered by the Toronto DX Club. Requests for membership should be directed to: CANAD-X, Box 717, Stn. "Q", Toronto, Ont., M4T 2N7, Canada. Long Skip is published monthly by Canad-X, and is a very worthwhile addition to any DX'ers shack. Gary Hammond, VE3GCO, became the editor of Long Skip effective in August, and is doing a very creditable job. Congratulations Gary. If you have any information that you would like to see in Long Skip, then send it to Gary, at: 5 McLaren Avenue, Listowel, Ont., N4W 3K1.

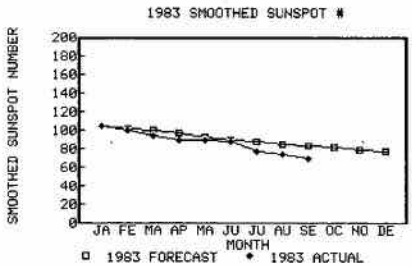
PROPAGATION

In addition to the sunrise and sunset times mentioned earlier, I have included something which may be of general interest. Because those magical sunspots have such a profound effect on the degree of ionization of the atmosphere, hence on HF propagation, I plotted the smoothed sunspot numbers for each month for the years 1980-83, and these graphs may be found in fig. 1. There was a gradual decline from



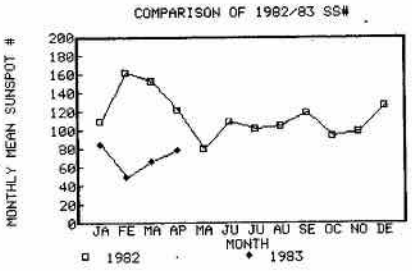
Jan. to Dec. 1980, while during 1981, the smoothed numbers remained very constant. This was the "stalled" decline of sunspot cycle 21, which kept ocnditions as good as they have been for so long. Then, with Jan. 1982, we see that the gradual decline began again, with a substantial drop occurring at the beginning of this year.

Figure 2 is a comparison of the forecast smoothed sunspot numbers predicted for 1983, versus the actual numbers found so far this year. The actual numbers are



lower than those forecast, i.e. cycle 21 is declining more rapidly than the pundits predicted, which means that all you 10M fans had best start thinking of another band. For those of you who do not yet have your advanced ticket, better get moving!

Figure 3 is a comparison of 1982, and 1983 monthly mean sunspot numbers, and from



these data we can readily see why conditions were so bad a several times earlier this year.

BITS & PIECES

SV5QX . . . Rhodes . . . QRV 1800Z on 21.300.QSL via P.O. Box 157, Rhodes.

C21BD . . . Nauru . . . Often QRV 1300Z on 14.177, and 2330Z

on 21.160. QSL to P.O. Box 225, Republic of Nauru.

H44 . . . Solomon Is. . . . Often QRV 1000Z on Sundays, on 7.090. QSL via KB9MI.

T30 . . . Kiribati . . . Often QRV 1245Z on 14.154. QSL to P.O. Box 34, Tarawa, Kiribati.

YJ . . . New Hebrides . . . YJ8TT often QRV 0700Z on 14.222. occasionally on SSB but more frequently on CW, or RTTY. QSL via K8TBW.

3V8AA . . . Tunisia . . . Often QRV from 0000-0100Z on 14.010-14.015. QSL to IS0LYN.

YB5 ASO . . . Indonesia . . . Watch for John this winter on 160M. He has a vertical with 80000 feet of radials, and a rotatable outside receiving loop.

KG4DX, KG4KM . . . Guantanamo . . . Active from the American base on Cuba, 160-10M. QSL to WB2 CPV.

VS5MS . . . Brunei . . . Often QRV from 1000-1500Z on 14.200-14.250. QSL to N200.

KJ9W/DU2 . . . Phillipines . . . Watch for this station during the CQ WW Contest at the end of the month. QSL's to to K9XR.

EY2P was a specail prefix to commemorate 40 years of Soviet power.

EX5DW was a specail prefix marking 1500 years of existence of th city of Kiev, in the Ukraine.

The following stations have been identified as pirates: PJ8II, PJ0II, A6XWT, 3V8YQ, FT0US.

Don't forget that the CQ WW SSB Contest falls on the last full weekend of October, and can be a rich source of rare and semi-rare DX.

That's it for this month. Thanks to CQ Magazine, QST, Long Skip, and many off the air reports for material appearing hereg.

'73

Doug, VE3KKB

Call Sign	QSL Via;
5N9GM	I8XIU
5R8TV	HB9OP
7P8BQ	K9KXA
9H4P	N2DO
A22BT	DJ0FZ
A22BW	DK3KD
A22ED	K4EBY
A35DB	W7XN
A35JL	K9AUB
A35MC	WA1YDJ
A35ZZ	K0CS
A4XGY	K2RU
AH2E	N9AVY
AH9AA	KW9HF
AJ60/KH0	W6TAG
AM03BEN	EA3BEN
AM2AFO	EA2AFO
C31NP	EA3BNX
CO2QQ	KB7SB
CO2RX	KB7SB
CR4VP	CT4VP
CR9FE	KL7IHP
EI8EK	WA9AEA
EK9D/1	N8ACA
EL2AT	N4VV
EL2EB	K8DIU
EL2T	W3HNK
EL7H	OE2UF
FG0HUL/FS	N3CQM
FG0VG	DJ0FX
FK0AF	FK8DD
FK8CW	K2IJL
FM7CF	WB3AKI
FM7WS	F2BS
FM7WW	KU4J
FO8HI	WB6GFJ
FO8HL	WB6GFJ
FO8HO	WB6GFJ
H44KR	W8DUV
H44MB	WA2MNM
H44TA	JJ1KEK
H5YL	K9KXA
H7Z	K4CLA
HH2VP	N4XR
HR11RR	WB9VXK
HS1ANJ	W1QUS
J28DG	F6FGN
J28DL	F6ESH
J28DP	F2GA
J37AH	W2GHK
J29AA	WB2LCH
J87LTA	K4LTA
K1CO/PJ7	K3RYA
K2LE/DU2	W2AYJ
K3OX/VP9	W2PD
K4BF/CN8	K4CEB
KJ8R/V2A	W9SWM
KN2M/J6L	KA2NIQ
LA5EBA/OH0	LA6URE
T30AT	G3XZF
T30EFW	JA3EFW
T30KC	W5RBO
T32AI	KE0A
T32AL	WB7SIC
T4A	ZS6AK
TR8DR	W2PD
TR8WHG	N4AXR
TU2DP	KC4IR
VP2KBD	K1IJV
VP2KBE	K1IJV
VP2M	WB2LCH
VP2MM	AB1U
VP8AQU	K0JW
VQ9XX	N6BFA
ZK2JK	KB6JK
ZK2PF	K9KB
ZK2RU	K6RU

Halifax

Month	Sunset	Sunrise
10		
1	2142 Z	1027 Z
5	2134 Z	1032 Z
9	2127 Z	1037 Z
13	2120 Z	1042 Z
17	2113 Z	1048 Z
21	2107 Z	1053 Z
25	2101 Z	1059 Z
29	2055 Z	1104 Z

Ottawa

Month	Sunset	Sunrise
10		
1	2227 Z	1113 Z
5	2219 Z	1119 Z
9	2212 Z	1124 Z
13	2205 Z	1129 Z
17	2158 Z	1135 Z
21	2151 Z	1141 Z
25	2145 Z	1146 Z
29	2140 Z	1152 Z

Regina

Month	Sunset	Sunrise
10		
1	0018 Z	1314 Z
5	0009 Z	1321 Z
9	0001 Z	1327 Z
13	2352 Z	1334 Z
17	2344 Z	1341 Z
21	2336 Z	1348 Z
25	2329 Z	1355 Z
29	2322 Z	1402 Z

Edmonton

Month	Sunset	Sunrise
10		
1	0051 Z	1352 Z
5	0041 Z	1400 Z
9	0031 Z	1408 Z
13	0022 Z	1415 Z
17	0012 Z	1423 Z
21	0004 Z	1431 Z
25	2355 Z	1439 Z
29	2348 Z	1447 Z

Vancouver

Month	Sunset	Sunrise
10	0137 Z	1431 Z
1	0129 Z	1437 Z
5	0120 Z	1443 Z
9	0112 Z	1450 Z
13	0104 Z	1456 Z
17	0057 Z	1503 Z
21	0050 Z	1510 Z
25	0043 Z	1516 Z
29		

S. America

Month	Sunset	Sunrise
10	2106 Z	0853 Z
1	2107 Z	0850 Z
5	2107 Z	0847 Z
9	2108 Z	0845 Z
13	2109 Z	0842 Z
17	2111 Z	0840 Z
21	2112 Z	0838 Z
25	2113 Z	0837 Z
29		

C. Asia

Month	Sunset	Sunrise
10	1100 Z	2311 Z
1	1057 Z	2311 Z
5	1055 Z	2312 Z
9	1052 Z	2313 Z
13	1050 Z	2314 Z
17	1048 Z	2315 Z
21	1047 Z	2317 Z
25	1045 Z	
29		

E. Europe

Month	Sunset	Sunrise
10	1712 Z	0604 Z
1	1703 Z	0610 Z
5	1655 Z	0617 Z
9	1647 Z	0623 Z
13	1639 Z	0629 Z
17	1632 Z	0636 Z
21	1625 Z	0642 Z
25	1619 Z	0649 Z
29		

E. Europe

Month	Sunset	Sunrise
10	1518 Z	0413 Z
1	1509 Z	0420 Z
5	1500 Z	0427 Z
9	1451 Z	0433 Z
13	1443 Z	0440 Z
17	1436 Z	0447 Z
21	1428 Z	0454 Z
25	1421 Z	0501 Z
29		

N. Africa

Month	Sunset	Sunrise
10	1718 Z	0553 Z
1	1712 Z	0556 Z
5	1707 Z	0600 Z
9	1701 Z	0604 Z
13	1656 Z	0608 Z
17	1651 Z	0612 Z
21	1647 Z	0616 Z
25	1642 Z	0620 Z
29		

C. Africa

Month	Sunset	Sunrise
10	1828 Z	0633 Z
1	1826 Z	0633 Z
5	1825 Z	0633 Z
9	1823 Z	0632 Z
13	1822 Z	0632 Z
17	1821 Z	0633 Z
21	1820 Z	0633 Z
25	1819 Z	0634 Z
29		

S. Africa

Month	Sunset	Sunrise
10	1544 Z	0407 Z
1	1540 Z	0409 Z
5	1536 Z	0411 Z
9	1532 Z	0413 Z
13	1528 Z	0415 Z
17	1525 Z	0418 Z
21	1522 Z	0420 Z
25	1519 Z	0423 Z
29		

Middle East

Month	Sunset	Sunrise
10	1510 Z	0341 Z
1	1505 Z	0344 Z
5	1459 Z	0347 Z
9	1454 Z	0350 Z
13	1450 Z	0354 Z
17	1445 Z	0357 Z
21	1441 Z	0401 Z
25	1438 Z	0405 Z
29		

Australasia

Month	Sunset	Sunrise
10	1533 Z	0333 Z
1	1532 Z	0332 Z
5	1531 Z	0331 Z
9	1530 Z	0330 Z
13	1530 Z	0330 Z
17	1529 Z	0329 Z
21	1529 Z	0329 Z
25	1529 Z	0329 Z
29		

S. Pacific

Month	Sunset	Sunrise
10	0803 Z	1855 Z
1	0802 Z	1953 Z
5	0803 Z	1951 Z
9	0803 Z	1949 Z
13	0803 Z	1947 Z
17	0804 Z	1946 Z
21	0804 Z	1945 Z
25	0805 Z	1844 Z
29		

Japan

Month	Sunset	Sunrise
10	0812 Z	2044 Z
1	0806 Z	2048 Z
5	0800 Z	2051 Z
9	0755 Z	2055 Z
13	0750 Z	2059 Z
17	0745 Z	2103 Z
21	0741 Z	2106 Z
25	0737 Z	2110 Z
29		

Indian Ocean

Month	Sunset	Sunrise
10	1225 Z	0031 Z
1	1223 Z	0030 Z
5	1222 Z	0030 Z
9	1220 Z	0030 Z
13	1219 Z	0030 Z
17	1218 Z	0030 Z
21	1217 Z	0031 Z
25	1216 Z	0031 Z
29		

ICOM IC-745 new

A New Transceiver Worth Celebrating!

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

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

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

Compare these exceptional features:

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

Other Standard Features:

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

Optional Accessories:

• IC-PS15	External Power Supply
• IC-PS35	Internal Power Supply for the ultimate in Portability
• IC-2KL	Linear Amplifier
• IC-SP3	External Speaker
• IC-MB12	Mobile Mounting Bracket
• IC-AT100	Antenna Tuner (100W)
• IC-AT500	Antenna Tuner (500W)
• IC-BC10	Memory Backup
• IC-EX241	Marker Module
• IC-EX242	FM Module
• IC-EX243	Electronic Keyer
• IC-FL52A	500Hz 455KHz CW Filter
• IC-FL45	500Hz 9MHz CW Filter
• IC-FL54	270Hz 9MHz CW Filter
• IC-FL53A	250Hz 455MHz CW Filter
• IC-FL44A	2.1KHz 455KHz SSB Filter
• IC-SM6	Desk Mic
• IC-HM12	Hand Mic

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

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

NEW!! IC-751

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

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

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IC-751-----$1799
IC-745-----$1279
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PS-35------$ 209
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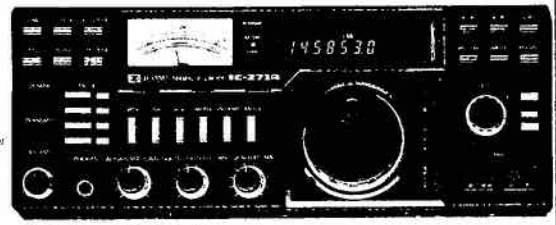
IC-271A

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

NEW Ideal for satellite contacts!

IC-271 LIST $899



IC-471A

NEW

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

IC-471 LIST $1029

IC-R70 LIST $949

NEW ICOM with free HM-14 TouchTone Mike!

IC-25H

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

IC-25H LIST $489

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

ICOM IC-290H

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

Green LED Readout. For improved readability in bright sunlight.

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

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

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

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

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

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

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

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

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

ICOM IC-290H

2M ALL MODE TRANSCEIVER
25 Watts Output
FM CW SSB
LIST $599
With FREE TouchTone Mike

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YAESU FT-726R under $1000 complete with 2M Board
OPTIONAL ACCESSORIES: 430Mhz Board, 440Mhz Board, 6M Board. SOON: Duplex Option, HF Boards.

YAESU FT-726R TRIBANDER

NEW GALAXIES OF PERFORMANCE ON VHF AND UHF

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

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

Multiband Capability

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

Advanced Microprocessor Control

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

Full Duplex Operation

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

High Performance Features

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

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

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- 10 Memories
- Two VFO's
- LCD Readout
- 25W Out
- Memory or Up/Down Scan

VHF/UHF Multimode Portables

FT-690R 50Mhz.....
FT-290R 144Mhz.....
FT-790R 430Mhz.....

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

FT-708R 440Mhz HT....
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208/708 Accessories:

PA-3 DC-DC Car adaptor/charger	$23
YM-24A Speaker Microphone	$35
FNB-2 Extra Nicad Pack	$35
FNB-LC Nicad pack - NO Case	$29
NC-8 Deluxe Desk Charger/Adptr	$79
FBA-2 Charging Sleeve for NC-8	$ 6
MMB-10 Mobile Hanger	$12
LC-208 Leather Case	$39
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GENERAL COVERAGE—ALL MODE DELUXE SOLID STATE TRANSCEIVER

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CAT SYSTEM—Computer Aided Transceiver
- Wide Dynamic Range
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- 10Hz Digital Readout
- All Mode Transceive—CW/SSB/AM/FM/FSK!
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- Variable Bandwidth
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- Much, much more—call or write for info

Computer Interface now in development—Own Tomorrow's HF Transceiver—Today!!

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New 80-10mtr Compact HF Transceiver
- Digital Readout
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- CW/SSB/FM Modes
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- Optional AC Supply, CW Filter, FM Unit External VFO, Antenna Tuner Available

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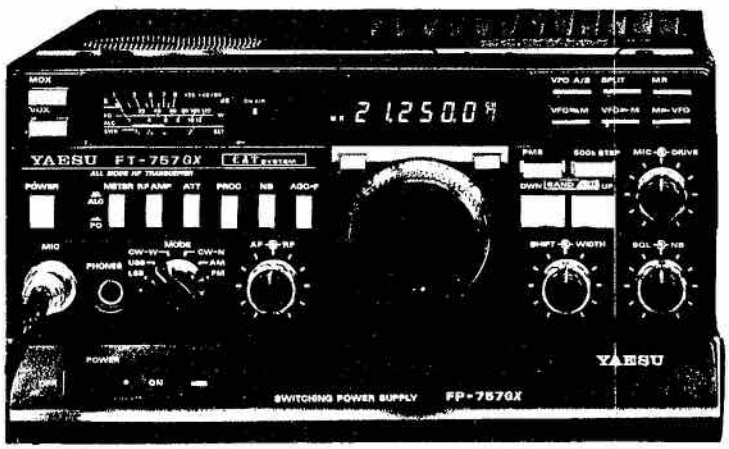
All Mode Digital Communications Receiver .15 to 29.99Mhz—Receives SSB/AM/FM/CW. Built-in S Meter, Speaker, Noise Blanker, Timer, FM Squelch, AC Supply and More!

THE NEW YAESU FT-757GX TRANSCEIVER



A New All Mode General Coverage Transceiver with all possible options. Receiver 500kHz-30MHz, built-in AM, FM modes, 600Hz CW Filter, Iambic Keyer, 25kHz marker, IF Shift and Width Filters, Speech Processor and an effective Noise Blanker. It is compatible with the CAT System. The remarkable new heatsink allows 100% Transmitter Duty Cycle. The FT-757GX has 8 memories and allows memory or programmed Band Scan
ACCESSORIES: FP-757GX one inch high, switching Power supply.
FC-757AT fully automatic Antenna Tuner.
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FREE ENGRAVED CALL LETTERS - 4 WEEK DEL.
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Model 173DM
Dual, independent clocks/Solid walnut case/ Functional and beautiful
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Model 173B
Internal backlight/Aluminum and Poly case/Portable
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~~$69~~ $59 DUAL 24 HOUR LCD MFJ-104

Two independant 24 hour LCD displays! Read both GMT and local times at a glance.

Six digit main display has seconds readout. Four digit auxiliary. Switch reverses main/aux.

Alarm plays 4 selectable melodies. Alarm "ON" indicator. Snooze button.

Quartz timing. Synchronizable to WWV.

Flip-top cover serves as stand.

Night light. Forward/reverse, fast/slow set buttons. Lock function prevents mis-setting. Display main time only, main/auxihary or main/alarm time. Includes battery. 4x2x1/2 inches.

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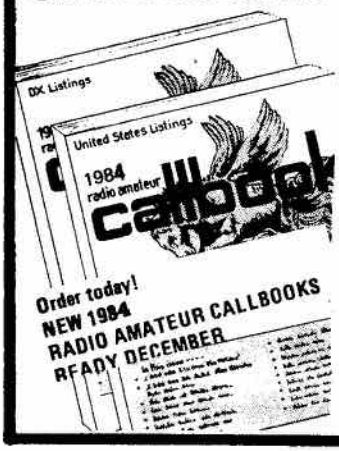

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IDEAL CHRISTMAS GIFTS FOR EVERY AMATEUR !!!

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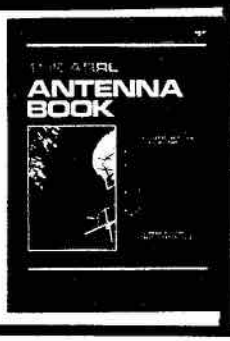

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ASTRON Power Supplies

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

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

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

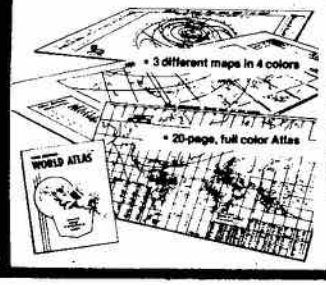
Astron Model	Cont. Amps	ICS Amps	Size (") h×w×d	Ship. Wt.	PRICE	S&H
RS-7A	5	7	7×6½×9	9	$ 95	$ 5
RS-10A	7.5	10	4×7¾×10¾	11	$119	$ 6
RS-12A	9	12	4½×8×9	13	$129	$ 6
RS-20A	16	20	5×5×10½	18	$169	$ 7
RS-35A	25	35	5×11×11	27	$249	$ 9
RS-50A	37	50	6×13¾×9¾	45	$369	ASK
w/Switchable volt and Amp meter						
RS-20M	16	20	5×9×10½	18	$199	$ 7
RS-35M	25	35	5×11×11	27	$279	$ 9
RS-50M	37	50	6×13¾×11	46	$419	ASK
w/Variable output & separate volt/Amp meters						
VS-20M	16	20	5×9×10½	20	$239	$ 8

BUTTERNUT New HF6V

HF6V	10-80+30M	$189 + $9
TBR-160HD	160M	$ 79 + $4
STR II RADIALS		$ 42 + $4
RMK II ROOF MNT		$ 65 + $7
2MCV	2M COLINR	$ 69 + $6
2MCV5	2M SUPER	$ 89 + $7

ICOM SP-4 $28
MAGNETIC SPEAKER FOR YOUR MOBILE RIG

FREE!
RADIO AMATEURS
WORLD ATLAS
with purchase of famous
CALLBOOK MAP LIBRARY!



1. **Prefix Map** World-wide map on one other. Size
2. **Map of Nor** Includes C bean to t areas, zone Size 30" x
3. **Great Circle** Centered o cities, latitu bearings ar

Plus special F The Callbook **World Atlas, F** the 3 maps. C maps of the wo the radio amate

COMPLET $7.00

KDK FM-2030

SIMPLE SCAN CONTROL

FUNCTION ring selects type of scanning as follows:

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

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

SIX IN ONE CONTROL

A multi-function triple switch with co-axial knobs to:

1. Dial frequencies,
2. Select memories, LED display shows memory numbers,
3. Select memories, display shows memory frequency,
4. Select CALL memory,
5. RIT control in 1KHz increments, and
6. Memory WRITE by pushing on DIAL knob.

DIAL

FUNCTION ring

HI/LO POWER BUTTON

HI - 25 watts, LO - 5 watts

COMBINATION VOLUME CONTROL, POWER AND MEMORY MODE SWITCH

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

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

REVERSE BUTTON

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

$379.95

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

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

CANADIAN DEALERS TO DATE:

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

SWR POWER METER
MODEL FS-5S

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

Specifications: $79.95

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

Hansen

Available for shipment NOV 15, 1983

BOTH HAVE LIGHTED METERS WITH 12VDC

SWR POWER & FS METER
MODEL SWR-3S

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

Specifications: $45.95

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

ANT

LM-1

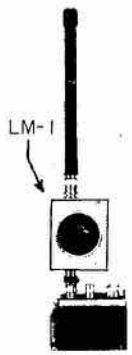
THROUGH POWER

FOR 2M & 440MHz

THE IDEAL GIFT FOR THE HAM WITH A HANDHELD

LM-1

FREQ	: 145 430MHz
POWER	: 0.5 - 5.0W
Zo	: 50ohms
VSWR	: 1.15
ACCURACY	: MS ± 10%
ATTNUATOR	:
OUTPUT	:
CONNECTOR	: BNC
SIZE	: 55×96×48.5$^{m}_{m}$
WEIGHT	: 120 g



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

KURANISHI

DUAL BAND
LINEPASS METER

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

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

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

LINEAR AMPLIFIER

BE HEARD !!
GIVE YOUR HAND-HELD THE BOOST IT NEEDS !!

$99.95

THE NEW DAIWA LA-2035 2M LINEAR AMPLIFIER. A COMPACT AMP AT A COMPACT PRICE. ONLY **$99.95** Suggested Retail.

This amplifier is designed for use with hand-held transceivers in either mobile or fixed station configurations.
Because of it's light weight and compact size, the LA-2035 can be mounted under the dash, under the seat or any other convenient location.
This is a LINEAR amplifier suitable for FM, CW and SSB. It is one of the few small amplifiers that have a relative power output meter.
Easy operation. Connect the supplied cable to your HT, hook up a suitable antenna and 12VDC power source and you are ready to go.

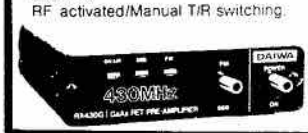
SPECIFICATIONS:
Band 144-148 MHz
Mode FM, CW, SSB
Input Power 1-3 Watts
Output Power 30+ Watts
Power source 13.8VDC @ 5A Max
Dimensions 100W 35H 125D mm
Weight 500 grams (18 oz)
Coax cable with BNC supplied
Output connector SO-239
Fused power cable supplied
Relative Power Output Meter

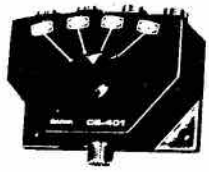
DAIWA GaAs FET PREAMPLIFIERS

RX-110G 144-148MHz, 15dB min gain, 13.8VDC 100ma **$ 99.95**
RX-430G 430-440MHz, 13dB min gain, 13.8VDC 100ma **$159.95**
Place directly into the antenna line. RF activated T/R switch

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

	RX-110G	RX-430G
FREQUENCY	[illegible]	430 - 440 MHz
GAIN	[illegible]	13 dB min
INPUT/OUTPUT IMPEDANCE	[illegible]	[illegible]
RF POWER BYPASS RATING	[illegible]	[illegible]
POWER SOURCE	[illegible]	[illegible]
DIMENSIONS (W × H × D mm)	90 × 28 × 90	





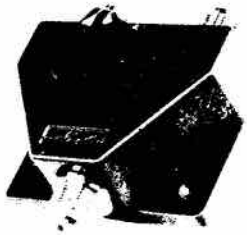
CROSS NEEDLE METER
DAIWA

DAIWA COAXIAL SWITCHES

PROFESSIONALLY ENGINEERED CAVITY CONSTRUCTION

CS-201 2 POSITION $ 35
CS-401 4 POSITION $109

Unused terminals grounded. Power 2.5kW PEP.
ISOLATION 70db@30MHz 45db@500MHz adjacent.

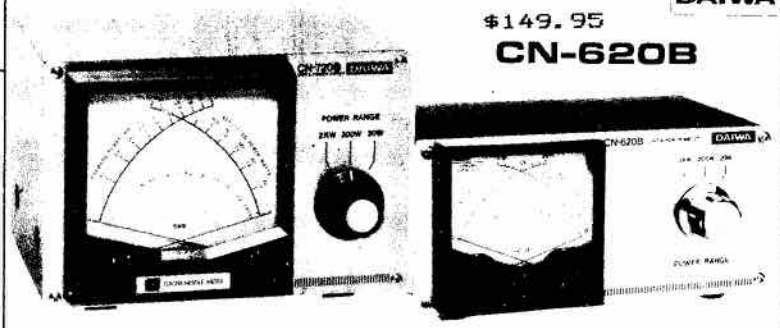


SWR & POWER METER

CN-720B $239.95

DAIWA

$149.95
CN-620B



DAIWA Power Meters are unique in the Meter Industry. All three functions of the meter are installed in ONE Meter. One scale indicates Forward Power, the other Reflected Power and SWR is indicated at the crossing of the two scales. This unique feature allows you to read Forward Power, Reflected Power and SWR all at the same time. Never again will you need to 'Forward Set' your meter. It's ready for any frequency, any band.

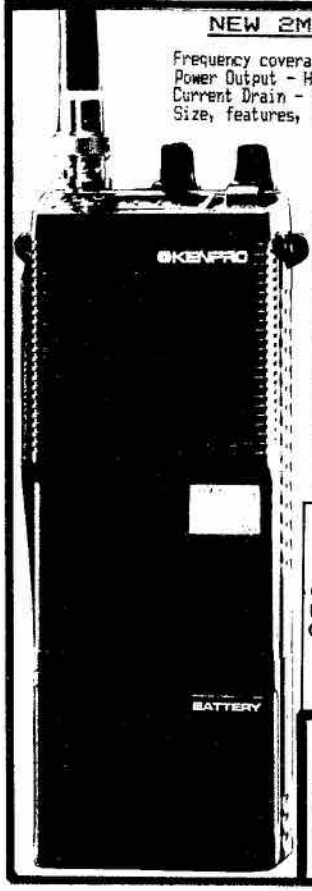
AN IDEAL GIFT FOR ANY HAM STATION

SPECIFICATIONS:

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

NEW 2M HAND-HELD FROM KENPRO

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



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

KT-200E(T) & ACCESSORIES

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

CW PRACTICE OSCILLATOR

KENPRO TRX3 OSCILLATOR $19.95

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

DAIWA ELECTRONIC KEYERS

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

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

ATLANTIC HAM RADIO LTD.

We are proud to present NEW amateur lines to the Canadian Amateur. The items shown on this page are available from selected dealers across Canada. If your favourite dealer doesn't carry the line ask him to contact us. If you have problems finding a dealer, order direct.
DEALERS: Many territories still available. Contact us.

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

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MINIMUM CHARGES $50

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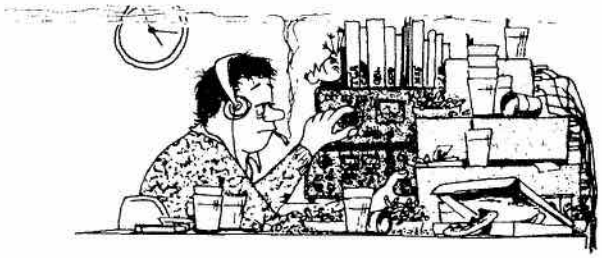
(506) 652-5753

CONTEST SCENE

by Dave Goodwin
VE2ZP/3
1-285 Metcalfe St.
Ottawa, Ont. K2P 1R8



CONTEST CALENDAR

October:
1-2 VK/ZL/Oceania SSB
8-9 VK/ZL/Oceania CW
10 RSGB 21/28 MHz SSB
15-17 CARTG RTTY
16 RSGB 21 MHz CW
22-23 CLARA AC/DC
29-30 CQ WW DX SSB
A2November:
5-7 ARRL SS CW
12-X3 EDXC RTTY
19-21 ARRL SS SSB
26-27 CW WW DX CW
December:
2-4 ARRL 160m CW
10-11 ARRL 10m
18 CARF CANADA CONTEST

Some time ago it was brought to my attention that I may have been writing too much for the experienced contester, and not enough for someone who is just playing around with contesting. I hope in this column to try to introduce contesting to those unsure of what all the excitement is about. The fundamental object of contesting is competition, more or less for its own sake. Striving for excellence, measured against your peers is a pretty common feature of our society, and in Amateur Radio Contesting, this involves pitting the capabilities of your equipment, antennas, and especially your operating skill against other Amateurs. There are other things which make contesting fun and educative. Spending 24 or 48 hours watching propagation conditions change, seeing new openings occur to different areas of the world can teach you a great deal about propagation. When major contests are on, and there is plenty of round-the-clock activity from every corner of the world, some of the real potential of the bands we use can be realized.

In the course of competing with your friends, you may develop some new ideas and try experimenting with different, higher-performance antennas, or more efficient station layouts, using computers to handle all of your log-keeping functions.

If your station is not large (mine never has been, especially now) you may not be able to compete with the big guns, but at least you can do as well as you can, and doing your best is never anything to be reticent about.

Some people find excitement in simply running stations, that is working a great many stations in a short period of time. Getting into a rhythm, working station after station can be a great deal of fun, and a solid 150-an-hour run of Japanese is something you may remember a long time.

For casual DXers or award hunters, contests offer high levels of activity from what might be otherwise inactive spots. A contact in a contest is as valid for an award as one in a non-contest pileup or even a leisurely ragchew. A nice long ragchew may be very heartwarming, but for the DXer, the challenge of finding the station in a rare country, and getting through the pileup represents no less an achievement in a contest, and in fact, reflecting on some of the contesting I have done on 80 and 160 metres, contest pileups can be among the most demanding of patience and skill.

There are plenty of other pleasures to be found in contests, and these are best determined by you and your own experiences. As with most other things, success in contesting requires hard work, and dedication. You may find the hard work satisfying in itself, and the success you have a reward for a job well done.

If you are just interested in playing around, 'getting your feet wet', so to speak, try to familiarize yourself with some of the basic rules for any contest. The exchange is a good place to start. The exchange is a little profuctory bit of information that each station must send to the other in a contest. The most common form is a serial number. This is a three- or four-digit number that starts as 001 and goes up by one with each additional contact made. It is wise to send at least three-digit exchanges, even when you are only making your first few contacts, as those placeholding zeroes really to eliminate some confusion. Other exchanges can be your province, ARRL section, CQ WAZ Zone, ITU Zone, your age, even in one small contest your occupation, or the year you graduated from university. It is wise to read this part of the rules, and be sure you are sending the right piece of information. In almost all contests, the RS or RST is included in the exchange, usually sent as the first part. A typical exchange would be 59001 or 59 Newfoundland on SSB and on CW 599001 or 599NF. Zones are sent as two-digit numbers, such as 5904 or 59903.

Find out if you can work the same station more than once, and how. Noone needs duplicate contacts, so please be sure you are helping the other guy and not filling his log with contacts he cannot claim.

Most of the other rules are pretty straightforward, and you should have no problems.

There are a few published

sources of contest info, including two Canadian sources. The CARF Reference File has one chapter devoted to contesting, and tries to introduce the subject in small bites. This can be obtained from CARF in Kingston, and it has been advertised in TCA. Garry Hammond, VE3GCO, now the editor of *Long Skip* last year produced an excellent compendium of contest rules cover sheets and tips to successful contesting. This is available from Garry at 5 McLaren Ave., Listowell, Ont., NR2 3K1 for $8 postpaid. As well, the Radio Society of Great Britain and the ARRL publish fine operating handbooks that include informative sections on contesting well worth a look. Contesting can be a lot of fun, and there are a few things to learn along the way, but it is not hard, and well worth the effort to try.

VK/ZL/Oceania Contests
Period: SSB: 1000z 1 Oct. to 1000z 2 Oct.
CW: 1000z 8 Oct. to 1000z 9 Oct.
Classes: Single operator, all bands or Multi-op.
Bands: All Amateur bands except 10 MHz.
Exchange: RST and serial number.
Multipliers: Total of VK/ZL call areas worked on each band.
QSOs: 2 pt/QSO with VK or ZL stations, 1 pt/QSO with other stations in Oceania.
Awards: Certificates will be sent to the top scoring entrant from Canada in each class.
Entries: Separate log sheets should be used on each band. A summary sheet and the customary honesty declaration must be included, and entries should be mailed as to arrive before 31 Jan. 1984 to: VK/ZL Contest Mgr., GPO Box 1002, Perth 6001, Western Australia.

RSGB 21/28 MHz SSB Contest
Period: 0700-1900z 9 Oct.
Classes: Single or multi operator, multi-band only.
Exchange: RS and serial number.
Multiplier: Total of UK prefixes worked on each band (max. possible of 42/band). GB-prefixed stations do not count for multiplier or QSO credit.
Points: 3 pt/QSO with stations in the United Kingdom.
Awards: 1st, 2nd and 3rd place certificates will be awarded to the leading stations outside the U.K.
Entries: Must include a summary sheet listing multipliers worked in each band, and logs must be received before 1 Dec. by RSGB HF Contest Ctte., P.O. Box 73, Litchfield, Staffs., WS13 6UJ, U.K.

RSGB 21 MHz CW Contest
Period: 0700-1900z 16 Oct.
Classes: Single operator, and Single op. QRP (less than 10w in.).
Bands: 21 MHz CW only.
Multipliers: Total of UK prefixes worked. GB-prefixed stations do not count for multiplier or QSO credit.
Points: 3 pt/QSO with U.K. stations.
Awards: Outside the U.K., 1st, 2nd and 3rd place certificates will be awarded to high scoring stations ineeach class.
Entries: Should be submitted by 31 Dec. to D. Lawley, 24 Glenview, Gravesend, Kent, DA12 1LP, U.K.

CARTG RTTY DX
The rules, especially for the point scoring system are so complicated that I could not do justice to them here in the space I have, but complete rules are available for an SASE from CARTG, 85 Fifeshire Rd., Willowdale, Ont., M2L 2G9.

CLARA AC/DC
Period: 1800z 22 Oct. to 1800z 23 Oct.
Classes: Single op, all bands only.
Bands: 80 through 10 metres, except 30 metres.
Exchange: RST, Name, QTH.
Multiplier: Total of provinces and territories worked, regardless of band.
Points: Each station may be worked twice, either on two different modes or on two different bands. CLARA members may work anyone, non-members may work only YLs. 1 pt/QSO, 3 pt/QSO with any 'bonus station'. These stations will identify themselves as such.
Awards: 1st, 2nd and 3rd place certificates will go to the top non-members, and the first place CLARA member will receive a pin.
Entries: Logs should be sent to Lynn Boothroyd, VE3 LQL, 673 Tackaberry Dr., North Bay, Ont., P1B 8R1 by 31 Dec.

CQ WW DX Contests
Period: SSB: 0000z 29 Oct. to 2400z 30 Oct.
CW: 0000z 26 Nov. to 2400z 27 Nov.
Bands: 160 through 10 metres, excluding 30m.
Classes: Single op, single or all bands; Multi-op single or multi-transmitter. There are separate QRP single operator single and all band classes for stations running less than 5 watts output.
Points: 1pt/QSO with other Canadians; 2pt/QSO with other North Americans; 3pt/QSO with stations on other continents.
Multiplier: Total of CQ WAZ Zones and DXCC/WAE countries worked on each band.
Awards: Certificates are awarded to the top-scoring entrant in each class in each Canadian Call Area. In the Phone Contest, trophies are awarded to the top scoring Canadian entrants in the Single op single band, single op all bands, and multi-op single transmitter classes. In the CW contest, trophies are awarded to the top Canadian single op single band and single op all band entrants. CARF is the sponsor of the single op single band trophy.

Entries: Official entry sheets are available from CQ. Entries should be postmarked before 1 Dec. for the SSB and 15 Jan. for the CW contest. SSB logs should be sent to: Larry Brockman, N6AR, 7164 Rock Ridge Terrace, Canoga Park, Cal., 91307, U.S.A. CW logs should be sent to: Bob Cox K3EST, 6548 Springvalley Dr., Alexandria, VA, 22312, U.S.A.

1982 CAN-AM CONTEST RESULTS

VE3 BMV, Yurk Blanarovich
Box 65
Don Mills, Ontario
M3C 2R6

TROPHY WINNERS

Canadian Champion, combined — VE6OU, John Sluymer
American Champion, combined — AA5B, Bruce DRAPER
Canadian Phone Trophy — VE5ADA, B.J. Madsen
American Phone Champion — AH6BK, Mike Hart
Canadian CW Trophy — VE3DZV, Ken Dixon
American CW Champion — K6LL/7, David Hachadorian
Canadian Multi Op Champion — VE7ZZZ, Prince George CC
American Multi Op Champion — N5FA/6, Harvey Mudd College RC
Club Competition — Albaquerque DX Assn.

SINGLE OPERATOR, TOP TEN

Canadians **Americans**

Combined Phone + CW

VE6OU	1026997*	AA5B	743589*
VE3DZV	163404	W5JW	729008
VE1CEG	123574	AH6BK	722127
VE3ATD	115830	AG7M	527828
VE5ADA	100772	K6HNZ	424732
VE3NBE	60462	K6LL/7	34768
VE3FHZ	26390	KB5FU	314768
VE3KOY	19147	KJ7K	294168
VE3BMV	18966	KF6A	277580
VE7IQ	16653	KB0G	223295

Phone

VE6OU	631410	AH6BK	536089*
VE5ADA	100772*	AA5B	485415
VE3FHZ	26390	K6HNZ	424732
VE7EGD	15480	W5JW	387121
VO1QU	13792	KJ7K	294168
VE3MBV	9231	AG7M	288788
VE3CKR	7020	KB5FU	274988
VE7DKS	5859	KF6A	158330
VY1DD	1260	KU51	100737
VE4AKN	1258	KC7JO	91304

CW

VE6OU	394956	K6LL/7	344770*
VE3DZV	163404*	W5JW	341887
VE1CEG	123574	AA5B	258174
VE3ATD	115830	AG7M	239040
VE3NBE	60270	KB0G	223295
VE3CKR	53658	KG5U	216216
VE3KOY	19147	AH6BK	186038
VE7IQ	16653	KQ8M/0	128202
VE3KZE	12578	KF6A	119250
VE3MKK	10170	W7TC	100512

Multi Operator, Combined Phone + CW

VE7ZZZ	666510*	N5FA/6	917856*
VE1DXA	484530	K5LZO	314689
VE5GF	315341	K08T	360458

Club Competition

Albaquerque DX Assn	2443049*
Northern Alberta CC	1026366
Texas DX Society	946410
River City Contesters	329004
Sturdy Mem. Hospital ARC	147912

Scores are listed in the following order: Call, MX area, score, QSOs, multipliers.
* = certificate winner

CANADIANS — PHONE

Single Operator, All Band

VE6OU	AT	631410	1113	195*
VE3FHZ	ON	26390	127	65*
VE4AKN	MB	1258	26	17*
VE1ABU	PE	1152	64	18*

Single Band

VE5ADA	20 SK	100772	588	59*
VE7EGD	20 BC	15480	131	40*
V01QU	15 NF	13792	146	32*
VE3BMV	15 ON	9231	106	30
VE7DKS	15 BC	5859	73	27
VY1DD	20 YU	1260	26	18
VE3MCN	15 ON	432	19	8
VE3NBE	10 ON	192	12	6

QRP

VE3CKR	ON	7020	64	39*

Multi Operator

VE1DXA	NS	484530	906	186*
VE7ZZZ	BC	353652	777	156*
VE5GF	SK	315341	830	727*

AMERICANS, PHONE

Single Operator, All Band

K1VUT	MA	58240	269	104*
KF1C	RI	41769	220	91*
N1AFC	ME	19596	209	46*
KA1UE	MA	15730	115	65
N1BPJ	RI	9900	84	12
K1ZZJ	MA	2548	44	28
K1NCD	CT	1558	38	19*
WB3EKV	PA	71706	329	102*
K3FN	PA	68750	393	110
W3FG	MD	3150	46	30*
W3ICM	MD	1644	36	22
KB4FO	FL	37440	195	90*
WD4PZN	AL	20088	129	72*
KE4VP	SC	5184	66	36*
K4FPF	VA	2828	46	28*
AA5B	NM	485415	1163	201*
W5JW	NM	387121	911	203*
KB5FU	TX	274988	815	761*
KU5I	TX	100737	408	117
N5HH	NM	52595	461	54
WA5IYX	TX	39615	199	95
KY5N	TX	28424	196	68
K6HNZ	CA	424732	1044	196*
KF6A	CA	158330	532	142
K6SG	CA	39468	230	78
AA6EE	CA	1071	24	21
KJ7K	AZ	294168	852	168*
AG7M	WA	288788	817	172*
KC7JO	WA	91304	390	113
KT7G	WA	14850	161	45
WD8CZA	WV	10815	149	35*
W8VEN	WV	5054	63	38
KA9KAW	IL	82398	442	93*
K0VGB/9	IN	21597	147	69*
K9GDF	WI	1178	27	19*
KB9Q	WI	36	5	3
WDOCCW	KS	42224	391	52*
WA4PGM/O	MO	21490	129	70*
AKOG	NE	19113	130	69*
KAO1FG	IA	6864	72	44*
KCOUM	ND	3774	52	34*
WBORJJ	NE	2875	54	25*
AH6BK	HI	536089	1140	229*

Single Band

KC8JH	20	OH	17673	200	43*
KA60MP	15	CA	7112	E02	34*
W9QWM	20	IL	3850	71	25*
KMOL	20	MO	2862	48	27
N4BS	40	KY	1394	43	17
NO4J	15	FL	1188	50	22
NOCLV/Q	20	KS	60	6	5

QRP

WAOVBW	IA	18525	135	65*
KB3WN	PA	4125	58	33*

Multi Operator

N5FA/6	CA	712185	1462	237*
K5LZO	TX	199512	697	153*
KO8T	MI	198674	584	161*
KK9G	IN	55016	252	104
KS7T	MT	31464	218	69
W2OW	NY	11735	190	72
K1JYM	RI	9635	98	47

CANADIANS, CW

Single Operator, All Band

VE6OU	AT	394956	664	207*
VE3DZV	ON	163404	371	153*
VE1CEG	NS	123574	331	137*
VE3ATD	ON	115830	314	130
VE3NBE	ON	E0270	222	98
VE7IQ	BC	16653	96	61*
VY1BQ	YU	2277	34	23*
VE5AFF	SK	660	17	15*

Single Band

VE3KOY	40	ON	19147	164	41*
VE3KZE	40	ON	12578	117	38*
VE3MKK	40	ON	10170	118	30*
VE3BMV	15	ON	9735	109	29
VE1BCZ/3	20	ON	6912	77	32
VE3INQ	160	ON	1881	35	19
VY1DD	180	YU	420	16	10
VE3LQJ	10	ON	420	14	8

QRP

VE3CKR	ON	53658	192	99*
VE5ACY	SK	4257	46	33*
VE1ABU	PE	3577	73	49*
VE3ACF	ON	228	19	17

Multi Operator

VE7ZZZ	BC	312858	570	191*

AMERICANS, CW

Single Operator, All Band

K1VUT	MA	70305	252	129*
KF1C	RI	40090	205	95*
W1CNU	CT	32208	171	88*
KA1UE	MA	15680	116	64
K1UCA	MA	13216	100	56
W1VH	CT	7093	82	41
K1ZZJ	MA	5699	65	41
W2FTY	NY	22708	127	83*
KW2J	NY	9645	83	55
W2JEK	NJ	656	20	16*
W3FG	MD	19481	114	77*
KBEYY	PA	4107	50	37*
WD4PZN	AL	68286	279	114*
KA4LXZ	FL	46368	266	89*
K4FPF	VA	43442	185	107*
WC4E	FL	11918	142	59
KB4FO	FL	4536	49	42
W5JW	NM	341887	727	221*
AA5B	NM	258174	639	189
KG5U	TX	216216	609	168*
KB5FU	TX	39780	177	102
AG5C	TX	37020	169	99
KJ9R/5	OK	5346	75	33*
KY5N	TX	3364	51	29
KF6A	CA	119250	371	150*
K6SG	CA	11956	92	61
K6ARE	CA	2158	34	26
K6LL/7	AZ	344770	700	230*
AG7M	WA	239040	585	192*
W7TC	OR	100512	324	144*
W7ZMD	AZ	35280	183	90
KK9G	IN	47405	232	95*
W9HE	WI	11475	105	51*
KOVGB/9	IN	9918	79	57
N9BKT	IL	9900	83	55*
K9GDF	WI	9025	84	51
KBOG	KS	223295	570	185*
KQ8M/O	MN	128202	436	138*
AK0G	NE	34104	161	98*
WA4PGM/O	CO	33853	161	97*
KA01FG	IA	16064	113	64*
KCOUM	ND	10	2	2*
AH6BK	HI	186038	583	167*

Single Band

KC7V	15	AZ	3416	55	28*
AA6EE	15	CA	2834	47	26*
NOCLV	20	KS	2775	49	25*
W9QWM	20	IL	846	21	18
KA5GWQ	15	TX	420	18	10
KA31RV	40	PA	385	17	11
KA9X/3	40	MD	240	12	10
KH6JWK	20	HI	234	12	9
KD4PP	20	TN	27	4	3

QRP

AA6DP	CA	14446	108	62*
W8EAO	OH	6627	66	47*
KG1K	MA	1368	35	19*

Multi Operator

N5FA/6	CA	20567	543	179*
KO8T	MI	161784	448	168*
K5LZO	TX	115177	356	149*
K1JYM	RI	15128	119	61

Check Log: VE1BAK

Multi operator stations operated by: VE1DXA (VE1CEG); VE7ZZZ (VE7VX, SK, ENI, ENF); VE5GF (=VE5XK); N5FA/6 (=KE6RH); K5LZO (=WB5RUS, WBONFY/5); KO8T (+KA80CR); KK9G (+KN9C); KS7T (+KA7GVI); W2OW (N2HR, KF2X, N2CFN, N2CIC); N5FA/6 (+KB6EQ); KO8T (+KC8ZJ); K1JYM (+KA1GQW)

1983 CAN-AM Contest is held:
Phone: Sept. 17-18
CW Sept. 24-25

CONTEST QRM:

Phone

Biggest thrill was working VE4RM on 6 bands within 10 minutes — VE6OU; Still one of my favourites, but it seemed very slow this year — VE3FHZ; Getting contacts on Sunday was like pulling teeth! — VE5ADA; We've got kilowatters, we've got QRPers, what about us poor guys in between? — VE7DKS; QRP: fun, amazing and frustrating (now I know why people buy linears), next year speech processing — VE3CKR; Where were the VE2? — VE7ZZZ; I wish more hams would enter this contest. More advertising of test might help. — WB3EKV; The phone weekend was the wrong time to have sore throat — K4FPF; Had S9 precipitation static first 6 hours of contest. Lots of fun otherwise — AA5B; Nice to finally get KH6 on 75m with my lousy antenna — WA51YX; Poor 10 m condx and noisy low bands reduced score this year — K6HNZ; Unfortunate that conditions were so bad — still was enjoyable. The results sure show a difference up here from last year — AG7M; Excellent, CU next year — KA9KAW; As a Canadian transplant, this is my favourite contest, wish I could have heard more VEs, looking forward to next one — WBORJJ; Really enjoyed working as father and son team, especially because I needed a voice. I got laryngitis the day before the phone contest, no voice! Thank God for sons! — K1JYM.

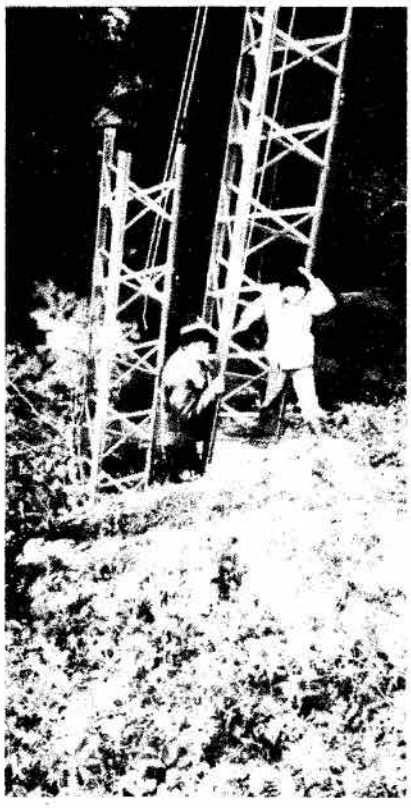
CW

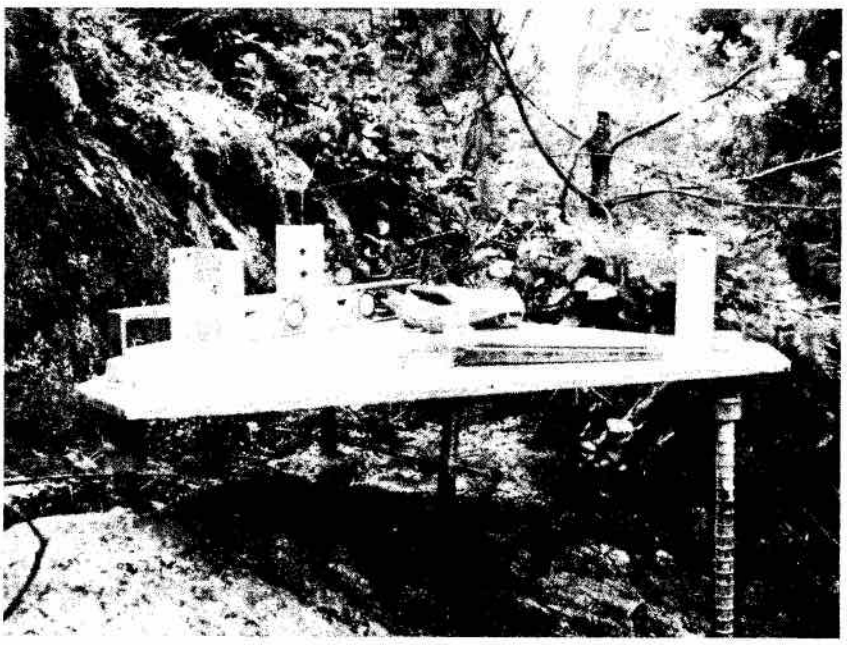
Too bad geomagnetic storms can't leave contest weekends alone — VE6OU; My first try. Sri

if ops asked for repeat of NR or MX and I didn't send it, but my speed doesn't approach 35 WPM. Will try again next year — VE5AFF; Hard to work W6 and only DX heard was KH6CC. Really got tired of explaining the contest to each QSO but now they know for next year, Hi! Enjoyed it regardless! — VE3INQ/160; The recognized abbreviation for Yukon Territory is YT. — VY1DD; No TVI with QRP! — VE3CKR; We were "Aurored" it is beautiful to look at, but sure screws up the propagation — VE7ZZZ; Very nice contest again, especially CW portion — K6HNZ; 7 hrs of operation. Hopefully next year this dummy will read the rules and find out that contest starts at 2 p.m. on Sat. instead of 9 p.m. then he won't be surprised when he finds no one on the band at 1801 Z on Sunday — KW2J; Stopped too early Saturday night, lovely condx Sunday — AA5B; Where were all the Canadians? — K6ARE; Nobody showed up for multi op, not even Murphy — KK9G; Too bad my 80m ant brok during CW event. Fun anyway. — AH6BK. Great to get 5NN with 2W out and an indoor dipole! — KG1K; Enjoyed operating father-son team, Dave KA1GQW is 12 yrs old — K1JYM.

Hauling concrete up the B.C. mountainside — where the flattest area to be found is about one square foot — would have been a sure way to end all operations. Used ¼ inch steel plate, three six inch pieces of channel, drilled and welded for the tower base and all hot dip galvanized. One inch threaded rebar rods are cemented into one and one-half inch foot deep drilled holes. Expanding (4%) concrete was used in the rebar holes — tower is a 40' Delhi, and very solid.

73.





RAQI Congres Provincial 1983-84

Robert Sondack
VE2ASL

Les 12, 13 et 14 août derniers RAQI (Radio Amateur du Québec Inc.) tenait son 33ième congrès annuel. Tradition remontant à 1951 où à l'époque, l'esprit était aux pique-niques, et rencontres champêtres.

Parrainé par l'association provinciale, le congrès de RAQI est organisé régionalement par un club de radio amateur qui en devient l'hôte. Ainsi, après avoir parcouru tous les coins de la province, cette année la région des cantons de l'est proposait ses services par l'intermédiaire du club SHERHAM (VE2CSH) et de son dynamique président Victor Leunens VE2EVX.

A vingt minutes de la ville de Sherbrooke, le village de Compton offre aux visiteurs l'accueil touristique d'une superbe région vallonée parsemée de lacs. Dans un décor calme et reposant le manoir St-Laurent fut retenu comme site du congrès.

Parmi les activitées, on a pu assister à une série de conférences sur des sujets d'actualité technique, tels que les satellites d'amateur, présenté par Robert Sondack pour AMSAT, ainsi que les derniers développements du réseau THF trans-Québec, une réalisation provinciale d'envergure, présenté par Jacques Janelle VE2BKJ. Des ateliers d'études ont amenés des propositions concernant la protection des intérêts des radio-amateurs canadiens. En parallèle, des activités étaient offertes aux XYL et notamment une clinique sur les fours à micro-ondes, qui, si l'on en juge par sa durée et l'assistance présente, s'est avérée fort populaire.

Au cours du banquet du samedi soir, plusieurs invités de marque étaient présents. Le ministre des communications du Québec, Monsieur Jean Jacques Bertrand, avec beaucoup d'humour, a prononçé une allocution fort appréciée des participants, dont le nombre s'élevait à environ 600, en insistant sur l'apport que constituent les radio-amateurs pour la communauté québecoise. Monsieur Lambert, directeur général de la protection civile du Québec a ensuite enchaîné en soulignant les accords et le protocole déjà existant entre cet organisme et les radio-amateurs et en affirmant qu'il ferait tout en sont pouvoir pour que cette excellente collaboration, non seulement se maintienne, mais continue à se développer. A titre d'exemple, mentionnons que l'unité mobile des communications de la protection civile était en démonstration pendant toute la durée du congrès.

En clôturant le banquet, Laval VE2AAH a brossé un historique de RAQI et de certains des congrès précédents. Exposé qui était rehaussé de la présence de plusieurs anciens présidents de RAQI.

Le dimanche dont l'activité principale était le hamfest a permis à FRAC-CARF de prendre contact avec les radio-amateurs en tenant un kiosque d'information où pour la première fois la version française du document "au service des radioamateurs canadiens" était dévoillée. Bruno Molino VE2FLP assistant directeur et Robert Sondack VE2ASL directeur étaient présents et se sont retrouvés enchantés de l'accueil réservé à l'association nationale.

Avec ce 33ième congrès, qui se tenait, rappelons-le dans l'année mondiale des communications, les radioamateurs ont montrés une fois de plus qu'ils formaient une grand famille a l'esprit civique pré-dominant.

Nouvelles breves

Le club de radioamateurs "O.A.R.C." (Club de radioamateurs d'Ottawa) tenait un kiosque d'information lors de l'Exposition Centrale d'Ottawa "Super Ex" qui a eu lieu du 19 au 28 août 1983. Le 26 août, Bruno Molino, VE2FLB et Joe Courtemanche, VE2DZT y étaient présents comme représentants de F.R.A.C. pour faire une démonstration et donner de l'information au-sujet de la radioamateur.

Le 7eme SYMPOSIUM NATIONAL de F.R.A.C. aura lieu les 14 et 15 octobre 1983 à l'Hotel "Nova-Scotian" à HALIFAX. Seront présents aux differéents ateliers un représentant du Ministère des communications, 2 représentants régionaux de ce même Ministére et de nombreux radioamateurs.

Le 22 octobre 1983 à Montreal, se tiendra une vente à l'encan organisé par le club "West Island". De nombreux articles de radioamateur y seront mis en vente à de bons prix. Pour plus de renseignements soyez à l'écoute du répéteur VE2RM.

Le 29 octobre 1983, le "O.A.R.C. (Club de Radioamateurs d'Ottawa) organise une vente à l'encan et un marché aux-puces à l'école secondaire Canterbury sur l'avenue Canterbury à Ottawa.

The Japanese radiotelegraph code

By Ralph Cameron
VE3BBM

Have you ever wondered how one can transmit the seemingly undecipherable ideographic characters used in the Chinese and Japanese languages? How would you convey their meaning by simple dots and dashes? If Morse code is becoming a drag and you're rather bored by exchanging three number signal reports — read on.

Japanese telegraph code or "HORE" ホレ as it is known (see — TCA Nov. '82 — Amateur Band Intruders), contains as many as six bits to represent the fifty kana characters. All 26 Morse characters are used as well as those needed to complete the kana syllabry.

A word or two is in order to explain the term syllabry. Most of the Japanese characters or ideographs derive from the Chinese. These are the so-called Kanji characters. Japanese have adopted both a Chinese way of reading the character as well as one or more Japanese ways to read the same character. It should be borne in mind that one common Kanji may be used as the root of a noun, verb, adjective or even adverb. This root could have as many as thirteen ways of being read. Which particular reading applies depends on the context. To some extent a contextual meaning simplifies the grammar. Verb person doesn't change and definite and indefinite articles disappear. Sometimes a literal translation can be made with no verb at all! Watch out for the adverbs though — they agree with the tense of the verbs and have some "messy" endings. Many of the "readings" of a Kanji may differ by a single syllable but the meaning is entirely changed.

Each Kanji has a simple sound of one or two syllables — such as wa, ka, su, ki etc. The kana syllabries are used to represent each phonetic sound with a distinctive character of simple construction. The katakana syllabry is like the printed form of our alphabet while the cursive or written form makes use of the hiragana syllabry. Both kana have the exact same phonetic pronounciation. A few examples will make this clear.

The Romanized form of the phonetics are called "Romaji". To be able to learn the kana characters it is very helpful to first learn their sounds. Copying the Japanese code is speed limited by having to copy two Roman letters for each character received — so to improve speed — memorize a few groups of kana at one time and work on them. Some come very easily while others still cause me trouble. A crisis arises when moving on to memorize hiragana. There is a secret of course and that is to recognize the order in which both kana are normally written. Each of the vowels a, i, u, e, o (yes, that's the order) are combined with several consonants to form the Romaji. The sounds so formed when used singly or in combination and following syntax rules for the kana permit pronounciation of any Japanese word. Simple enough.

Should any readers be pursuing the study of Japanese as a student or as the next step beyond this article, the bibliography contains one of the most informative modern books I have found. I have yet to see one in any local library. This book was written in 1981 and is indispensable. It was authored by two Germans and includes all 1250 kanji which are prerequisitse of the Japan Ministry of Education. I found it by chance in an Oregon bookstore.

The Japanese kanji as well as the kana are being continually reviewed by the Japan Ministry of Education and may have been simplified by removing some of the strokes. A Toronto newspaper "The New Canadian" is published for the Japanese-Canadian community; however, it is almost unreadable by school children in Japan. The reason of course is that the Toronto paper uses kanji forms popular thirty years ago and which have now been simplified. The cost of replacing all the type is probably prohibitive.

In reference to the Japanese code table it should be noted that five of the kana yi, ye, wi, we and wu are technically obsolete, but one or two of these are heard occasionally. Old WWII Japanese radio ops still ply the high seas aboard fishing vessels. The Tuna fleet has several such operators. I have been unable to find the code for wu as well as the Kana for yi, ye and wu. Since those kana are no longer used their absence is immaterial.

It is necessary to remember four simplified rules when learning, copying or sending katakana. Katakana is used for telegrams, many technical terms and anglicized or Americanized names or words. Some sounds you may recall are not available in Japanese. Where we would use an "l" Japanese would prounce with an "r" sound, etc., etc. One major problem is created by the kanji for personal names. One is never sure of the correct "reading" for a particular name so that when subscribing to magazines or completing info request cards a space is provided called "furigana" for phonetically spelling in one of the kana, one's name. Now for the Rules:

Rule No. 1— All words end in a vowel unless they end in the end of syllable sound "N". (N acts as a delimiter and may also be pronounced M.)

Rule No. 2 — All kana have short sounds — that is — avoid the tendency to dwell on the

vowel sounds. A perfect example of this is: sukiyaki — prounced s'kiyaki. The first "u" is swallowed. In the verb form arimasu (is) the last u is almost silent; "su" is prounced as in suck. The kana distinguishes short and long sounds by use of two more rules.

Rule No. 3 — Any kana followed by "u" (••—) lengthens the sound. We show this in the word SAYŌ(u)NARA. The Yō is sent as You or ヨウ in katakana. The dash or macron over the vowel indicates lengthening. It is easy to see that in katakana SAYŌNARA is written as サヨウナラ.

Rule No. 4 — In order to express double consonants such as pp or tt the kana(tsu) (•——•) is used before the letter to be doubled. A modern example would be the words for "logic analyzer", which has entered the language in katakana form: ROGIKKE ANARAIZA. In katakana this would be ロジ"ッケ アナライナ". In this case doubling the Ke sound makes it more closely follow the English.

There are two grammatical operators that are used to change the pronounciation of certain groups of kana. These two operators are a set of marks like quotes and a small circle. These signs follow the kana being transmitted. The sign " is called dakuten and the ° handakuten. An example using the dakuten is the word DATSUN ダ"ツン. The word for Japan uses the handakuten although Japan has its own kanji ニッポン.

Most of the punctuation follows certain suggested conventions and some of these are not absolute. In fact how one pronounces a certain word may reflect how the kana are used to give what he thinks convey the sound. The spelling may vary from person to person for the same word depending on the dialect! This is not true of Morse code unless we make a conscious effort to convey an accent, e.g.— "you all" etc. In the following table the danraku acts like quotation marks while kakko act as brackets. The nakasen serves as a hyphen-implying from-to, when speaking of dates or time. The seldom used punctuation can really depress you, especially if one catches you off guard — even when you think you know them all!

Two characters used by Japanese operators are not included here because they tend to follow commercial practice. These are ŠN for end of transmission and VĒ for error or end of formal traffic.

Not much can be said about the Marine code abbreviations — they are used on the Marine bands and for passing formal traffic. You can follow a standard commercial message form by knowing these but I have not encountered many. These abbreviations took me two weeks of evenings to translate from page 90 of the Manual. I make no apology for accuracy nor have I found anyone that could correct errors if they exist. I have never seen the English equivalent. It was more fun this way(?).

Several pages have been excerpted from the official Japanese Radio Operator's Manual. You can see the references to Q codes and abbreviations. Also note they can switch from horizontal reading, left to right as well as vertical reading top to bottom, from the right.

Sometime in the future I hope to review other forms of c.w. perhaps with some seldom used languages. Japanese was quite a challenge but I feel quite comfortable copying it and occasionally forget a character or how to write it. Believe me, learning to write the kana saves time. It has opened many a conversation and I always learn something new about a land and its traditions far away.

I would be glad to hear from readers who had knowledge of this code when it was more popular than today. I am always looking for corrections to my own interpretations.
"73"

In order of appearance: Romaji, katakana, hiragana

a	ア	あ	——•——	su	ス	す	———•—
i	イ	い	•—	se	セ	せ	•———•
u	ウ	う	••—	so	ソ	そ	———•
e	エ	え	—•———	ta	タ	た	—•
o	オ	お	•—•••	chi	チ	ち	••—•
N	ン	ん	•—•—•	tsu	ツ	つ	•——•
ka	カ	か	•—••	te	テ	て	•—•——
ki	キ	き	—•—••	to	ト	と	••—••
ku	ク	く	•••—	na	ナ	な	•—•
ke	ケ	け	—•——	ni	ニ	に	—•—•
ko	コ	こ	————	nu	ヌ	ぬ	••••
sa	サ	さ	—•—•—	ne	ネ	ね	——•—
shi	シ	し	——•—•	no	ノ	の	••——

ha	ハ	は	—•••
hi	ヒ	ひ	——••—
fu	フ	ふ	——••
he	ヘ	へ	•
ho	ホ	ほ	—••
ma	マ	ま	—••—
mi	ミ	み	••—•—
mu	ム	む	—
me	メ	め	—•••—
mo	モ	も	—••—•
ya	ヤ	や	•——
yi			
yu	ユ	ゆ	—••——
ye			
yo	ヨ	よ	——
ra	ラ	ら	•••
ri	リ	り	——•
ru	ル	る	—•——•
re	レ	れ	———
ro	ロ	ろ	•—•—
wa	ワ	わ	—•—
wi	ヰ	ゐ	•—••—
wu			
we	ヱ	ゑ	•———••
wo	ヲ	を	•———

Note: wa and wo are respectively the subjective and objective post-positions. yi, ye, wi, we, wu are almost obsolete. Phonetic changes occur in pronounciation when certain groups are used with the so called dakuten (″) and the handakuten (°). Romaji are similarly affected. The affected groups are as follows:

Group	Pronounciation
h-″	ba bi bu be bo
k-″	ga gi gu ge go
s-″	za ji zu ze zo
t-″	da ji zu de do
	Note: ji may also equal zi.
h-°	pa pi pu pe po

Punctuation		
dakuten	″	•
handakuten	°	••——•
Ten	\	•—•—•—
danraku	ㄴ	•—•—••
kakko	(	•—••—•
	)	—•——•—
nakasen	|	•——•—

Japanese Marine Code Abbreviations

キ	Your station
ト	Our station
ルイ	Kind, type, sort
ヤ	Number of letters (Japanese)
ハツ	Departure despatch station name
タナ	Departure despatch station identification number
トメ	Time: = A.M. = P.M.
ウヘ	Addressee, forward to
ウケナ	Senders name
ホホ	Handling instructions
ウウ	Report or article
ホレ	Text
オウブン	Send European script traffic
クブン	Send Japanese script traffic
ラタ	End of transmission
タツ	Station identification number is excessive
センソウ	Transit identification number
メ	Send number (confirm) of Japanese characters
ヨク	. . . and correct revision
イヤ	Send correction from . . .
サラ	Send correction from beginning
ス	Please send as follows
ケシ	Cancel please
カシラ	Service message to European text addressee

A study course for the amateur class ticket

For instructors who are undertaking classes for the 1984 exams for the Amateur class certificate and for people going the self-study route, we are printing the syllabus developed by the Burlington, Ontario, Club for its fall class. The twenty-two lessons are to be covered in the period October to March, inclusive.

The course follows the DOC syllabus laid down in the new TRC-24 as amended and which should be in print about the time this reaches our readers. (Readers will recall that the TRC-24 with the words "Draft" on it issued last April was to be replaced with a final edition with a number of changes requested by CARF and agreed to by CRRL.)

An introduction to the course material encourages those enrolling with some well-chosen words.

"It possible that some of you already possess a good knowledge of electronics and some of you may know some Morse Code. The majority of you, however, will have knowledge of neither. In fairness to everyone, this course will assume that you have none. The common factor that you do all share is that you are enrolled in this course and are therefore, hoping to join our wonderful world of Amateur radio.

"It is an exciting fraternity and encompasses people worldwide from all walks of life. We have members of Royalty, show business personalities, sports stars and people in such divorced employments as Airline pilots and Doctors to Policemen, taxi drivers, electricians, etc. Licensed hams include, for example — King Hussein, Barry Goldwater, Donny Osmond, the late David Niven.

"The camaraderie and friendships that are established throughout the world along with the learning experience of talking to people of many varied cultures, makes this a great hobby.

"The course you are commencing has been specifically geared to cover the topics and subject areas that you will need to know and understand in order for you to pass the examination for an Amateur Radio Operator's License.

"All of your instructors are qualified as Advanced Amateur Radio Operators and will do everything to impart their knowledge onto you. It is imperative though that you do your part. Participation and home study will be required and the ease with which you begin to understand the subject will be directly related to the amount of effort that you put into it.

"None of us have forgotten that first moment when a distant station received our transmission! With some hard work and involvement on your part, you will also be experiencing a similar moment within a few short months.

"Welcome to Amateur Radio and Good Luck!"

The course study is divided in 22 weekly lessons. At the end of each lesson the appropriate reading material should be listed, giving the sections and pages of the material to be covered. Since these will vary with the study guides being used the references given by the Burlington club have not been included.

UNIT #1

7.00-7.45
Course introduction with discussion of goals, required literature, code oscillator, tape cassette, etc., and about the hobby of Amateur Radio. Introductions of other instructors and the B.A.R.C. President.
7.45-8.15
Code
Break
8.30-9.30
Radio Theory:
— atomic structure of matter
conductors
resistors
insulators
8.30-10.00
Code

UNIT #2

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— Magnetism
— electrostatic and electromagnetic fields
— current flow, rules for direction of flow (Electron flow)
— Electromotive force (EMF)
— direct current: nature and generation including primary and secondary cells
Break
9.30-10.00
Code

UNIT #3

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— allernating current: nature and generation, frequency, sine and square waves, and their graphical representations, voltage and current: instantaneous, peak, peak-to-peak, RMS and average values.
— resistance: factors affecting units of measurement, ohm's law series and paral-

lel, voltage dividers, conductance, colour code.
Break
9.30-10.00
Code

UNIT #4

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— review of weekly units 1-3
— power: dissipation, units of measurement, calculations. VA, 1^2R, E^2/R, dB.
Break
9.30-10.00
Code

UNIT #5

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— *Propagation*
— speed of electromagnetic waves, frequency and wavelength, polarization, refraction
— the sun and the ionosphere: formation of E and F layers, auroral effects
— signal attenuation, radiation angle, skip distance, direct and sky waves, fading, maximum usable frequency (MUF), multiple hop communications
— inversion and ducting
Break
9.30-10.00
Code

UNIT #6

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— Capacitance in D.C.: electrostatic field, factors affecting, units of measurement, series and parallel, time constants
— Inductance in D.C.: factors affecting, units of measurement, series and parallel, time constants
— Capacitance and Inductance in A.C.: reactance, phase relationships of voltage and current
— RLC circuits, parallel and series impedance, resonance, Q
Break
9.30-10.00
Code

UNIT #7

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— transformers: standard and autotransformers, coupling, turns and voltage ratios, losses, electrostatic shielding, impedence transformation
Break
9.30-10.00
Code

UNIT #8

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— review of Units 1-6
Break
9.30-10.00
Code

UNITS #9 and #10

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— *Tubes:*
— thermionic emission
— diodes, triodes, tetrodes and pentodes
— heater, cathode, grid, screen grid, suppressor grid, plate or anode
— biasing methods, saturation, cutoff, effects on amplifiers, gain
— classes of amplifiers, A, B, C and AB
— common cathode, grounded grid, and cathode follower circuits
Break
9.30-10.00
Code

UNITS #11 and #12

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— *Semi-conductors:*
— composition, acceptor and donor materials
— PN junction, forward and reverse bias, avalanche
— diodes as rectifiers, forward voltage drop, peak inverse voltage
— NPN/PNP bipolar transistors: emitter, base, collector
— biasing methods, saturation, cutoff, classes of amplifiers, alpha and beta
— thermal runaway, stabilization and protection
— common emitter, common base and common collector circuits
— FETS and varactors
— *operation of tubes and semiconductors*
— comparison of tubes and semi-conductors for rectification, detection, amplification and oscillation
Break
9.30-10.00
Code

UNIT #13

7.00-7.45
Code
Break
8.00-9.15
Radio Theory:
— review of Units 9-12
Break
9.30-10.00
Code

UNIT #14

7.00-8.50
Code
Break
8.00-9.15
Radio Theory:
— *Antennas:*
— halfwave dipole, quarter-wave grounded vertical, 3 element yagi, trapped antennas
— radiation resistance, radiation
— voltage and current distribution on antennas
— calculation of lengths of antennas, use of traps for shortening and multi-banding
— methods of feeding, impedance of antennas
— radiation patterns of antennas
— matching devices
Break
9.30-10.00
Code

UNIT #15

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— *Transmission Lines*
— coaxial and parallel lines characteristic impedance — effects of impedance mismatch, standing wave ratio (VSWR)
Break
9.30-10.00
Code

UNIT #16

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— review of Units 5, 14 and 15
Break
9.30-10.00
Code

UNITS #17 and #18

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— *Block Diagrams and Emissions*
— *Stages:*
— power supply, master oscillator, beat frequency oscillator (BFO), variable frequency oscillator (VFO), local oscillator (LO), frequency multiplier, buffer amplifier, power amplifier, final amplifier, speech amplifier, clipper, sideband filter, modulator, reactance modulator, balanced modulator, filter, RF amplifier, mixer, IF amplifier, limiter, detector, discriminator, audio amplifier, loudspeaker, microphone, transmit-receive (TR) switch, antenna
— *Emissions/modes:*
— telegraphy
— frequency and phase modulated telephony
— amplitude modulated single sideband telephony
— radio teletype (RTTY), FSK and AFSK
Break
9.30-10.00
Code

UNITS #19 and #20

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— *The Amateur Station:*
— installation and operation
— power sources
— circuit breakers, fuses, interlocks
— location of main switch to prevent unauthorized or inadvertent activation of equipment
— lighting protection
— grounding
— discharge of HV capacitors before doing maintenance work
— electrical hazards and personal protection
— adjustment and tuning
— monitoring of modulation, frequency, power input/output, SWR
— transmitter, problems, harmonics, spurs, parasitics and remedies including shielding, neutralization, traps and filters, grounding key clicks
Break
9.30-10.00
Code

UNITS #21 and #22

7.00-7.30
Code
7.30-7.50
Regulations
Break
8.00-9.15
Radio Theory:
— *Interstation Interference:*
— desenitization and receiver overload
— lack of immunity to unwanted signals
— image and spurious response
— intermodulation, cross-modulation and external re-radiation
— remedies including shielding, antenna orientation, hi-pass, lo-pass, band pass filters, power line filters, shielding of speaker leads, internal by-pass filtering of unwanted interfering signals
— *Radio noise interference:*
— locating sources of radio noise, characteristics of interference or
— methods of radio noise interference suppression that can be done by amateurs
— choosing and installing an antenna for maximum signal to noise ratio
Break
9.30-10.00
Code

Note: The exam schedule for 1984 is February 8, April 18, June 20 and October 17. Applications must be in DOC a month previous to the exam dates.

CARF NEWS SERVICE

CARF reviewing exam question bank

DOC's 400-odd question bank used for Amateur exams in being reviewed by CARF as a follow-on to the new TRC-24 which resulted from the recommendations and suggestions made by CARF to the Department in 1982. Both CARF and CRRL were asked to appoint two officials to meet with the Department. The objective would be to (a) examine the existing questions to establish if they are in the appropriate certificate category; (b) to delete inappropriate and obsolete questions; (c) to consider new questions for inclusion from among those either developed within the Department or submitted by interested parties, and (d) to ensure that all questions in the banks are properly framed and relate to the subject listed in TRC-24.

After review by the two organizations the working group will convene to consider the results. The meeting, tentatively scheduled for the middle of September has been moved to October 29th.

CARF News Service

Operating in another country?

If you plan on operating in a country which has a reciprocal operating agreement with Canada you must make application at least four months before you go. Some governments are slower than others and few, if any, can issue the necessary permission in short order. CARF International Liaison Officer, Bruno Molino, VE2 FLB, has had a number of incidents where Amateurs have asked for assistance in obtaining foreign permits only a couple of weeks before departure with resulting disappointment.

CARF News Service

Cordless phones — the latest toy

Technical requirements for cordless telephones have been issued by DOC as its bulletin TRC-68. These gadgets will not be licensed although they are radio devices. Meanwhile, in the U.S. advertisements are appearing for RF amplifiers for them and the FCC is, according to one source, being petitioned to allow them to have a five-mile range. What this will do to 160 metres, where they are already an interference nuisance, will prove to be most interesting.

The demise of the present unsophisticated models will probably be concurrent with the opening up of 1.6 to 1.8 MHz for the broadcast band in a couple of years' time. Meanwhile, the current cute kiddie caper by the younger set is cruise around the block with the handheld phone looking for a channel with a dial tone, then dialing up all sorts of long-distance numbers on the unsuspecting cordless phone owner. Coded access, available in the more expensive models, can save the owner a lot explaining those unknown toll calls to the phone company . . . or his wife!

CARF News Service

AMSAT opposes unrestricted U.S. ten metre repeaters

Speaking of ten-metre repeaters, the FCC in the U.S. is again in an expansionist mood in proposing unrestricted repeater operation between 29.0 and 29.7 megahertz, from the current 29.5 to 29.7 megs. AMSAT and satellite experimenters are vigourously opposing this move as it would interfere with the 29.3 to 29.5 band agreed to for satellite working.

CARF News Service

International clampdown on illegal operation

According to reports from Maritime Amateurs the DOC has taken action against a rign of illegal radio operators by seizing equipment and dismantling antennas in New Glasgow, N.S., early in September. The group, which operates in and out of the Amateur bands, is international in scope, with its own call signs and QSL cards. Some of the equipment seized was Amateur gear modifier to operate form 6 to 25 MHz.

Halifax Amateurs said that they were asked to report to DOC any related "bootleg" activities, and that the enforcement action was being taken in conjunction with some other countries. DOC has not given out any details as the matter is still under investigation. Prosecutions will likely follow.

Reports from the U.S. earlier this year described similar illegal activity on the Amateur bands which was related to marijuana and dope smuggling. Most of that traffic was apparently centred in South America, the Caribbean and Florida.

CARF News Service

A tip for the workbench

A square of sponge rubber carpet underlay is a handy thing to have on the workbench under a piece of electronic equipment when you are working on it. It provides a non-slip surface for holding a chassis or circuit board and if the dimpled side is up, nuts, bolts, other wee bits and the pencil soldering iron will not roll off it onto the floor.

OARC Groundwave

(1977)

TECHNICAL SECTION

by Art Blick
VE3AHU

Audio Module for SSB Transceivers

The KENWOOD TS-830S is a "vy fb" SSB transceiver but after a few weeks operation, several needed improvements present themselves.

There is an operating console in the station, consisting of eight 6" × 4" modules in a frame. This console houses the AF modules, control module and power supply that are described below.

The modification to the TS-830 consists of installing a 5 terminal DIN socket in one of the pre-drilled holes on the rear panel of the TS-830 and wiring as shown in Fig. 1. Fig. 2 notes where the shielded mike cable connects on block 7 on the IF UNIT (board X48-1290-00) with the PTT line connected to the REMOTE (ACSY) connector. The EXT SPKR, new MIKE outputs and KEY input are brought to the input terminals of the console with the MIKE and KEY lines connected to the MIKE and KEY sockets of the console.

1 - Mike Out (to Xmtr)
2 - NC
3 - PTT
4 - Mike Gnd
5 - NC
Shell - Chassis Gnd

Fig. 1 - AF DIN Connector

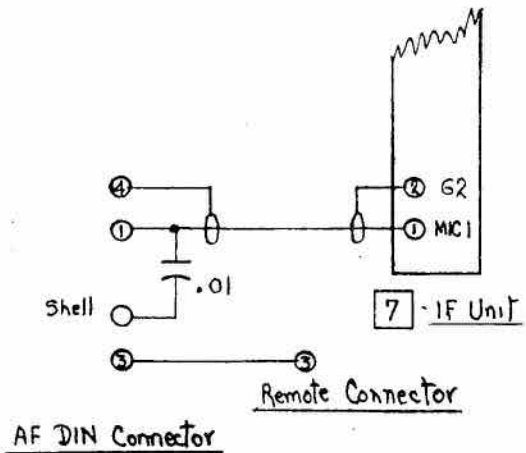


Fig. 2 - TS830S Connections

The SPEAKER output is connected to a DPDT toggle switch in the Control module that directs the RX AF either to a SPEAKER socket or to the AF modules. See Fig. 3.

The first AF module is a VOGAD — voice operated gain adjusting device — using the PLESSEY SL622C I.C. (See Note 1). This device will provide essentially constant output, set by the LEVEL control, for a 60 dB range of input and is effective for CW operation — no more ear-shredding tones from a local 2kW station when copying weak DX and overcomes the slow fading characteristics of some DX operations. See Fig. 4.

From the VOGAD, which can be switched IN or OUT, the RX AF goes to the second module containing an 800 Hz decoder (offset used in TS-830 for CW), an AF filter featuring veriable frequency and bandwidth (see Note 2) and a 1 watt AF amplifier. See Figs. 5 & 6.

The 800 Hz decoder circuit is derived from the data supplied by SIGNETICS for their NE 567 I.C. With the values shown the LED will light for any input between 750 and 850 Hz. The input frequency desired is set by adjusting R1 and can be adjusted to offsets other than 800 Hz.

For the TS-830, set HEATERS OFF, MODE to CW and STAND-BY to SEND. Press key to produce a sidetone and adjust R1 until the LED lights.

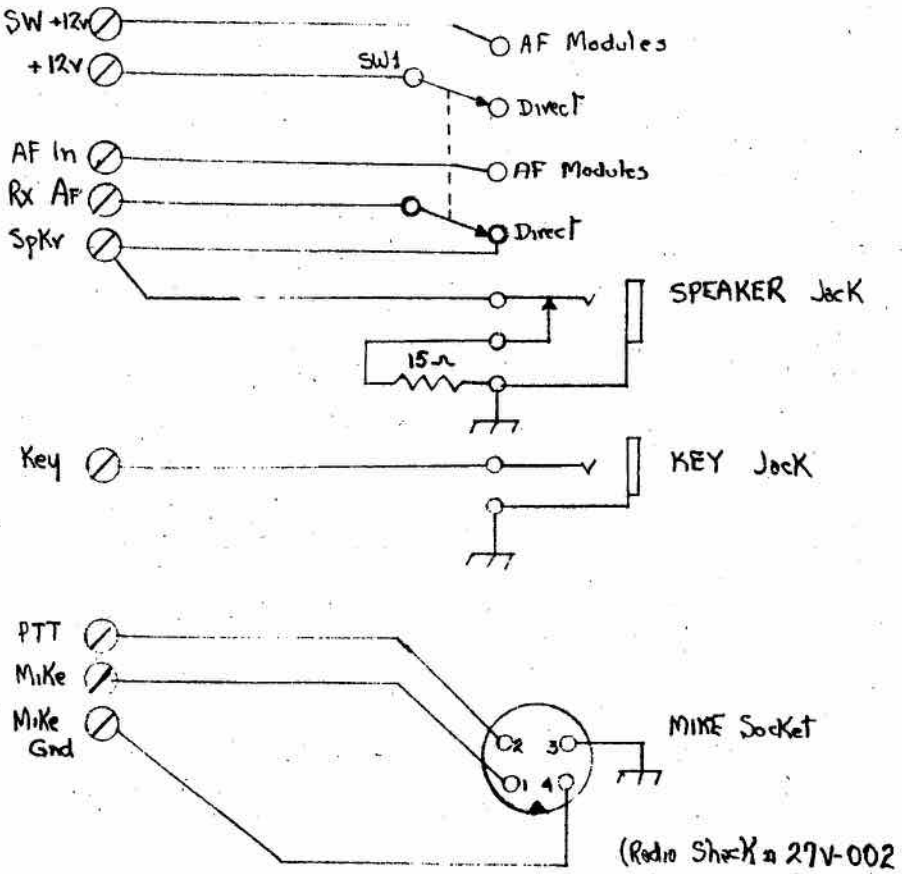
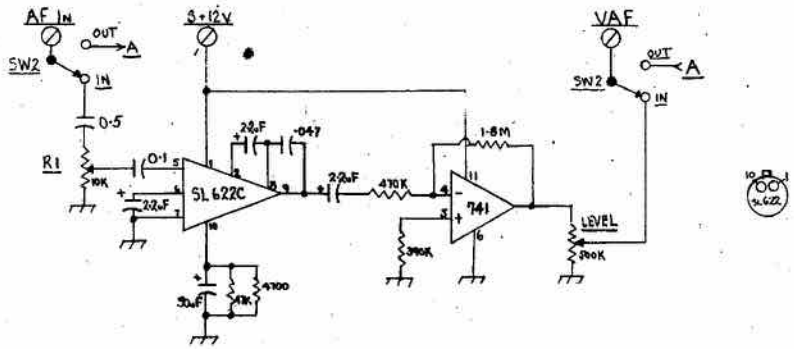


FIG. 3 - Control Module



1. Adjust R1 so normal Rcvr AF does not overload circuit.
2. Input to SL622 100µV - 25mV for 100mV output.
3. 741 Op Amp is a voltage amp. Adjust LEVEL control so no difference in signal with VOGAD IN or OUT.

FIG. 4 - VOGAD Circuit

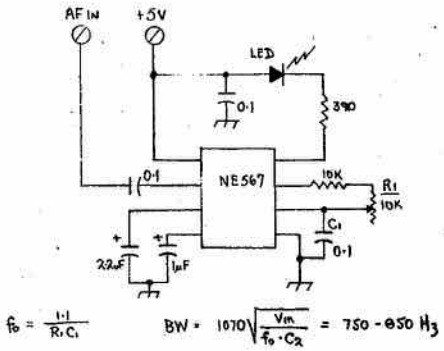


FIG. 5 - 800 Hz Decoder

In use, tune receiver to where the LED lights in unison with the desired CW signal. You are now "zero-beat" to within 50 Hz of this signal.

The AF filter and amplifier circuits are straightforward and simple. Initially set the FREQUENCY control to high (max'm resistance), BANDWIDTH control to sharp (max'm resistance) and R1 (Fig. 6) to max'm. A high pitched tone will be produced. Reduce R1 until oscillations stop and add a half turn to ensure stability of operation. Best results occur when the FREQUENCY control is adjusted to your offset frequency. Adjust the BANDWIDTH control to suit requirements. Minimum Bandwidth is approximately 150 Hz. Use of the filter in conjunction with the VBT, IF SHIFT and NOTCH controls of the TS-830 can really produce a clean CW signal. Note that the HEADPHONE jack in the AF module enables full use of the VOGAD and filter circuits.

The LM380M is a simple, effective, low power AF amplifier and circuit shown uses a 12 volt supply. Its output will match 4, 8, or 16 ohm speakers. The I.C. used is the 14 pin version and requires heat-sinking for best results. This is done by cutting 2 pieces of thin copper sheet as shown in Fig. 7. Solder the narrow edge of one piece to pins 3, 4, 5 of the socket and other to pins 10, 11, 12 (all at Ground potential).

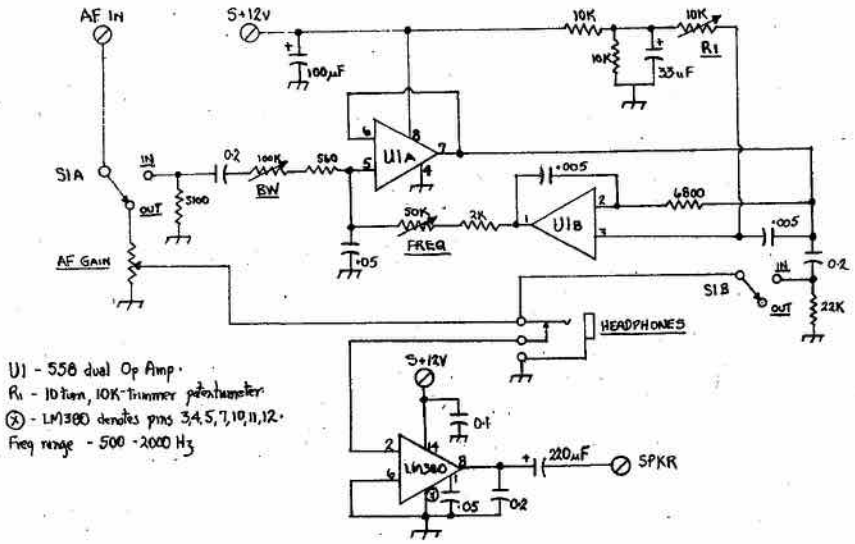


FIG. 6 - AUDIO FILTER & AMPLIFIER

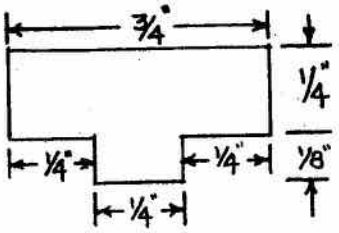


FIG. 7 - Copper Heat Sink

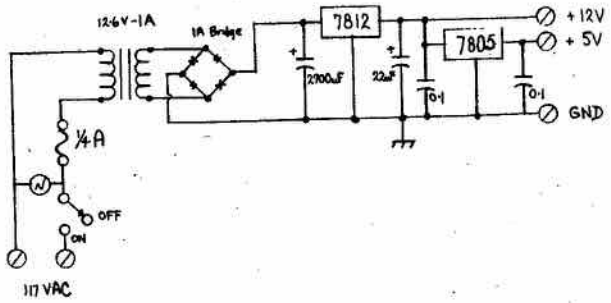


FIG. 8 - Dual +5/+12 Volt Power Supply

The power supply used, a dual 5/12 volt type, is shown in Fig. 8. The AF modules, Control module and power supply can be housed in a case or cabinet of your choice or adapted to fit other types of operating consoles.

Note 1: PLESSEY I.C.s may be obtained through GEC CANADA LTD., 5112 Timberlea Blvd., MISSISSAUGA, ONT. L4W 2S5.

Note 2: Based on circuit in "Design Ideas for Miniature Communications Receivers", by Ray Megirian, K4DHC, HAM RADIO, Apr 1976.

Note 3: All circuits were built on VEROBOARD 01-0021h, cut to size. VERO boards, etc., are available from E.P.S. Ltd., P.O. Box 481, KINGSTON, Ont K7L 4W5.

Art Blick,
VE3AHV

NEXT MONTH: A very special issue

Life on the Ocean Wave (last article in series);

CRAG, EMCOM, YL, Contest, DX Columns;

RAQI, Pacific, Western Reports;

64 pages full of enjoyable reading!

Canadian Merchant Marine Radio (Wartime)

By Boyd G. Simpson,
3rd Sparks
S.S. Outremont Park

Every time a great ship sails — a little world has been cast upon the waters. A world of human beings, who, for a certain length of time, are destined to make the best of a predetermined routine in a floating neighbourhood; a neighbourhood of adventurers, each with some pet reason to get away. When the whistle blows and the ship casts off her shore lines, we are on our own. We then realize we are fully responsible for our actions and the safety of the ship and other crew members until we return from our voyage.

The assignment of holding down the job of Marine Radio Operator is a very responsible position. On board ship we were commonly called "SPARKS" because the olden ship transmitters were of Spark type; thus the name Spark Operator. The radio operator had to keep his equipment ready for all or any emergencies. He was responsible for overcoming the difficulties of keeping the sets humming while at sea. The reasons they didn't keep humming are many. Firstly, the antennas take quite a beating and have to be checked daily. This included the main antenna and the emergency antenna as well as the lead-ins and the Sense Antenna used on the direction finder receiver. In times of good weather the antennas are no problem, but in rough seas it is a whole different ballgame. The high mist of salt water gets everywhere. One gets an assortment of crackling noises in the receivers. While on the subject of antennas I must add that when in port or whenever the loading cranes had their loading booms in position, the antennas had to be taken down. The antennas, of course, lasted much longer when the radio operators took the antennas down and put them back up, so you know who had that job! We had to keep the wire coiled when not in use. When in port the deck crew did most of the painting. (The entire ship was painted every six months — a wartime dark grey.) The only way to mark the antenna holding cables (Halyard) was to wrap pieces of scrap wire around the cables, so when the antennas were put up again one could easily return the same amount of antenna tightness. The main antennas were usually L type flat top ½ wave self resonant at 3.0 Mcs.

I wish to make known at this point that I was only on one ship, the *S.S. Outremont Park*, and I spent all my time on this ship during my sea going days. We had the same crew throughout this time. I was Third operator, and remained so until I left the ship due to ill health in April 1945. I was classed as an Officer and lived and ate with the other Officers. Most of them wore uniforms; the Chief and the Second operators wore uniforms but as Third operator I did not, although if I had wanted to, I could have. I chose to wear civies all the time. The Captain and the First operator each had separate cabins. The Second operator and myself shared a cabin, with double deck bunk beds supplied with blankets and sheets. The meals were always good. Our cook was a real chef and he always took pride in serving delicious meals. I always heard that Park Steamships really looked after their crews, and I can vouch for that.

The *S.S. Outremont Park* was built at the United Shipyards, Montreal. It was rated at 10,000 tons, Canadian type, British design, 441.5 feet long and the widest width amidships 57 feet. The depth from top of deck to bottom of Keel was 37 feet. It was powered by one triple expansion steam engine, 2500 HP at 229 RPM at 220 pounds steam press, supplied by three Scotch Steel Boilers burning either coal or fuel oil. The total crew numbered 52. The radio room was up on the main bridge deck.

The navigation room housed the large Sperry gyro compass (about 3' in dia. and 4' high) with other small repeater units tied to this main unit. The radio room was about 12 feet long and 7 feet wide. The room had a heavily constructed bench type table along both sides of the room about 30 inches wide. The table across the narrow end was the operating table. The receivers were mounted on a small table about one foot above the operator's table. All were of very sturdy build and fastened to bulkhead walls. The receivers were bolted at all four corners with 5/16" steel bolts, and the transmitters were bolted with 3/8" to ½" steel bolts. The radio clock was above centre just over the receivers. When the operators were sitting in the comfortable chair he was facing the stern of the ship.

The radio call we had was GRRZ. The equipment was installed by Canadian Marconi Co., Montreal. It consisted of the following: Transmitters — LTT (100 watts, 260-520 kc. cw/icw). Emergency transmitter was a 50 watt Quench-Gap Spark, fixed frequency 500 kc. Also a Shortwave transmitter running 100 watts at 6.0-20.0 Mc. Receivers were a MSL-5, 15-1500 kcs in 5 ranges. It had 4 tubes, regenerative detector with two preselector stages. We also had a 3V-SW8, with 3 tubes, regenerative detector with one preselection stage.

(Diagram similar to the Nation SW-3 receiver). For an emergency receiver we had the above which covered from 26.0 mcs to 100 kcs, with eleven sets of plug in coils. We also had the MDF-5 Direction Finder receiver (265 kc to 670 kc); it had 6 tubes and a battery 1.4 volt type. The RCA AR8600X Auto-Alarm receiver with a fixed frequency of 500 kc. It had 9 tubes and was used on the Distress frequency. The International Auto-Alarm signal consisted of a series of dashes four seconds in length, separated by spaces of one second in duration. When a correct signal was received it would activate a warning bell and the operator would rush to his receiver to hear the distress message. Because of wartime, when a torpedo struck, many didn't have time to send the alarm signal. I have heard many just send SOS followed by position, and usually just half of the word "torpedo" and nothing more. This would come in a half minute or less. For this reason all shipping companies tried to have three operators on all vessels so that the radio room could be manned 24 hours a day.

Both main receivers MSL-5, and the 3VSW-8 each had 6 volt tubes and were always run off of a 6 volt battery. The batteries for the emergency transmitter and lights were checked daily. The battery charger was always on, supplying a trickle charge to some and higher rates to others as needed. The ship's mains were 110 volts DC. Normally the ship's mains coming into the radio room went through a filter unit. This source was used for the receiver's high voltage supply. If power went off or if there was a high noise level on board ship the RCVR high voltage was taken off two heavy duty 45 volt B-batteries in series for 90 volts. The Auto-Alarm receiver was of the AC-DC type and ran off the 110 volt DC mains. The two main transmitters received their power from a 750 watt motor-generator unit, converting 110 volt DC to 110 volt AC at 60 cyles. All this required our constant attention while at sea, mainly just running maintenance. Once anchor was dropped in port, serious top to bottom inspections and maintenance were done. Battery connections were removed and cleaned when necessary, keeping a heavy coating of vaseline on all connections. We made sure that there was a spare antenna to put up in the event that one was needed. Of all the time at sea we never used our transmitter once. We just made short tests in port. Radio silence was the orders. Only in an emergency by orders of the ship's Captain could an SOS be sent. This was very important to remember. A situation occurred at the beginning of the war when one ship sent out an SOS after being torpedoed, giving out its location. Three other ships came to its rescue. The sub knew the three others were coming so it waited around and torpedoed them as well, so the losses were four ships in one day by one sub. After this and other similar episodes no ships replied to an SOS. The only hope was that coastal stations heard the SOS. We were only able to copy the message and pass them on to the Captain for his attention. Usually the Navy vessels or Patrol aircraft looked after the rescues, however, many Merchant ships picked up lifeboats with survivors. The ship's Captain got to be very nervous about SOS's because he knew of the dangers involved in the area. If a ship did get hit in a convoy, help was usually close at hand and no SOS was sent; it was sent only if you were away off by yourself. I must say the Lord was with us and really protected us. On our ship was, for the most part, a God fearing crew which was a great influence on my life.

Our ship was a "munitions ship" and we knew that only by a miracle would we ever be making use of lifeboats (after all those lifeboat drills). If we did get hit by a torpedo, it would be another 1917 Halifax explosion at sea, with of course, no survivors. I certainly praised the Lord for his protection.

The ship had everyone working two four-hour shifts each day. I always had the 8 to 12 shift, twice a day. Anyone who could sleep during the day always did so with their clothes on and a life-jacket near by. Most attacks occurred at night and at that time we did not have radar. We had to travel fully blacked out (no lights allowed). When it was pitch dark and foggy we had lookout stations at the bow, stern, and along both sides to help prevent collisions between vessels.

We had collisions even with the lookouts on post resulting in ships sinking. As soon as daylight came the whole convoy would go back into the zig-zag courses. This meant that the ship would travel to the right for a few minutes and then to the left for a few minutes. This prevented any sub from having a direct hit on the ship. This, of course, slowed travel and the convoy always travelled at the maximum speed of the slowest ship. Because so many vessels were lost in the war the navy was forced to put into service old vessels that were or should have been retired long ago. Many of these ships had old engines that could only go between 4 to 8 knots top speed, so the speed of the convoy was held down. Many of these old ships had old radio equipment made in the 20's and early 30's and the long wave receivers were only regenerative detectors coupled to the antennas through tuners, etc. Re-radation from the detectors in the oscillating conditions were terrible and a dead give-away as to the location of our convoy. All these receivers had to be modified with the addition of an untuned RF stage placed between the antenna and the detectors. This made the receiver more acceptable. While on ship we copied everything that we heard. Coast stations sent all messages out blind and there were special BAMS messages for merchant shipping in various areas. (The charts had the ocan

maps drawn with lines each way and each square was given a number.) The messages could have been about weather, latest sub infor, or anything; and these messages were always coded and needed to be deciphered. My life was never dull. There was always something to do, such as spending whatever free time I had down in the engine room. There was a well equipped workshop down there. I got along well with everyone and enjoyed myself as much as possible.

There were some very distressing times which I have tried to forget, but I shall never forget my last trip. It was to be my longest, but turned out to be my shortest trip. We were headed for India; the ports of Karachi, Bombay and other East Indian ports. We had loaded up in Saint John, N.B. and were alone, headed to New York at top speed of about 11 knots. I had not been feeling well when I signed up for the trip. All was fine until we were not far off the northern end of Cape Cod. I had just finished my noon meal, after completing my 8 to 12 shift. I was resting beside No. 3 hold when all of a sudden the waters parted off centre starboard side, and a large black submarine surfaced. It was so close I could almost hit it with a baseball. It scared us all badly and I could see the Captain shaking. The sub's periscope was pointed ahead and not in our direction. The sub veered off to starboard (right) and we veered off to port (left). Nothing happened except that we were badly upset by it. I think it especially bothered me because just before that I picked up an SOS call from either a Corvette or a destroyer which had been torpedoed not far from Sable Island. We knew that subs were in the area. After that we hugged the shoreline. When we got into New York harbour and anchored I knew my nerves were shot. The navy doctor came on board and thus my sea going days had come to an end. I was not the only one that suffered this fate. The Fifth Engineer was also taken off, as we thought he had suffered a heart attack. We both went off to headquarters in the base of the Statue of Liberty, then to offices of Park Steamships and then by train to Montreal where we were outpatients of the Montreal General Hospital.

So ends my sea going days but just before we left New York I was with the Captain and it was revealed to me that the sub that we had seen was an American training sub . . . but the damage was already done and I missed my trip to India.

Sincerely,

Boyd G. Simpson
VE4DU

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THE TIGER MOTH STORY

Alan Bramson
& Neville Birch

There were no proper drawings for the first Tiger Moth. It just happened on a trial and error basis when the Royal Air Force requested that the de Havilland concern should alter their highly successful Gipsy Moth so that, in an emergency, service pilots wearing parachutes could leave the front cockpit without difficulty. In a little shed on the now built-over Stag Lane aerodrome a handful of de Havilland engineers concocted the forerunner of the Tiger Moth from parts of a standard Metal Moth.

From these shaky beginnings the Tiger Moth emerged and when World War II started the little biplane filled an urgent need for a cheap, reliable trainer that was safe but not all that easy to fly accurately. They even used it against German 'U' boats, fitted it with bomb racks and tried a very odd device on it for destroying parachutists.

For countless thousands of pilots throughout the world who first learned to fly on Tigers this book will bring back happy memories and provide more than a few surprises. Since the original editions the authors have updated their highly researched account of this remarkable aircraft and added to their host of amusing and other stories. There is now a list of all known Tiger Moths throughout the world. Happily there are more today than when the first edition was published in 1964.

The book ends with a vivid recollection of how it feels to be back in the cockpit of a Tiger, surrounded by those taut, biplane wings, with the wind in the wires and that reliable old Gipsy engine popping away up front.

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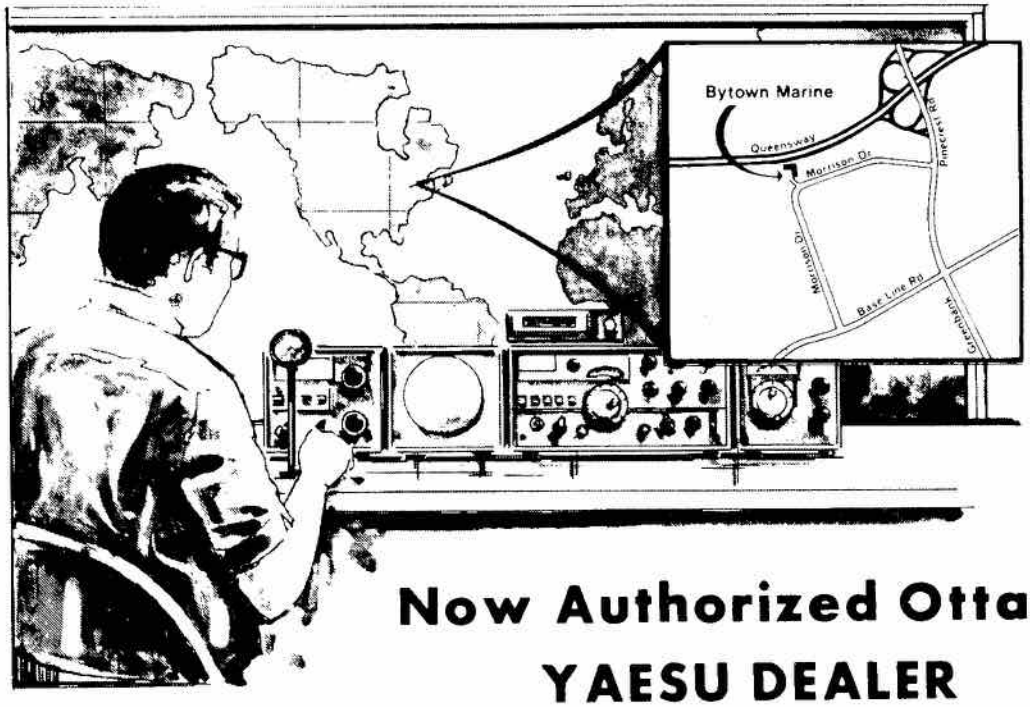

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