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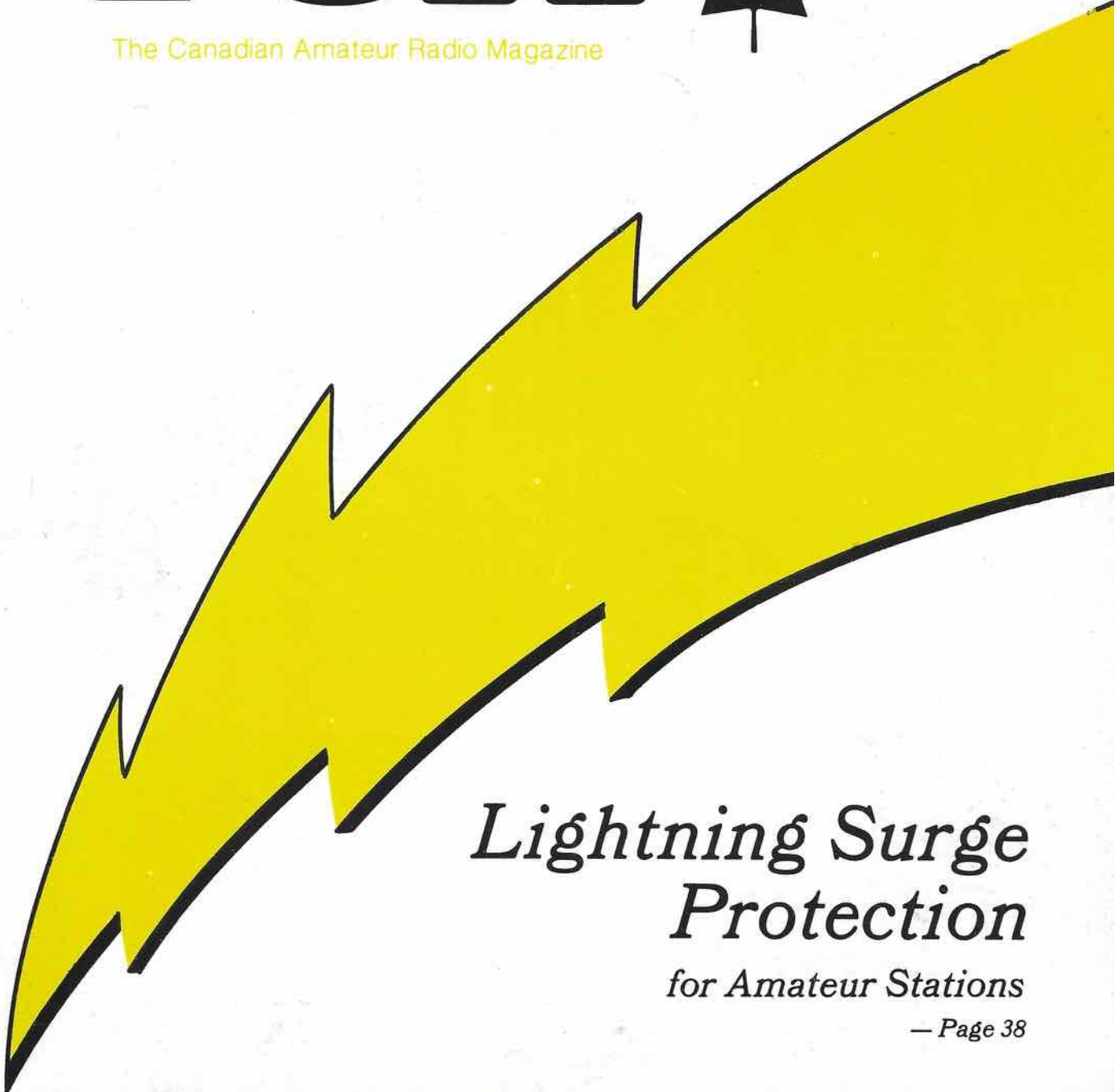
TCA



\$1⁰⁰

MAY 1981

The Canadian Amateur Radio Magazine



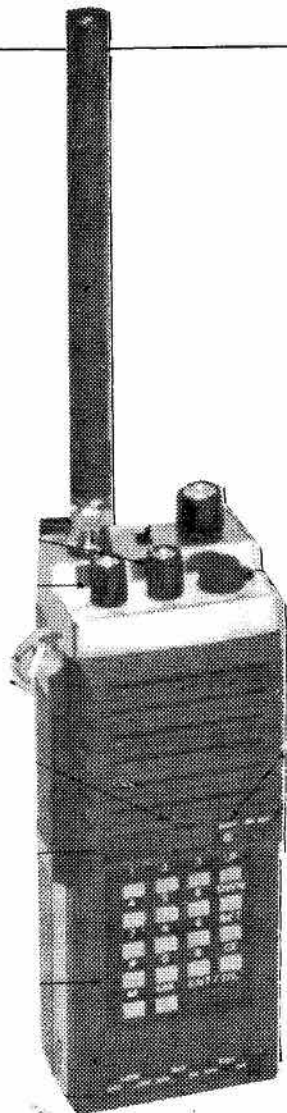
Lightning Surge Protection

for Amateur Stations

— Page 38



Yaesu

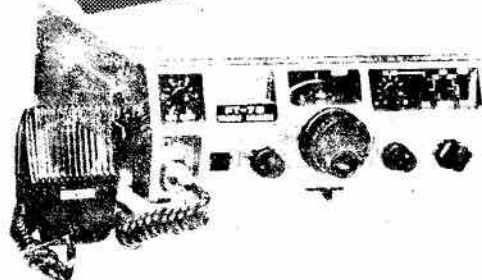


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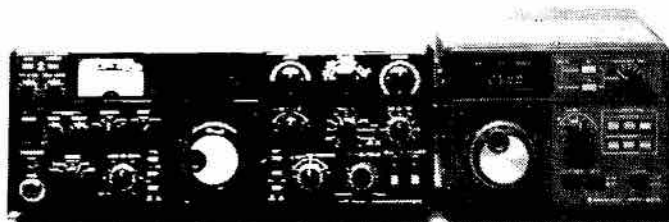


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TCA - The Canadian Amateur is published in Canada 11 times per year to provide Radio Amateurs, those interested in radio communications and electronics and the general public with information on matters related to the science of telecommunications.

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

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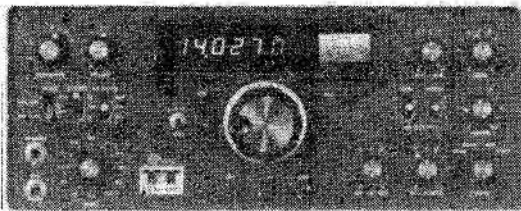
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TEN-TEC

The All-American DX Machines

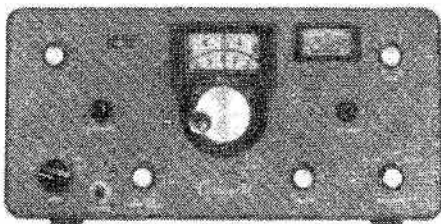


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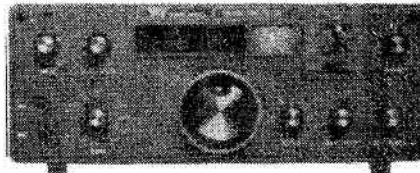
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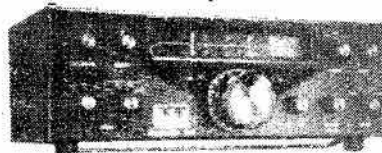
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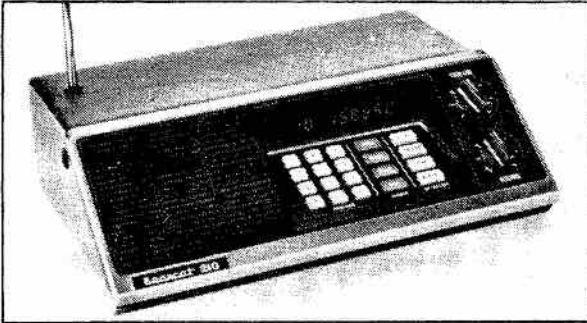
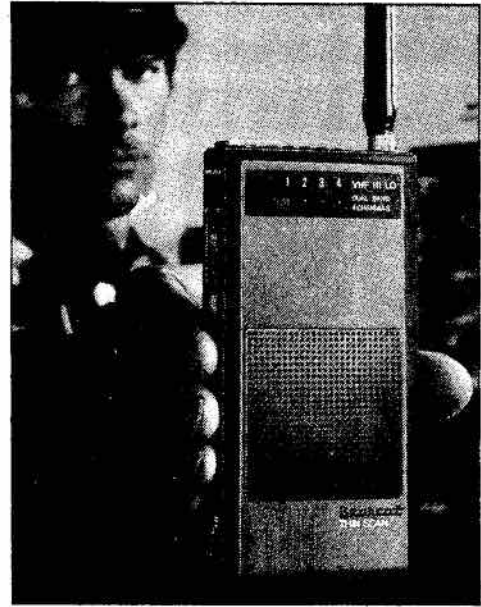
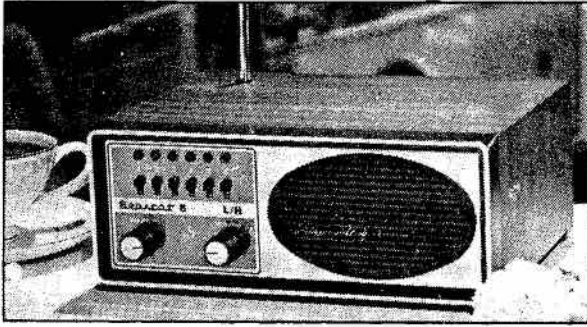
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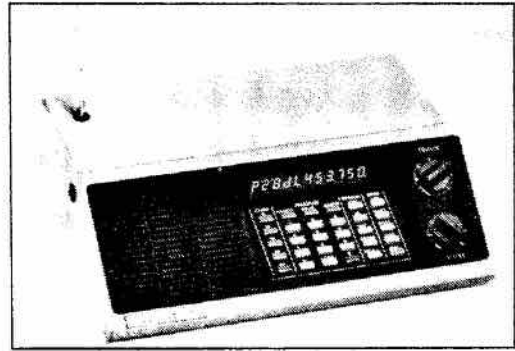


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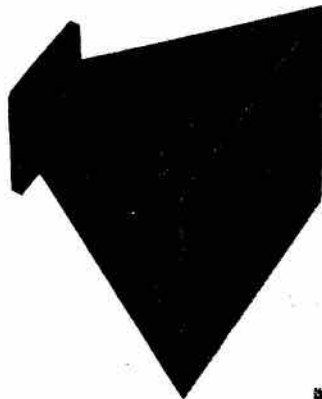
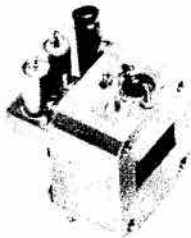
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for Amateur Applications



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■ ELECTRONICALLY TUNABLE

■ HIGH RELIABILITY

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The rear portion of the unit consists of a GUNN oscillator which directly converts dc to RF energy. The oscillator, unless otherwise specified, is delivered preset at 10.250 GHz (oscillators preset to other frequencies are available on request). When supplied in pairs, one unit is preset at 10.250 GHz and the other unit is preset at 10.280 GHz. Mechanical tuning is available to shift the center frequency ± 100 MHz. A tuning varactor is mounted close to the GUNN diode which will deviate the fundamental frequency typically 60 MHz when the proper tuning voltage is applied. FM, including both audio and video, can be applied to the tuning varactor input. In the front of the transceiver, a Schottky diode mixer is provided. The GUNN diode acts simultaneously as a transmitter and local oscillator with a portion of its energy (approximately 0.5 mW) being coupled to the mixer diode. The receiver noise figure is approximately 12 dB depending on auxiliary equipment used. A ferrite circulator has been integrated into the waveguide mount to isolate the transmitter and receiver functions.

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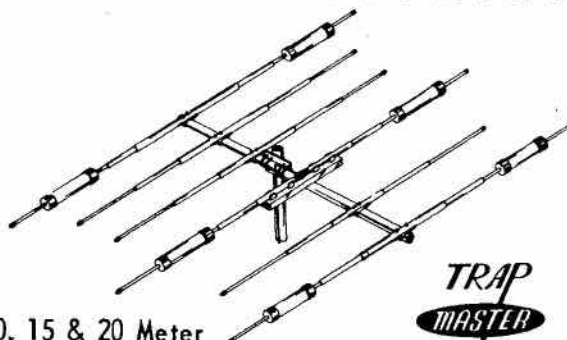


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10, 15 & 20 Meter
6 Element Beam
10.1 db. Forward Gain (over isotropic source)
20 db. Front-to-back Ratio

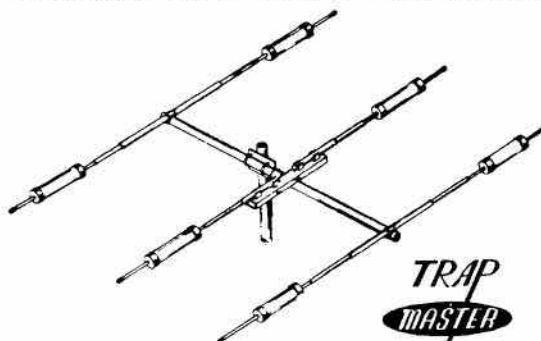
SPRING SPECIAL CL-36.

Regular \$529⁰⁰ Special \$439⁰⁰

Mosley TA-33Jr.

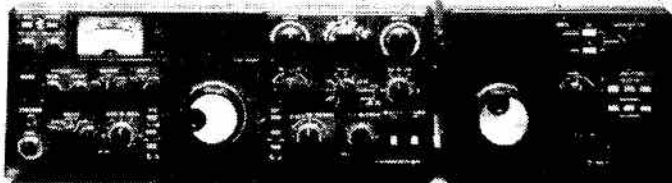
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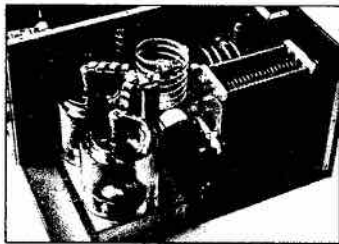
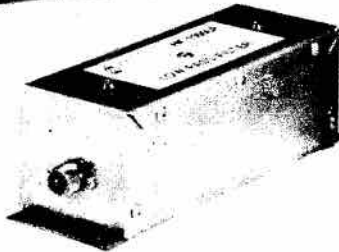
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LINEAR
AMPLIFIER**

**Hammond
POWER
BAR**

**HF-1000LP
LOW PASS
FILTER**



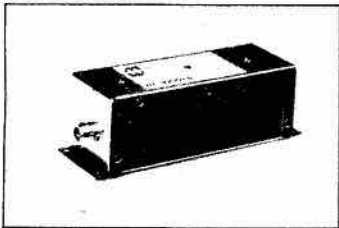
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A truly rugged, uniquely Canadian, linear amplifier in the Hammond tradition. Top quality, heavy duty components designed for longest life performance.

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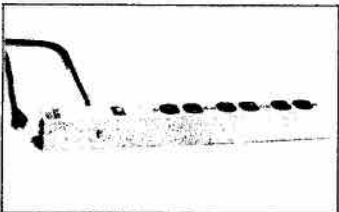


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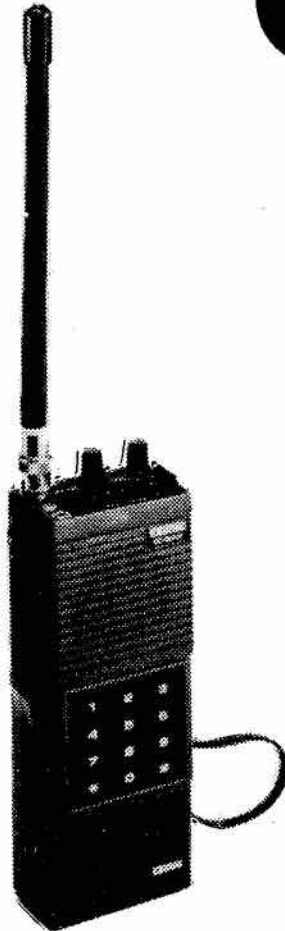
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APPROXIMATE
BATTERY LIFE vs
POWER OUTPUT
3:1 Duty Cycle



BATTERY PACK MODEL	HEIGHT	CHARGER REQUIRED	BATTERY DISCHARGE	POWER OUTPUT (WATT)	SEPARATE ANTENNA	NOTES
IC-BP2	35mm	BC-3C	14.00 4.5	1.5	NO	IC-2A, IC-2A1, IC-2A2, IC-2A3, IC-2A4, IC-2A5, IC-2A6, IC-2A7, IC-2A8, IC-2A9, IC-2A10, IC-2A11, IC-2A12, IC-2A13, IC-2A14, IC-2A15, IC-2A16, IC-2A17, IC-2A18, IC-2A19, IC-2A20, IC-2A21, IC-2A22, IC-2A23, IC-2A24, IC-2A25, IC-2A26, IC-2A27, IC-2A28, IC-2A29, IC-2A30, IC-2A31, IC-2A32, IC-2A33, IC-2A34, IC-2A35, IC-2A36, IC-2A37, IC-2A38, IC-2A39, IC-2A40, IC-2A41, IC-2A42, IC-2A43, IC-2A44, IC-2A45, IC-2A46, IC-2A47, IC-2A48, IC-2A49, IC-2A50, IC-2A51, IC-2A52, IC-2A53, IC-2A54, IC-2A55, IC-2A56, IC-2A57, IC-2A58, IC-2A59, IC-2A60, IC-2A61, IC-2A62, IC-2A63, IC-2A64, IC-2A65, IC-2A66, IC-2A67, IC-2A68, IC-2A69, IC-2A70, IC-2A71, IC-2A72, IC-2A73, IC-2A74, IC-2A75, IC-2A76, IC-2A77, IC-2A78, IC-2A79, IC-2A80, IC-2A81, IC-2A82, IC-2A83, IC-2A84, IC-2A85, IC-2A86, IC-2A87, IC-2A88, IC-2A89, IC-2A90, IC-2A91, IC-2A92, IC-2A93, IC-2A94, IC-2A95, IC-2A96, IC-2A97, IC-2A98, IC-2A99, IC-2A100
IC-BP3	38mm	BC-3C BC-3C	14.00 4.5 14.00 4.5	1.5 1.5	NO NO	IC-2A, IC-2A1, IC-2A2, IC-2A3, IC-2A4, IC-2A5, IC-2A6, IC-2A7, IC-2A8, IC-2A9, IC-2A10, IC-2A11, IC-2A12, IC-2A13, IC-2A14, IC-2A15, IC-2A16, IC-2A17, IC-2A18, IC-2A19, IC-2A20, IC-2A21, IC-2A22, IC-2A23, IC-2A24, IC-2A25, IC-2A26, IC-2A27, IC-2A28, IC-2A29, IC-2A30, IC-2A31, IC-2A32, IC-2A33, IC-2A34, IC-2A35, IC-2A36, IC-2A37, IC-2A38, IC-2A39, IC-2A40, IC-2A41, IC-2A42, IC-2A43, IC-2A44, IC-2A45, IC-2A46, IC-2A47, IC-2A48, IC-2A49, IC-2A50, IC-2A51, IC-2A52, IC-2A53, IC-2A54, IC-2A55, IC-2A56, IC-2A57, IC-2A58, IC-2A59, IC-2A60, IC-2A61, IC-2A62, IC-2A63, IC-2A64, IC-2A65, IC-2A66, IC-2A67, IC-2A68, IC-2A69, IC-2A70, IC-2A71, IC-2A72, IC-2A73, IC-2A74, IC-2A75, IC-2A76, IC-2A77, IC-2A78, IC-2A79, IC-2A80, IC-2A81, IC-2A82, IC-2A83, IC-2A84, IC-2A85, IC-2A86, IC-2A87, IC-2A88, IC-2A89, IC-2A90, IC-2A91, IC-2A92, IC-2A93, IC-2A94, IC-2A95, IC-2A96, IC-2A97, IC-2A98, IC-2A99, IC-2A100
IC-BP4	49mm	BC-3C	14.00 4.5	1.5	NO	IC-2A, IC-2A1, IC-2A2, IC-2A3, IC-2A4, IC-2A5, IC-2A6, IC-2A7, IC-2A8, IC-2A9, IC-2A10, IC-2A11, IC-2A12, IC-2A13, IC-2A14, IC-2A15, IC-2A16, IC-2A17, IC-2A18, IC-2A19, IC-2A20, IC-2A21, IC-2A22, IC-2A23, IC-2A24, IC-2A25, IC-2A26, IC-2A27, IC-2A28, IC-2A29, IC-2A30, IC-2A31, IC-2A32, IC-2A33, IC-2A34, IC-2A35, IC-2A36, IC-2A37, IC-2A38, IC-2A39, IC-2A40, IC-2A41, IC-2A42, IC-2A43, IC-2A44, IC-2A45, IC-2A46, IC-2A47, IC-2A48, IC-2A49, IC-2A50, IC-2A51, IC-2A52, IC-2A53, IC-2A54, IC-2A55, IC-2A56, IC-2A57, IC-2A58, IC-2A59, IC-2A60, IC-2A61, IC-2A62, IC-2A63, IC-2A64, IC-2A65, IC-2A66, IC-2A67, IC-2A68, IC-2A69, IC-2A70, IC-2A71, IC-2A72, IC-2A73, IC-2A74, IC-2A75, IC-2A76, IC-2A77, IC-2A78, IC-2A79, IC-2A80, IC-2A81, IC-2A82, IC-2A83, IC-2A84, IC-2A85, IC-2A86, IC-2A87, IC-2A88, IC-2A89, IC-2A90, IC-2A91, IC-2A92, IC-2A93, IC-2A94, IC-2A95, IC-2A96, IC-2A97, IC-2A98, IC-2A99, IC-2A100
IC-BP5	60mm	BC-3C	14.00 4.5	1.5	NO	IC-2A, IC-2A1, IC-2A2, IC-2A3, IC-2A4, IC-2A5, IC-2A6, IC-2A7, IC-2A8, IC-2A9, IC-2A10, IC-2A11, IC-2A12, IC-2A13, IC-2A14, IC-2A15, IC-2A16, IC-2A17, IC-2A18, IC-2A19, IC-2A20, IC-2A21, IC-2A22, IC-2A23, IC-2A24, IC-2A25, IC-2A26, IC-2A27, IC-2A28, IC-2A29, IC-2A30, IC-2A31, IC-2A32, IC-2A33, IC-2A34, IC-2A35, IC-2A36, IC-2A37, IC-2A38, IC-2A39, IC-2A40, IC-2A41, IC-2A42, IC-2A43, IC-2A44, IC-2A45, IC-2A46, IC-2A47, IC-2A48, IC-2A49, IC-2A50, IC-2A51, IC-2A52, IC-2A53, IC-2A54, IC-2A55, IC-2A56, IC-2A57, IC-2A58, IC-2A59, IC-2A60, IC-2A61, IC-2A62, IC-2A63, IC-2A64, IC-2A65, IC-2A66, IC-2A67, IC-2A68, IC-2A69, IC-2A70, IC-2A71, IC-2A72, IC-2A73, IC-2A74, IC-2A75, IC-2A76, IC-2A77, IC-2A78, IC-2A79, IC-2A80, IC-2A81, IC-2A82, IC-2A83, IC-2A84, IC-2A85, IC-2A86, IC-2A87, IC-2A88, IC-2A89, IC-2A90, IC-2A91, IC-2A92, IC-2A93, IC-2A94, IC-2A95, IC-2A96, IC-2A97, IC-2A98, IC-2A99, IC-2A100



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- #15) ARRL ANTENNA BOOK @\$6.50 +\$1.25 S&H #16) ARRL SOLID STATE BASICS @\$6.50 +\$1.25 S&H....
- #17) ARRL "UNDERSTANDING AMATEUR RADIO" @\$6.50 +\$1.25 S&H #18) ARRL "FM & REPEATERS" @\$6.50 + \$1.25 S&H #19) ARRL OPERATING MANUAL @\$6.50 +\$1.25 S&H #20) ARRL SINGLE SIDEBAND @\$5.50 +\$1.25 S&H #21) ARRL "SOLID STATE DESIGN" @\$9.50 +\$1.50 S&H.....
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Kenwood's remarkable TR-7800 2-meter FM mobile transceiver provides all the features you could desire for maximum operating enjoyment. Frequency selection is easier than ever, and the rig incorporates new memory developments for repeater shift, priority, and scan, and includes a built-in autopatch DTMF encoder.

FEATURES

15 multifunction memory channels, easily selectable with a rotary control

- M1-M13...memorize frequency and offset (± 600 kHz or simplex).
- M14...memorize transmit and receive frequencies independently for nonstandard offset.
- M0...priority channel, with simplex, ± 600 kHz, or nonstandard offset operation.

Internal battery backup for all memories

All memory channels (including transmit offset) are retained when four AA NiCd batteries (not Kenwood-supplied) are installed in battery holder inside TR-7800. Batteries are automatically charged while transceiver is connected to 12-VDC source.

Priority alert

M0 memory is priority channel. "Beep" alerts operator when signal appears on priority channel. Operation can be switched immediately to priority channel with the push of a switch.

INTRODUCTORY PRICE

\$559⁰⁰

Extended frequency coverage

143.900-148.995 MHz, in switchable 5-kHz or 10-kHz steps.

Built-in autopatch DTMF (Touch-Tone) encoder

Front-panel keyboard

For frequency selection, transmit offset selection, memory programming, scan control, and selection of autopatch encoder tones.

Autoscan

Entire band (5-kHz or 10-kHz steps) and memories. Automatically locks on busy channel, scan resumes automatically after several seconds, unless CLEAR or mic PTT button is pressed to cancel scan

Up/down manual scan

Entire band (5-kHz or 10-kHz steps) and memories, with UP/DOWN microphone (standard)

Repeater reverse switch

Handy for checking signals on the input of a repeater or for determining if a repeater is "upside down"

Separate digital readouts

To display frequency (both receive and transmit) and memory channel.

Selectable power output

25 watts (HI)/5 watts (LOW).

LED bar meter

For monitoring received signal level and RF output.

LED indicators

To show: +600 kHz, simplex, or -600 kHz transmitter offset; BUSY channel; ON AIR.

TONE switch

To actuate subaudible tone module (not Kenwood-supplied).

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Depth is reduced substantially.

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Note: On Front Cover of Cat # 19 our Phone No. should be (604) 984-0404.

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Letters:

KEEP UP THE EFFORT

I wrote this letter simply to pass on a note of encouragement to all budding Amateurs and Advanced Amateurs.

It would appear in my contacts with others, that the time and effort required to pass either examination was slowly eroding the aspect of Amateur Radio being a 'Hobby' and was gradually edging it toward 'career'.

I can only assess that the required volume of study is a way of filtering out or deterring possible 'Pirates' or trouble-makers. To the 'True to the heart' candidates, I can only reassure and tell you not to give up. Believe me, your efforts will be well worth it, when you receive that 'Good News' in the mail. After two previous unsuccessful attempts, I didn't 'Come back to earth' for days after receiving my passing Advanced Amateur results. Hang in there, you'll thank yourself for it.

Brett Lockerbie VE3KBF

15TH WORLD SCOUT JAMBOREE, 1983

Sometime in the summer of 1983 (the exact dates have not yet been announced), Canada will be the host country for the 15th World Scout Jamboree. The site will be in the Kananaskis Provincial Park, some 35 km from Banff, Alberta.

The purpose of this letter is to ask for help. I would like to enter into correspondence with Amateurs who would be interested in spending some time working at the Jamboree. It will run for ten days, but it would not be necessary to commit oneself for that length of time, of course.

The planning for the signal-

ling, electronics, and Amateur radio activities is just starting and what we finally do will be dependent upon our resources of men and women, and equipment. Having done my first QSO from the Amateur radio station at the 14th World Jamboree in Norway, I am determined that the 'show' Canada puts on shall be at least the equal of that put on by the Scouters from Scandinavia.

It may become necessary for on-site Amateurs to be registered Scouters in their home communities. As recent publicity emanating from British Columbia will have informed your readers, in this eventuality, I would not be able to accept offers of help from practising atheists, although they might well be able to serve in their own communities as contacts for 'phone patches, traffic handling', etc.

Vernon L. Dutton, VE4VQ
63 Laval Drive
Winnipeg, Manitoba R3T 2X8

NPARC MINI-HAMFEST

The NPARC held its third annual Mini-Hamfest, Dinner and Dance on Saturday, February 14, 1981 at the Holiday Inn in St. Catharines, Ontario. The flea market was the largest ever, with over 400 Amateur

radio operators and enthusiasts coming to see everything from ham gear to computers. The grand prize of an Icom IC-2AT was won by Bill Spencer VE3MFF. The executive is already looking for a larger hall for next year's event.

The Amateur of the year award went to Fred Cross VE3DVI and Nick Sawchuk VE3DID was also given an award in appreciation for the fine swap net he runs on VE3NRS.

Lawrence Hetherington VE3LJN
CARF Rep. for NPARC
St. Catharines, Ont.

SWAP SHOP

I would like to thank all those who responded to my request in the Swap Shop section of the January issue of TCA. A number of service manuals were received.

The response to the ad proved to me that I'm not the only one who reads TCA from cover to cover as soon as it arrives. Thank you TCA and fellow CARF members.

F.G. Clark Forrest VE3BOF
Hensall, Ont.

LIGHTS-CAMERA-HEADACHE!

Recently I had the opportunity to do some late night DX-ing and rag-chewing. My station is set up along my desk and a lamp with a gooseneck sits upon the rig for lighting.

I quickly discovered much to my dismay, that I became tired and easily frustrated if I was unable to break a pile-up. This of course, discouraged me and I went QRT!

Realizing the problem lay not in my station, which works very

**TCA WELCOMES LETTERS
TO THE EDITOR. PLEASE
SEND ALL CORRESPONDENCE
TO EDITOR TCA,
1082 APOLYDOR AVE.,
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well, but in my lighting system, I discovered a night light in a tubular shade that casts a soft light upon my rig and has adequate light for logging, setting up frequencies, tuning etc.

While operating at night in my shack I turn off my 40 watt lamp (which is reserved for studying and essay writing) and turn on the small 10w night light. I have found a great deal of difference in my tolerance of QRM, etc. and find it considerably easier to operate for extended periods of time. Besides it is much easier on the eyes and makes late-night DX-ing considerably more enjoyable.

I hope that this will aid any other Amateurs who would like to work that P29 or KH8 late at night but gets easily discouraged. It may not be your equipment, it may be your lights!!

Cyril Stanway VE3IFS

PARC BOOSTS AMATEUR RADIO

The Peterborough Amateur Radio Club this summer will be demonstrating and promoting Amateur radio to visitors at the Peterborough Exhibition.

They will be occupying a space in the Memorial Centre arena on the fair grounds and plan to have several stations operating in as many modes as possible.

William G. Carew VE3MEW
PARC Executive
Publicity Director
R.R. #6 Ashburnham Dr.
Peterborough, Ont. K9J 6X7

DX BULLETIN

VE3FRA, former editor of CANAD-X Long Skip, is now producing a bi-weekly DX Bulletin. Subscription are \$16 and can be obtained from DX Report, 10 Fairington Cres., St. Catharines, Ont. L2N 5W3.

Caveat Emptor — Is it fixed yet?

A recent TCA article, "Diary of a Homebrewer" suggests that it is now often cheaper in the long run to buy your new equipment already assembled rather than to go the homebrew route. I am not a do-it-yourselfer, but would like to pass on a recent woeful experience with a commercial piece of equipment.

At the October 79 RSO convention in Ottawa, I purchased a new touch-tone microphone from one of the retailers there, naturally assuming that I was dealing with a credible organization.

Shortly after installing the new 'goodie' in my 2-metre operation, I began to receive reports of intermittent audio. This increased in frequency as I went along, until the mic audio ceased altogether by the end of January 80. After confirming that the transceiver was not at fault, I called the dealer and on his advice packed up the mic and sent it off to him via insured parcel post for warranty service.

After a month of silence, I contacted the dealer again and received the bad news — yes, the mic cartridge was defective, and they would fix or replace it as soon as a new shipment of mics and parts arrives, in about two weeks. As the months went by, the following took place:

May 80 — called again; they're still waiting for the shipment, but its now at the customs warehouse and will have it in a day or two.

July 80 — called again; what, I haven't received it yet? The mic

was fixed weeks ago and mailed first class registered mail. Well, they'll send a new one in its place and claim for the lost one.

Aug. 80 — called again; nothing yet? Well, we'll send you another one, by courier this time, you have it by the end of next week.

Sept. 80 — What? Can't understand what's the matter with the mails and the courier! Well, by this time I had "had it up to here" and promptly arranged to have a friend in the dealer's area pick up a new unit personally.

This was accomplished the following week and I finally had a replacement mic in Oct. 80. What do you know, this one was defective too ... there was no way this dealer was going to get his hands on this one, so I ended up by having it fixed locally — bad solder connections were the culprit — and now it's working just fine, thank you. It only took a year and six long distance phone calls to accomplish. Needless to say, a certain dealer will not be receiving any more of my business. I shudder to think of going through such an experience with a \$1500 transceiver...

The point I would like to make is this: check around before you buy, and not just for the best price. If the dealer is not prepared or willing to give you good after-sales service, you're taking a big chance. Retailers tend to develop a reputation about the way they do business and you'll save some grief by checking into it first.

VE3GEA

Contest Scene

Dave Goodwin VE2ZP., 4 Victoria Place, Aylmer,
Quebec J9H 2J3

CONTEST CALENDAR

May 9-10 USSR 'M'
May 10 DARC Corona RITY
May 30-31 CQ WPX CW
June 13-15 ARRL VHF
June 20-21 All Asia Phone
June 27-28 ARRL Field Day
June 27-28 QRP FD
July 1 **CARF Canada Day Contest**
July 11-12 IARU Radiosport
July 18-19 10-10 QSO Party

I apologize to all for not getting a column into last month's TCA. Other commitments took precedence.

A few interesting events of late include Al Leith VE3FRA's departure from CANAD-X to produce a bi-weekly DX news sheet. The CANAD-X DX info net now has a new net controller, well known to contesters, in the person of Yuri VE3BMV. Yuri has added an interesting new feature to the net in the form of a Contest/technical oriented roundtable which many of you should find interesting. The net itself meets Sundays at 1600z on 14173. The primary purpose is to exchange DX info, as Doug VE3KKB has mentioned in his column. The DX info part of the net lasts anywhere from 20 to 40 minutes usually, and is followed by the roundtable I mentioned above. A few of the 'big gun' contesters types have shown up, so it is often very interesting.

The results of the WPX SSB contest for 1980 were published in March CQ, and Canadian results are presented below. There have been some small changes to the rules for the

		WPX SSB 1980 Canadian Results		
Call	Class	Score	QSOs	Mult
VO2CW	A	1,927,120	1614	442
VE3GCO	A	1,888,016	1319	464
VE7FJ	A	1,095,325	1349	275
VE6AGV	A	789,600	1045	300
VE3JTQ	A	591,798	642	318
VE3DUS	A	429,975	550	273
VE7BSM	A	429,632	670	224
VE7AZO	A	269,460	483	180
VE3FEA	A	237,133	388	221
VE7CVR	A	137,750	390	125
VE3MV	A	59,182	172	127
VE3EZU	A	57,687	162	123
VO1AW	A	30,485	125	91
VE3IZH	A	12,528	72	58
VE7NI	A	4,060	40	35
VE7DQS	A	3,185	38	35
VE3BMV	28	2,796,255	2120	495
VE7BGK	28	2,598,178	2805	374
VE1CCC	28	240,051	481	283
VE7DET	28	157,724	376	172
VE5AAD	28	1,276	26	22
VE7CML	21	2,973,955	2691	295
VE6KW	21	2,960,091	2332	459
VE7IN	21	1,978,830	2029	349
VE4RP	21	90,751	243	151
VE3FRA	14	1,014,492	993	389
VE7VX	14	601,839	822	287
VE2FU	7	478,848	464	232
VE3EEW	7	413,324	537	191
VE3IKN	3.5	152,076	285	138
VE3JAY	1.8	72,696	233	78
VE3ABG	1.8	67,928	250	74
VE3BBN	1.8	25,376	122	52
VE1BNN	1.8	2,576	31	23
VE7CC	MS	5,283,124	4106	476
VE1DXA	MS	4,946,670	2944	591
VE7UBC	MS	4,690,800	3597	450
VE7SK	MS	3,027,973	2736	437
VE7WJ	MM	16,505,881	9043	653
VE7BFO	MM	1,235,012	1570	283

WPX, presented in February, and clarified in March CQ. Among the changes: Multi-single entrants may **not** use any form of second transmitter to collect multipliers on any other band. This rule change was made to cut off the possibility of any improper use of a multiplier seeking position. There are stories of Multi-singles with ten transmitters, each taking turns collecting multipliers in accord with the old ten minute rule.

Also, if you are a candidate to win one of CQ's own plaques for this contest, you cannot win the plaque two years consecutively. If you win in your class year after year, you can only expect to get a plaque every other year. The old rule read every three years. The third change is that all logs must include a checklist of prefixed worked.

Those of you who are planning to work the CANADA DAY contest in July, and would like to use the official entry forms can obtain them by sending an SASE to CARF headquarters in Kingston or to my own address.

I have received a few inquiries about how a newcomer gets involved in a contest. I plan to write a few columns on that subject over the coming months. The simplest way, is of course to read the rules, become familiar with what is expected of you in the form of an exchange, and get on and call people! Submitting the entry itself is quite another matter, as is the matter of Dupe sheets and check sheets.

A few of the local lads have mentioned my comments in March TCA about special prefixes. Generally the response has been positive from contesters and non-contesters alike. If anyone found the tone offensive, I apologize, but my object was to demonstrate how the present policies are out of whack.

If any of you are particularly

concerned with this question, a letter to DOC headquarters and the CARF office may be in order. Perhaps this matter can be raised with DOC again. They are a rather cooperative lot, and if there is a demonstrated desire for change, they are often quite willing.

USSR 'M'

Period: 2100z May to 2100z 10 May.

Bands: 3.5 through 28 MHz, both CW and SSB.

Classes: Single operator, single or all bands; Multi operator, all bands.

Exchange: USSR stations will send RST and oblast (region) number; Others send RST and QSO serial number.

Scoring: 1 pt/QSO with stations in North America, outside Canada. 3pt/QSO with stations on other continents. Multiplier is number of countries worked on each band, added together. The DXCC countries list is the standard, with the following additions: Oblasts 002, 013, 014, 056, 084-098, 159, UA1-Novaya Zemlya, UAO-Kurile Is., UAO-New Siberian Is.

Entries: Should be post-marked before 1 July, and sent to: Krenkel CRC, CQ 'M' Contest Committee, Box 88, Moscow, USSR.

DARC CORONA RTTY

Period: 1100z to 1700z 10 May.

Band: 10 metres, RTTY only.

Classes: Single or multi operator.

Exchange: RST, QSO number, and name.

Scoring: 1 pt/QSO, multiplied by number of DXCC countries worked. Call areas in Australia, Canada and USA count as separate countries.

Entries: Deadline is 30 Days after the contest. Logs should be sent to: Klaus Zielski, DF7FB, Box 1147, D-6455, Erlensee, West Germany.

CQ WPX CW

Period: 0000z 30 May to 2400 31 May.

Bands: 1.8 through 28 MHz, CW only.

Classes: Single op., single or all band; Multi op all band, single or multi transmitter. Single operator entries may only work 30 hours. The 18 hours of 'off' time may be taken in up to 5 periods. There is a separate single operator QRP section.

Exchange: RST and serial number. Multi multi entries only may send separate serial numbers on each band.

Scoring: QSOs with other North American Countries count 4 pt on 1.8, 3.5 and 7 MHz, 2 pt on 14, 21, and 28 MHz. QSOs with stations on other continents count 6 pt on the low bands, 3 on the high bands. Multiplier is the total number of prefixes worked. A prefix can be counted only once, regardless of band.

Awards: CARF is sponsoring a plaque for the top scoring single operator, all band entry from Canada. See CQ for details of other awards for this contest.

Note: please keep in mind the rules changes mentioned above.

Entries: Official log and summary sheets are available from W8IMZ for an SASE. Logs should be sent before 10 July and sent to Bernie Welch, W8IMZ, 7735 Redbank Lane, Dayton Ohio, 45424 USA.

ANNUAL MEETING POSTPONED

In order to avoid conflicts with several regional Amateur gatherings, the CARF Executive decided to postpone the Annual General Meeting of CARF by one week. It will now be held on June 20 at 9:30 a.m. in the conference room of the Monterey Motor Inn, 2259 Highway 16, Ottawa. All CARF members are welcome. If you plan to attend, please let CARF know at least two weeks in advance so enough chairs will be provided.

DX

Douglas W. Griffith VE3KKB
33 Foxfield Drive,
Nepean, Ont. K2J 1K6

The showers of April have gone, and with the coming of May flowers also comes excellent morning short path openings into the Pacific, and long path openings into Africa and the Indian Ocean.

Getting out of bed a few moments earlier and firing up the rig while drinking your favorite morning beverage is well worth the effort. Doing just that a few days ago netted me FR7BI on Reunion Island, coming through with an outstanding long path signal.

Ten metres will begin its annual east-west path Summer siesta this month, but some north-south propagation should prevail through Fall. Twenty and 15 metres should remain in good shape, with 20 being open almost 24 hours a day to some part of the world.

Unfortunately, the QRN levels on 160M, 80M and 40M will slow DX activity on these bands. A smoothed sunspot number of 132 is forecast for May 1981, as cycle 21 continues its slow decline.

The busy Winter/Spring contest season ends in May with the CQ WPX CW contest, held on May 30-31. This is the third running of the CW mode of the WPX contest, and if its popularity in the last two years is any indication, there should be a lot of DX to be worked during the event.

A small aside, if I may, on contests. Many Amateurs simply do not go on the air during contest weekends. They have a multitude of reasons, ranging from the high levels of QRM to feeling that they simply cannot hack the pile-ups because they don't have an

amplifier or a tremendous antenna array.

Yes, the QRM is heavy, but at few other times are there so many countries available during such a short period of time. Not only are these foreign Amateurs on the air, but they are all primed and listening for calls. Therefore it becomes very easy for anyone with even a modest signal to be heard.

Further, a number of contest DXpeditions to many rare or semi-rare countries are generally made, making it easy to work a few new ones. Although these DXpeditions are popular early in the contest, with large pile-ups, by late on Sunday they are often begging for a new contact. You could work them with two watts into a wet string ('wetstring' being the nickname of a well-known local Amateur, notorious for trying to get the most for the least investment in Amateur radio — and who, as a matter of interest, has well over 300 countries confirmed).

It is a two-sided coin. You get your contact, and a new country, and they get another valuable QSO late in the contest. In terms of total Amateur numbrs, relatively few enter these contests seriously, so it is very important to these few serious entrants that as many as possible enter on a casual basis.

Contesting can be a lot of fun and, who knows, you might even like it or show a flair for it. Just remember, skilled operators are not born, they are made. So the next time you pick up a copy of CQ Magazine or QST or 73 or

TCA, check the contest section and see if anything is coming up. If a particular contest catches your eye, read the rules and participate, no matter how casually. At the very least, you hand out a few points, and you might just add a new country or two to your score.

With the increasing numbers of DX list operations appearing on the HF bands, the controversy surrounding them has skyrocketed. I'm sure that everyone knows how these lists work, but for anyone unfamiliar with them, here's roughly how they go.

DX1ZZ is an Amateur who has just received his ticket in some rare country (or is a W/VE Amateur who has been posted to DX1-land). The DX1-land native is very inexperienced, and the W/VE transplant never had any interest in DX at home, but was more of a ragchewer. Unfortunately, the first time that DX1ZZ gets on the air, he finds himself besieged by calls from North American Amateurs. Without the experience and skill in handling the huge pile-up, the result is total mayhem on the band, and DX1ZZ either goes QRT or skulks around the band looking for someone calling CQ with whom he can have a few words before the DX sharks tear him to pieces again.

DX1ZZ calls VE3YYY, and the latter had heard the earlier mess, and asks the DX station if he can take a list for him. Thus the mayhem breaks around VE3YYY and gives DX1ZZ a breather, and all going well VE3YYY runs the

list in an orderly fashion and many North American Amateurs get their contact with this rare country.

Remembering the initial success, the next time DX1ZZ comes on the air, he asks his first contact to take up a list for him, and away he goes again.

In this context, list operations seem to make sense. There is, however, a rub.

Many North American Amateurs may have excellent propagation to the DX station, but can't get through to the list-taker. Herein lies a serious source of frustration, which often leads to confrontation and unruliness on the bands. This frustration is often compounded by the appearance of a number of 'big-time' list-takers who appear daily on the bands. These operations are more controversial in that many DX stations who are quite capable of running their own pile-ups appear on these controlled 'nets'.

Many have argued that these list-type DX operations have removed the skill and challenge from working DX. I think that these arguments are well-founded, and personally I have no love for list operations, especially those which appear on a daily basis.

However, I think that there is one very important fact that we tend to overlook in the heat of the argument. Only the DX station operator knows his own physical or emotional limitations and operating capabilities, and I think that it is very narrow-minded of us to presume that he should operate the way we want him to operate.

In many instances, the DX operator has no real interest in working thousands of North Americans, and indeed, it is to his credit that he shows up day after day to give contacts to the needy. Just remember that there are two sides to every tale the next time you growl about some list operation.

Bits & Pieces

OJ0AM - Market Reef. Semi-rare Market Reef will be active from July 6 to 14, through the efforts of OH1BR, OH2BAD and W6EUF. OH0XX/OJ0 was active during the CQ WW WPX SSB contest at the end of March. The reef is to be taken over by the Finnish military in the Fall, so it may become very difficult to work in the future.

VK9NYG - Cocos-Keeling Is. This station is quite active on 10 metres, operating around 28540 from 12-1300 GMT. He is not all that strong, as he is only using 40W to a dipole, but he is certainly workable. (Amazing how a rare prefix adds a couple of S units.) QSL to VK6NE.

YI1BGD - Iraq. Apparently war doesn't close down what limited Amateur activity there is in Iraq. YI1BGD in Baghdad is available through a list operation with I1AGC as the control station on Thursdays on 14.292 MHz at 2000 GMT.

ZF1KG/ZF1DL - Cayman Is. If you worked this one late in March, then you worked Dave Lambert VE3KGG. QSL to Box 1703, Stn. A, London, Ont. N6A 5H9

ZD9 - Tristan da Cunha. The latest word on the ZD7BW expedition to ZD9 is that it now has been delayed until July.

ZM7 - Tokelaus Is. After operating from KH5 and KH5K in April, AD0S, W6TPH and KB7NW should appear from this relatively rare spot sometime in early May. They will be active on both SSB and CW. QSL's go to KB7QB.

5N0DOG - Nigeria. There goes my favorite call. Dave Guthrie has now left Nigeria. His activity will be missed by DXers and contesters alike.

5R8AL - Malagasy Republic. Watch 21.300 MHz around 1900 GMT.

5Z4QS - Kenya. Manfred has returned to Canada. If you worked him during his tenure in Kenya, QSL to: Manfred Hanke, 3166 Forest Glade Drive, Windsor, Ont. N8R 1Z2.

9G1RT - Ghana. Rod Hallen is quite active from Ghana, and if that isn't enough, he seems to be always on the move to some new African country to provide DX fodder for the North American cannons (and pistols). Recent operations had Rod in C5A and 3X. He will be in Africa until this summer. QSL's go to KB7HB.

Like most things in life, Amateur radio prefixes are in a state of constant flux. Here are a few recent changes:

ZL0 is a prefix being issued to visitors to New Zealand. J87 for visitors and J88 for residents replaces VP2S.

T4 is no longer Vendaland, but replaces CM and CO for Cuba. T5 replaces 60 (Somalia). T6 replaces YA (if they ever get back on the air).

For you low-band types, here is a sample of what has been available:

ZS2MX	7063	0220
AH2G	7005	1322
VK9NS	7001	1256
5T5JD	7097	0815
VR6TC	7062	0900
FW0VU	7006	0545
EA9IE	7091	0747
OX3ZM	7076	0720
TL8CN	7003	0525
ZD8TC	7026	0730
JD1ALU	3795	0100
FR0FLO	3789	0100
KX6EU	3535	1220
FC9VN	3501	0601
EA6FG	3515	0640
A7XD	3789	2300
EA9IE	3790	0800
J87BN	3510	0720

QSL Information

<u>CALLSIGN</u>	<u>QSL via</u>
A9XDD	K7DVK
A9XDA	N4BPP
C31HV	G4GIG
C31IU	W8JAQ
C5ACO	W2TJ
KØDHI/CEØ	KØDHI
CN8AD	F8JL
EL2AV	N6FL
EL2AM	WD4NBX
FH8YL	I8JN
FØFZF/FC	ISØIFA
HC8GI	W3Hnk
HP1XAT	WB3KGY
HZ1AB	K8PYD
H44SH	AD1S
H44MM	K1MM
HV1CN	DL1KK
HV2VO	I8YCP
HV3SJ	IØDUD
JALJWP/JD1	JALRJR
J6LIR	WB6FCR
J28AZ	I8JN
N7AQS/NH8	WB7DDQ
OHØAL	OH2AL
OHØAM	OH2BBM
OJØMA	OHØNA
P29RY	WA4WTC
PYØCP	PY2CJW
SVØAO	KA2FRP
S79MC	AK3F
TU2JJ	KNØKCW
VE1AI/1 Sable	VE1AI
VP1ØA	KBØU
VP2AZG	WB4SXX
VP2AJ	WB2TSL
N6YK/VP2A	N6NK
VP2EA	KB4QB
VP2KAA	N4PN
VP2MCL	K1ZZ
VP5GM	NP2AF
ZD8RA	N2FU
ZD8RH	G4DBW
ZF2AN	W5UF
ZF2EK	W8TN
ZK1CT	WØRLX
PAØLVB/3A	PAØLVB
4K1A	UB5LHO
4S7KK	K2FV
4U35UN	W2MZV
5B4CX	OE8GMK
5B4HF	KC5I
5W1CY	ZL1AMO

CALLSIGN

QSL via

6W8AR	WB4LFM
6Y5MD	VE3IPR
8R1K	K1RH
9K2EW	WA3SWH
9K2KX	W4KA
9Q5AH	JA8BI
9V1UQ	K5BLV
9X5AB	ON8RA
9X5LO	DL5FX
5B4NP	Box 4916, Nicosia, Cyprus.
YB1AEE	VE7DZR

My sincere thanks to Garry Cameron for the QSL information on YB1AEE, and to George Snow VE1CAW for his letter. George, by the way, has worked 157 countries and confirmed 116 in less than a year using an attic dipole

and vertical antenna and a Kenwood TS120S barefoot. Keep up the good work.

Many thanks to LIDXB, HR Report, CQ Magazine and Long Skip for some of the material appearing here.

That's it for this month. Keep the letters coming.

UPCOMING EVENTS
1981 RSO Convention

When: October 2, 3 and 4, 1981.
Where: The Waterloo Motor Inn, Waterloo, Ontario. Note: Pre-registration forms will be available in the February issue of 'The Ontario Amateur', according to the chairman of this year's convention publicity committee, Merrick Jarrett VE3BCZ. Further details will be published when they become available.

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— For Further Information Contact: DENNIS GORE-VE3DGA-1-519-836-6226

ANDY JANOSIK-VE3GDY 1-519-824-3227

HF Mobile Across Canada

After almost ten years of hamming, I realized a dream come true this past summer. Finally, I had the resources and opportunity to operate H.F. mobile as I travelled to Canada's west coast and back.

Over a six week period my wife and I mobiled our way across the country visiting our many relatives and friends in such notable locations as Laurier Manitoba, Margo and Moose Jaw Sask., Calgary and Nestow (try to find that on a map) Alberta, Salmon Arm and Vancouver B.C. not to mention the many national and provincial parks along the way. During the westbound portion of our trip, we were joined by Brian ZL4HA, from Dunedin New Zealand.

I would like to relate how absolutely fascinating I found this aspect of the hobby.

Although I had a two metre rig in the truck, it was the H.F. rig that got the most use. I had a pre-arranged sked with Dan VE3FOV every night at 0100 z on 20 metres. If 20 metres wasn't good, 15 metres usually was. The experimenting between bands and several types of mobile antennas was a learning experience in itself.

A five-band trap dipole was erected wherever possible at various overnight locations. We got some pretty funny looks from other campers in YOHO National Park as the dipole wound its way through the grounds. Brian was able to talk home to New Zealand almost every night on 15 metres using the dipole.

Having phone patches back to Toronto as we travelled up the Okanagan Valley in B.C. or through the confusing Picadilly Circus style traffic circles of St. Albert, Alberta were memorable occasions for me.

I had the distinction of beginning one QSO while mobile VE5, near Yorkton, and finishing the contact as a VE4 driving into the middle of the Ukranian Folk Festival in Dauphin. My wife loved it being a native Manitoban with Ukranian roots.

I would also like to mention some of the Amateurs that made those long hours behind the wheel of our camper a lot shorter for me. Many days we spent 14 to 16 hours on the road. Phone patches, signal reports and just plain greetings certainly kept me from falling asleep behind the wheel.

Dan VE3FOV, Harry VE3JNN, Tom VE3CDM, Bill VE3KDT, Al VE3AND and Kevin VE3HYQ looked after me at those times when I needed a Toronto contact.

George VE8MQ from Hall Beach gave us a shout as did Eric VE1CAM, in Dartmouth. Bobby VE7CBK in Richmond kept an ear out for us and Jim VE6CGN in Medicine Hat passed a few minutes with us on two metres. Special mention goes to Joe VE3KSM in Parkhill who gave us a report from time to time and subsequently bent my S-meter on those occasions. What a power house!

I had an eye-ball QSO with the only ham in my mother and

father-in-laws home town of Margo, Sask. in the form of John VE5GO. My only regret was not hooking up with VE6CBW from Bow Island. Wes is my wife's uncle and we expected to make it into a mini-hamfest in Margo but Wes failed to make the town's 75th anniversary party.

I plan on making a similar trip next spring and you can bet the H.F. rig will be within reach all the way.

I wonder how many readers operate H.F. mobile? I would be interested in hearing from them, get some ideas on equipment, antennas, matching devices, frequencies worked and trips planned for this next summer. Possibly we can establish a summertime mobile net or a series of frequencies on various bands for mobiles to monitor. Road conditions, forest fire warnings and severe weather information could be passed along on those frequencies.

With the relatively low price of the newer, broadband, mini-rigs on the market today, H.F. mobile can easily be attained in even the smallest of compact cars. I highly recommend it to anyone who travels long distances, especially if they must travel alone.

I thank everyone who helped me along the way and look forward to getting reports from anyone who can hear VE3AGI mobile.

Warren Canney VE3AGI
2952 Bayview Ave
Willowdale, Ontario
M2N 5K6

Alert

World's Most Northern Station

Most active Amateurs have listened to VE8RCS while phone patches are being made to wives and relatives of our servicemen stationed at 'the top of the world'. Some have even participated, but few have any real idea of what alert is really like. The following article describes the place as it has developed over the past thirty years.--Ed

Less than 900 kilometres (560 miles) from the North Pole and far from any civilization, some 200 Canadian servicemen keep the most northerly inhabited site, Canadian Forces Station (CFS) Alert, running smoothly.

CFS Alert goes back to 1950, when the Canadian Department of Transport and the U.S. Weather Bureau decided to set up a joint meteorological station at the northern end of Ellesmere Island. There was no landing strip at the beginning, so all equipment and supplies had to be dropped by parachute by the Royal Canadian Air Force.

In 1956, the RCAF decided to set up a post at Alert, near the Canadian-American camp, to carry out communications research. Two years later, the Army took over and made major changes to the antiquated facilities.

Since then, Alert has undergone continuous expansion. It now has all the services of modern society. Station personnel have individual bedrooms in living quarters that would be the envy of many service members in large bases to the south. The three barrack blocks built during the past five years have kitchenettes, lounges, washers, dryers and closed circuit colour televisions.

Working conditions are also excellent. A new, well-equipped operations room has just been opened, following completion of a filtration plant.

Residents at Alert have plenty

to occupy their free time. A video-cassette system rebroadcasts television programs from Canadian and American stations eight hours a day. Each of the three messes holds a nightly film show. Every week the Hercules providing a link between CFB Trenton delivers mail and a selection of some 120 newspapers and magazines.

An FM station plays music 24 hours a day. Selections are drawn from a record library containing over 4800 albums and about 13,000 45 rpms. Members of the station act as disc jockeys during their off duty hours. An Amateur radio station provides a radio and telephone link to families almost every day.

For sports buffs, CFS Alert has a weightlifting room and gymnasium, plus curling and bowling clubs, allowing members to work off excess energy.

A serviceman who is on his first assignment at Alert must approach his apprenticeship with a different set of values. He must accustom himself to six months of isolation from the outside world and must learn to live in a group so as not to disrupt the smooth function of the station.

Winter temperatures often dip below -50 degrees Celsius and polar night (a period of complete darkness) lasts from 12 October to 3 March. (A period of complete daylight extends from 8 Apr. to 5 Sep.)

Because of CFS Alert's isolation and extreme weather conditions, it has a number of

peculiarities. One thousand kilowatt hours of electricity are provided by five diesel-powered generators housed in two separate buildings in case of fire. They consume over half the station's Arctic diesel fuel.

Heating is provided separately by furnaces -- two to a building. The station consumes about 16,000 gallons of water each day pumped from Dumbell Lake, two kilometres away, and heated to 15 degrees Celsius before being piped into the filtration plant through a long jacketed pipeline containing an electrical heating element. Two enormous reservoirs each hold 50,000 gallons of water, which is reheated before being piped throughout the station.

Transportation is provided by 48 vehicles of all types, including several tracked vehicles, maintained by six mechanics.

Medical care is by two medical assistants. Intensive care or surgery cases are air evacuated to the south. Emergencies can also be referred to the doctor at the American Air Force Base, Thule, less than 675 kilometres away.

Supplies are brought in entirely by air. Urgently needed equipment and perishable foodstuffs are brought in on weekly flights. All other material, including fuel, is brought to Thule in ships and flown into Alert usually by three Hercules which run a shuttle until the operation (known as Boxtop) is finished. Three Boxtop operations are held each year.

Canada Weekly
Dept. of External Affairs

New Horizons

The following article was submitted by IARU to ITU for publication. The author, Tom Atkins VE3CDM, is well-known to CARF members.

In 1967, the Radio Society of Ontario, Inc. adopted the radio club of the Canadian National Institute for the Blind as a tangible expression of support for the work of the few dedicated Toronto area Amateur operators who had started classes for the blind in Amateur radio several years earlier.

The objectives of the C.N.I.B. Amateur Radio Club supported by the RSO were as follows:

1. - to expand the horizons of the visually handicapped by encouraging them to become licensed radio Amateurs.

2. - to solicit the help of volunteer sighted persons.

3. - to organize and direct such volunteers for the purposes of:

a) instructing blind persons in code and theory,

b) assembling and installing Amateur radio equipment for use by blind persons,

c) providing technical advice and assistance; and

d) acting as sponsors and associate sponsors of blind radio Amateurs.

4. - to solicit financial and material support required for the provision, at minimum cost, of equipment to blind radio Amateurs.

To operate an Amateur radio station in Canada a licence is required from the Federal Department of Communications. Obtaining such a licence involves the ability to send and

receive Morse code at specified speeds, and in addition candidates must understand the basic theory of electricity and radio. Knowledge of equipment operation and the international regulations governing Amateur radio are also required.

Such an examination contains both oral and written elements, and obviously presents great difficulty for the visually handicapped. For this reason the DOC makes special provision for such handicapped persons, and administers an oral examination only.

Having passed the DOC test, the granting of an Amateur radio station licence to a blind radio Amateur - "a white-caner" - is conditional on each handicapped Amateur having as a "sponsor" an individual holding an "Advanced" licence. This sponsor is responsible for equipment; for assistance in early days on the air; for doing all those things which are impossible because of the handicap. The sponsor supervises the kit assembly and installation and proper operation of equipment loaned to the whitecane licensee.

Equipment is made available on a rental plan, which enables any blind person who has qualified as a radio Amateur to outfit himself or herself with a complete 3.5 MHz SSB station. Rental is nominal, \$15 per year. The blind operator purchases a

speaker and microphone, and must pay the \$13 annum fee for the licence.

After three to six months operating experience on 3.5 MHz, application may be made for a 14 MHz station and accessories upon payment of a further \$15 per year rent.

An RSO Technical Advisory Committee spent many months reviewing all aspects of Amateur radio operation by the blind. It became evident that if a blind Amateur was to operate equipment safely, efficiently and legally, standardization of equipment, as well as installation and operation procedures, was essential.

Recommendations of the Committee favoured the following equipment, policies and practice:

A) single-band transceivers and antennas,

B) use of a relative power reader to allow final tuning by sound,

C) use of 3.5 MHz only until experience was gained on the air,

D) the Heathkit HW 12 AC and HW 32 AC were specified for a number of reasons. They were available in Canada with factory service; cost was relatively low, with volunteer assembly; their narrow band widths which eliminated band edge problems; the simplicity of modifications necessary to read frequency by touch and minimal

possibilities of TVI and BCI. Folded co-axial dipole antennas were recommended, thus eliminating the need for antenna tuners.

This program has expanded from Ontario to all parts of this country, and has been an unqualified success.

In Canada, to date, more than 400 blind persons have become licensed radio Amateurs, and \$50,000 approximately in supporting funds has been raised since the New Horizons program began. Many of the methods and techniques involved here have been adopted by several other countries.

These enthusiastic operators serve their fellow Amateurs by acting as control stations on the Ontario Amateur Radio Service net (ONTARS) which operates for 11 hours each day of the year, on 3.755 MHz. They are also active on many other nets across Canada, and the world. The whitecaner has proved to be a skillful and resourceful Amateur in the finest tradition of the Amateur radio service.

As we have watched the patience and dedication of these visually handicapped Amateurs, we feel privileged to have welcomed them into an international fraternity characterized by goodwill and sharing with those less fortunate. We have been repaid a hundredfold and have had our eyes opened to "New Horizons" of service and self worth.

T.B.J. Atkins VE3CDM
55 Havenbrook Blvd.
Willowdale, Ont. M2J 1A7

EXAM DATES

DOC has announced the dates for Amateur examinations in 1982. They are: February 10, April 21, June 16, October 20. The corresponding closing dates for applications are: January 13, March 24, May 19 and September 22,

The Amazing Gustav R. Kirchhoff

(1824-1887)

Kirchhoff was a German physicist who formulated two theories very important to electronics, and thus Amateur radio. Kirchhoff also refined a laboratory technique for spectroscopic analysis, a key to modern astrophysics.

Here is a brief outline of Kirchhoff's laws. The sum of all current flowing to a point in an electric circuit equals the total current flowing away from that point. This law shows the application of the law of conservation of charge.

Kirchhoff's second law says that in any circuit or part of a circuit that provides a closed, continuous path for electric current, the sum of the voltages provided by batteries or generators equals the sum of the voltage drops. The voltage drop across a circuit element is equal to the product of the current that passes through the element and the resistance of the element. If the circuit contains two or more generators producing current in opposite directions, one direction is chosen as negative, and all currents or voltage drops in this direction are subtracted from the total. This law is an application of the law of conservation of energy.

Many years of experience have proved the exactness of these laws. Kirchhoff's laws have an analogy in heat flow, and they extend Ohm's electrical conduction theory to thermal conductivity as well.

It was also Kirchhoff who showed that the velocity of an electrical impulse was equal to the velocity of light.

Kirchhoff and Robert Bunsen (of the Bunsen Burner) became great friends and worked on projects together. Later he proved that there was a coincidence between the two dark lines which are produced when a continuous spectrum similar to that of the Sun is viewed through sodium vapour, ie: the Sun contains sodium.

In 1862 he demonstrated that the absorptive and emissive powers of any radiating body are the same when that body is at the same temperature as its surroundings. A black body could be an ideal radiator as well as ideal for energy absorption (Kirchhoff's radiation law).

His research led to the discovery of two new elements, cesium and rubidium. With Bunsen, he founded spectrum analysis. It has been found that his circuit rules are applicable to complex alternating current circuits and with modifications to complex magnetic circuits too.

Kirchhoff's Law has applications in Amateur use: Voltage in a series circuit divides among its resistances. Current does not divide in a series circuit. The sum of all the voltage drops in a series circuit is equal to the original voltage.

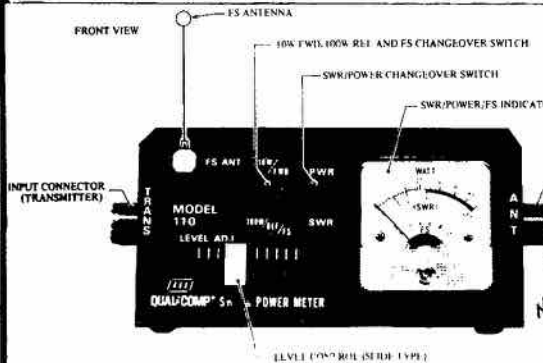
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Emergency Preparedness in the Durham Region

The Mississauga Evacuation was just a little over a year ago and since a number of South Pickering ARC members were deeply involved in this incident and since most of our members live in Durham Region, perhaps you will find the following of interest.

Our area has had a disaster plan for many years, but since Mississauga it has been dusted off and is being updated and improved. The person behind this formidable task is Sgt. Dan Matthews of the Durham Regional Police who is on special assignment to the Chief of Police of Durham Region specifically for this purpose.

Peter VE3JPP organized our ARES group about two years ago. If he hadn't, SPARC would have been just another club climbing on the band wagon after the fact and would not have played such a prominent role in providing emergency communications.

As a result of the SPARC's role, Peter VE3JPP, Ken VE3KXT and myself attended an Emergency Response Training session last winter that was put on by the Ajax-Pickering Branch of the Red Cross. Sgt. Matthews was one of several speakers who attended. There were a number of speakers from the Red Cross and one from Ontario Hydro.

My impression during the Mississauga incident was that it was more by good luck than by good sense that things went as well as they did. At the Red Cross session last winter, I felt that at least there was

recognition that a disaster plan was needed, but if a disaster had occurred in our area at that time I still had the impression that only good luck would see us through the incident.

On November 13, 1980, I attended an Emergency Preparedness Training session conducted by Sgt. Matthews at No. 18 Division of Durham Regional Police. Also in attendance were several members of the Ajax-Pickering Branch of the Red Cross and a large number of the staff of Durham Region Social Services. I'm pleased to report that good progress has been made in updating the local plans, however there is still much to be done.

Do we really need a disaster plan? Yes, because according to Sgt. Matthews there have been six incidents in the Durham Region this year that could have potentially been disasters. They ranged from a potential dam burst, to hospital fires, floods, chemical fires and possible toxic gas releases. An hour after the Mississauga derailment the train could have been passing through Durham Region.

In Durham Region a state of

*"...it was more by good
luck than by good sense
that things went as well as
they did..."*

civil emergency would be declared by the local Mayor and Council. One of the big problems in Mississauga was that a state of emergency was never declared by anyone and this is the reason why everyone is suing everyone else for they all want the other guy to pick up the costs. If an emergency is declared here, I understand that the costs would be picked up by the Region and later recovered from the party responsible for the incident.

A Civil Emergency Co-Ordinator will direct the efforts of an emergency Social Services Director and other emergency services such as police, fire, public works.

The Emergency Social Services will have a chief in charge of each of lodging, feeding, clothing, registration and inquiry, and personal services. Arrangements have been made to use any Board of Education facility as an evacuation centre during a local emergency so we won't have the problem of evacuees being in a school when the Board of Education wants them out so that the kids can go to school. This happened in Mississauga. At each evacuation centre there will be a manager as well as a person in charge of each of the services noted previously.

At the present time no one has been assigned to the positions noted. However, it is expected that they will be filled by Municipal Social Services staff. These people will respond when an emergency is declared

and will be in charge of their respective area of responsibility.

Where do Red Cross, St. Johns Ambulance and other volunteer services fit in? When the 130 paid members of the local Municipal Social Services staff cannot handle a situation by themselves or if they require any special assistance the volunteer services will be called upon to assist.

What role will the ARES play in such an emergency? This has not been clearly established, but I'm pleased to report that Sgt. Matthews appears to recognize the potential value of well disciplined communications service that the local Amateur clubs could supply. He's aware that Police, Fire and Municipal radio systems would be working at capacity and that the telephone system may be out of service or jammed by calls so that inter service communications would be difficult or impossible. He's suggested that we could provide inter service communications between Police, Fire, Municipal Works and Social Service evacuation centres, etc.

It seems to me that it would

QRP GROUP

Two Guelph, Ontario, Amateurs have set up a Canadian group to function as a focal point for Canadian Amateurs who enjoy the challenge of QRP operation - communicating with only a few watts.

The club is known as the VE QRP Amateur Radio Club and is interested in flea-power operating, home-brewing of equipment and other technical aspects of this part of Amateur Radio. For information on the set-up, send SASE to Lou Vermond VE3QRP, 83 College St. W., Guelph, Ont. N1G 1S2. Dave Woodhouse VE3HEA is Lou's partner in this venture and his address can be found in the callbook.

be very timely for all clubs and ARES groups in Durham Region to put all our resources in one basket and co-ordinate our efforts so that if the need should arise there would be one big pot to draw from rather than a number of small pots. I'm sure Sgt. Matthews or whoever heads the Durham emergency service would prefer to deal locally through one source rather than through fragmented groups.

That's the current status of Emergency Planning in Durham

Region as I see it with a little opinion thrown in for good measure. There's still much to be done but our Region has come a long way in the last year. My hat's off to Sgt. Matthews who has done an excellent job to date. It's just unfortunate that politics and petty differences between groups appear to be making his task much more difficult than it should be.

Ron VE3WZ
SPARC

Listening Posts

Two metre FM repeaters have different roles in the Amateur community. Those repeaters serving cities are a place to make a contact prior to moving over to a simplex frequency. The peak period use of these repeaters makes short contacts imperative. The fast timers on city repeaters are a result of the high demand for the machine.

In the rural areas however, the repeater has become the means by which contact is maintained. This is particularly the case for mobile operators. Simplex contact is terrain and distance dependent and making a trip into the repeater with a signal is a much easier task to accomplish.

Although simplex contact should be used when possible, the repeater has made two metre FM operation the tremendous mode it has become for the rural VHF operator. In contrast to the city repeaters short timer the rural repeater is usually generous and only long winded operators "time out".

This type of operation makes minimum use of the repeater and thus more repeaters are

needed to serve fewer Amateurs.

The rural clubs are aware of this problem and some fine repeaters have gone on line in 1980. More will be operational shortly. Rural areas that previously had no VHF coverage now have reliable communications. Some times an operator has more choice of repeaters in a rural area than he does in a large centre. For instance, in the immediate vicinity of Red Deer a mobile operator may access VE6QE, VE6SPR, VE6VHF or VE6SS and may shortly be able to access the pending Hand Hills repeater.

VHF operations have not paralleled those in use on HF. Formalized nets and traffic handling as used on HF have not been popular on VHF. FM on VHF is a young method of Amateur operating and more formal methods will likely crystallize over the years.

When operating a different listening post than the one that you are used to, please keep the different manners of operation in mind. In addition try to be patient with mobile operators just passing through.

Keith Gibson VE6BAZ

A Half-Century Of It

Ham Radio, That Is

By Bill Kitto VE3GWM

During a recent contest whose format called for the usual signal report plus the last two digits of the year in which the operator had obtained his or her certificate of proficiency radio licence, several contestants asked, "Did you say three, zero"? I had to answer "QSL", although it was a bit of a shock to realize that I have had my certificate for half a century. Thank goodness I got it while in my teens or I'd be older still! One OM said, "Not to worry. My number is two, eight."

My interest in radio began with a crystal set, consisting mainly of a piece of galena, a variable capacitor (a condenser in those days) and an inductor (a coil) wound on a cardboard oyster carton. Great SWL DX was to hear KDKA.

A crisis occurred in 1926 when the Jack Dempsey-Gene Tunney fight was to be broadcast. My brother and I found ourselves without a radio, the crystal set having been reduced to its component parts in the interests of experimentation. When the horror of the situation dawned upon us, just before the fight was to begin, we gathered up the items, hooked them together with a few twisted wires, and got the set working.

All was well until one of us moved enough for the cord from the earphones to pull on things and produce a loose connection. This seemed to happen at a critical moment in the fight, and led to frantic activity on our part. When the fight was over

and our hero had been beaten by that Shakespeare-quoting man, rather wished that the set had not worked at all.

The code test for my Amateur standing is something to remember. The examiner had a peanut-tube oscillator with a one-and-a-half volt A cell for the filament and a 45 volt B battery for the plate. He hooked them up wrong and blew the tube. He expressed his displeasure by pulling the tube from the socket and smashing it down on the floor where it shattered.

He got another peanut and did it right this time, but when he grabbed the key and began to send, I knew it was something more than the good old ten-words-a-minute for which I had prepared. Fortunately the officer in the Canadian Signal Corps who had trained the class of which I was a member, and where the same ten words per minute were required insisted on a margin of safety, like 12 words or a little better. This enabled me to get enough of what was going on so that when the examiner asked me to send it back I was able to fill in the blanks and come out OK. Whether that was 100% copy or not, I'll leave up to you to decide.

The rest of the exam was no problem - a bit of theory, a couple of diagrams and a few oral questions - and before long a rather austere but impressive certificate arrived. It was duly framed and hung up for all to see and it is still there (the walls have changed, what with moving

from one place to another, but you get the idea).

The first contact must be etched on the mind of every Amateur who actually became bold enough to fire up the rig and press the key. I had visions of the Radio Inspector being at my door within five minutes because I was interfering with the distress call of a ship going down with all hands on board.

I tuned across the band to spy out the prospects and found a VE3 calling CQ at about eight words, and it seemed like a reasonable proposition to give him a call. I wondered whether he would hear me since I was rock bound and could not zero beat. I hoped (a) that he would not hear me; (b) that he would answer somebody else; and (c) that he would come back.

I switched over to receive and there he was. My call sounded like music, but now I had a new fear: suppose I could not copy his name and QTH. That would be embarrassing. I did not know about, "Solid copy. Please repeat name and QTH." All went well, although I was glad to sign off and take time to recover. Then the icing on the cake: his QSL card arrived!

The surplus sales after World War II were a ham's delight, and this led to my first VFO. Plug-in units were available which could be converted, one for each Amateur band. They were beautifully constructed, a delight just to look at, but when it came to the conversion, that was something

else. I remember feeling frustrated on one job because, try as I might, there was no rf.

A friend who is a pro at that sort of thing came in to have a look, and he made a remark that has stuck with me ever since, and which I have applied to more situations than Amateur radio. Here is the gist of it: "The unit doesn't work because something is wrong. When everything is right, it has to work." So we set to work, found the mistake, fixed it, and the rf went on its merry way.

One of the more difficult moments in my personal history of Amateur radio came with a move from a 60 to a 25 Hertz area. There was no problem with the receiver – that bargain of bargains, a BC-348Q – but to convert the transmitter was something else. As I was wondering what to do, I began to hear about TVI. A neighbour was almost ready to give away his newly-constructed rig which ended up in a pair of 813s because he couldn't seem to get rid of all those little harmonics which did funny (not the "hah-hah" kind of funny) things to TV reception.

That decided it: I would wait for 60 Hertz to come to me or I would go to it. Strange to say, both happened about the same time. Ontario Hydro changed over the community as I made a move to another town.

In the interval, I dropped my station licence, with the assurance that this would not affect my Advanced Amateur standing. Later, however, when I applied for another licence, I was told I would have to sit the Advanced examinations. "Sorry about that," an official said, "but the regulations have been changed."

I thought – well, never mind what I thought. The only thing left was to get to work. The Amateur's bible is a formidable book to work through, but I

typed out questions and answers until I had an impressive notebook. I tried to get it all into my head, but it's a bit like pouring too much water into a bucket: it slops over.

When I was convinced that I had learned about as much as I was going to learn, I went into the DOC office and asked when the next examinations were to be held. The RI asked, "What are you doing now?" and an

hour or so later it was all a thing of the past, and the Advanced status was again mine.

I'd like another 50 years to explore untouched (by me) areas such as packet communication or slow scan TV, or Earth-Moon-Earth QSOs. Who knows? I may get a chance at them yet. Be that as it may, it's been a top-notch hobby for a considerable length of time.

Old-Timers Hockey Pacific Tournament

On January 23, the fourth annual Old Timers Hockey Association Tournament known as "1981 Pacific Cup" got under way, in Victoria, B.C. There were 76 teams in six divisions playing 174 games in 7 arenas in greater Victoria. They came from as far afield as Anchorage, Los Angeles and Winnipeg.

Communications for this event, between the seven arenas and the tournament headquarters was carried out by about 50 Amateurs from the various Amateur radio clubs in this area.

VE7VIC, The Victoria repeater was used for all communications during this event with the Victoria Short Wave Club station VE7EZ in operation as net control station located in the tournament headquarters in Harbour Towers.

Games continued all day Friday and all day Saturday at all seven arenas. Semi-finals started at 0800 Sunday in three arenas until about 1530. Because the finals were all held in Memorial arena we were able to secure at about 1600 on Sunday.

The committees involved thank all the Amateurs involved and those who loaned their

equipment for this weekend. Sincere thanks also to all the regular repeater users for their cooperation during the tournament. Your cooperation helped just as much as the donations of time and loans of equipment by the participants to make an event of this calibre the success that it was.

To those who did not participate, either as an operator or even as a spectator to at least some of the games, you missed a wonderful event – this was hockey at its best.

Zero Beat
Victoria (BC) ARC

ZL RTTY

Peter ZL4TCC has issued a list of some 52 ZL stations known to be active on HF RTTY – mainly 80 metres. The August 1980 issue of 'Break-in' (journal of the New Zealand Association of Radio Transmitters Inc) has published a special RTTY issue with articles ranging from descriptions of common machines to simple electronic gadgets – motor speed strobe, RY generator, etc. One very informative article written by ZL1APC deals with the elimination of BCI from teleprinter motors.

What is a Demonstration?

by Malcolm Perry, G8AKX

What does the general public know about Amateur radio? What is the purpose of putting on a demonstration? These are just two of the questions to be considered when putting on a station at various functions, not including mobile rallies and the like intended only for the radio Amateur.

The general public can be divided into various groups. The largest group knows nothing of or about the hobby of Amateur radio, except perhaps the Tony Hancock image of bungling incompetence, or that the man next door causes havoc with the television or hi-fi. Not the best image, to say the least.

A minority group has a passing knowledge of the hobby from shortwave listening or from acquaintances who are interested. A demonstration station, therefore, is the ideal way of getting across to the public the ideas and aims of the hobby of Amateur radio.

So, with this in mind, put yourself in the position of the General Public. You walk into a room and see the back of a man who is talking to a black box. Something you see every day on television. So you walk out. If you are slightly interested you decide to stop. You then try to ask some questions. "Ssh, I'm on the air", is the reply from a faceless head.

An interested shortwave listener who asks how much the gear costs may be luckier in obtaining a reply to his question, if there is no contact in progress at the time. "Well", he is told, "This one is 400 pounds, that one is 600 pounds or the one there is 500 pounds. Plus a few hundred for masts and antennas." The swl decides to take up

stamp collecting, and who can blame him?

During a demonstration of Amateur TV a voice from the back piped up, "I get a better picture than that at home!" Who was to blame for that remark? The person for not understanding the complexities of transmitting and receiving TV, or the demonstrator for not trying to explain what is involved.

At this point, let us stop and think. What, so far, have we demonstrated to the public? Very little. There is no easy answer, but the next time you put on a station at the local flower show (or the like) stop and think. Ask yourself, "Why am I putting on the station?" If it is just to have some contacts from a different location, by all means take your black box - leave Mr. General Public as ignorant as before.

If the answer is, "To try and

demonstrate the hobby of Amateur radio", then put yourself in the position of someone who knows nothing about radio. Try to make the demonstration eye and ear catching, to make the public stop and take notice, and have some means of explaining simply what is going on.

With this in mind, and a bit of thought, we may be able to get over to the public what Amateur radio is really all about. I do not profess to know all the answers, or offer suggestions. All I intend is to provoke you into thinking about what is an excellent opportunity to give Amateur radio a better image to the public; which I think you will agree, cannot be a bad idea. If you have found the answer, or have any ideas, why not get them published so that others may benefit.

RSGB Radio Communication

The Quarter Century Award

The QCA is being reviewed by the British Amateur Radio Teleprinter Group, and it is now available to any Amateur or SWL (not necessarily a BARTG member) who can provide evidence of having worked/heard 25 different countries using the RTTY mode. The status of a country is determined by either the ARRL DX list or the Geoff Watts DXNS listing.

A contest entry for the BARTG Spring RTTY Contest can be accepted instead of waiting for QSL cards to arrive. There were over 50 different countries active in the 1980 contest. Endorsement stickers are available for attachment to the original Award and these go

up in steps of 25 countries as far as 200 although so far, no one has reached this magical figure.

So have a hard look at those QSL cards most of us have tucked away out of sight and for full info on how to apply for the Award, send a SASE to the Contest and Awards Manager, Ted Double G8CDW, 89 Linden Gardens, Enfield, Middlesex, England, En1 4DX.

As of November 5, 1980, Canadian VE2QO, Bruce Balla, leads VE/VO Award status with 100 stations contacted. VE2JR Fraser Jamieson with 55, VE5RC with 53, VE7UBC with 38, VE3JKZ with 26, VE3IR and VE3AYL and VE4BJ all with 25 countries.

Amateur Overpopulation

Do theories of world population growth apply to Amateur Radio?

Francoise d'Eabonne founder of the French Feminist Ecology Movement, told Concordia University students recently that the aggression and competition inherent in patriarchal societies are going beyond the point where basic resources could sustain a growing world population.

What has this to do with Amateur Radio? Bear with me and I'll get into the subject.

Referring to studies with rats, d'Eabonne (a prominent French Feminist) says that overpopulation among them leads to such manifestations as murder and suicide, especially among the more competitive male rats. Females tend to destroy their nests and not produce.

Now do you get the picture?

There are 381,881 Amateurs in the U.S.A. In the rest of the world 360,465. The U.S.A. totals have dropped slightly but this has not stopped them from demanding additional frequencies at the expense of the rest of the world. We cannot obtain additional frequencies outside our present limits; that has been made obvious by WARC.

Canada's Amateur population is about 24,000 and growing. What is happening in Canada? It seems that many clubs and individuals feel it is necessary to produce as many Amateurs as possible.

The attrition rate per the actuary's figures are about 3 per thousand so we only need 75 new Amateurs to gain 3 increase. Allowing perhaps 10

who relinquish their licence, I have only known one over 32 years. So now we require at least 85 per year.

What is their reasoning behind the urge? Let us try to break it down. The club in many cases has no planned year program, no program of technical endeavour. More so today with the sophisticated equipment that does not lend itself to alteration.

Many clubs, to justify their existence pick on recruiting new Amateurs as an easy course, and to boost their membership and finances.

But, was any thought given to the project? Were the students given an orientation course on what Amateur radio entailed; on the capital cost of involvement? Was the subject of interference covered adequately, including the interfacing with the neighbours?

Was the wife of the potential Amateur informed of the time that would be spent on a non-productive hobby? Were the parents of the student still at school fully informed about what it could do to his schooling?

Now the individual. Is he doing it for money? Does he teach at the local Community College? Is it being done for ego? Does it sell more books?

Francois says, "Man may be the only animal who has all the instincts... but he is also the only species who does not know when to stop destruction in time to save his own species."

How many of the Instructors get on the 10, 15, 20, 40 and 80

metre bands, especially the 20 metre band when the DX is flowing fast and furious around 14.195, or shall we say 14.205?

Some of Francoise d'Eabonne's observations are very apparent at that time!

The Instructors, who are churning out dozens and dozens of Amateurs, spend very little time on the air they just do not have the time! So he does not know about the chaos.

What can and could be done? It is becoming increasingly obvious that more research could be undertaken by the instructors, if they are going to produce quality and not just quantity. The structure of the examination has gone through a change, requires a longer period of instruction, a more versatile instructor, a better knowledge of the regulations, and a higher standard of concentration on the part of the person taking the course.

People with no background of electronics or electricity should be informed that they will be required to study extra hard. They should be instructed that they should not expect to make it in one period.

Now to get back to Francoise's observations. It appears we should be a little more circumspect in how we approach the training of Amateurs. Do we just do it for fame and fortune or do we approach it with responsibility.

The alternative is Genocide on the Amateur frequencies!

Rowland C.E. Beardow VE3AML
Sarnia, Ontario

News Briefs

10M REPEATER

The DOC has received a proposal from the CRRL based on a recommendation of the ARRL's VHF Repeater Advisory Committee that repeater operations be established in the top portion of the 10 metre band. DOC is asking for Canadian Amateur comment. Presumably, Canada's Amateur Repeater Policy would be revised if there is general support.

The sub-allocations proposed by the Committee are as follows:

29.52-29.58 MHz	Repeater Inputs
29.6 MHz	Simplex Operation
29.62-29.68 MHz	Repeater

O u t p u t s

There is no repeater operation proposed below 29.5 MHz to protect the OSCAR satellite output at 29.4-29.5 MHz and the Radio Sport satellite sub-band at 29.3-29.4 MHz. This band plan has been implemented in the United States.

It would be appreciated if Amateurs could send their comments to CARF by May 10 in order that their comments can be discussed at the CARF National Symposium in Winnipeg on May 22-23 and an appropriate recommendation made by the Symposium to DOC.

LORAN

STATIONS CLOSED

Three more LORAN A stations in Canada are to be closed on Dec. 31 of this year. This brings the return of the 160 metre Amateur band to full Amateur radio status one step closer. These stations are at Baccaro and Deming in Nova Scotia and Port aux Basques in Newfoundland. Spring Island, B.C. was closed in 1979.

The final step will be the closing of the stations at Bonavista and Battle Harbour in Newfoundland and Frederiksdal in Greenland plus the lifting of the power ceilings on Amateur sta-

tions. This is being delayed tentatively until Dec. 31, 1983, one year beyond that permitted by WARC '79, because of the difficulty of building a Loran C station in Labrador. DOC and DOT have been discussing the time extension and Amateur power ceilings, but no conclusions have been reached yet.

PACKET NETWORK

Packet Radio planning in the Hamilton area got started on Jan. 25 with the formation of the Hamilton and Area Packet Network, according to the 'Hamilton Amateur'. Those attending the opening meeting decided, among other things, that the repeater installation would be on 145.65 MHz in order not to interfere with existing operators.

The group felt that a low-cost entry point into packet operations should always be maintained via 2 metres even after the move to 220 or 440 MHz. File transfer, message communications and packet video (digital TV) were the most popular of 11 uses determined in a survey. Other uses being considered include RTTY replacement (HF gateway) and VE2 and VE7 gateways (e.g. satellite).

JAPANESE PRIVILEGES

Full operating privileges may soon be available to foreign Amateurs who want to operate in Japan. A bill being considered by the Japanese legislature would lift the present restriction which limits foreign Amateurs to the operation of club stations only under the supervision of a Japanese Amateur.

If passed, both Canadian and Japanese Amateurs would benefit. The Radio Act requires true reciprocity in the granting of Canadian privileges to foreign Amateurs. When DOC learned of the Japanese restriction last year,

it had to discontinue efforts to reach a reciprocal operating agreement. Hopefully DOC will resume negotiations when the Japanese bill is passed.

10 MHZ RESEARCH

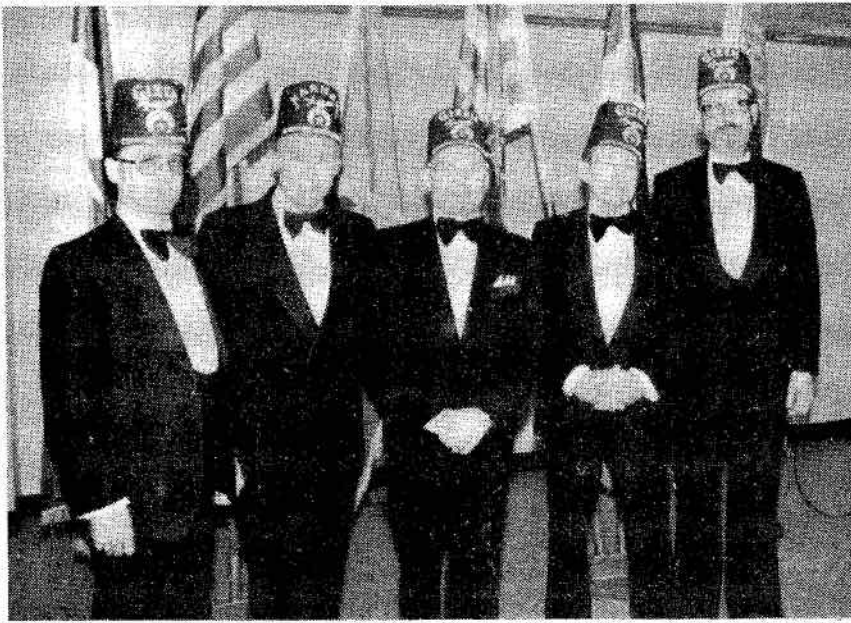
Following the Canadian lead in authorizing propagation research in the 10 MHz band, the FCC has authorized similar research in that band. HR Report tells us that U.S. Amateur N4DR is operating a 20 watt beacon on 10.125 MHz at Silver Spring, Maryland. The experimental station's call is KK2X-GM and it operates from 0100-0130Z and 0200-0230Z. Reception reports are sought. They will be QSLED if you send SASE and an IRC to cover postage.

Canadian experimentation began last winter with about 5 watts using ASCII on 10.101 and 10.149 MHz. The Amateurs involved in the Canadian experiments are VE3QB and VE3BPD and the calls used under a special DOC Experimental Service licence are VE9FLZ and VE9LIN. It should be noted that the 10 MHz band is not yet legal for Amateur station use.

REALLOCATION

The work being done by Canada to comply with WARC '79 Decisions to reallocate the 10, 18 and 24 MHz bands to the Amateur service is progressing favourably. In the next few weeks, the DOC will be sending to the ITU in Geneva an up-to-date list of HF frequencies now being used in Canada. Hopefully, other countries will be doing the same.

By late fall, DOC hopes to have received from the ITU an accurate list of all HF frequencies in use throughout the world. DOC says that only then will they be able to make any prediction as to when Amateurs in Canada will be able to start using the new bands.



Communications Unit, (l-r), Dean McKerricher, President; Ozzy Candy, Vice President; Bud Smith, Sec-Treas; Tony Craig, Co-ordinator; Jim Whiteside, Asst. Comm. Co-ordinator.

Communications Unit Installed by Gizeh

On March 22, the Gizeh Temple Communications Unit was duly installed at the South Delta, B.C. Recreation Centre under the direction of Noble Lou Sekora, Oriental Guide, Gizeh, A.A.O.N.M.S. Elected and appointed founder officers are:

President, Dean McKerricher VE7IO; Vice President, Ozzy Candy VE7KZ; Sec-Treas., Bud Smith VE7FI; Comm. Co-ordinator, Tony Craig VE7XQ; Assistant Comm. Co-ordinator, Jim Whiteside VE7LW; Auditor, Mort Mortensen VE7KM; Auditor, Ken Gorman VE7ABS.

Founder Members: John Draper VE7WQ, Bill Bishop VE7BCM, Bill McCarter VE7WM, Tony Santos W7ISX, Al Miller VE7KC, Bob Lamb VE7EWX, Hank Burrows VE7BXH, Stan Mowatt VE7BSY, Ken Light VE7DHI, Moe Broadfoot VE7DVR, Ted Buxton VE7AP, and Robin Kinney VE7AAG.

To the best of our knowledge

this is the first unit of its kind among North American shrines and it is the intention of the members of the organization to be available as a communication link when needed. The members of this unit are also available to provide contacts between the parents and the children located in various hospital and burn units where possible and practical.

ITALY

CARF has written to DOC asking them to make arrangements with Italy for reciprocal Amateur licensing. Italy now permits foreign Amateurs to operate in that country upon completion of an application and payment of a fee. They use their own call with an Italian suffix. Accordingly, DOC should be able to reach an agreement quite easily through an exchange of letters with their counterpart in Italy.

Traffic with RTTY

One hundred WPM with the receiving op not missing a word - that is traffic handling via RTTY. We all know that RTTY has a number of distinct advantages over other modes, and having RTTY capabilities means being able to clear traffic quickly with a greater degree of accuracy. Once the link is made with the stations, all one needs is someone that can type. They don't have to know the code, net procedures, rules and regs, as long as a control op is around.

In a real devastating emergency a great deal of traffic will come from that source in much less than perfect form, and the sending station may only be going along at 20 wpm speed. But the relaying station - hopefully equipped with punched tape gear, mag tape, or other forms of memory apparatus, can be making corrections and relaying simultaneously at full machine speed. Now that we are familiar with ASCII, organized volumes of traffic can be handled quickly and efficiently. So never underestimate the advantages provided to the traffic handler as well as to the people involved in traffic communications. Future drills should be held, in order that we can practice now and gain experience before we are involved in the 'real thing' again.
credit RTTY News (CARTG)

BARTG EDITOR

The new Newsletter Editor for the British Amateur Radio Teleprinter Group (BARTG) is Tony Oakley G4HYD - QTH 100 Normandy Avenue, Beverley, North Humberside, HU17 8PF, England.

TCA: Technical Section

TIDY UP!

Phasing a pair of verticals was both a pleasure and a learning project. However it also results in a large amount of coax. The original layout included a small aluminium box with two DPDT switches for controlling antenna direction. This arrangement either had to sit on the operating desk or be hung on the wall. Both beyond arms length. Neither of these was convenient. In fact during one contest while chasing several new sections, standing up suddenly to manipulate a switch change nearly cost me an ear. This surprise almost led to partial strangulation. Wearing earphones and making sudden reaches can be a definite disadvantage.

J.G. COULOMBE VE2HY

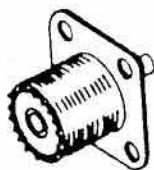
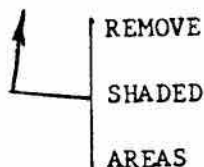
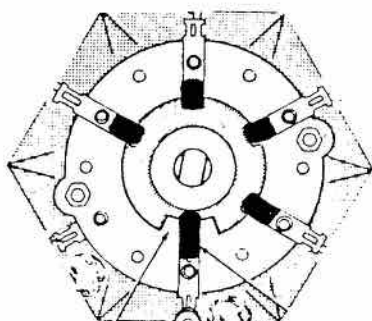
Besides being poorly organized, I had coax lines running in all directions, and no allowances for any further expansion. The power handling capability of both switches was another limiting factor. Not all Amateurs run 100 watts. If higher power was desired or is being used, a more robust system

had to be built.

Digging through various storage bins turned up two unused Heath coaxial switches, Model, HD 1234. With the covers removed, examination revealed they could be easily modified, adding one definite improvement. These switches can handle 1000 watts or 2000 watts PEP, maximum. With the entire system installed in a cabinet, three other objectives would be achieved, convenience, less chance of hanging myself on the earphone cord and eliminating a spidery network of coax lines. Last but also important, the unit could repose at the operating position, within arms reach.

For other Amateurs who are presently using such a pair of switches, and not interested in modifying them, why not get them off the wall. Leave them as is and mount them in a similar sized enclosure. This will give the operating position a neat and tidy appearance.

A cabinet was found on the back corner of a shelf. It measured eight inches wide, three and a half inches high and five and a half inches deep with no openings. If you do not have one on hand, most electronic outlets usually have them for between five to eight dollars. If you reside in an area with no such stores, then try - Dominion Radio and Electronics Company, 535 Yonge St., Toronto, Ontario, M4Y 1Y5.



The first step is to dismantle the switches. All parts will be utilized with the exception of the five connector panels, cover plates and mounting bracket.

The inked-out portion of each lug is removed on the rear wafer of both switches. This can be accomplished with a Dremel tool

and a grit cutting wheel. Only the lugs on the front section of the switch should remain. Of course do this only if you are going to use them for a phasing control. If the rear lugs are not cut off, the grounding feature of the switch would automatically earth one half of the phasing harness and defeat the whole purpose.

Next remove the top portion of the cabinet and put it to one side. All parts mounting and wiring will be done on the bottom section. Drill or cut out nine holes to accept the coaxial jacks. Be certain to allow sufficient space between each hole to permit the mounting plates, to fit next to each other. Refer to the drawing of the jack and note a minimum of two diagonally opposite holes are required to attach them to the chassis. Drill these mounting holes after the center holes are cut. Using the jack as a template, the exact location can be determined.

Use a center to center measurement between the shafts of the switches of three and a half inches. You can increase the dimension to suit your cabinet, but no less, otherwise wiring will be difficult. After measuring and marking the front panel, drill two 3/8 inch holes to accept the shafts and threaded portion. You may have to enlarge each hole slightly to obtain a free fit. Drill a third hole to accommodate a DPDT switch with at least a 250 volt DC rating at 15 amps or higher.

Mount all three switches with the hardware. The ceramic ones will tend to turn slightly even though you have tightened the retaining nut. Don't worry, once the wiring is in place, there will be no movement on either switch.

Interconnections are made with either number 14 or 12 copper wire with all insulation

removed. Follow the coded wiring of the pictorial, connections to the various jacks can vary from the drawing. One word of caution, be certain to allow as much space as possible between the wiring of switches and jacks. If you don't and run power greater than a 100 watts, an arc-over will probably occur, and some disappointment.

Once this is finished the front knobs can be temporarily installed to permit the front panel to be lightly marked for switch position identification. Use dry transfer lettering and label the jacks on the back panel as well. When this is completed give each lettering sequence a coat of clear acrylic laquer or spray the entire back and front panel with the same solution to preserve the appearance.

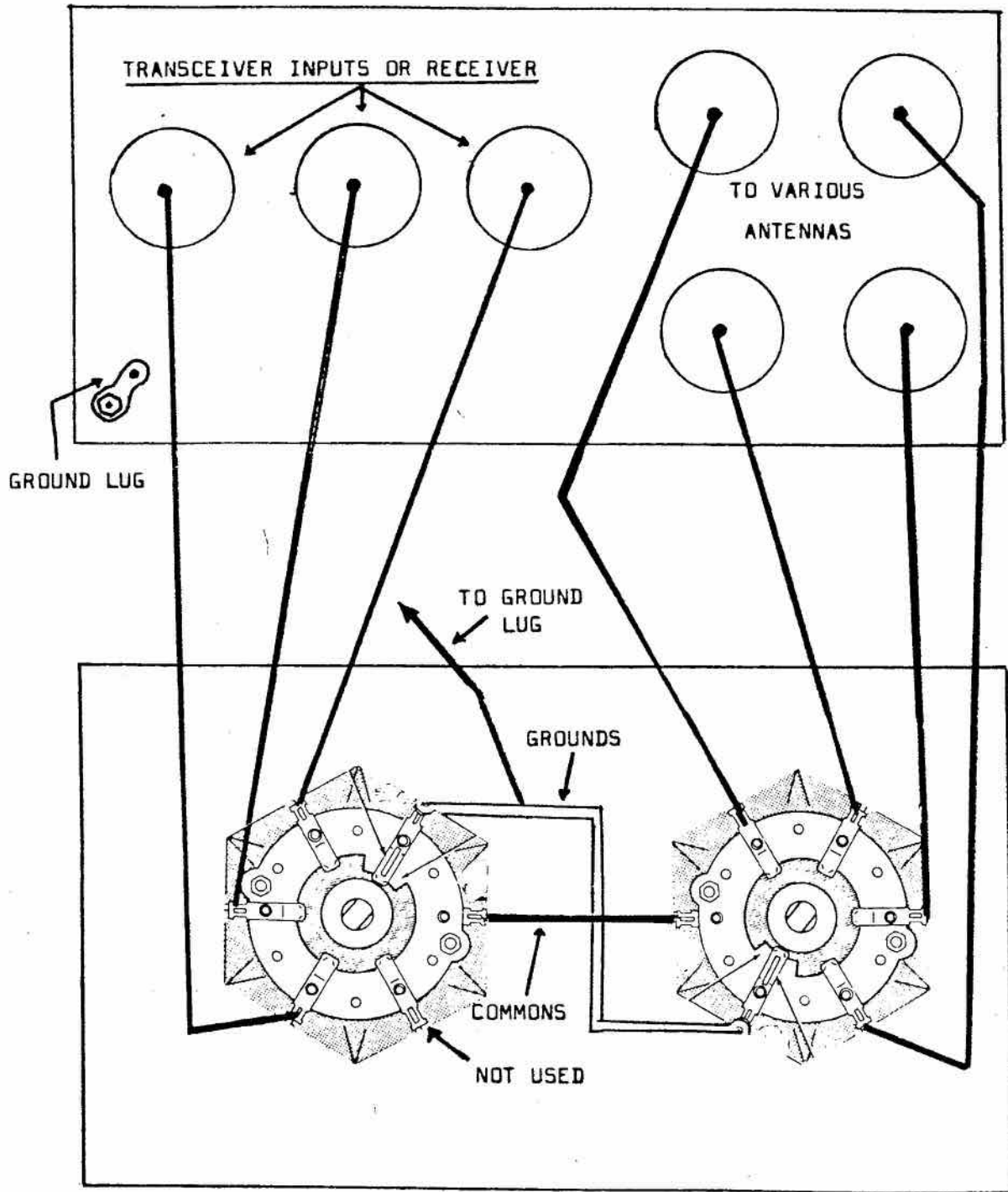
Again if you do not plan phasing, no modification is required, except to dismantle the switches and save the hardware for remounting. Only two internal connections are required between the coaxial switches. One between the "Common" lugs and also the two for grounding. All other joins are from the individual lugs to the jacks on the back panel. Two ground lugs are installed on both units as shown, one on the inner and outer face.

The same caution also applies here as previously mentioned, about spacing between all wiring and cabinet surfaces. Once all labelling of inputs and antennas is completed, and rear jack identification, coat all markings with clear acrylic laquer.

Solder ground leads to the ground lugs and attach to a suitable ground. Replace the top half of the cabinet. Screw all coax plugs into their respective sockets, sit the cabinet within comfortable reaching distance. Now sit back and admire your handiwork and the nice tidy appearance as well.

BACK PANEL

INSIDE VIEW



FRONT PANEL

INSIDE VIEW

15/10

20

20

15/10

L3

L3

L5

L5

15/10

20M

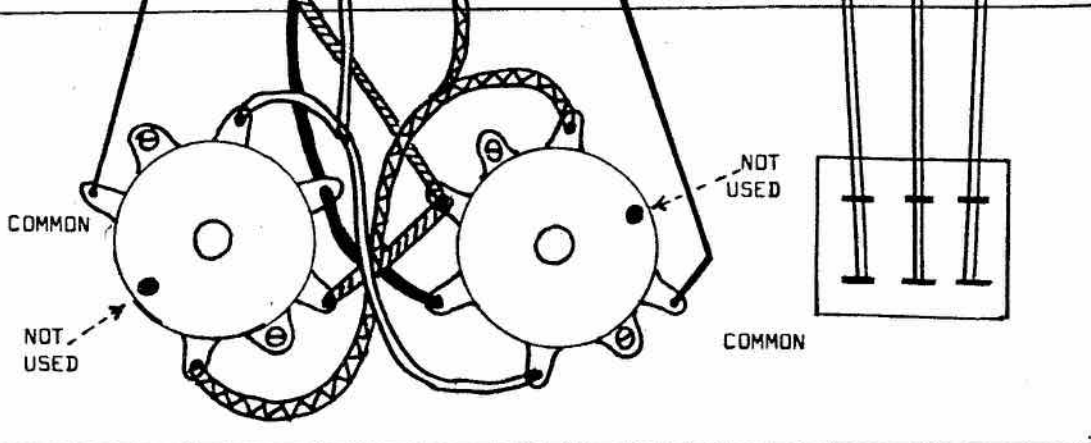
BACK
PANEL

TO ANTENNA "B"

TO ANTENNA "A"

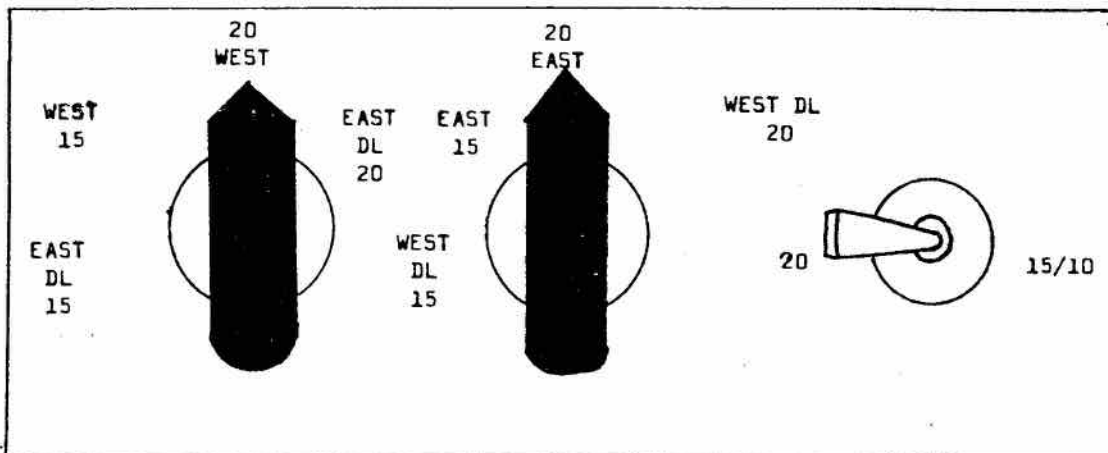
INPUT

GROUND
LUGS
BOTH
SIDES



FRONT

PANEL



TCA: Technical Section

Lightning Surge Protection

John Lester VE3BZT

Did you know that more Amateur radio stations are damaged by lightning-caused surges on their power lines than by direct strikes to their antenna systems? Statistics gathered over the years show that this is true. The electric power distribution systems in common use throughout Canada and the United States are overhead type. The conductors and the neutral wire are all insulated usually, and these metal wires form a giant web quite attractive to lightning.

A lightning strike on a power distribution line causes a surge of voltage and current at the point of strike. The surge moves away from the source, along the conductors, until it eventually fades to zero potential. The surge is delivered to the homes along its path as faithfully as the electric energy the customer expects. If the surge reaches an Amateur's home relatively unattenuated, and if the home wiring and radio equipment is not prepared for it, then damage can occur. Radio Amateurs can protect their homes and summer cottages and their radio stations from surge caused damage. This article will try to show how to protect one's own station and buildings from surge damage.

What is lightning? In the interests of brevity, I will answer this question as concisely as possible and refer my reader to the many studies available. Electrical energy flowing between the earth and overhead clouds is called lightning. Voltages reach the hundreds of millions of volts. Currents of tens of thousands of amperes have been calculated. The energy is in the form of a sort of alternating current as opposed to direct current. The lightning has a frequency range of from low frequency (LF) (3KHz) up to high frequency (HF) (30 MHz) in the radio frequency spectrum. A simple confirmation of this may be made by carefully monitoring the Amateur radio bands when a lightning storm is going on, and noting the marked drop-off of static above 14 MHz. The voltage and current peaks seldom occur at the same instant of time. The duration of the actual lightning strikes is measured in microseconds and milliseconds. The point to remember is that lightning is AC electrical energy at radio frequencies.

As seen by a lightning strike, a power line is a gigantic antenna system. The metal wires are

fastened to insulators that may withstand up to 100 KV DC or so even when wet, and this includes the neutral wire.

To maintain the neutral conductor at zero potential with respect to the public, it is standard practice to install ground rods at intervals connected to the neutral wire. In addition, it is also standard practice to require the customers to provide one or more ground rods at the point where the electric energy is delivered to their home. These ground rods are all that is provided as grounding that is useful in dissipating a lightning induced surge. In some areas of the United States where lightning is a severe problem, every pole is so grounded. In Ontario where lightning occurrence is relatively low, it is customary to ground only poles with step-down transformers on them. It is readily understood then that a considerable distance exists between grounded poles in rural Ontario.

What does a ground rod do? The purpose of the rods referred to above is to reach to the ground water table from the ground surface. These rods are usually $\frac{3}{4}$ " diameter and 10 feet in length. A piece of wire would

serve, but something easily driven by a sledgehammer is required.

Supposing the ground water is deeper than the ground rod reaches? In this case the grounding value of the rod may be reduced right down to zero, depending on the type of soil at that point. Clay soil contains a measure of water always and is composed partly of aluminum, so always has a low resistance. On the other hand, sand and gravel mixtures, being largely silica in Ontario, have a very high resistance in the absence of ground water.

Therefore, as seen by lightning, a power distribution line might be poorly grounded for considerable stretches to radio frequency energy, in rural Ontario.

In case those official lightning protective devices up on utility poles give you some comfort, I would point out one factor. The utility protects its equipment as best it can, but with one aim in mind; electric power should continue to serve the customer. Therefore, nearly all line surges will pass through the utility equipment to the customer's house. Since the surge voltage occurs at radio frequency, the utility step-down transformer is transparent to the surge.

For the few micro or milli seconds that a voltage surge exists which is caused by lightning, the power line may act like an antenna with gain characteristics. All of the features that produce effects like coupling, gain, directivity, act to amplify the effects of lightning induced surges. Such features may exist innocently on your power line. I give one here that causes a good deal of fun on rural lines. The feature is the gamma match.

When several buildings, cottages for example, require power, one transformer may be

installed, and a run of secondary line installed for two or three spans below the primary line from this one transformer, to pick up these customers. Such a secondary is resonant at some frequency, and its harmonics. A surge coming along the power line will pile up on the "matching section" and reflected power will result; the last customer on the secondary will get the full brunt of the surge. The results can be appalling at that building. This is only one simple example in a complex picture. Many puzzling activities of lightning on power lines can only be made sensible by applying radio antenna theory to the matter.

What harm is caused when a momentary surge enters a person's home via the electric system? Speaking generally, those devices which have a transformer or field coil of high impedance at 60 hertz may be burned out. The very fine wire is overstressed and opens up. Devices in which the house current is directly rectified by solid state diodes may lose the diodes. Without going further we have ruined a lot of television sets, electric clocks, hi-fi gear and Amateur gear transformer primaries. Many homes have relays and furnace controls and so on that may be voltage damaged as well.

The whole matter of surge damage rests upon whether or not the voltage surge has with it a tiny amount of current for the few microseconds involved. This is called the power factor. This phase relationship is highly variable, as my foregoing explanations should have indicated. It is entirely possible that in a medium sized house a severe voltage surge could enter, be reflected, go to ground, and destroy only an electric shaver, or whatever, simply because the appliance was located at the only point in the

building where the voltage and current came together at the same time to produce power.

Now, what does one do to protect one's home? The answer comes in two parts. The outside of the building must be treated; then the inside.

Outside treatment rests on a simple principle; ground at radio frequencies, and with as low an impedance as possible over the widest possible radio frequency spectrum. Let it be clearly understood at the outset that an electrical ground that provides personal safety at 60 hertz may be absolutely useless against lightning surges at radio frequencies. The most practical system of lightning grounding I know of is the buried radial wire arrangement. Radials operate independently from the deep ground water table, so may be used anywhere, even on bald rock. Radials may, and should be, of varying lengths, thus efficiently using up scrap wire.

So, install at least two sets of radials, one from the ground wire at the house entrance of the electric system, and a second from the ground rod at the base of the utility transformer pole that serves the house. Let's aim for 10 radials at each point, averaging 50 feet each. Burial should be about 4 inches in grass covered soil. Objects that prevent spading in should be avoided by circling around. A perfect radial pattern is seldom achieved, and is not important here. The cost of wire is of concern. Buy scrap wire from your power utility at scrap metal price. If you buy used rural wire, you get 6 lengths of heavy aluminum wire for every length you purchase. You have to unstrand it. Western Union joints serve well to join scrap pieces, and the price is right, nothing. Use any source of scrap bare copper or aluminum wire, to keep the cost down.

As well as putting in radials,

join up any and all the metal outdoor objects you have. Here I include well casings, fences, — any outdoor objects. As well, a grid of wire over a septic system or any wet ground nearby is of value. If the building is near open water, then a number of wires going to below the lowest water level of winter will give excellent grounding. Remember, the more wires, the more protection obtained. Remember also, even one buried wire is far better than none at all.

If possible, a continuous counterpoise should be installed. My own house is an example. The two neighbours, one each way from me, have their own individual transformer poles. So, by joining up the three poles in a row with a buried wire to the ground rods, a good length of counterpoise is created, and it begins protecting me a pole span each side of my house.

Television towers and Amateur radio towers should, of course, have their own radial systems in addition to their own ground rods. These systems should be joined to the new electric entrance systems. The foregoing grounding system, implemented to suit the householder's own situation, will provide a large measure of protection without further work. It is always good practice to tie grounding systems into the ground water if practical. Groundwater, be it under the earth, or visible as a lake or river, is the ultimate ground for our purpose. The difficulty for the average person is; how far down is it? In and around cities it is often down a good long way. In rural areas it is usually near the surface, but not always, and it is not always the same depth over the period of a year.

A survey of one's neighbours is necessary, with paper and pencil in hand. How far down is the well water? Do the power

men always have dry digging when setting poles? And so on. I know exactly where my ground water is because I tested and found out. Out by the power line, it is nine feet below the surface. Hence a standard 10 foot rod is two feet into the ground water table. The top of the rod is a foot under ground surface. I consider that only two feet of penetration into ground water is not enough, since in my area the table can and does go down periodically. I have, therefore, out of a twelve rod system, put eight of them down a further six feet by starting them from the bottom of the foundation hole for my house. If one wasn't digging holes at the time, the jointed rods answer the problem, so one may be driven right on top of another to give a 20 foot rod.

Remember, if your ground water table is beyond the reach of the ground rods, then it is a waste of money to put them in. Use radial wires instead. This completes your effort to offer lightning surges the lowest impedance path to ground outside your dwelling.

If, in spite of careful grounding, some surge energy gets into the house via the power line, then there are steps to take to minimize the effects as follows:

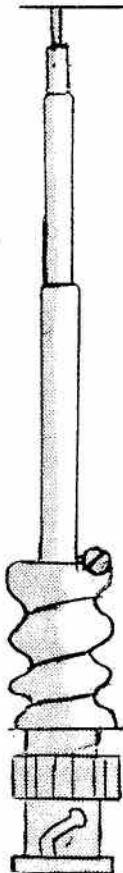
In nearly all electric power entrances, a piece of copper wire is run from the entrance box to either one or two ground rods just outside the house or cottage. Look for this piece of wire. If it runs on the inside of the dwelling anywhere before it exits, and runs over wood anywhere, then a fire hazard exists. Do not touch the existing wire. Obtain a new piece of copper wire of the same size, and run it on the outside of the building from the neutral (third power wire) right to the ground rods direct, thus paralleling the original. Use new additional clamps at both ends. This

procedure is not cheap, but can save your home from a fire. Carefully determine which is the neutral by following the grounded wire right from the pole transformer. If your dwelling seems to be not grounded as I describe, then have a man come from your power authority to help you check your house system. Your safety depends on this piece of wire.

Once the house has been grounded to your outside system, as just described, then a surge protector is added right at the house main power switch. Protectors are readily available from electrical supply houses. General Electric #9L15CCB007, called the Home Lightning Protector is the one to buy. Don't be put off if the number given to you is slightly different than the one above. The item is about two inches in diameter, two inches high, with a threaded portion so it can be mounted right on your service entrance box. Connect the wires as instructed, and your entire house system is protected.

In this era of complex and expensive Amateur equipment, a protector for your valuable power supply transformers is a good item to have. The old "brute force" filter, constructed in small size and mounted inside the power supply does a good job against surges. Two small coils of wire, four .005 mfd ceramic capacitors and a pair of mounting strips do the job. Coils close wound of #14 wire, at ¼" diameter and 1" long would do, or any similar shape to suit the container. Putting such a filter between your transformer primary and the house wiring makes a lot of sense. Remember that radio frequency grounding of your radio equipment becomes of primary importance after such a filter is installed.

I hope that these few thoughts will help fellow Amateurs to protect themselves.



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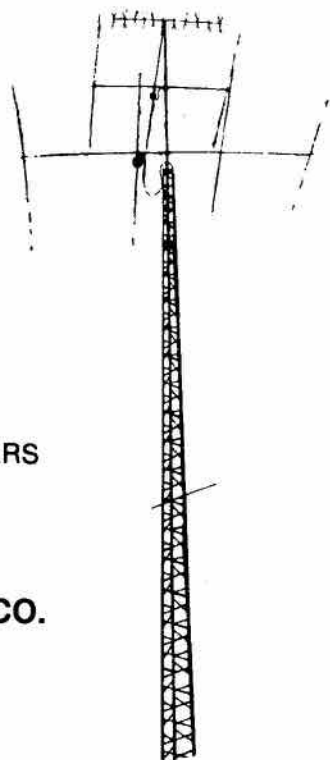
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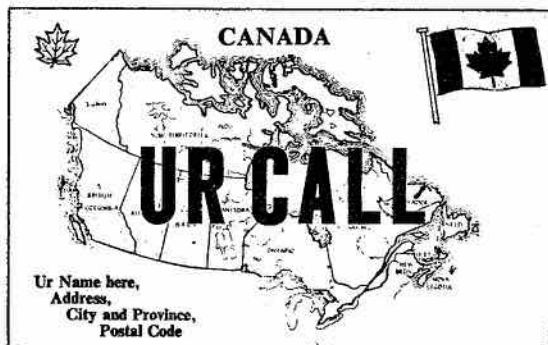
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QSL Cards

FEATURE OF THE MONTH



STYLE 4

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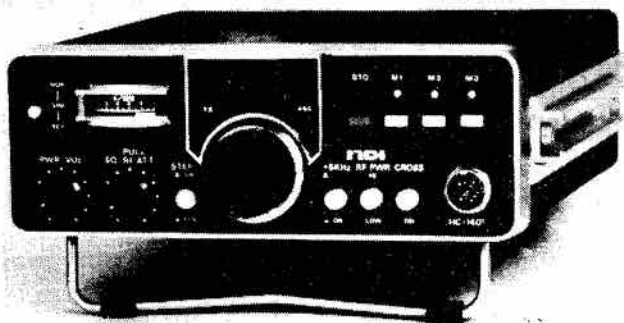
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Increases audio punch and average SSB output power, while suppressing sideband splatter.

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"N-W" switch allows selection of wide and narrow bandwidths. Wide CW and SSB bandwidths are the same. Optional YK-88C (500 Hz) or YK-88CN (270 Hz) filter may be installed for narrow CW.

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"N-W" switch allows selection of narrow SSB bandwidth to eliminate QRM, when optional YK-88SN (1.8 kHz) filter is installed. (CW filter may still be selected in CW mode.)

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Infosection

1981 Amateur Symposium

The 1981 National Symposium, sponsored by the Amateur Radio League of Manitoba, will be held on Saturday, May 23, 1981 in Winnipeg, Manitoba, preceded by an informal get-together and registration on the Friday evening in the Airliner Motor Hotel.

The Symposium will be conducted at the Red River College from 0830 to 1630 — Forums until 1230 with the Plenary Session commencing at 1400 hours. A listing of the Forums has been widely publicized and includes:

Amateur-type illegal operations;

Amateur examinations and procedures combined with an instructors' forum;

Amateur Emergency communications;

Increased Amateur use of the VHF/UHF spectrum.

Group rates have been obtained at the Airliner Motor Hotel at \$25⁰⁰ single and \$30⁰⁰ double occupancy plus a 5% Manitoba tax. The Registration fee is \$2⁰⁰ to cover the costs of coffee and donuts supplied during the event. A group booking has been obtained for the Saturday evening meal and floor show at the International Inn, a very popular entertainment spot. It promises to be a memorable weekend to those attending!

Please send advance registration and accommodation bookings to: The 1981 National Symposium

Committee, A.R.L.M., P.O. Box 475, Winnipeg, Manitoba R3C 2J3... *not to CARF!*

VE3AHU

TRC-24 DRAFT

DOC may have a draft of its new TRC-24 published in time for discussion at the CARF Symposium in Winnipeg on May 23. The discussions will be interesting and important to the future growth of Amateur Radio in Canada. Plan to attend. Registrations can be sent along with the \$2.00 fee to the Amateur Radio League of Manitoba, P.O. Box 475, Winnipeg, Manitoba R3C 2J3. You and your views on all aspects of Amateur radio in Canada will be most welcome.

Swap Shop

Single insertion is \$1.00 (minimum charge) for 10 words and \$1.00 for each additional 10 words. To renew, send copy and payment again. Deadline is first of month preceding publication (e.g. Jan. 1 for Feb. issue). Put your membership number and call (not counted) at the end of your ad. Print or type your ad and include your address with postal code. If using a phone number, include the area code. TCA accepts no responsibility for content or matters arising from ads. This feature is for use of members wishing to trade, buy or sell personal radio gear. It is not open to commercial advertising. Send to: TCA Swap Shop, Box 356, Kingston, Ont. K7L 4W2.

WANTED: Service Manual for Stark Model 1604 transistorized VOM. C. Pat Byers VE6AAN, 717 - 25th Ave. N.W., Calgary, Alta.

FOR SALE: One 20 metre, 3 element, 20 ft. boom homebrew. One 10/15 metre interlaced beam, 3 elements on 15 and 3 elements on 10, on 20 ft. boom, homebrew. One Mosley S402, 2 elements. One 2 metre 11 element Cushcraft beam. Gilles Bruyerc VE3HJY, Box 316, Embrun, Ontario K0A 1W0. Phone 613-443-3277.

FOR SALE: Yaesu FTV-901R, VHF-UHF Transverter with basic 144 MHz. New Condition. Will sell for \$450.00 or Trade for FT 101 series transceiver. D.H. Carter VE7FAA, 1716 Denman St., Victoria, B.C. V8R 1Y4. Phone 595-6680.

WANTED: Pre-1930 QST's; any radioamateur related old books, magazines, handbooks, callbooks, etc. Supply list, condition, prices. **FOR SALE:** Over 300 magazines, QST's, CQ's, 73's, others, 1924-1981. list/SASE. M. Gilles Parrot VE2OU, 2785 rue Valcourt, Ville de Sainte-Foy, Quebec G1W 1W2.

FOR SALE: Collins 75A4 Receiver, Serial 4035 with three mechanical filters and vernier. KWS-1 Transmitter. Speaker with case lumiline desk lamp and phone patch. 664 Desk microphone. Over 50 spare tubes in original cartons. A1 shape with factory modifications only. Complete \$1200.00. Murray W. Doull VE1EE, Box 3041, Sta. B, Saint John, N.B. E2M 4X7.



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WHAT IS CARF?

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

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

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BOARD OF DIRECTORS

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

- VE7BBQ Peter Driessen, 1946 York Ave., Apt. 203, Vancouver, B.C. V6J 1E3. 604-732-3298.
- VE6HO Jim McKenna, Box 703, Ft. McLeod, Alta., T0L 0Z0. 403-234-4068.
- VE3FON Marv Nash, 43 Bruce Farm Rd., Willowdale, Ont. M2H 1G4. 416-223-5544.
- VE3FTO Ed Sheffman, 182 Fenn Ave., Willowdale, Ont. M2P 1X9. 416-226-1701.
- VE2SY Lionel Bonhomme, 22 Cinq-Mars, Hull, Quebec J8Y 6B7. 819-771-4953.
- VO1NP Nate Penney, Box 10, Shoal Harbour, Nfld. A0C 2L0 709-466-2931.

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Iraq, Khmer Republic**, Libya, Somalia, Turkey, Viet-Nam, Peoples Democratic Republic of Yemen
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Note: As a general rule, DOC will consider licensed Amateurs of Commonwealth countries for reciprocal privileges in Canada if the other country does the same.

How to use the CARF QSL Service

The CARF Outgoing QSL Service will forward your QSL cards to anywhere in the world. This service is free to CARF members. If you send a lot of cards, a CARF membership will soon pay for itself in view of the high cost of postage when cards are mailed direct.

Please observe the following rules when using the CARF Outgoing QSL Service:

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

(For an explanation of QSL Bureaus in general, see the CARF Regulations Handbook chapter on QSLing.)

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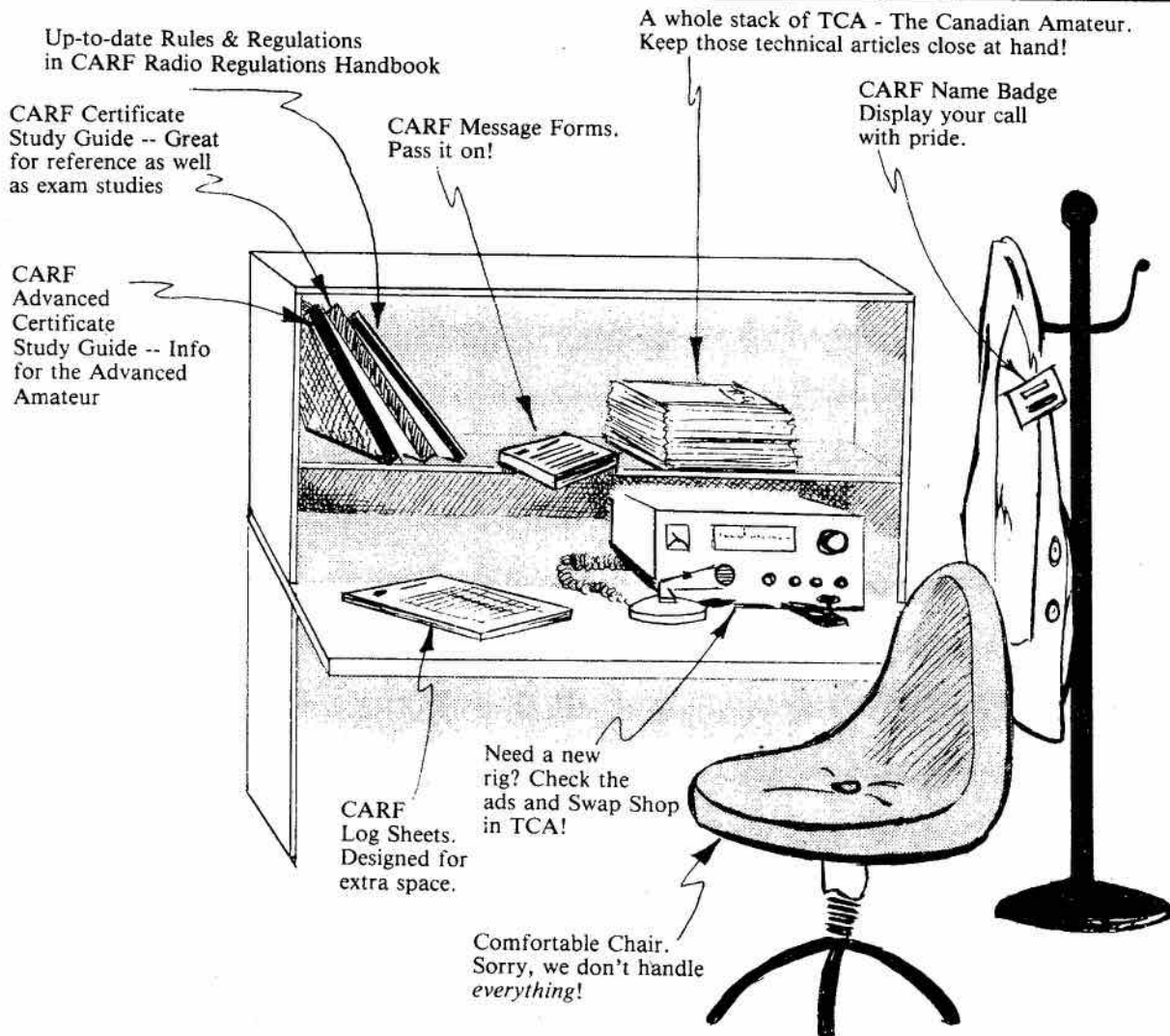
Le service d'envoi des cartes QSL de FRAC se charge de l'envoi de vos cartes QSL dans le monde entier. Ce service est gratuit à tous les membres de FRAC. Si vous envoyez beaucoup de cartes, les frais de votre souscription seront tôt récupérés dû au coût élevé du service postal quand les cartes sont expédiées directement.

Veillez observer les règles suivantes quand vous utilisez le service FRAC d'envoi des cartes QSL:

1. Classer les cartes (DX) alphabétiquement par préfixe
2. Classer les cartes canadiennes par ordre numérique de préfixe.
3. Veuillez placer les petites quantités de cartes dans des enveloppes en papier épais et bien scellées. Envelopper les grosses quantités de cartes avec précaution de préférence dans du carton. N'utilisez pas de brocheuse!
4. Veuillez adresser vos envois.
5. Ne Pas Recommander les envois de cartes. Cette pratique est plus dispendieuse et occasionne souvent des retards et par conséquent, n'est pas réellement nécessaire
6. Si vous désirez recevoir une preuve que FRAC a reçu votre envoi de carte QSL, veuillez inclure une enveloppe pré-adressée ou une carte postale avec timbre avec le mot 'Receipt' imprimé.
7. Si un colis était endommagé sur réception (très rare), FRAC vous fera parvenir une liste des cartes reçues de sorte que vous pourrez vérifier s'il y en a eu de perdues dans le courrier.

Traduisé par Jack VE2SF

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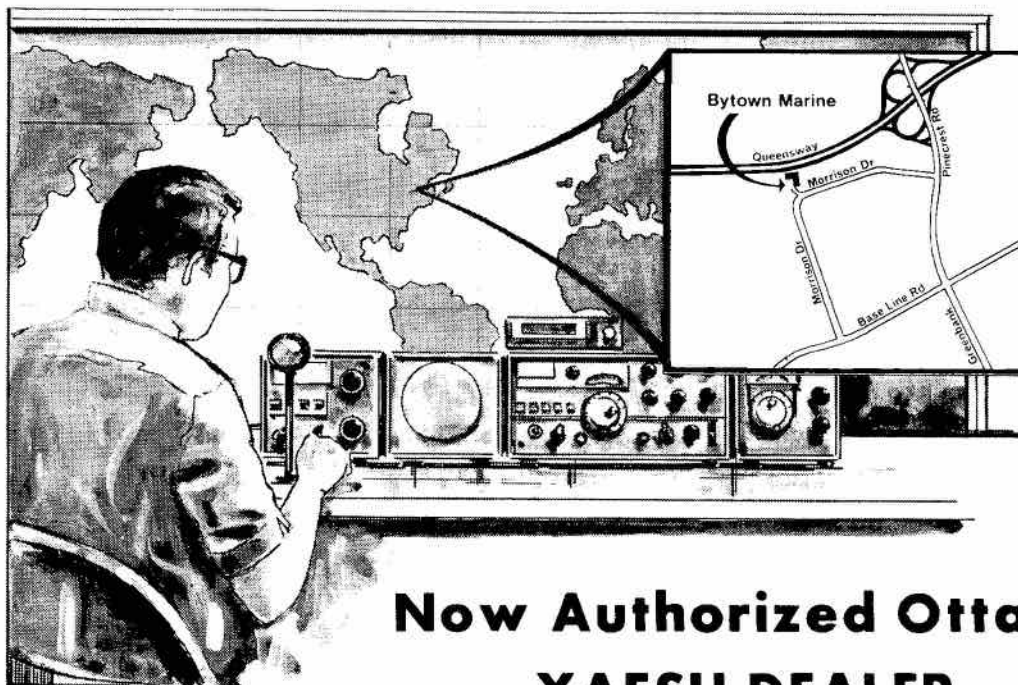
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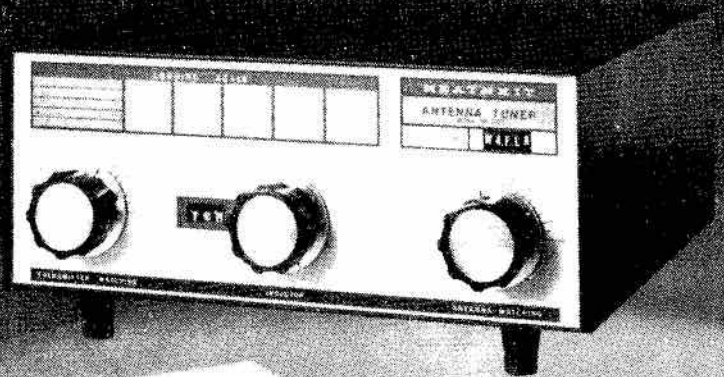


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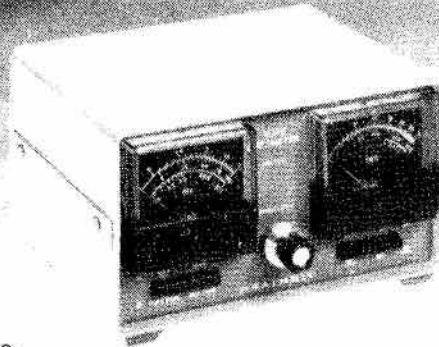
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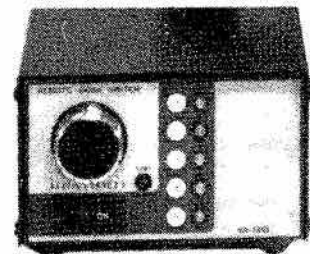
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