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The Canadian Amateur
Radio Magazine
La Revue des Radio
Amateurs Canadiens

DECEMBER 1986

Ravenscroft Fund over \$60,000

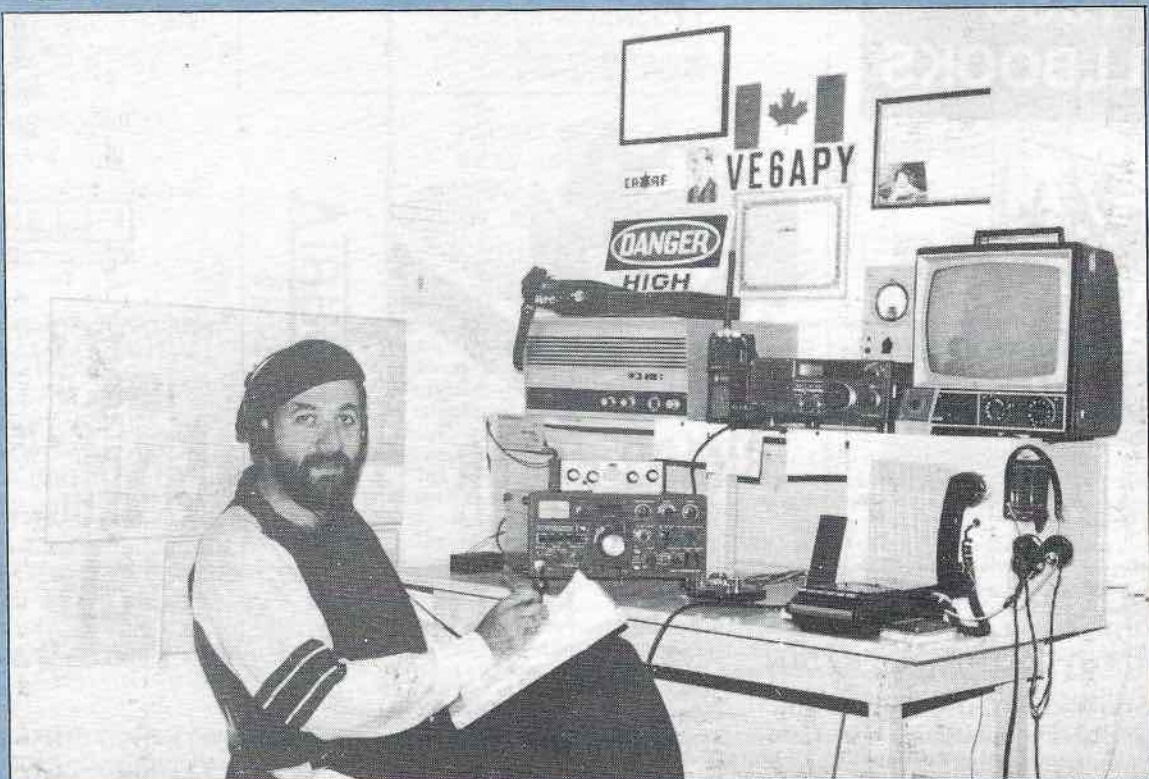
—Page 7

Outstanding Amateurs VE7US & VE7UR

—Page 10

Need Zone 2?

—Page 15



Canada Day contester VE6APY used this rig to garner 11,840 points last July 1.

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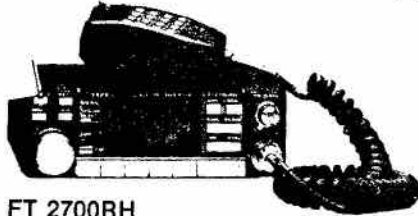
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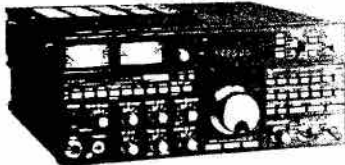


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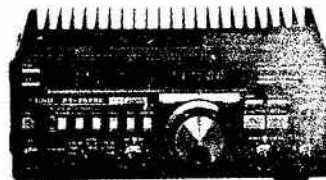
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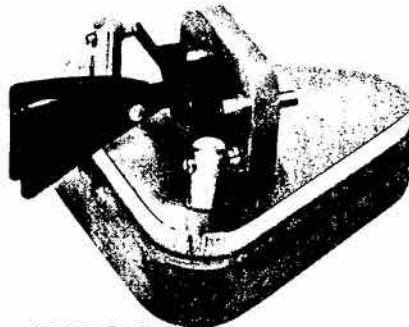


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Unsolicited articles, reviews, features, criticisms, photographs and essays are welcomed. Manuscripts should be legible and include the contributor's name and address. A signed article expresses the view of the author and not necessarily that of C.A.R.F.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

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WHAT IS ?

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

EDITORIAL

QUA 

When Icicles Hang

BY PAUL COOPER VE3JLP —

There is a depressing view out of my window this morning, a cold rain is slanting down as if to emphasise the fact that summer—such as it was—is really finished. If activities outside are becoming less attractive, we must turn our attention back inside and do a little planning to make the next six months of our hobby as much fun as possible.

More time in the shack seems one obvious answer. For those of us operating mostly on the HF bands, searching for that elusive quarry, DX, the winter months present a whole range of opportunities. We may, at this very time, be at the bottom of the sunspot cycle (although proof positive will not come for many months until the smoothed data is plotted and the shape of the curve becomes clear). While the slumping solar flux figures have certainly made HF communications pretty frustrating at times, it is surprising the openings that have popped up, relatively frequently, on a favorite band, 20 metres. I think it's fair to say now that conditions can only get better and the pundits tell us that the upswing of the cycle is normally quicker than the decline. So dust off that HF rig, check your antennas and start listening.

Winter is the ideal opportunity to get involved in another satisfying aspect of our hobby, home-brewing. Much has been written over the last 15 years of the decline in this art and the growth, in the Amateur community, of what are often disparagingly referred to as 'Appliance Operators.'

It is not true that this very large

group of our fellow Amateurs is somehow inferior to those rugged individuals of yesteryear who built everything from scratch. Our hobby is nothing if not dynamic, with new techniques and systems appearing almost monthly, and if there is one common denominator to these developments it is increasingly complex circuitry.

It is simply not reasonable to expect the average Amateur to attempt to build from scratch a modern HF or VHF transceiver or a TNC. However there is a wide range of accessories which we all use in our shacks, which are well within the capabilities of the average Amateur: useful things like a transmatch, which is particularly handy for those of us with solid state finals in our rigs, an SWR bridge, or, what about an electronic keyer, with memory if you like? None of these is very complicated to build and you may even be able to find kits of parts to make the whole exercise more painless. The low power field is a particularly fertile area for home brewing with a wealth of information available on simple-to-build transmitters and receivers. There is no satisfaction to equal that which comes from building something oneself, remember that old saying about 'Man is a building animal'?

So there we are, there is no excuse for winter depressions... of the human kind anyway... Get out your soldering iron, leave your receiver monitoring a favorite band and have an enjoyable hibernation!

TCA welcomes contributions to this column of opinion.

LETTERS

BOUQUET

Despite the fact that I have been a licensed Amateur for almost two years and a member of CARF for almost the same period of time, this is my first letter to the Federation's magazine. Let me begin by reiterating the praise of many before me: TCA magazine is a quality product which I enjoy to Nth degree every month. Although I do not find a great deal of time in which to pursue the hobby, I immensely enjoy the few hours a month in which I do. In fact, I probably spend about 20 hours a week computer hacking and maybe ten hours a month with radio. Presently I am boning up for the Advanced Amateur exam, and one of my main frustrations has been in locating local hams for help, but thanks to a newsletter received from the Mississauga Amateur Radio Club this problem should be resolved.

With regard to recent Jack Ravenscroft case, it would be perhaps advantageous to bring this situation more to attention of the public by setting up shopping mall displays on busy weekends, and inserting announcements on cable TV (usually a free public service)— you would be surprised just how much exposure is possible through this medium.

Keep up the excellent technical articles (especially computer material!) and I hope in the future I can be more active in this great hobby.

Mike Hill VE3OYM

TO DO

The Nanaimo Amateur Radio Association is greatly concerned over the implications of the conviction in the 'Jack Ravenscroft case'.

It appears to us that while your department gave Mr. Ravenscroft a clean bill of health as far as his station was concerned, it is our understanding that you did not appear in Court on his behalf. And, as far as we have been able to determine, your Department has not taken any action in regard to this conviction.

If a civil court can rule a legally licensed Amateur off the air, presumably the same court could rule any other DOC licensed station off the air as well— whether it is another Amateur Station, or a Commercial or Government or Military Station.

At this point, we question what validity our station licences have, if any?

It is our understanding that Mr. Ravenscroft is going to appeal his conviction at great personal cost,

although there has been some financial support from individuals and radio clubs across Canada.

We feel that this is a great injustice, and that the problem really lies with the Government of Canada and your Department in particular.

We believe that if this issue is to be fought in the courts, then your Department should be leading the fight, not Mr. Ravenscroft. This is an issue that concerns every licensed Radio Station in Canada, certainly not just one individual.

We would further suggest that instead of fighting lengthy and costly legal battles in the courts, whatever new legislation may be required should be proceeded with at once. New legislation should clearly define your department as having the final say and authority over such Radio Interference matters.

We sincerely hope and trust that your Department will proceed with all speed and diligence in this matter.

We eagerly await your reply.

Yours very truly,
Nanaimo Amateur
Radio Association

SPREAD THE WORD

We radio Amateurs are supposed to be proficient in communicating. Radio signals via satellites, earth-moon-earth, packet, CW, SSB, the works. These are signals which may, or may not, carry useful information. A case in point: today I had a three-way QSO on 2-metre mobile and the other two hams had only vaguely heard of the Ravenscroft case. Further, neither were members of CARF and so did not get the magazine. They were unaware of the significance of this case and how it might set a legal precedent whereby any radio Amateur could be forced to shut down if somebody brought them into court.

What can we do? We can spread the gospel in all our QSO's. Forget the weather and the antenna. Here is an issue which goes to the very roots of Amateur radio operating. Talk it up for the benefit of the hams who do not belong to CARF. Radio clubs should do some fund-raising— likewise flea-markets. There are over 22,000 radio hams in Canada.

At ten dollars per ham, this is \$220,000 to help in fighting this court case. Is your hobby worth ten dollars? How about ten dollars per year? This might seem ridiculous, but I for one, would be more than willing to continue feeding a quarter of a million

SILENT KEYS

O. R. Smith VE3JUD. My husband passed away earlier in this year. Your valuable magazine was very much appreciated, believe me.— G.L. Smith

Mildred Graham VE3GTI became a silent key October 9.

Stephen Cylka VE3BKF became a silent key October 10.

dollars per year to hassle this case in the courts.

Write to your MP, also the DOC and the Minister of Communications. Better still— if you can get a small delegation together, make an appointment with your local MP at his office in your town.

In the 1940's and 50's we had a proliferation of AC/DC sets for broadcast listening on the AM bands. Cut to the bone and in plastic boxes they were a substitute for the electric chair. They were also very prone to RF pickup due to cheap design. The problem could be eliminated by soldering in a ten-cent mica capacitor but the manufacturers would not do it. Now we have transistorized equipment which is much worse for pick-up in most cases.

Junction transistors inherently behave like diodes and are easily overloaded. Wander through our department stores and gaze on this electronic junk from the Far East. Plastic boxes with no shielding whatsoever. Radio Amateurs can expect increasing numbers of complaints from these unsuspecting purchasers. It may be a tape recorder, cheap B&W TV, 'High-Fidelity' special at cut-rate prices.

We exported employment from Canada to the Far East as a result of Government policy. The least we should expect from the Federal Government are regulations which require this imported junk to have a level of immunity to Radio Frequency Interference (RFI) in many cases this would only involve a copper foil shield in the plastic box and RF bypassing and filtering at the appropriate input and output connections.

The Ravenscroft case is expected to come up for APPEAL in the Spring of 1987. Let all radio Amateurs get behind this case and help especially in the financing or lobbying in the coming months— especially the hams who recently purchased FTone's.

73, H.H. Wood VE2JD

COUNT YOUR BLESSINGS, VE!

I'm Marian, until recently OK3CAW and also a member of OK3KII Radio Club in Bratislava.

I've come to my new homeland CANADA just a few months ago, July 23, 1986. I'd like to write down just a few sentences about radio Amateurs in Czechoslovakia.

I said to myself that I would not apply for a licence here, in Canada, until I speak English well, and also I don't have enough money for a rig yet. Anyway I've obtained some information on how to get a licence here. It's much, much easier than in OK-land. Really, Ham radio is more accessible for everybody here.

In Czechoslovakia the process of obtaining a licence is very long. Who wants to have his own OK1, OK2 or OK3 callsign first must become a member of ZVAZARM (Union for Cooperation with Army). The ZVAZARM also directs activity of radio clubs. Then it is necessary to pass a 'RO' (Radio Operator) examination. It consists of five subjects: Morse test, radio engineering, operational proficiency (Q-codes, prefixes...), Amateur radio services regulations and politics.

Who passed the 'RO' examinations have to wait a few weeks (months) for a certificate. Who has this 'RO' certificate is allowed to operate ham radio station in a radio club if there is another operator who has a licence or already passed an 'SO' (Independent Operator) examination. The 'RO' operator who would like to obtain his own licence has to make a prescribed number of QSO's and after a few months is allowed to sit for another examination. (So-called 'SO' or 'OK'

examination), again five subjects but more difficult. After writing these examinations the usual waiting time is one year. If everything is OK after this one year there is one more new lucky holder of a licence in Czechoslovakia.

I waited three years and I know one YL (now XYL) in OK3 who waited almost five years! but that's just the waiting time for a licence after the last examination. The whole process is longer.

I obtained my OK3CAW licence in July 15, 1984 but I had been a member of a radio club since Fall 1978. (First as a member of OK3KJF and then as one of OK3KII contest team).

The examinations are not easy. For the highest 'A' class knowledge is needed of, for example, every prefix of the DXCC list, and three minutes Morse test at 120 characters per minute.

There are four operator classes in Czechoslovakia A, B, C and D. The last one is only for 144 MHz and up. The other classes are also for shortwave. The 'C' class is for beginners and also not for each SW band. Just 1750-1950, 3520-3600 and 28100-28200 MHz and just CW on shortwave. The 'C' class Morse test is 50 characters per minute.

The classes 'A' and 'B' are for every band. The only difference is that the operator who has class 'A' is allowed to use 500 watt input power and the 'B' is allowed 150 watts.

73, Marion Hlavac
ex OK3CAW, Edmonton

Samuel F.B. Morse in 1844 probably would have been accepted as an Amateur operator years before radio when he tied his study room to the telegraph lines running by his house (now a museum) in Poughkeepsie, N.Y. With the telegraph he was able to keep in touch with worldwide friends simply by the wirechief patching him into other lines and the transatlantic cable.

Since 1983, two Dutch Amateurs PA0BFN (Rinus) and PA3ALM (Dick) have been publishing a quarterly journal in the Dutch language for Morse enthusiasts. In 1985 a simple 44 page English version was issued using 14 contributions from eight countries. My copy, in a very attractive cover, was indeed quite interesting reading and showed considerable effort on the part of both editor and authors. Expansion is foreseen so British writer and radio Amateur Tony Smith G4FAI has joined the editorial team as English language editor so that this version will be available soon, quarterly.

Canadian may subscribe for one year (four issues) using a bank money order payable to Morsum Magnificat for £6 sterling and sent to: G4FAI Tony Smith, 1 Tash Place, London, England N11 1PA.

The intention is to bring together the worldwide story of Morse as everyone experienced it from early days to the present. Material about Morse in your life can be sent to Tony direct or via VE6BLY whichever is more convenient. Send along your personal experiences, anecdotes and adventures not normally found in popular magazines today, with illustrations and/or photos.

73, Moe Lynn VE6BLY,
10644-146 Street,
Edmonton, Alta T5N 3A7

EDITOR'S NOTE

Here's the December TCA again, how time flies! This year, anyway, I have a homebrew tiltover mast, and a homebrew 15 metre beam on top, ready for the improving DX of the new year. Yes, the most beautiful thing I saw recently was the first sunspot of the new cycle traverse the sun's northern face.

So Merry Christmas, successful Canada Contest, and Happy New Year. May the sunspot numbers rocket! —Editor

MOVING?

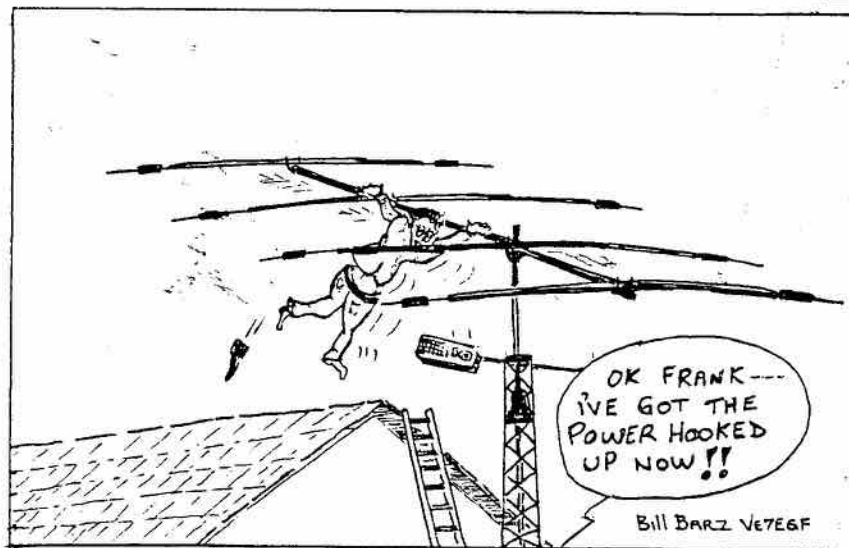
If you're moving, please let Debbie know your new address. Write her at P.O. Box 356, Kingston, Ont. K7L 4W2.

JRSD FUND

If you haven't done so yet, please write your MP about Ravenscroft and make a donation— 1% of the value of your rig seems fair— to the JRSD Fund, Box 8873, Ottawa K1G 3J2.

MORSUM MAGNIFICAT

How would one qualify in a QRP contest if you were using a telegraph sounder powered by two flashlight batteries?



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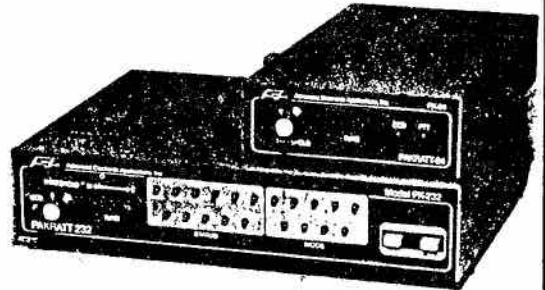
WHICH OTHER HT CAN:
MEMORIZE 2 PHONE NUMBERS
TELL THE TIME (24hr CLOCK)
RUN ON 12VDC, ETC., ETC.

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Frequency Range	142.000 to 150.995 MHz
Type of Emission	F3
Memory Channels	10 Channels
Antenna Impedance	50 ohms
Power Source	9.5V NiCd battery pack 9V Dry battery pack D.C. 8-16V
Transmitter	
RF Output Power	5.0 Watts (H), nominal at 12V 3.5 Watts (H), nominal at 10.5V 0.5 Watts (L), nominal at 10.5V
Modulation	Frequency modulation
Maximum Deviation	± 5 KHz
Transmit Spurious	± 60 dB
Microphone	Electret Condenser Microphone
Receiver	
Receiving Methods	Double superheterodyne
IF	1st 18.95KHz 2nd 455KHz
Sensitivity	Less than -0.25µV at 12dB SINAD
Band Width	± 7.5 KHz at 60dB down
Selectivity	± 15 KHz at 60dB down
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First, A Good Idea

The idea behind the Pakratt is very simple. One controller that does Morse, Baudot, ASCII, AMTOR, and Packet, and works both HF and VHF bands. Of course the decoding, protocol, and signal processing software must be included in the unit, and connection to the computer and transceiver have to be easy. The unit also has to be small and require only 12 volts, so it will work both in the shack and on the road.

Second, Computer Compatible

It doesn't matter what kind of computer you have, we have a Pakratt for you. The PK-64 works with the popular Commodore 64 or 128, and the PK-232 works with any other computer or terminal that has an RS-232 serial port. The PK-64 doesn't require any additional programs. Simply connect to the computer and transceiver and you're on the air. The PK-232 needs a terminal or modem program for your computer. The one you're using with your telephone modem will work just fine.

Third, Performance and Features

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PACKET CONTROLLERS and Accessories:

A.E.A. PK-232 \$559; PK-64A \$459; PK-64 \$369; PK-80 \$369; PM-1 \$299; HFM-64 \$169
KANTRONICS KPC-2400 \$559; KAM \$559; KPC-2 \$289 Modem-2400 \$259
M.F.J.-1270 \$249. Extra 5 pin cable \$12



FM-240
\$449.00

Specifications KDK FM-240 (and FM-740)

General	
Supply Voltage	13.8V ± 15%, negative ground
Consumption	Transmit 1.5W at 5w, 3.5W at 25w Receive 4A at 3.5w, 6A at 7.5w max output -10 deg. C to 60 deg. C
Temp. Range	-10 deg. C to 60 deg. C
Dimensions	40H x 140W x 170D mm (Body only)
Weight	1.0Kg (Body only)
Transmitter	
Freq. Range	FM 240 142.000 - 150.00 MHz FM 740 440.00 - 449.975 MHz
Output	High = 25 watts (H), Low = 5 watts (L) High = top (Low = 1W) (FM 740 High = Low)
Modulation	Variable reactance frequency modulation
Max. Deviation	± 5KHz
Spur. Emiss.	More than 60dB down from carrier
Duplex Offset	Programmable ± 1 to 12.7MHz (set at ± 6KHz ex factory)
Tone	
	Programmable 74.250/134 EIA tones Encode and Decode
Receiver	
Int. Freq.	1st = 10.7MHz, 2nd = 455KHz (1st/2nd 4MHz 2nd 455KHz)
Sensitivity	Better than 12dB SINAD at 2µV
Squench Sens.	Better than 15µV
Bandwidth	± 6KHz @ ± 60dB
Selectivity	± 12.5KHz @ ± 60dB
Image Ratio	Better than 70dB
Audio Output	More than 2w, 8 ohms load, 10% THD
Standard Accessories	
Speaker Microphone	Speaker = 8 ohms, Mike = Condenser type
SM 3A	UP/DOWN plus tone encoder
2 meters	with 7A fuse

- Superior features, simpler to use for 2 meters, MARS, CAP
- Compact size for better fit in today's automobile
- 16 fully programmable memory channels, plus priority call channel
- 2 VFOs for today's user
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with TouchTone Speaker Mike
Voice Synth. \$59



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DOC News

Ravenscroft Appeal

The trial transcript has still not been made available to the law firm of Borden-Elliott, Toronto. This firm is acting for VE3SR in his appeal from the permanent injunction placed against him by a judge from the County Court in Ottawa last January. It seems it is not uncommon to wait 7-8 months to obtain transcripts from the Court because the Court Recorder is responsible for typing the transcript on his/her own time i.e. after hours.

Until such time as the transcript is available nothing can happen to complete the Appeal documents. The rest of the appeal response procedure and setting of Appeal hearing will also be delayed. Too bad the interest on the defendant's damages cannot similarly be held in suspension.

The decision obtained through the Ontario Court of Appeal need not be final. It has been explained that Parliament has ultimate power in resolving the outcome of this case—should this be necessary. This is, perhaps the reason why DOC have been keeping abreast of developments while they have no mandate whatsoever, in law, to become implicated. In the event the Appeal Judges find fault with the administration of the Minister's powers, in this case, it would seem a wise move on the part of DOC. You may recall the 'Reasons for Judgement,' handed down by Judge Hollinger were quite specific in citing the lack of action taken by the Minister.

The JRSD Fund will be undergoing an audit by the time this is received. To answer questions which are continually raised, here are the unaudited figures at closing of books, at the end of September:

Total U.S. Donations to date	
.....	\$5,783.10
Total Canadian Donations to date	
.....	\$54,557.98
Total legal expenses to date	
.....	\$24,424.40
Total operating expenses to date	
.....	\$388.72
(including returned cheques)	
Total expenses	\$24,813.12
Difference	\$29,744.86

Note: the difference amount represents the Canadian funds bank total. It is planned to transfer \$5,500 from the U.S. Funds account to the Canadian Account after the audit.

Concerned Amateurs who want to ensure incidents due to lack of immunity

in electronic appliances or industrial control equipment are properly recorded and brought to the attention of the DOC, Radio Advisory Board and Manufacturers are asked to forward the following details to: Ralph Cameron VE3BBM, 30 St. Remy Drive, Nepean, Ontario K2J 1A3.

Immunity Incident— Make/Model-incident-date-call sign. Additional details if possible. Advise if property loss or potential danger exists or existed.

— VE3BBM

Minister
of Consumer
and Corporate Affairs



Ministre
de la Consommation
et des Corporations

Dr. Bruce Halliday, M.P.
Room 348, West Block
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Bruce:

Thank you for your letter of August 20, 1986 regarding your constituent, Mr. William K. Atcheson's concern about radio interference with consumer electrical products.

I have received letters from a number of Canadian amateur radio operators on this same issue, and I have indicated to them that, in my view, the issue is primarily one of broadcasting and therefore within the responsibility of the Minister of Communications, the Honourable Flora MacDonald. I note that you have brought this matter to her attention and I expect that you will be hearing from her shortly.

In your letter, you raise the question of setting standards for consumer electrical products as a matter under my jurisdiction. This is not so in any clear-cut manner. I have asked the appropriate officials in my Department to look into this rather complex matter, and I shall inform you as soon as possible of the results of their study.

I am sorry I cannot be of more assistance to you. In any case, I would like to thank you for bringing this matter to my attention.

Yours sincerely,

Harvie Andre

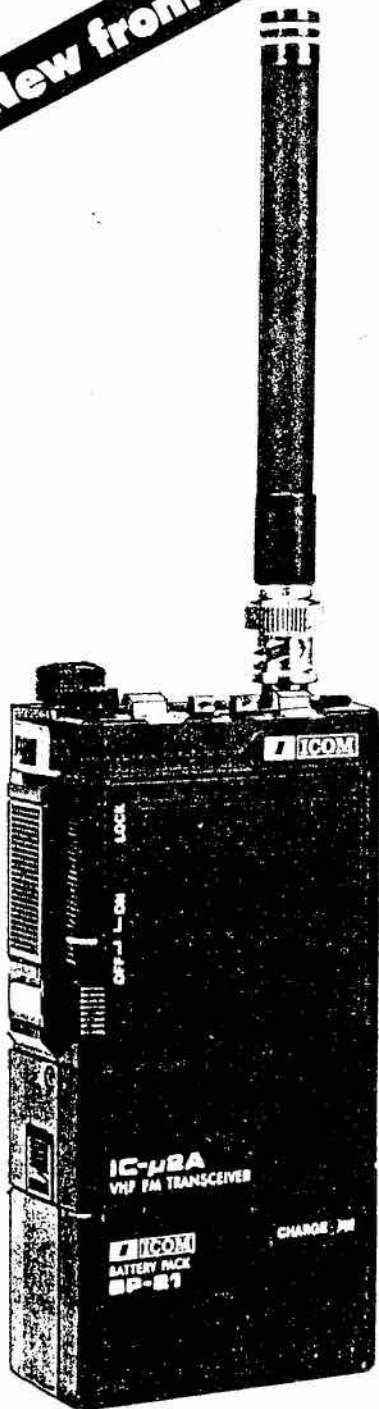
c.c.: The Honourable Flora MacDonald, P.C., M.P.
Minister of Communications

House of Commons Chambre des communes
Ottawa, Canada K1A 0A6

New from ICOM

IC- μ 2A/T

2-Meter Handheld



SPECIFICATIONS

GENERAL

Frequency Range:	140.000-163.000MHz
Antenna Impedance:	50 ohms
Frequency Stability:	±15ppm (-10° to +60°C)
Memory Channels:	10
Frequency Resolution:	5kHz
Power Supply:	7.2V - 13.8V DC
Polarity:	Negative GND
Current Drain:	
Standby	23mA
High	550mA
Low	220mA
Size:	2.3"W x 5.6"H x 1.1"D
Weight:	8 oz.
Operating Temperature:	-10° to +60°C

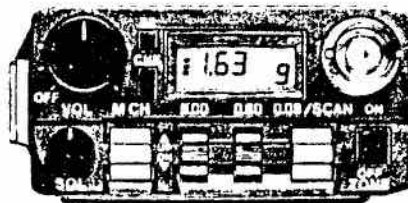
TRANSMITTER

Output Power:	High: 1W (25W opt.); Low: 0.1W
Modulation:	FM: Variable reactance modulation
Max. Deviation:	± 5.0kHz
Spurious Emissions:	-60dB
Microphone Impedance:	600ohm electret
Operating Mode:	Simplex and duplex
Subaudible Tones:	32 tones built-in

RECEIVER

Sensitivity:	FM 12dB SINAD -12dBu (0.25μV)
Squelch Sensitivity:	FM Threshold -20dBu (0.1μV)
	FM Tight -12dBu (0.25μV)
Selectivity:	± 7.5kHz
Spurious & Image Rejection:	60dB
Audio Output:	0.25W (8ohms @ 10% distortion)
AF Output Impedance:	8 ohms
Receiving System:	Double conversion superheterodyne
IF Frequencies:	16.9MHz; 455kHz

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First, A Good Idea

The idea behind the Pakratt is very simple. One controller that does Morse, Baudot, ASCII, AMTOR, and Packet, and works both HF and VHF bands. Of course the decoding, protocol, and signal processing software must be included in the unit, and connection to the computer and transceiver have to be easy. The unit also has to be small and require only 12 volts, so it will work both in the shack and on the road.

Second, Computer Compatible

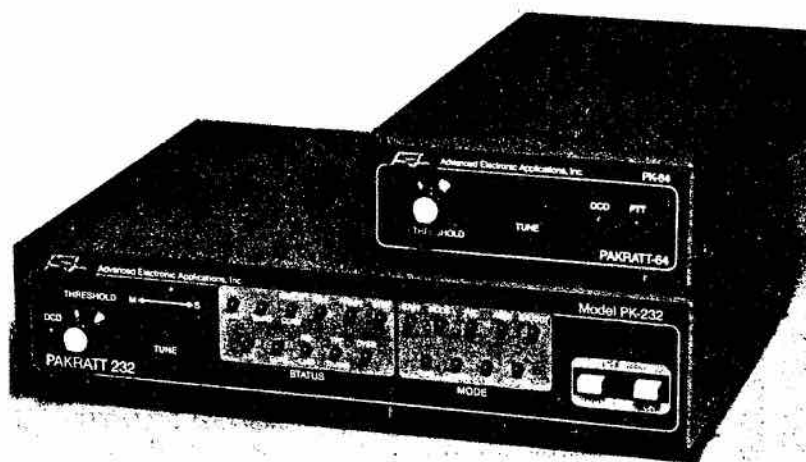
It doesn't matter what kind of computer you have, we have a Pakratt for you. The PK-64 works with the popular Commodore 64 or 128, and the PK-232 works with any other computer or terminal that has an RS-232 serial port. The PK-64 doesn't require any additional programs. Simply connect to the computer and transceiver and you're on the air. The PK-232 needs a terminal or modem program for your computer. The one you're using with your telephone modem will work just fine.

Fourth, AEA Quality and Price

Not many manufacturers like to discuss quality and price at the same time. AEA thinks you want high quality and low price in any product you buy, so that's what you get with the Pakratts. Ask any friend who owns AEA gear about our quality. The people who buy our products are our best salespeople. As for price, the PK-64 costs \$369.95, or \$539.95 with the HF option. The PK-64A, an enhanced software unit with a longer flexible computer cable, costs \$449.95 or \$619.95 with the HF option. The PK-232 costs \$539.95 with the HF modem included. All prices are Amateur Net and available from your favorite amateur radio dealer. For more information contact your local dealer or:

Prices and specifications subject to change without notice or obligation.

PAKRATT™ Model PK-64



PAKRATT™ Model PK-232

Third, Performance and Features

The real measure of any data controller is what kind of on-air performance it gives. While the PK-64 and PK-232 use different types of modems, both give excellent performance on VHF. The optional HF modem of the PK-64 uses independent four-pole Chebyshev filters for both Mark and Space tones, and A.M. detection. The HF option can be factory or field installed.

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Over 50 years with Amateur Radio

BY J.F. HOPWOOD

VE7AHB

Wilf and Rae Moorhouse, VE7US and VE7UR (pictured here), of Nanaimo B.C., not only celebrate 50 years as OM and XYL, but a lifelong love affair with ham radio. With 7UR at his side, Wilf's contribution and dedication to Amateur radio has spanned 56 years of operating, organizing and experimenting from many B.C. QTH's. The history of Amateur Radio in British Columbia would not be complete without the story of 7US and 7UR.

Wilf obtained his Amateur operator's certificate in 1930, but depression days delayed his station licence until 1934 when he started as VESAK. He received a change of call to VESUS in 1935 and became VE7US with the change of district 5 to 7 after World War II. VE7US has been very active from VE7-land ever since.

He was active with the B.C. 5 o'clock round-up at first on 160 metres during the 1930's and at 3850 kHz during the late 40's. Among his archives is a tape of net control Ed Brooks ex VE7BJ, Knobby Clark ex VE7AAZ, Barney Ashten ex VE7BK, Chris Brown ex VE7CB, Clarence Ferris ex VE7PO and Ernie Savage VE7FB, plus a host of silent keys now resting peacefully in ham valhalla.

Wilf and Rae were married in 1936. Their son Sydney was born in 1937. They have two grandchildren. Between 1935 and 1941 Wilf worked in Quesnel and Wells B.C. where among other jobs, he installed and maintained a radio link to help control a power dam water gate for the local power and light company.

Then began a long career as a movie projectionist for Famous Players and Odeon theatres, living in Chilliwack, Penticton, Vancouver, Trail, Victoria and Nanaimo from 1941 to 1972. Working evenings as a projectionist meant he spent most of his time on-the-air during the late night hours. He retired in Nanaimo in 1982.

Over the years, he was often in the forefront of Amateur radio emergency communications. A 1965 ARRL Public Service Award for meritorious emergency communications service was recognition of his effort during a disastrous landslide at Ocean Falls, B.C. He recalls the devastating B.C. Flood year of 1948 when many communities relied wholly on ham radio for days on end.

From his QTH at Penticton in 1948, he provided communications for C.P.



Rae and Wilf in their shack.

Rail dispatchers to keep passenger trains moving when all other telecommunication links were out. Later that same year he helped arrange air flights to Vancouver for rail passengers stranded by a landslide in a mountainous area of B.C.

These experiences proved valuable when he helped to organize and coordinate the first B.C. Amateur Radio Emergency Corps (AREC), which was the forerunner of the Present B.C. Public Service net. Many hours were spent with Civil Defence, R.C.M.P. and Red Cross officials to ensure Amateurs were ready and available for any emergency.

Wilf was president of the Penticton Amateur Radio Club in 1949. After moving to Vancouver and then to Nanaimo in 1952, he served a brief stint as ARRL Section Communications Manager for B.C. Today, he serves as treasurer for the Vancouver Island Senior Citizens Amateur Radio Repeater Association who operate VE7ISC at Nanaimo on 146.04/.64.

The introduction of SSB around 1950 challenged Wilf and many of his colleagues such as Bob Manning ex VE7AFO, Tom Holtby VE7VP, Bill Murray VE7YY, and now silent key Merle Wilson VE7ALW to build and operate Norgard Phasing rigs.

Technical innovation and experimentation has always occupied VE7US's spare moments. From such work QST Published Wilf's 'Peak Limiting AM' in 1944 and 'On Audio Amplifiers' in 1946. The Victoria Publication *Zero Beat* regularly

featured his articles on SSB and various gear modifications as did the Toronto based *XTAL* magazine.

A QSO with "seven U uncle, S skunk," as Wilf announces himself, is always challenging and never dull. He and Rae enjoy daily skeds with Charlie Honour VE7ADF and many of the lower mainland old timers on 2 metres. He keeps in touch with his many stateside friends. Particularly Tommy Thompson AH6E in Hawaii on 80 and 20 metres.

Behind every good man is a loving woman! Rae received first VE7ASA in 1951 and later VE7UR after she and Wilf returned to B.C. from a short stint with an oil company in Calgary in 1957. "Wilf travelled a lot for Famous Players in those days," she said, "and I obtained my licence to keep in touch with him when he was away." Rae is still fondly called 'Asa' by the local old timers.

Rae will never forget the personal meaning ham radio gave to her life when Wilf took seriously ill during a recent holiday in Hawaii. "During the crisis our friends in Canada kept in touch with our friends in Hawaii via 20 metres," she said, "What a wonderful thing is our ham radio. It meant so much to Wilf and I to know we were not alone."

So it should! For a guy and gal who have befriended so many in and out of the Amateur service over the past 50 years, many good turns deserve one such other! Wilf and Rae are the kind of folk who helped make Canadian Amateur radio what it is today! ■

AMATEUR RADIO IS NO PLACE FOR AMATEURS.

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Producing an Amateur Radio Exposition

(CONTINUED FROM NOVEMBER ISSUE)

Harry Aronovitch VE2AQA, our Publicity Chairman, was the project leader for the exposition. At the same time, he continued to produce publicity releases for the media on all of our activities. For planning and executing the show, he was ably assisted by Ziggy Schipper VE2FSC and Joe Ship VE3JS, our Vice-President.

Very early in the planning, we realized that it would be desirable to have the participation of the Mayor and the City Council at the event. This would increase public awareness and would serve to educate the City Council about our Association and Amateur Radio. We used this occasion to present the Mayor with his certificate of honorary membership. In addition to receiving his membership certificate, the mayor officially opened the exhibition.

It turned out that the City of Côte Saint-Luc has a twin in Israel called Ashkelon. Both Mayors know each other and have exchanged visits. The public in the city are aware of this twinning due to previous publicity. We simply committed to establish a communication link with Ashkelon during the exposition around 1300 local time and to put the two mayors in touch with each other in a public setting. What an opportunity! but risky you say?

We calculated the risks of having a bomb on our hands. First we used the MUFLOT programme to give us a prediction of the path between Côte Saint-Luc and Ashkelon for April 19, the day of the exposition. MUFLOT indicated that the path should be available between 1200 EST and

HOW LONG A SHOT?

1400 EST on 20 metres. We also planned alternative local arrangements if the attempt at Ashkelon failed.

On the day of the exposition the 20 metre band was not open at 1100. At 1200, it was open only to the south, with some US stations being heard from. At 1230, lo and behold, we contacted Tel Aviv. Bingo! A triumph for Amateur radio! From there we raised an Ashkelon station—the gamble had paid off. Many of our members are still recovering from overbitten finger nails.

The success of an exposition of this

scope depends on rounding up outside individuals and organizations who will volunteer time and equipment to prepare and produce a display. Even very large clubs would have difficulty in finding all aspects of Amateur radio within their resources, so outside volunteers are a very important aspect.

CSLARA in spite of its small size, did have quite an array of resources including SSTV, ATV and Packet. However, to ensure public interest, we sought other exhibits to provide a variation in 'style.'

During our activities to amend the by-law, we had sought and received advice from DOC. When we requested their support at the Exposition, they advised us that their budget restrictions would not allow them to apply their inspectors in this way. However, they did agree if one of their people would volunteer his personal time to operate one of their spectrum management vehicles they would release it in his charge.

OUTSIDE HELP

Joe Rosso VE2GX graciously volunteered to help us and spent his Saturday presenting a display which attracted high public interest. This also underscored the relationship between Amateur Radio and the Federal Government which was not lost on our city council.

Radio Canada National Engineering Department, which has its headquarters in Côte Saint-Luc, was contacted to see if they could help. Because of their 20-year connection with the community and a desire to increase their visibility, they agreed to provide an acoustical analyser and a technician to operate it. This exhibit turned out to be quite a crowd pleaser. George Lubell VE2APQ, one of our members, who worked for CBC Engineering helped set up the display.

The Montreal Association for the Blind and their club station VE2MAB provided a working HF station to demonstrate sight impaired operations. David VE2MPD, Cliff VE2GOG and other sight impaired operators, made many good contacts during the Exposition and contributed materially to its success.

Mike Ross VE2DUB, of microwave fame, provided a combination 10 GHz and ATV display which attracted considerable interest from the public. Microwave was one of the

communication modes that CSLARA did not have within its resources. Thanks to Mike, and his finely tuned presentation, we were able to demonstrate this aspect of Amateur radio.

A GENERATION GAP

The Canadian Grenadier Guards Cadet Company sent their signal section. A static display was established with a base station. Several of the cadets patrolled the mall with backpack radios acting as outstations. Besides participating in the exhibition, they provided valuable coordinating communications and security. The boys provided a visible group with which the younger members of the community could identify. We OM's realized early in the game that there was a significant generation gap.

The 12 exhibits that were finally displayed represented a distillation from 20 that we investigated as a result of exposition committee brainstorming sessions. All 20 individuals or organizations were contacted personally, and the exhibitors who eventually agreed to participate were sent a letter confirming the details of the Exposition. To wrap up the participation of outside exhibitors, a certificate of appreciation was designed and sent to each one.

The centrepiece exhibit was our HF station VE2CSA. The key to the contact with Israel was the antenna which had to be outside and in the clear, pointing at 55 degrees from Montreal. Mitch Herf VE2BAB, one of our members who is a student at Concordia University, arranged for VE2CUA, the Concordia club, to loan their tribander which we installed on the elevator penthouse of the office complex associated with the shopping centre. The top of the penthouse was at 90 feet elevation and the view was free of obstructions. The Radio Shack store in the mall agreed to loan the use of their RG 8 coax, already installed to an 11 metre ground plane antenna on the penthouse. When we tested this cable, we discovered that the outer conductor was open at the antenna end connector. As a result of our efforts, the store manager found the reason why his CB demo wasn't working too well!

The assembly and installation of the antenna was supervised by Joe Ship VE2JS and the first QSO completed

with the transceiver set up temporarily at the top of the elevator shaft. The second QSO was completed at the selected operating location within the mall. All was ready for the next day.

I must mention the support rendered by our National organizations: Radio Amateur de Québec (RAQI) provided a tape which was shown on a projection TV provided by a video shop in the mall, alternately with a CRRL tape. Mike Masella VE2AM represented CARF, and manned a display occupying a central position at the exposition with visibility enhanced by the large CARF banner on the backdrop.

THE LOGISTICS

When the day of the exposition arrived, the various exhibitors started to unload and set up their displays at 0730. For security reasons, only the antenna had been installed previously, and all of the tables and chairs were in place. A map of the exposition had been worked out to scale by the committee, so installation

went like clockwork. By the time shoppers arrived at 0930, most of the displays were functioning. All exhibits had been checked out by the exhibitors at their homes, so there were few snags or bugs. The SSTV exhibit, set up and operated by yours truly and Richard Pervin VE2BQX, was a little complicated, but eventually ran very well, to the delight of the visitors.

Larry Touche VE2ME provided a 220 MHz set up, along with an excellent display of rare QSL cards which are always a crowd pleaser. Bert Plomer VE2ADZ assisted by Hy Silverman VE2FME manned an information booth at which they signed up new students for our fall school. In addition to this they obtained 200 signatures supporting our position on antennas in Côte Saint-Luc. A packet demo was provided by Harry Glanz VE2GJ, our Treasurer, and manned by Rocky VE2FY assisted by Stan VE2ATW. Joe VE2JS, in addition to providing the HF equipment for the club station VE2CSA, demonstrated VHF and

UHF repeater operations to the public using his repeater VE2RJS.

The most difficult phase of any volunteer venture is to get people to stay for the hard part. At the end of a long day when everyone is exhausted, a fresh crew for the purpose of assisting with the breakdown of the show is essential. We arranged for some of our members to come for the last hour or so to relieve those who had been at work all day and to help with dismantling. This worked out very well and in two hours flat, there was no sign that an exposition had taken place. Our people cleaned up the area thoroughly leaving no trace of debris to attract criticism. This was time well spent, as the mall would have us back any time.

THE PUBLICITY

Let us now turn to publicity, which can be considered in two phases: The first covers the period leading up to the event itself and is designed to get people to attend the exposition. The second happens on, and immediately following, the day of the exposition, and is designed to capitalize on the newsworthiness of the exposition itself. For the first phase, we used local newspaper coverage along with talk-ups on the various repeaters and nets. Talks were given to the area clubs to obtain volunteers and attendance. For the day of the event we issued press releases to newspapers, radio and TV stations. This was reasonably successful and we did get six o'clock coverage on CFCF TV on the day of the exposition.

If you are looking for ideas on how to produce your exposition, there is a very good pamphlet available from CRRL titled 'A Guide to Amateur Radio Demonstrations,' which contains some excellent tips. I would like to take this opportunity to encourage all clubs to undertake a major publicity project each year. These are good projects for your membership and are excellent team builders. Remember, we Amateurs are supposed to be communicators so lets get out there and communicate before it's too late.

For further information please contact Côte St-Luc Amateur Radio Association, 5705 Palmer Avenue, Côte Saint-Luc, Québec H4W 2P4.

NOTE: Mark Macpherson VE2JT, the President of CSLARA, is an electrical engineer and holds both advanced and digital certificates. His interest in radio goes back many years when he joined the Royal Canadian Signals and became a signal officer in the armed forces. He can be heard on CW or be seen on SSTV most weekends.

John Dunham VE3AKL Silent Key

John Dunham VE3AKL was the CARF assistant director for the Mississauga area, west of Toronto. John received his Amateur licence in 1964 in London, and was a member of the London club from 1964 to 1968. In 1968 he moved to Toronto in his professional capacity as a wire chief for CN Telecommunications, now CN/CP, where he worked until his retirement. He completed his career as Supervisor of Maintenance and his knowledge of the old mechanical TTY machines was such that he was invited back after his retirement on several occasions. This knowledge was also valuable to many local Amateurs, for whom he was always available to explain their problems with the mechanical gear.

While in Mississauga he joined first the Oakville club, then later when the Mississauga club was formed he joined it, becoming their first CARF club representative.

John joined CARF in 1964, and became the assistant director later that year, in November. He was always interested in emergency communications which led him to join the Red Cross communications in 1968. This led directly to an ARRL Public Service Commendation for his work in

connection with the 1979 Mississauga train wreck and evacuation.

John was also a member of the RSO and CRRL. John died on 25 August, 1986. He will be missed by his many friends in the many organizations in which he played an active part.

Pierre Mainville VE3LPM,
John Iliffe VE3CES



John VE3AKL in 1982



CANADA WINTER CONTEST

Sunday Dec. 28, 1986



Atlantic Ham Radio
Single Op Mixed Mode

Glenwood Trading
All Band Single Sideband

C.M. Peterson
Single Band 14 MHz

Hobbytronique Inc.
All Band CW

Com West Radio
Single Transmitter All Band

John Clark VE1CCM
Single Band 7 MHz

H.C. MacFarlane
Multi Transmitter All Band

One of these seven plaques could be yours!

Pick your class and join the competition.
Good Luck!

Harrington Harbour, Zone 2

BY KENT CHOWN VE2LJ

You know you are in the North when the person who takes your boarding pass is the person who loads the luggage, is the person who flies the plane.

You know that you are in CQ Zone 2 when the Northern California DX Foundation (NCDXF) donates an amplifier and the last 15 kilometres of its journey is by skidoo.

I arrived in Harrington Harbour, Quebec, Canada in July of 1985 to take up my first post as a newly-ordained minister. Harrington Harbour is a fishing village of about 400 people on Quebec's upper north shore, opposite the west coast of Newfoundland. The village is on a small island in the Harrington group (check your IOTA list). I run the United Church in Harrington, and take turns on the other islands with the Anglican and Catholic priests.

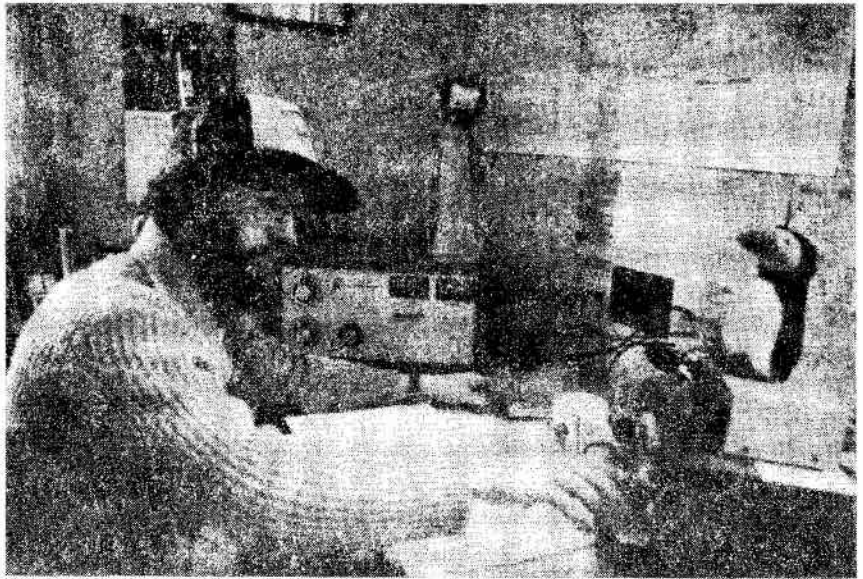
Harrington's real claim to fame among radio Amateurs is that it sits 29° 30' north of the 50th parallel, and so just barely makes it into CQ Zone 2, one of the rarer zones for WAZ chasers. Zone 2 included northern or 'Nouveau' Quebec (VE2), Labrador (VO2) and the eastern islands of the North-West Territories (VE8). There aren't many people in this huge area, and very few hams.

I became a ham at age 17 in 1977 with the call VE3JKC. At that time, I ran 2 watts out from an HW-8 and a five-wavelength per leg rhombic at my family's farm in Arnprior, Ontario. I worked a lot of ZLs on 15 metres with that rhombic and QRP.

I was active from VE3UDO at the University of Ottawa and VE2UN at McGill University, Montreal for a number of years. There I met VE2ZP and VE1BHA who got me interested in Contesting. John VE1BH convinced me to try sending with my left hand leaving my favoured right hand for logging. I've been following his advice for a few years now, and if you can't copy my sending, blame John.

I spent a year in Hong Kong as VS6KD and four months in Jamaica as VE3JKC/6Y5. On completing my studies, I returned to Canada and received my first posting, Harrington Harbour. I spent a few months signing VE3JKC/2, then VF2FGG for a few more months. Since this spring, I have been operating as VE2LJ. This will be my call for the rest of my time here.

I arrived at Harrington with a TA-33



VE2LJ handing out Zone 2. Rig is an IC 740, with a Hammond HL 1000A amplifier, Antek audio filter, MFT memory keyer and Bencher paddle. The onlooking bird is a puffin.



Kent's manse faces Harrington Harbour. The tribander is a Mosley TA33JR. The pole at left supports 40 and 80 m dipoles.

borrowed from VE3IQ, a small rotor, some pipe, 1000 feet of wire, some coax, an Icom 745, an MFJ Grandmaster Memory Keyer, and at least three years in Zone 2 ahead of me. The boat pulled in at 4 a.m. one morning and by 6 p.m. I had the tribander up on a very short mast and I was on the air.

Thanks to NCDXF, I now have a Hammond HL-1000 amplifier. As it stands at the moment, my station is as follows: Icom 745, Hammond HL-1000 amplifier, MFJ Grandmaster memory keyer, TA33 at 40 Feet, and dipoles on the lower bands.

NCDXF also helped out with the
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Another solution?

BY FRANCIS SALTER
VE3MGY

Recently I was listening on the 40 metre CW part of the band and heard an Amateur Extra calling CQ. He was answered by another Amateur from the same country, and the latter was rewarded for his efforts by being called a 'clown.' Shortly afterwards the Extra went elsewhere and I had a QSO with the 'clown,' and found him to be a pleasant conversationalist and delightful person to chat with.

When this QSO was finished, I went up the band and found our friend the Extra calling CQ again. I replied to his call one time and was told in reply that I was a '---- problem' and that he was calling for a specific station... not mentioned in the CQ, of course. In my QSL to our friend the Extra, I noted that calling CQ is the internationally accepted way of asking for any replies, and if he wished to call a specific station, it would be clearer to call that station by call sign. Here is the reply:

"Anymore, most Canadians are becoming like the Soviets. You call CQ, go back to a station, they continue to call. This goes on for minutes after a qso is established.

"My statement is not based on one instance but on many. So, for the great part of it, I just ignor (sic) calls from most Canadians.

"P.S. Most Canadians anymore, belong in the Novice Band."

I have omitted the name and call sign of our friend the Extra because I feel that if he wished to tell us Canadians that he doesn't want to talk to us, he should notify everyone himself rather than letting me do the job. I must confess that while listening to Soviet operators, I have yet to hear such expressions as 'klaun' or 'valyat invanushku,' not to mention 'chortova

problema,' nor have I heard them on the Novice bands, where I occasionally operate to give some of the novices some out-of-the-country contacts. I have noted that most of the novices and Soviets answer CQ fairly well, and when they wish to call a specific station, they do so by call sign rather than by calling CQ and complaining.

As for answering calls for minutes after a contact is established, my memory tells me about listening to one of our local Amateurs on a Dxpedition and the number of times that she was called after the contact was made. It should not be too much of a shock if one were to know that there were a lot of non-VE's who persisted in calling after the contact was made. I also remember taking 45 minutes to copy a message from a person in Barbados to his friends in the London area because of non-VE's attempting to either butt in or QRM the QSO, and I am sure that the people on some of the Canadian Nets have stories to tell that would be enlightening. But this is a digression from the point of this short discourse.

Perhaps one should be upset about this incident, but actually our friend the Extra may have, inadvertently, suggested a solution to a few of the problems besetting the Amateur community of his country and some other countries as well. I understand that there is a great amount of concern about the fetish of short call signs and the amount of QRM on the bands, which, combined with the desire of some people not to want to talk to us Canucks, could be resolved with a new type of licence, the AMATEUR EXCLUSIVE. This class of Amateur could apply for a call sign which would have the prefix NO(nn), and have the form NO(xx)VE, letting all us

Canucks know that this Amateur Exclusive doesn't want to talk to us. Amateurs desiring this call sign could apply for a call sign that, using less than 12 letters, excludes anyone they didn't want to talk to. For example, our friend the Extra, a potential candidate for an Amateur Exclusive, could easily get his NO(xx)VEUA, telling the Soviets not to bother, either.

It is not my intent to establish the system of designations or the distribution that such call signs would require to let the world know that they are dealing with someone who does not wish to speak to specific areas. I leave those minor details to those persons with large mainframe computers and the time to work out the system to prepare a code of exclusions. The advantages of the system are inspiring, however. First of all, it would popularize long call signs once again, and it would eliminate a lot of QRM from the air when some Amateur Exclusive called and the entire world knows that he doesn't speak to half of them.

Of course, the logical basis for this licence rests in the fact that if a country can request that no-one talk to their Amateurs, the Amateur in that country should also have some of these rights and exclude countries from talking to them. The Amateur Exclusive licence would, by cultivating a sense of snobbishness and exclusiveness, bring new members into the Amateur ranks, just eager to tell other countries that they do not wish to speak to them, and these numbers could easily be absorbed by the Amateur community because of the reduced activity on the bands.

This solution is so simple and practical, I can't understand why it wasn't thought of before this!

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costs of QSL cards. My QSL manager for my operations as VE2LJ, VE2FQG and VE3JKC/2 is: John Brummell VE3JDO, P.O. Box 880, Stittsville, Ont. KOA 3G0.

I would like to thank NCDXF for the support they have given me. I hope my activities will help bring WAZ and SBWAZ chasers that much closer to their goals. If I can help you with skeds, I am only too happy to. You can

contact me through John, on the air, or by phone at 418 795-3335.

In the past year, I have made about 4000 QSOs between work, some equipment problems, and trying to get my station in proper running order. Now I'm quite regularly active, spending most of my time in the lower 10 kHz of 160 through 10 metres, in CW contests and once in a while on phone.

You know you are in trouble when the freezing rain starts pouring down and you are in another village... and even more so when you are still stuck the next day and the winds are coming up to 80 kph blowing on the wires thickened by 4 cm of freezing rain. You know it's true when you get home and the yagi has only 1½ elements.

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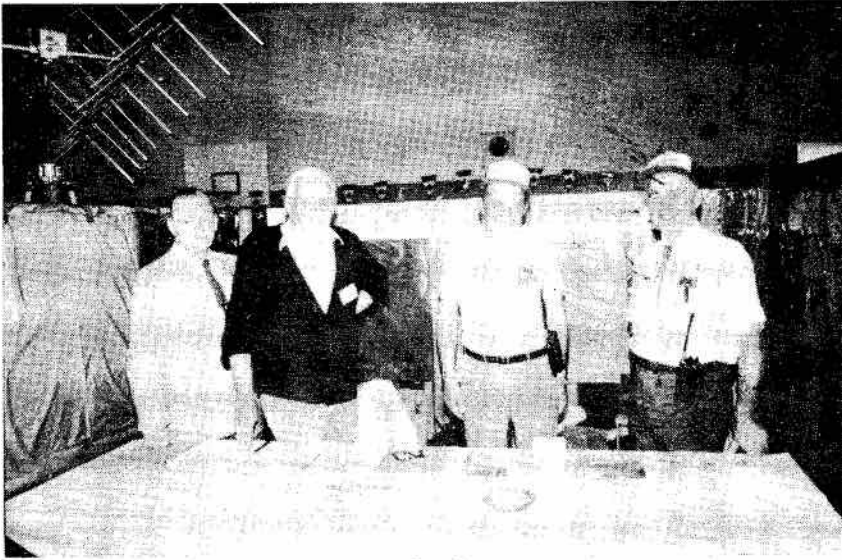
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VE7-land Hamfests '86

BY J.F. HOPWOOD
VE7AHB

It's been a great 'get-to-know-you' year for British Columbia's ham fraternity. In a sense, operating VE7EXPO for 5 1/2 months could be likened to attending a very long hamfest. OM's, YL's, XYL's, SWL's and thousands of nice people to share a few thoughts and moments with as they visited EXPO '86. But, away from the glitter and glamour of the big city event some very successful hamfests were taking place in other areas of the province.



← **MAPLE RIDGE— JULY 12 & 13**

Once again, club members co-ordinated by event chairman Peter Orobko VE7FY and Vice-Chairman John Schiere VE7BKG hosted the annual hamfest in the Fraser Valley community. Not only did the club give us a first class event, but also laid out the carpet for hams visiting EXPO '86 from many parts of the world. Besides many VE's, W's, K's and N's, the Maple Ridge Club welcomed hams from G, HB, OZ, VK, ZL and other countries. Photo shows the CARF booth, with (L to R) Keith VE7BRO, Val VE7EYG, Larry VE7LR and Jim VE7CWC.



← **INTER-VALLEY— JULY 25-27**

This was a 'first' for the club at Vernon. It turned out to be a very successful replacement for the annual Okanagan International Hamfest which had suffered from waning interest in recent years. Over 200 hams and their families from VE7 and VE6 lands gathered under the willow trees at the Big Chief RV Park to enjoy the hospitality of the North Okanagan ham community. The Vernon gang did a great job as hosts and sent us away with a wonderful pancake breakfast and many fond memories of an event we hope the Okanagan, Shuswap and Thompson Valleys hams will repeat next year. Photo shows Phil VE7ALV, Art VE7DKY, Lota VE7DKL and Pearl, VE7LBM's XYL, at the pancake breakfast.



← **VANCOUVER ISLAND'S 'HAM HAPPENING'— SEPT. 6 & 7**

The Nanaimo Amateur Radio Association sponsored the increasingly popular Vancouver Island event at the Cavalotti Lodge starting with a Saturday evening 'pot-luck supper social' and ending with the prize draws late Sunday afternoon. It attracted over 280 hams, their families and friends from Port McNeil in the north, Ucululet on the west coast to the capital city of Victoria at the southernmost tip. A great success and credit to all club members under the able leadership of Bill Stewart VE7BIO. Photo shows Al VE7AYN and Charlie VE7AYL.

Photographs by VE7AHB

Hurrah for Hamfests

I had a hamfest problem: impulse buying, particularly when I kept dragging home boat anchors. How to get ahead?

I surveyed the equipment on hand and decided to concentrate on the Heathkit SB line. The merit of Heathkit lies in the manuals, these provide the circuit, construction detail, operation and trouble-shooting, all at once and in English, no less. The line is compatible and offers a choice of affordable options if bought one at a time. A spell of listening to the Swap'n Shop items followed, and I noted prices and availability.

A list of wanted desirables followed, beginning with books, magazines and other publications, followed by the inevitable urgent tube wants, replacement spares sought after and finally actual equipment to look for. Upon review I made a note of gear to avoid, where wiser heads reported very adversely upon certain items. Try your own preference list.

The next big Ham Fair was the TACOMA event and after checking with the wife, approval was granted to attend on the Saturday, but be back for Sunday as it is a working day on Sunday mornings for her. We registered in advance.

To have a mid-week break, we took off on the Thursday preceding the Ham Fair and travelled very leisurely via Seattle, did some household shopping and eventually reached Tacoma to pick up our registration kit on the Friday afternoon. Our plan had been for the overnight stay in the dormitory of the Lutheran College, and be ready sharp for the 9 a.m. Saturday opening.

We left for breakfast at 8 a.m. and were still eating at 9:15, so we returned late and parking was very congested. However, a shady spot was located within a half mile.

SAN SALVADOR EARTHQUAKES

TCA learns that VE3AUM and VE2RP passed emergency traffic between Canada and El Salvador after the earthquake.

If you know of others who served in this disaster, please let the editor know at Box 855, Hawkesbury, K6A 3C9 or on the Quebec Radio Net.

My philosophy is that if a bargain is meant for me, it will wait for me—sometimes it is not a bargain. By the time the XYL made for the Ladies' activity section and I turned to the Flea Market, bodies were streaming out with gleaming goodies which they had grabbed. The first wave had been missed, but, anyway, into the milling throng.

What a disappointment there was nothing big on my list! The selection of books and magazines was small and again not what I craved. A quick check on tube types was an equal disappointment. A showing of meters, one of my weaknesses, at a price one could not refuse prompted purchase of a small single range voltmeter. It broke the ice, so as to speak.

A gem of a VTVM was noticed but no price marked... Returning to that stall enquiry asked as to price. The vendor said around \$20 and proceeded to pick it up. The meter came off the panel, the panel parted from the case and the guts were hanging loose, so to say. Quickly and with a deadpan face I said, "I calculate that kind of reduces the asking price," and promptly made a low offer. A quick consultation took place between the vendor and his partner, who muttered, "I told him to put it together," and my offer was accepted. The meter was badly scratched while the case and panel looked very fresh, the price was right.

I was back to impulse buying, none of these were on my list. At 11 a.m. a lecture on 'Antenna Construction Techniques' by Rush Drake W7RM—a speaker after my own heart with the theory and practical approach of "use of the least cash outlay for the greatest in WATT propagation," a worthwhile subject by an exceedingly lucid lecturer.

At noon I took a quick snack lunch with the wife, followed by a visit to the commercial section. The Icom display appeared the most striking to me, they had a draw for a handheld, while Yaesu and Heathkit were there, but I missed Kenwood. Although I am certain they were there, my eyes missed what they had to offer.

The remaining commercial exhibits were inviting and covered many of our lesser names of equipment peculiar to the Oregon and Washington State areas and there were give-aways. Upon returning to

the Flea Market, lo in the third row of tables sat an SB 650 Digital Display—first item on my want list.

The Digital Doo was lumped for sale with an SB 401 transmitter. Playing it cool, I enquired the individual prices and this met with the response, all or nothing. Offers and counter responses took place over the next hour or so with an agreeable price arrived at around 3:55. I had arranged to meet my wife at 4:00 and to attend the last lecture of the day for me, 'Troubleshooting Hints in the Hamshack.'

My wife is understanding, but was surprised to see the treasures which I had invested in, while I brought the car along to park in the Counter and Transmitter. We were late getting along to the lecture by Dale Olen W7ALC, an instructor at Green River Community College, who delivered an entertaining exposé on the use and misuse of meters at his college and Ham applications thereof. The Dinner commenced at 6:30 p.m. and the After Dinner Speaker entertained us up to 8:30 p.m.

The drive home from Tacoma to Vancouver is I5 interstate freeway, with a quick stop for Customs and we were home by 1 a.m.

CONCLUSION

The first meter purchased required an 80K series resistor and is fully operational—no sweat. The VTVM required minor metal fabrication and after swapping the beat-up plastic bezel for a cleaner one—looks good, however an AC/DC probe had to be made up to finish it off. The counter read an eternal 700.0 to 799.9 when first checked out. Perusal of the manual set out the effective trouble shooting procedure, it is now operational and in daily use. No longer am I scared of working on IC rigs.

The SB401 has life, however will require a tonic from the workbench, in order to make it respond in the manner of which it was designed. It will be the prime winter project and thanks to the manual can always be rebuilt from scratch. My wife reported a winning streak at her Bingo session. Thus we look forward to future hamfests.

(Will the author of this piece please write to the Editor?)

KIMWOOD					
ITEM	LIST	CASH	ITEM	LIST	CASH
AT130	269.00		SW100B	99.00	
MC60A	149.00		SW2000	229.00	
MC80	89.00		SW200A	199.00	
MC85	179.00		SW200B	199.00	
PB21	43.00		SWC1	49.00	
PB21H	63.00		SWC2	49.00	
PB26	65.00		SWC3	55.00	
PC1A	119.00		SWC4	72.00	
PS430	259.00		SWT1	55.00	
PS50	349.00		SWT2	55.00	
R2000	999.00	949.00	TH21A	349.00	339.00
SM220	729.00	699.00	TH21AT	389.00	379.00
SMC30	60.00		TH41A	369.00	355.00
SP940	155.00		TH41AT	409.00	395.00
ST2	170.00		TL922	2199.00	2099.00
SW100A	99.00		TM201B	579.00	529.00

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AH2	906.00	879.00	IC1271A	1749.00	1699.00
AH2A	718.00	699.00	IC12AT	665.00	
AH7000	137.00		IC271A	1229.00	1199.00
AT100	571.00	539.00	IC271H	1499.00	1469.00
AT150	571.00	539.00	IC27A	622.00	599.00
AT500	752.50	699.00	IC27H	665.00	649.00
BC35	101.00		IC28A	622.00	599.00
BP2	64.00		IC28H	665.00	649.00
BP3	48.50		IC290H	829.00	799.00
BP4	19.00		IC2AT	385.00	359.00
BP5	87.00		IC2KL	2599.00	2499.00
BP7	101.00		IC3200A	855.00	829.00
BP8	101.00		IC37A	699.00	679.00
IC02AT	579.00	539.00	IC3AT	485.00	449.00
IC04AT	639.00	599.00	IC471A	1419.00	1389.00
IC120	839.50	799.00	IC471H	1769.00	1725.00

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TH6-TH7	399.00
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Book Reviews

RADIO SYSTEMS FOR TECHNICIANS

By D.C. Green. Howard Sams & Co. Inc. Indianapolis.

This book covers the circuits and techniques used in modern radio-communications systems. Scanning this American publication, I was brought up short by finding the British terminology— aerial for antenna, earth for ground. Scrutiny of the copyright page reveals that the book was first printed in Britain by Pitman.

Regardless of its source, this is a sound, reliable text. It will serve anyone seriously interested in learning the fundamentals of AM, FM, transmission lines and aeri-als/antennas, propagation, transmitters and receivers, and commercial wide-band systems. As a self-tutor, the text carries not only a number of questions on the text, but also answers.

The text is clear, well printed, with excellent illustrations, and plentiful worked examples.

I spotted few errors. The Radio Systems III exercises numbers 1.2, 1.3, 1.4, and 1.5 might be more clearly associated than as printed. Figure 5.9, showing the radiation patterns of a dipole would be more comprehensible if set out in the standard plan-elevation way, with the maximum radiation vector the same length in both.

The European slant of the text is rarely troublesome, the slight differences in terminology being readily adapted to. However, the explanation of a European television system rather than the North

American one might mislead the beginner.— VE3DQB.

THE G-QRP HANDBOOK

Another communication from our International correspondent, Tony G4FAI, which brings a copy of the G-QRP Club Circuit Handbook. It is a soft cover publication of almost 100 pages measuring about 8 x 12" (or 21.3 x 29.8 cm to be exact!).

No space is wasted in telling you how to warm up your soldering iron or what tools you should have on a QRP bench. The first page prints who is responsible for compilation, artwork, text type and copyright notice. The second page gives a rundown on a 20M CW transceiver by G3YCC followed by two pages of associated schematics. This goes on for another 40 odd pages covering receivers, transmitters, transceivers and transverters. One discrepancy arises on page 24 in that there is no text for the six-transistor 'DAILY TELEGRAPH,' an 80M QRP TX by DK9FN. A three-transistor reflex receiver called 'SILVER TERN' appears on pages 44-46 written by Emil who was SM7WK in 1929 and by 1937 had Worked All Continents with 4 watts.

STATION EQUIPMENT

This, over 30 items for use around any ham shack, starts on page 50 and continues for 30 more. A two IC touch paddle keyer with foil pattern PCB and paddle specs are included. VE7BFB has his keyer from *Ham Radio*

November 1969 modified by W7EL on page 68. Modifications and improvements for the popular HW7 and 8 also appear in this section, i.e. HW8 RIT by HB9KI.

CIRCUIT IDEAS

This last section opens with an SSB generator by G3ROO and various power amps from 3.5 to 10 watts, then a T/R switch. A preview of the Plessey 80M miniature receiver by G3RZP and G4CLF introduces the new Plessey ICs on page 89. Pages 94, 95, 96 including illustrations take you step by step through crystal grinding so who can say there isn't something for everyone? Table of contents is on the outside back cover, front cover is a montage of schematics superimposed with the publication title. This leaves both inside covers blank or you could count 100 pages of very enlightening information.

AVAILABILITY

Tony has not written to say what the total cost is or how to order it, but word is expected soon and will be passed along. If anyone would like to see more of these circuits reprinted in *TCA*, we could arrange permission from G-QRP Club. Anyone with input is invited to write the editor or send a message via Amateur radio arranging telecommunications schedules. My C128 and Master Modem at 300 baud can be made available anytime after 0600 UTC if this method is more convenient.

WINDOW HEATER ANTENNAS

G3VA (Technical Topics, RadCom) reports on the use of the rear window defroster of cars as a 2 m antenna. The heater power supply is isolated from ground by a bifilar-wound choke, and the rig connected via a capacitor.

At 145 MHz, the rear wiper was found to be resonant and had to be removed.

Polarization is horizontal, but in urban areas, where polarization is perturbed, the performance of the heater may be comparable to a quarter-wave whip.



Ralph Cameron VE3BBM
30 St. Remy Drive
Nepean, Ont. K2J 1A3

CABLE TV—INGRESS AND VCR IMMUNITY

To find some of the reasons seemingly RF tight cabling permits undesired signals from entering the front end of the TV converter or TV set, I spoke to one of the local experts who services VCRs. Who better to know the practical problems associated with what is known as signal ingress?

SIGNAL INGRESS

Signal ingress is the phenomenon seen when a strong local station intrudes into the cablevision line or the tuner circuits of a TV, VCR or converter and causes beats between the cable signal channel space and the local TV station. This problem is probably one of the most common faced by television service technicians in the field today. Unfortunately, due to many reasons, not the least of which is lack of knowledge on the part of the TV owner, signal ingress is one of the most difficult problems to deal with.

As a Radio Amateur, you are probably asking yourself, "What has this got to do with me?" If you notice visual effects on your TV (or your neighbours do) when your operation and TV watching coincide, this information may help you.

LOCAL OTTAWA AREA

In the Ottawa area signal ingress is found primarily on channels 4, 9 and 13 with occasional interference on channel 6. The cause of signal ingress is poor RF shielding in one or more of the following areas:

- Cable transmission line
- VCR VHF antenna connection block
- VCR front end
- Antenna connection or front end of converter
- Antenna connection at the TV receiver

PINPOINTING THE CAUSE

The fastest way to determine whether the incoming cable (from outside) is causing the ingress is to install a known good converter (i.e. one known to not exhibit any beat symptoms) between the cable entry point and all the subsequent equipment (TV, VCR etc.). Set all equipment to channel 3 EXCEPT the good converter.

Set the good converter to the local station where the visual beat from signal ingress is most severe. If the signal ingress persists, the problem is somewhere in the incoming cable transmission line. In this situation it is quite probable there is no problem

with the rest of the household equipment. At this point it would be wise to involve the cable company. After 20 odd years, most cable transmission systems exhibit considerable leakage due to the effect of sunlight and corrosion from acid rain. Buried cables are susceptible too.

Once the cable TV company has had a chance to investigate and remedy any problem, it is wise to recheck the cable. An unterminated cable or poor ground can cause identical symptoms due to conducted RF or local radiation. If successful

FIX, REPLACE OR REFUND

By the time you receive TCA for December, word may be out officially that manufacturers have done an about-face in addressing immunity in electronic appliances. Reliable sources say the manufacturers have agreed to accept a mandatory regulation by DOC that would legally obligate the manufacturer to fix, replace or refund purchase price to a consumer experiencing lack of immunity. This laudable approach will well serve the interim period until 1991, at which time international immunity levels will be established. It will negate any expensive testing or purchase of test equipment for testing to required levels, until agreement has been reached on achievable and realistic environmental RF levels.

from the signal ingress standpoint, it is quite likely any problems due to TVI will have vanished. Be sure the signal ingress is totally gone. You must have a clean picture and no hiss on the audio. Be picky—that picture must be absolutely clean with NO TRACE OF INTERFERENCE. If signal ingress is still visible when you know the cable integrity is good, it is time to look at other possible causes.

OTHER CAUSES

Let's start with the TV receiver. First—before anything—make sure the cable company has done its job. Install your good converter as you did before and check for ingress. If the service was done correctly, the ingress should be gone. N.B.—A good rule of thumb...if ingress is eliminated with a known good converter, the problem is in the receiver. If ingress persists, the problem is in the cable. How many viewers know this? How

many times have your neighbours said, "Our reception has some funny lines on the screen" or "we see part of the local station's picture on cable channel 30 and so."

Assuming the cable is good, remove the good converter with which we ran our previous test and tune the TV set to the channel that exhibits the worst ingress problem. (Cable NOT connected!) Are you getting a pretty good picture on one or more local stations, without benefit of antenna? If so, this is precisely your problem. Something is acting as an antenna and it shouldn't be.

NEXT STEP

Next disconnect the piece of equipment that is at the opposite end of the chain from the TV. Check for the presence of those local TV signals again. Keep eliminating pieces until the signals vanish. When this point has been reached you have found the culprit. Further work now needs to be done to 'apply a little technical salve.' This is the 2-cent widget the manufacturer left out or decided to ignore because what else could possibly compete with a cable signal.

SKILL TESTING DEXTERITY

It is essential to test all ground points around the antenna input and tuner sections. If you've seen some of the construction techniques employed recently it may help if you've had experience in ballet or needlepoint. These circuits are difficult to reach and quite delicate. Unless you have experience in servicing TV's, VCR's or converters—find someone you trust to do the job. A fully equipped, responsible service shop can deal with the Varactor tuners, microprocessor controlled PLL and static sensitive circuitry far better than the average Radio Amateur. (Notice I said average).

If you take your piece of equipment into a service shop, explain the problem to the service manager and tell him what you have done to pinpoint the problem. Sure it's a lot of work and some inconvenience, but you want the nuisance fixed. It's the only way until enough consumers complain that the problem is cured at source, prior to sale. My service friends tell me that an accurate and detailed description of the problem and the actions taken to remedy the problem often go a long way to reducing the cost of service. Less time on the bench means a smaller labour charge.

Continued next month

George Morgan VE3JQW
687 Fielding Dr.
Ottawa K1V 7G6

From the Clubs...

I know that by the time you read this there could well be a foot of snow on the ground, but I hope everyone had a good summer. As for me, I took part in a family reunion out in MacGregor, Manitoba, and had a great time. Since my younger daughter and her family have a farm there, we had lots of room for all the family members who attended. In fact, her yard resembled a parking lot with all the cars, campers, RV's. It also looked like a Humane Society shelter with five dogs and five cats running around.

Strangely enough, I didn't do much in the way of Amateur radio. While in MacGregor I listened quite often to the Neepawa repeater, but didn't seem to hear the voices that I have heard in previous visits. And while driving out and back I stayed on 146.52, and was surprised by the lack of activity.

In fact, in 13 days of driving—as you can see, I wasn't in any hurry—I heard only one call on that frequency and had a short QSO with VE3IHS near Vermillion Bay, Ontario; and no one answered any of my calls.

All of this is really to serve as an excuse for the delay in dealing with the pile of mail that I have on my desk concerning the Affiliate Clubs, some of it having arrived shortly before I left and the rest while I was away. For those of you who have been expecting something from me, please hold on; I will get to it as soon as I can.

In the mail I found a letter from Dick Maguire VE4HK describing more of the activities of the Winnipeg Amateur Radio Club. I must agree with Dick that "hams in Winnipeg do it with higher frequency."

HOW IT'S DONE IN WINNIPEG

On June 15, 1986, the eighth annual Manitoba Marathon was held. One of the event's main objectives is to encourage runners of all abilities, from world class to the casual runner who runs only occasionally, to enter, and five different types of races were offered: one for wheelchairs with 46 entrants (most wheelchairs covered the full marathon course); the 2.6-mile Super Run with 500 runners; the

Challenge Relay with 400 five-person teams, each team member running a five-mile leg; the half marathon with about 800 runners; and the full marathon also with about 800 runners.

One of the most important runner support systems was the Amateur Radio Communications Network, provided by about 50 members of the Winnipeg ARC who worked with other groups to provide an effective radio hookup linking all essential areas of the marathon and contributing greatly to the success of the event.

I am very disappointed to read an editorial by Gil VE4AG in *QUA Manitoba Amateur* stating that, for financial reasons, *QUA Manitoba Amateur* might fold with the September issue. I have enjoyed reading this publication, which describes activities of clubs throughout Manitoba, and its disappearance will be a great loss. I certainly hope some means can be found to keep it going.

LOBSTER RALLY

According to Stan VE1UM in the Moncton Area ARC's newsletter, the 1986 Lobster rally, held July 19, was the most successful ever, with no accidents and excellent communication. The only problems were mechanical failures. Moncton area Amateurs were assisted by friends from PEI.

Following the Rally a number of Amateurs turned up for the hamburger and hot dog gathering to chat with the competitors and to rehash the exercise. About ten Amateurs took in the Lobster Brunch the following morning.

Unfortunately, this year marks the end of the event, at least in its present format, but MAARC hopes that the local organization will develop a navigation-type rally to take its place, as the Rally helps Amateurs keep up their skills for times when they are needed for emergencies.

Bruce Cox VE7BCZ has sent me the latest copy of *The Northern Net Newsletter*, and it seems that the Smithers Club is keeping very busy.

"The Hamfest has come and gone for another year. The hard work is done and now we can relax until the next one. Well, not really; we are always trying to think of new ways to make it work better than the previous year.

"The breakfast of pancakes and sausages was great, as usual, but the evening meal of chicken, spare-ribs,

veggies, corn-on-the-cob, salad and buns was superb. The thanks, again, go to the ladies of the Smithers club. They put in a lot of time and effort to give us a meal to remember.

A WELL-ORGANIZED HAMFEST

"We had a meeting soon after the Hamfest to hash over the events. The consensus was that the Hamfest was better organized this year. We kept fairly close to the schedule of events. This way we knew what was going on at all times.

"Those participating in the Fox Hunt said it was great fun. It took 1½ hours to find the elusive VHF transmitter. The winner of this event was John VE7BVS of Smithers. He was using a beam antenna and a couple of cavities. With this equipment he was able to locate the transmitter. We will improve on this sport for next year. The amount of enjoyment is directly proportional to the number of participants, so get your gear ready for the next one.

"The Swap and Shop went over very well. There was something for everyone, from grab-bags to transceivers, and bartering was the name of the game. We bought as much stuff as we sold, so the net gain in space was zero. It's a never ending battle to get rid of more than we take in.

"Although the Hamfest went well, there were a couple of areas that need help. The Saturday evening get-together in the shed was a little shallow. We need more entertainment. The other disappointment was the Home-brew contest. We had a total of two entrants. It seems that very few Amateurs are building equipment. I guess you can't blame them though. The catalogues come out with everything you could possibly need, and the only work necessary is giving your credit card number.

"The Smithers club finally made a profit at the Hamfest. With the raffle, grab-bags and the increased entrance fee, we made enough to purchase some UHF equipment. (This) will give us the ability to link repeaters. We are now asking the Fort George club if they will co-operate with us to link the two areas. The link would give us coverage from Prince George to Smithers."

In case you haven't heard, the most recent reprint of the Certificate Study Guide is now available from the Kingston office. If your club is interested in obtaining a supply for courses, there is a 15% discount on orders of 10 or more.

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DESCRIPTION

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The FT-270R provides 25W RF output, while the RH version provides 45W in the high power mode. The "LOW" switch on the front panel allows reduced output power, 3W or 5W, respectively.

High Visibility Display

Some transceivers have so much clutter in the digital display that it's hard to see what frequency you are on. The FT-270R/RH utilizes an easy-to-read backlit LCD that indicates frequency or CTCSS tone information in large 5mm digits for quick recognition. The latest wide-angle LCD and pleasing green illumination for the display assure you of readability day or night from most all viewing angles.

Dual Microprocessor Design

The FT-270R/RH's two 4-bit microprocessors offer a host of convenience features that save you operating time and promote highway safety through operating simplicity. Dual VFO capability, ten memories, programmable band scan limits, scanning steps, and CTCSS tone frequency

(option) are all selectable from the front panel with a minimum of effort and confusion.

Superb Scanning Flexibility

With the FT-270R/RH, you can memorize a number of scanning parameters to maximize performance. For example, you may set upper and lower limits for band scanning, or scan the memories looking for a busy channel. You may also watch a priority channel for keeping track of a favorite repeater.

Two scanning modes are also provided, allowing either fixed (6 sec.) or carrier-controlled scan resume after the scanner has halted on an active channel.

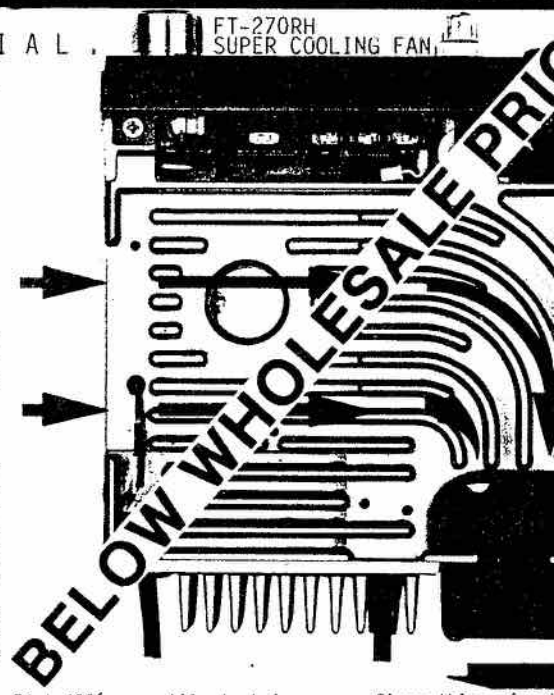
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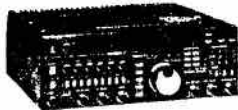
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RESULTS OF FIRST WEEKEND IN 10 GHZ CONTEST

Thursday night two 10 GHz stations, complete with dishes, were packed up and taken to the bus terminal for shipment to Ottawa the following day. A phone call from Keith VE3IMT confirmed they arrived safely Friday afternoon.

Saturday, Sept. 26, a day to remember as members of VE2CUA reach the peak of Mount Mansfield, the highest point in Vermont.

With the weekend of the first ARRL 10 GHz contest nearly upon us, plans were made with VE3IMT and PAOKKZ/VE3 to attempt a new record contact of 145 miles from Mount Mansfield, Vermont at 4,393 feet in grid FN34 to Mount Tremblant, Quebec over 3,000 feet in grid FN26. The VE3's took Tremblant as it was closer to Ottawa and we took Mansfield being nearer Montreal.

Three members of the Concordia University Amateur Radio Club VE2CUA, all non-licensed, volunteered for the trip. The team included Patrick Douek, who will be writing his digital exam in October, Denis Landry, Heidi Modro and I, VE2DUB.

We met at the Longueuil Metro (Subway) station promptly at 8 a.m. and headed south to the mountain. As we approached the border and noticed every car was being searched, we began to worry, especially with a trunk full of gear and a microwave dish. Our fears were put aside as we passed the officer with just the normal questions about where we were going and where we lived without comment on the gear.

Arriving at the base of the mountain we consulted the map to find a small road leading up the East side. The attendant in a small general store confirmed we were on the right track and gave full instructions on where to go. Following these instructions we proceeded up Mountain Road only to be greeted by a park ranger saying we would have to hike up the mountain from this point or take the toll road on the other side of the mountain. It was unanimous, we headed back down to find the toll road.

The road to the top was in pretty good shape in comparison to other mountain service roads I've been up. Although at one point there were comments that they should be paying us to go up this road and not vice versa. Anyway we arrived at the parking lot at 3,850 feet and inspected the tower supporting a channel 22 transmitter with guywires thicker than most tower legs!

After a quick stop at the snack bar to



Microwavers get lots of healthy outdoor exercise. Here's Patrick and Denis atop Mount Mansfield.

determine which of the two peaks was the highest, we headed up the North slope on what I had previously described as a short walk to the top of maybe a hundred feet or so. The path traversed large cracked boulders for about a mile and up 500 feet of elevation. Each peak that was overcome seemed to reveal yet another on the horizon. It was only after covering about half the distance to the top that we were able to access the Mount Tremblant 2 metre repeater to check on the progress of the other group climbing that mountain.

The news from the initial contact with VE3PAE was not good. The chairlift, which I was assured would be working by Tourisme Quebec, only took them about one third of the way up the mountain. The next lifts were not in operation, forcing them to climb the ski trails up the side of the mountain. We estimated it would be another half hour for us to get to the top, so we set up a schedule on the half hour to check each other's progress.

At the appointed time we called on the repeater only to be answered with a coarse STANDBY. By the tone of their reply we figured things were not going well at the other end. We broke for lunch at the top and set up the two metre and 10 GHz stations. The two metre station included a Yaesu FT290, 30 Watt Mirage power Amp, motorcycle battery, SWR/Power meter, portable homebrew 5 element beam and mast made from aluminum tent poles. Once the beam was connected we took some compass

bearings and fine tuned the direction with the 'S' meter on the two metre rig.

Contact was established with PAOKKZ/VE3 a short time later. They had not reached the top but had stopped part way up the slope and wanted to try it from there. They were not copying our FM signal direct, even with 30 watts into the beam, so we switched to SSB where they reported weak signals. We couldn't hear them at all. This was a pretty good indicator that we would not work on 10 GHz.

After a long silence and much consultation on their part, the guys on Tremblant decided to try to make it to the top on the condition that they would have to turn back at 3 p.m. to catch the last chairlift down the mountain at 4:30.

We agreed to wait and enjoyed the scenery from the mountaintop on one of the best days of the season. Visibility was excellent in all directions. The cool air at the high elevation was balanced by the warming rays of the sun in a cloudless sky. Most of the leaves on the trees had already turned red, in contrast to the still green fields of the valleys below.

Our equipment had been attracting quite a bit of attention from the other hikers on the summit. We were approached by two park rangers who suggested the antennas didn't fit in well with the natural scenery of the mountain. We assured them it was just a temporary installation and they

Cathy Hrischenko VE3GJH
56 Stockdale Cres.
Richmond Hill, Ont. L4C 3S9

YL News & Views

SILENT KEYS

It is with deep regret that I tell you Mildred Graham VE3GTI became a silent key Oct. 9. She had suffered with cancer for a long time.

Mildred was first licensed in 1965 as VE1AQI in Moncton, New Brunswick and the following year received her Advanced licence in Halifax, Nova Scotia.

Her interest in Amateur radio started years before when her OM Ivan held a provisional licence when they were stationed in Aklavik North West Territories.

Ivan was posted to the east and went shipside on the HMCS Margaree VEONP.

Later Mildred was honoured by the ship's crew with a presentation of an autographed photo of the ship and a bottle of perfume as a thank you for running phone patches for the crew during their trips to sea.

In 1967 they moved to Ottawa and Mildred became VE3GTI. Later they moved to Belleville.

Mildred was past president of the Maritime Sparkettes. She held DXCC,

RCC and other awards and operated many contests. She will be missed by many.

Our sincere thoughts and sympathy go out to her OM Ivan VE3GTH. Sympathy to...

Leola VE3DEA whose OM Stephen Cylka VE3BKF became a Silent Key Oct. 10, 1986.

MARK YOUR CALENDAR

87 Celebration plans are going quite nicely. CLARA YLs will be selling various things at Hamfests to raise money. So keep your eyes open for our tables and give us some support.

Remember the dates— Sept. 11, 12, 13, 1987. Want information? Send SASE to 87 Celebration, c/o Cathy VE3GJH, 56 Stockdale Crescent, Richmond Hill, Ont. L4C 3S9.

Don't forget GOTA— Guides On The Air Feb. 20-22, 1987.

Merry Christmas, Joyeux Noël.

SANTA AND THE CLARA NET

The CLARA net had started many voices were calling. One station was weak

but net control sure was trying.

She turned her beam northward and she heard "My name is St. Nick" can you believe it, she said "It's the CLARA net, that he's picked."

The net that day was filled with fun and laughter. They'd talk about this day for a long time after. The following week when net day came Many checked in— but it wasn't the same. They told of their gifts. The good times had by all. They talked about Santa and wished that today he would call. We, we all kept listening. In hopes that we'd hear Santa's happy voice saying Happy New Year. Then net control said "are there any last minute calls?" and then we all heard it "Happy New Year to you All!"

DX

DX before dishes? That's OK, I suppose.

The dishes are always with us, the DX comes and goes.

And though the dust is inches thick, that matter's merely minor, When you hear above the QRM a YL voice from China.

Crumbs, upon the carpet? You can't vacuum the floor.

You might miss above the cleaner's noise, a chat with Labrador.

What if you haven't made the beds or if the kids are howling, These things are unimportant if you have San Felix calling.

What if the lawns needs mowing, All the windows ceased to shine, Who cares about the boring chores when Svalbard's 5 by 9.

The OM's bent the time opener, Well, who can think of cooking

When Africa is coming in and round the band you're looking.

But if you do the dishes with one ear to the set

Here's a bit of good advice 'twould pay you not forget.

If you should hear some rare DX which everything surpasses, Don't drop what you are doing if— you're washing crystal glasses.

Joy Collis VK2EBX

JRSD FUND

If you haven't done so yet, please write your MP about Ravenscroft and make a donation— one per cent of the value of your rig seems fair— to the JRSD Fund, Box 8873, Ottawa, K1G 3J2.

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tolerated us for the remainder of our stay.

Three o'clock rolled around and we contacted the Mount Tremblant station on the repeater. Things had not been going well for them on their climb so they had to turn around and head back down.

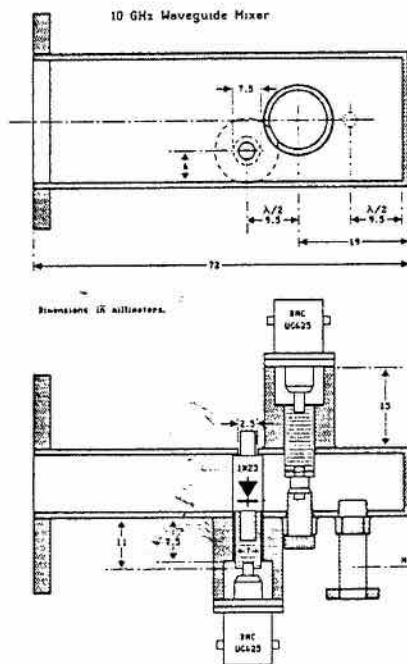
Hearing this, we made the last few calls on 2 metres using the contest frequencies. With no reply, we disassembled the stations, packed up and headed down the mountain. We found it much easier than going up!

The ride down the mountain saw the brakes on my car heat to near melting and caused the brake light circuit to become inoperative (or was that when Patrick pulled the brake wires instead of the seatbelt from under the back seat?).

Looking back, the main factor contributing to the failure was the chairlift not going to the top. Inappropriate footwear for mountain climbing, the use of handbags rather than backpacks for the equipment, chestpains, a sprained ankle, overloading of the people for the amount of equipment to carry, resulted.

Hopefully, something was learned from the experience, and we can make improvements for the next attempt.

Microwave contests don't always come easy! Look for more results from the October weekend next month.



Here's PA0KKZ's 10 GHz mixer, referred to in the microwave column last October.

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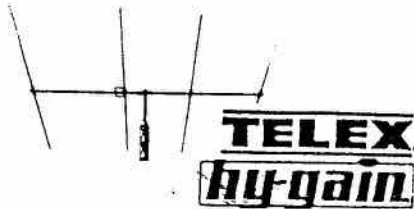
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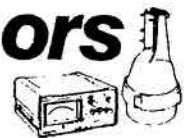
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CONTEST SCORES

Here we all are, with the sounds of the 1986 CQ CW Contest still ringing in our ears (or, perhaps, about to ring, depending on when you receive this). So this seems like a good time to take a look at the results of last year's contest.

Top banana in the single operator all band class was Dave VG3BVD with 1990 QSO's for 1.6M points. That was well ahead of second place VE2AYU who had a 640k score.

VE3MFA took home the bacon on 160M (sizzling bacon... static...

160M... get it?... sorry) with 33k, twice the score of number two VE3INQ.

The action was hot and heavy on 80M between record holder VG3BMV and VE2HQ. Yuri outdistanced HQ by 24 QSO's and 3 multipliers and as a result finished up... second. Boy, that hurts. VE2HQ used his proximity to Europe to good advantage, beating Yuri by a slim 3400 point margin. He claims a new Canadian record in the process. As well, it should be noted that these scores were the fourth and fifth highest in the world on 80.

Congratulations are in order for both operators.

Forty saw a close race also, between VE3OZB and VG3KRN. OZB worked 483 people for 89k points, while KRN came up with 79K.

The inimitable VE6OU/3 walked away from the competition on 20M, scoring 433k points while working 32 zones and 94 countries. Like, c'mon, eh, it's the bottom of the sun spot cycle already.

It seems that 15 and 20 were both pretty quiet. VE3NBE was the sole entrant on 15, ending up with 80k. On ten metres, Reg VE1BNN went all out and made 19 QSO's, in 8 zones and five countries, for 585 points. Ah well, this will improve in a couple of years.

Multi-single this year went to VG3IY with 1.7M. Another score that deserves mention in this category is that of VO2WL. This DXpedition netted 4600 QSO's. If they had had a multiplier to make that QSO total stand up, that could have been a BIG score.

So how did we all do this year?

CANADA DAY CONTEST

Next let's take a look at the results from this year's running of the Canada Day Contest.

The top gun single operator was VE3XN with 358k, comfortably ahead of VE6JO who had 178k in second place.

In the single band competition, we find VO1QU emerging as the winner on 20M. He ran up 336 QSO's for 54k points. Forty metres belongs to VE3OOS who tallied 79 QSO's for 10k.

Number one on 80 metres was VE6CPE with 17k, while VE3INQ was the sole entrant on 160, finishing with 282 points.

In the multi-operator category, old reliable VE7ZZZ worked 1160 people, including a lot who gave him serial numbers on 20 metres. They finished up with a FB 603k points, while second place went to VE2FOT with 206k.

RAMBLINGS

Your humble scribe has recently been looking at antenna prices. Now, I grant you that the last time I did this was back in 1979, but holy \$#!%%. What's going on? I mean, even with our 72¢ dollar, \$1500 for a tribander seems like an awful lot of money. That is not to mention \$900 for a 4 element 20M yagi. The last time I bought a 20 metre beam, it seems to me that it was about \$400. And we thought that was a lot. Has aluminum gone up that

CQ WW CW CONTEST CANADIAN RESULTS

CATEGORY	CALL	SCORE	QSO'S	ZONES	CNTRYS	
Single Op All Band	VG3BVD	1,616,670	1990	107	238	
	VE2AYU	639,912	922	79	194	
	VE3KP	373,048	777	73	138	
	VE7GMN	336,384	1063	65	81	
	VE3ST	290,832	424	71	178	
	VE7QO	240,470	666	56	83	
	VE7DLM	172,484	607	57	67	
	VG3XN	93,912	206	62	120	
	VE6ADK	58,536	519	22	50	
	VO1MP	36,584	100	37	99	
	VE3OMU	11,440	80	27	38	
	CH1AW	6,435	61	20	25	
	VE3MCL	5,535	48	13	27	
	160M	VE3MFA	33,276	340	15	32
		VE3INQ	16,428	218	12	25
VE3OME		15,717	242	9	22	
VE7CC		6,402	141	9	13	
VE2DVI		1,456	47	6	10	
VE7ES		1,020	32	7	8	
80M	VE2HQ	176,180	793	22	70	
	VG3BMV	172,805	817	22	73	
	VG7IG	126,063	826	23	40	
	VG5RA	80,568	519	22	50	
40M	VE3OZB	89,182	483	25	61	
	VG3KRN	79,474	462	25	54	
	VO1KO	30,072	236	15	41	
20M	VE6OU/3	433,440	1285	32	94	
	VE6CB	187,320	671	31	74	
	VE4IM	150,190	523	32	83	
	CH1PJ/VG8	136,200	810	21	54	
	VO1QU	120,888	566	25	67	
	VE2FGG	50,184	510	13	35	
	VG1CYL	46,020	290	19	46	
	VO2AC	22,372	329	12	22	
	VE4IY	14,766	124	18	28	
	VG6VW	10,032	130	11	13	
	VE7AV	6,386	91	16	15	
	15M	VE3NBE	80,595	398	22	59
	10M	VE1BNN	585	19	8	5
VE2AEJ/3		112	8	4	3	
Multi- Single	VG3IY	1,763,784	2011	110	264	
	VO2WL	886,049	4639	63	128	
	VG4ALO	437,400	1322	61	101	
	VE2UMS	352,640	1016	49	96	
	VE6CSE	13,630	137	25	22	
	VE3JW	8,908	122	14	20	

(Did someone miscalculate VO2WL's score?— VE3BHA)

Canada Contest 1986



Les voici encore! Here they are again! Sylvain VE3FOT, René VE2AHC and, feet on ground, Norm VE2FQX.

COMMENTAIRES:

Félicitations pour le Canada Day Contest 86. J'aimerais souligner la grande participation des radios Amateurs des Maritimes. Bonne chance à tous et rendezvous en Décembre. 73, Sylvain VE2FOT.

Congratulations on the '86 Canada Day contest. I'd like to emphasize the splendid participation of the Maritime Amateurs. Good luck to all and see you in December. 73, Sylvain VE2FOT.

De plus en plus intéressant les concours. J'espère que les Canadiens s'impliqueront d'avantage dans le seul concours Canadien. J'ai bien hâte de refaire ce concours avec de bonnes conditions sur 10 et 15 metres, ah ouil Très heureux d'entendre VE7ZZZ mais un peu déçu de la participation des VE4-5-6-8 VY1. 73, René VE2AHC.

The Contest gets more and more interesting. I hope that Canadians will participate more in the only Canadian contest. I can't wait to try it again with good conditions on 10 and 15 metres! Glad to hear VE7ZZZ but a little disappointed in the participation from VE4-4-6-8 and VY1. 73, Rene VE2AHC.

Très heureux de notre performance amélioré sûrement stimulé par le retour de VE7ZZZ. 73 à tous les OM's, Normand VE2FQX.

Very pleased with our improved performance, greatly stimulated by the return of VE7ZZZ. 73 to all Normand VE2FQX.

Suite au concours du jour du Canada, le groupe VE2FOT dites: Toutes les antennes sont en bonne condition pour le prochain concours du Canada 86 en Décembre. Au plaisir de te revoir, operateurs Canadiens! 73, René, Norm, Sylvain.

After the Canada Day contest, the VE2FOT group says: "All of the antennas are in good condition for the next Canada Contest 86 in December. CU again Canadian operators." 73, Rene, Norm, Sylvain.

Page 29

much in price? Or are the antenna manufacturers making a lot of bucks here?

I'm not so much complaining as just trying to recover from the shock of it all. Anyway, I guess that it's not all bad. I seem to have rediscovered an

interest in homebrewing yagis. Where's the best place to buy aluminum?

My ulcer is bothering me again now, so I'll go have a glass of milk and try not to think about rotors and amplifier prices.

Does it really make sense that the

antenna costs as much as the rig?? Arrghh... milk, milk.

LATER..

Ahhh, that is better. Anyway, don't forget the CARF Contest on December 28. À la prochaine.

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GD-8/500W	\$ 119	+ 7.90	#300	\$ 89	+ 6.90
GD-8/2KW	\$ 219	+ 7.90	#1211	\$ 49	+ 6.90
GD-7/500W	\$ 129	+ 8.90	#1213	\$ 59	+ 6.90
GD-7/2KW	\$ 229	+ 8.90	#1217*	\$ 69	+ 6.90
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•CO DX•CO DX•

You may remember that I devoted nearly all the June column to the old problem of how to make your QSLing as effective as possible. I warned you that I had probably missed a few points and asked for your suggestions and input so that a further few paragraphs could be written to put the subject to bed... for the time being anyway!

Bob Eldridge VE7BS came up with a couple of good points. He tells me he gets good results by sending his cards via the N7RO DX Service. I hadn't heard of this before but apparently you use it rather like a private QSL bureau except you pay a fee for every card you send through, I understand its currently \$1.00 for every 10 cards, which sounds very reasonable to me.

Bob also has a suggestion for writing the date. He favours the International Standards Organization's approved format of 'year.month.day' i.e. 86.06.08 for the 8th of June 1986. He points out that you can add a 4 digit number to the end to cover time of the QSO and so end up with a 10 digit number in your log that covers date and time i.e. 8606081256 for 1256 on the 8th of June 1986. Well I can see the advantage of that ten digit number for computerized log keeping. Since some people may not yet be familiar with it, and since the English names of the months may be strange, I put the month number in Roman numerals!

George VE7AYJ has a suggestion which came originally from QST. On the back flap of your SASE you print

the DX station's call, the day, month and year of the contact, the time in UTC and the frequency and mode used. He tells us that he has received compliments from several QSL managers for doing this so it's obviously useful to them in the fast processing of your request for a card.

DO WE NEED THEM?

All this writing and thinking about QSLs has raised some fundamental issues in my mind that I think we should all be pondering. In this age of electronic communication where huge volumes of data cross oceans in seconds, all in digital form, error corrected too, what are we doing mailing pieces of cardboard backwards and forwards to confirm a contact?

The problem was eloquently addressed in a paper presented to the IARU Region II conference in November '85 by Cliff Hawkins P29CH/ZL1BXX. If our editor had more space available I would have suggested that TCA print the paper in its entirety, inviting discussion amongst Canadian Amateurs. However, you'll have to settle for some of the highlights which I felt were particularly important. First of all some facts:

- The volume of cards being exchanged world wide is starting to swamp the system. Apparently the Japanese bureau handled 16 million cards last year and is now seriously considering some form of automatic sorting. We all know that Box 88, Moscow, must have been swamped

years ago judging by the time it takes to exchange a card with a Russian station.

- The rarer DX stations, often in the poorer parts of the world, are being faced with a heavy burden in terms of the cost of responding to requests for QSLs even when they are accompanied by all the appropriate IRCs, SASE and so on. In addition they are wasting valuable spare time, when they could be on the air making contacts, handling the chore of sending out cards.

- There is a sizable, perhaps growing, number of Amateurs who do not respond to cards at all. It came as a bit of a surprise to me, recently, when a member of a local club somewhat sheepishly admitted that he never had any cards on hand and never responded to requests for cards! I knew that there must be lots of foreign hams in the murkier parts of Lower Slobovia who obviously worked on this principle but to find responsible Canadian Amateurs following the same approach saddened me.

- My June article stressed that QSLing is not cheap, particularly if you are looking for quick returns and so choose the direct route. These costs are steadily rising, perhaps faster than any other element of cost in the hobby. Even the humble card itself is quite an expense when you come to write out a cheque for 500 or a 1000 personalized ones. CANAD-X seems to offer the best buy here but their cheapest are over 3 cents each. Other Canadian sources seem to start at about 8 cents each for their simplest design.

WHY EXCHANGE CARDS?

Given this unsatisfactory situation, it's time we took a hard look at why we exchange cards at all.

I think there are two obvious reasons, firstly those of us working towards various awards must have the cards as proof of contact, there's no choice here... at least at the present time under the current rules of the game.

The second reason is more flexible: a great many Amateurs like to exchange cards as a sort of 'final courtesy' of a QSO. Cliff Hawkins makes the point that this made sense in the very early days of the hobby when Amateurs were using home-built equipment and making contacts beyond the limits that contemporary propagation theory then accepted as possible.



Paul VE3JLP received this entertaining card recently.

However the situation has now changed dramatically. How many of our contacts could be said to be stretching the limits of propagation theory?!

The results of the 'Final Courtesy' philosophy are only too apparent once a month when the envelope arrives from the Bureau and we sort through a pile of, generally speaking, completely useless cards from countries we have worked dozens of times before, confirming pleasant but usually unmemorable QSOs that have, in the vast majority of cases, vanished from our minds. Do we need these cards? Clearly we do not! Then most of us sit down with our log books and a pile of our own cards and dutifully send cards back, where we haven't already done this.

Here's the challenge: how do we slow this avalanche of paper down to a steady trickle of useful cards? Either those we need for awards or welcome as the 'Final Courtesy' for those few outstanding contacts both ends agree should be commemorated in cardboard?

Perhaps CARF should lead the way by announcing that, from now on, members will only send cards to those who really need them for awards? We shall need a new, very well publicized 'Q' code that conveys this message clearly to our distant contacts, how about QFA or QSL/A?

Some of the minor awards already require you to send in only an extract from your log rather than cards, in other words an honour system. How would this sit with most Amateurs? Clearly some people would see this as an opportunity to fiddle the books and get credit for contacts they never made. I've always felt this wasn't too serious a threat, how much would an award really mean to those who cheated to get it, and knew in their heart of hearts that they weren't entitled to it?

For the vast majority of Amateurs, a shift to the honour system would mean a blessed release from many of the chores and problems we've been covering in these two articles, to say nothing of the time saved which could then be spent on the air!

"I have a vision of the future, chums, the worker's flats in fields of soya beans..."

and so on; it's a poem by John Betjeman which you should all read... great stuff! What's it got to do with QSLs? Well it just serves to turn our attention to what could happen five to ten years down the road. My 'vision of the future' for QSLing is every ham shack equipped with computerized logging. Once a month we press a few buttons and send our logs to a national data base which in turn talks

to all the other ham data bases world wide and either confirms, or does not, whether we are in the other station's log.

If we are working for an award, an update will be sent automatically to the ARRL, or whoever runs the award, and eventually a message will pop up on our screen "Your new DXCC total is 295 confirmed." It all sounds so easy and, of course, what I've described is technically possible right now. Too easy, I hear you say and perhaps you are right. Maybe the trials and frustrations of QSLing should be part of the struggle to get that award? On that sober note I shall leave, for the time being anyway, the subject of QSLs!

WWV PROPAGATION FORECAST

Many of you will have already discovered that this invaluable service provided by the National Bureau of Standards at 18 minutes past the hour seems to be temporarily no longer available. The announcement suggests that you write (!) to NBS for the figures or dial a long distance number they provide. Out of curiosity I dialed the number to find myself listening to a recording with all the usual up-to-the-minute figures on Solar Flux, A and K index and geomagnetic conditions. Why can't this recording be played over WWV at 18 minutes past the hour instead of the notice that the service is temporarily unavailable... the mind boggles!

Alternatively, the solar flux numbers are available in Ottawa,

which is whence WWV gets its figures, anyway. Call Christie Donaldson on 613-993-6060 around 1900Z.

BITS AND PIECES

4W Yemen— It appears that there is a chance of a modest operation from Yemen coming off shortly. QRZ DX reports that a communications technician who will be installing commercial equipment there has applied for a ham licence and is hopeful that he will be given permission. This will be a phone only operation on 20 metres working split on 14.183, 14.195 & 14.226 MHz.

TA Turkey— I expect some other readers have already noticed TA1A, Dr. Unal Akal, on either 20 or 15 metre CW. The frequency I heard him on was around 14.013 and his reported 15 metre choice was 21.025 MHz. He is on the air usually from 2100 to 2400 UTC. There are serious rumours floating around Ottawa that TA will shortly be dropped from the banned countries list. We will keep you informed of developments.

AROUND THE BANDS

This is a new section I'm trying as an experiment. It contains in tabular form details of some interesting stations that have been heard recently. The theory is that we hams are creatures of habit and tend to operate at the same times and on the same frequencies week after week. Given the 'Needle in a haystack' problem we face in trying to catch some of the rare ones, Table I should help to sharpen your aim, good luck!

TABLE I

Call Sign.	Time(UTC)	Frequency(MHz)	QSL to
VK9XI	1030	7.000	ZL1AMO
FM5ES	0158	7.004	Box 23, Riviere Salle Martinique.
9L1AR	1925	14.161	DK9XD
T77C	2009	14.018	Direct
ZS3AV	1950	14.000	
VP8PTG	0024	7.008	G3RFW?
DL1JW/VP5	1102	7.005	DL1JW
FR4ZD	0300	7.004	
HD8G	1500	21.020	KT1N
HZ1HZ	0310	7.012	
JW1CCA	2110	14.013	
JW5E	1340	14.023	LA5NM
JX5AG	1400	14.009	LA4GTB
OY2F	1530	14.004	
OY7ML	1300	14.025	
ON7JP/ST2	2220	14.180	ON7IP?
SV5OX	2130	14.022	
TL8BA	2130	14.163	
UV100	0115	7.013	
3B8CF	0315	7.005	
4S7RO	1140	7.003	
7J1ACH	(1345 1210)	3.505 7.001	
9J2BO	0415	7.003	

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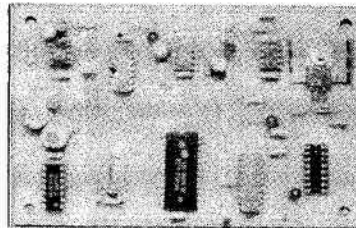
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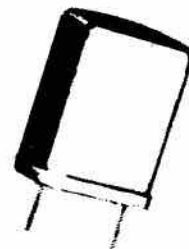
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Packet Radio Timing Parameters

BY BARRY MCLARNON
VE3KLW

As far as packet timing parameters are concerned, there are few, if any, hard and fast rules. They are generally arrived at through a combination of common sense and on-the-air experience. I have looked at the recommendations from TAPR (in the TNC2 manual), and from some of the U.S. packet gurus (W3IWI, in the Jan. '86 *Packet Status Register*, and WB2KMY, in April '86 *CQ*) as well as doing some experimenting. Here is a distillation of the results, which apply only to standard AX.25 packet communications at 1200 baud.

FRACK—

This sets the basic retry interval, in seconds, for retransmitting a packet if an acknowledgement fails to arrive. The TNC2 default is 3, which seems rather short, given the delays which can occur on an active channel due to other traffic. WB2KMY recommends FRACK = 7; I have been using an in-between value of 5 with reasonable results. This likely represents the minimum value that should be used under normal circumstances. On a direct-connect circuit on a quiet channel, reducing FRACK to 1 may be beneficial.

RESPTIME—

This parameter sets a minimum time to wait before transmitting an ACK, in case the transmitting station has another packet to send, but has paused briefly while it is being assembled. It can be set to zero for normal keyboard use; TAPR recommends setting RESPTIME = 10 (i.e., 1000 ms) for large file transfers. This parameter is not available on some older TNC units.

PACLEN—

This is the maximum size for the data field of a packet. The packet will be automatically transmitted if you type this number of characters without typing a (CR) (or whatever else your SENDPAC character might be set to). The usual default value is 128; for maximum throughput in a file transfer, it can be increased to 256, but this should only be done if there is no chance of colliding with other users (i.e., in a direct connect situation on a clear channel). On a busy channel, packets substantially shorter than 128 characters will tend

to get through much better. It is not usually necessary to change PACLEN, however, simply force the transmission of a short packet by hitting (CR) at the appropriate place. For a file transfer (in CONV mode), the packet length will be determined by the length of lines in the file; on a busy channel, you may want to set PACLEN to a more appropriate value (e.g., PACLEN = 40 for files with a maximum line length of 80).

MAXFRAME—

This sets the number of packets which will be concatenated together into a single transmission. The usual default is 4, but based on the clutter I've seen resulting from this value, and the recommendations of WB2KMY, I would be inclined to reduce this to 2 or even 1. MAXFRAME can be set to its maximum value of 7 for file transfer under the 'quiet channel' conditions mentioned above.

DWAIT—

This is a very important timing parameter, since it applies to all packet transmissions. It sets the minimum interval that the TNC must see a quiet channel (i.e., no DCD) before keying up the transmitter to originate a packet. It is automatically set to zero when digipeating a packet, thereby giving digipeated packets priority on the channel. It also can, and probably should, be used to prioritize other types of traffic as well.

The highest priority, after digipeated packets, should be packets originated by keyboard users, since the amount of data is generally small, and the frustration factor high, when delays occur. Next comes BBS traffic, since there is less interactivity and larger volumes of data. Lowest in priority is file transfer, since these can proceed automatically while the users can go for coffee, etc. W3IWI's recommendations are 160, 320, and 480 ms, respectively, for these classes of service.

For file transfer when direct-connected on a quiet channel, you can reduce DWAIT to the minimum value which will accommodate the other station's turnaround time; this will have to be determined experimentally if you really want to optimize your throughput. The default DWAIT value of 160 ms found in the TNC2 and its clones looks like a

reasonable choice for normal use (but beware: some TNCs, such as the Kantronics units, apparently have a default of only half this value).

The exact value of DWAIT is not that critical; the important point is that a minimum be established, and that ALL users abide by it. It is tempting to reduce one's DWAIT in order to gain an edge over other stations, but this is definitely not playing by the rules of the game, and is ultimately self-defeating.

TXDELAY—

This sets the interval between keying the transmitter and the beginning of the actual packet. There are no absolutes here; each packet user must determine his own optimum setting. There are three main factors which determine the required TXD: your rig's receive-to-transmit switching time (i.e., time from application of PTT signal to full power out), the other station's receiver risetime (primarily determined by the squelch circuit, if used), and the DCD (data carrier detect) response of the other station's TNC.

Wait for a time when the frequency is quiet, then select a station you can direct connect to, preferably not a wide-area digipeater that may be hearing many stations that you are not. Connect to the station, and then decrease your TXD by the smallest available increments (usually 10 ms), and send several packets at each new value. At some point, you will notice a large increase in the retry rate; then back the TXD off a notch and disconnect. Verify that this setting also works with the other stations with which you normally direct connect or digipeat through. Adjust your TXD upwards if necessary to accommodate these stations; however, if some require dramatically larger TXD from you, perhaps something can be done to improve their receive response time.

In my own case, I have found that the required TXD (with a rig using mechanical t/r switching) varies from 20 ms to upwards of 100 ms, depending on the configuration of the other station. In general, the lowest figures are for stations using NO squelch and having a modem based on the XR-2211 chip, as found in the TAPR TNC1 and TNC2 boards and their clones. The highest figures are for stations using both squelch and a

TNC having a relatively slow DCD response, such as the Kantronics units. A TXD of 80 ms appears to

accommodate just about everyone, in my case at least.

but others recommend values as low as 4.

CALENDAR

1987

Feb. 20-22: Guides on the air. Watch the YL column from October on.

Sept. 11-13: CLARA 87 Celebration. Details October YL column.

Applications for DOC licence examinations Jan. 14, Mar. 18, May 20, Sept. 23. DOC licence examinations Feb. 11, Apr. 15, June 17, Oct. 21.

Publicize your get-together here. Write the Editor, TCA, P.O. Box 855, Hawkesbury, Ontario K6A 3C9.

Let TCA know about your events three months in advance to list them in the Calendar.

JARL PRESIDENT HONOURED

Shozo Hara JALAN, President of the Japanese Amateur Radio League, has been awarded a 'Ranjuhoshho' or blue ribbon medal in recognition of his distinguished service to the telecommunications world, particularly in the promotion of Amateur radio in the past three decades.

The blue ribbon medal is awarded by the state for meritorious service or achievement. It is the highest honour for a private citizen and few are awarded.

Shozo Hara's interest in Amateur radio goes back to 1939. After WW2 he played a prominent role in the fight to reopen Amateur radio in Japan, won in 1952. Since 1970 Shozo has been president of JARL.

Break-in

MOBILE TELEPHONE SERVICE

Bell Canada has applied to the CRTC for approval to withdraw its Mobile Telephone Service by Dec. 31, 1986. Bell Canada claims that it has lost a significant number of customers to the cellular radio service. They feel that their remaining customers would have ample time to make alternative service arrangements. This move is a very important one for the telecommunications industry and offers interesting possibilities for the surplus of VHF and UHF equipment that will effectively become obsolete.

RETRY—

Here is another parameter that has a large influence on the amount of clutter heard on the packet channels. It of course determines the number of times an unacknowledged packet will be retransmitted before the connect (or connect attempt) is abandoned. The typical default value for retries is 15, but I suggest that if you need anywhere near this value to get any data through, then you are making extremely inefficient use of the shared channel. Wait for another time and try indulging in a more productive activity, like reading your TNC manual or getting reacquainted with your family! On many TNCs, it is possible to set the number of retries to infinite; do this on a busy channel only if you are determined to acquire a reputation as a LID (emergency situations excepted, of course). I customarily use a RETRY value of 6,

SUMMARY

For normal keyboard activity, I recommend the following be used: FRACK = 5 (or more), RESPTIME = 0, PACLEN = 128, MAXFRAME = 2 (or 1), DWAIT = 160 ms, RETRY = 6 (or less).

If you are attempting to transfer a large file on a busy channel, courtesy dictates that you increase the DWAIT at the originating end substantially, to perhaps 320 ms. Reducing PACLEN may also be beneficial.

For file transfer on a quiet direct-connect circuit, try the following: DWAIT to be determined experimentally (try starting with 80 ms or so). (Consult your TNC manual for the actual numbers to be inputted for DWAIT and RESPTIME). Remember to restore the normal settings when you get back on the common channel! Finally, determine your optimum TXDELAY experimentally, as described above.

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FOR SALE Heathkit Station Monitor SB-614 and Heathkit μ MATIC keyer. Both priced to sell. Brian Toney VE3MCV, 29 Viamede Crescent, Willowdale, Ont. M2K 2A7. (416) 229-2489.

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AMSAT NEWS

Ernie Welling VE3HD
165 Catalina Dr.
Scarborough, Ont. M1E 1B3

Doomsday for Oscar 10 was expected to have been mid-October although early in that month the beacon was still a good signal. It could not have been long after that date because the sun angle became very small and the battery charge would have just faded away. On top of that, it was reported that dozens of additional memory locations were failing daily.

It is sad to report the end of the most advanced and active satellite that we have had and, like all the dear departed, it will be missed. Those that did not get on Oscar 10 missed one of the big thrills that Amateur radio has to offer although there will be other chances in the future. One of those chances may be, surprise surprise, Oscar 10!

There is a theory among some of the AMSAT engineering people that there is a chance that, when the sun angle improves and the batteries recharge (having suffered no ill effects from having been floating around discharged in space for some time),

Oscar 10 will reactivate. Part of this theory is that the memory will regenerate during a long period of rest. We'll see.

Rather than wait for Oscar 10, to make like Lazarus, you should be actively participating in Oscar 12, or Fuji-Oscar 12 as it is now designated. Japanese custom is to name spacecraft after flowers once they are in orbit and thus the transition from JAS-1 to Japan-Oscar 12 to Fuji-Oscar 12. (The flower is the wisteria). Now that FO-12 is settling down, the Japanese controllers have decided that it would be advisable not to run it flat out all the time, particularly during periods of eclipse or partial eclipse. So, for most of the fall, the transponder has been shut down on Mondays and Fridays.

It is usually difficult to know when an operating schedule will change so don't be alarmed if you listen and find no signals. Definitely don't blame your equipment unless you are absolutely sure that the satellite transponder was on. So far, only the Mode J transponder (145 up and 435 down

but digital only) has been tested but not yet put into operation. The unexpectedly high level of fading on Mode J, due to the spacecraft tumbling, is said to be delaying Mode JD's introduction.

While the new Japanese bird is currently the star of the show, there is plenty of other activity in the Amateur space programme, which, as you may have already heard, is 25 years old this December. Take, for example, Oscar 9, which has been in orbit since October '81 and is now the veteran Oscar. Built at the University of Surrey in England, it has not had much visibility outside of the satellite community because it does not carry a transponder. Its scientific and educational payloads have been, and still are, very important for the reputation of the Oscar programme.

It is, of course, the plans and projects for the future that are the most exciting and there are two that have just surfaced that will make a profound difference to Amateur radio. Because the planning time for satellite projects is so long, the first indications of what may happen are years before the event. The Space Station proposal just announced is of a permanent Amateur installation on NASA's Space Station scheduled for the mid-90's. NASA, AMSAT, and ARRL have met and a formal proposal will be made next year to have the facility designed in. Reports say that the chances are good.

Another far-reaching announcement is that planning has started on the programme that will follow Phase IIIC, the next AMSAT satellite to be launched. A Phase IV Technical Study Plan has been completed by AMSAT and proposes a pair of geosynchronous Oscars. This will be studied by AMSAT's Board and a decision can be expected next year with the possibility of launch four years later (1991). Because a project of this size cannot be undertaken by the present AMSAT membership there must be growth in the number of Amateurs who will support a programme of this kind.

Adjusting our focus from the nineties back to the eighties you will recall that there are some satellites waiting for a launch. The big one is AMSAT Phase IIIC which is now held up by the Ariane Launch vehicle. The launch date has been receding before us and now stands at August '87. As for those two Russian birds, RS9 and RS10, they really seem to have a low priority. The current rumour is for next February, whatever that's worth.

Re: Jocelyn Lovell (Quadriplegic) Fund

After repeated assurances that it was Jocelyn's intention to get his Amateur radio licence, it has in recent months become increasingly apparent that he now has no interest in the hobby.

The Thornhill Radio Amateur Club has a Trust Fund set up for Jocelyn in a separate account which presently totals in excess of \$1,680. Since Jocelyn has now expressed no interest in the hobby, this fund will be held in abeyance until such time as any Amateur radio club or individual becomes aware of another such individual: paraplegic, quadriplegic or severely handicapped person sincerely wanting to pursue the hobby of Amateur radio.

Any club, group or Amateur who has generously and graciously contributed money to the Jocelyn Lovell Fund and who does *not* wish the money to be given to another disabled, needy person, should write to the Thornhill Radio Amateurs' Club, Box 17, Thornhill P.O. Ont., L3T 3N1 and the amount of their contribution will be returned.

Equipment supplied from the

Thornhill Radio Amateurs' Club would be strictly on loan from the club. Should the recipient be unable to continue pursuing the hobby for any reason or should leave the country, it would be agreed that the equipment would be returned to the Thornhill Radio Amateurs' Club to be passed on to another needy individual.

I regret any inconvenience this may have caused anyone and I'm sure everyone can appreciate the many hours I and others have spent on this project. I sincerely regret the outcome. Jocelyn's loss will be someone else's gain. Thanks to all of those who so generously contributed.

Libby Stevens VE3IOT

FOXX KITS

FOXX Transceiver kits are available at \$40 with diode tuning and \$50 with capacitor tuning. \$5 P&P from Frank Hughes VE3DQB, Box 855, Hawkesbury, Ont. K6A 3C9.

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Aurora and Radio Propagation

BY BILL RICHARDSON
VY1CW

Living in the northern latitudes and suffering the poor propagation associated with the polar areas encouraged me to research the Aurora Borealis (northern lights) and its effect on HF propagation.

I am sure those of you who have worked VY1, VE8 and KL7 as well as transpolar paths, have noticed the warble effect on signals from these areas at various times. These are most noticeable at times of high auroral activity. There is still much to be learned about aurora but even with the little we already know, it is a fascinating subject.

Aurora is high level electrical discharge caused by solar flares and solar winds. Solar winds emanate from the least active areas of the sun's surface called coronal holes, and attain velocities from 300 km to 1000 km per hour.

These coronal holes are much more common during the lower levels of the sunspot cycle and can last for several months, thus with the sun's rotational period of 27 days, these areas can keep affecting the ionosphere recurrently every four weeks.

The solar wind can reach the earth in 48 hours and then many things can happen. X-rays can cause the E and F layers to be greatly enhanced thus giving excellent propagation for a short period. The D layer can also be ionized at this time or very soon thereafter causing severe signal absorption and resulting dead bands. Polar cap absorption is caused by this D layer ionization and this affects the polar latitudes to varying degrees at all times. This is the main reason no one hears VE8 and VY1 for that last needed multiplier in contests, Hi, Hi.

Aurora usually occurs from 100 to 1000 km above the earth. Current discharges during intense aurora can cause very high voltages and currents to be induced into long conductors such as power lines and pipelines. These currents of up to 100 amps and

voltages of up to 100,000 volts can cause corrosion at joints in the conductors and blackouts in power grids.

The reason for the various colours in the aurora display is thought to be an interaction between the protons and electrons in the solar wind and the edge of the earth's magnetic field. The current caused by this interaction causes the gases in the upper atmosphere to fluoresce.

Excited nitrogen causes intense red light while ionized nitrogen gives intense blue and violet shades. Excited oxygen emits green and red light. The red areas are usually between 200 and 400 km with green areas between 100 and 200 km. The lower level of aurora is around 100 km which is the average boundary level of the D and E layers of the ionosphere. Intense aurora can occur as high as 1000 km above the earth.

The wavering and flickering effect is the result of turbulence created by the solar wind. These winds vary in velocity from 300 to 500 km per hour to as high as 1000 km per hour.

Auroral propagation is usually equated with 10, 6 and 2 metres but can also be usable on 15 M and the

higher VHF bands. Distances vary from 200 to 2000 km. The old adage about pointing north to work aurora is not always true. Quite often the strongest signals will be from directions quite different from the visual aurora display.

Most frequent and intense aurora occur near the spring and fall equinoxes with major effects during later afternoon and early evening hours. I have found an excellent means of determining when aurora propagation is usable is to keep a CB rig on channel 16 LSB. You can be sure if there is any propagation, the CBers will be taking advantage of it. Also a 4 or 5 on the WWV K index at 18 minutes past the hour is another good indicator as is the warble effect on signals on the HF bands. WWV also announces solar flares and geomagnetic disturbances which can tip you off to possible auroral openings as well as good E and F layer openings.

You won't work DXCC on aurora but it can fill in time when propagation is out, and take heart fellows, we in the far north have to put up with it most of the time.

KOEW's Half Sloper

A few comments on the KOEW three element half sloper described in QST April 1986 issue.

I just put up this very simple wire antenna for 80 metres from my 48 ft. tower and I must say it is truly broad-banded, absolutely flat from 3.615 to 3.925 MHz with a slight rise at each end of the band.

I also made some very interesting observations while testing this antenna. It is slightly directional as the sloping wire in my installation is toward the south so signals are favored in that direction. I also have a co-ax dipole: comparing the two, the dipole has a slight edge over the

sloper except in the southern direction which may be 1 S unit better than the dipole.

Another interesting observation is that there is no RF interference to my AM radio or the cassette recorder while taping as I am transmitting on the Kenwood TS120S.

Also there is no TVI whatsoever on any channel as compared to any other antennas I have tried.

All this without the use of tuners or matching devices makes this a truly fine antenna for our solid state transceivers, and for keeping peace with our neighbours!

Bill Barz VE7EGF

Antennas

BY VE3DQB

CHAPTER 11 TRANSMISSION LINES

A transmission line is the conductor used to convey electrical energy from its source to its place of use. In radio, this means between the transmitter and dummy load or antenna.

Radio transmission lines differ from those carrying DC or low frequency AC power. If the length of the line is comparable to a wavelength, resonance can occur. Lecher wires (Chapter 4) make use of this to measure wavelength, as we know.

STANDING WAVES

If a Lecher wire is excited by a transmitter, and an RF sniffer (a diode, with two leads going via chokes to a meter) is brought up to one of the conductors, as in Figure 83, the meter will usually show a reading. If the sniffer is moved along the line, the meter reader will vary, showing that the voltage along the line varies with distance. Nodes are found at half-wavelength intervals.

If an antenna, or a 300-400 ohm resistor, is connected to the open end of the line, the voltage variation found will be smaller than when the line is unterminated.

To understand this, think only of the peaks of current the transmitter sends out into the line, first positive-going, then negative-going, one-half wavelength apart. When the first peak meets the end of the unterminated line, the current cannot flow to the very end, for there is nowhere for the electrons to go. Instead, the voltage at the end of the line goes below zero.

This low voltage repels the electrons in the nearby conductor, so the peak of current which approached the end is reflected in opposite phase, that is, the electrons travel in the opposite direction, Figure 84.

A quarter wave later, the reflected wave meets the next peak from the transmitter, one-quarter wavelength back from the end. The two peaks combine to give a high-current zone, where the voltage is low—a voltage node.

After another quarter wave of travel, the reflected peak meets the next one approaching from the transmitter. The two phases are opposite,

now, so here is a current node, and the voltage is correspondingly high.

If the end of the line is short-circuited, the pulses travel round unimpeded, and the result is the same as when the line is unterminated.

This arrangement of nodes and antinodes at quarter-wave intervals is known as a **STANDING WAVE PATTERN**.

If one of the conductors of the Lecher line is continued a half-wave beyond the other, the standing wave is set up on this extension, but the power is not reflected back into the line, but is radiated, for the extension is an antenna. So there are no standing waves on the line.

Terminating the line with resistors (non-inductive ones) will show various magnitudes of standing waves with different values. There will be one resistance, however, at which the standing waves will be undetectable. The resistance turns the power from the transmitter into heat, rather than radiating it like an antenna. This resistance is called the **SURGE IMPEDANCE** of the line.

Careful experiment proves that the exact resistance that gives zero standing waves depends on the diameter of the conductors of which the line is made, and of the distance between them. If the conductors are encased in a dielectric, as TV twinlead

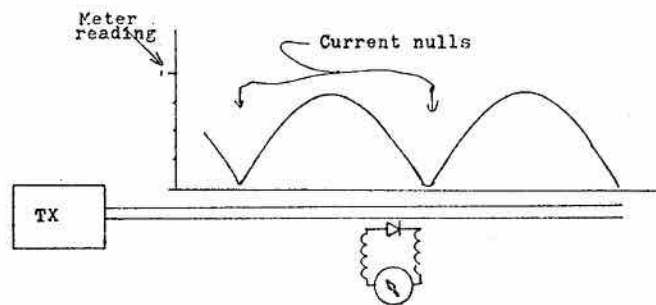


Fig. 83— An RF sniffer shows that the current and voltage along an unterminated transmission line varies from point to point.

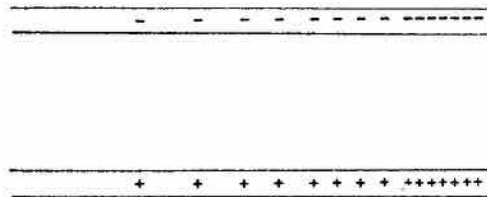


Fig. 84— At the unterminated end of a transmission line, the electrons pile up at one end, and retreat from the other. This changes to the opposite polarity and back every cycle.

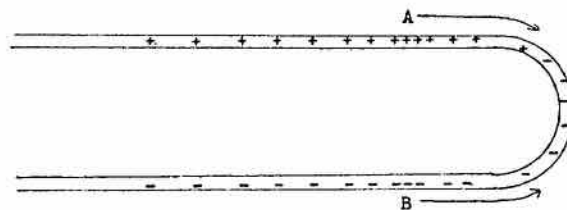


Fig. 85— If the line is short-circuited at the end, a bunch of electrons travels round the end in one direction as an opposite wave passes round in the other direction. Neither wave affects the other.

is, this complicates matters. The terminating resistance needed by air-dielectric lines of various dimensions is found from Figure 86.

Standing waves are usually

measured by the ratio of the voltage peak to the voltage trough, as in Figure 87. This is quoted as the **VOLTAGE STANDING-WAVE RATIO**, or **VSWR**.

Two-wire transmission lines cannot be constructed to give surge impedances much below 200 ohms. This means that they cannot be used to feed dipoles at the center without standing waves. To do this, another kind of line—coaxial line—has to be used. This is practical between 200 and 50 ohms impedance.

Standing waves are undesirable on transmission lines, mostly because the voltage peaks can get too high for the safety of the equipment. A high-power transmitter can burn out coaxial line if it is wrongly terminated.

High standing-wave ratios carry high currents, too, at the current peaks. This leads to power losses in warming up the transmission line. It is only considerable on long lengths of coax: open-wire line losses are usually negligible, regardless of the VSWR. See Figure 88.

The high voltages and currents at the transmitter end of the transmission line can damage the transmitter, unless precautions have been taken. In general, too high a VSWR should be avoided except on open-wire line.

MATCHING THE ANTENNA TO THE LINE

An antenna may present a pure resistance to its feedline at many different frequencies. At any frequency other than this set, its impedance will show both resistive and reactive components. When the impedance of the feedline differs from that of the antenna at the point at which it is being fed, a **MISMATCH** (of impedances) is said to occur, and causes standing waves on the feedline.

This causes problems, because the impedance of antennas ranges from a few ohms to thousands of ohms. However, no feedline below 50 ohms is practical, and commercially available lines are restricted to 50 and 73 ohm coaxial, 150, 300, 400 and 600 ohm twinlead.

Modern transmitters are invariably designed with 50 ohms nominal output. That is, the circuitry inside the transmitter will match a 50 ohm load with some leeway—perhaps 40-90 ohms. The output is also to a coaxial connector. So the transmitter can be connected to a 50 ohm load (antenna or resistor) by 50 ohm coaxial line, to work as designed.

The antenna, unlike the noninductive resistor, will only be a true 50 ohms at one frequency. To tune across an Amateur band will mean accepting a standing wave on the feedline.

To be continued

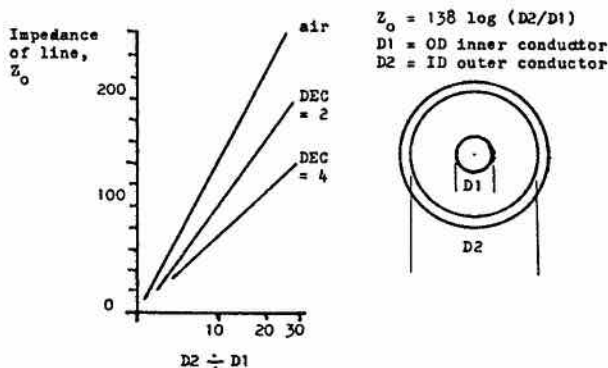
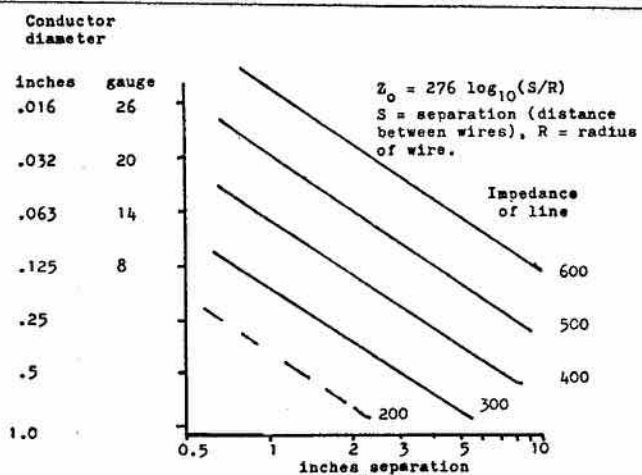


Fig. 86—Line impedance can be calculated from the dimensions of the line. The coax line diagram has three lines for fillings of air, and the fillings of dielectric constant (DEC) of 2 and 4.

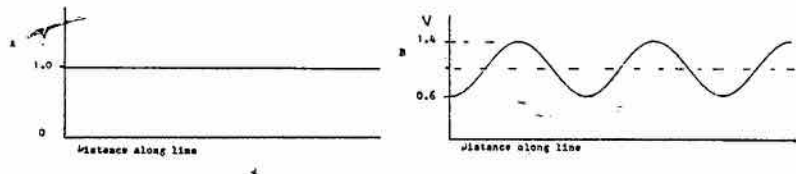


Fig. 87—If a transmission line is terminated in its surge resistance or in a matched load, the sniffer shows constant current along its length, A. In B the load is not perfectly matched, and the current or voltage varies between 1.4 and 0.6. The Standing-Wave Ratio is then 1.4:0.6 or about 2.3:1.

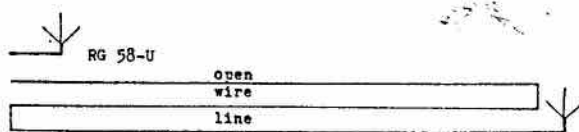
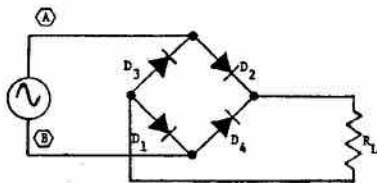


Fig. 88—The losses in open-wire line are far smaller than those in coaxial cable. These two lines are of equal loss, drawn to scale. If the antenna is far from the transmitter, consider open-wire feedline.

Try these!

FROM RECENT DOC EXAMINATIONS

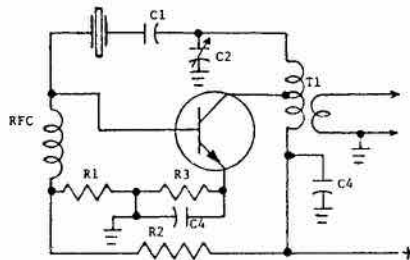
1. a) What is the principal function of the filter network in a power supply?
b) Explain how it is possible to rectify an AC voltage and produce a DC voltage almost twice the AC value.
1. a) Quel est le rôle principal d'un réseau de filtres dans un bloc d'alimentation?
b) Expliquez comment il est possible de redresser une tension alternative et produire une tension en courant continu qui soit presque le double de la valeur du courant alternatif.
2. Shown below is a schematic diagram of a full-wave bridge rectifier with a load. Briefly describe the operation of this circuit during a full cycle of input voltage.
2. Ci-dessous se trouve le schéma d'un redresseur en pont pleine-onde avec charge. Décrivez brièvement le fonctionnement de ce circuit pendant un cycle complet de la tension d'entrée.



3. Show how a zener diode may produce a constant voltage source.
3. Démontrer comment une diode zéner agit comme une source constante de tension.
4. (a) What is the purpose of a product detector?
(b) Explain how a product detector functions.
- 4 (a) A quoi sert un détecteur de produits (product detector)?
(b) Expliquez le fonctionnement d'un détecteur de produits.
5. How is automatic gain control accomplished in a receiver?
5. Comment s'effectue le contrôle automatique du gain dans un récepteur?
6. What is carrier reinsertion and why is it necessary in single side-band suppressed carrier reception?
6. Qu'est-ce que la réinjection de porteuse et pourquoi est-elle nécessaire pour la réception en bande latérale unique porteuse supprimée?
7. A balanced modulator used in SSB SC transmitter has a 14 MHz sine wave signal applied to one input and

a 3 kHz sine wave signal applied to the other input. What signals appear at the output terminals?

7. On a un modulateur équilibré (balanced modulator) dans un émetteur à bande latérale unique. On applique un signal sinusoïdal de 14 MHz à l'une des entrées de ce modulateur et un signal sinusoïdal de 3 kHz à l'autre entrée. Quels signaux apparaissent aux bornes de sortie de ce modulateur?



8. a) What is the technical name for the above circuit?
b) Name two reasons for using this type of circuit.
8. a) Quel est le nom technique du circuit ci-dessus?
b) Donnez deux raisons pour lesquelles on utilise ce circuit.
9. Why is it necessary to re-insert the carrier when detecting a single sideband signal?
9. Pourquoi est-il nécessaire de réintroduire la porteuse pour détecter un signal à bande latérale unique?
10. a) What is a balun and what is it used for?
b) Where would a balun be used in an antenna system?
10. a) Qu'est-ce qu'un 'symétriseur' (balun) et à quoi sert-il?
b) Où utiliserait-on un symétriseur dans un système d'antenne?
11. a) What are the purposes of the reflector and director elements in a yagi antenna?
b) Why is the reflector longer than the driven element of a yagi antenna?
c) What is meant by the front-to-back ratio of a uni-directional antenna?
11. a) Quels sont les rôles des éléments 'reflecteurs et directeurs' dans une antenne yagi?
b) Pourquoi le réflecteur est-il plus long que l'élément radiateur dans une antenne yagi?
c) Qu'entend-on par 'rapport avant-arrière' d'une antenne uni-directionnelle?

12. a) What is a two tone oscillator?
b) For what purpose is it used?
c) Describe how it would be used.
12. a) Qu'est-ce qu'un oscillateur à deux tonalités?
b) Quelle est son utilité?
c) Décrire comment on l'utilise.

SUBSCRIPTIONS

Please look at your label! Debbie rubber-stamps it in red when your CARF membership has expired. (If you have paid next year's dues recently, please ignore the notice.) Paying dues is easy— just take the last page of TCA out of the magazine, and send it to the office with your cheque or credit card details.

ALASKAN FISHING VESSELS

CARF has been advised that Alaskan fishing vessels are again using Amateur frequencies illegally. They have been reported on 7080, 3770 and 1824 kHz USB. CARF would like stations in western Canada to submit intruder reports to DOC regional offices in British Columbia with a copy to the Pacific Director Jim Voight VE7CWC. Reports should include date, time (Z), frequency and details of transmissions.

HELP!

CARF needs the addresses of these Amateurs. If you know where they are presently living, please tell Debbie. Her address is CARF, Box 356, Kingston, Ont. K7L 4W2.

Name and last known address:
Dave Goodwin-Hill VE2ZP, 1-285 Metcalfe St. Ottawa, K2P 1R8.
W. Graham VE7GL, 404-1170 Rockland Avenue, Victoria, B.C. V8V 3H7.

And the QSL Bureau needs addresses for the following call signs:

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Send SASEs to Trilliums QSL Bureau, c/o Ron Martin, 44 Threadneedle Cr., Willowdale. M2H 1Z6 for B suffixes. If you are not in the call book, or when you change your address, do please advise the Bureau.



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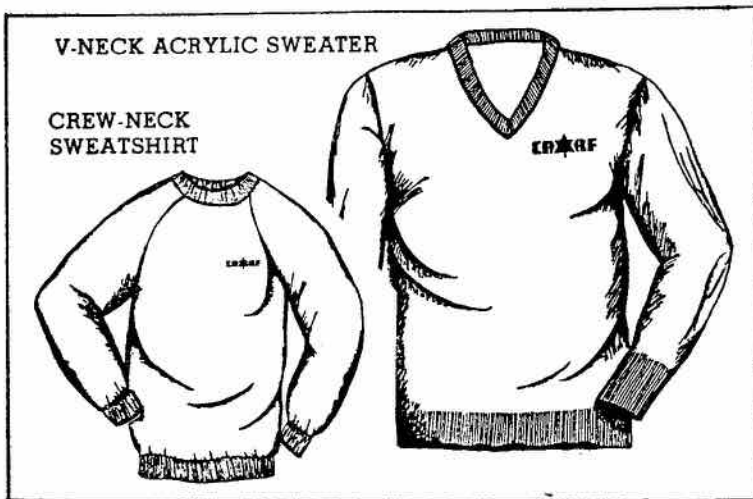


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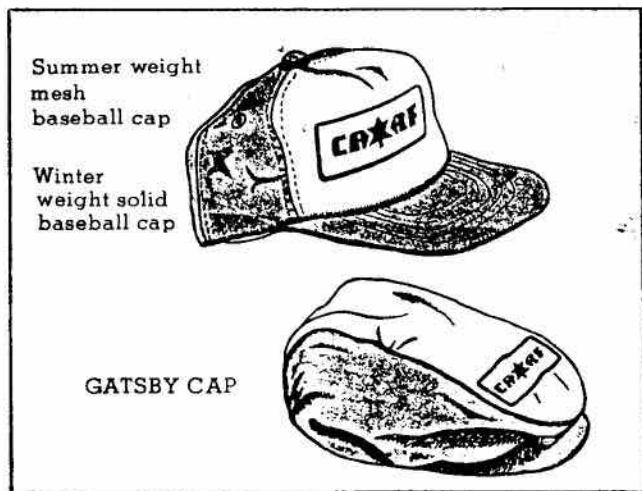


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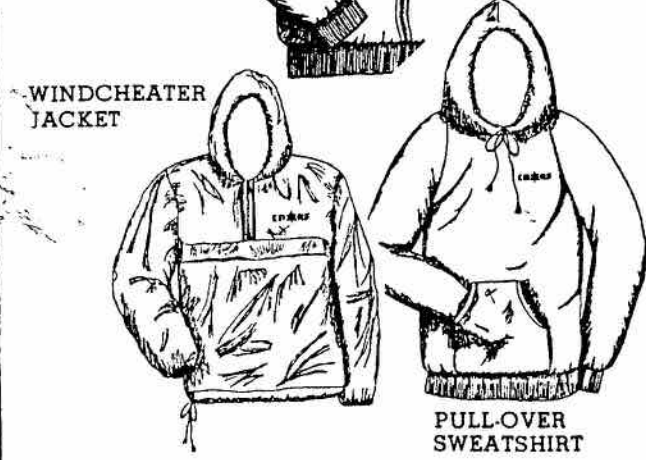
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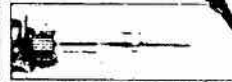
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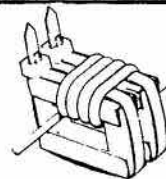
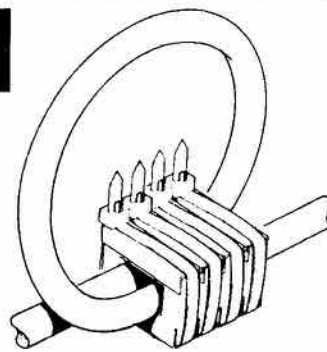
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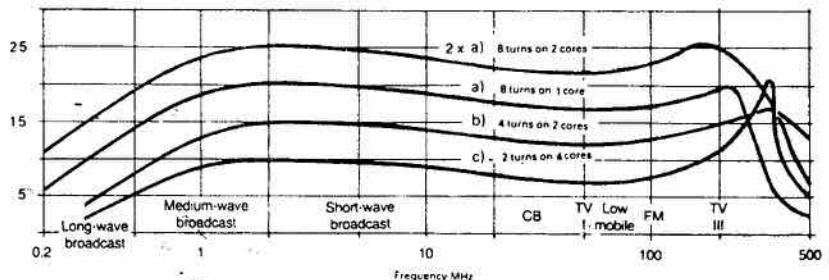
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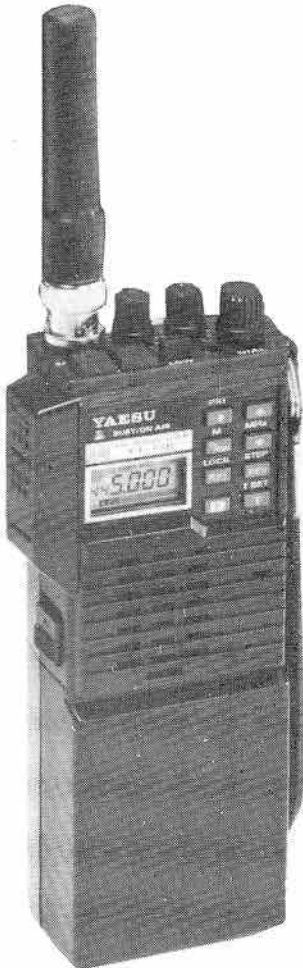
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