

Second Class Mail
Registration Number
5073

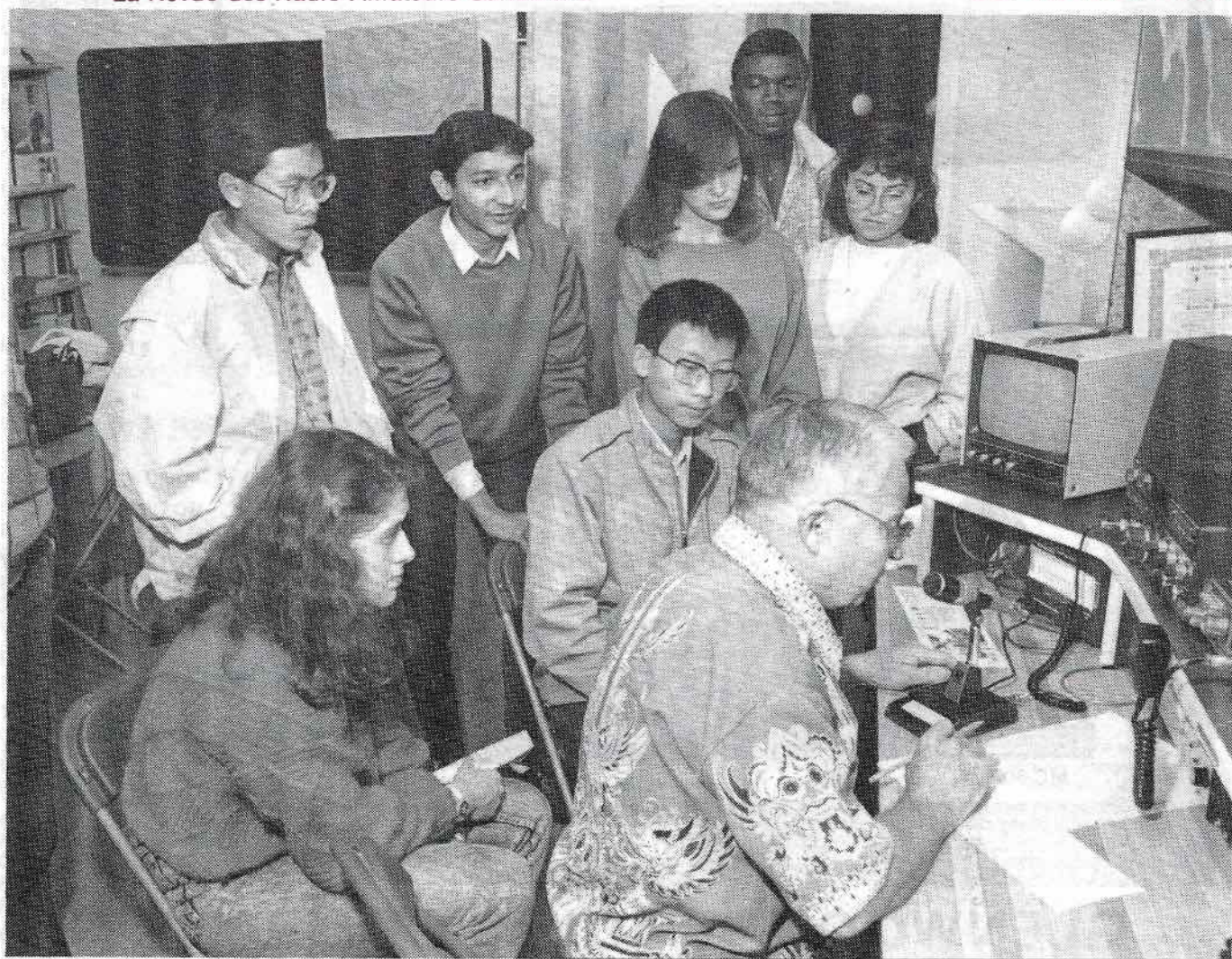
\$2.50

THE CANADIAN AMATEUR

Canada's Amateur Radio Magazine

La Revue des Radio Amateurs Canadiens

SEPTEMBER 1989



Development Day

VE7LPC on the air at Lester Pearson
College, Victoria, with Roy VE7TG at the
mike. See Page 9 for story.



MC-60A SP-940

TS-940S

SW-2000
SM-220

TL-922

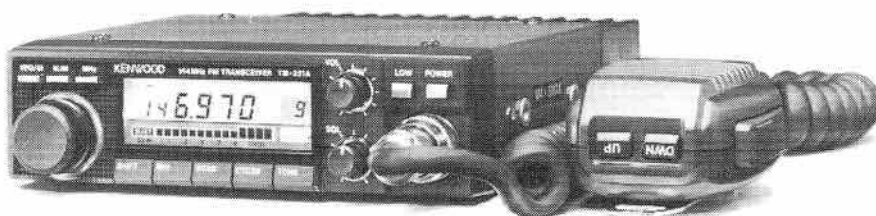
GLENWOOD

PRESENTS

KENWOOD



TM-2550A



TM-221A



TR-2600A



TH-21AT



TR-751A



MC-60A



PS-50



TS-440S



SP-430

(604) 321-3200

GLENWOOD TRADING COMPANY

DIVISION OF

COM- WEST Radio Systems Ltd.

8179 Main Street, Vancouver, B.C. V5X 3L2

STORE HOURS: Mon-Thur: 9 a.m.-5 p.m., Fri: 9 a.m.-6 p.m., Sat. 9 a.m.-4 p.m.

CIRCULATION OFFICE

CARF Head Office
P.O. Box 356,
370 King St. West,
Kingston
Ont. K7L 4W2
613-545-9100

EDITOR

George Sansom VE3GWS

ASSISTANT EDITOR

Debbie Norman

COLUMN EDITOR

Clayton Bannister VE3LYN

CONTEST SCENE

Dave Goodwin VE2ZP

CROSSWAVES

Ralph Cameron VE3BBM

AFFILIATE CLUBS

J.P. LeBlanc VO1SK

CQ DX CQ DX

Paul Cooper VE3JLP

QRP COLUMN

Moe Lynn VE6BLY

YL NEWS AND VIEWS

Cathy Hrischenko VE3GJH

LISTENING TO THE WORLD

Sheldon Harvey

ARES

Bob Boyd VE3SV

LINE OF SIGHT

Robert Smits VE7EMD

NYBLES & BITS

Antonio Salvadori VE3NXQ

PACKET RAP

Bernie Murphy VE3FWF

IARN NEWS

Glenn Baxter K1MAN

OVER THE HORIZON

Bob Brown NM7M

TECHNICAL EDITOR

Bill Richardson VY1CW
36 Range Rd.,
Whitehorse, YT Y1A 3V1

LOOKING AROUND

Art Blick VE3AHU

THE GAIN GAME

Gerry King VE3GK

INDEXING

Bill Watts VE3DWV

ADVERTISING**REPRESENTATIVE**

Don Slater VE3BID
RR 1 Lombardy, Ont. K0G 1L0
613-283-3570

PRODUCTION

Steve Campbell,
County Magazine Printshop Ltd.
P.O. Box 30, 71 Main St.
Bloomfield, Ont. K0K 1G0
613-393-3355

Please address correspondence to the
Editor at Box 356, Kingston, Ontario K7L
4W2, telephone 613-545-9100.

ISBN 0834-3977

September 1989

Vol. 17 No. 8

THE CANADIAN AMATEUR

Canada's Amateur Radio Magazine

EDITORIAL, VE1GWS	3
LETTERS	5
FEATURES	
Development Day	9
Radio is my Passport, VU1GOC/VE7	11
Amateur use of the 11 Bands, VE3NR	13
50 Years! It can't be!, VE3NB	16
JRSD Fund ends, VE3BBM	18
YL NEWS & VIEWS	19
LISTENING TO THE WORLD	20
CONTEST SCENE	21
CQ DX CQ DX	27
ARES COLUMN	29
CLUB CORNER	31
OVER THE HORIZON	32
IARN NEWS	34
LINE OF SIGHT	36
QRP COLUMN	38
PACKET RAP	40
SWAP SHOP	41
QUA COLUMN	42
GK ANTENNAS	44
LOOKING AROUND	46

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

Unsolicited articles, reviews, features, criticisms, 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.

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

The Advertisement Department of The Canadian Amateur on behalf of the magazine wholly disclaim any responsibility for the content of any advertisement contained herein and make no representations on behalf of The Canadian Amateur as to the truth of any statement contained in any such advertising.

C.A.R.F. Publications Limited and the publisher and editors of The Canadian Amateur hereby disclaim any responsibility for any statement of opinion or other statement that may be contained in any article published by The Canadian Amateur and any such statement of opinion or other statement contained in such article is solely the opinion of the author of the article and not that of C.A.R.F. Publications Limited, the publisher or editors of the magazine unless it is specifically stated to be the case therein.

The Canadian Amateur is published by C.A.R.F. Publications Limited, 370 King St. West, P.O. Box 356, Kingston, Ontario, Canada K7L 4W2. It is recommended by the Canadian Amateur Radio Federation Inc. and its members receive it automatically. Indexed in the Canadian Periodical Index: ISSN 0834-3977.

Second Class Mail Registration Number 5073



INC. EXECUTIVE

C.A.R.F. PRESIDENT

John Iliffe VE3CES, 387 Selby Crescent, Newmarket, Ontario L3Y 6E2
(416) 898-4875

PAST PRESIDENT

Ron Walsh VE3IDW, 869 Haverhill Dr., Kingston, Ont. K7M 4V1
(613) 389-3301

VICE-PRESIDENT

Clayton Bannister VE3LYN, 705 Fleet St., Kingston, Ont. K7M 5A4

SENIOR VICE-PRESIDENT

Earle Smith VE6NM, P.O. Box 412, Grande Prairie, Alta. T8V 3A5
(403) 532-4279

GENERAL MANAGER

Bernie Burdsall VE3NB, Box 356, Kingston, Ont. K7L 4W2

TREASURER

Ollie Schijns VE3LXO, 730 Dempster Dr., Gananoque, Ontario K7G 2E7
(613) 382-3867

SECRETARY

Eric Hott VE3XE, RR3 Yarker, Ont. K0K 3N0 613-378-2590

HONORARY LEGAL COUNSEL

Timothy Ray VE3RBK, Hughes, Laishley, Barristers & Solicitors,
116 Lisgar St., Suite 600, Ottawa, Ont. K2P 0C2 (613) 236-7333

MID-WEST DIRECTOR

Norm Waltho VE6VW, Box 1890, Morinville, Alta. T0G 1P0
(403) 939-3514

ONTARIO DIRECTORS

Antonio Salvidori VE3NXQ, 17 Colborn St., Guelph, Ont. N1G 2M4
Dan Holmes VE3EBI, 33 Crownhill St., Gloucester, Ont. K1J 7K5
(613) 746-0968

QUEBEC DIRECTOR

PACIFIC DIRECTOR

J.F. Hopwood VE7AHB, 1209 Kilmer Rd., North Vancouver, B.C. V7K 1P9
(604) 985-1267

ATLANTIC DIRECTOR

Nate Penney VO1NP, P.O. Box 10, Shoal Harbour, Nfld. A0C 2L0
709-466-2931

ASSISTANT REGIONAL DIRECTORS

Stuart Harvey VO1OO
Susan Harvey VO1OI
R.G. White VO1RW
Dan Murray VO2AZ
Dr. Roger Côté VE1BWQ
Jeannine Côté VE1BWP
Burt Amaro VE1AMA
Geoff Smith VE1GRS
Camille Tremblay VE2DNO
Tony Pattinson VE2KM
Ben Cuperman VE2LRB
Antonietta Avanzini VE2AAV
Gordon Roberts VE3IMA
Mel Brown VE3ACD
Barry Baggs VE3IVV
Charles Baker VE3PAP
Hans Zekai VE3ZHM
Cecil Fardoe VE4AEE
Max Geras VE4IX
Malcolm Timlick VE4MG
Vic Allen VE5AE
Bjarne Madsen VE5FX
William J. Wood VE5EE
Ken Schneider VE6COH
David Roberts VE6XY
Jim McKenna VE6SU
Gene Graham VE7GAS
Vol Riley VE7YG
Larry Reid VE7LR
George Stephens VE7YF
Tony Van Wouw VE7CCI
Jim Voight VE7CWC
Hu Reijne VE7CHW
Ron McFayden VY1AD

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 Communications Canada;
4. To promote the interests of Amateur radio operators through a program of technical and general education in Amateur matters.



Committee Chairmen

D.O.C. Liaison

Bill Wilson VE3NR

News Service

Bernie Burdsall VE3NB, Box 356, Kingston, Ont. K7L 4W2

Electromagnetic Interference

Ralph Cameron VE3BBM

CSA Committee

Ivor Nixon VE3IHN, 17 Romney Rd., Islington, Ont. M9A 4E9

Canada Winter Contest

J. Parsons VE6CB, RR#1 Oxford Mills, Ont. K0G 1S0.

Canada Day Contest

John Clarke VE1CCM, 16 Keele Ave., Sydney, N.S. B1R 2C7.

CARF Awards

Garry Hammond VE3XN, 5 McLaren Ave. Listowel, Ont. N4W 3K1 (519) 291-4813

Reciprocal Licencing & International Affairs

Francis Salter VE3MGY

Publications Committee

John Iliffe VE3CES

C.A.R.F. QSL Service

Jean Evans VE3DGG, P.O. Box 66, Islington, Ont. M9A 4X1

Government Relations

Dan Holmes VE3EBI, 33 Crownhill St., Gloucester, Ont. K1J 7K5

CARF Head Office

Debbie Norman, Office Manager (613) 545-9100

EDITORIAL

Canadian Amateurs assist in Sea Rescue

By George Sansom VE3GWS

The following is a Canadian Press story as printed in *The Vancouver Sun*, July 13, 1989.

CANADIAN BURNED IN YACHT BLAST

LISBON— A Canadian ham radio operator and U.S. Air Force Officers helped rescue a Canadian who was severely burned when a stove exploded and a fire broke out aboard his yacht in the Atlantic Ocean west of the Azores.

The sailor, Albert Edward Wilson of Wellington, Ont., near Belleville, was taken aboard a merchant ship from his burning nine-metre-long sailboat Wednesday night, Portuguese officials said today. Wilson was the only person aboard the vessel.

The officials said the sailor's distress call was heard at a U.S. Air Force base in Lajes, on the Azores island of Terceira, and a U.S. reconnaissance plane located the yacht while rescue vessels rushed to the scene.

Wilson was saved about 210 km west of the Azores, mid-Atlantic islands owned by Portugal, the officials in the Azorian city of Ponta Delgada said.

Lorne Bowers, a ham radio operator in Charlottetown, P.E.I., maintained contact with Wilson all night and said the sailor was coherent and cheerful despite his ordeal.

Bowers said Wilson told him he was trying to circumnavigate the Atlantic.

Portuguese officials said Wilson was very badly burned. Reports overheard by a ham radio reporter in Maine said Wilson was near death after sustaining burns on his hands, arms, legs and stomach.

Further to the above story, a well-researched and rather lengthy news clip (as news clips go) appeared on National TV commending Lorne Bowers VE1AII for the exemplary way in which he handled the situation and a pat on the back for hams in general. Although Lorne took the limelight in stride (and rightly so) there were others who deserve to be recognized by the Amateur community. I talked with Chuck Millar VE3GO, who is quick to downplay his role, but still exuberant over the most exciting event in his 65 years as an Amateur Radio Operator.



Bert Wilson VE3OBH at his home in Wellington, Ontario in 1986.



Right: Lorne Bowers VE1AII of Bondshaw, P.E.I.

He is also quick to echo the feelings of the press in commending Lorne Bowers for his professionalism during the entire rescue operation.

Chuck relates the following story: At about 8 p.m. Atlantic time, a call for help was heard by Lorne Bowers VE1AII, of Bondshaw P.E.I. on 14.140 MHz, the Canadian calling frequency. The call came from Bert Wilson

VE3OBH (Old Bald Head) on board the yacht *Sadie*, a 30-ft. sailboat in mid-Atlantic. He had suffered serious burns. Details are sketchy, but the cause is believed to be a kerosene/alcohol stove. Unconfirmed reports indicate that Mr. Wilson's beard had ignited, burning his clothes and a good portion of his body. At any rate, he was in great

Continued on next page ➤

Photo courtesy County Magazine

pain, delirious and very glad to have a serviceable ham radio on board.

As reported by the press, Lorne Bowers contacted the Canadian Coast Guard, who in turn alerted the U.S. Coast Guard since the position was in an American control zone. U.S. Coast Guard station NMN came on frequency, talked with the injured sailor, determined his exact location using DF equipment and directed a Navy plane from the Azores to his position. The 66' container ship *Charlotte Lykes*, en route to Norfolk, VA., was diverted to the scene. Actual details for the rescue are scarce, however during the course of events, the sailboat rammed the container ship and Wilson was eventually plucked from the deck by the ship's rescue crew.

Wilson was taken to the burns unit of a St. John's, Nfld., Hospital. His salvaged two-metre rig appeared at his bedside, and has allowed communication with Ted VO1AB and others in the St. John's area.

The drama and excitement of the rescue are the easy parts to report. What really went on behind the scenes was perhaps more subtle but nonetheless very important to the successful rescue effort. Bert Wilson was badly burned and in great pain. He was delirious! He had to sail the boat, talk on the radio, fire flares, keep his wits about him and try to stay alive until the rescue ship got there. During many long hours it took to get that huge container ship directed to him, he had help. Other hams from all

over the world talked to him and kept him going.

Eric Reid VE3GSI in Napanee (the hub) has known Bert for some time. He remained on frequency through the night, helping Lorne keep Bert's spirits up. Ralph Barnes VE3PBR in Grafton contacted Don Newlands VE3HGN of CTV. Don, of course, is responsible for the excellent coverage given to the rescue effort. There are others we are not aware of. You know who you are and the part you played. Your efforts are appreciated as much as the rest.

There are many hundreds who will never be recognized. The injustice is that they are the really important people! They are the hams who resisted the urge to activate the PTT switch on their transmitter and sat back to listen and wait— just in case they would be needed. They recognized the need for a clearly defined leader, in this case Lorne Bowers, and to let him 'do his thing'.

Lorne rose to the occasion, something we all hope we will do as well if it is ever our turn. He was cool, professional and deserves the praise. The rest of us can learn from him. He took charge, kept control until someone more qualified arrived on scene (the Coast Guard) and remained to assist where necessary. This is almost textbook perfect and shows the rest of us how it should be done in practice and during the real thing.

Your political affiliations don't matter when the emergency strikes! You can be ARES, PEP, IARN, CRRL, CARF or

ARRL. What really matters is how YOU are going to react to the situation. There are many opinions on the subject, but the main one is that *training* is paramount. You can be the hero or you can be the goat, *training* will put you on the hero side of things.

We all get our licence to have fun and enjoy the hobby but, wait a minute! Whatever happened to public service and real communications? This episode on the Atlantic is a prime example of what all the experts have been telling us for years. Learn how to handle formal traffic, learn how to be cool under fire, learn how to save lives.

The organizations exist to help us all to do a better job when the chance of a lifetime arises. We get to save lives! Join ARES, PEP, IARN or any of the other similar organizations out there. Find the one that is within your interest and use them to learn all you can about 'Emergency Communications'. Join one (or many) but don't forget the prime rule: petty politics has NO place in emergency communications! We all exist for one reason and one reason only— to save lives. LET'S DO IT. ■

Chuck VE3GO adds that the medical report says Bert is doing fine and sitting up in bed. He has received many encouraging reports via his 2 metre handheld (the only thing salvaged from his yacht *Sadie*), and baskets of fruit from well-wishers.

Efforts are underway to try to locate the abandoned yacht which is drifting in the North Atlantic.

DOC 1989 Symposium

Sponsored by CARF and the Scarborough Amateur Radio Club at

Wexford Collegiate

in the City of Scarborough, Ontario

October 21, 1989

Topics:

- Frequency Coordination on Shared Bands
- Restructuring, the details
- Amateur Exams - should the clubs run them? - who should set and mark them?
- A national VHF/UHF coordinating committee for Canada
- Callsigns - where do we go from here? VE3 near end of block; Basic/Advanced certification in restructuring, etc.

DOC will have officials at each seminar who are knowledgeable and can give the official DOC position. **THIS IS YOUR CHANCE FOR DIRECT INPUT TO THE DOC.** The minutes will be submitted at the top levels of DOC and, together with the reports of the DOC officials in attendance, will influence their future policy.

PLAN TO BE THERE!

LETTERS

MEMBERSHIP BLUES

I sent my membership to CARF early this year after moving to Alberta from Saskatchewan. I had heard it was a good organization to belong to. It wasn't long before my cheque came back indicating it had been cashed. So I knew the application got through. Three months later I still didn't receive any word of thank you or acknowledgement I was a member of this fraternal organization. Four months later I received my first copy of *The Canadian Amateur*. To date I have not received any other indication I am a member. I checked with other long standing members who tell me I should have received a certificate indicating my acceptance. I will wait... but I assure you when a year is up, and that certificate doesn't arrive I won't be renewing my membership.

Bob Stonehouse VE6RLS

THE OFFICE MANAGER REPLIES

Your membership application and payment arrived here in March. The first issue of the magazine you were scheduled to receive was May. As you will appreciate, we must work to deadlines; these deadlines are somewhat ahead of the calendar year. For example, the labels for the May issue were printed the last week of March. The May issue was in the mail the last week of April. In fact, your first issue was on its way to you in less than six weeks.

Our procedure for acknowledgement of new members is simple. The mailing information is entered in our computer system, a membership number is assigned, and a postcard is sent to the new person indicating the first issue which can be expected, the membership number and the expiration date. A sample card is enclosed. It is conceivable that your card did not arrive; it did, however, leave here!

I thank you for taking the time to express your thoughts. We do appreciate hearing from our members, and we are willing to take the time to respond. Our members are important to us.

Debbie Norman
CARF Office Manager

TRIBUTE TO VE3ZS

Thank you for the splendid and well-merited tribute to Art Stark VE3ZS in the current issue of the CARF magazine.

Indeed he will be mourned far and wide in Amateur circles.

I never had the pleasure of meeting him in person, although I live in Ottawa,

but I felt a close bond with such an outstanding figure in Amateur Radio.

When I first joined the ranks, I was told if ever I had a problem that Art Stark was the person to call. Somehow I always pictured him as looking exactly like your reproduction on the front cover; an approachable and likeable old-timer. That is the way I will always remember him.

Gaston Wagner VE3LBT

INDIVIDUAL PREFIX FOR P.E.I.

I am writing to support the Charlottetown Amateur Radio Club in its efforts to obtain an individual prefix for Prince Edward Island.

P.E.I. Amateur Radio operators currently share the same prefix as operators in New Brunswick and Nova Scotia even though we are a separate province with 224 licensed operators.

Not only would an individual prefix give P.E.I. Amateur Radio operators their own identity, it would also lead to a greater understanding of Atlantic Canada by those operators living outside the country.

Amateur radio operators on P.E.I. also provide important communication services for many community events. For that reason, operators here should be easy to identify in radio communications.

I also support the prefix requested CFI 'Confederation'. It would be appropriate for Amateur Radio Operators to receive that prefix this year as islanders celebrate the 125th Anniversary of the founding meeting of the Fathers of Confederation.

I urge you to give favourable consideration to the request of Charlottetown Amateur Radio Club for an individual prefix.

Joseph A. Ghiz
Premier of Prince Edward Island

Our club has recently become aware of a proposal originating from the Charlottetown ARC which, if adopted, would alter the existing VE1 call prefix allocation.

It is our understanding that officers of the Canadian Amateur Radio Federation and the Canadian Radio Relay League have already met with officials of (the DOC) to present and discuss this matter. From bulletins issued by both organizations, we further understand that the Department is seeking additional comment from Amateurs within the affected Provinces.

The Dartmouth ARC represents 71 licensed Radio Amateurs. At the June meeting, the membership discussed

IN MEMORY OF ART STARK

As requested by his family, CARF is accepting donations in memory of Art Stark VE3ZS. All donors will receive a copy of the following letter. A full accounting of funds received and their disbursement will appear in a future TCA. Editor.

Thank you for your kind donation to The Canadian Amateur Radio Federation in memory of our good friend, Art Stark VE3ZS. Your donation has been put into a special account and its future use will be decided by the Board of Directors.

Please be assured that all donations will be used to further Amateur Radio in Canada.

We will advise Art's daughter Janice of your generosity.

Bernard H. Burdsall VE3NB
General Manager

and studied the Charlottetown ARC proposal as published by CARF and CRRL. While our membership would regret to see any of the Maritime Provinces change its VE1 prefix, we recognize that we cannot rightfully speak on behalf of another Province, nor indeed, they for us.

In a subsequent motion, our members voted 100% without abstention, against the idea or suggestion of any changes to the VE1 callsign prefix as it relates to Nova Scotia.

We appreciate the Department's attention and opportunity afforded to us for comment. We trust that in the final decision, Nova Scotia will continue to keep the VE1 prefix. Failing that, we would ask the Department to make provisions such that no presently licensed Radio Amateur would be forced unwillingly to change his VE1 callsign prefix.

L.H. Elvidge VE1BXI
President, DARC

MORE ON LICENSING

Re the proposed relaxing of the DOC requirements for new Amateurs and the proposed upgrading of Canadian novice class Amateurs to advanced class without having to pass the required 15 WPM Morse Code test.

It is my own personal opinion that this will not enhance the hobby in any way, more than likely it will be a negative move, based upon the assumption that if something is not earned, the respect of having a privilege is not quite the same, and being allowed to operate voice transmissions on the HF bands is a privilege, not a right.

I have been licensed since 1954, having obtained my novice licence when I was 17 years of age, and my advanced when I was 18 years of age.

Continued on next page ➤

LETTERS (cont'd)

When it comes to the Morse Code requirements, I have no sympathy with those who say they cannot do it...it's just that they do not try hard enough to learn the requirement of 15 WPM. There are some people who may really in all honesty have a problem with reading Morse Code, but the majority of those who are still novices after many years of being an Amateur Radio operator are in this category only because they chose not to upgrade, be it the Morse Code or the theory that posed the biggest obstacle. But if they really wanted to become an advanced Amateur with the privileges that come with same, then they would have made or will make the necessary effort to upgrade, and learning Morse Code at 15 WPM is something they should be required to pass.

Let's keep Amateur Radio in Canada something worth working for to achieve, and keep Morse Code as one of those requirements.

Douglas F.W. Conrad VE1ZL

SPECIAL PREFIX

Please be advised that the Special Amateur Callsign Prefix XM1 has been assigned to The City of Saint John, New Brunswick, ARC for the month of June to commemorate the 100th anniversary of the first rail line between Montreal and Saint John.

Al Daly,
Regional Manager
Authorization
Atlantic Region

KUDOS TO ICOM

In these days of super high tech transceivers and accessories, the art of home transceiver repair is falling by the wayside. Most of us Amateurs just do not have the expertise and/or equipment to properly service these marvels of engineering science. Because of this, we now, on the most part, rely on the Manufacturers or their representatives to do many of our necessary repairs and modifications.

I have bought a significant number of new rigs in the last three or four years, and have had my share of defective

equipment. There is nothing more upsetting than spending \$2,000 on a new rig, only to get it home and discover that it does not function in the prescribed manner. At least, nothing other than the runaround associated with trying to get the unit attended to.

You can imagine my dismay, when the new Icom IC275H I purchased in Dayton this year, did not work properly when I got it home. The dealer I bought it from suggested I send it to Icom direct to save some time. I was expecting to be without the rig for months. Not again! I thought I would take a chance and call Icom Canada to enquire about the cost of servicing a rig in Canada. They advised me that they are not obligated to honour the warranty on rigs purchased from U.S. dealers, but in the interest of expedience and good customer relations, they would look at it for me. GREAT STUFF!! I packaged the rig up and sent it Purolator to Vancouver. Now began the tedious process of waiting. I was resigned to the fact that I was going to have to wait for two or three months while they got around to working on the rig.

One day less than three weeks later, a package arrived from UPS for me. What was this? The IC275H was back already? Did they change their minds? Was it undeliverable in Vancouver? No way. Fixed? I don't believe it.

It took only 15 minutes to confirm it. Working perfectly. I still find it hard to believe. London to Vancouver, repaired, and return shipped in less than three weeks, and at no charge. The rig was completely re-aligned, both TX and RX. There was no hint of any problems at all.

It is really nice to see these days that there are still some companies around who treat their customers like they actually do value your business. SERVICE actually does mean something to them.

I thought that your readers would like to know that not all the Amateur manufacturers are created equal. Some actually are better. Way to go ICOM. Keep up the good work.

P.S. Actually, 80% of my station is Kenwood equipment, at least for now.

Doug MacKinnon VE3OLN

RIC-24 CONCERNS

Reference to CARF proposed changes to RIC 24, as reported in June issue of *The Canadian Amateur*:

I am in agreement with the premise of reversal in A and D levels, but take objection to the proposal that the new level D, (or old A), include the science of ATV, and Packet as a must for the issuance of the first licence.

Many 'old time hams' have very little knowledge or interest in the modern means of communication, and in some cases, no desire to use these modes of operation.



CANADIAN AMATEUR RADIO FEDERATION INC.
FEDERATION DES RADIO AMATEURS DU CANADA INC.

July 2, 1989

Mr. Bruce Bradbury
Superintendent
Terra Nova National Park
Glovertown
Newfoundland
A0G 2L0

Dear Mr. Bradbury:

Yesterday, for the fifth consecutive year Amateur Radio Operators enjoyed "Canada Day" at Terra Nova National Park.

You will be interested to know that radio contact was made with 170 stations, including The Canadian Armed Forces bases at Golan Heights in the Mid East, Lahr in Germany and Alert in the Canadian Arctic. All ten Provinces and the Northern Territories were extended greetings from Terra Nova National Park.

International contacts included Britain, several European countries, Russia, South and Central America and many States in the USA.

Particular thanks to John Fulton for his invitation and Gayleen Marsh for the many courtesies she extended. There could be no better way for Amateur Radio Operators to celebrate Canada's Birthday.

Thank you, on behalf of The Canadian Amateur Radio Federation.

Sincerely,

Nate Penney, VO1NP
Atlantic Director

I have been a Ham for 57 years, and although I have made it a point to 'keep up with the times', it is because I am by profession a retired (or retarded) Electronics Engineer, and am interested in seeing where the world of communications is headed.

I teach Ham radio basics to a group of Senior Citizens at our local senior centre, and I sincerely believe if the initial exams are made too tight, both the old and the young potential new members to our hobby will be driven away.

There is ample time in the Class C level to introduce the fundamentals of Packet Radio to students, and ATV in the Class B level.

Do not make the 'entrance' level so high that we defeat the purpose of the 'new' classes, it is up to the teachers of each level to ensure the student has sufficient knowledge to enter the airwaves with respect. Tightening the rules won't accomplish this.

John Hughes VE6MT

THE PRESIDENT REPLIES

I have been working quite closely with DOC on the structure of the new licence, as has Earle Smith VE6NM, CARF's Vice-President, Education.

Both of us are concerned with the content of the exams, first that it be complete and appropriate and second

that it be possible to pass with a reasonable length course of training. We are most insistent that the new rules must not keep qualified people out of Amateur Radio.

The DOC objective is that the Amateur Radio Operator's Certificate with Basic Qualification (the new official name for the 'A' ticket) be attainable by an average person with 40 hours of training. This, to me, seems a reasonable and achievable goal.

Earle, and his CRRL counterpart George Spenser VE3OZW, have spent considerable time examining all questions which will be in the initial question bank for fairness and an appropriate level of difficulty and I think you will find the results to be a fair test and one which your seniors will be able to pass.

The range of topics covered has been widened considerably over the old structure because there will no longer be any endorsements for special modes. It is also DOC's perception that more Amateurs are getting involved in unusual modes (SSTV, Packet, FSTV), as commercial equipment becomes available. Thus their mandate is to increase the scope at the expense of less in-depth knowledge. The new exams will be based primarily on how to install and safely use equipment and basic items such as TVI prevention and

regulations.

Overall, I think you will be happy with the results and the new exams will not form a barrier to new Amateurs.

John Iliffe VE3CES,
President.

NATIVE PERSONS NET

Now being formed is the 'Little Big Horn Amateur Radio Organization'. This is a group of Amerind Amateur Radio Operators and hams of other ethnic backgrounds who are banding together to build bridges of understanding, friendship and respect between all Native Americans and other people via Amateur Radio.

Membership in the LBH is not limited to Native Americans. Currently LBH includes members from the Cherokee, Crow, Ojibway, Oneida, Sioux and Tlingit tribes.

They meet on Sundays on 14,057 MHz at 2200 UTC with a code speed of about 15 wpm. There is a slow speed group that meets on 21,150 MHz at 2230 UTC. Visitors are welcome. For more information contact W6FSE.

— Algoma Amateur

WELCOME TO THE FIFTH ANNUAL CALGARY HAM RADIO FLEA MARKET

SATURDAY, SEPTEMBER 16, 1989
FROM 0900 TO 1300
AT THE

PARKHILL COMMUNITY CENTRE

4013 STANLEY RD. S.W.
CALGARY, ALBERTA

TO RESERVE SEND YOUR NAME, CALLSIGN AND \$2.00
TO

NOVATEL AMATEUR RADIO CLUB
P.O. BOX 7578, STN E, CALGARY,
ALBERTA, T2E 3M3

Buy or Sell all kinds of Amateur Radio,
Computer, Test Equipment and other Electronic
Articles.

Coffee, Pop and Doughnuts available.
Talk In: VE6NRC 147.16/76
Simplex 146.52

Sponsored by
NOVATEL AMATEUR RADIO CLUB

K.A.R.C.

(Kingston Amateur Radio Club)



5th ANNUAL
EASTERN ONTARIO
AMATEUR RADIO and ELECTRONICS

FLEA MARKET

SATURDAY, SEPTEMBER 23, 1989

St. Margaret's United Church,
690 Sir. John A. Macdonald Blvd.
(Across from Sears)

KINGSTON, ONTARIO

General Admission '1.00

For Reservations etc. Contact:

BERNIE BURDSALL, VE3NB

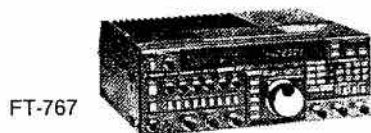
91 King St., E. Apt. 304, Kingston Ontario, K7L 2Z8

544-4438

AREA CODE 613

Doors open to Public 9 a.m.-1
COMMERCIAL DISPLAYS
DOOR PRIZES
Light Refreshments
Talk-In 34.94 VE3KAR

YAESU



FT-767



FT-767GX, 757GX, 747GX



FT-23R, 33R, 73R

FT-727R
DUAL BAND HT



KENWOOD



TS-940, 440, 140



TM-721

TM-721A FM DUAL BANDER
TM-221A, 321A, 421A



TH-215AT, 315A,
415A, TH-205AT

TH-25AT, 45AT



Rotors

CD-45 11 CALL FOR
HAM IV. LATEST
T2-X-- PRICES



HYGAIN



ANTENNAS

Coaxial & Rotor
Cable

Trade-Ins Welcomed
Call for latest prices!

DMX3T

DMX4

DMX5

DMX6

DMX7

DMX8

DMXHD-32

DMXHD-40

DMXHD-48

CBS8

KENWOOD TS440SAT TRANSCEIVER

\$1795.00

Kenwood TS-940S Deluxe Transceiver

\$2895.00

TS-711A Deluxe all mode base station, 2 metre

\$1239.00

Kenwood R-5000 Super deluxe radio

\$1169.00

Kenwood TM-221 45W 2 metre FM mobile

\$549.00

MFJ-1274 VHF-UHF TNC special clearout

\$219.00

MFJ-1278 Deluxe multi-mode

\$449.00

TRYLON Extra heavy duty B-200-72 tower

\$1495.00

USED EQUIPMENT IN MINT CONDITION

Kenwood TS-180S solid state transceiver

\$795.00

Kenwood TS-930S deluxe transceiver

\$1595.00

Kenwood SM-220 Monitor

\$495.00

Kenwood TR-9130 2 mtr. All mode mobile

\$595.00

AEA-232 PAK-RAT MULTI MODE TNC

\$395.00

H.C. MacFarlane Electronics Ltd.

CHECK OUR
SPECIAL PRICES
ON USED GEAR

R.R. #2 Battersea, Ont. K0H 1H0, Phone 613-353-2800 VE3BPM
IN BUSINESS SINCE 1958

Open Monday to Saturday 7:30 a.m. to 9 p.m. Closed Sunday.

YOUR ONE-STOP HAM SHOP

ANTENNA SYSTEMS INSTALLED WITHIN RADIUS 150 KM; EXPERTISE FREELY GIVEN ANYWHERE!

Dealer for Delhi Towers, CDE Rotors, Hy-Gain, Mosley, Cushcraft and Hustler Antennas, MFJ and B&W products.

SPECIFICATIONS AND PRICES
SUBJECT TO CHANGE

Development Day

By Gina Watson

On Development Day last year, when London teenager Ann Choi talked to Alice, a young girl in Dominica, they discovered that they shared a dream. The young Canadian said she wanted to be a lawyer. There was a brief silence and then a voice crackled back on the radio, "I want to be a lawyer, too."

Those few minutes on the air did more to break down stereotypes about

developing countries than entire lessons at school could achieve.

When the first annual Development Day was launched on Oct. 3, 1988, the Canadian Amateur Radio Federation helped Canadians contact people in developing countries. In a collaboration between CARF and the Canadian International Development Agency (CIDA), a national network of ham radio operators will be set up this year in an effort to contact operators in Asia,

Africa and the Americas.

Not all locations had London's good fortune in contacting developing nations. Some stations contacted Europe while others simply chatted among themselves in Canada. But Development Day ham radio co-ordinator Dan Holmes is still happy about last year's effort.

"We had a lot of fun trying to make

Continued on next page ►



VE7LPC on the air at Lester Pearson College, Victoria, with Roy VE7TG at the mike. Seated are Natasa Mitic, Yugoslavia and Yang Yang, China. Standing, left to right, are Owen Ted, Vancouver; Milind Sharma VU2GOC, India; Monica, Bolivia; Jean-Marie, Ivory Coast and Marite, Ecuador. The equipment was donated by the Kiwanis Club of Victoria as a youth project. The college has students from 75 different countries.

► DEVELOPMENT (cont'd)

contact with Third World stations, though signal strength varied across the country, and sunspots created a few problems," he said. Mr. Holmes operated last year from the Museum of Science and Technology in Ottawa. Nine other locations were set up across Canada with ham radio equipment, and students, journalists and the general public were invited to participate.

This year more stations— both Canadian and international— are being encouraged to join in this event. Frank Salter, who an the ham radio station in London last year, is tuning up again for this year.

"We have contacted scores of operators in many Third World countries, and asked them to be on the

air for Development Day. We are looking forward to talking to people from all over the world," he said.

Development Day focuses public attention on international development and raises the awareness of Canadians about Third World issues. The ham radio event is particularly appealing because it puts Canadians directly in touch with people in developing countries.

The short-wave radio contacts link Canada with the Developing World, and promote the idea of partnership, which is basic to all CIDA programs. International organizations, voluntary movements and grass-roots community groups all play an important role in this partnership.

CIDA administers 75% of Canada's

Official Development Assistance (ODA) which helps those in developing countries help themselves. Last year ODA totalled \$2.6 billion. CIDA used its share of the funds for a wide range of projects in the developing nations of Asia, Africa and the Americas. Projects focus on the poorest people in the poorest countries. CIDA also helps in times of crisis, providing food aid and emergency assistance.

In emergencies, ham radio operators are often called on when all other means of communication have been cut off. Last year ham radios were used to contact people in Jamaica and the Caribbean when, in all its fury, Hurricane Gilbert smashed the regular communications channels.

But it is not only when disasters occur that Canada and the Developing World communicate with each other. The ham radio contacts on Development Day are but one demonstration of this as they continue the ongoing north-south dialogue which is so important for global understanding. ■



Above: Milind VU2GOC and Angela Cozzolino, Italy, on Development Day, a CIDA-organized operation, to contact many countries, especially college and university stations, around the world.



Johannes LA6LFA, Norway, at Pearson College club station VE7LPC.

HELP WANTED

The CARF Office needs the current addresses of the following Amateurs, listed by name and last known address. Let Debbie know at P.O. Box 356, Kingston, Ont. K7L 4W2.

Michael Pilon VE7EWR, CFB Chilliwack, B.C.

Ed Van Zant VE3NBO, 805 Pinewood Dr., Peterborough, Ont.

TECHNICAL ARTICLES

The Canadian Amateur welcomes technical articles. Please send them to the Technical Editor, Bill Richardson VY1CW, 36 Range Rd., Whitehorse, Yukon Y1A 3V1.

THIS SPACE FOR SALE

Remember...
people do
read ads!

\$50 per month
Write or call us
at



Radio is my Passport

By Milind Sharma VU1GOC/VE7

The Prime Minister got me into this. He is Rajiv Gandhi VU2RG, who attended my school in his younger days. He sent a team from the National Institute of Amateur Radio NIAR, to give us a crash course in hamming.

I was 14 at that time, and I attended, along with 34 fellow students from Doon School, near Delhi. Most got Grade 2 licences. A few of us got high marks, so we got a Grade 1 ticket.

In India, Grade 2 has a code test at 5 wpm, and it is for CW only. Grade 1 has a test at 12 wpm, and it allows phone on most bands. Advanced Class has a 15 wpm test, and it allows full privileges, on all bands. In India, we are restricted to low power— 10 watts, 25 watts or 50 watts, respectively.

Equipment is hard to come by, as Amateur equipment is not manufactured in India, and the duty is very high— sometimes 200% on imported gear. In my province, there are only three Amateurs— two of them not active.

With other students from Doon School, I attended a ham seminar in south India, where we met many VU Amateurs, and looked over the transceivers displayed there, much homebrew, because of the cost of manufactured gear.

I became president of the school radio club, and we tried to get a station on the air, using WWII surplus gear— it was a disaster! We tried some homebrew projects, which also failed, as there is no local Radio Shack to supply parts. There are no Shop 'n Swap meets, or on-air nets in India.

In my final years at Doon School, I heard about the United World Colleges which offer scholarships to Canada, the U.K., Singapore, Italy, Venezuela and the United States, founded by the late Lord Mountbatten.

About 500 of us from India applied for the seven vacancies. I applied for one of the two at Lester Pearson College in Victoria, and I was lucky to arrive here, in the fall of 1988.

Several of the Colleges have radio clubs— Atlantic College in Wales in Donats Castle, given to the UWC by William Randolph Hearst; Singapore College, housed in the Army Staff College there, and the American College, Montezuma, New Mexico, sponsored by Armand Hammer.

The Victoria College has a fine ham station; the equipment was donated by the Victoria Kiwanis Club. It began almost by accident. A student from Papua, New Guinea, was staying for Christmas, in 1981, with Bert King VE7FBK, who introduced him to Amateur radio, talking crosstown to Roy Parrett VE7TG. Bert and Roy are Kiwanians, so they decided that a College would be a good idea, as there are students from all over the world at Pearson College. Many are a little homesick, and eager to talk 'home' and perhaps hear their native language on-the-air.

In the Victoria College, there are students from about 75 countries— a sort of United Nations. Some have never heard of Amateur radio, one even said that he knew that anyone with a handheld or beam antenna at home belonged to the secret police! At Pearson College, students learn in many ways— including free use of the radio, to many countries.

There are two licensed Amateurs, myself, and Johannes LF6LFA from Norway, and we are helped at the club station by Roy VE7TG, Harry VE7AKM, Gordon VE7GEF, Peck VE7DIG, Derrik VE7LZ and many others.

We have radio classes once a week, and operate after classes— about 3 p.m.— and on weekends using the club call, VE7LPC. It is surprising how many of the foreign students have parents, uncles or friends who are Amateurs, especially in Central America and South America.

This year, at Pearson College, we have two students from the Soviet Union, a girl and a boy. Oleg Minin is from Tyumed in Siberia, about 2,000 km east of Moscow. He has an Amateur friend back home and is hoping to contact him one day. Lyudmila 'Lucy' Tabatchikova, also from Tyumid, attended university back home, majoring in English Literature and the humanities. She finds Amateur radio helpful, as she hopes to teach English and linguistics on graduation.

Johannes and I have keys to the radio equipment, so we can operate for students, if third-party permits them to contact their home country. I have heard that Doon School has equipment at last, so I am naturally looking out for my alma mater in India.

Our two metre equipment was donated by John VE7DBO, and with our

mountain-top repeaters, I was able to easily contact a graduate of Doon School, now at university in Portland, Oregon, Nitez VU2UNY/W7.

Our Sponsor Roy VE7TG is a great traveller, and I was able to work him when he was in Fiji, and in Vanuatu Republic, in the South Pacific, from the club station here. Another contact on the HF was Dr. Ranga, an Indian Doctor, operating portable W6 in California. We were able to use the Indian languages— a great pleasure for me.

At Pearson College, we have a land rescue, and a marine rescue team, using the usual marine FM equipment to contact Search and Rescue, and other marine stations. The land rescue has a problem in this mountainous, wooded terrain, so, we hope that when the new regulations come into effect, we will have Amateurs and two-metre equipment for communication.

Last fall, we took part in Development Day, sponsored by the Canadian International Development Agency who sponsor 24 of our students, using the special call CZ7LPC, talking to many foreign countries, and to colleges and universities across Canada.

All of Pearson College students are on scholarships from CIDA, or Canadian companies or, in many cases, individual persons. The two-year course ends in an International Baccalaureate certificate from Geneva, recognized in most countries.

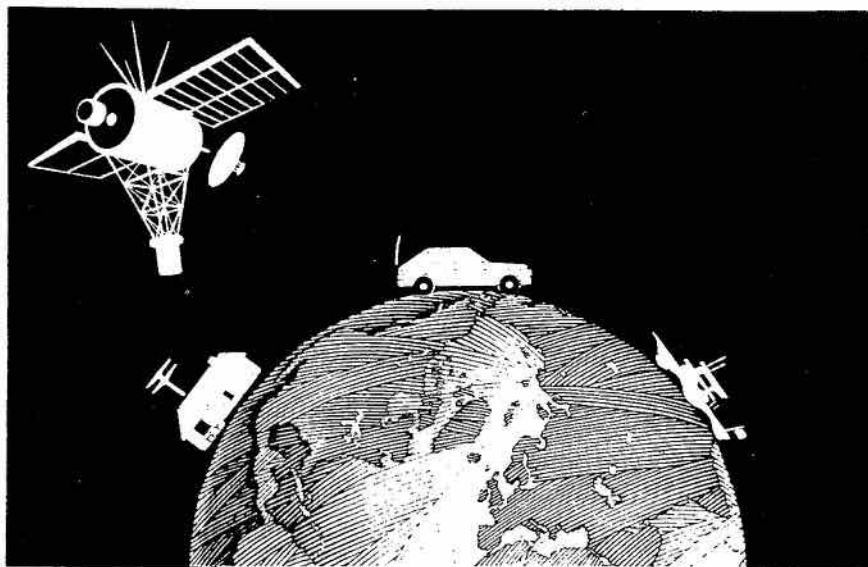
The colleges were founded by the late Lord Louis Mountbatten, who was the UWC president. On his untimely death, Prince Charles succeeded him, and the Prince has visited the College several times.

The whole idea of the College, and of VE7LPC, is to promote international understanding. The students live four to a room— usually with one Canadian or American on hand, so they quickly learn about other countries and other students. Lester Pearson said, in his address accepting the Nobel Peace Prize, "How can there be peace without people understanding each other. And how can this be if they do not know each other?"

At Pearson College, and at VE7LPC, our aim is to demonstrate that education can be a force to unite nations, and people, rather than to divide them. ■

RADIO SCHOOL

AMATEUR



HAM RADIO IS FUN!

TALK TO THE WORLD FROM YOUR HOME, CAR, BOAT, OR COMPUTER

TAKE THE LOWER MAINLAND AMATEUR RADIO SCHOOL'S
COURSE TO OBTAIN YOUR D.O.C. LICENSE!

STARTS - OCTOBER 3, 1989
(24 Tuesday Evenings)

TIME - 7 TO 9:30 PM

PLACE - B.C. TEL'S EDUCATION CENTRE
1795 WILLINGDON AVE., BURNABY, B.C.

COURSE FEE - \$60 (BOOKS NOT INCLUDED)

CONTACT: *HU REIJNE,	HOME	OFFICE
VOL RILEY,	VE7CHW - 277-3939	432-0521
	VE7EYG - 531-4917	

(*B.C. TEL EMPLOYEES AND PIONEERS CONTACT)

REGISTER NOW AND BEAT THE RUSH!



GA70098

CO-SPONSORED BY THE TELEPHONE PIONEERS OF AMERICA -
CHAPTER 53 - AND THE LOWER MAINLAND AMATEUR RADIO CLUBS

Amateur use of the 11 bands between 430 MHz and 10.5 GHz.

A new way of doing things is needed so Amateurs will get the most out of this part of the Spectrum.

By Bill Wilson VE3NR

Editor's Note— This is the final article in a series of three. In the first, Bill compared both spectrum management and domestic band usage in Canada with that in the States. In his second, he described how shared band frequency plans and frequency coordination could be used to help Amateurs ensure their use of the 11 shared bands. The first two parts were published in the June and July/August issues of The Canadian Amateur.

PART III— AN AMATEUR'S RIGHTS AND OBLIGATIONS IN FREQUENCY CO-ORDINATION

As more Amateurs make use of the bands above 430 MHz that are shared with other radio services, there is an increasing probability that they will have to take part in frequency coordination procedures under Communications Canada auspices. Frequency coordination is what spectrum managers do to ensure that radio systems share the spectrum without causing each other 'harmful interference'.

'Harmful interference' is that interference which endangers safety radio communication or radionavigation services or seriously degrades, obstructs or repeatedly interrupts other radiocommunication services operating in accordance with the Regulations. Spectrum congestion is now such that spectrum managers and users have had to recognize that there may be times when other stations may be heard but their strength is so low they really do not interrupt radiocommunications. Today that background stuff is called simply 'interference', not 'harmful interference'. We Amateurs know all about both kinds of interference.

Frequency coordination can be done voluntarily without involving DOC. Typical of this kind of coordination is that done by Amateur repeater councils for Amateurs planning new or changed repeaters.

However, when frequency coordination involves non-Amateur radio systems in Canada, frequency coordination is carried out under the direction of Communications Canada

under the authority of the Radio Act. Should an Amateur get involved in this kind of coordination, it is wise for him, as a licensee or an applicant, to know his rights and obligations, since by taking them into account he can avoid future difficulties and perhaps damages.

To understand what happens in a frequency coordination situation, let's hypothesize a typical case, without regard for the kind of radio services involved, in which a station has been in service for some time and DOC has just received another application for a licence. The station that is presently in operation got its authority to operate (a licence) after following a procedure established under the Radio Act. An 'Application for a Radio Station Licence' was completed and included information describing the use to be made of the station and its location, the proposed equipment and its performance characteristics, as well as the height of the antenna and its technical characteristics. Also completed was a form giving 'Particulars of Proposed Site and Radio Antenna Structures' so the Ministry of Transport (MOT) could decide if the antenna might be an aeronautical hazard.

It might have been that that applicant did not know much about the technical aspects of radio, in which case he would have hired a technical expert to help him. Whether or not he hired an expert, the applicant was still responsible for the technical aspects of the application (as well as the other non-technical information that had to be submitted but which does not enter into this case study). Since both the technical and non-technical requirements of the Radio Act and Regulations were met by the applicant's commitment and MOT cleared the antenna, the applicant gained the right to have a radio licence and the Department was obligated to issue one for the station for the communication purpose and the use of the equipment described in the application.

Note carefully that the 'application' and 'particulars' are important parts of the station licensing process—something few licensees realize. That applies to all radio station licensees, Amateurs station licences included. In

the case of an Amateur application, however, the application is less complicated than for other radio services. (Antenna particulars are not often asked of Amateurs unless their station is near an airport.) In signing an application form, the Amateur commits himself to meet the technical and other requirements, the details of which are set out in the Regulations.

Continuing on with this hypothetical case, we'll assume that the Department just received an application which also meets all requirements. After study, the DOC finds that the proposed station is to be adjacent geographically to the existing station and that the only frequency available is close to its frequency—so close that there just might be a harmful interference problem. As a result, DOC decides to get the licensee and the applicant to coordinate frequencies and ensure that neither will have harmful interference and that the performance requirements of both systems will be met.

A three-way meeting is organized involving: (1) the DOC as spectrum manager, (2) the licensee who is responsible for the existing station and (3) the applicant who has filed an application for a licence which meets all requirements.

A special word for Amateurs at this point. Because each Amateur enjoys the right to have three stations and to give only one address under the terms of the Regulations, the Department may choose to contact an Amateur club or association to find out if there is a station with which coordination may be required. Clubs, etc. have always been most helpful in this regard by giving DOC the names of any Amateurs that may be involved. However, clubs and repeater councils should remember that they have no legal status whatever in the frequency coordination process, unless:

1) one of the two (licensee or applicant) involved authorizes a club to act as an advisor and the licensee or applicant so advises the DOC in writing, or

2) a club is the licensee or the applicant for one of the stations actually involved in the frequency coordination problem.

Continued on next page ►

The club or association that jumps in to solve the problem without the approval of the licensee or applicant may be inviting legal action. Both the licensee and the applicant whose application has been received by the DOC have rights under the Radio Act.

Participants in this kind of discussion for the first time usually will want to know the basis on which frequency coordinations problems are solved. It is not true now-a-days that 'the first in is fully protected'—that notion went out 30 years ago. Also, there are a number of things in the Radio Act that deal with this sort of problem, but they all boil down to the long-standing fact that while the equipment in a particular station meets DOC technical requirements, the Department may require the licensee to make adjustments to resolve a problem of interference. Equally, the Department may require an applicant to revise his application.

Keeping in mind the matter of costs, the Department, working cooperatively with both parties, will try to find the best technical solution—namely, that neither system will experience harmful interference and that the performance objectives of both systems will be met. Any way one looks at it, it will be a negotiating situation in which a good technical knowledge of equipment performance, system requirements and propagation will pay off. It may be that some additional costs may be involved but, as a matter of principle, every effort is made to find inexpensive technical solutions.

Well, when DOC gets into it, the problem turns out to be a little more difficult to resolve and more technical information is needed about the performance of the respective equipment and possible technical 'fixes'. The question is: who is responsible for what additional information?

Often the Department can provide supplementary info. After all, its prime interest is in preventing harmful interference and ensuring performance objectives. Thus one can expect it to have related information and experience that it can make available. DOC's role is always to be helpful in accordance with the terms of its mandate. However, the responsibility for turning up the required information rests with the licensee for his station and the applicant for his proposed station. Each can seek the services of consultants if they wish, but that does not relieve the two main parties of their responsibilities.

Earlier the matter of costs was mentioned along with the objective of trying to keep costs to a minimum. If costs are found to be a result of an acceptable technical solution, their

division is, quite reasonably, the subject of further discussion. Occasionally one party may agree to help the other party with the costs of change or even to pay the full cost of a necessary change. However, there are no fixed rules in this regard. If both parties come into frequency coordination discussions with a bit of flexibility in their positions, successful results usually are achieved.

Some feel that they should take the political route in their search for a solution to such coordination problems. Following that course is somewhat like going to court—the people involved in making the decision may not understand the technical aspects of the problem and what technology can make possible. They may want to consider a lot of other factors too. Check the risks on this route carefully because the decision may not be what is wanted, either technically or in terms of cost and time.

Once an agreed solution to the problem has been found, the revised technical characteristics of the stations will be recorded on the station files.

Occasionally the Department may ask to have the applications amended.

To conclude, if an Amateur is planning something more powerful than a mouse-powered station in a band above 430 MHz which is shared with another primary service, he/she should be prepared for serious frequency coordination discussions and know one's rights and obligations. Also needed is reliable, accurate information about their station's technical performance such as transmitted occupied bandwidth, ERP radiated, antenna directivity, spurious emissions, receiver selectivity, spurious emissions, receiver selectivity and sensitivity, spurious responses and system performance objectives to name a few essential characteristics. Should such discussions be called, an Amateur should be prepared, after serious negotiation, to make changes to accommodate primary service stations that may legitimately use the band. Only with this kind of approach will Amateurs get the most out of the shared bands. ■



The Radio Club of Panama announces a Contest on HF to celebrate the 28th Anniversary of the Club. We are printing a Commemorative Diploma for those who fulfill the requirements of the Contest.

The Contest will take place on Sept. 2, 1989. Hours of the Contest: 00:01 GMT to 23:59 GMT.

Conditions of the Contest: In order to receive the Commemorative Diploma, one must log contact with 5 of the authorized stations. Authorized Stations are: HP1-LD, HP1-AIB, HP1-ALX, HP5-RJ, HP1-BSL, HP1-CDW, HP3-DBQ, HP1-BTV, HP1-ECA, HP1-CDZ, HP1-AXW, HP1-BYS

Contest calling: CQ RADIO CLUB OF PANAMA CONTESTA. Contest Frequencies: 15 M, 20 M, 40 M.

We appreciate the opportunity to bring this to your attention and your widest dissemination of the information among the members of your organization so as to guarantee the greatest confraternity among the radio Amateurs of the world.

Radio Club of Panama,
Omar Amat, HP1-BTV
President
Apt. 10745, Panama 4 R. of P.

El Radio Club de Panama, se complace en informarles de la realizacion de un concurso en HF para celebrar el aniversario XVIII de la fundacion del Club.

Estaremos otorgando Diploma Conmemorativo a los que cumplan con los requisitos del Concurso.

El Concurso se efectuara el dia 2 de Septiembre de 1989. Horas del Concurso: 00:01 GMT a 23:59 GMT. Bases del Concurso: Se haran acredores a Diploma Conmemorativo, los que logren contactar 5 de las estaciones autorizadas. Estaciones Autozadas: HP1-LD, HP1-AIB, HP1-ALX, HP5-RJ, HP1-BSL, HP1-CDW, HP3-BQB, HP1-BTV, HP1-ECA, HP1-CDZ, HP1-AXW, HP1-BYS.

Llamado del Concurso: CQ CONCURSO DEL RADIO CLUB DE PANAMA. Frecuencias del Concurso: 15 mts, 20 mts, 40 mts.

Aprovechamos la oportunidad para solicitarles por su intermedio, la mayor diseminacion de esta informacion entre los miembros de su organizacion, para garantizar el mayor exito del concurso y lograr una mayor confraternidad entre los Radioaficionados del mundo. ■

There are two ways you can operate an amateur dual band UHF/VHF radio: you can go through the extra expense and bother of using two antennas... or, you can install the new Larsen 2/70—the single antenna that brings you both bands.

The Larsen 2/70 blends a half-wave element for 2-meter (144-148MHz) amateur band and collinear elements for 70cm (440-450MHz) amateur band. One antenna serves both bands, and is available with three different mounts for any mobile needs.

The self-resonant design of the Larsen 2/70 allows mast

applications for vessels and base stations outfitted with standard Larsen BSA-K hardware. With or without a ground plane, the Larsen 2/70 gives you the highest performance attainable, whether you are using a dual band radio or two separate radios.

If your radio does not have a built-in band splitter, we can even provide that.

Performance... savings... convenience... and a no-nonsense warranty—four great reasons for banding together with the Larsen 2/70. See your favorite amateur dealer or write for a free catalog today.

BAND TOGETHER



Larsen Antennas
The Amateur's Professional™

See your favorite amateur dealer or write for a free amateur catalog.

IN USA: Larsen Electronics, Inc. / 11611 N.E. 50th Ave. / P.O. Box 1799 / Vancouver, WA 98668 / 206-573-2722
IN CANADA: Canadian Larsen Electronics, Ltd. / 149 West 6th Ave. / Vancouver, B.C. V5Y 1K3 / 604-872-8517

LARSEN® KÜLROD® AND KÜLDUCKIE® ARE REGISTERED TRADEMARKS OF LARSEN ELECTRONICS, INC.

Fifty Years! It can't be!

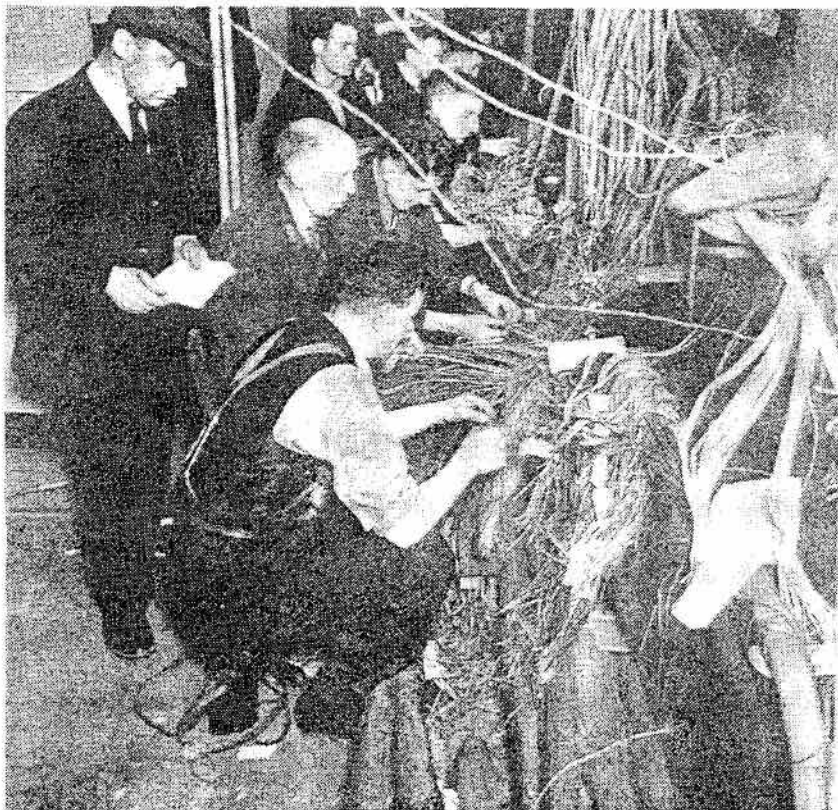
By **Bernie Burdsall VE3NB**

On Sept. 3, 1939, at 11:15 a.m. the Prime Minister of Great Britain, Neville Chamberlain, informed his countrymen, over the BBC, that Britain and Germany were at war as no reply to the government's ultimatum had been received. No one cheered, there was only a sad acceptance of the state of war, and when shortly afterwards the air raid sirens sounded there was little panic. It turned out to be a false alarm. Death struck swiftly later that evening when the passenger liner *Athenia* was torpedoed by the German submarine U-30. One hundred and twenty men, women and children died. Thus began World War II in which there were to be 25 million known dead and which changed the lives of almost everyone in the world.

It is now the 50th Anniversary of the outbreak of World War II and I can recall that period quite clearly. The last week of August, 1939, I was at the British Post Office Telephone Research and Training Centre at Dollis Hill, London, on a Creed teleprinter course. We were told to put all the machines in working order as they were to be used by the armed forces, and return to our headquarters as war would be declared on Sunday, Sept. 3.

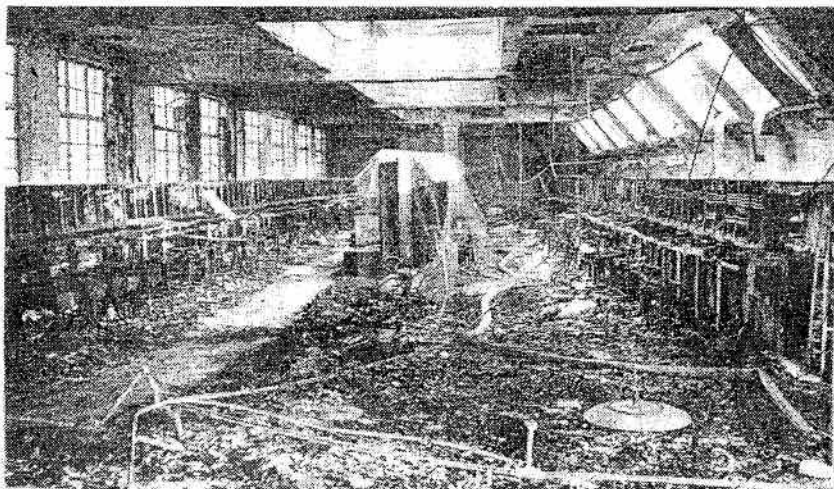
The next weeks saw me working non-stop, wiring in special service lines in the telephone offices for emergency and government services. Such was the secrecy required on some lines that shielded cable was used throughout the telephone offices to avoid any cross-talk. Gallons of red paint were used to denote these hot secret lines. Preparations for war had been going on for the past year and changing the telegraph system from metallic circuits to multi-channel voice-frequency operation, using mark and space frequencies, helped save the country's communications when the central telegraph office in London was destroyed by bombing in 1940. The disruptions to the telephone system were enormous due to bombing and fires and it was often necessary to re-route circuits around the bombed out telephone offices.

Arriving home one evening after pedalling by bicycle the six miles from work, I was greeted by my very worried Mother who said, "A policeman is looking for you. What have you been up to?" I was a pure and poor (\$5 a week)



1940— Joining up after a raid...

...and the operator didn't even answer.



young apprentice and had never, well hardly ever, chased girls, much preferring fiddling around with radio equipment. (I reversed this in later years.)

Reporting to the police station, I was interviewed by a Captain from the Royal Corps of Signals who asked if I could copy Morse Code, as he knew I was the holder of an Amateur licence. I said I could copy slow code, about 10 words a minute, and then I was asked if I would be willing to help monitor certain radio frequencies. I agreed, and twice a week in the late evening, I would let myself into the third storey room of a private house.

For a two hour period I sat in front of a Hallicrafter receiver, put the earphones on, tuned around for a special preamble and then copied the coded messages. I did this for about a year until the code speeds required were beyond my capabilities. I never saw a soul during my visits. I just came in, did my work and left, leaving the message pads on the table. I assume the information was sent to Bletchley Park (Britain's top secret code-breaking centre) for decoding. I bet they had trouble with some of my copy.

The Amateur licence I had in 1938/39 was known as an artificial aerial licence, and it was a no-code experimental. You were able to build transmitters but could not hook them up to an outside antenna. The artificial aerial was either an incandescent bulb or a combination of inductance, capacity and resistance, in effect a dummy load. However, by some strange unexplained phenomenon, the radio waves would jump from the dummy-load to my long receiving antenna. My call sign was 2DKW (which became G2DKW post-war). I would get called by fully-licensed G stations telling me that I was doing something illegal. It was fun experimenting, building receivers and transmitters from odds and ends.

We could work short distances with these unshielded dummy loads, mostly on 40 metres amplitude modulation or chirpy CW.

Sometime in September/October 1939, I was loaned out to the Post Office radio branch to help them pick up radio transmitting equipment from Amateur stations for storage during the war, as all activities had been suspended. It was a hectic but exciting time for me that first winter, known as 'the phony war'. I passed my telephone company trade test and became a skilled workman, was issued with a very old, green BSA motorbike and sidecar, and chugged around to RAF stations and Army bases installing suppressors on teletype machines, bells, buzzers, in fact on anything that could cause interference to radio reception.

Driving at night under blackout

conditions that existing then was hazardous and often resulted in my becoming lost, frequently ending up in the middle of the village cricket grounds. After a meal of fish and chips and half a pint of mild and bitter beer I would recover enough to bike the six miles home, whistling and singing the current Gene Autry song, 'South of the Border, Down Mexico Way'.

Many times I was sent to repair out-of-order phone lines, only to find on arrival that the house was a pile of rubble with twisted wires everywhere, and the streets blocked by overturned buses and unexploded bombs. One day I was working up a 60 ft. pole on a high point of land when a German plane came out of the low clouds, circled around, dropped a bomb on the city and machine-gunned the streets— and then the pilot looked up and thought, "I'll get young Bernie up on that pole". At least that's what I thought as I descended at great speed.

In early 1940 I was again helping the radio branch. We were given a list of hospitals and private nursing homes to visit, and told to pick up their diathermy machines which had been commandeered by the government. This caused

some hostility especially in the nursing homes, as the machines were used for patient treatment, probably high priced. We did not know at the time why we were doing this, but could see that the units were high-powered self-excited oscillators on about 30 MHz. In later years I read that they were used to jam the German Knickebein beams on 30.0 and 31.5 MHz which were used as a navigational aid to German bombers, giving them, at the point where the two beams crossed, the place to drop their bombs.

What with blackout, air raid warnings, food rationing, bombs dropping here and there, riding the motorbike, parades with the Post Office Home Guard detachment, and chasing after the telephone operators (I had given up fiddling with the radio by now), I led an interesting life, but when the government permitted telephone technicians and policemen to leave what had been, up until then, a reserved occupation (essential service) a group of us young telephone men decided to join the RAF, and become pilots, where life would be more glamorous. But that is another story. ■

Approximate Population to Ham Count in Canada

BY VE3GPR
DATED 89-07-12

(A) PROV. POPULATION YKN	(C) HAM POPULATION	(E) % OF HAMS PER PROV.
23740	49	0.00206 %
NWT 42230	85	0.00201 %
P.E.I. 112340	224	0.00199 %
B.C. 2670380	4216	0.00158 %
N.S. 901400	1135	0.00126 %
ONT. 9026190	9014	0.00100 %
ALB. 1997740	1986	0.00099 %
N.B. 737620	715	0.00097 %
NFL. 609110	509	0.00084 %
SAK. 1007490	787	0.00078 %
MAN. 1116600	809	0.00072 %
P.Q. 6817050	4176	0.00061 %
25061890 TOTAL	23705 TOTAL	0.00095 TOTAL %

JRSD Fund ends

The JRSD Fund which was legally started in 1985 as a non-profit trust to defray the legal expenses of Jack Ravenscroft VE3SR has come to an end. The acronym stood for Jack Ravenscroft Susceptibility Defence Fund.

Over \$89,000 was collected from supporters sympathetic to the technical enigma caused by radio sensitive consumer equipment malfunctioning when located near an Amateur Radio transmitter.

The ensuing legal case sidestepped the real technical issue by being tried as a Civil case, under Nuisance law. Existing legislation under the Radio Act precluded any intervention by a Regulatory agency since much of the sensitive equipment is covered by no regulation.

VE3SR was ordered by the Court to suppress his neighbour's appliances and this was achieved to a degree satisfactory to the Department of Communications. He was also fined \$7,500 for "damages of inconvenience". His neighbours were bound by the Court to cooperate in the suppression work. Finally, a permanent injunction preventing VE3SR from transmitting was lifted after the above conditions were imposed by the Supreme Court of Ontario.

Ravenscroft lived to see the last appliance suppressed; however, his untimely passing 10 days later was a short-lived technical victory which all

Radio Amateurs will remember.

Trustees of the JRSD Fund express sincere appreciation to all donors and for those who so genuinely believed a solution could be achieved. Over 1800

separate donations were received during the four-year course of the Fund.

Ralph Cameron VE3BBM
Chairman JRSD Fund

JRSD FUND

Notice

Made pursuant to a Trust Agreement dated the 2nd day of April, 1987 between Ralph Cameron, Bruce Lauer, Richard Van Gastel and others, as the Settlers and Ralph Cameron, Bruce Lauer and Richard Van Gastel, as the Trustees.

TAKE NOTICE that attached hereto is an account of the administration of the Trust.

TAKE NOTICE that thirty (30) days after publication of the accounts, if no notice has been received by the trustees of any objections to the above noted accounts, the accounts shall be deemed to be approved by all persons interested. Notice may be sent to the Trustees, c/o Mr. Ralph Cameron, 30 St. Reny Drive, Nepean, Ontario, K2J 1A3. or Hughes, Laishley, Toughy & Sigouin, Solicitors for the Trust, 116 Lisgar Street, Ottawa, Ontario, Attention: Mr. Timothy Ray

ACCOUNTS OF ADMINISTRATION OF THE TRUST

Statement of Cash Receipts and Disbursements for the period

May 11, 1985 to July 31, 1989

May 11/85- Sep.30/86	Oct.1/86- Sep.30/88	Oct.1/88- July 31/89
\$	\$	\$

Cash Receipts

Donations received	59,605	21,122	3144
Foreign exchange Gain (loss)	2483	(78)	(35)
Interest earned	243	623	136

<u>62,331</u>	<u>23,667</u>	<u>3245</u>
---------------	---------------	-------------

Cash Disbursements

Legal fees, audit, damages	24,424	55,123	8907
Office supplies, expenses	189	251	-
Bank service charges	71	193	85

<u>24,684</u>	<u>55,567</u>	<u>8992</u>
---------------	---------------	-------------

Excess of Cash receipts
over Cash disbursements

37,647	(31,900)	(5,747)
--------	----------	---------

Opening balance

<u>0</u>	<u>37,647</u>	<u>5,747</u>
----------	---------------	--------------

Closing balance

<u>37,647</u>	<u>5,747</u>	<u>0</u>
---------------	--------------	----------

Made pursuant to a Trust Agreement dated the 2nd day of April, 1987 between Ralph Cameron, Bruce Lauer, Richard Van Gastel and others, as the Settlers and Ralph Cameron, Bruce Lauer and Richard Van Gastel, as the Trustees.

DATED AT OTTAWA this 10th day of July, 1989.

Ralph Cameron
Ralph Cameron, Trustee

INTRODUCING

QSL's

By VE3IWF

QUALITY CARDS AND FAST SERVICE!

USE YOUR OWN CUSTOM DESIGNS

OR SELECT ONE OF MY SAMPLES

-BOTH ARE PRICED FROM ONLY-

\$29.00 FOR 250 CARDS.

ACTIVE DXERS***

***CONTESTERS

SUPER LOW PRICES FOR ORDERS

OF 1000 OR MORE CARDS.

SEND OR CALL FOR FREE SAMPLES

AND A COMPLETE PRICE LIST.

O.M.PRESS

JEFF PARSONS, VE3IWF

R.R. #1

OXFORD MILLS, ONT. K0G-1S0

(613) 258-7131

YL News & Views

Cathy Hrischenko VE3GJH, 2 Dalmeny Road, Thornhill, Ontario L3T 1L9



Where did the summer go? The YL nets re-open officially in September, so make an effort to get on and say hello and get caught up on what's happened during the summer.

TOT

A new slate of officers for The Ontario Trilliums: President— Audrey McDermott VE3CCO, Vice-President— Eva Colleck VE3EVA, Secretary— Doris Hart (no call), Treasurer— Doris Cody VE3BBO, Editor— Beverley Ormstrup VE3LZU.

HAMFESTS

Dayton Hamfest— the Buckeye Belle booth is the place to meet both old and new YL friends. I was happily surprised to meet my long time (about 20 years) friend Nellie XE1CI. We had a nice visit. A visit to Canada is in the making. Also met Elisabeth Taylor! Oh yes, the Elisabeth Taylor— the one who has the call DL2KCE! Gotcha on that one. Uschi DJ7ES found we had much in common and we will be keeping in touch. She has a daughter Andria DK4JY. The Buckeye-Belles always make everyone who visits their book most welcome. The Central Ontario AR Fleamarket

brought out a few YLs such as Tess VE3HIR, Audrey VE3KGS, Wendy VE3ERT, Joy VE3YUK, Marion VE3NLN, Ann VE3HAI, Jean VE3BCP, Irma VE3IYL, Gail VE3GSQ, Thelma VE3CLT, Betty VE3ASZ, Helen VE3PA and a new YL but a long time friend— Bernice Popelyak VE3CCQ. One of her sons got his call at the same time. Her OM is Les VE3CCP. Congratulations Bernice. The above are the ones who came up to our table to chat. I enjoyed myself on Roller Skates while selling.

The Ontario Hamfest had many of the above plus Gwen VE3AYL, Susan VE3BEC, Marion VE3CLP, Jean VE3DGG, Buddy VE3JPB and maybe more?

Batavia, New York Fleamarket— The SALARKs had a table where I signed in. Outside I met a couple of N2 and W2 YLs, Grace VE3MCO and Lia WA2NFY and I talked for quite some time. She had just returned from the YIRL convention in Hawaii. I know of two Canadian YLs who attended. Truus VE3MRS and Elizabeth VE7YL.

Kay VE3KAY spent some time at the Joseph's Lake Camp. She is still on the air almost daily. In case you don't know

about her— she is both blind and deaf. A very special person. Looking for a Japanese YL to QSO. The first Monday of each month Nozomi JH3SQN and others can be found on CW between 1500 & 1600Z on 14.050 or 21.050. Sometimes at 2300Z.

In the 'Did You Know' department: Ruth Adams was the first Canadian Woman to receive a patent. It was for her 1855 cooking stove.

While talking recently with Lois WA2RXO she told a story about herself when she was teaching. She had always talked very fast. She asked the class a question. The class just looked at her. Finally one child rose and said, "If you slowed down, we could listen better."

That's it for this time 73/33/88 as the case may be.

WARNING TO DOC ENGINEERS:

An FCC engineer in the U.S. was recently delivering a warning citation to a ham out west. In return he received a trip to the hospital to have five stitches put in!

— Algoma Amateur

TRANSMITTERS - RECEIVERS - TEST EQUIPMENT - LAB EQUIPMENT - COMPONENTS

CARF

VE3 KHB

ARRL/CRRL

RSCB

Wholesale/Retail

W. J. FORD SURPLUS ENTERPRISES

Buy/Trade



Our warehouse 21 Market St., Smiths Falls.
(corner Market & William)

Mail to: P.O. Box 606
Smiths Falls, Ontario
K7A 4T6

Phone: Bus. (613) 283-5195 Res. (613) 283-0637

We are now open Saturdays from 9 am to 5 pm. Weekdays, for the present, are restricted to appointments for any time between 5 am to 10 pm. We normally are not maintaining a regular schedule during the week and therefore an advance appointment is essential to ensure your visit is successful. Sundays and holidays we are closed.

We carry a vast assortment of items ranging from medical, laboratory, scientific, photographic, optical, antiques and other strange pieces for the experimenter and enthusiasts as well as schools, labs and electronic firms. If in the area when we are open, feel free to drop in and browse through two floors loaded with surplus.

We are always happy to answer queries by phone or mail. Don't hesitate to phone us any time at home or warehouse. If by mail, a postage stamp to defray the cost of a reply would be appreciated. Due to the nature of surplus very few items are stocked in depth and as a result it is impossible to prepare a catalogue or listing which would remain valid for even a short period of time.

Arrivals for September include the following:

- (1) Military receiver R1511. Looks like a SP600 but partial solid state. Freq. 54 to 54 MHz, with manual. \$150.00
- (2) Hammarlund SP600VLF31 covering 10 to 540 KHz. Very nice shape, with manual. \$400.00
- (3) Tektronix storage oscilloscopes, Model 564 with 2 plugins & manual. \$250.00.
- (4) HP Vector Impedance Meter Model 8410A, less probe. \$500.00
- (5) HP Network Analyzer Model 8410A. Includes 8414A Polar Display & manual; 8413A Phase Indicator & manual; 8411A Frequency Converter (0.1 to 12GHz) and an assortment of Smith Chart Overlays. \$1500.00
- (6) HP 50MHz BW oscilloscope Model 175A with manual and 5 plugins. \$75.00
- (7) Antenna multicouplers, Rohde & Schwarz NV4172UZ, 1.6-30MHz. \$40.00
- (8) Eddystone solid state receivers Model EC958/3, 10KHz to 30MHz, with manual. \$350.00
- (9) Binoculars, Barr & Stroud WW11 7x50 in wooden case, military markings, built in rotatable set of eyepiece filters. \$125.00
- (10) GE keyboard printer, Terminet 300. On floor stand with castors. \$100.00
- (11) Tektronix oscilloscopes, dual channel Model T922R. \$410.00
- (12) Military receiver, Collins R399/URR. This unit same as 51J4 with 3 mechanical filters. Mint condition. \$400.00
- (13) Racal receivers Model RA17C12 with sideband unit RA98B. \$375.00
- (14) Antenna, Omni Unipole, Andrew Type 925C1. \$40.00
- (15) Transmitter, Collins Model 32V2 with cabinet. Fantastic appearance. \$400.00
- (16) Camera, 35mm electrically operated, detachable 100ft magazine, unmounted Vivitar 90mm f4.5 lense. Made by Photo Control Corp., Model Camerz Electri Tronic 135E2D. \$50.00

Listening To The World

Sheldon Harvey, 79 Kipps St., Greenfield Park, Quebec J4V 3B1



As we reach the end of the summer and, dare I say it, start thinking of fall and winter, we must look on the bright side and realize that we are entering the best seasons of the year as far as international radio monitoring is concerned. Almost without exception, due to various factors, fall seems to annually bring on better reception conditions, particularly in the tropical shortwave bands, and certainly for anyone interested in AM or mediumwave band DXing. With the reduction of outdoor activities as the hot weather fades away, many radio monitors return to the dials after their summer sabbatical. I guess there is a positive side to everything, even as the summer winds down.

COUNTRY OF THE MONTH

Our radio voyage this month takes us to probably one of the most fascinating and important countries in the world today, the Union of Soviet Socialist Republics with a focus on the operations of Radio Moscow, one of the most powerful voices on the shortwave bands around the world. No matter where you are in the world, chances are that you will find Radio Moscow somewhere on the shortwave dial.

Radio Moscow is one of the most easily heard international broadcast stations on the air. The first external broadcast from the Soviet Union aired in October 1929 with a German service. English and French programming followed in November and December. Today, Radio Moscow broadcasts a total of 250 hours of programming per day in 66 languages, plus a number of local dialects.

Radio Moscow claims to have immediately gained a reputation as an 'antiwar station'. During Hitler's preparation for World War II, Radio Moscow urged the world to take a stand against aggression. During the war, Hitler ordered forces to wipe out Radio Moscow at all costs, but he was unsuccessful.

During the Cold War, Radio Moscow spent much of its airtime with 'imperialist bashing' and filled its airwaves with propaganda-oriented broadcasts. With the introduction of perestroika, or restructuring, programming at Radio Moscow has changed drastically. Two main services of Radio Moscow, together with the BBC, operate a World Service which transmits programming around the world in English 24 hours a day. Also they operate the North American Service which is audible here from

2200 to 0600 UTC daily in the English language.

As previously mentioned, it is almost impossible not to find Radio Moscow somewhere on the shortwave bands at all times of the day. They have been known to operate on as many as 13 different frequencies at the same time, often with several frequencies in each major international broadcasting metre band.

The variety of programming is wide. Subject matter includes news, sports, political commentaries, music, science and technology, social, cultural and educational programming.

It also broadcasts a Russian language lesson to over 40 nations in 33 languages and supplies free educational material to assist you with the course. Radio Moscow has an extensive network of high transmitters spread widely throughout the Soviet Union, plus they also operate some relay transmitters, particularly in Bulgaria and Cuba.

It is impossible to highlight all the frequencies for Radio Moscow, particularly during the 2200 to 0600 UTC block. Some of the more powerful and consistent frequencies are 9765, 11850, 11730, 11750 and 15290 kHz. These are just a few spots to look, but just tune across the dials daily and you will definitely find the familiar tones of Radio Moscow.

There are many other regional services on the air from the Soviet Union also audible in North America, such as Radio Kiev, Radio Vilnius, Radio Yerevan, Radio Tashkent and Radio Peace and Progress, but more on these regionals at another time. I would strongly suggest that you drop a note to Radio Moscow to obtain copies of their detailed program and frequency guides for both the World Service and the North American service. You can write to either of these services at the following simple address: Radio Moscow, Moscow, 113326, U.S.S.R.

Radio Moscow states that they receive mail from over 160 countries. They always welcome questions and constructive criticism and encourage listeners to write. Tune in and see how the other side views things.

BOOK REVIEWS

One of the most difficult aspects of choosing a shortwave receiver is choosing the right one for you. There are so many to choose from. Should you buy a new receiver or look for a used piece of equipment? What should you

pay and what will you get for your money? Well, there are two very fine publications on the market today which do their best to help you out with this difficult choice. They also make for very interesting reading as well, even if you aren't in the market for a receiver. If you are a collector of data on equipment, then these publications will be for you as well.

The two books are: *Shortwave Receivers—Past and Present*, edited by Fred J. Osterman; and *Radio Receiver—Chance or Choice, Part 1 & 2*, by Rainer Lichte. Let's take a brief look at each of these.

Shortwave Receivers—Past and Present features a concise guide to over 200 shortwave receivers manufactured in the last 20 years. The book gives information on each model including a photo of most. Information given includes the coverage, circuit type, performance, date of introduction, brief performance review, plus the new and used values of the equipment. The book also indicates where and when certain receivers were reviewed in various publications. A section also includes copies of manufacturers' specification sheets on the various receivers. This 104-page book is chocked full of good information on American, European and Asian receivers alike, from portables to high-end communications receivers. Must reading for those addicted to equipment.

Radio Receiver—Chance or Choice, Part 1 & 2 is actually two separate books, Part 2 featuring more current receivers. These books are written by a world-renowned radio engineer. Mr. Lichte has prepared detailed reviews of each piece of equipment based on real-life testing, and features actual photographs of most of the receivers. Part 1 reviews 75 pieces of equipment including Icom, Kenwood, Yaesu, Panasonic, Sony, Realistic, Magnavox and JRC lines, plus others, in 224 pages. Part 2 is 96 more pages of the same in-depth reviews of more recent equipment including the JRC NRD-525, Icom R-7000, Kenwood R-5000 and Panasonic RF-B60. There are 14 additional reviews in this second part. All in all, very in-depth, straightforward and unbiased reviews of table top and portable receivers, plus additional reviews of various shortwave accessories.

Both of these publications are available through me in Canada. Should you wish to order these books, here are the pricing details. *Shortwave*

CONTEST SCENE

Dave Goodwin VE2ZP, 15 Oval, Aylmer, Quebec J9H 1T9

CONTEST CALENDAR

Sept 6-8 YLRL "Howdy" Days
 Sept 9-10 European SSB Contest
 Sept 9-10 ARRL VHF QSO Party
 Sept 10 North American CW Sprint
 Sept 16-17 Scandinavian CW Contest
 Sept 17 North American SSB Sprint
 Sept 23-24 Scandinavian SSB Contest
 Sept 23-24 CQ WW DX RTTY Contest
 Sept 23-24 Classic Homebrew Exchange
 Oct 7-8 Pennsylvania QSO Party
 Oct 7-8 VK/ZL Oceania CW Contest
 Oct 8 RSGB 21/28 MHz SSB Contest
 Oct 15 RSGB 21 MHz CW Contest
 Oct 28-29 CQ WW DX Phone Contest
 Nov 10-12 Japan Int'l DX Contest
 Nov 11-12 European RTTY Contest
 Nov 25-26 CQ WW DX CW Contest
 Dec 2-3 Telco Pioneer QSO Contest
 Dec 31 CANADA WINTER CONTEST
 (Courtesy John Dorr K1AR, CQ Magazine and The Canadian Amateur)

CQ WPX CW

While it seems ancient history, the WPX CW was the last major contest of the 88-89 season. This year, the signs before the contest were not good. There were continuous storms, auroras and flares in the weeks leading up to the contest. When the contest finally happened, conditions were not bad for the time of year. 10 Metres was poor, as could be expected, and the noise on 80 and 160 scared away all but the most dedicated. As usual 15 and 20 carried most of the burden, with 40 enjoying considerable attention. In this contest above all, taking 18 hours off really helps.

There was plenty of Canadian activity and at least one potential new record. I

CQ WW DX RTTY

		CANADA					
VE2JR	64,468 AB	167	454	39	74	29	
VE6CB/3	220,651 AB	345	947	59	115	59	
VE3JPC	55,536 AB	142	356	52	66	38	
VE3UR	26,400 14	111	300	27	44	17	
VE3JAN	14,690 14	89	226	15	31	19	
VE6ZX	95,893 21	374	931	20	45	38	
VE7BT0	19,838 AB	89	218	29	31	31	
VE7DTA	19,251 AB	84	207	30	31	32	
VE7VP	14,186 AB	64	173	32	34	16	
VE7HDX	4,608 AB	34	96	20	27	1	
VE7BDQ	2,795 AB	28	65	15	10	18	
VE7ZZZ	333,735 MS	496	1,171	64	81	140	

have a few score rumours to pass on:

Call Class, QSOs, mult, score
 VE6OU/3 A? 2200+
 CJ7SV A? 2100+
 VE2ZP A 1305 498 1.88M
 VE3KKU 28 135 92 29k
 VE1AEJ/3 28 99 65 17k
 XK1CYL 14 2100+
 VE7ZZZ MM 1660 530 2.44M

Paul XK1CYL seems to have the best shot at a new record with his 2100 QSOs on 20 metres. Others believed to be serious included: VO4MP, VE3KP, VE3AT (All AB) and VE2FU on 40. Special thanks to Frank VE7AV of the 'ZZZ gang who sent me their score via packet.

CQ WW DX RTTY

The results of the 1988 contest appeared in the June issue of CQ and are reprinted here. Congratulations to Jeff VE6CB/3 for his first place showing for Canada, and to VE6ZX for being first worldwide on 24 MHz. VE7ZZZ once

again carried the multi-op flag for Canada with a respectable score. This contest has quite different rules than the CW and SSB WVs, and is still in its infancy. With CQ's reputation for well-managed contests, it may not be long before the CQ WW RTTY DX Contest becomes the RTTY event of the year.

CQ WW DX CW

High claimed scores from the 1988 CQ WW DX CW were published in July CQ. The list below shows call, class, claimed score, and worldwide ranking. * denotes a possible new record.

VO1MP	A	2,737,327	32*
VE6OU/3	A	2,726,946	33
VE3IY	A	1,833,920	63
VE3KP	A	1,190,884	104
VE2LJ	21	439,300	23
VE3VN	21	264,620	47
VE7CXR	21	228,608	59
VE2ZP	14	532,740	6
VE7BC	14	268,500	21
VO1NA	1.8	103,320	3
VE3DO	1.8	31,146	19
VE7CKF	QRP	202,280	22
VE7ZZZ	MS	3,301,320	41

The scores of VO1MP and VE6OU/3 both beat the existing record by a very slim margin, and less than 1% separates them! Special congratulations should go to VO1NA for his performance in TRIPLING the existing 1.8 MHz record.

CANADA DAY CONTEST

Conditions were fair, but participation seemed to be up a bit, especially from overseas. This year, Canada Day fell on a Saturday, and that was probably responsible for the increase in foreign participation.

I know of only two scores. VE2ZP, operated by Ken WD9INF came out over 700 Qs on all bands for a score of over 200k. VE1CYL was found with about 700 Qs at 1500Z, and he was a 20 metre single band entrant! If Paul had less than 1200 Qs at the end, I would be very surprised, and may have a score well over 100k.

Continued on next page

LISTENING (cont'd)

Receivers— *Past and Present* is available for \$11 Canadian, including shipping. Radio Receiver— *Chance or Choice, Parts 1 & 2* are available separately or combined. Part 1 is \$20 and Part 2 is \$10; the special combined price for both books is \$24.95 Canadian. These prices also including shipping. Should you wish to order, please send a cheque or money order, payable to me, to my above mentioned address. I also stock a number of other radio related books and publications. Should you wish to obtain a price list with details of these publications, please send me a self-addressed, stamped envelope and I'll get off a copy to you.

Finally, I hope that some of you had the opportunity to experience some of the rather dramatic FM and television E-skip conditions which took place in early July. I was able to log several FM stations from Florida, George, Alabama, Missouri, Nebraska, Iowa

and Illinois and even television from Sioux City, Iowa. These openings were some of the best E-skip conditions experienced in these parts for quite some time, sometimes continuing for several hours, both in the day and evening. Let me know if you had any interesting FM/TV experiences.

Next month I hope to have a report on this year's Association of North American Radio Clubs annual ANARCON convention which took place in mid-July in St. Petersburg Beach, Florida. The theme of this year's convention was broadcasting in Latin America and many interesting guests were scheduled to attend. Two of our local CIDX club members were in attendance at the convention and will be filing reports upon their return. Look for this feature report in the next issue. Thanks again to all the CARF members who continue to write to express their comments on this column. Your input is always appreciated. Until October! ■

NA SPRINTS

These two four-hour events, sponsored by the *National Contest Journal* (NCJ) take place this month. Just as the name implies, these are non-stop events, and move so quickly that you'll finish the contest feeling like you just sat down. Last year, the SSB contest was deferred by one week due to Hurricane Gilbert. Such an event is unlikely to interrupt this year's events.

The most curious aspect of the Sprint is the 'QSY Rule', which effectively prevents you from holding a frequency running. You may call CW, but once you have completed a contact, you must move off. Either move 5 kHz and call CQ again, or call someone else. When you call someone else, you may take over

the frequency and call CQ after your contact. In this way, any given frequency is handed off from one station to another, with each station making no more than two successive contacts on a given frequency. It sounds strange, but it is easily learned, and adds a real immediacy to the event.

RADIOSPORTING

Well, there appears to be some life in the old rag yet! The May issue showed up at my door in the early part of that month. Yuri VE3BMV/W2 is now talking of getting issues out on a quarterly basis until things really get going. Until a few issues have appeared on a regular schedule, I think I would rather put my money in Argentine government bonds. Again, watch this space for details.

RANDOM THOUGHTS

The call for suggestions about the Canada Contest rules has produced nothing. I have three promises of written suggestions from people, but nothing on paper. One verbal suggestion I have is "drop it". If people don't care enough to write, that may be the result. Please give it some thought, and drop me a line with your thoughts. See the Contest Column in June TCA for some of the problems and give us your ideas.

Craig VE3KKU feels he deserves some mention in this column. Craig has provided me with a computer with which I tested KLEA's software, and he does collect my mail on packet, so here you go, Craig. Here is your 15 seconds of fame. Enjoy! ■

Silent Keys

W6UF— William Eitel, who was the EI of EIMAC. Don't know what ham linears would be today if he had not developed all of those powerful HF and VHF tubes.

VE3PBI— Thomas Davall, July 3, 1989, in Kingston, Ont., age 72. Tom, a popular member of the Kingston ARC, had spent 48 years in uniform, starting as a boy entrant in the RAF in England at age 17. He became a skilled armourer and was a pre-war Air Gunner, wearing the brass winged-bullet badge on his sleeve. He served on 218 Squadron Fairey Battles, escaping from France after the retreat from Dunkerque, and then was on active service in the Middle and Far East, leaving the RAF as a Flight Sgt. after 15 years service. Tom and his wife, Midge, emigrated to Canada on the *Aquitania* in 1948. Tom joined the B.C. Provincial Police and then the RCMP when it took over the provincial policing duties. Coming east due to family matters, Tom stopped off in Kingston and took over the security

at the Fairbanks Morse Locomotive Works, later joining the Correctional Service of Canada, serving in Kingston Penitentiary until his retirement in 1981.

An active CBER for many years, Tom, with the help of his XYL Midge, studied hard and received his Amateur licence in 1985.

VD6JQ— Mervyn Harris Jaque, VE6JQ passed away June 11, 1989, age 69 at Sidney, B.C.

I first met Merv after the war, in the mid-40s. He was an ambitious young man. He bought the feed mill in Lacombe, expanded it and put in a seed cleaning section. We were both single, I had a radio shop and did electrical contracting. It was through business that I first met Merv. We became close friends.

This was the day of the little red school house and the country halls. Both being single, every Friday night we would take off for a country dance. It was after the war, cars were hard to find. Merv had an old 4-90 Chev car with the back seat cut out and a box built in. When we were ready to go home, someone had to wind it up to start it. If we did not have too much luck, Merv would get out, grab the handle, and the whole front of the truck (car) would be swung around— it knew it had better start or get pulled apart.

At that time Merv met a farmer's daughter from Bentley, Alberta, Donna Moore. They were married and lived happily ever after.

We both moved, I met him once up in the Peace Country, he was working on his ham ticket and in the process of building a shack. I never saw him again till the late '70s. His ham radio hobby

continued to be very special to him the rest of his life, even to the last when he was fighting cancer.

Merv was a hard worker, he would attempt anything, try carpentry work with one arm, or put a garage door opener together and install it. He loved old cars, gardening, rock hounding, hamming, hard work and his wife Donna and family Jeryl, Don and Joann.

Merv was a second generation pioneer of his beloved Peace River country in Alberta. In his later years, he resided in the Edmonton area, devoting his life to public service. Finally moving to beautiful Sidney, where he spent his last year with Donna. He will be greatly missed. 73 Merv.

— Elmer Lodmell VE6BLO

VE7DIW— Lewis Caldwell became silent key on July 6 as the result of a massive heart attack.

VO1II— Clifford V. Hierlihy passed away at a hospital in Gander on June 2 in his 78th year. He was a long-time employee of the CBC (23 years) and was actively involved in community groups of which he freely gave his time.

VE7BBD— Fred Devenish of Sidney, B.C. on June 19. Fred also held the call GSUP, which I believe is still current, and from the mid-30s until about 1970 was licensed as VE3ADV. This call has been reassigned.

— George Wright VE3MZ

VE7DXI— Laurie McCrackin, well-known Nanaimo and West Coast DXer, passed away suddenly and peacefully July 31. His distinguished voice and humour will be missed by all his ragchew friends around the world. ■

VE3VCA

CARF would like to invite Amateurs who are in the Kingston area to come operate the club station, VE3VCA. If you'd like to visit the station, just contact the CARF Office and make an appointment.

LETTERS WELCOMED

The CARF General Manager welcomes your signed letters of praise or discontent. Anonymous letters are unfortunately not acceptable for any action other than disposal.

10 METRE BEACONS

Freq.	Call	Location	Notes
28.050	PY2GOB	Sao Paulo, Brazil	15W, vertical
28.175	VE3TEN	Ottawa, Ontario, Canada	10W, ground plane
28.195	IY4M	Bologna, Italy	20W, 5/8 ground plane
28.200	GB3SX	Crowborough, England, U.K.	8W, dipole
28.200	KF4MS	St. Petersburg, Florida, USA	75W, ground plane
28.201	LU8ED	Buenos Aires, Argentina	5w
28.2025	ZS5VHF	Durban, Rep. of South Africa	15W, ground plane
28.205	DLOIGI	Mt. Predigtstuhl, W. Germany	100W, vertical dipole
28.207	W8FKL	Venice, Florida, USA	10W, vertical
28.208	WA1IOB	Marlborough, Mass., USA	75W, vertical
28.210	3B8MS	Mauritius	ground plane
28.210	K4KMZ	Elizabethtown, Kentucky, USA	20W, vertical
28.212	EA6RCM	Palma de Mallorca, Span	4W, 5el NNE
28.2125	ZD9GI	Gough Is., South Atlantic	ground plane
28.215	GB3RAL	Slough, Berkshire, U.K.	20W, ground plane
28.215	LU4XI	Puerto Deseado, Argentina	
28.2175	WB9MVY	Oklahoma City, OK, USA	4W, ground plane
28.220	5B4CY	Zygi Cyprus	26W, ground plane
28.222	W9UXO	Lake Bluff, Illinois, USA	10W, ground plane
28.2225	HG2BHA	Tapolca, Hungary	10W, ground plane
28.2275	EA6AU	Mallorca, Balearic Is., Spain	10W 5/8 ground plane
28.230	ZL2MHF	Mt. Climie, New Zealand	50W, vertical dipole
28.231	N4LMZ	Mobile, Alabama, USA	2W, 5/8 ground plane
28.232	W7JPI/AZ	Sonoita, Arizona, USA	5W, 3el Yagi NE
28.233	KD4EC	Jupiter, Florida, USA	7W, ground plane
28.235	VP9BA	Hamilton, Bermuda	10W, ground plane
28.2375	LA5TEN	Oslo, Norway	10W, 5/8 ground plane
28.240	OA4CK	Lima, Peru	10W
28.2405	SZ4ERR	Kiambu, Kenya	
28.2425	ZS1CTB	Capetown, Rep of South Africa	20W, 1/4 vertical
28.245	A92C	Bahrain	dipole, NW/SE
28.247	EA3JA	Barcelona, Spain	
28.2475	EA2HB	San Sebastian, Spain	6W, ground plane
28.248	K1BZ	Belfast, Maine, USA	5W, vertical dipole
28.250	Z21ANB	Bulawayo, Zimbabwe	15W, ground plane
28.250	4N3ZHK	Yugoslavia	1W, vertical
28.252	WB4JHS	Durham, North Carolina, USA	7W, vertical
28.255	LU1UG	Gral Pico, Argentina	5W, ground plane
28.2575	DK0TEN	Konstanz, West Germany	40W, ground plane
28.260	VK5WI	Adelaide, SA, Australia	10W, ground plane
28.262	VK2RSY	Sydney, NSW, Australia	25W, ground plane
28.264	VK6RWA	Perth, WA, Australia	
28.266	VK6RTW	Albany, WA, Australia	
28.266	KB4UPI	Birmingham, Alabama, USA	50W, 1/4 vertical
28.2685	W9KFO	Eaton, Indiana, USA	0.75W, vertical
28.270	ZS6PW	Pretoria, Rep of South Africa	10W, 3el Yagi on G-land
28.270	VK4RTL	Townsville, QLD, Australia	
28.2725	9L1FTN	Freetown, Sierra Leone	10W, vertical dipole
28.275	AL7GQ	Jackson, Mississippi, USA	0.5/1W, broadside loop
28.2755	N6RDX	Stockton, California, USA	20W, 3el Yagi
28.2775	DFOAAB	Kiel, West Germany	15W, ground plane
28.280	YV5AYV	Caracas, Venezuela	10W, rotary beam on Europe
28.280	LU8EB	Buenos Aires, Argentina	5W
28.282	VE1MUF	Fredrickton, NB, Canada	0.5W, dipole
28.284	VP8ADE	Adelaide Is., Antarctica	8W, vertical beam to G-land
28.286	KA1YE	Rochester, New York, USA	2W, vertical dipole
28.287	W80MV	Asheville, North Carolina, USA	5W, ground plane
28.287	H44SI	Honiara, Solomon Is.	15W, ground plane
28.288	W2NZH	Moorestown, New Jersey, USA	5W, ground plane
28.290	VS6TEN	Mt. Matilda, Hong Kong	10W, vertical
28.2925	LU2FFV	San Jorge, Argentina	5W, ground plane
28.295	WB8UPN	Cincinnati, Ohio, USA	10W, vertical
28.296	W3VD	Laurel, Maryland, USA	1.5W, vertical dipole
28.297	WA4DJS	Ft. Lauderdale, Florida, USA	10W, 76 meter longwire
28.300	PY2AMI	Sao Paulo, Brazil	10W, vertical dipole
28.300	VE2HOT	Beaconsfield, PQ, Canada	5W, vertical dipole
28.300	ZS1LA	Stillbay, Rep. of South Africa	20W, 3el Yagi NW
28.315	ZS6DN	Irene, Rep. of South Africa	100W, vertical
28.888	W6IRT	North Hollywood, Cal, USA	5W, gnd plane, code practice
28.992	DLOANN	Nuernberg, West Germany	1W, delta loop

U.S. 10M FM REPEATERS

Out	In	Call sign	
29.62	29.52	N6AHW	WA2TMZ
		KC4CI	KD8C
		KE4IO	KC50U
		WDOALH	W5HZZ
		K85VC	K3CFY
		K3SP	WD8CIY
		W1BHD	KC50Q
		WD80XD	WB9ZRB
		W0JZY	
29.64	29.54	WB4QVT	N8EEG
		KE4QC	WB3FKO
		K6GZK	WB7DRU
		KJ4CA	WB5ITT
		W04B	K5TVY
		WAONSH	W9ZY0
		K0GBZ	
		N5ARU	
		W3DID	
		WBOARL	
		K2KLN	
29.66	29.56	N9PL	W9LM
		N6BPK	AEON
		WOIA	K2MZ
		KC3AM	WA6GBG
		N3AUY	KC5EJ
29.67	29.57	KAIDFI	
29.68	29.58	KD4VD	
		N9DVF	
		KD4DN	
		KA3KPV	
		W2SEX	
		WB9STA	
		KD9FA	
		W4MM	
		KA4ZAY	

14 MHZ BEACONS

This series is sponsored by the Northern Californian DX Foundation. The beacons all operate in turn on the one frequency of 14.100 MHz. The series starts on the hour. They send the following series of signals at the power indicated:

QST de (call sign)	100W
—	100W
..	10W
...	1W
....	0.1W

sk de (call) 100W

The call sequence is as follows:		
T+0 min	4U1UN/B	New York
T+1	W6WX/B	Stanford
T+2	KH60/B	Honolulu
T+3	JA21GY/B	Ise City
T+4	4X6TU/B	Tel Aviv
T+5	OH2B	Espoo
T+6	CT3B	Funchal
T+7	ZS6DN/B	Pretoria
T+8	LU4AA	Santa Cruz
T+9	HK4LR/B	Colombia



Atlantic Ham Radio

presents an



ICOM & cushcraft

ICOM

MAIN ICOM PRIZE

IC-2GAT
2M HANDHELD
VALUE \$629



EXAMPLES OF ICOM
DAY SPECIALS:
IC-32AT \$699
IC-3210 \$799

DAY

Saturday,
September 9, 1989
9:00am til 4:00pm



MAIN CUSHCRAFT PRIZE

R-5
NO RADIAL VERTICAL
VALUE \$529

SPECIAL PRICING!
HOURLY PRIZES!
ICOM PERSONNEL!
cushcraft PERSONNEL!

EXAMPLES OF
CUSHCRAFT
DAY SPECIALS:
A-3 \$449
A-4S \$589
ARX-28 \$69

\$899



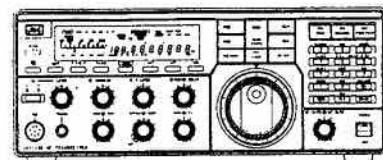
TM-731

NEW TM-731A - With light background for much better readability at night or day or sunlight!!
New Multi-function TouchTone Mic with instant recall of MR VFO and CALL. New Memory CH on Sub.

JRC

Japan Radio Co., Ltd.

JRC HF 7



JST-135

THE NEW JST-135
NOW AVAILABLE

Insured SHI
Some heavy
ADD 8% S&H
without not
requests.
Card orders

IC-2400



NEW IC-2400 2M/440MHz DUAL-BANDER 45W VHF - 35W UHF Full Duplex capability as well as Dual Band Receive. 40 Memory channels, 20 per band. TouchTone Mic \$1069

NEW IC-2SAT Super Small 2M Handy 1.9" w 4" h 1.3" d Programmable frequency entry, TouchTone Pad, 48 Memories, 10 Telephone Number Memories, Built-in Clock with Alarm, External DC jack 6-16VDC, weight 9.9oz. Wide Freq Cov, Built-in Nicad pack as well as optional external pack. Output power is 5W @ 13.8VDC. All that for only \$539.00

IC-726

HF+6m

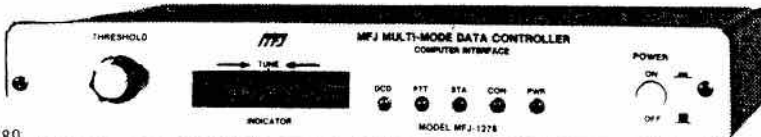


NEW IC-726 HF Transceiver also includes 50-54MHz 6M Band 100W HF, 10W 6M. 22 Memories, All mode with AM/FM Standard. Size and other features identical to IC-725 Xcvr \$1659

AEA SOFTWARE
PC PACKRATT & FAX \$ 75
COMPACKRATT & FAX \$125
MacRATT & FAX \$ 99
NEW KEYS
THE MORSE MACHINE \$299
CLEAROUT !!
PK-88 Packet Contr \$199

While others offer you some digital modes using 3 year old technology, only MFJ gives you all 9 digital modes and keeps on bringing you state-of-the-art advances

MFJ-1278



MFJ-1270B \$189

MFJ-989C \$599, MFJ-986 \$399, MFJ-962C \$349, MFJ-949D \$249, MFJ-941D \$179, 945C \$149

WE TAKE TRADES - USED EQUIPMENT NOW AVAILABLE - 100% 30 DAY WARRANTY - TS-930SAT IC-761 WH-7 FP-757HD FC-757AT FT-707 TR-851A TR-2400 UTU UTU-XI/P FT-720RVH FTS-12 SONY CCD-V110 Video

AEA Advanced Electronic Applications

PK-232 Multi-mode Data Controller
\$549



- NEW IBM Fax Screen Display Program Available
- Transmit/Receive on Six Modes
- CW/RTTY/ASCII/AMTOR/Packet/FAX
- IBM and Commodore terminal programs available
- Radio Ports for HF and VHF

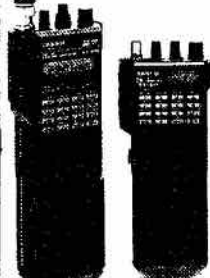
In Stock for Quick Delivery

TRANSCEIVER

\$2699

USES THE FAMOUS NRD-525 AS THE RECEIVER !!

FT-470 \$759
2M 136-174MHz RX
440 430-450MHz
FT-411 \$449
RX 136-174MHz
TX MODS AVAILABLE



1 Dual-band performance perfected. Yaesu's FT-470 dual-bander has everyone talking! 2 meter and 430-450 MHz. 42 memories. Simultaneous receive of both bands. Dual VFOs each band. PL tone encode/decode. Paging feature. DTMF autodialer with 10 memories, each 15 digits. Auto repeater shift. Scanning features. Auto power-off. Battery saver. Extended receive. Audible command verification. Keypad and rotary-dial frequency entry. Water-resistant seals. 2.3-watt battery pack and optional packs up to 5 watts. More.

2 Maximum singleband HT performance. Yaesu's compact FT-411 Series gives "sophisticated HT operation" a whole new meaning. 2 meter and 440 MHz models. 49 memories. Dual VFOs. DTMF autodialer with 10 memories, 15 digits each. Auto repeater shift. Battery saver. Scanning features. Auto power-off. Extended receive. Audible command verification. Keypad and rotary-dial frequency entry. Optional battery packs, up to 5 watts, available. More.

YAESU

ATLANTIC HAM RADIO LTD.

Tues.-Fri. 10 a.m.-6 p.m.
Saturdays 10 a.m.-2 p.m.
After 7 p.m. Call (416) 222-2506
For Orders.

378 WILSON AVE.
DOWNSVIEW, ONT.
CANADA M3H 1S9
(416) 636-3636

Shipping & Handling -- Please add 2% (\$5.00 Minimum) to all orders. Long items are subject to freight collect. ONTARIO RESIDENTS PAY TAX AFTER ADDING SHIPPING. All prices are subject to change. Please send 2 first class stamps for catalogue and info. Special prices are based on cash or cheque with order. Credit 2% to discount prices only. New Fax Fone 631-0747

I beacon in banda 28 MHz

al 25 maggio 1988

Legenda

LOC (località)

es.: 1234N4567E =
(in gradi centesimali)
Lat. 12.34 N
Long. 45.67 E
oppure WW Locator

BE (Osservazioni)

C: funzion. continuo
O: attivo spesso
I: con interruzioni
X: non chiaro (+)
T: time sharing
R: Robot (IY4M)
P: in preparazione
*: International
Beacon Project (IBP)

ANT (antenna)

GP: ground plane
VE: stilo verticale
DP: dipolo
VDP: dipolo verticale
YA: yagi
DL: delta-loop
2QU: quad a 2 elem.

BA (Modo di emiss.)

A1 o A2 o F1

H/NN (quota)

in metri s.l.m.

QRG (frequenza)

in kHz ($\pm 0,5$ kHz)

Fonte informazione di "Funk":

1) G3DME
The IBP. IARU Reg. 1
News, pagg. 26-30 1988

2) cqDL 7/87 (vedi anche
da R.R. 8/87, pag. 59)

3) Ten Meter Beacons
(ed. VE2HOT e W1HDQ)

4) Osservazioni
dell'Autore

(*)

Nota di Redazione

Un'ampia descrizione
del funzionamento
del beacon italiano
IY4I è stata fatta
da Radio Rivista 6/85

QRG	CALL	QTH	LOC	ERP	ANT	H/NN	BA	BE
28050	PY 2GOB	Sao Paulo		15	VE		A1	C
28175	VE 3TEN	Ottawa		10	GP		A1	C
28185	OA 4VHF	Lima						X
28195	IY 4M	Bologna	JN 54QK	20	5/8GP		A1	R
28200	GB 3SX	Crowboro	JO 01BB	8	DP N/S	230	A1	T
28200	KF 4MS	St. Petersburg FL		75	GP			C
28201	LU 8ED			5				X
282025	ZS 5VHF	Durban	KG 50JG	5	GP	678	A1	O
28205	DL 0IGI	Mt. Predigtstuhl	4742N1253E	100	VDP	1650	F1	T
282075	KE 4NL	Sarasota	2720N8224W	5	VE	6	A1	X
282075	W 8FKL	Venice FL	2720N8224W	10	VE		A1	C
28208	WA 1IOB	Marlboro Mass		75	VE			C
28210	3B 8MS	Tamarind Falls			Gp		F1	C
28210	K 4KMZ	Elisabethtown KY		20	VE			I
28212	ZD 9GI	Gough IS.	4021S0952W		GP		F1	C
28212	EA 6RCM	Palma Majorca	JM19HO	4	YA			O
28215	GB 3RAL	Slough	JO91RL	20	GP	20	F1	C
28215	LU 1DZ						A1	X
28215	LU 4XI	Cape Horn						X
28217	WB 9VMY/B	Oklahoma CTY	EM05..	4	GP		A1	C
282175	VE 2TEN	Chicoutimi QU		4			A1	X
28219	LU 4XS		5459S6644W				A1	X
28220	5B 4CY	ZYYI Cyprus	3445N3319E	26	GP	20	F1	C
28222	W 9UXO/B	Chicago Ill.		10	GP		A1	C
282225	HG 2BHA	Tapolca		10	GP	280	F1	X
282275	EA 6AU	Palma Majorca	3929N0483E	10	5/8GP	149	A1	T
28230	ZL 2MHF	Mt. Clunie	4109S17509E	50	VDP	890	F1	C
28232	W 7JPI	Sonoita AZ		5	YA NE			X
28232	KD 4EC/BCN	Jupiter FL		5	VE		A1	C
28233	N 4LMZ/B	Alabama					A1	O
28235	VP 9BA	Southampton/Bermuda		10	GP		F1	C
282375	LA 5TEN	Oslo		6	5/8GP		A1	C
28240	OA 4CK	Lima	1203S7657W	10			A1	X
28240	SZ 4ERR	Kiambu	KI88MX				F1	C
282425	ZS 1CPT	Capetown		20	VE		F1	X
28242	LU 4FM	Rosario						I
28245	A9 2C	Bahrain	2609N5028E		DP NW/SE		F1	C
28247	EA 3JA	Barcelona					A1	I
282475	EA 2HB			6	GP			I
28248	K 1BZ	Belfast ME		5	VDP		F1	C
28250	Z 21ANB	Bulawayo		40	2QU N		A1	C
28251	4N 3ZHK	Mt. Kum	4606N1502E	1	VE	1216	A1	O
28252	WB 4JHS/B	Durham NC		6	VDP		A1	I
282525	OH 2TEN	Helsinki		10	8/8GP		A1	C
28255	LU 1UG	General Pico	FF84DH	5	GP		A1	O
28257	DK 0TEN	Konstanz	4741N0910E	25	VDP	440	F1	C
28260	VK 5WI	Adelaide SA		10	GP		A1	C
28262	VK 2RSY	Dural NSW	3342S15103W	25	VE	240	A1	C
282645	VK 6RWA	Perth WA				300	A1	C
28266	VK 6RTW	Albany WA						C
282665	OH 1ZAA		KP01RO				F1	O
28267	KB 4UP/B	Alabama					A1	O
28268	VK 8VF	Darwin NT						X
282685	W 9KFO	Eaton IND			3/4 VE			I
28270	ZS 6PW	Pretoria		10	YA N			O
28271	VK 4RTL	Townsville QL					A1	I
282725	9L 1FTN	Freetown		10	VE		A1	X
282745	PT 7AAC						A1	O
28275	AL 7GO	Jackson Miss		1	LOOP			X
28277	DF 0AAB	Kiel	5419N1033E	10	GP	163	F1	C
28280	YV 5AV	Caracas	1021S6653W	10	YA		F1	I
28281	VE 1MUF/B	New Brunswick	FN65NX	1			A1	O
28282	VE 2HOT/B	Montreal QU	4541N73789W	5	VDP	150	A1	C
28284	VP 8ADE	Adelaide IS	6734S6808W	8	V-BEAM EU		F1	O
28284	KA 1YE/B	Rochester NY	4302N7741W	2	VDP		A1	O
28286	KE 2DI/B		FN02..				A1	O
28287	W 8QMV	Asheville NC		5	GP			X
28287	H 44SI	Honiara		15				P
28288	W 2NZH/B	Moorestown NJ		5	GP		A1	I
28290	VS 6TEN	Mt. Matilda		10	VE	300	A1	C
28292	LU 2FFV	San Jorge		5	FP			X
282925	ZD 8HF	Ascension IS	II2206				F1	O
28295	WB 8UPN/BCN	Cincinnati Ohio		10	Ringo			O
28295	VU 2BCN	New Delhi						O
28295	WB 4DJS	FT. Lauderdale		10	Wire			O
28296	W 3VD	Laurel MD		10	VDP	130		C
28299	PY 2AMI	Sao Paulo	2245S4716W	10	GP		A1	C
28300	ZS 1LA	Stillbay	3423S2124E	20	YA NW	15	F1	X
28302	ZS 1STB		3423S2124E	5	DP N/S	15	F1	I
28315	ZS 6DN	Irene		100	VE	1280	F1	C
28325	DF 0THD	Darmstadt	4980N0865E	4	GP	100	A2	X
28340	Z 22JV							I
28888	W 6IRT	Hollywood CA	3412N11828W	5	GP			I
28890	WD 9GOE	Freeburg IL						X
28892	DL 0ANN	Montitzberg	FJ47A	20	DL N/S	630	A1	X
29266	Z 22JV							X

(da Funk 10.88 - a cura di DJ2RE)

•CQ DX•CQ DX•

Paul Cooper VE3JLP, RR 2 Metcalfe, Ontario K0A 2P0
613-821-2167



SUMMER PROPAGATION

The summer months are not the best for propagation as we all know. 160 and 80 tend to get very noisy while 40 becomes usable, for DX anyway, only at night. As cycle 22 climbs towards what may well be a record high, the 10, 15 and 20 metre bands provide a roller coaster of surprises and disappointments. Solar flux levels in the 200s (Equivalent sunspot numbers over 300) suggest potentially super conditions but unfortunately, with these high flux levels comes increased ionospheric storm activity, note those high A and K indices. This frequently results in very heavy absorption by those layers of the ionosphere we rely on either for reflecting our signals or, for the lower layers, allowing our signals to pass through relatively unattenuated.

Jack VE3BTQ comments that "...conditions have been terrible lately, bands open up the odd day if you are lucky to catch it. All the DX lately have been repeats..."

I have lately been attempting to mine 15 metres for some of those elusive SE Asia countries I still need. My propagation bible, the monthly CQ Magazine column by George Jacobs W3ASK, showed the possibility of openings in the afternoons, so I swung the beam to the northwest and checked all the weak CW signals I could find on the band. Of course most of them were Europeans attenuated by the side of my beam but I did strike oil once. A weak CQ turned out to be BV2DA and after a number of exchanges he did manage to get my call correct and we exchanged reports. That was a new one for me, so the QSL went off to DL7FT today.

Shortly afterwards I checked out another weak CQ which proved to be Mary 3D2MK. Not a new one, but always pleasant to work into Fiji, especially when the operator at the other end is an XYL. In both these cases the signals were not even moving my S meter and were barely above the noise level. It's a frustrating business, summer DXing, but it's surprising what can be worked with patience, especially if you are blessed with a quiet location.

QSLING

What's your success rate with QSLing? If you are like me you get mixed results. Some cards come flying back from the other side of the world in a month, no problem at all. These are the exceptions, I'm afraid. Mostly I find I have to wait for several months and sometimes nothing comes back at all. This is after I have carefully checked the

DXCC 16A, BUKIT SEDAP ROAD, SINGAPORE, 1027.					
" [CW] REPUBLIC OF SINGAPORE					
WAS [1558] 9 V 1 TL					
TO RADIO	DATE	U.T.C	MHZ	MODE	R.S.T.
VE3JLP	15 SEPT 81	11-05	14	CW SSB	579
YAESU FT 101E: INVERTED VEE DIPOLES FOR 40 AND 20					
Vy psd to qso Paul is glad to be a new 1 for u.					
73 de Peter					
OP PETER CARBUTT G2AFV					

My most expensive QSL Card, 5-IRCs plus an airmail stamp!

address in the call book, looked up and included the correct number of IRCs, not put an Amateur call sign on the envelope and so on. Frustrating, isn't it?! I have concluded that we need all the help we can get to gather in those vital cards. With this in mind I'd like to pass on the latest helpful hints I've found on QSLing.

Amongst all the goodies I picked up at the Dayton Hamvention was a, new to me, list of QSL Managers. Known to many of you as the 'GO List', it's put out by W6GO/K6HHD. It consists of a single large sheet of newsprint with a closely printed computer listing of over 5000 DX stations and their QSL managers. It so happened that a month after I got back from Dayton I decided that it was time I caught up with my DX cards for the previous six months. I had about 15 new countries worked and in some cases I already knew the QSL route but some of the others were unknown to me. I was resigned to ploughing through the back issues of QRZ DX and Long Skip to try to find QSL information for these stations when I suddenly remembered the GO list and pulled it out. It was a revelation! I think 13 of the 15 stations I'd worked were listed with a manager, sometimes with the full address too. What a painless, quick way of tracking down the information.

The list is published monthly by Jay and Jan O'Brien Electronic Enterprises, PO Box 700, Rio Linda, CA 95673-0700 U.S.A. Canadian subscribers are charged \$25 (U.S.) for a year's subscription and single copies are available for \$3 U.S. or 8 IRCs. I think you would have to be a very active DXer

to justify receiving the list every month, but a single copy every six months, for example, would keep you up to date on the new ones while the great bulk of the listing stays the same.

Fergie VE3NQI pointed out to me a most interesting article on QSL managers, with particular reference to F6FNU, in Vol. 1 Number 4 issue of The DX Magazine.

Also the DX Bulletin recently analyzed international postage rates and discovered that no country requires more than \$1 U.S. for the minimum weight return, good for an envelope and QSL card by airmail. Contrast this with the number of IRCs you need to send to Singapore, 9V1, for an airmail reply... 5! At \$1.05 (CAN) each, that's about \$4 U.S.; quite a difference.

However, let me sound a note of caution here before everyone rushes off to the bank to buy 'Green Stamps' to use instead of expensive IRCs. There are a number of countries in the world that forbid the importation of foreign currency. These are usually the poorer, Third World countries which are often on the DXer's list of most wanted cards.

Be very careful about sending green stamps unless you are absolutely sure that they will not get the DX station into serious trouble with the authorities. He could lose his licence or worse because of that dollar bill you include with your card.

BITS AND PIECES

HL Antarctica(!)— Thanks to Alan VE3HX for an unusual spotting on ten metres. Han HL5BDS was heard on May 20 on 28.432 MHz at 1920 UTC. He

Continued on next page

DX (cont'd)

indicated that his QTH was Antarctica. I knew that quite a number of countries have established bases in this inhospitable part of the world but I hadn't realized that this group included South Korea. They are almost certainly there to establish some kind of a territorial claim prior to the continent being opened up for 'development'. At the present time there is a United Nations treaty which only allows scientific research. Unfortunately this treaty expires soon and the vultures are already gathering!

70 P.D.R. of Yemen— Yemen again?! Well this time it's the other Yemen, the one with the Communist Government, prefix 7O rather than North Yemen, 4W. It appears that Paul 11RBJ plans to be in

70 in July and be signing 11RBJ/70. Since he is not a good CW operator he will be working SSB almost exclusively. QSLs to his father, 11RB. I shall be looking for this one, as will a great many other DXers worldwide, but I remain dubious that it will come off.

3Y Bovet Island— Each time I publish a list of the ten most wanted countries, 3Y is near the top. There hasn't been an operation from this remote South Atlantic Island in at least ten years so it's good to read in *QRX DX* that there is now a 'Bovet Club' dedicated to mounting a DXpedition there. Two of the club's organizers are LA1EE and LA2GV who were the operators on the very successful Peter 1st Island DXpedition in 1987. They are tentatively scheduling a 3Y attempt

around Christmas 1989 but they may well be held up by the costs of the expedition. The total bill is around \$200,000(!), of which about half must be raised by Amateurs. The DXpedition is independent and will not share costs with any other group going to Bovet, hence the high costs.

The club is appealing to DXers everywhere to come forward with contributions. Readers who are feeling generous should give me a call for details of where to send your cheque. If everyone working on DXCC and WAZ sent five dollars, I should think they would be over-subscribed... think about it.

VR6 Pitcairn Island— Long term readers of the column will know that I have a 'thing' about Pitcairn, so you can imagine how pleased I was when, browsing through my barber's pile of old magazines, I came across a long, well-illustrated article about the island and its inhabitants. The reference is *People Weekly* for April 17, 1989. Since these National magazines are rather fussy about copyright, I can't quote from the article or copy the photograph of VR6TC's shack without their written permission. Stand by for more on this subject.

VKO Macquarie Island— We understand that there are now three operators on this remote island south of Australia. Graham VKOGC likes 14.180 at 0300 and 1200 UTC. On Saturdays, U.S. time, he can be found on 28.550 MHz at 2300 UTC, 1823 kHz at 1100 UTC and he checks 3.795 MHz between 0900 and 1100 UTC. Robin VKODM, who is a YL, has a sked with her manager, VK2DEJ, around 14.120-14.125 MHz on Tuesdays at 0900 UTC. Doug VKOYQS/O(?) will be on the island until the end of November, but he only operates on six metres.

A recent report in the papers mentioned a fairly severe earthquake with its epicentre not far from Macquarie Island. Let's hope our friends down there were not too shaken up!

THE ZOMBIE'S REVENGE

Those of you who work CW and have occasionally strayed up towards 14.100 MHz may enjoy this little limerick that I spotted in *QRZ DX* but which originates from K7ZR in *The Totem Tabloid*.

Brass-pounder Alex can't hack it,
He's crazy from RTTY and Packet,
Slow scan and AMTOR,
So he lets out a roar:
"I can't work DX through this
RACKET!"

Thanks are due to the following sources for some of the material appearing in this column: VE3HX, VE3NQI, *QRX DX*, *Long Skip*, 'The W6GO/K6HHD QSL Manager List', VE3BTQ, *People Weekly*, K7ZR and *The Totem Tabloid*. ■

Band Reports

Thanks to Fergie VE3NQI for these "Chips off his Log" (!)

CALL	FREQ (MHz)	UTC	DATE	QSL
KB8RO/KP4	14.	0225	APR 30	KB8RO
FH/DL7FT	21.290	1938	APR 30	DL7FT
Z21BA	28.645	2009	APR 30	N5FTR
ZX5C	28.420	2150	APR 30	PY5CC
TA3F	21.325	1616	MAY 1	Box 66, Izmir. 35214
ZL7TZ	14.016	0515	MAY 2	BURO or CBA
(Chatham)				
YJ0AMI	14.130	1326	MAY 2	JL1RUC
YJ0AYS	14.035	1411	MAY 5	JAL1FP
VP2ESM	28.475	2140	MAY 5	Box 336, Anguilla BWI
VP5VRS	21.192	2228	MAY 5	JR3RVO
EO1AQW	14.010	0238	MAY 8	UZ1QWW
A92BE	21.296	2128	MAY 9	CBA
JT1KAA	21.251	2351	MAY 10	Box 639, Ulan Bator
JX7DFA	14.170	0038	MAY 11	LA2KD
VS6WV	21.252	1715	MAY 12	K0TLM
KG4FB	14.226	1443	MAY 14	N0FBC
3B9FR	14.173	1103	MAY 22	F6FNU
FT4ZE	14.250	0215	MAY 29	F2CW
9H3KE	14.	2335	JUNE 8	PA0PAN
4C2TCQ	21.025	0038	JUNE 9	XE2TCQ
T28RW	21.026	0219	JUNE 10	ZL1AMO
4K0F	14.007	0534	JUNE 13	Box 9, Chersky

Fergie tells me that he has received cards from the Willis and Mellish Ref expeditions. Very nice, fold out ones with pictures. Greg NM2L is doing the cards by bands; Fergie's were for 10 MHz. The advice is, be patient.

ARES AMATEUR RADIO EMERGENCY SERVICE

Bob Boyd VE3SV, P.O. Box 356, Kingston, Ontario K7L 4W2



ARES IN ONTARIO'S BRUCE COUNTY

Recently we asked Bill Hardie VE3EFX, EC for Bruce County, for a report on his group's activities. He replied as follows:

"Our ARES group has been active for about nine years. Fortunately we have not had any disasters in our area, but one could happen at any time. There is a commercial airline starting daily flights in and out of Kincardine, so there is always the chance of accidents happening and we have made the airport manager aware of our ability to help. We have 18 hams signed up, some of whom have taken the Red Cross Level 1 course, and most of whom have participated in our exercises.

"The largest exercises we have been involved in were a couple of Ontario Hydro simulated nuclear disasters. For these we used two metres for local communications and 80 and 40 metres to pass traffic into Toronto where stations were set up at the Ontario Provincial Police and the Red Cross headquarters.

"We also conduct a Simulated Emergency Test each year to give our members training in message handling. In the winter we provide communications for ski races while in summer we have helped with bicycle races and runs or walks for charitable organizations. We also assist with crowd and traffic control at the air shows at the Kincardine Airport. We helped the police last Halloween for the first time and that went very well.

"We are in a snow belt, so one of our problems is poor driving conditions during winter storms. We put weather and road condition reports on the packet BBS in Goderich when necessary, so we have access to the weather situation at various points in the area.

"I recently started a net for our ARES members on 3.737 MHz on the first Monday of each month. Not everyone can get into the repeaters in Port Elgin and Kincardine, but all can participate in the new 80 metre net. The net has been well-attended, and it allows all to discuss problems, make suggestions and get questions answered. Some of our local Amateurs are now checking into the Ontario Phone Net and familiarizing themselves with traffic handling procedures."

BROCKVILLE ARES

Last June I had the pleasure of visiting the Brockville Club, along with two of our AECs, and gave a talk on ARES and

on our ARES activities in the Kingston area. The Brockville Club, while small, is quite active and the hospitality extended by President John Lesprance VE3PSG and Past President Wilf Jobbins VE3MNJ was much appreciated. We enjoyed chatting after the meeting with the President of Brockville EC, Clarence Angst VE3LBU. His problems in organizing and training an effective ARES group are much the same as ours, and the exchange of ideas was mutually beneficial.

FIXED EMERGENCY ANTENNAS

What fixed locations in your area are likely to require a station in an emergency? Certainly the Municipal Emergency Control Centre is a prime candidate. What about police headquarters, hospitals, Red Cross headquarters, etc.? In the survey of ARES organizations across Canada, I learned that many groups had examined their local communities, and had installed fixed antennas on key buildings, ready to be put into use with handheld or other transceivers. Practically all were for operation on 2 metres.

Here in Kingston we are installing Sinclair 2 metre folded dipoles on the Kingston Township Headquarters Fire Hall, which is the Township Emergency Control Centre, and on the Red Cross Headquarters building in downtown Kingston. Other buildings will be similarly equipped later. We selected Sinclair because we wanted commercial quality, with an expected life of many years with minimum attention. The antenna chosen, the Model SRL-210, has sufficient gain for most of our anticipated needs and is within reach costwise.

An area has been identified and marked in each building as the location of the ARES station. The fire hall has an excellent emergency power system and a 120V outlet has been provided at our operating position. Funds for these antennas have been made available by the organizations involved, who are most anxious to assist ARES in our emergency role. These antennas provide visible continuing evidence of the ARES presence and thus contribute to public awareness of our ability to serve the community in times of emergency.

EMERGENCY PREPAREDNESS CANADA

In Canada the agency responsible for coordinating the Federal response to emergencies and for encouraging emergency preparedness to protect the

health, life and property of Canadians is Emergency Preparedness Canada (EPC). This directorate gives or sponsors more than 100 courses, conferences and seminars at year at the Canadian Emergency Preparedness College located at Arnprior, Ontario. Each year, about 3,000 representatives from all levels of government and the private sector are trained in the techniques of emergency planning and management. Most courses run for one week, and topics range from emergency health and welfare services to transportation of dangerous goods. EPC pays travel and living expenses from the time course participants leave home until they return.

One course of particular interest to us is on Emergency Communications Planning. The course is structured to provide participants with an understanding of how to conduct communications needs analysis, how to develop a communications plan, how to plan for communications training, how to exercise the communications plan and finally how to manage a municipal emergency communications system. The course includes information on ARES capabilities and functions, thanks to the several Ottawa area hams who assisted in developing the course contents.

The EPC courses have become extremely popular, with the result that one must enroll several months in advance of the scheduled course date. If you wish to attend the Communications, or any other of these excellent courses, I would suggest you contact, through your area emergency organization, your provincial emergency preparedness office. It in turn will, if convinced of the need, arrange a reservation for you at an upcoming course.

From my personal experience in attending two one-week EPC courses in the past, I can vouch for the high quality of the instructors and the facilities. Accommodations in refurbished army H huts are quite comfortable, if not deluxe. The food is great, and there is even a physical exercise room to keep you in shape. And all expenses (except for bar bills) are paid by EPC! ■

It is hoped that this column, which is being submitted to both The Canadian Amateur and to QST Canada, can become an ongoing source of news and information for members of both organizations on ARES activities across Canada. ARES members and particularly ECs are invited to send along information.

THE WORLD ACCORDING TO



Membership in CARF gives you the "WORLD OF AMATEUR
RADIO WITH A DISTINCTIVE CANADIAN TOUCH!"

Just look at all the quality services CARF brings to your enjoyment of
Amateur Radio...

- The Canadian Amateur magazine is clearly the best quality Amateur Radio information service in the country.
- CARF News Service to Clubs and on Packet Radio bulletin board systems.
- CARF QSL Bureau Service pays for the price of membership alone.
- CARF Government Liaison Committee ensures your interests are always "up front" in Ottawa and in the international community.
- CARF Publications gives you the best in licensing study guides, repeater directories and callbooks available in Canada.
- Contests and Awards in the 'traditional Canadian' flavour as Canada Day/Canada Winter Contest and the Canadaward system are world-renowned.
- CARF honours our Achievers through the support of a permanent memorial in the Canadian Amateur Radio Hall of Fame.

***Get the best out of
Canadian Amateur Radio!***

CLUB CORNER

J.P. LeBlanc VO1SK/VP9LA, Box 356, Kingston, Ont. K7L 4W2

Is your club a CARF Affiliate Club? If not, your club should seriously consider it. Actually there isn't a whole lot to it. Just ask! Your club will be placed on the CARF Bulletin mailing list. Affiliate Clubs also get bulk order book discounts.

You're probably asking yourself what this is going to cost. Well, my friend, not one red cent. However, there is one small catch. Your club is expected to put CARF on your club bulletin mailing list and we use each other's articles as long as proper credit is given.

NEWS FROM HERE AND THERE

From the Quinte Amateur Radio Club in Belleville, Ontario, we learn that the three radio licences held by the club have once again been renewed on the basis of gift to the club. Horace VE3LGQ paid for VE3RL, Doug VE3BGY covered VE3KBR, and Glen VE3CJG took care of the VE3BEL autopatch licence. The Loyalist College Station VE3ALC is going ahead thanks to VE3BPL and VE3NFP. The students have built a Zepp antenna which is tuned and ready to go.

I received for the first time, a copy of The Thousand Islands Amateur Radio Club (TIARA) Newsletter from Brockville, Ontario. They have been busy with Ham Radio Classes. Of the 14 candidates who showed up for the theory and regulations exams, seven passed both exams, two passed the regulations but missed the theory, and five missed both exams.

The Nanaimo Amateur Radio Association has named Gerry Pement VE7BGP NARA Amateur of the Year at the March Dinner Meeting. Gerry has been a member of NARA since his teenage years, and has held several executive positions and is presently club Treasurer. Congratulations Gerry.

The Pioneer Amateur Radio Club of Ottawa provided radio communications at the Nakkertok ski race on Feb. 18. PARC volunteers were Joe VE3PDS, Chuck VE3PAP and Doug VE3JDF.

The Peterborough ARC assisted in the 1989 Rotary Telethon. A base station was set up in the CHEX-TV studio area by Karl VE3AFP and Bob Gray. Rick VE3IQZ helped out when things got busy. Addresses were assigned to area cars which contained two Rotarians to do the leg work. On the road were Ollie VE3NT, Bill VE3MCC, Harold VE3NZL,



Bob VE3GEE and Orville VE3JTM. The Telethon goal was \$45,000 and at sign-off the total was \$60,601. Part of the total was due to the great 'detective' work by VE3NZL and crew. A local business owner called in a pledge but wouldn't give his name. He did give some clues; one being the address that he was at (not his place). We presumed that he didn't walk there, so NZL was set to the area, and found his truck. The person was correctly identified by the Mayor and he had to pay-up. He gave \$500.

Congratulations to the Hamilton ARC for an economical club paper format. There have been many changes in club papers in the past year as clubs attempt to keep their publication alive in the face of escalating postal and production costs. Using the standard 8½ by 11 inch sheet, the *Hamilton Amateur* manages four pages 8½ by 5½ inches each printed vertically on the 8½ inch axis. Three sheets of paper provides 12 pages in the current issue that can be mailed at standard rates without oversize or overweight penalties.

According to the Official Bulletin of the Ottawa ARC Groundwave, the Canadian Ski Marathon for 1989 was very successful thanks to the support of three clubs and 30 Amateurs. Here is a list of Amateurs who took part: John VE3MPF, Stan VE3OWK, Fred VE3OAF, Mel VE3OJN, Souly VE1FFS, Hassan VE2SSB, Keith VE3IMT, Dave VE3KMY, Chuck VE3PAP, Andy VE3KIZ, Rob VE3ZZR, Ed VE3HCA, Keith VE3GFI, Brian VE3LQ, Brett VE3JLG, Al VE3ANO, Dave VE3JBX, Bill VE3KEB, Doug VE3JDF, Dave VE3GSA, Mike VE3FFK, Bob VE3MPG, Henry VE3OMU, Duncan VE3BDC, Grath VE3EOF, Dave VE2ZP, Michael VE3WMB, Rene VE3LOT and Peter VE3LBW.

The Oakville ARC has elected Norm VE3AGW and Mildred VE3BGI Busk, as well as Bert Croll VE3GZN to Life Membership into the Club.

Gary Hetherington VE3TGH was the fortunate Grand Prize winner at the Niagara Peninsula ARC Big Event #11 this year. Gary is now the proud owner of an ICOM IC-3210A dual band transceiver.

A dedicated Amateur is someone like Len Jarrett VE3MYF, who on Feb. 28

completed 31 years as World Organizer of JOTA, now a regular feature of International Scouting. Well done, Len!

Publicity for Amateur radio topped the list of activities of the Windsor ARC in March. Jack Greenway VE3CXX was interviewed for a half hour on CKWW radio, and told the listening audience about his activities in the hobby. James Cowan VE3KUC was before the TV cameras of CBET, which is doing a video feature on the club.

Remember, your club NEEDS you. Everyone has something unique to offer, be it your knowledge, your skills, your jokes, your conversation or just your presence. ■

IN SPACE AGAIN SOON!

An Amateur Radio station is scheduled to fly aboard the Space Shuttle in March 1990. Approval for the inclusion of the Space Shuttle Amateur Radio Experiment (SAREX) on the secondary payload list of flight STS 35 has been received from NASA Headquarters.

Ron Parise WA4SIR, a payload Specialist for the Astro 1 payload to be carried on that flight, will operate the station in the orbiting shuttle.

Representatives of ARRL and SAREX and AMSAT stated that they learned of the approval at a meeting with NASA officials held on March 14 at the Lyndon B. Johnson Space Centre in Houston.

WA4SIR will communicate with Amateur operators worldwide using voice and video communications as well as packet radio. The orbit of the shuttle will allow Amateurs located between about 46° North and 46° South latitudes to communicate directly with the shuttle. The SAREX transmissions from the space shuttle will be such that a standard scanner radio can receive them.

The approval for SAREX operation is contingent on final approval by Johnson Space Centre of the SAREX hardware and operations plan, as well as prioritization of secondary payloads for the STS 35 flight.

— The ARRL Letter

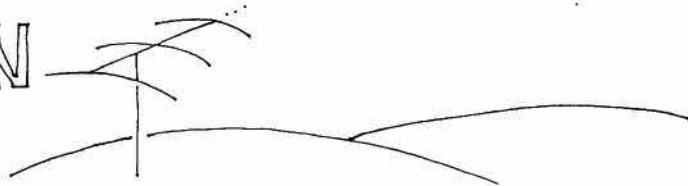
TCA COPIES

Copies of articles from *The Canadian Amateur* from Vol. 1 No. 1 Jan. 1973 are available. One article per issue \$20 ppd.

Back issues of *The Canadian Amateur* magazine for 1988/89 are available from CARF office for \$2.50 each post paid.

OVER THE HORIZON

Bob Brown NM7M,
504 Channel View Dr.,
Anacortes, WA, U.S.A. 98221



The Canadian Amateur is pleased to welcome yet another new columnist. Bob Brown NM7M is a noted writer whose regular contributions to **WORLD RADIO** are regarded as first class.

Following is the first installment of 'Over the Horizon' which will appear on an alternating monthly basis.

First licensed in 1937, Bob was off the air for 40 years, but was 'reborn' in 1981 when he was licensed as N7DGZ. In that time he was a Professor of Physics at the University of California at Berkeley. He was involved in using balloon-borne radiation detectors in the Arctic and Antarctic, as well as ground-based magnetometers and riometers (Relative Ionospheric Opacity Meters) in order to learn about the various forms of solar-terrestrial effects through knowledge of our atmosphere/ionosphere.

He has recently served as secretary/treasurer for QRP ARCI and written the *Propagation and DX* column for the QRP Quarterly.

In starting a column on HF propagation in *The Canadian Amateur*, I had to come up with a suitable title to go on the masthead. Given that the VHF column is called 'Line of Sight', I couldn't escape the idea that something ionospheric in nature had to be invoked. Of course, the Russian Woodpecker has given 'OTH' a bad name but in these days of glasnost, I'm hoping they'll cease and desist, leaving me free and clear to make the most of OTH on my masthead. So when you hear the woodpecker calling 'QRL', you'll know that I've got it made.

But anyway in opening the discussion about HF propagation, let's stake out three points with regard to Cycle 22: where we started from, where we are now and where we're heading. For starters, that's a fair task so let's turn to it.

I can't say that it was by acclamation but the consensus seems to be that the last solar minimum was around September '86. By that, we can look back and see that we came out of the doldrum when the 10 cm solar flux, as given by WWV broadcasts, was down around 70. Okay, that was easy; but where are we now?

At this point, mid-summer in '89, we're looking at solar fluxes in the range of 200-250. But we had a wild time of it back at the start of the year, the solar flux roaring out of the 150's to reach a peak of 300 and then falling back to where we are now. Those times were fantastic on the bands but not without their price, partly paid for around March 15 with a huge magnetic

storm wiping out the bands and a few other things as well, including some Canadian power systems.

And then there were some solar proton events too; they took their toll on polar paths to Europe and the Orient. Everything considered, it had all the earmarks of a military situation: "Hurry up and wait!" Thus, we enjoyed the outpouring of solar X-rays and UV that brought the ionosphere up to peak conditions and then waited while the magnetic storms resulting from the solar flares went their course. Familiar? Indeed!

As for where we're heading, there's no consensus on that question either. Indeed, the sooth-sayers are numerous and their predictions cover a range of dates. But if one takes the easy way out, deferring to the statistics of previous cycles, it looks like the solar maximum of Cycle 22 will be somewhere between September '89 and March '90. If you're not satisfied with that, the best thing is to stay with the data, plotting up the solar flux day by day and making a personal estimate of the ongoing status of Cycle 22.

But let me warn you, that is not without its hazards. Thus, periods like last spring can come along again to distort the picture, albeit briefly. To give you a sense of what I mean, let's go back to Cycle 19, the one during the International Geophysical Year (IGY). In the

beginning there was a tremendous period of solar activity in the first three months of 1956, perhaps the most energetic solar flare event ever recorded coming on the scene in February of that year.

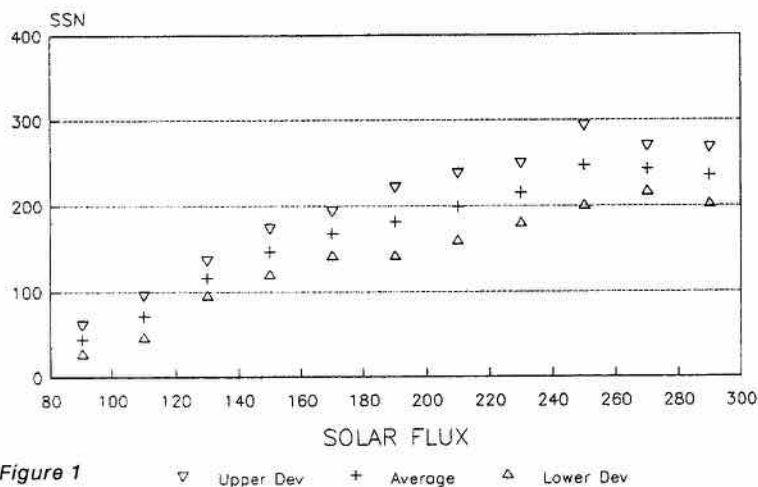
Then just about two years later, around solar maximum, another burst of solar activity produced some of the most spectacular aurora ever seen, observed even as far south as Athens and Mexico City. After that, there was the period around November '60; that was comparable to the recent events in March '89.

So you can see that there were several things going then, even as we can expect in the future of Cycle 22: the run of the solar cycle, summarized by 13-month running averages of sunspot numbers or values of the solar flux, and then hills and valleys of activity with individual events that upset statistics, all the while making lasting impressions on one's memory.

But Amateur Radio is a day-by-day business, operators going on the bands in the never-ending search for new DX or maintaining skeds and contacts with old friends in distant places. To be effective in either of those efforts, however, one needs a sense of current band conditions. That is usually obtained by monitoring WWV broadcasts and noting the current value of the solar flux. But we've all had

SUNSPOT NR vs SOLAR FLUX

July '87 to June '89



disappointments or surprises by doing that, band conditions either not measuring up to expectations given by 'the numbers' or going beyond them. Curious! Or is it?

Actually, in modern parlance, we're trying to have it both ways, describing the development of a solar cycle by using 13-month smoothed averages of sunspot numbers yet using daily values of the solar flux for estimating propagation conditions. If we could tie those two closer together in some fashion, it might help gauge propagation in the practical sense.

So the first question is: can we come up with daily sunspot numbers and how they're related to the solar flux? Well we don't have to go far to find what we're looking for: it's all in the weekly Preliminary Report and Forecast of Solar Geophysical Data from NOAA-SESC in Boulder, CO. There, you will find daily values of the solar flux on 10.7 cm from Ottawa and daily values for the sunspot numbers, the latter being the grist for the long-term averages. The question then is how the two are related, daily values of the solar flux and the sunspot numbers.

Of course, the answer to that is easy: *statistically!* To see that all you have to do is plot one value, say the solar flux horizontally, against the other, the sunspot number vertically, thereby putting a point at the right place on a piece of paper. If one does that in full detail, day by day for a period of time, the result is like a scatter-shot record on paper.

When you've done that for a year or so, the pattern is pretty obvious. However, the trends in such a diagram can be made clearer if we select data according to ranges, collecting all those sunspot numbers when the solar flux is in a given range, say 20 units wide. At that point, one can do a simple calculation, finding the average sunspot number for that range of flux. But that's only part of the story; we have to find how the sunspot numbers are spread above and below the average, the so-called statistical deviation. When we've done that for all the flux ranges, from solar minimum onward, then things fall into place, revealing both the trend and the variability of the relationship.

To show you what I mean, look at Figure 1; that was obtained from 23 months of data from Cycle 22, daily values of the flux and sunspot number for 701 days. You can see the trend, even a departure from linearity, as well as the spread in the data points above and below the various averages. The thing you cannot sense from the diagram, however, is the size of the data sample; that varies from over 100 points at low fluxes to about 50 for the 200-220 flux range and only a few data points at the highest range in the diagram.

People who do statistics for living would assign probabilities to the deviations above and below the various average values. Myself, given the limited size of the data sample, I'd prefer to just say that the upper and lower limits shown in the figure serve to give the viewer a sense of the extremes by which the sunspot number could depart from the average for a given flux level; thus, for a daily value of 210 for the solar flux, the sunspot number could range about 40 units above or below the average sunspot number, 200. On a percentage basis, that's $\pm 20\%$ but it's certainly much better than the spread $\pm 40\%$ back when the solar flux was down below 100.

Now, if we think solar activity and propagation can be gauged by sunspot numbers, the lesson in all this would be that, given the spread in sunspot numbers, propagation would be highly variable and less to our liking around solar minimum. I don't think anyone would argue with that but now you see we can put numbers to your feelings.

For those who are more than casual students of propagation, you'll know that I've only given part of the story, completely omitting the effects of magnetic activity on propagation. After all, when the earth's magnetic field is acting up, it is well known that propagation suffers. But how are we to add that dimension to the earlier discussion? To use another word, *empirically!*

Thus, experience shows that HF propagation is best when the geomagnetic field is quiet and worst when it is at magnetic storm levels. That being the case, one can collect both solar flux data and a measure of magnetic activity, the A-index, from WWV broadcasts and plot them day by day, the A-index horizontally and solar flux vertically. Again, one has a scatter-shot diagram but it has to be analyzed in a different manner.

Now if we admit the idea that one quantity may dominate the other when it comes to propagation, then the fact that both quantities are spread over a

range in values leads us to breaking up the scatter diagram into regions, each characterized by a level of propagation, from excellent (high, flux, low A) through average (medium flux, modest A) to poor (low flux, high A). But judgements of what are low, modest or high values of the A-index depend on the solar flux.

My experience is that for a flux level of about 200, those A-values would be 1) less than 10, 2) 20 to 30, and 3) greater than 40 respectively. Like everything else in this world, this approach can be written up as a computer program, even with shades of propagation between those extremes, but it must be borne in mind that it is empirical in origin and not derived from any set of 'first principles'. I have been known to share this mystery with others, so if you send a SASE to CARF HQ, they will forward a listing of the (IBM PC Style) BASIC program to you.

Finally, we come to the end, the demise of Cycle 22. Again, those of a statistical turn of mind suggest that solar cycles run about 11 years, from bashful beginning to torpid end. In that regard, you can do the arithmetic as well as I can, but you should come up with something like 1997.

While the lesson in all this is doing one's homework and then going to the HF bands when 'the numbers' are favourable, I'm hoping that the textbook will change in the future. I say that as sunspot numbers are really archaic, an inferior approach to representing solar activity. For ionospheric purposes, the 10 cm radiation seen through the ionospheric window is quite helpful but it is still about a factor of a million too long in wavelength to be treated as a causative agent.

What we need are daily reports of the solar X-ray flux at satellite altitude. They're available from NOAA via teletype now; the only questions are when they'll show up on the WWV broadcasts or the NOAA BBS. Soon, I hope! ■

1990 REPEATER DIRECTORY

We are in the process of updating the CARF Repeater Directory for 1990. We need your help to ensure its accuracy. Please send changes, additions or deletions before Nov. 15, 1989 to:

P. Mainville VE3LPM or
23 Chatsworth Dr.
Brampton, Ont.
L6X 2L8

CARF
P.O. Box 356
Kingston, Ont.
K7L 4W2

International Amateur Radio Network

Glenn Baxter K1MAN, Long Point Lodge, Belgrade Lakes, Maine, U.S.A. 04918

FIVE IARN DELEGATES INVITED TO THE SOVIET UNION

Five IARN delegates from the United States have been officially invited to visit the Soviet Union for two weeks in October, 1989... all expenses paid by the Young Communist League in Moscow.

This trip is further implementation of the historic international accords signed between IARN and Soviet Officials in Moscow on Jan. 28, 1989. All of this started in December, 1988 after the devastating earthquake in Soviet Armenia. After a full day of offering Amateur Radio Emergency Services to the Soviets without much response, the IARN Network Manager met personally with United States Senate Majority Leader George Mitchell, who agreed to make some high level contacts for us and see what could be done to open up lines of cooperation. Senator Mitchell was able to get a special expedited export licence for IARN equipment. A special verbal authority from the Federal Communications Commission for third party traffic between the U.S. and the U.S.S.R. was also obtained. To this date, we continue to handle official Amateur third party traffic between IARN, Soviet Officials and various Soviet expeditions.

The purpose of the visit of our IARN Delegation is to further develop the many projects underway and to lay the groundwork for further cooperation in several areas extending beyond the confines of Amateur Radio and Amateur emergency communications alone. This includes exchanges of students between Saint Louis Community College and other U.S. schools and Soviet schools of higher learning.

Covered in the written accords is the \$20,000 of IARN equipment loaned to Soviet IARN and our joint IARN/POISK office in Yerevan, Capital of Soviet Armenia. With this equipment in place, IARN has daily contact with our POISK (search) office. General supervision of this activity is the responsibility of IARN Soviet Director, Victor Goncharsky UB5WE, of Lvov.

A big feature of the trip will be attending the International Digital Symposium in Minsk where Glenn Baxter K1MAN will present a talk entitled 'Digital Communications During International Emergency Communications Crisis.'

IARN sent the following letter of

acceptance to Moscow:

TO: Yuri Bondarev, YCL, Moscow
Vladimir Formin, POISK Program Coordinator
Victor Goncharsky, UB5WE, IARN Soviet Director
FROM: Glenn Baxter K1MAN, IARN Manager

We are pleased to receive radio message, RA 43, dated May 25, 1989 and heartily accept your invitation for our IARN delegation of five to visit the Soviet Union in October, 1989, with air tickets between New York-Moscow-New York and our expenses in the U.S.S.R. all paid by the YCL (Young Communist League).

You can FAX us any time at 207-495-2069 or access our computer any time at 207-495-2490. A Telex can also be sent addressed to IARN, Belgrade Lakes, Maine 04918 Telephone 207-495-2215.

Our delegation would like to leave New York Oct. 6, 1989, via Aeroflot for Moscow, and return to New York Oct. 19, 1989.

The IARN Delegation has been selected as follows:

Glenn Baxter K1MAN, (IARN Manager)
Bonnie Baxter (Wife of Glenn Baxter)
Bob Sherin W4ASX (IARN and Florida Skip Reporter)
Professor Hilliard Goldman KYOU (IARN Advisor)
Dave Porter K2BPP (IARN Communications Manager on the Island of Jamaica during Hurricane Gilbert, 1988)

All delegates are non-government, private United States citizens. We will sent passport numbers and more details as soon as we have them available.

We would like to set up meetings in Moscow with various groups such as YCL young people, some of your two and four year technical schools and universities, the Central Radio Club, Radio Sports Federation, Radio Moscow, Radio Magazine, and perhaps some highest government officials such as Mikhail Gorbachev who would be willing to talk with us briefly. We are all very optimistic and enthusiastic about this coming trip. See you soon in Moscow!

Glenn A. Baxter, P.E., K1MAN
Registered Professional Engineer
IARN Network Manager

14.313 SERVICE NET GETS UNDERWAY

The new 14.313 Service Net started its regular operations on Monday, June 26, 1989. This net will run every day from now on beginning with the weekly IARN Amateur broadcast on 14.313 MHz (plus 3.975 and 28.475 MHz) at 0915 UTC followed by a repeat broadcast at 1000 UTC. After the repeat broadcast, at 1045 UTC, the live 14.313 Service Net will begin. This will be followed by the Intercontinental Net and then the Maritime Mobile Net. At 1100 UTC, the normal IARN Amateur broadcast schedule begins on 14.275, 3.975 and 28.475 MHz. ■

CARF OPINION POLL

Conducted by VE3IDW

With 'The Merger' negotiations underway once more, it might be interesting to see how Canadian Hams feel about some of the issues which are sure to arise.

If CARF and CRRL merge to form a new united national organization should:

1) The new organization be given an entirely new name? Yes ☐ No ☐

If 'Yes', what is your suggestion?

2) Canadians be allowed to apply for DXCC, WAS, etc. awards 'only' if they are members? Yes ☐ No ☐

3) A new national executive be appointed only by the regional directors? Yes ☐ No ☐

4) Canadians sit on 'joint' committees with ARRL rather than be members of ARRL committees as in the past practice? Yes ☐ No ☐

5) Canadians be 'lumped' with W's in ARRL contests? Yes ☐ No ☐

6) The new organization continues to publish *The Canadian Amateur*? Yes ☐ No ☐

7) The new organization continues to publish *QST Canada*? Yes ☐ No ☐

8) Life members be made 'life members' of the new organization? Yes ☐ No ☐

Feel free to add comments on a separate sheet.

A low cost alternative for amateur radio

TRYLON A•B•C Towers

Trylon ABC Towers are scientifically designed to withstand the rigors of harsh wind and weather.

Pre-engineered for heavy loads — up to 60 sq. ft. or 800 lbs. of wind load — Trylon ABC Towers are easily assembled and erected right on your site.

- Rugged, dependable triangular construction
- Self support to 96' in 8' sections
- Designed to meet your unique requirements



TRYLON
MANUFACTURING CO. LTD.

P.O. BOX 186, 21 HOWARD AVENUE
ELMIRA, ONTARIO, CANADA N3B 2Z6
(519) 669-5421 • FAX (519) 669-8912

FOR FURTHER INFORMATION CONTACT

Atlantic Ham Radio
378 Wilson Avenue
Downsview, Ontario M3H 1S9
(416) 636-3636

Southwest Amateur Communications
Box 34, 231 Oakwood Place
R.R. 3 Dorchester, Ontario N0L 1G0
(519) 268-7579
(Formerly Scarborough Amateur Supply)

Century 21 Communications Inc.
4610 Dufferin St., Unit 20B
Downsview, Ontario M3H 5S4
(416) 736-0717

Com-West Radio Systems Ltd.
8179 Main Street
Vancouver, B.C. V5X 3L2
(604) 321-1833

D & L Towers
4 Divadale Drive
Toronto, Ontario M4G 2N8
(416) 467-1235

**H.C. MacFarlane
Electronics Limited**
R.R. 2 Battersea, Ont. K0H 1H0
(613) 353-2800

line of sight

Robert Smits VE7EMD, 13894 94A Ave., Surrey, B.C. V3V 1N2

BEGINNER'S GUIDE TO REPEATERS AND AUTOPATCHES PART TWO

To conclude our Beginner's Guide to Repeaters and Autopatches, this month I've included a glossary of terms often used in VHF/UHF repeater circles. With tongue firmly in cheek, this glossary will allow you too to understand what the heck the other guy (or gal) is talking about.

AM: Ancient Modulation, the mode the early VHF repeaters used.

Adjacent channel interference: Interference to a repeater system from another repeater one channel away. This may be 15, 20 or 30 kHz.

Alligator: One of two things: the repeater time-out timer, which will shut off the repeater transmitter when its time limit has been exceeded or a repeater with a much bigger transmit range than receive range—hence one that's all mouth or an alligator.

Autopatch: Automatic Telephone Patch that connects users of the repeater directly to the telephone network.

Bandplan: The generally recognized usage pattern on the band.

Base: Amateur station located at a home.

Battery Backup: Standby Emergency battery power to run the Repeater in case of power failure.

Bootlegger: Unlicensed individual operating on the Amateur Bands.

Bunny Hunt: Contest to locate a hidden transmitter for fun or to locate a jamming station.

Burst: Same as Tone-Burst

CG: Channel Guard, the General Electric version of CTCSS.

COAX: Can refer to any type of coaxial antenna cable, with one conductor inside an outer, hollow one. Usually means RG-213, RG-8, etc.

COR: Carrier Operated Relay. A switching circuit that operates by sensing a received signal and turning on a repeater transmitter.

CTCS: Continuous Tone Coded Squelch. A sub-audible tone superimposed on an FM transmission to signal a receiver's squelch circuit to open only when its particular tone is transmitted.

CW ID: Identification of the repeater system by a recorded or electronically generated transmission of the callsign in morse code.

Call: To try to make contact.

Cardioid: An antenna pattern with a pronounced null in one direction only.

Carrier tail: Repeater transmit carrier that remains on briefly after repeater receive input has ceased.

Cavity: Specially built High Q Tuned Circuit, usually used in duplexers.

Channel: Operating frequency of the repeater

Charger: Device to re-charge batteries for portable or handheld transceivers.

Clipper: Limiting circuit designed to clip or limit audio signals to the repeater transmitter.

Clobber: To completely override another signal.

Closed Repeater: A repeater financed and operated by a group of Amateurs for their private use. Non-members are usually not welcome. Very unusual in Canada.

Coordination Council: The process of obtaining approval from other Amateurs in a given area to operate a repeater so that it will not interfere with existing systems.

Coordinator: The individual Amateur in charge of repeater coordination for a particular band or area.

Cop: Over zealous control station. Usually self-appointed. Often opinionated. Always a pain in the a%%.

Also see repeater policeman.

DC: Direct current. Also VHFers term for high frequency Amateur operations.

Desense: Slang for desensitization.

Desensitization: Loss of receiver sensitivity due to RF leakage into the receiver from the system or another nearby transmitter.

Deviation: Not a sexual proclivity, but the amount of frequency swing above or below the carrier frequency in an FM transmission.

Dial: Send DTMF (Touch-Tone) digits over the air to an auto-patch or repeater controller.

Direct: Slang for Simplex, as in "call me direct on six five two."

Directory: A listing of repeater frequencies, available in Canada from CARF, CRRL, ARRL and your local frequency coordinator.

Ducky: See Rubber Ducky.

Duplex: Simultaneous transmissions between two stations using two separate frequencies.

Duplexer: Collection of High Q Cavities used in a repeater system to allow simultaneous use of the same antenna by both repeater receiver and repeater transmitter.

ERP: Abbreviation of Effective Radiated Power

FM: The Fun Mode or Frequency Modulation.

FM Capture: The ability of the strongest FM signal to override all other FM signals into a receiver.

Filter: Device to eliminate unwanted signals. Unfortunately doesn't work on



jammers or other flakes.

Fried: Equipment that has failed and burned.

Front End: RF and 1st mixer stages in a receiver.

Full Duplex: Simultaneous transmissions between two stations using two separate frequencies.

Full Quieting: An FM receiver condition during which the received signal is strong enough to fully silence the internal noise of the receiver.

Gain: Antenna or amplifier characteristic.

Gallon: A kilowatt.

Gripe: User complaint to a system owner about the operation of the system.

Guest: Non-member invited to use a system.

HT: Abbreviation of Handie Talkie

Half Duplex: Alternate transmissions between two stations using two frequencies.

Hand-held: Modern portable transceiver.

Handie Talkie: Motorola tradename for an early handheld transceiver.

Hang Timer: Device used to keep the repeater transmitter on for a preset time period after the user unkeys his radio.

Hard limiting: An FM receiver condition during which a stronger signal will cause additional saturation of the limiter stage.

Hard Line: Special type of large diameter, heavy, stiff, low loss coaxial cable especially suitable for VHF/UHF operation.

Heliac: A special type of low loss antenna cable. Often in diameters of 3/4 inch to 2 inches. Heavy and not very flexible. See hardline.

Hub: Central site of a multi-site system

IF: Intermediate Frequency

IMD: Abbreviation of intermodulation distortion.

Input: Repeater system receive channel.

Interference: Interference occurs when another station's transmissions prevent you from carrying on your QSO. It is NOT interference if you can occasionally hear the output of another repeater on the same frequency as the one you are listening to.

Intermod: Intermodulation distortion in receiver RF stages or transmitter PA stages caused by non-linear operating.

Causes spurious signals to be heard or transmitted.

Isolator: A Device used to isolate two or more transmitters from each other.

Jammer: Someone who causes willful or malicious interference to normal Amateur communications.

Ker-chunk: The sound the repeater transmitter makes when a user keys it on and off. Not appreciated by repeater operators. Often done by users in ill advised attempt to see if a) the repeater's on, b) their radio is working, or c) God only knows.

Ker-chunk box: Very basic repeater.

Land mobile service: Commercial communications service using FM technology.

Licensee: Holder of the Repeater System Licence.

Limiter stage: Receiver stage used to remove any AM component from the signal.

Lockout: Device used to prevent repeater transmitter operation even though there is a signal on the input.

Machine: Another word for repeater station.

Mic: Abbreviation of microphone.

Microprocessor: The computer chip at the heart of the repeater controller. Its brains, as it were.

Mixer: Transmitter of receiver stage that combines two signals and produces the sum and difference of each.

Mobile: Amateur station installed in a vehicle.

Mobile Extender: Mobile remote base.

Modulation: Audio imposed on the RF carrier.

Multi-site: Repeater system that uses two or more locations.

Narrow band: An FM system designed to transmit and receive with deviation of about 5 kHz or less.

Ni-cad: Abbreviation of nickel-cadmium battery. Used in portables and handhelds because they are rechargeable.

Offset: The difference in frequency between repeater receivers and transmitters.

Omni: Short for Omni-directional antenna. It radiates equally well in all directions.

Open Repeater: Repeater available for use by any Amateur, club member or not. The norm in Canada.

Output: Repeater system transmit channel.

PL: Short for Private Line, a Motorola trademarked name for CTCSS.

PM: Abbreviation of Phase Modulation.

Pad: Abbreviation of Touch-Tone Pad, a DTMF encoder installed on many VHF radios to make autopatch calls and control other repeater functions.

Patch: Abbreviation of Autopatch.

Picket Fencing: Repeating fluctuations in signals received from a mobile as the transmission is blocked or reflected momentarily by trees, utility poles or other obstructions.

Pirate: Uncoordinated repeater or remote base system.

Polarization: The direction of the electrical component of an electromagnetic wave, which is usually used to describe antennas.

Portable: Amateur station carried with the Amateur, ie. a handheld.

Preamp: RF amplifier placed ahead of a receiver to improve its sensitivity.

Pre-emphasis: An audio filtering process to emphasize higher frequencies in the transmitted signal of an FM transmitter.

RCC: Abbreviation of radio common carrier, like commercial paging companies or mobile telephone service.

Rcvr: Abbreviation of receiver.

Relay: To continue communication through re-transmission.

Remote Base: A remotely controlled station, usually over a telephone or radio link.

Repeater Controller: Collection of circuits that control the activities on the repeater, including timers, access tone decoders, logic circuits, etc. Are often combined into a computerized controller system.

Repeater Council: An organization to provide technical guidance to coordination efforts and sometimes to act as a collective political voice for the repeater-oriented Amateurs of an area.

Repeater Policeman: Over-zealous control station. Drives beginners away in droves. Alienates users. Infuriates everyone. See Repeater Cop.

Restrictor: Autopatch circuit that limits calls to ones in the toll-free calling area.

Rock: Crystal used to determine operating frequency of a circuit, receiver or transmitter.

Rubber Ducky: As in rubber ducky antenna. Shortened Coil covered with rubber to make a flexible antenna that will not break off when you sit on it.

Scanning: Circuit that allows the VHF operator to monitor many frequencies in a preset order or sequence. Available on most current VHF/UHF transceivers.

Service Area: The coverage area of a repeater system.

Shift: To change frequency.

Simplex: Alternating transmissions between two stations using the same frequency.

Single site: Repeater system operating from only one site.

Smoke Test: First test of a system or circuit when power is applied.

Split: Another word for transmit/receive offset, the difference in frequency between repeater receivers and transmitters.

Split site: Repeater system operating from two or more locations.

Squelch: Receiver circuit that turns audio off when no signal is being received.

Squelch Tail: Noise burst transmitted by some repeater transmitters at the end

of a transmission.

Stubby Ducky: Even shorter (usually about 2 inches) version of the rubber ducky. Good only for short range or very good repeaters.

Synthesizer: Device to replace crystals which allows a transceiver to tune an entire band.

T-Hunt: Abbreviation for transmitter hunt. See also Bunny Hunt.

TVI— Abbreviation of Television Interference.

Timer: Electronic device that limits repeater transmissions to a set time limit. Usually resets when signal disappears on the input frequency.

Tone access: Any one of a variety of tone controlled access systems limiting repeater use to signals with the correct tone code on the input frequency. Includes CTCSS, DTMF, Tone-Burst, Whistle-Up, etc.

Tone decoder: Device which converts signalling tones into operational functions.

Tone encoder: Tone generating device used to signal or control a function. Includes DTMF (Touch-Tone) and CTCSS encoders.

Tone-Burst: Short tone used to turn on repeater system.

Transmission line: Line from the repeater system to the antenna.

Trustee: Holder of club or repeater licence.

Tuning for maximum smoke: Exciting method of troubleshooting defective equipment. Power it up and see where the smoke comes from. Be prepared to spend money.

Tx: abbreviation for transmitter.

UHF: Abbreviation of Ultra High Frequency. Refers to frequencies from 300 to 3000 MHz.

Unidirectional: transmission only in one direction.

VHF: Abbreviation of Very High Frequency. Refers to 30-300 MHz.

Voter: Not a reminder of the last election. Refers to a device which selects or votes for one of many receivers in a large system, usually the one with the best signal-to-noise ratio.

Whistle Up: A tone access system responsive to human Whistles.

Wide-Band: An FM system designed to transmit and receive with deviation of more than 15 kHz.

Wireline: A control link or relay using long wire connections instead of radio links.

Xmtr: Abbreviation for transmitter. ■

NEW CALLSIGNS FOR MARITIMES?

After meetings with CARF and CRRRL, DOC has agreed to consider new prefixes for the Maritimes to give each province a distinctive call. Who knows what they will come up with, but there are already some objections!

— Algoma Amateur

QRP

Moe Lynn VE6BLY, 10644-146 St., Edmonton, Alberta T5N 3A7



More fun! Here we are into September, well past the summer doldrums with holidays behind most; everyone is just chomping at the bit to put all our new-found QRP equipment to good use.

One of the two letters received recently pertained to QRP, the first from Bill VE7CGJ out in Powell River. He came up with an idea for the QRP or homebuilder while sorting through his junk box for good transistors. The tester, built into a Radio Shack plastic box, also tests in-circuit components. The idea has been forwarded to our Technical Editor for his consideration toward future publication.

The second letter is from Nick VE7NJP who has recently moved to Qualicum Beach. Again he will continue QRP activity and is even brushing up on writing skills in case an opening occurs for this QRP column. All this to fit in with their expected new arrival around Labour Day. He managed to get 1 3/4 watts out of his TWOFER but no output when married up with the companion receiver. We look forward to more from Nick in future issues of *The Canadian Amateur*.

QRP PACKET

This is not dead, as was once thought in this column. Conditions were not particularly outstanding one evening

following my traffic net activities and exchanging reports on 3560 QRP. On moving up to 14103 I connected to Joe WB4HIS in Miami using the previous QRP power setting. Maybe we should start a packet section in QRP contests of the future?

TOP BAND QRP

Dave VE3DN finds himself lonely on 160 metres and encourages more activity judging from Member News in the July issue of *ARCI QRP Quarterly*. He has a homebrew VFO on 160M running 100 milliwatts (worked 13 states) and runs up to one watt at times. Dave credits the few operators on 160 with being set up to copy weak signals and invites hearing from anyone now on, or contemplating, 160 metre QRP.

GLEANINGS

Jack VE6BOX advises no word from Circuit Board Specialists mentioned here in the June issue. Seems he was short shipped a meter and other sundry items to finish the keyer kit he had ordered. We managed to get it 'on the air' but the front panel looks ugly with that gaping meter hole!

Hart VE6PA (exVE6BRY) is now with VR Communications Ltd. here in Edmonton. They are ready, willing and able to help QRPers, SWLs and Amateurs with the latest antenna, radio

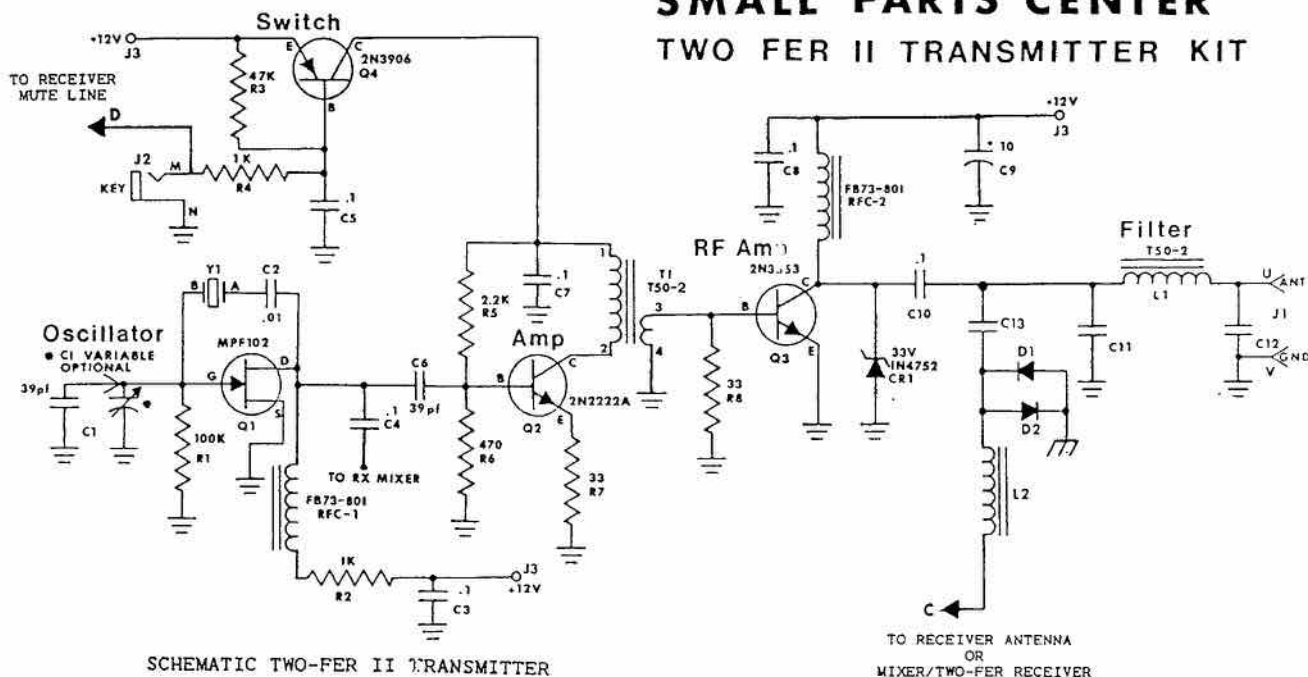
equipment and towers up to, and including, satellite dishes.

Al VE6AXW of Cardinal Industrial Electronics fame reports working Seattle using 11 milliwatts while experimenting with a self-designed VFO. Angela VE7ANG sent Al a ONE-ER kit she picked up on a recent visit to G-land. Al has that lined up to drive a 5W linear amp for QRP high power work. He has promised to write these up for *The Canadian Amateur* now that he has signed up for membership in CARF. Al, having just acquired a new state-of-the-art 35mm camera, may also present a few pictures of his projects.

Readers may recall Tom VE7BNI was responsible for Al becoming interested in Amateur Radio and bush flying during the mid-40s. According to a letter from Tom, Al has never looked back since and they still correspond and visit on occasion.

Mike WB8VGE continued his discussion on batteries in *73 Magazine* for January. He covered a wide range of types, makes and models, as well as how to install, measure charge, testing and maintenance procedures. He uses eight 220 am/hour Exide EV-1V and GC-4 six volt batteries putting out at 12 volts. Just the day before this column was to go in the mail, a letter arrived from Bob NM7M who proudly

SMALL PARTS CENTER TWO FER II TRANSMITTER KIT



announced his association with *The Canadian Amateur* on a contributing editor basis writing propagation and other related Amateur articles.

Also in the same mail were two kits from Small Parts Centre for me to put together. One was the much modified TWO-FER transmitter mentioned in a previous column. This is his Model II and sports such innovations as QSK for any receiver. It has a companion receiver which is a much modified TWO-FER sporting the new model number II as well. Both were easily assembled in accordance with his few pages of instructions, preliminary tests conducted and set aside while finishing this monthly column so as to get it in on time. Just to give you an idea of what to expect besides high quality parts and PCBs, here is the schematic for the transmitter and parts layout for the receiver.

CONTEST RESULTS

QRP ARCI Spring QSO Party listed AA2U in top spot with 2,934,800. VE5BA scored high Canadian with 302,505 followed by VE7CA with 40,275 then VE2BLX with 28,352 to round out all the VE entries. Next contest is the Fall QSO Party Oct. 21 (1200 UTC) to Oct. 22 (2400 UTC) then Holiday Spirits Homebrew Sprint Dec. 12 from 2000 to 2400 UTC. See you there!

NEW ACTIVITIES

Understandably it has been quiet during the summer months, but let us all make a concerted effort from now on. QRP ARCI WSN was quite active on Wednesday at 2100 MDT run by Jim W6RCP from Portland OR. This new time replaced the original gathering on Saturday, a move which was made to avoid unfavourable conditions.

Don't forget the International QRP Frequencies 1810, 3560, 7030/40, 10106, 14060, 18106, 21060, 24906, 28060 all 24 hours daily. 14060 on Sundays at 1900 UTC for VE QRP gathering, then ARCIRCN at 2300 UTC on or about 14060. Drop in for a chator pick up NCS for a couple of calls. ■

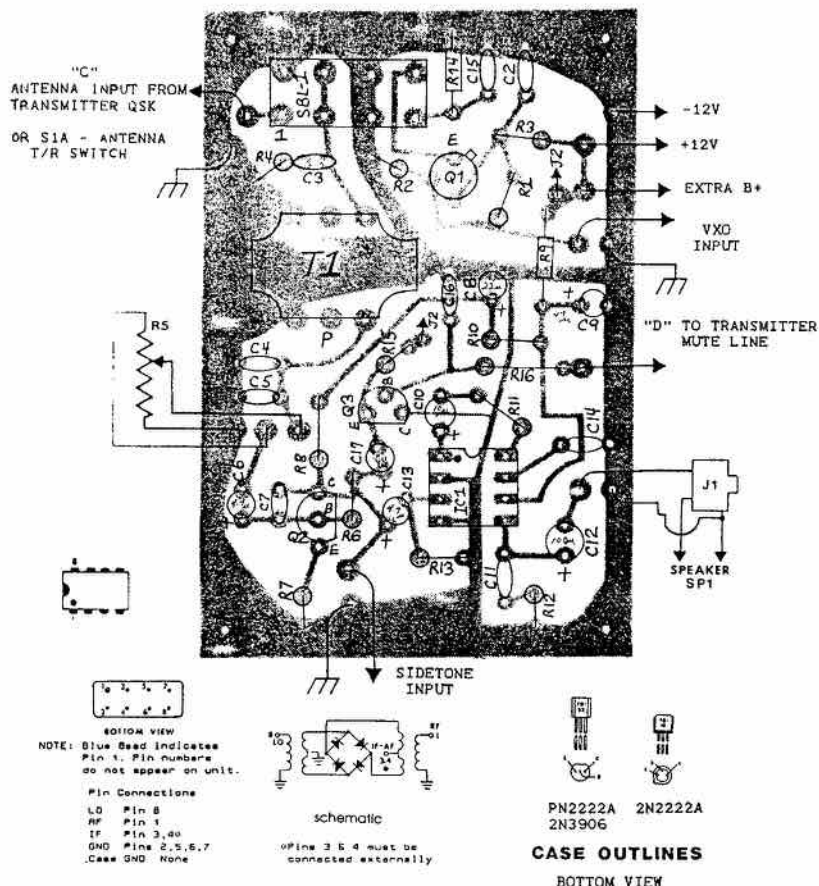
LETTERS TO THE EDITOR

All signed letters to the Editor are eligible to be printed, space permitting. The Editorial staff reserves the right to omit libelous and slanderous material and make spelling and grammatical corrections. Please make an effort to type, print or write very neatly. Thank you... Editor.

TECHNICAL ARTICLES

The Canadian Amateur welcomes technical articles. Please send them to the Technical Editor, Bill Richardson VY1CW, 36 Range Rd., Whitehorse, Yukon Y1A 3V1.

PC PARTS OVERLAY - TWO-FER II RECEIVER
VIEWED FROM COMPONENT SIDE OF BOARD



Call for Nominations for Regional Directors 1990-92

A healthy organization is one in which the members take a serious interest in how well it is run. CARF policy is set by its Board of Directors who are six in number, of whom three are elected each year for a two-year term of office. Often, too many directors are elected by acclamation. Let's have plenty of nominations this time so that we can actually hold elections.

The following positions will become vacant Summer 1990. The terms of office will be for two years.

Atlantic Region
 Ontario Region
 Pacific Region

Nominations are required from full voting CARF members (Canadian residents with Canadian licences) of each region. Each nomination must be supported by the signatures of Five CARF full members and the acceptance signature of the nominee. If you wish your incumbent Regional Director to continue in office, he must be re-nominated.

Ontario members should note that the term of only one of their two Regional Directors (Toni Salvadori VE3NXQ) will expire in 1990. The term of the other (Dan Holmes VE3EBI) will expire Summer 1991.

The deadline for receipt of nominations is Jan. 15, 1990. Please address your nominations to Secretary CARF, Box 356, Kingston, Ontario K7L 4W2. Send by REGISTERED MAIL.

PACKET RAP

Bernie Murphy VE3FWF, 3 Herrington Court, Nepean, Ont. K2H 6B9

ELECTRONIC MAIL

This month's column is about electronic mail. As some of you may know, the most powerful feature of packet radio is the ability to send electronic messages anywhere in the world at no cost.

SOME BACKGROUND

One of the first 'applications' for packet radio was keyboard-to-keyboard QSOs. This mode of operation allowed hams to communicate in real-time just like they did on SSB or CW. Having operated in this manner for awhile, most hams found that this mode of operation was not too efficient. With the advent of low cost surplus computers such as the Xerox 850, hams began to experiment with *Bulletin Board* software. These pioneers used floppy disks as a medium to store messages. Today, most bulletin board operators or SYSOPS (SYStem OPERatorS) have IBM PC class machines with hard disk drives. Many systems have 20, 30 or even 40 million bytes of storage for packet messages. Needless to say, we have come a long way in just a few years. So, the idea is quite simple. You leave a message on the local Bulletin Board System (BBS) for a buddy and your buddy can read it any any time he/she wishes. So far so good. Now the fun begins... Suppose your buddy lives in another town, or worse, in another country. How does your message arrive at the proper destination?

FORWARDING OF MESSAGES

In order to deliver your message on packet, you must indicate to the BBS software the call of the BBS where your friend can retrieve the message. Say your friend's call is VE3ABC and the call of the closest BBS is VE3XYZ. You address your message as: VE3ABC@VE3XYZ. How does the message reach the final destination?

Through the magic of software on the BBS and the ability of the SYSOP to construct the proper *routing tables*, the message will be forwarded to the final destination (eventually). This forwarding is best described by an example. See Figure 1 for a typical packet message. Notice that the path that this particular message took. It started out at BBS W3IWI and ended up at VE3JF (in Ottawa).

If you want more information on how the message actually was routed, you can issue the BBS 'verbose command' which is usually the string 'v nnnn' where nnnn is the message number. As can be seen by examining Figure 2, you

can see the path that the message took. You start at the bottom of the 'routing trace' and work your way up to the top. This particular message was held up for

awhile between the W3IWI BBS and the WA4ONG BBS. This routing trace is a valuable tool for the SYSOPs who operate and maintain the many packet

```
[27964] BF BID: ANS-182.01
```

```
Path: VE3JF!VE3FJB!VE3NUU!VE3SNP!WB2VPH!KC3BQ!WA2TVE!  
WA2UMX!WA2PVV!KJ4LQ
```

```
Path: WB0TAX!N4H0G!WA4ONG!W3IWI
```

```
Date: 06 Jul 89 00:41:48 Z
```

```
From: W3IWI@W3IWI
```

```
To: ALL@AMSAT
```

```
Subject: URGENT HELP IS NEEDED IN LOCATING MICROSAT COMPONENTS
```

```
*** text of mail message ***
```

Figure 1: Typical Packet Radio Message Format

```
[27964] BF BID: ANS-182.01
```

```
Date: 06 Jul 89 00:41:48 Z
```

```
From: W3IWI@W3IWI
```

```
To: ALL@AMSAT
```

```
Subject: URGENT HELP IS NEEDED IN LOCATING MICROSAT COMPONENTS
```

```
R:890706/0041z 27964@VE3JF [Ottawa, ON] Z:K2B6Y1
```

```
R:890705/2114z @:VE3FJB Drillia, ON #:21176 Z:L3V3M4
```

```
R:890705/2000z @:VE3NUU Scarboro, ON #:8446 Z:M1V3B2
```

```
R:890705/1923z @:VE3SNP Wainfleet, Ont #:7942 Z:L3K5V4
```

```
R:890705/1718z @:WB2VPH BROCKPORT, NY #:6101 Z:14420
```

```
R:890705/1632z 26040@KC3BQ [Skaneateles, NY] Z:13152
```

```
R:890705/1341z @:WA2TVE Utica, N.Y. #:4137 Z:13501
```

```
R:890705/1134z @:WA2UMX Ballston Spa NY #:13829 Z:12020
```

```
R:890705/1051z @:WA2PVV Valatie, N.Y. #:29567 Z:12184
```

```
R:890705/1019z @:KJ4LQ Chesapeake, VA #:4518 Z:23320
```

```
R:890705/0555r 56256@WB0TAX [Hampton, Va. 23666]
```

```
R:890705/0915z 12118@N4H0G Newport News, Va. Z:23606
```

```
R:890705/0744z 45117@WA4ONG [Richmond, VA] Z:23235
```

```
R:890703/0118z 38137@W3IWI [Balto/Wash MD/DC/VA/DE] Z:21029
```

```
*** text of mail message ***
```

Fig. 2: Verbose Packet Radio Message Format

BBS systems in the world.

Some messages come a long way via many stations. Figure 3 demonstrates this rather dramatically. Reading from the bottom, the message started out in Norway (LA1G), worked its way to Switzerland (HB9), on to Germany (DB0), to Israel (4X1), over to the United States (N4), and then up the Eastern Seaboard into Canada (VE3SNP) and finally to Ottawa (VE3JF). Whew! And it actually works! Notice that the time and date stamps are all in an (almost) standard format. Many of the short haul paths today use 2 metres and run at speeds of 1200 bps. The long haul paths use 20 metres and run at only 300 bps.

These examples show that the ham radio packet network is now a world-wide system. What is truly amazing is that the whole network is run by volunteers.

SUMMARY

I hope this short description of ham radio electronic mail has whet your appetite to learn more about packet radio. I'm sure I have glossed over some points that need further clarification. Please drop me a note via Canada Post or packet if you have any questions or need more information. My packet address is VE3FWF@VE3JF. ■

USE YOUR CALCULATOR

Do the arithmetic in the order given, then turn your calculator upside down and read the answer in the numbers.

- $31 \times 11 \times 11$ and get a small island.
- $3^9 + 35,495$ and get a description of married life.
- $5,016 \times 11 + 2,542$ and get unwelcome arrivals on the first of the month.
- $1,000 + 852.8667 \times 2$ and get the bottom line on your shoes.
- $851^2 - 143,667$ and find what a man does when he loses a winning ticket worth \$100,000.
- $0 - 1,234,567 + 6,589,945$ and find what a preacher does.
- $2,101 \times 18$ and get the name of a very good book.
- $60^2 - 96$ and get a gardening tool.
- $1,234 - 463$ and find out what you'll be after eating four gallons of ice cream.
- $23^5 - 1,118,998$ and find what a woman does about her age.
- $305,664/43$ and get into hot water.
- $9,999 - 8,0389 \times 3$ and find what the tide does after it flows.
- $73^2 + 9$ and get a honey of an answer.
- $127^3 \div 4,618,283 - 1,347,862$ and find how people occupy their spare time.

— Lee DeForest Radio Club

[20556] BF BID: 6812+LA1G

Path: VE3JF!VE3FJB!VE3NUU!VE3SNP!WB2VPH!KCSBQ!WA2TVE!WA2UMX!WA2PVV!KJ4LQ

Path: WB0TAX!WB8CQV!N6DA!N6DA!K6RAU!AA4RE!KB6QWT!N6VV!N4QQ!N4QQ!4X1RU!SV11

Path: PA0SCH!PIBEAE!PA3DZI!DB0AHA!DB0BQ!DB0IZ!DB0LJ!DB0GV!DB0AAA!DB0CZ

Path: HB9PD!HB9AC!HB9XC!FE6B1G!FC1L1L!FC1GHV!F6DEB!FC1HP1!F6ABJ!LA6CU!LAST

Path: LA3FY!LA1G

Date: 12 Mar 89 06:41:16 Z

From: LA4JL@LA1G

To: TCPIP@ALLONT

Subject: LA IP-ADDRESSES

*** text of message ***

Fig. 3: Packet Message from LA1 Land



FOR SALE: HOME in Nakusp, B.C., 733 Columbia Crescent. Nine yrs. young, 1450 sq. ft. plus 325 sq. ft. court-yard-sundeck. Beautifully fenced and landscaped. Double garage, Sauna with pool. Underground wiring, sewer, street lights, side walks. **EXCELLENT DX-Location.** Curling, fishing, golf, Hot Springs, Ski Hill. Contact VE7EHD, 604-265-3175.

WANTED: Wireless set no. 19 equipment and accessories. Especially looking for power amplifier and pocket-watch. I am willing to buy and/or trade equipment. Please write to Chris Bisaillon VE3CBK, RR#1 Old Carp Road, Kanata, Ont. K2K 1X7.

WANTED: E.F. Johnson 250W Matchbox, must be unmodified. E. Crump, 790 Regent St., Cambridge, Ontario N3H 2V3.

WANTED: Collins Transceiver KWM 380. Bruno Molino VE2FLB, 26 Rue des Anciens, Gatineau, Que. J8T 3T2. 819-561-3689.

FOR SALE: EIMAC 4C X 10,000D tube, socket and chimney (SH) \$450.00. Also, EIMAC 4-1000 tube with socket (SH) \$150.00 and EIMAC 4-125A new \$35.00. Filament transformer for 4C X 10,000D \$60.00 (SH). **WANTED:** Operating instructions and schematic drawing for Yaesu DXL-2000 linear, also for a SWAN 1200Z linear. Total reproduction cost honoured up to \$40.00. Clem Beauregard VE2BIA, 286 Helen, Otterburn Park, Quebec J3C 1R6. (514) 464-6911.

FOR SALE: EZ-Way self supporting 40 ft crank-up tilt-over tower. Call for details. SB220 Linear Amplifier, good condition \$800.00. Pair new 3-500Z tubes \$230.00. Syd Horne VE3EGO, 531 Victoria Ave., Belleville, Ont. (613) 966-8670 evgs.

FLORIDA QTH: For Rent, Indian Rocks, St. Pete's, 1 bedroom condo, Beach, Year Round Sun, Pool, tennis, hot tub. Contact Ron VE3NKS, week/monthly rates. Call: 416-875-2621.

CQ KIMBERLY, B.C.: Would like to find a Kimberly Ham who would be interested in an occasional schedule and phone patch, Please contact Jerry VE3IXS, 519-821-5465, 12 Steffler Dr., Guelph, Ont. N1G 3L6.

FOR SALE: Ham IV Rotor with cable and control \$200. Explorer 14 partially assembled, with 30 metre kit \$325. Three 10 ft. tower sections (including rotor support) \$125. Moving, in excellent condition. Call Dave VE3MUQ (416) 493-9455.

FOR SALE: Kenwood TS820S and Datong FL-3 Audio Filter, both for \$750.00 or best offer. Sigi Bernhoff VE3JDA, 15 Sandwell Cr., Kanata, Ont. K2K 1V2, Tel. 416-592-0172.

FOR SALE: Super Mint Kenwood Twins R599D T599D in original factory cartons, manuals, health reasons, forced to sell, sacrifice \$400.00 plus UPS. Inquire on other equipment available. M. Levy W5QJT, 7600 Blanco Road, 608, San Antonio TX 78214. Tel. 512-341-9549.

Please send your 'Swap Shop' notices to the The Canadian Amateur Swap Shop, Box 356, Kingston, Ont. K7L 4W2. Single insertion is \$1.00 minimum (10 words) and \$1.00 for each additional 10 words. To renew, send copy and payment again. Please TYPE OR PRINT CLEARLY! and put your membership number and call (not counted) at the end of your ad. Include your full address with postal code; if using a phone number, include the area code.

AUSTRALIA 50 MHz Band

There are restrictions in VK on the use of 50-52 MHz during the transmitting hours of one of the TV channels. In VK1, 2, 3 and 4, Amateurs cannot use the band at all during these hours. In VK5, 7 and 8 they are restricted to 25 watts. There are no restrictions in VK6.

Broadcast Bulletins

Each WIA (Wireless Institute of Australia, the VK national society) Division puts out an information bulletin each week. Here are some of the frequencies that may be of interest to readers of TAC (times are local):

VK2: 1100 and 1930 Sunday on 28.320, 1100 Sunday on 7.146

VK3: 1030 Sunday on 7.085

VK4: 0900 Sunday on 7.118, 14.342, 18.132, 21.175, 28.400

VK5: 0900 Sunday on 14.175, 28.470

VK6: 0930 Sunday on 7.075, 14.110, 14.175, 21.185, 28.485

VK7: 0930 Sunday on 7.090, 14.170.

Morse Code

Gil VK3CQ (7 Church St., Bright, Victoria 3741) is interested in the present symbol for the exclamation mark. One source gives it as 'KW', another as dah dah dah dit (often used as a small laugh as distinct from HI). The symbols in the ITU Maritime Manual do not include anything for the exclamation mark; many old timers still write a ! when the comma comes along in an address.

Amateur Radio Awards

2nd edition by Sue Squibb G1TZU lists about 300 awards, including The Monk's Beer Award of the Abbey of Gembloux (Belgium), the Onion Award of the Radio Society of Aalst (Belgium), the 1066 Award, the 't Gooi Award (Netherlands— and that IS an apostrophe t) and the DX Widow Award (Australia). The conditions, rules, cost, address are all given, and the awards are indexed. The publication costs 5 Pounds Sterling plus 3.22 Pounds airmail postage, from G1TZU, 36 Frognall Gardens, Teynham, Sittingbourne, Kent ME9 9HU, U.K. Info Needed by Bob Walker VK2YRX, PO Box 279, Drummoyne NSW 2047. Bob is putting together a file of information about the various facets of Amateur Radio for use by the press, and he is looking for the names of prominent or well-known people through the world who are or have been Radio Amateurs.

Interesting QSLs are sought by Ken Matchett VK3TL, PO Box 1, Seville 3139, Victoria, the curator for the WIA QSL collection. He is looking for cards

from rare countries and prefixes and special commemorative cards. A Contributor's Ladder will be published each month naming those who contribute cards (50 points for a DX country not yet part of the collection, 2 points for a new prefix, 1 point for each special event or memorial card). The Collection has received a lot of cards from the shacks of Amateurs who are now Silent Keys— what an awful thought that the cards could have gone to the dump with those old logbooks!

Roy Kerr VK4DK (ex-K4DK) slipped quietly from the ranks of the OOTers and became a SK in Brisbane on Oct. 13, 1988. Roy was a famous telegraphist, and VK4SS passes on this story about him. A busy 'singing wire' out of Winton continually snapped at the same place. An inspection by Roy and a couple of linesmen showed that the culprits were pink galahs— thousands of them perched on one particular span. The reason was a waterhole, 100 yards away and not a tree in sight.

"OK", said Roy "Let's divert 'em. Erect three poles and two spans of the strongest, thickest wire available— that comes from and goes nowhere— closer to the water."

So the decoy was erected and it worked perfectly. There was no more trouble. Where in VK or anywhere else has a flock of birds had an imitation telegraph line erected for their special use?

Aircraft enhancement of VHF and UHF signals has been used for several years to good effect, and there are different ideas about the mechanism. VK1BG believes that under certain conditions, hot exhaust gases may be the reflective medium. He says a favourable set of conditions would be: a distance of about 450 km; reasonably still and stable air; normal ground-wave propagation conditions; aircraft track nearly parallel to the radio path, and intersection of the two near the midpoint of the path; both stations line-of-sight to the aircraft; sideband equipment, more than 20 watts, reasonable antenna gain, low noise preamplifiers (the average FM operator lacks the necessary ERP and receiver sensitivity).

The aircraft delivers a lot of heat to the atmosphere, creating a wake very much like the temperature inversions that provide so much fun for serious VHF operators. Work done by the RAAF some years ago showed that the thermal footprint of an aircraft is easily detectable 20 km behind the aircraft.

Contra-rotating vortices behind a plane, created by the wings, trap the heat from the exhaust, and the wash typically sinks about 900 feet before stabilizing and reaches this level about 1.5 minutes after the passing of the plane.

The plane is dragging a kind of shallow, open inverted two-dimensional prism of warmed air behind it, the prism having a lower refractive index than the surrounding air. This is a condition conducive to useful refraction of the radio signal.

VK1BG includes some calculations of heat production of a Boeing 747 and the properties of air, and several references.

HARC preparation

At their 1988 Federal Convention, the WIA Federal Council came up with several specific recommendations for measures to be taken in preparation for the next big WARC. They include: involvement in APG (Australian Preparatory Group) activity through the accreditation of one or more competent Amateurs to that body, noting the travel expense involved; direct/encourage APG to support Amateur Service proposals advanced by other administrations;

seek the inclusion of one or more competent Amateurs as members on the Australian delegation to relevant ITU conferences;

create a WARC92 fund;

cultivate the awareness of key persons involved in ITU affairs; keep IARU Region 3 fully informed of national preparations, noting any requirements to maintain such confidentiality as APG involvement incurs;

continue involvement in CCIR preparations, noting that this may place significant workload on a few volunteers. (On the subject of representation, no useful gains can be achieved by the WIA financing a member to join the IARU observer team, because the IARU has only observer status and representation by Region 3 is included in their budget).

Amateur Maritime Nets in the Pacific

Tony's Net 2100Z on 14.315 covering SW Pacific.

Pacific Maritime Mobile Net (VK4NN) 0200Z on 14.315, S-W Pacific and Western Australia.

Travellers Net 0300Z on 14.106, covering Western Indian Ocean and northern VK waters.

Seafarers Net 0300Z on 14.314 covering Eastern Pacific.

Pacific Maritime Mobile Net 0400Z on 14.314 covering the Pacific.

German Maritime Mobile Net 0600Z on 14.313 covering Western Indian Ocean, Mediterranean and Eastern Atlantic.

South African Net 0600Z on 14.316 covering Indian Ocean. (Travellers Net passes yachts heading west from Australia over to this net.)

Pacific Inter-Island Net 0800Z on 14.315 covering the Pacific.

South African Net 1130Z on 14.316 covering Indian Ocean.

There are three 'pirate' nets on 14.320 at 0001, 0400 and 1000 (info from VK4NN).

Band planning

The IARU Region 3 Conference in Seoul October, 1988, adopted a revised set of Regional Band Plans. The WIA delegates contributed to the band planning working group and identified areas where Australia might not be able to comply with proposed regional band plans. The plans have now been examined, tested against the Australian Band Plans adopted at the 1986 and 1988 Federal Conventions and derived proposed revised Australian Band Plans.

The proposals were printed in the January 1989 *Amateur Radio* for consideration by VK Amateurs and will

be considered at the April 1989 WIA Federal Convention.

There are pages and pages of them, and they are very complicated — we will try to summarize the ones that matter to Canadian/U.S. Amateurs when we hear what happened to them at the April Convention.

It is interesting meanwhile to see the reasons given for variation from the IARU Regional Band Plans. WIA says:

"It has not been possible to adopt the Region 3 Band Plan for 1.8 MHz due to the much reduced Australian allocation, compared with other regional nations. Consequently, the 1986 plan has been retained, although some out-of-band working may be necessary for DX operations...

"The increasing demand for spectrum for data communications, as reported by the Packet Working Group, has led to a redefining of narrow band modes bandwidth, which is now increased to up to 2 kHz occupied bandwidth. The narrow band modes segment has been moved down to 7.040 to align with Region 3. Opportunity has also been taken to align the lower edge of the narrow band modes segment with the regional plan at 7.025 MHz.

"For the 10 MHz band, Region 3

defined a narrow band modes segment from 10.140 to 10.5 MHz. This does not vary from the existing Australian narrow band modes segment. However, because of a spot frequency we must avoid, it may be desirable to widen the segment. We retain the right to use phone on the band for communication within Australia only.

"The increasing demand for data communications has likewise led to an increase in the narrow band modes segment on 14 MHz. As packet and other traditional data modes, such as RTTY and AMTOR cannot co-exist, the band plan retains the traditional modes in the interval 14.070 to 14.095 MHz and places other data modes, including packet, in the interval 14.095 to 14.112 MHz, excluding the CW beacons at 14.000 plus/minus a 500 Hz guard band. No charges are recommended to the existing 18, 21, 24 and 28 MHz band plans..."

(all from *Amateur Radio*, the journal of WIA)

LETTERS

Send letters to the Editor to: Editor, *The Canadian Amateur*, Box 356, Kingston, Ont. K7L 4W2.

ICOM DAY!

Presented by:

COM-WEST Radio

8179 Main St.
Vancouver, BC V5X 3L2
(604) 321-1833

**SATURDAY
September 23, 1989
9am til 4pm**

 **ICOM**



WIN!!

Grand Prize IC-2GAT 2M

7 WATT HANDHELD

**Prize Drawings each hour.
Come and register to win.**

(No purchase necessary to win.)

- Special pricing
- ICOM personnel to demonstrate new equipment
- See the new line of ICOM equipment

ANTENNAS

THE GAIN GAME by GERRY KING VE3GK



ANTENNA PROJECT MOBILE LIMITED SPACE— LOADED ANTENNA INTRODUCTION

The following is a description of a shortened vertical antenna that I have used for many years. It works well in mobile and portable operation. This particular project is designed for 20 metres but other high frequency bands, especially higher ones, work well. If higher frequencies are used, just short out some turns and if lower frequencies are used, more turns are required. Adding turns results in less efficiency and much less bandwidth.

The only change from sketch in Fig. 1 would be the size of the loading coil. This coil could be remotely switched and/or tuned for added fun. One would have to use a tuner or matching device to adjust the load impedance because of the limited use of efficient radials. The input impedance is closer to 50 ohms if the radials are sloped down to about a 45° angle. You could use this arrangement when operating portable.

GROUNDING (Ground-plane operation)

The best ground surface, or ground plane, is an infinite copper sheet placed beneath the antenna. This is an ideal setup, but not very practical. An important fact to remember is that the element or 1/4 wave part of the aerial has to see its image in the reflecting ground plane to be effective as a 1/2 wave radiator.

Because the resonance can occur at different impedance values, matching is usually required for maximum power transfer. With the new solid state rigs, load impedance has to match the transmitter output impedance for full efficient operation.

MOBILE OR PORTABLE— OPERATION: 20 METRE MOBILE INSTALLATION

The highest input impedance value I could achieve in the mobile installation on 20M was around 25 ohms. I installed a 2 to 1 matching transformer made by Atlas radio in the transmission line and the reflected power dropped significantly. Simply raising the feed point impedance from about 25 to 50 ohms made the difference.

The band pass at the 1.5/1 VSWR is about +/-50 kHz— not bad. Tuning is accomplished by sliding a clip, from a

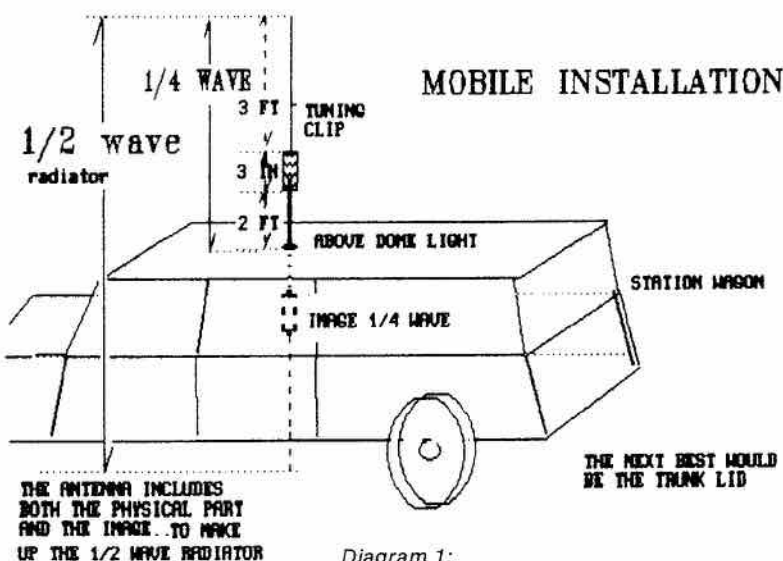
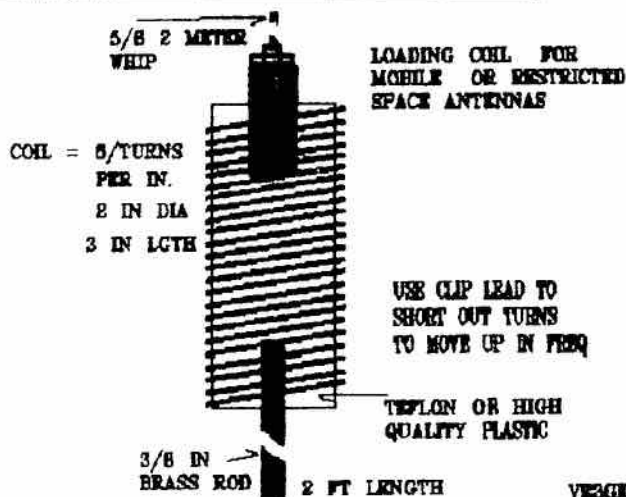


Diagram 1:
20 Metre Mobile Installation

clip lead, up and down the whip on top of the coil. When the clip is removed, it works well at about 14.300 MHz, when the clip is on the end, minimum VSWR occurs at around 14.050 MHz. It is important to remember that the best performance is when the antenna is mounted in the middle of the roof (coax braid attached to the roof)— wow! Got to drill a 3/8" hole above the dome light— can you do it? Well you could mount it at

the trunk lid— won't work as well though.

Here are a few suggestions you might find useful if you use this antenna in an apartment building:

If horizontal operation is used, the antenna could be installed straight out from the balcony, (90+ to the building). A length of small gauged wire (no. 20 +/-) attached to the coax braid could be hung up to the next balcony and down

on an angle either side so as not to be visible to the people below. This amount of reflecting surface should be adequate for good results.

For vertical operation, an inexpensive CB whip could be used as part of a ground plane straight out from the balcony railing (could be retracted when not in use). Also, lengths of wire along and from the balcony metal could be used as reflecting surface.

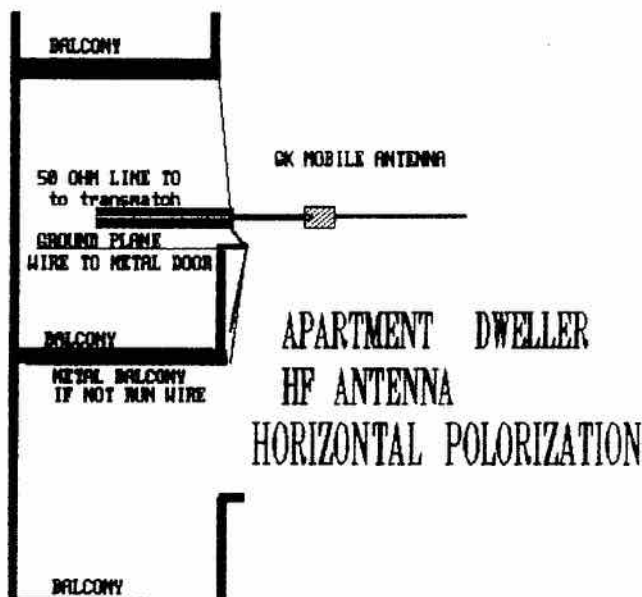
Reflecting Groundplane Note: The shield of the coaxial line has to be attached to the balcony metal securely.

If the balcony is made of cement or other nonconducting materials, one could tape wire along the edge, out of sight.

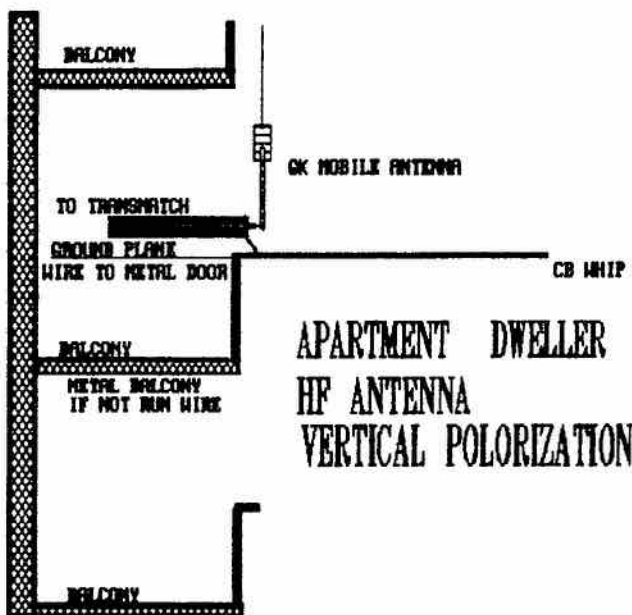
CONCLUSION

This antenna has worked well both mobile and portable for me for many years. I worked the same VK station from the mobile on 20M twice in one day, once short path in the morning and eight hours later long path in the late afternoon during a recent trip to the Maritimes. Anyway, I have had lots of fun using the system and hope someone else tries it. Have fun! ■

NO. 1



NO. 2



SOCIAL EVENTS

VE3OW

The Windsor Amateur Radio Club, in conjunction with Environment Canada, will operate special event station VE3OW from the International Plowing Match and Farm Machinery Show. This event is to be held in Maidstone Township, east of Windsor, from Sept. 19 to Sept. 23, 1989. The special event station will be operating on 20 metre phone, 14.250 MHz, from 1300 UTC to 2200 UTC each day on the above mentioned dates.

For a very special commemorative certificate, send QSL & 8 1/2 x 11 SASE to: Windsor Amateur Radio Club, P.O. Box 1322, Station A, Windsor N9A 6R3.

FIRST ANNUAL GREENWOOD ARC HAM FLEA MARKET

The Greenwood Amateur Radio Club would like to invite Amateurs and friends to their first annual ham flea market to be held Saturday, Sept. 23, 1989 from 9 a.m. to 4 p.m. in Gilwell Hall, Greenwood, N.S. Admission is \$1 per person, kids under 12 free. There will be door prizes, refreshments, and a guest speaker from DOC. Flea market tables \$5 each. Talk-in on 146.52 simplex, 147.27 o/p - VE1WN and 147.06 o/p VE1BO. For more information or to reserve your table, write Greenwood ARC, P.O. Box 63, Greenwood, N.S. BOP 1N0 or call Jim Baskey at (902) 765-4570. Hope to see you there!

COTE ST. LUC AREA HAMFEST

Sept 9th, 1989 at St. Richard's Church, 7070 Guelph Rd, Cote St. Luc, Que. 9 a.m. to 3 p.m. Flea market set up 8 a.m. \$2 at the door, no advance; tables \$10. For information and table reservations, contact: Joe Ship VE2JS, 5637 Melling Ave., Cote St. Luc, Que. H4W 2C1 (514) 482-6500. Talk-in on VE2RED. 147.27/ 147.87.

WHAT IS HAPPENING TO OUR HANDHELDS?

A report from the London *The Sunday Times* indicates that ICOM 2 metre handhelds are being used by the IRA to trigger radio controlled bombs in Ireland and in the U.K.

Hope they don't start using them over here. It could be dangerous to be seen holding a HT if some trigger-happy anti-terrorist squad member happened to be going by.

— Algoma Amateur

LOOKING AROUND

Art Blick VE3AHU, P.O. Box 356, Kingston, Ontario K7L 4W2



There are many designs found in Amateur and electronic publications for Code Practice Oscillators using the 555 IC. We set up, on an IC breadboard, a circuit that would give an output frequency of about 1000 Hz and then played around with different values of resistors and capacitors until we had the circuit given in Figure 4.

The 3300, 15k resistors and .047 uF capacitor produce a pleasing tone (900-1000 Hz, depending on precise values of these components) from square waves with a duty cycle of 45%, and with sufficient volume to power a 4" diameter, 8 ohm speaker to full room volume. Volume output is controlled by adjusting the 500 ohm variable resistor and current, from the 9V battery, varies from 10mA to 50 mA, depending on audio output. The circuit can be keyed as shown—in the 9V supply circuit—or, if a 'tail' appears on the code characters, in the audio output circuit. Note that, if latter keying is used, an ON/OFF switch should be added in 9V line as the 555 chip does draw some power when not producing an output.

We have not noticed any 'tail', when a 9V battery is used, but one could be produced if the CPO is powered from a 9V power supply. The 5 uF electrolytic capacitor in the output is minimum size for full output and a higher value can be used if a 5 uF is not in your junk box.

We mentioned, in a previous article, that our bench power box contained a calibration oscillator that is used to set up an oscilloscope for accurate voltage measurements. This oscillator is similar to the CPO shown in Figure 4 but with the frequency chain consisting of 2200 and 68k ohm resistors and a .01 uF capacitor that produces an output of about 1000 Hz with a duty cycle of 49%. A 5k potentiometer is connected between the output terminal, pin 3 and ground, with a 10 uF electrolytic capacitor in series with the variable terminal of the potentiometer and an

output terminal. The output voltage is set to 1 volt, peak-to-peak, using a digital multimeter.

After the calibration oscillator had been built, we came across a circuit, in *Ham Radio*, March 1979, and shown in Figure 5, that will give a precise duty cycle that can be varied from 5% to 95%, depending on values used for Ra and Rb. The diodes are silicon signal types and the frequency output is given by:

$$f = 1.49 / (R_a + R_b)C, \text{ and duty cycle} = R_b / (R_a + R_b).$$

For 1000 Hz, with a 50% duty cycle,

$R_a = R_b = 74500 \text{ ohms}$ and $C = .01 \text{ uF}$.

Note that any variations on pin 5 (Control terminal) could cause a change in timing or audio output, so this terminal is normally bypassed to ground by a .01 uF capacitor. External keying of the oscillator circuit can be achieved by varying the voltage on pin 4 (Reset terminal) (+5V will key oscillator ON and Ground (low) will key it OFF).

A simple, variable audio oscillator can be made by using a dual potentiometer for Ra, Rb and switching in different values for 'C'.

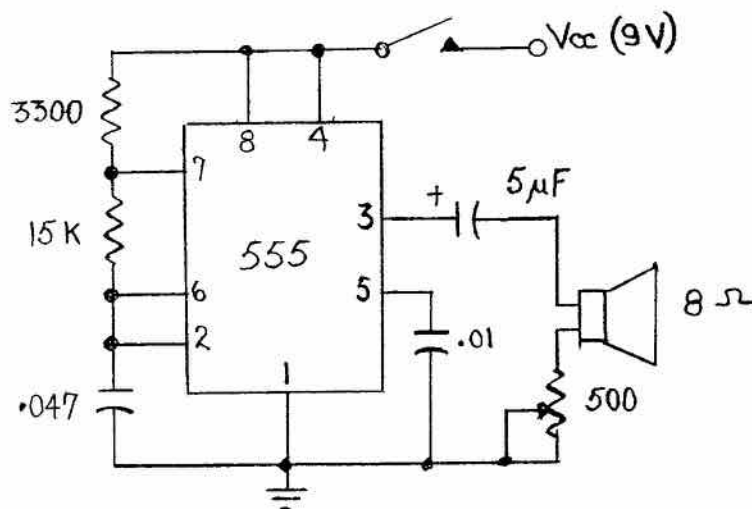


Figure 4: Code Practice Oscillator

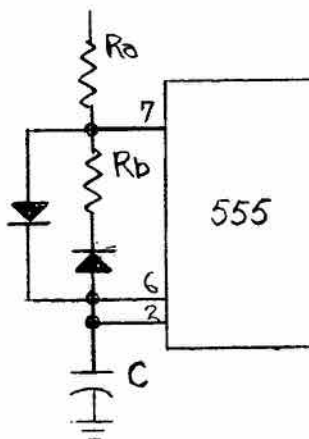


Figure 5: Precise Duty Cycle

NEW CALLSIGNS FOR ONTARIO?

It won't be long before the VE3 calls hit the end of the line. What comes next? VA3, VB3, etc. or what? It will open up a new batch of 2 letter calls.

— Algoma Amateur

Bring a blind Amateur with you to your next club meeting.

Several clubs run a code phone. Does yours?

THE FIRST ANNUAL
GREENWOOD AMATEUR RADIO
CLUB

HAM FLEA MARKET

Saturday, Sept. 23
9 a.m. to 4 p.m.

to be held in Gilwell Hall on Bedford
Road off Ward Road,

Greenwood, Nova Scotia

Talk-in on 146.520 MHz simplex on day
of flea market.

Proposed DOC guest speaker from 1:30
p.m. to 2:30 p.m.

Hot dogs and drinks on sale
Flea market tables \$5 each

For more information:
Greenwood Amateur Radio Club
P.O. Box 63
Greenwood, N.S. B0P 1N0

Now Available!
Completely Revised



CERTIFICATE STUDY GUIDE

\$16⁹⁵

See Page 48 for ordering

Receiver P.C.B. DT-66 VHF Marconi ...\$150. ea
Receiver P.C.B. DT-62 UHF Marconi ...\$150. ea
P.A. 30 Watts VHF and UHF\$150. ea
1:1 Balun 2-30 MHz 1000 W\$20. ea
1:4 Balun 2-30 MHz 1000 W\$20. ea
Stranded Copperweld wire #1415 ft
Stranded Copperweld wire #1025 ft
6 in. End Insulator\$3.00 ea

For Parts and service on all Marconi Products
HF-VHF-UHF... Please contact us, VE2GFC.

COM-O-PAC INC.

2264 Montee Gagnon, Blainville, P.Q. J7E 4H5
Tel (514) 435-2739, Fax. (514) 437-0586

Ham Radio Magazine

CARF is the exclusive Canadian Subscription agent for HAM RADIO Magazine.

SAVE MONEY. Subscribe or renew through CARF to this excellent American magazine. Only \$35⁰⁰ Canadian for 12 issues.

Use the handy order form below:

CARF Membership Number: _____ Expiry Date: _____

If a renewal, my Ham Radio Number is: _____ Expiry Date: _____

Send Renewal Notice with \$35⁰⁰ to CARF Head Office.

Name: _____ Call: _____

Address _____

City: _____ Code: _____

I am a CARF Member and wish to take advantage of the discount. Enclosed is:

☐ My cheque for \$35⁰⁰

☐ Visa/Mastercard Number: _____ Expiry Date: _____

I am not a CARF Member and wish to order Ham Radio at the non-member rate. I am
enclosing \$38.

Allow 6-8 weeks for processing.



CANADIAN AMATEUR RADIO FEDERATION

P.O. Box 356, Kingston, Ontario, Canada K7L 4W2 613-545-9100

TEXTS AND STUDY GUIDES

Certificate Study Guide
Advanced Study Guide
CW into Foreign Languages
CARF Callsign & Address Book
plus Ont. residents 8% tax
Question Bank, Amateur
Question Bank, Advanced

\$16.95 _____

\$15.00 _____

\$ 6.00 _____

\$13.95 _____

POSTAGE

ADD \$2.50

\$ 5.00 _____

MAX. 4 ITEMS

\$ 5.00 _____

CARF REFERENCE FILES

The Vertical Radiator
Amateur Design of Printed Circuit Boards
Binder - 2" D-ring

\$3.00 _____

\$2.50 _____

\$4.50 _____

MISCELLANEOUS

Repeater Directories, POST PAID
CARF Log Sheets (25/pkg.) POST PAID

\$2.00 _____

\$3.00 _____

VIDEO TAPES

HAMMING IT UP 3/4 in. rental
Refund when returned in 21 days

\$35.00 _____

\$30.00 _____

INCLUDE \$2.50 SHIPPING FOR ALL TAPES

TOTAL _____

For Bulk Order Discounts and Postage, Contact CARF Office.

Subscription Rates

\$25.00 CDN/yr. Residents

\$30 U.S./yr. Non-Residents

\$2.00/yr./Additional Family Member

\$375.00 LIFE MEMBERSHIP

\$30.00 Additional Family LIFE Member

All members of CARF receive THE CANADIAN AMATEUR

Non-members may subscribe to THE CANADIAN AMATEUR

TOTAL ENCLOSED _____ (CHEQUE/MO/CARD)

VISA/MASTERCARD EXP. DATE _____ NUMBER _____

CALL _____

EXTRA FAMILY CALL _____

CARF NUMBER IF RENEWAL _____

NAME/NOM _____

ADDRESS /ADRESSE _____

CITY/VILLE _____ PROV _____ CODE _____



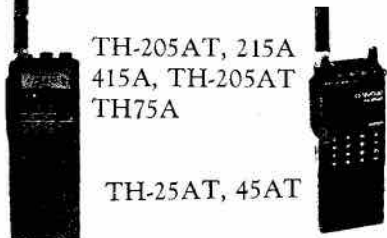
KENWOOD



TS 940, 680S, 440, 140



TM-721A, 231A
TR-751A



TH-205AT, 215A
415A, TH-205AT
TH75A

TH-25AT, 45AT

LEASE TO OWN

1. 48' TOWER, MAST BEARING, MAST;
HAM IV ROTOR, ROTOR WIRE 100';
TH3JR. & BALUN, RG 213u 100'; 4
CONNECTORS; TS-140S, PS-430, DELIVERY
TOTAL— \$3900.00

36 MONTH LEASE— \$142.58 per month

42 MONTH LEASE— \$127.76 per month

2. 48' FREE-STANDING TRYLON TOWER,
MAST BEARING, MAST 12'2"; HYGAIN
HAM IV ROTOR; EXPLORER 14 BEAM; 2
METRE ANTENNA; 300 RG 213u; 150' 8448 8
WIRE CONDUCTOR; 4 CONNECTORS;
ICOM IC-761, ICOM IC-275H; DELIVERY
TOTAL— \$8778.00

36 MONTH LEASE— \$311.71 per month

42 MONTH LEASE— \$278.00 per month

3. 48' TOWER, ROTOR, BEAM; ICOM IC-
751A, ICOM PS-30, DELIVERY
TOTAL— \$4900.00

36 MONTH LEASE— \$179.14 per month

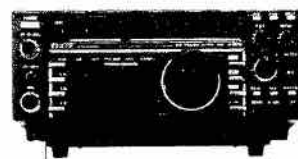
42 MONTH LEASE— \$160.52 per month

4. 48' TOWER, MAST BEARING, MAST;
HAM IV ROTOR & WIRE, TH3JR. & BALUN
& WIRE; CONNECTORS; ICOM IC-735,
ICOM PS-55, DELIVERY
TOTAL— \$4200.00

36 MONTH LEASE— \$153.55 per month

42 MONTH LEASE— \$137.54 per month

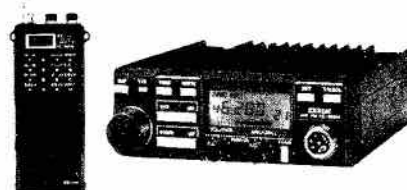
ICOM



IC-725, 735, 765, 751A, 781



IC-2GAT, 32AT, 4GAT, 2SAT



IC-228H, 448A, 900

WE WILL MEET OR BEAT ANY PRICE!

- Quick, reliable service
- We trade



American
Express

CENTURY 21 COMMUNICATIONS INC.

23 McCleary Ct., Unit 23, Concord, Ont. L4K 3R6
Telephone (416) 738-0000

Commercial - Cellular - Marine - Amateur
Sales - Service - Installations

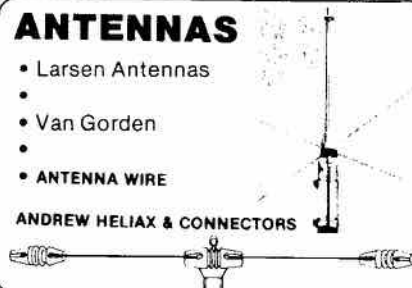
ANTENNAS

- Larsen Antennas

- Van Gorden

- ANTENNA WIRE

ANDREW HELIAX & CONNECTORS



ACCESSORIES

- Power Supplies
- Accessories
- Bencher Paddles
- Meters



PUBLICATIONS

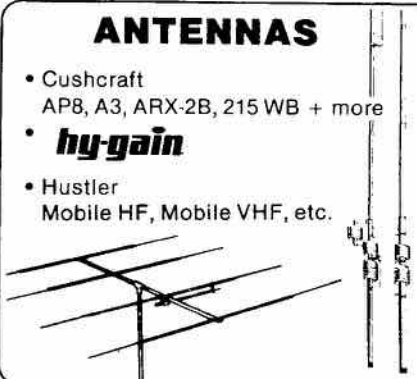
- ARRL

- Radio Amateur
Callbook
- World Radio TV
Handbook
- Gordon West
Radio School



ANTENNAS

- Cushcraft
AP8, A3, ARX-2B, 215 WB + more
- **hy-gain**
- Hustler
Mobile HF, Mobile VHF, etc.



ACCESSORIES



MFJ

Antenna Tuner
Plus Full Line
Of Accessories

AMERITRON

MIRAGE

VHF & UHF Amps

ALINCO

PACKET

Kantronics



PK-232, PK-87



1278

MFJ

1270B, 1274, 1278



THE BEST OF BOTH WORLDS.

The pacesetter IC-R9000 truly reflects ICOM's long-term commitment to excellence. This single-cabinet receiver covers both local area VHF/UHF and worldwide MF/HF bands. It's a natural first choice for elaborate communications centers, professional service facilities and serious home setups alike. Test-tune ICOM's IC-R9000 and experience a totally new dimension in top-of-the-line receiver performance!

Complete Communications Receiver. Covers 100KHz to 1999.8MHz, all modes, all frequencies! The general coverage IC-R9000 receiver uses 11 separate bandpass filters in the 100KHz to 30MHz range and precise-tuned bandpass filters with low noise GaAsFETs in VHF and upper frequency bands. Exceptionally high sensitivity, intermod immunity and frequency stability in all ranges.

Multi-Function Five Inch CRT. Displays frequencies, modes, memory contents,

operator-entered notes and function menus. Features a subdisplay area for printed modes such as RTTY, SITOR and PACKET (external T.U. required).

Spectrum Scope. Indicates all signal activities within a +/-25, 50 or 100KHz range of your tuned frequency. It's ideal for spotting random signals that pass unnoticed with ordinary monitoring receivers.

1000 Multi-Function Memories. Store frequencies, modes, and tuning steps. Includes an editor for moving contents between memories, plus an on-screen notepad for all memory locations.

Eight Scanning Modes. Includes programmable limits, automatic frequency and time-mark storage of scanned signals, full, restricted or mode-selected memory scanning, priority channel watch, voice-sense scanning and scanning a selectable width around your tuned frequency. Absolutely the last word in full spectrum monitoring.

Professional Quality Throughout. The revolutionary IC-R9000 features IF Shift, IF Notch, a fully adjustable noise blanker, and more. The Direct Digital Synthesizer assures the widest dynamic range, lowest noise and rapid scanning. Designed for dependable long-term performance. Backed by a full one-year warranty at any one of ICOM's four North American Service Centers!

ICOM

First in Communications

ICOM America, Inc., 2380-116th Ave. N.E., Bellevue, WA 98004
Customer Service Hotline (206) 454-7619
 3150 Premier Drive, Suite 126, Irving, TX 75063 /
 1777 Phoenix Parkway, Suite 201, Atlanta, GA 30349
 ICOM CANADA, A Division of ICOM America, Inc.,
 3071 - #5 Road, Unit 9, Richmond, B.C. V6X 2T4 Canada
All stated specifications are subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions. 9000489