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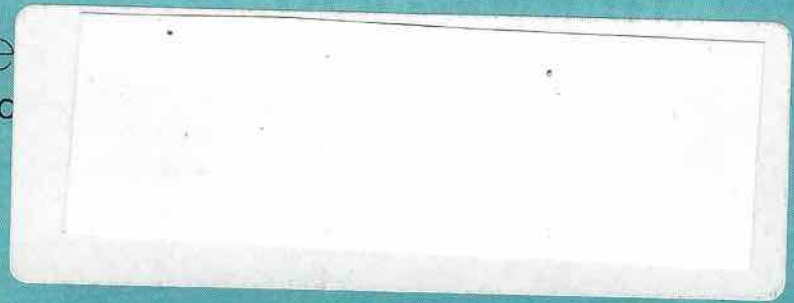
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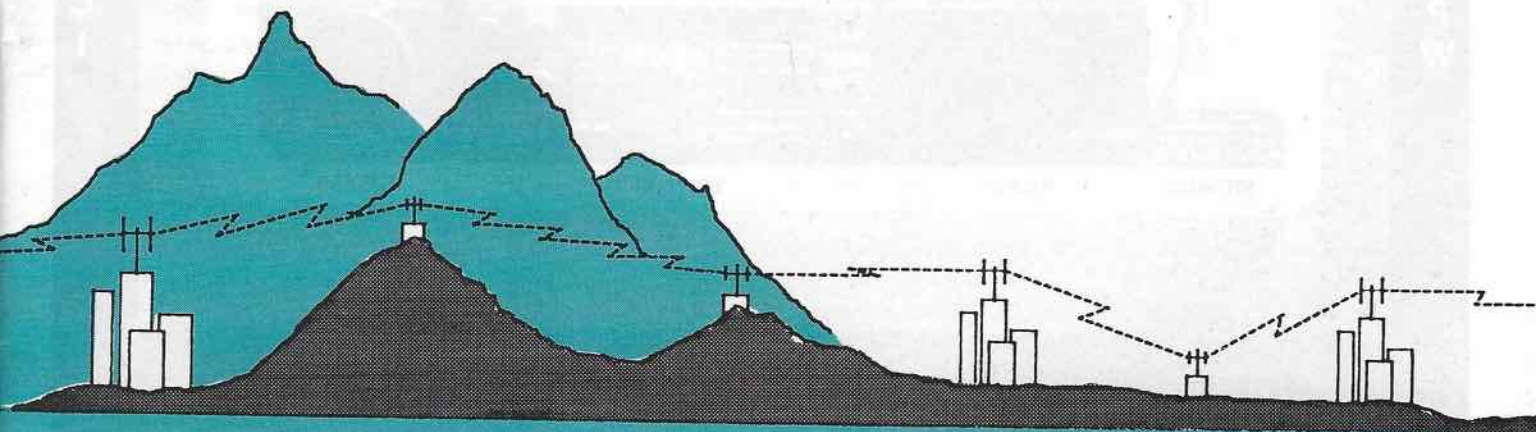
MARCH 1988



IPARN: Canada's Growing Full Duplex Trunk Network

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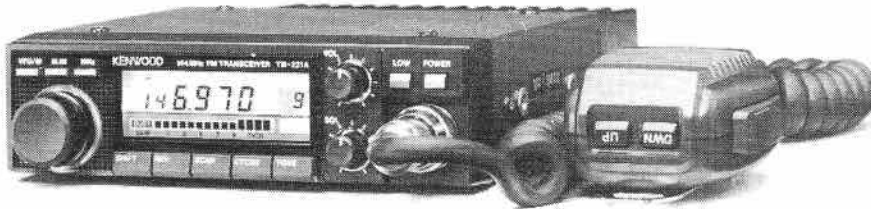
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EDITOR
George Sansom VE3LXA

ASSISTANT EDITOR
George Morgan VE3JQW

COLUMN EDITOR
Steve Campbell

TECHNICAL EDITOR
Bill Richardson VY1CW

CONTEST SCENE
John Connor VE1BHA

AMSAT NEWS
Ernie Welling VE3HD

MICROWAVES
Michael Ross VE2DUB

CRAG COLUMN
Cary Honeywell VE3ARS

DX EDITOR
Paul Cooper VE3JLP

QRP EDITOR
Moe Lynn VE6BLY

YL NEWS AND VIEWS
Cathy Hrischenko VE3GJH

VHF/UHF
Walter D. Rawie VE1AWS

PACKET RADIO
Brett Delmage VE3JLG

COMPUTERS
Lyle Blake

TECHNICAL ILLUSTRATOR
Don Jarvis VE2DWG

AFFILIATED CLUBS
George Morgan VE3JQW

LOOKING AROUND
Art Blick VE3AHU

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
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Canada's Amateur Radio Magazine

March 1988

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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.

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Second Class Mail Registration Number 5073



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
Earle Smith VE6NM
P.O. Box 412,
Grande Prairie, Alta.
T8V 2A2
(403) 532-4279

Senior Vice President
Francis Salter VE3MGY
14 Teresa St.
London, Ont. N6C 3K8
519-439-7779

Committee Chairmen

D.O.C. Liaison
Art Stark VE3ZS

News Service
Dino Moriello VE2FSA,
Box 241, Pierrefonds, Que. H9H 4K9
Translation: VE2DDT Michel Ricard

Electromagnetic Interference
Ralph Cameron VE3BBM

Emergency Communications
Ken Kendall VE3IHX

CSA Committee
Ivor Nixon VE3IHN,
17 Romney Rd., Islington, Ont. M9A 4E2

CARF Contests
Norm Waltho VE6VW,
Box 1890, Morinville, Alta. TOG 1P0

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

Reciprocal Licencing & International Affairs
Francis Salter VE3MGY

Affiliate Clubs
George Morgan VE3JQW,
687 Fielding Dr., Ottawa, Ont. K1V 7G6

Publications Committee
John Iliffe VE3CES

C.A.R.F. QSL Service
Jean Evans VE3DGG,
P.O. Box 66, Islington, Ont. M9A 4X1

CARF Head Office
Debbie Norman, Office Manager 613-545-9100

**General Manager/
Treasurer**
Ollie Schijns VE3LXO
730 Dempster Dr.
Gananoque, Ontario
K7G 2E7
(613) 382-3867

Secretary
George Sansom
VE3LXA
786 Selkirk Rd.
Kingston, Ont.
K7P 1A5
(613) 389-5108

**Honorary
Legal Counsel**
Timothy Ray VE2KC
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.
TOG 1P0
(403) 939-3514

Ontario Directors
Pierre Mainville VE3LPM
23 Chatsworth Dr.
Brampton, Ont. L6X 2L8

Dan Holmes VE3EBI
33 Crownhill St.,
Gloucester, Ont. K1J 7K5
(613) 746-0968

Quebec Director
Michael Masella VE2AM
19 Pheasant Street,
Dollard des Ormeaux,
Quebec H9B 2T4
514-683-7785

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

**ASSISTANT
REGIONAL DIRECTORS**
Stewart Harvey VO1OO
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WHAT IS ?

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

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

EDITORIAL

From the Lands of Lotus and the Midnight Sun

the Yukon, living as we do in the far west and north, experience our own special niche in the world of Canadian Amateur Radio. We are proud of being VE7s and VY1s. We are even more proud of being part of the greater whole which binds us together with you in the other Provinces and the North West Territories. Perhaps you feel a sense of *oneness*, as we do, through the articles and columns of *The Canadian Amateur* each month. We share a fraternal on-air friendship and helpfulness that cements our unity through the use of the national calling frequency at 14.140 MHz. We also share an interest in the achievements of Canadians in the broader world of international DX, contests, Nets, VHF/UHF, RTTY and Packet Radio, to name a few.

The desire for stability and growth in Canadian Amateur radio has been frustrated in recent years. Cable-vision RF leakage; inferior consumer electronic devices which are incompatible with proper engineering practice; potential tower regulation; and the perceived and real threat to our VHF/UHF spectrum are all part of our national concern. Even more disconcerting is the apparent low priority our own DOC seems to give to matters which we patiently seek to have resolved. The re-structuring of the service is long overdue and we need help to meet the challenge of technological change and the demands it places on our ability to attract newcomers and experience renewed growth.

This issue of *The Canadian Amateur* offers a small glimpse of people and activities in the Pacific Region. IPARN, the planning and building of the Inter Provincial Amateur Radio Network across the western provinces, is not just a dream. It's a Canadian happening! It's the result of the dedication and hard work of a resourceful and imaginative Canadian: Bill Blake VE7CQ. We honour our own Ernie Savage VE7FB who, for over a quarter of a century as ARRL Section Manager, has

contributed much to the organizational growth and stability of Amateur radio in the region. There is also the story of Hal Garvie VE7AEI, who seems to be destined to break mobile QSO records from the cab of his big Kenworth while hauling around the northwest. Ron McFayden VY1AD gives us some insights from the land of the midnight sun. Other stories of people and activities will serve to round out some of the magic of Amateur radio in this wonderful region from the Rockies to the Pacific and north to the Arctic Ocean.

VE7 and VY1 Amateurs extend congratulations to the Canadian Amateur Radio Federation for over 20 years of splendid service by, of and for Canadian Amateur radio. CARF has exemplified quality Canadian talent and leadership since its inception during Canada's centennial celebration in 1967. We express our sincere appreciation to the OMs, YLs and XYLs who give their best to ensure our Canadian spirit is not without an outlet to express our true independent entrepreneurship and innovativeness. We are proud members who wholeheartedly support the aims and achievements of CARF. We are saddened that a single, unified, national organization seems as yet a dream, but we live in the hope that it will become a reality before long.

From the lands of lotus and the midnight sun, we extend to each and every Canadian Amateur our thanks for making operating from VE-Land such a rewarding experience. We also extend a warm invitation to come and visit and share with us our mountains, lakes, valleys and sea coasts. If you cannot make it 'out west' or 'up north' for awhile, then we look forward to an eyeBall with you in the future. Until then, we'll listen for you on the bands and of course, at 14.140 MHz. Who knows? Perhaps we will QSO over the IPARN network in the not too distant future!

BY J.F. HOPWOOD
VE7AHB

Amateur radio operators are a proud part of the diversity of our great country. We bring special enthusiasm, resources, knowledge and skills which enhance and strengthen Canada. We do not just offer emergency and public services, however important that is. We help to develop and to contribute to the art and science of communications through the opportunities and challenges that Amateur radio provides. We possess a knowledge base of technical and operating skills which supports our country and its role in the modern world. Our radio communication with people around the globe binds us, in a very human way, to every race, colour and creed. We are privileged to be special ambassadors of friendship and good will. We are a valuable national resource.

Amateurs in British Columbia and

LETTERS

THE ENDANGERED SPECIES

I write this (Jan. 1, 1988), realizing that in a mere 28 days my lifestyle could be forever changed and that Amateur Radio as we know it will never be the same again.

Many of us grew up in a civilization that is now virtually extinct. Back in the days prior to WWII there were no solid state devices; computers; television sets; lasers; atomic weapons; jet aircraft and a multitude of other marvels of science which today are taken for granted.

We labouriously built our own Amateur Radio equipment and long distance communication was a profound and exciting experience, particularly on the upper limits of HF.

Perhaps the significant and relevant question is— who actually cares other than Radio Amateurs? Surely the manufacturers of Amateur communications equipment have to care; we are their lifeblood.

The Military must care, as evidenced by the attached letter (following) from NDHQ, Ottawa, dated Nov. 7, 1985. My lawyer (at that time) dismissed it, stating the letter was not relevant to our case. As it turns out this was a very short-sighted approach; the letter was written in good faith but unfortunately does not form part of our factum.

What about the general public? More often than not we find we are classified with the CBers. Occasionally we get honourable mention by the media in connection with some natural or man-made disaster. I doubt if the public would care (or even know) if we all went QRT tomorrow. Obviously, if the public are not aware of our useful capabilities, that is definitely our fault. We need more positive exposure.

We argue the pros and cons of deregulation... a good thing? I wonder. That modicum of authority is still a requirement, in my opinion.

We note with consternation (at least many of us do) that the current average age of the Canadian Amateur Radio community is now around 55 years of age and still increasing.

We desperately need the infusion of young blood, however, if current matters prevail, do we include at the beginning of all Amateur radio courses: "NOTE: If your on-air operations affect your neighbour's electrical (electronic) equipment you must be prepared to immediately cease all transmitting or you may be subject to litigation."?

Not a very palatable introduction to the world of Amateur Radio.

Now we come to the basic and fundamental question: does the DOC care? Perhaps they do... but the Department, I must insist, works in mysterious and sometimes confusing ways.

The DOC attempts to regulate us without any mandate to protect us. Why in this day and age of electronic enlightenment, does the DOC continue to operate in a system of antiquated radio laws? The Department produced, no doubt at great public expense, EMCAB-1. Due to total lack of enforcement this document remains completely ineffective, even useless.

Let us examine the following and you will understand why I use the term confusing.

An article appeared in *The Canadian Amateur* (November, 1986 on page 5) entitled 'Audio Swamping Interference.' attention is drawn to item 10. "If swamping occurs, what do I do? Either live with it or correct the fault(s) that caused it." (DOC instructions to the consumer.) This is taken directly from the Pacific Region Information Circular 81-5, issued by the DOC Pacific Regional Office, October, 1981 (File 1440-2). This article is still valid and has been reissued by the DOC as late as 1985, in the Western Region.

In contrast, the article which appeared in *QST* (October, 1986, page 67) states, in part: "Therefore, regardless of how well your equipment performs, it is still your responsibility, as a resident of the community, to ensure that it does not affect people around you." The perfect bureaucratic cop out. Another branch office heard from.

The current action of the DOC in Calgary, Alberta against VE6KG illustrates my point. The DOC, in this case, didn't even follow their own regulations.

Further, the letter to Bob Campbell VE3KLK (dated Aug. 14, 1986) then president of the OVMARC (Ottawa Club) from the Hon. Flora MacDonald, Minister of Communications, contained little but platitudes. For example: "In such cases where conflicts between two desirable social goals arise, the solutions are neither simple or exact and always take a considerable time to fashion."

Interpretation: We do not intend to do anything but will hide behind the VE3SR case and let the courts decide

QRP COLUMN

Moe Lynn is progressing well after his recent accident, but has notified us that he is resigning as the QRP Column Editor for a long term. The Editor of *The Canadian Amateur* is actively seeking someone to replace him. If you are interested, send pertinent information to the CARF Office, Box 356, Kingston, Ont K7L 4W2.

our course of action. There is much on record to substantiate this.

Canada has earned world respect in the area of communications but will we continue to deserve this respect if the DOC waffles its Radio Amateurs into obscurity?

Are we to become the dinosaurs of the communication age?

John Ravenscroft VE3SR
(Silent Radio)

Fortey and Scott
Barristers and Solicitors

In response to a request by Mr. Jack Ravenscroft, we are pleased to provide you with information which we hope will support his civil suit.

The first close association between the Amateur Radio fraternity and the military in Canada occurred during WWII at which time the 'Call to Arms' saw many of the electronics and communicator trade positions in all three services (Army, Navy and Air Force) filled by Ham operators. Many of these Amateurs formed the nucleus of the Forces communications training cadre and it is a well-documented fact that the experience and expertise of the Ham operators contributed greatly to an effective communications system.

Perhaps the most visible association and, as far as the military is concerned, the most beneficial service in terms of morale, provided by the Amateur Radio fraternity over the past 25 years or so, has been the provision of a person-to-person voice traffic link in the form of 'phone patching' performed by Ham operators for service personnel stationed in remote and isolated locations so they may communicate with their families at home.

The first recorded and publicized accounts of this morale boosting communications service appeared in the 1956/57 period and involved Canada's first peacekeeping force which was deployed in the Middle East (Egypt) with the United Nations Emergency Force. A young and enterprising Staff Sergeant whose call was VE3AHU set up the first Middle East Ham station to operate phone patches back to Canada and this same station

operated successfully for about 10 years until the UN was abruptly asked to leave. Of course Amateur stations are now back on the air from the ME operating daily from Damascus, Syria, Nicosia, Cyprus and the Golan Heights. Further, for the past 20 years or more, phone patches have been operated for servicemen in the Far North and from HMC Ships on sea deployments.

Not enough can be said for the hundreds of Amateur operators in Canada who have devoted their valuable time and equipment to operate informal traffic nets over the years. The communication service provided through ham radio has been and continues to be tremendously popular as far as individual service personnel and their families and relatives are concerned; this can be seen from the impressive traffic volume figures. It is without a doubt a key morale booster for DND personnel serving at remote and isolated posts around the world.

Radio Amateur operators played a key role during the recent earthquake in Mexico by providing communications while the existing communications systems were rendered unserviceable. Should a natural or man-made disaster occur in Canada the Amateur Radio fraternity would be expected to provide similar emergency communications to assist civil or military authorities.

NDHQ fully supports in principle the activities of Amateur Radio operators in enhancing their applications of the Amateur systems and in promoting viable personal and public oriented communication means.

W.H. Batt
Colonel
Director General
Communications and
Electronics Operations

NEED TO JUSTIFY? ---

I was very interested in the editorial in the Dec. 87 issue of *The Canadian Amateur* taken from *Algoma Amateur*. It sure shows me the typical attitude that I have suspected existed in the public's mind for some time.

I would like to suggest that *The Canadian Amateur* take a direct action stance and tell it out loud that we don't have to justify our hobby. Arts and Sports don't have a need to justify, so why should we?

Let's do the best we can to foster good attitudes between ourselves and others of all races, creeds and colours. Really, that's about the best thing, in my view, we can do. Let's demonstrate it by the 'good neighbour' policy. "It's my fault until proven otherwise."

Dick VE3BIA

The Premier Le Premier ministre
of Ontario de l'Ontario

Legislative Building
Queen's Park
Toronto, Ontario
M7A 1A1

Hôtel du gouvernement
Queen's Park
Toronto (Ontario)
M7A 1A1

December 2, 1987

Dear Mr. Iliffe:

Thank you for your recent letter concerning the re-establishment of an amateur radio station at the Ontario Science Centre. I have taken the liberty of sending a similar response to everyone who has written.

Staff at the Science Centre considered this proposal as recently as December 1986. At that time it was decided not to pursue the re-establishment of a station due to high staffing costs and lack of consistent volunteer assistance.

Very few of the science museums in North America continue to operate an amateur radio station. The popularity of radio communication has been surpassed in recent years by other technologies. With funds being limited, many science museums have elected to invest in newer technologies.

Thank you again for sharing your views with me.

Sincerely,



David Peterson

EMERGENCY PLANNING ALIVE AND WELL IN OTTAWA ---

The Regional Municipality of Ottawa Carleton and the Emergency Measures Amateur Radio Group have a continuing relationship. When the Emergency Measures Organization (EMO) was disbanded as a separate organization in 1985, emergency planning changed hands a few times, eventually ending up with the Transportation Department of RMOC. It took over coordination of EMARG at the beginning of 1986.


The Region then appointed me Emergency Planning Officer—Communications. In this position, I am responsible for organizing auxiliary emergency communications, coordinating frequency use during an emergency, and advising primary services on emergency communications. The Region has set up HF and VHF stations at the Emergency Operations Centre at 222 Queen Street. These stations operate under the call sign VE3OCE (Ottawa-Carleton Emergency). New VHF gear has been purchased for the Regional Mobile Emergency Command Vehicle. We were consulted on the

selection of gear for the vehicle to be used by the primary services (police, fire, ambulance/hospital).

An emergency plan was written by the region and passed to us for review. We prepared an emergency communications plan to be published on completion of callout procedures. Two voice pagers have been issued to EMARG to allow quick activation of the callout tree. EMARG has participated in various exercises and training efforts. Various members have participated in providing communications for emergency training courses at the Emergency Preparedness Training College run by Emergency Planning Canada in Arnprior.

The Region and the Province have agreed to fund the connection to the provincial voice linking system coordinated by Harrie VE3HYS. This system will allow Ottawa and Valley Amateurs to link on VHF to many other areas of the province, and it provided communications at the time of the Barrie tornado.

In summary, EMARG is alive and

Continued on next page 

LETTERS (cont'd)

well. I would like to thank VE3KMV, VE3PAE, VE3KKU, VE3PAP and many others for their active participation.

David Goldsmith
Emergency Planning Officer
Communications, RMOC

THE NUMBERS GAME

I have just read the article in the December issue by Bill Wilson VE3NR, and was somewhat put out. Surely the DOC will not resort to a numbers game when it comes to band management. Not only is that misleading, but it will effectively eliminate Amateur Radio.

I wonder how many commercial stations would be on the air if they had to go through the rigorous examinations that the Amateur does. Probably a whole lot less than there are now.

I also wonder about the Canadian Amateur and the belief that keeping high standards is 'right' for the 'service'. It appears to me that if Amateurs show up to play hockey and the people who make the rules elect to

play baseball, we won't only lose, but we won't even be in the game.

If DOC plans to use numbers then we must examine our current strategy. There may be (heaven forbid) reason to look at the classes and qualifications for the various classes of Amateurs. An introductory licence may bring the necessary ranks into the ranks of Amateur radio to keep a portion of the spectrum.

I know, too, that when the question is raised about the good of Amateur Radio the 'universal cry' will be "in disasters we...". All I can say to that is: what about the regional summer/winter games, non profit organization events for community improvements and good old fairs, exhibitions and local sporting events? Surely we can get some good press—a letter copied to the DOC. Too many of us figure the other guy will do that, and we go off to our Saturday morning coffee clutch as usual. Well, when the usefulness of Amateur Radio is being set by our example, we can always blame the other guy when the spectrum is lost. But keep in mind that what goes around comes around.

So, given that we aren't in the pickle yet, what do we do? Depending on the time that is available to work this issue, the options may be few or many. What will be needed is the collective brainstorming of every Amateur for this task.

If the time is short (12-24 months), we can be bold and go after management of our spectrum. If we have responsibility for our bands, that will give us needed time to put together a five and 10 year plan. Probably something we need to propose anyway to get the correct use from the spectrum. We can try to put a dollar figure to the 'community and humanitarian aspects', something I believe a lot of us would disagree with in principal (I put myself in that number). We can ask the collective support of Amateurs worldwide on this issue—eventually it may come to that. If the world of Amateur Radio is lobbying with us, the DOC may want time to restudy the global ramifications (breathing time).

If we have greater than 24 months, CARF and the other Amateur Radio organizations need to get together and develop that five, 10 or 20 year plan and get government support as well as the world advisory bodies. Any way you look at it the Amateurs need to get very professional in the way they conduct themselves.

I know there are many good ideas out there; let's get busy because time is very short.

Dave Lincoln VE6VU

QUEST FOR ANTENNA

I am writing this on behalf of VE2JTM, a white caner who has a problem.

Orville now lives in a townhouse with a very small lot. He is not permitted to put up an antenna for HF. The unit does not have an attic and the second storey has aluminum siding. A flagpole has been suggested, but appears to be out of the question. Loading up the aluminum rain pipe has not proved satisfactory. His automatic antenna tuner can only handle a VSWR of 4:1 or less.

Is there someone out there who has (or can suggest) an unobtrusive HF antenna suitable for 80 thru 20 metres?

Any response may be directed to me at Box 835, Lindsay, Ont. K9V 5N3.

Drew Watson VE3AAU

The Spider Antenna has been recommended to me by a satisfied user. Perhaps one of our readers or advertisers has another solution... Editor.

SNO BIRD NET

We are now 'Down South' for the winter.

To Amateurs who use the Sno Bird net I wish to say "please be patient"



News from Cobourg

During 1987 the Cobourg Sesqui-centennial celebrations included participation of the Heritage Amateur Radio Club and the special VX3 prefix was assigned by DOC in commemoration of the event.

Special QSL cards were printed and close to 1,000 contacts were made during the two-week period in July during which this prefix was valid. A club station was installed in the Northumberland Art Gallery in historic Victoria Hall and included in the demonstration was an antique

radio display of Ham radio gear and communication equipment dating back to about 1908.

One of the highlights of the project was a three-way QSO involving the Mayors of Cobourg, Ont, Coburg, Germany and Coburg, Australia.

The QSL cards that were not used have been overprinted with the Calgary Olympic Logo and may now be used again with the VX3 prefix permitted from Jan. 1 to Feb. 20, 1988.

Bill Daly VX3MCW
Heritage Amateur Radio Club

most of us here in the south don't have the best antennas and, in my case, I have a pretty difficult time with line noise.

I would like to state the case for using the NET frequency plus or minus 14.152 for calling only. When you call and get your station PULEEZ move off and get your QSO going somewhere else!

14.152 is a good place to meet your friends, but don't get upset if it doesn't work 100%. Lots of people use 20 and some don't want to go along with this idea. Some don't know we operate a net, and others don't even hear us. Be the gentleman and bow to the possibility. After all, it's not easy for a group to use a particular frequency for six months, then disappear and return six months later and expect it to be waiting for them.

Dick VE3BIA

THOUGHTS ON PACKET

Recently, I began experimenting with packet radio, and I am now very active in this mode. I use 14 MHz, but am in the planning stages of constructing a 10 MHz antenna because of a discovery I made.

I didn't realize it at first, but the 14 MHz packet frequencies are encroaching on the non-U.S. phone band. This was brought to my attention by a VE3 carrying on a QSO in the middle of a packet channel.

Listening to arguments from the VE3, many points were made. For instance, the U.S. took the top 50 kHz of our phone band, and now monopolizes the lower 7 kHz with packet. It was also suggested that there were a lot of unattended stations that just cause QRM.

The VE3 stated that members of his local radio club agreed that we should reclaim this territory by using it whenever possible. On another day, I heard a VE7 complaining about the packet QRM around him. He made the comment, though, that we were 'winning the battle.'

Well it's true that we do have a concern. The existing packet channels are becoming crowded as more people get involved. There is a possibility that packet may gobble up even more phone space.

Anyone concerned with this must do something about it. My opinion is that we should go through proper channels, such as CARF, and make our opposition known. Let's keep some democracy in our hobby. I do side with the phone user but, right or wrong, and for whatever reason, 14

MHz packet has wound up where it presently exists.

Now we get to the point of this letter. To the hams who know nothing about packet, and plan to use phone on top of packet stations, please read this! (It is a very, very brief primer.)

- The mode is not exclusively American. There are many Canadian as well as South American and European stations using HF packet.

- Many of the unattended stations are 'gateways', i.e. HF/VHF links. These allow Amateurs to pass traffic from a VHF radio and distribute it worldwide. This includes bulletins, OSCAR information, public service messages and even emergency traffic. There are many Canadian gateways in use across the country, including two here in Manitoba.

- The channels are multiple access. This means that many stations can talk with each other on the same frequency. Someone using phone on a packet channel could jam 20 or more QSOs at one time and not all of them would be American. (Could you really do this to so many?)

I hope that a few Hams who read this will take some of the points I have mentioned to heart before wading into those bleeps and braps to carry out a phone QSO.

Jim Townsend VE4CY
Now let's hear from the other side... Editor.

KUDOS FOR TCA

May I take this opportunity to congratulate your editor and staff for the excellent publication. I always enjoy reading it from start to finish every month. You always seem to have a good mixture of articles (technical, non-technical) and newsworthy ones as well.

Joseph A. Cyr VE1AXJ

QRP TRANSMITTER

Readers interested in building their own QRP Transmitter from my article in a recent issue may obtain Torroid Cores FT 37-61 and T 50-1 from myself at \$1.30 each plus a SASE.

I have about ten spares of each on hand at present.

Moe Lynn VE6BLY
10644-146 Street
Edmonton, AB. T5N 3A7

Technical Committee resolves RFI complaint

The St. Paul Radio Club recently investigated an RFI complaint and, in effect, resolved a dispute between an Amateur and his neighbours.

The FCC wrote to the club and asked our technical committee to investigate RFI complaints against an Eagan Amateur. The FCC had received a formal complaint signed by two of the Amateur's neighbours alleging that the Amateur's transmitted signals were causing interference with the neighbours' televisions, telephones, a microwave and a smoke detector.

Technical committee member John Ketzler WONKU arranged to meet with the Amateur and his neighbours to see what was wrong and to offer solutions to any problems. Accompanied by Mary Ketzler KA0OMX, John inspected the shack and found it to be well set up. The main source of RF power was a Henry 3K Classic, capable of maximum legal output. John observed a good grounding system and noted that the Amateur used two lowpass filters, one after the transceiver and one after the linear.

With KA0OMX as an in-shack observer, the ham tuned up to full power output on 40, 20 and 15

metres. When applicable, he pointed his beam directly at the neighbours' houses. According to WONKU, none of the reported problems could be reproduced on any of the frequencies tested.

While John said he was prepared to tell the neighbours how to solve the problems, it became unnecessary when the interference couldn't be reproduced. In response to the complaint about the smoke detector, the ham bought a new battery-operated detector for his neighbour. The neighbor had been using an AC-powered smoke detector.

According to WONKU, the matter was resolved without any hard feelings. John said the neighbours commented that they were impressed that the club would send someone out to help with the problem. As the interference conditions could not be reproduced, the parties involved decided that, should another interference problem again occur, the neighbours would call the ham immediately. He will, in turn, record the operating conditions which produced the interference, and then call WONKU to investigate. ■

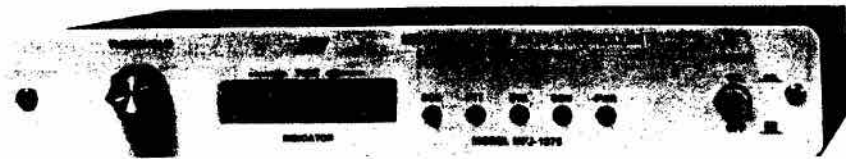
Ground Wave and bulletin of the Saint Paul Radio Club, Inc.

JRSD FUND

Donations to the JRSD Fund should be sent to Box 8873, Ottawa K1G 3J2.

COMING
SOON

multi-mode data controller



MFJ shatters the 6 mode barrier and the price barrier with the MFJ-1278 and gives you . . . Packet, RTTY, ASCII, CW, WEFAX, SSTV and Contest Memory Keyer . . . 7 digital modes

Amateur radio's newest multi-mode data controller -- the MFJ-1278 -- lets you join the fun on Packet, RTTY, ASCII, CW, Weather FAX, SSTV and gives you a full featured Contest Memory Keyer mode . . . you get 7 modes . . . for an affordable \$249.95.

Plus you get high performance HF/VHF CW modems, software selectable dual radio ports, precision tuning indicator, 32K RAM, AC power supply and more.

You'll find it the most user friendly of all multi-modes. It's menu driven for ease of use and command driven for speed.

A high resolution 20 LED tuning indicator lets you tune in signals fast in any mode. All you have to do is to center a single LED and you're precisely tuned in to within 10 Hz -- and it shows you which way to tune!

All you need to join the fun is an MFJ-1278, your rig and any computer with a serial port and terminal program.

You can use the MFJ Starter Pack to get on the air instantly. It includes computer interfacing cable, terminal software and friendly instructions . . . everything you need to get on the air fast Order MFJ-1282 (disk)/MFJ-1283 (tape) for the C-64/128 and VIC-20 or MFJ-1284 for the IBM or compatible.

Packet

Packet gives you the fastest and most reliable error-free communications of any amateur digital mode.

With MFJ's super clone of the industry standard -- the TAPR TNC-2 -- you get genuine TAPR software/hardware plus more -- not a "work-a-like" imitation.

Extensive tests published in Packet Radio Magazine ("HF Modem Performance Comparisons") prove the TAPR designed modem used in the MFJ-1278 gives better copy with proper DCD operation under all tested conditions than the other modems tested.

Hardware DCD gives you more QSOs because you get reliable carrier detection under busy, noisy or weak conditions.

A hardware HDLC gives you full duplex operation for satellite work or for use as a full duplex digipeater. And, it makes possible speeds in excess of 56K baud with a suitable external modem.

Good news for SYSOPs! New software lets the MFJ-1278 perform flawlessly as a WORLI/WA7MBL bulletin board TNC.

Baudot RTTY

You can copy all shifts and all standard speeds including 170, 425 and 800 Hz shifts and speeds from 45 to 300

baud. You can copy not only amateur RTTY but also press, weather and other exciting traffic.

A high performance modem lets you copy both mark and space for greatly improved copy under adverse conditions. It even tracks slightly drifting signals.

You can transmit both narrow and wide shifts. The wide shift is a standard 850 Hz shift with mark/space tones of 2125/2975 Hz. This lets you operate MARS and standard VHF FM RTTY.

You get both the American Western Union and the international CCITT character sets. Autostart for unattended reception and selectable "Diddle".

A receive Normal/Reverse software switch eliminates retuning and Unshift-On-Space reduces errors under poor receiving conditions.

ASCII

You can transmit and receive 7 bit ASCII using the same shifts and speeds as in the RTTY mode and using the same high performance modem. You also get Autostart and selectable "Diddle".

CW

You get a Super Morse Keyboard mode that lets you send perfect CW effortlessly from 5 to 99 WPM, including all prosigns -- it's tailor-made for traffic handlers.

A huge type ahead buffer lets you send smooth CW even if you "hunt and peck".

You can store entire QSOs in the message memories, if you wanted to! You can link and repeat any messages for automatic CQs and beaconing. Memories also work in RTTY and ASCII modes.

A tone Modulated CW mode turns your VHF FM rig into a CW transceiver for a new fun mode. It's perfect for transmitting code practice over VHF FM.

An AFSK CW mode lets you ID in CW. The CW receive mode lets you copy from 1 to 99 WPM. Even with sloppy fists you'll be surprised at the copy you'll get with its powerful built-in software.

You also get a random code generator that'll help you copy CW faster.

Weather FAX

You'll be fascinated as you watch WEFAX signals blossom into full

fledged weather maps on your printer. Other interesting FAX pictures can also be printed -- such as some news photographs from wire services.

Any Epson graphics compatible printer will print a wealth of interesting pictures and maps.

Automatic sync and stop lets you set it and leave it for no hassle printing.

You can save FAX pictures and WEFAX maps to disk if your terminal program lets you save ASCII files to disk.

Pictures and maps can be printed to screen in real time or from disk on IBM and compatibles with the MFJ-1284 Starter Pack.

You can transmit FAX pictures right off disk and have fun exchanging and collecting them.

Slow Scan TV

The MFJ-1278 introduces you to the exciting world of slow scan TV.

You'll not only enjoy receiving pictures from thousands of SSTVs all-over-the-world but you can send your own pictures to them, too.

You can print slow scan TV pictures on any Epson graphics compatible printer. If you have an IBM PC or compatible you can print to screen in near real time or from disk with the MFJ-1284 Starter Pack.

You can transmit slow scan pictures right off disk -- there's no need to set up lights and a camera for a casual contact.

You can save slow scan pictures on disk from over-the-air QSOs if your terminal program lets you save ASCII files.

The MFJ-1278 transmits and receives 8.5, 12, 24, and 36 second black and white format SSTV pictures using two levels.

Contest Memory Keyer

Nothing beats the quick response of a memory keyer during a heated contest.

You'll score valuable contest points by completing QSOs so fast you'll leave your competition behind. And you can snag rare DX by slipping in so quickly you'll catch everyone by surprise.

You get iambic operation with dot-dash memories, self-completing dots and dashes and jamproof spacing.

Message memories let you store contest RST, QTH, call, rig info -- everything you used to repeat over and over. You'll save precious time and work more QSOs.

You get automatic incrementing serial numbering. In a contest it can make the difference between winning and losing.

A weight control lets you penetrate QRM with a distinctive signal or lets your transmitter send perfect sounding CW.

More Features

Turn on your MFJ-1278 and it sets itself to match your computer baud rate. Select your operating mode and the correct modem is automatically selected.

Plus . . . printing in all modes, threshold control for varying band conditions, tune-up command, lithium battery backup, RS-232 and TTL level serial ports, watch dog timer, FSK and AFSK outputs, output level control, speaker jack for both radio ports, test and calibration software, Z-80 at 4.9 MHz, 32K EPROM, and socketed ICs. FCC approved. 9x1 1/2x9 1/2 inches. 12VDC or 110VAC.

Get yours today and join the fun crowd!

FOR YOUR NEAREST DEALER CALL

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Tiny, Tough, & Terrific

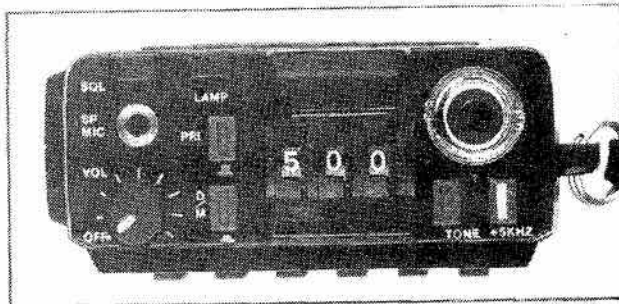
The new Alinco ALX-2T is far and away the best transceiver for the dollar and size conscious ham.

- **Tiny** = Actual size shown - with optional 160mAH battery
- **Tough** = 3+ watts output on high power - with standard 450mAH battery
- **Terrific** = One memory - settings on front panel

- Unit scans between thumbwheel | frequency and memory
- CTCSS Board Standard
- 12 button DTMF pad standard
- **Battery save circuit draws 8mA for extended battery life**
- .16uV sensitivity
- LED lights thumbwheel
- 140.18 to 149.995 MHz
- Easy operation
- 2-year factory warranty

Accessories available:

- 7.2v 160mAH Ni-Cd battery
- 7.2v 450mAH Ni-Cd battery
- 7.2v 700mAH Ni-Cd battery
- 9.6v 450mAH Ni-Cd battery (4+ watts output)
- Earphone/microphone
- Leatherette case set
- 117v A/C wall charger
- D/C/ D/C converter
- D/C charging stand
- RCA to BNC adapter



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You're face to face

Meet America's Newest, the Ten-Tec Paragon, Model 585

PARAGON HF TRANSCEIVER, Model 585

The Paragon Model 585 is a full featured, synthesized transceiver. General coverage all mode receiver tunes from 100 kHz to 29,999.99 MHz. Transmit at 100 watts output on all authorized frequencies from 1.8 to 29,999.99 MHz. SSB, CW, FSK and optional FM. Noise blanker and speech processor are standard equipment. Dual VFOs, RX offset, TX offset, QSK with a changeover time of less than 30 ms, five i-f filters (standard 6 kHz AM and 2.4 kHz SSB, optional 1.8 kHz, 500 Hz and 250 Hz) that are front panel selectable independent of mode, selectable tuning rates with automatic speed-up at rapid tuning knob rotation, passband tuning, audio bandpass filtering, tone control, squelch, notch filtering and more!

Sixty-two programmable memories that include frequency, mode, filter selected, channel number and a 7 character alpha-numeric tag for entering a net name, call sign or I.D. of your choice. As the memory channels are scanned, all of the information is displayed (what a light show!) and the receiver automatically sets up mode, filters, tag and frequency as stored in each channel. Channels scanned are totally controllable with global lock-out, global reset and individual lock-out and reset.

The construction is impressive too. All circuit boards are glass epoxy (G-10) and all of them can be removed without desoldering. The front panel is hinged to provide access to all sections of the chassis. All aluminum construction keeps the weight of the rig reasonable too. And of course, the front panel is a spacious arrangement which makes the critical controls easy to use.

Frequency selection can be made using the main tuning knob, keypad direct entry or up/down buttons that can shift one MHz or to the next ham band. Frequency readout is selectable to display to 100 Hz or 10 Hz. Front panel clock is in 24 hour format. Rear panel input and output provisions keep the all-mode operator in mind too. Fixed level audio out and FSK keying (170 Hz shift), auxiliary dc jack, amplifier control circuits plus all the other connections that you could possibly need, including RS-232 computer interface option.

The Paragon is the end result of a three year engineering effort. Much of that effort was invested in improving the receiver performance and controlling the phase noise inherent in a PLL oscillator. We are proud of the performance of the Paragon and we think it has set new standards of excellence in synthesized rigs. All we ask is that you take the time to check it out. We think that you will share our pride in the Paragon.

GENERAL SPECIFICATIONS

Frequency Range: Receive: 100 kHz to 29,999.99 MHz. Transmit: 1.8 to 29,999.99 MHz.
Frequency Control and Readout: Microprocessor controlled digital PLL synthesizer, 10 Hz resolution.
Frequency Stability: Worst case, 1 PPM per degree C. at 29,999 MHz.
Frequency Accuracy: ± 100 Hz @ 25 degrees C.
Tuning Rate:

| | Normal | Normal Shifted |
|----------------|---------------------------|----------------------------|
| CW/USB/LSB/FSK | 10 Hz 4.8 kHz per turn | 20 Hz 9.6 kHz per turn |
| AM/FM | 50 Hz 24 kHz per turn | 100 Hz 48 kHz per turn |
| | Fast | Fast Shifted |
| CW/USB/LSB/FSK | 20 Hz 9.6 kHz per turn | 50 Hz 24 kHz per turn |
| AM/FM | 100 Hz 48 kHz per turn | 500 Hz 240 kHz per turn |

Antenna Impedance: 50 ohm unbalanced
PC Boards: 14 double-sided, 9 single-sided 062" glass-epoxy
Power Required: Receive = 1.5A Transmit = 20A 12-14 VDC
Dimensions: HWD 5 1/4" x 14 3/4" x 14 1/4" 13 x 37 x 36 cm
Net Weight: 16 lbs 7.25 kg

...America's Best Kept Secret!

TEN-TEC



with the Paragon.

Shown actual size.

MADE IN USA

TRANSMITTER

Modes: USB & LSB (J3E), CW (A1A), FSK (F1A); FM (F3E) optional (Model 256).

DC Power Input: Typical 200 watts.

RF Power Output: ALC stabilized, adjustable, 10 to 100 watts (into 50 ohms) with front panel RF-OUT control.

Microphone Input: Low impedance, bias voltage for electret provided.

CW Sidetone: Internally generated, adjustable tone and volume independent of AF GAIN control.

SSB Generation: 9 MHz, 8-pole crystal ladder filter. Balanced modulator.

Carrier Suppression: Greater than 60 dB.

Unwanted Sideband Suppression: Greater than 60 dB at 1.5 kHz AF input.

Harmonic Emissions: Greater than 45 dB below peak power output.

Spurious Output: Greater than 50 dB below peak power output.

Third Order Intermod Products: -30 dB from two-tone at 100 watts PEP.

Metering: Switchable forward power, SWR, collector current or audio processing level on SSB.

CW Offset: 750 Hz automatic.

FSK Shift: 170 Hz.

Transmit Offset Tuning Range: ± 99.9 kHz

RECEIVER

Modes: USB, LSB, CW, FSK, AM, (FM optional)

Sensitivity:

| | 1 - 1.6 MHz | 1.6 - 29.999 MHz |
|-------------|-------------|------------------|
| SSB/CW/RTTY | 5 uV | 15 uV |
| AM | 3.5 uV | 1.0 uV |
| FM | 1.0 uV | 3 uV |

10 db S/N @ 2.4 kHz
10 db S/N @ 6.0 kHz
12 db SINAD @ 15 kHz

Selectivity:

| | -6 dB BW | -40 dB BW | Shape Factor |
|------------------------------|----------|-----------|--------------|
| Standard AM | 6.0 kHz | 11.25 kHz | 1.875:1 |
| Standard SSB | 2.4 kHz | 3.36 kHz | 1.87:1 |
| Opt. 1.8 kHz SSB (Model 258) | 1.8 kHz | 2.9 kHz | 1.60:1 |
| Opt. 500 Hz CW (Model 265) | 500 Hz | 1.4 kHz | 2.80:1 |
| Opt. 250 Hz CW (Model 262) | 250 Hz | 85 kHz | 3.40:1 |
| Standard FM | 15 kHz | 30 kHz | 2.00:1 |

Attenuator: -20 dB for 1.6 to 29.999 MHz, -10 dB for 1 to 1.6 MHz.

I-F Frequencies: 1st = 75 MHz, 2nd = 9.0 MHz, 3rd = 6.3 MHz (FM 3rd = 455 kHz)

Image Rejection: Greater than 80 dB.

I-F Rejection: Greater than 70 dB.

Noise Blanker: Switchable on/off with adjustable width.

Dynamic Range: 100 dB.

Blocking Dynamic Range: +16 dBm for 1 dB compression of an S3 signal, frequency offset = 50 kHz, -2 dBm for 1 dB

compression of an S3 signal, frequency offset = 50 kHz.

Third Order Intercept: +18 dBm.

Noise Floor: -132 dBm @ 2.4 kHz BW.

Squelch Sensitivity: Less than 6 uV.

Receiver Recovery Time: Less than 27 ms.

Receiver Offset Tuning Range: ± 99.9 kHz.

Pass Band Tuning I-F Shift: ± 1.2 kHz.

Audio Output: 1.5 watts @ 8 ohms, 5% distortion max.

Notch Filter: 250 Hz to 2.2 kHz, greater than 50 dB notch depth.

Audio Bandpass Filter: 4 pole, variable center frequency

220 to 1.7 kHz, 35% bandwidth @

-6 dB

Tone Control: Variable 15 dB rolloff @ 5 kHz

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AMERITRON

HF Linear Amplifiers

Designed and built to give reliable long-life performance. All four models cover 160 through 15 meters.

AL-84 with 4 6MJ6 tubes - 600 watts PEP output.

AL-80A with 3-500Z tube - 1000 watts PEP output.

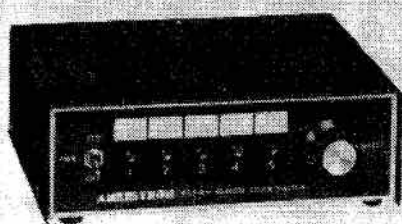
AL-1200 with 3CX-1200A7 tube - full legal output with 100 watts drive.

AL-1500 with 8877 tube - full legal output with 65 watts drive.

RCS-4 FOR CONVENIENT INSTALLATION

No control cable required.
Selects one of four antennas.
VSWR: under 1:1 to 1 from 1.8 to 30 MHz.
Impedance: 50 ohms.
Power capability: 1500 watts average, 2500 watts PEP maximum.

Remote COAX Switches



RCS-8V FOR SPECIAL APPLICATIONS

Selects up to five antennas.
Loss at 150 MHz: less than .1 dB.
VSWR: under 1.2 to 1 DC to 250 MHz.
Impedance: 50 ohms.
Power capability: 5 kW below 30 MHz, 1 kW at 150 MHz.

GREAT PRODUCTS BY



HEARING IS BELIEVING



The Key Element

SSB clarity starts at the microphone...

If you are not satisfied with the "sound of your station" - it's no wonder-most "communication" mics you use were designed for industrial paging or p.a., not for the sophisticated SSB techniques. The HC-3, 4 and 5 response gives maximum articulation for getting through DX pile-ups and has set the new standard for all.

You can easily install this small, advanced Heil element into your present old mic.

**CONTESTER
SPECIAL
SUB. MIN.
SMALL MIKES**

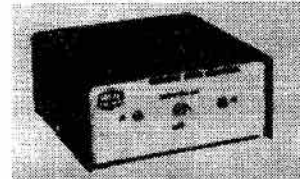
You've earned your Ham ticket. Now What?

The new Heil Ham Radio Handbook was written by the 1982 Radio Amateur of the Year-Bob Heil, K9EJD. Bob heads his own electronic manufacturing company and is respected world-wide for his sound systems, microphones and equalizers.

Bob's new book fills the gap that often makes the difference between aiming there watching the dial lights and actually making contacts that are the real joy of amateur radio.



REMOTE BASE INTERTIE



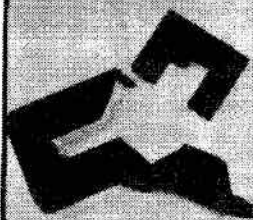
MODEL RB-1

The RB-1 allows the easy interconnection of two transceivers for the purpose of remote base operation. For instance, a 220 or 450 MHz rig can be inserted to control a fixed station connected to regular 1/2 gain yagi or dipole antennas. This provides tremendous coverage from a UHF portable or mobile. By utilizing the touch circuits of the new TS 430, IC-730, etc., the RB-1 allows the HF bands to be worked with the intended UHF portable.

Since there are actually two carrier operated relay systems in the RB-1, it can also be used as a simple, but effective repeater control.

SNAP ON CHOKE-EASY AS

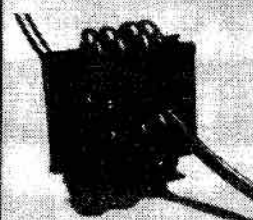
ONE...



TWO...



THREE...



ELIMINATES RADIO FREQUENCY INTERFERENCE

AFFECTING:

- TELEVISIONS
- RADIOS & STEREO SYSTEMS
- PA SYSTEMS
- TELEPHONES
- VIDEO RECORDERS
- TEST EQUIPMENT
- BURGLAR & FIRE ALARM
- MODEMS
- MONITORS
- AND OTHER ELECTRONIC DEVICES

DUE TO:

- DOMESTIC APPLIANCES
- RADIO TRANSISTORS (COMMERCIAL HANDIRADIO, CB)
- INDUSTRIAL MACHINERY
- COORDLESS TELEPHONES
- SWITCHING SYSTEMS
- COMPUTERS

DOES NOT VOID EQUIPMENT WARRANTY

PACKAGE OF 3

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SALES CANADA, INC.

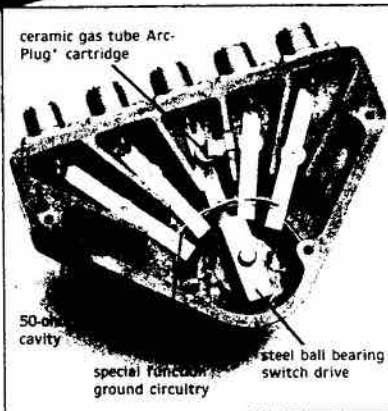
Alpha Delta Model DELTA-4 Lightning Surge Protected 4-Position RF Coax Switch



and equipment
protection for amateur,
military and government
communications stations.

- Exclusive center "off" (ground) position internally disconnects and grounds all antenna circuits for maximum protection when operator is away from the station — an Alpha Delta first!
- Incorporates the famous replaceable Arc-Plug[®] cartridge for continuous protection of the active antenna circuit. Unused antenna circuits are automatically grounded — an Alpha Delta first!
- The Model DELTA-4 Switch features a custom designed cast housing with constant impedance micro-strip cavity construction for outstanding performance through UHF. No lossy wafer switches are used.
- Positive detent ball bearing switch drive tells you which position you're in . . . without guessing . . . without looking.
- DELTA-4 handles full legal power.
- Designed and produced in the U.S.A. by Alpha Delta.

ceramic gas tube Arc-Plug[®] cartridge



Model DELTA-4 (UHF connectors, 500 MHz)
Model DELTA-4/N (N-type connectors, 1.3 GHz)

High Performance Antennas...

THE SOLUTION TO
160-80-40 METER
OPERATION IN SMALL
AREAS!

Model DX-DD shown

- No-trap design. Unlike trap antennas, there are no capacitors to break down under high RF voltages, and a tuner may be safely used for multi-band operation if desired.
- Direct 50 ohm feed. Tuners usually not required when operating in resonant bands.
- Full power operation.
- Uses "ISO-RES" inductors.
- Stainless steel hardware.
- Fully assembled.

Model DX-A 160-80-40 Meter Quarter Wave Twin Sloper —

- The premier low frequency DX antenna.
- Combines the tremendous DX firepower of the quarter wave sloper with the wide bandwidth of the half wave dipole.
- One leg is 67', the other 55'. Installs like an inverted-V. Ground return through tower or down-lead.

Model DX-DD "Delta Dipole" 80-40 Meter Electrical Half Wave Dipole —

- Also covers 80-10 meters with a wide range tuner.
 - Only 82' overall length
- Model DX-SWL Commercial shortwave band sloper —
- Provides world-class reception on AM broadcasts, tropical bands and 60 thru 13 meters.
 - Only 60' overall length

ALPHA DELTA COMMUNICATIONS, INC. AA



It's not a
Secret Anymore!

The New Pro-Am Designer Series

- State of the Art designs
- Full line of amateur, two-way - commercial - cellular Antennas & Accessories
- 100% American made . . . because it matters!
- The best kept secret, just got better

Here are just a
couple models

DUAL BANDER

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IPARN

Canada's growing Full Duplex Trunk Network

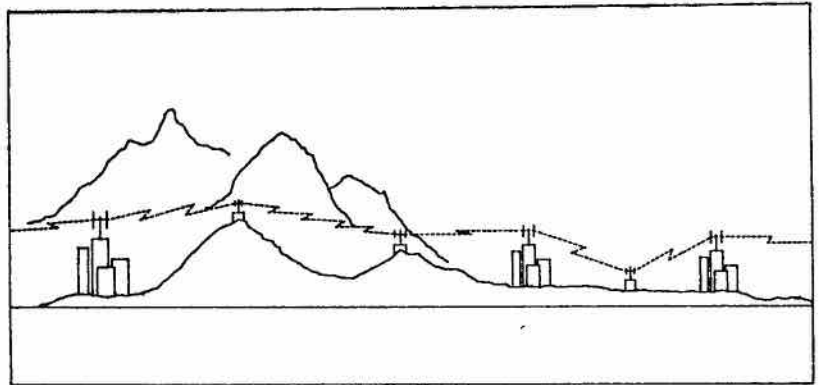
Part 1— A system overview of a VHF/UHF network which is being built across the east. Part 2 will present a detailed system operation for the serious builder.

BY J.F. HOPWOOD
VE7AHB

The use of the VHF/UHF Amateur bands for reliable long haul communications has been the dream and goal of many Hams for several decades. Since World War II, commercial telecommunications has developed elaborate UHF and Microwave radio networks to meet the growing demand for voice and data channels in every part of the globe. Developers were motivated by the opportunities for profit and growth and the excitement of a never ending application of new technologies which made it all possible. Amateurs employed in these organizations used the freedom to experiment that they enjoyed on the Ham bands to make significant contributions in the development and expansion of VHF/UHF communicating.

As surplus commercial VHF/UHF radio equipment became more readily available, radio Amateurs modified, constructed and installed local FM repeaters to simplify operating and extend the range of communicating in and around towns and cities. It was only a matter of time before the more enterprising in the Amateur fraternity would plan and develop a radio network which could connect the repeaters in the towns and cities across a province and even across the country. Bill Blake VE7CQ is a veteran VHF/UHF experimenter/builder who, along with Don Auld VE7FKX, is doing just that!

Bill is more than an innovative builder. He has a vision. His plan is based on extensive knowledge of his subject, a hard-headed practical approach and the will to make it happen! His friendly and courteous manner belies a personal discipline



and single-minded determination to encourage interested Amateurs to follow his lead in the design and application of a VHF/UHF Amateur Radio Network which will be superior to any operating today. He stresses the importance of 'commitment' as the necessary key to the effective expansion and future operation of the network by those who would undertake to follow Bill's standards and plan.

THE FULL DUPLEX TRUNK

The Interprovincial Amateur Radio Network (IPARN) is comprised of a number of VHF repeaters interconnected by a continuous, unbroken duplex UHF trunk (Fig. 1). The trunk is somewhat similar to the layout of a divided superhighway with traffic flowing unimpeded in each direction, yet capable of allowing easy entry and exit at sites along the way. The trunk consists of bidirectional paths of UHF radios in which signals travelling in an east-west direction are completely divorced or separated from signals flowing in the opposite

west-east direction. Similarly, north-south signals travel over separate radio paths from those of south to north. This design ensures consistent full duplex operation. Signals originating at one end of the trunk will never turn around and reflect back to the source causing unwanted system degradation. The full duplex trunk is the key to the network's superior design and flexibility.

This design has significant advantages over the familiar method of cascading or hubbing VHF repeaters (Fig. 2 & 3). The UHF duplex trunk design allows a user to dial onto the trunk at a local repeater and exit to a destination repeater without bringing intermediate repeaters on-line. Since it is a full-duplex configuration and the hub system is basically a simplex interface, the trunk offers superior control of the network as a whole. It also eliminates network down-time caused by linked repeaters which sometimes lock-on and virtually disable the cascade and hub type systems.

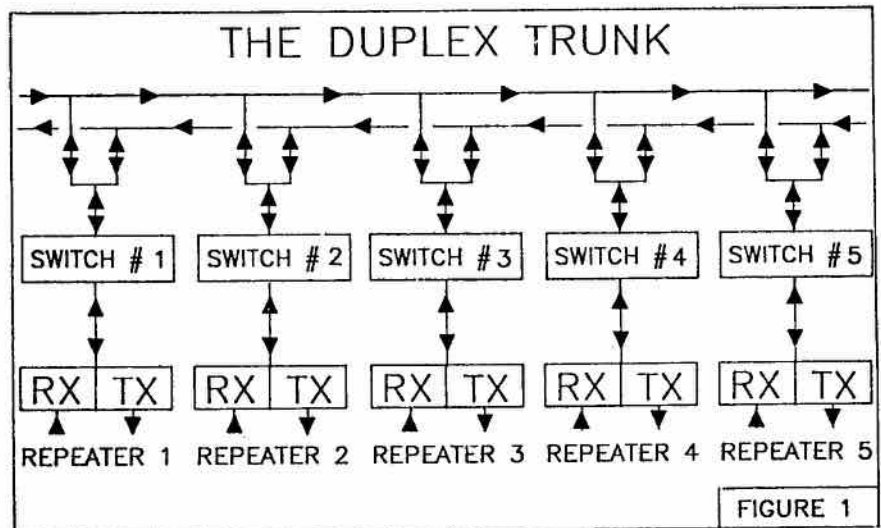


FIGURE 1

USER FRIENDLY SYSTEM AND CONTROL

The full duplex trunk/drop repeater network is 'user friendly'. When correctly implemented, there are only two standard VHF drop frequencies to remember. In British Columbia 147.060 MHz is the primary frequency, and where overlapping or a previous frequency assignment conflicts, 146.660 MHz is used. Users do not have to memorize the particular frequency of a drop repeater for each town or city enroute. This ensures radio frequency spectrum usage is minimal and that overlapping coverage can be achieved without conflict. A leap-frog series of UHF Trunk Channels use the same principle, but because of their point-to-point character, four pairs of UHF channels are co-ordinated for use. Only two control codes are required regardless of the distance between the user's repeater to the full-duplex trunk and the second code connects the destination repeater to the trunk. The control codes are called 'drop codes'.

Partitioning or fragmenting sections of the trunk by code command is never allowed. This guarantees the end-to-end continuity

along the network at all times and eliminates the usual complex series of 'linking' codes which are difficult to remember and cumbersome to use. It also ensures that no one area or segment of the overall trunk can isolate another from gaining the full benefit of the overall system. There is however, more to the success of this design than just the application of the full-duplex trunk with its drop repeaters enroute.

STANDARDS ARE A MUST!

The operational simplicity of the concept is ensured through the discipline of standards. This discipline includes UHF/VHF frequency assignment allocations, co-ordinated use of DTMF (Dual Tone Multiple Frequency) signalling codes, FM deviation and audio frequency response, the application of Transmitter/Receiver spares, plus the correct use of CW identification response confirmations. There is standard method of applying timers throughout the system to avoid inadvertent time-outs in different parts of the system.

These basic standards are the essential ingredients in the fundamental design of the IPARN system. Amateurs wishing to adopt

and participate in the extension of IPARN must be "fully committed to the principles of design and operation" insists Bill Blake VE7CQ, the designer and builder. Bill is the overall IPARN co-ordinator. The Alberta IPARN co-ordinator is Mike Foreman VEGAMC, and in Saskatchewan it is Ken Nyeste VESNR. Bill also assisted some Amateurs in Washington state with their adoption of IPARN. Unfortunately, they did not adhere to the network design principles and use a segmented 'links and legs' version which destroys desirable network continuity and coding simplicity. Bill co-ordinates frequency and code assignments and keeps a complete set of computer records to ensure the standards are adhered to, thereby guaranteeing the benefits of the 'network' are realized.

DROP CODES

A VHF drop repeater is connected to or disconnected from the UHF duplex trunk by means of a DTMF operated switch called a Drop Enable Switch (DES). It is operated by the transmission of a DTMF 'drop-code': one 'on-code' and one 'off-code' for each repeater. The codes are four digits long. The first digit designates the

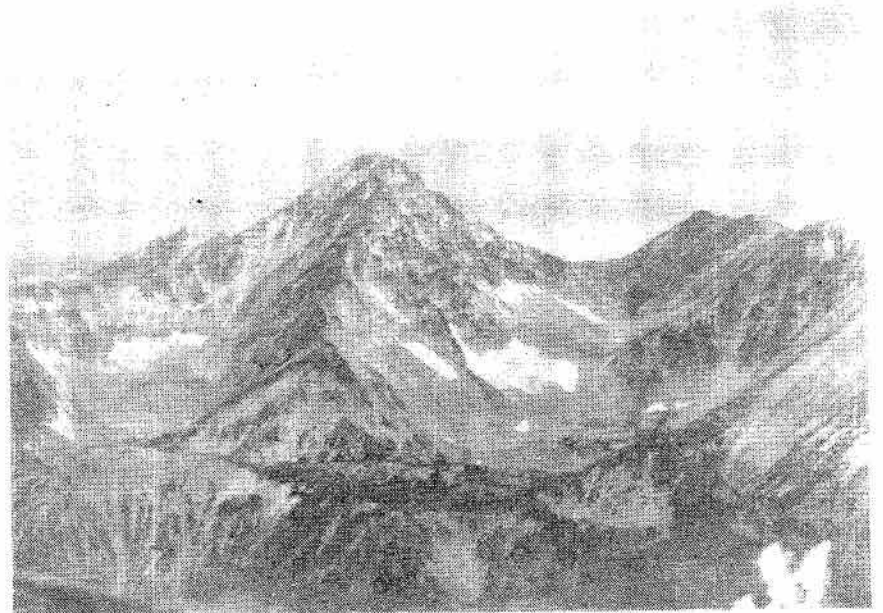
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Left: Al Lindstrom VE7AZQ works on IPARN site antenna high above B.C.'s Fraser Canyon.

View of Rugged B.C. terrain from VE7HGR IPARN site at the 7,000 foot level.



Photos: VE7CQ



British Columbia & Yukon

Province. For example, all drop repeaters in B.C. (VE7) are assigned drop-codes beginning with a 7, Alberta drop-codes begin with 6 and Saskatchewan 5, and so on! The second and third digits are the particular on-off codes assigned by the IPARN network co-ordinator. The on-code is always an even number and the off-code is an odd number. The last digit is always * (star). Hence

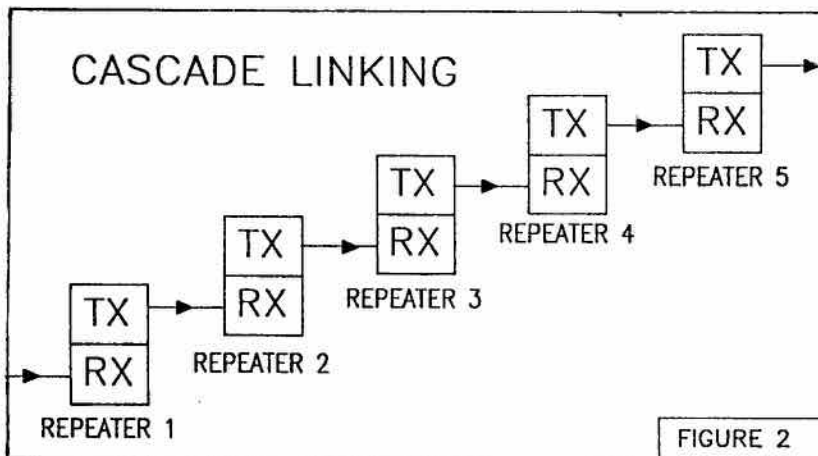
the codes for Vancouver's network drop repeater VE7FVR are:
ON-CODE: 700* connects VE7FVR to the network trunk.
OFF-CODE: 701* disconnects VE7FVR from the network trunk.

IPARN's system of co-ordination allows for 300 drop repeaters per Province, 600 secret control codes per repeater (with room for expansion!), and up to 1800 codes for public use.

The completed groundwork which produced these codes per repeater can be applied anywhere in Canada. The use of DTMF codes throughout the network will be covered in more detail in a future article in this series in *The Canadian Amateur*.

THE NETWORK AUDIO PATH

The transmission of the audio signal through the interconnecting radios at each site **MUST** be maintained at **UNITY GAIN** for both directions of the trunk. The maximum FM deviation allowed for the trunk's transmitters is plus or minus 5 kHz. Unity gain ensures that if 3 kHz of deviation is received, then **EXACTLY** 3 kHz must be passed on to the next site. Sites which permit greater or less than unity gain will degrade system performance. The effect is additive and can result in audio distortion, low audio level or poor signal-to-noise ratio over the network and possible loss of control. The correct use of pre-emphasis and de-emphasis is essential.



UHF TRUNK RADIO FREQUENCIES

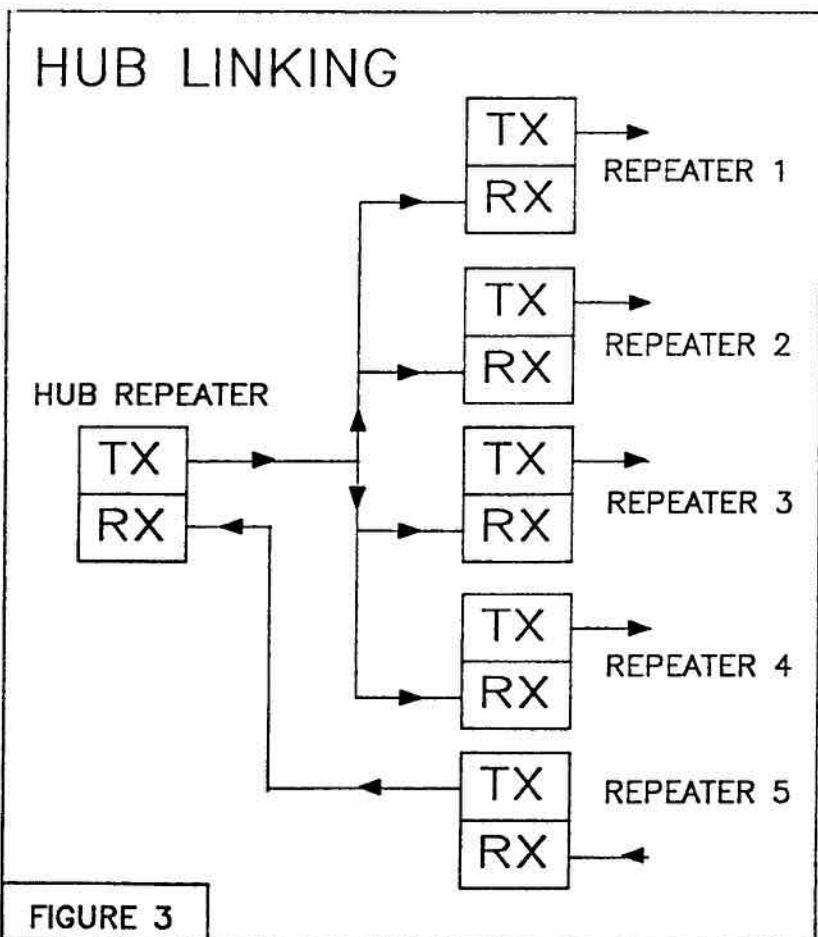
Four UHF channel pairs with 5 MHz off-sets are allocated and assigned. The standard duplex trunk frequencies are 447.725 MHz and 447.700 MHz. If these allocations are inadequate or unsuitable, other channels are assigned. These UHF assignments are compatible with the standard VHF drop repeater frequency assignments. Intermodulation (IMD) components are all but eliminated. These points must be considered if a different mix of frequency assignments are used for Canadian repeaters.

IDENTIFIERS AND COURTESY TONES

The station licence demands the use of the call sign identifier. This identifier is **ONLY** triggered by the Carrier Operated Switch (COS) at the VHF receiver. COS activity on the trunk must not cause the repeater to identify.

Additionally, routine identification of the repeater should not be heard over the trunk. One can imagine the result if 15 repeaters were identifying over the trunk at the same time!

The only time that a station identification is heard over the trunk is when a drop repeater is connected or disconnected from the trunk. This confirms that the code was received and the VHF repeater is activated. When the on or off code is received (regardless of the current state of the



drop-enable switch), the selected site must respond by sending its call sign on both the VHF repeater and back to the user over the trunk.

Courtesy tones (beeps) that often appear on a VHF drop repeater should not be used over the trunk. This is to prevent the network sounding like an arcade. The only exception would be in a case where the tones are part of a user-accessed function. The tones provide meaningful responses for the user and does not limit the 'personality' of the repeater.

TELEPHONE ACCESS (Including Autopatch)

IPARN is not another Canadian long-distance telephone network for radio Amateurs. It should be clearly understood that such a practice is detrimental to the network. We have an obligation to commercial communications, which often allow us to use strategic sites, not to compete with the licensed services. We also wish to avoid tying the network up with telephone traffic. IPARN is not a nation-wide telephone booth.

This policy does not restrict the local use of an autopatch on the drop repeater. Local system designers may also wish to provide access from the trunk to the local repeater for emergency traffic. Such an arrangement is in use throughout south-western British Columbia. Bill VE7CQ would be pleased to pass along the method currently in use here.

DROP-OUT DELAY TIME

The UHF trunk transmitters have no drop-out delay timers. As a result no accumulative delay is apparent on the trunk transmitters.

TIMERS

Ultimately, it would be good design to have timers on all transmitters and receivers at every IPARN site. However, the minimum requirement is to time the VHF receiver in such a manner that it will not cause the duplex trunk transmitters at any site to time out. A suggested drop receiver

MEMORIES OF 40 SQUADRON

Due to the appearance of our special B.C. and Yukon section, the conclusion of VE3NB's *Memories of 40 Squadron* will be found in the April issue of *The Canadian Amateur*. Sorry to keep you in suspense.

Send letters to Box 356, Kingston, Ont. K7L 4W2.

timer period would be 5 minutes for receivers and 15 minutes for transmitters. This avoids inadvertently timing out portions of the network.

SQUELCH CIRCUIT RECOVERY TIME

Every effort should be made to minimize the squelch circuit recovery time on all trunk receivers. The accumulated effects of squelch tails is thereby reduced to a tolerable level.

DATA

Data, in the form of Packet on other forms, is permissible on the trunk. Care should be taken not to monopolize the system for the operation of data transmissions. Adequate voice identification should be used during these periods.

SOLAR SITES

Solar sites are to be avoided unless the power system duty cycle can handle the full traffic load of the trunk 24 hours a day. In this manner the solar site does not become a restrictive factor in reliable stable network operation.

SITE OUTAGES

In the event that a site outage will cause loss of one or both sides, of a duplex trunk, the adjacent sites and the IPARN co-ordinator should be advised.

IPARN DEVELOPMENTAL PHASES

The first phase is to co-ordinate the VHF drop repeater on to the network channel. The second phase is to connect the VHF repeater to duplex trunk. The third phase is to extend the duplex trunk to the next co-ordinated IPARN station.

ADDITIONS TO THE IPARN SYSTEM

Additions to the IPARN network system are encouraged provided the parties so inclined are 'committed' to the principles and standards outlined above. IPARN is not interested in spontaneous uncoordinated additions to the system. The goal is to make the operation of the system a pleasant, useful and reliable event of users across the land. This can only be achieved through intelligent planning and execution by motivated groups who are committed to its success.

Because of the size and potential growth of this network, Bill Blake VE7CQ, the system designer/builder co-ordinator, is ready to pass along relevant information concerning site operations and network features for Amateurs who are seriously interested in extending the network in their local area. While the initial thrust has taken root in Canada's western province and lately in the Pacific Northwest region of the United States, IPARN's proven quality network features are attracting support from far and wide. Information can be obtained by writing to IPARN, 3586 Monmouth Avenue, Vancouver, B.C. V5R 5S2. Send along an SASE or IRCs to defray return postage expenses.

MORE TO COME

This is the first of a series of articles about IPARN. Bill Blake VE7CQ will present Part 2: System Operation, and Part 3: Trunk/Repeater Interface. Periodic updated information will follow in future issues of *The Canadian Amateur*. ■

Announcing the CARF 1988 Membership Drive

From March 15, 1988 to May 15, 1988, the following policy will be in effect:

REGISTERED Affiliate Clubs will be eligible for a 20% rebate on every new CARF member recruited through club facilities! (limited to 1 year memberships)

Have prospective NEW CARF members fill out a copy of the application found at the back of *The Canadian Amateur*. Collect the FULL membership fee and send all applications along with a cheque for the total amount to: CARF, Box 356, Kingston, Ont. K7L 4W2.

LIMITATIONS

- A NEW member has not been a CARF member since March 15, 1986.
- \$1.00 rebate for each RENEWAL submitted during promotion.
- Renewals will be appended to existing membership expiry dates.
- Rebates paid to REGISTERED Affiliate Clubs only.

If your club is not already a CARF affiliate, why not become one? Affiliation is a free service providing regular news bulletins, reduced rates on study guides and other specials.

Further information is available through the CARF office in Kingston.

VE7 F-Farmer B-Brown

B.C.'s Veteran Gentleman of Amateur Radio

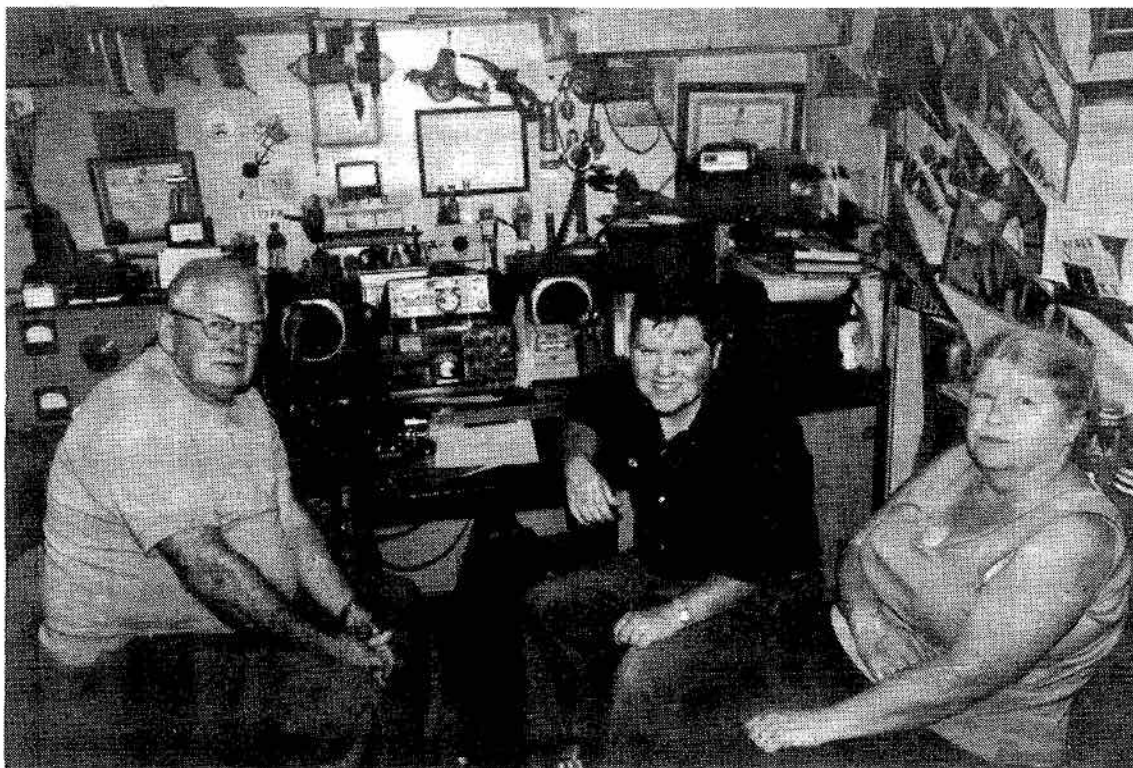


Photo: VE7AHB

Veteran Ernie Savage VE7FB, son James and XYL VE7SH.

BY I.F. HOPWOOD
VE7AHB

One of the aspects of Amateur radio which attracted me to the hobby in the late 1940s was the character and style of the people I monitored and met while working toward my first licence. Among the B.C. hams I admired was Ernie Savage VE7FB. Ernie's life and Amateur radio career is a story of service and commitment which we in VE7-land wish to share with all Canadian Amateurs.

Ernie's interest in 'wireless' started about 1934 when he spent many hours with Charlie VE5LQ, Bill VE5OM and Cy VE5ACW (pre World War II, VE7 was VE5 land). At the Vancouver Point Grey Provincial Police wireless station all communication was on CW. The radio operators at the station helped Ernie out with theory and CW for some time, but finally, in early August 1936, they informed him that he was 'out' unless he obtained his Amateur licence.

On Aug. 15, 1936 Ernie received his call sign VE5FB and by that evening he had a small ECO ('electronic coupled oscillator', for you youngsters) running 10 watts trying to break a QSO between Bill and Charlie. They were so elated that they arrived on his doorstep with a box of tubes and parts to build a rig. "How did you know it was me?" asked a surprised Ernie. "You're the only one around here who sends a 5 for an H," retorted Charlie. In the years that followed until WW II began, Ernie built and experimented with many rigs and antennas.

A call from the Radio Inspector in September 1939 to cease 'transmitting' ushered in a new career for Ernie with the Royal Canadian Corps of Signals. By early 1940 he was in Britain and by 1945 he had been with the Canadian army in Sicily, Italy and Northwest Europe. His official army service might have ended with 'The Canadian Decoration' in 1945, but

not so! VE7FB continued to serve his country back home in the corps militia as a WO2 and later, as a prominent Amateur in civil defence activities. His life is marked by extraordinary leadership qualities which have played a prominent role in the promotion and stability of Amateur radio in the region.

Ernie has the unique honour of being the longest continuous serving Section Manager in the history of the ARRL. His 26 years in that position are not only a tribute to the esteem and trust he receives from this Province's Amateurs, but also an extraordinary example of commitment to Amateur Radio's organizational needs. He is a positive man of conviction, not only blessed with a maturity born of a solid wisdom of background and experience but, above all, prudence and gentleness.

No doubt Edna VE7SH, could tell you more. She became his bride in 1958 after an unusual courtship via

80 metre CW. "Talking to each other at 20 wpm during the late night hours was okay for awhile. Ernie lived in Vancouver and I was in Nanaimo. He came home from work late and I had to get up early each day. He finally popped the question when I told him I was tired of sitting up after midnight," chuckled Edna. Son James echoes their catching humour, enthusiasm and love for radio. James restores old radios from the '30s and '40s era and is ever searching for old original tubes to make the sets operational.

The veteran gentleman of Amateur radio has made many friends in over 51 years in the hobby and the memories are enshrined in awards and mementos too numerous to mention. Ernie actively supported many Amateur radio organizations around B.C. He is a founding member of the Vancouver ARC, serving in many executive positions. For that, the influential club has awarded him 'Honourary Life Member' status. Ernie also served on the British Columbia Amateur Radio Association executive and was a major contributor to the success of the Provincial organization. Edna and Ernie are active in the Dogwood Chapter of the Quarter Century Wireless Club and have played key roles on the executive to further the growth of that popular organization on the west coast.

VE7FB's shack has been in the same room in the same house since 1935. While CW was, and still is, his first love, Ernie still finds time to experiment with antennas and to monitor various HF and VHF Nets. He, Edna and James enjoy travelling around in their modern van and trailer, well equipped with HF and VHF gear for emergency community service. Ever since the disastrous 1948 Fraser Valley Flood, where Ernie shared his shack with other Amateurs to handle traffic for 24 hours a day over a period of two weeks he has spent countless hours in support of Amateur radio preparedness and service to the community.

We salute Ernie Savage VE7 F-Farmer, B-Brown (as he announces his station) and his gracious lady, Edna VE7SH. As with many other experienced Canadian Amateurs who have set the standards and climate of Ham radio in Canada over the years, Ernie's personal qualities of maturity, loyalty, dedication, leadership and community service have served us well. Needless to say, we in B.C. are honoured by and proud of VE7FB.

Images of Lotus Land



Above: CARF Ontario Director Dan Holmes VE3EBI gives Hoppy Hopwood VE7AHB a hand with the CARF booth at the 1987 Vancouver Island Ham Happening at Parksville, B.C.

Right: Vic Lake VE7LAW retired Vancouver police superintendent and active Gizeh Amateur radio communications member, chats with Ken McMillan VE7NC of Mount Fairweather DXpedition fame (circa 1950s).



Below: Bill Blake VE7CQ describes the virtues of the IPARN to a crowd of interested hams using a makeshift black-board stand at the Okanagan Hamfest.



Hamming and Hauling



Hal VE7AEI working 2 metres from the cab.

**BY J.F. HOPWOOD
VE7AHB**

How would you like to enjoy your job and your hobby, both at the same time? Anyone who works the 2 metre repeaters and the sprouting VHF/UHF linking systems around B.C. knows Hal Garvie VE7AEI of Richmond B.C. Hal's the friendly trucker who can show up any time, any place, and join your QSO as he winds his way down the road. His 31 years of hauling are full of memories of hundreds of friends and every mile of some of the most rugged and scenic roads in the world. He is a true professional, not only as a driver with an enviable record, but as a first class radio Amateur.

Hal was born in Viking, Alta. in 1933, but spent most of his growing-up years in Kelowna, B.C. where he developed an early fascination for radio. Always a man who likes being

on the move, he joined the Royal Canadian Navy in 1950 and became a wireless operator. The Korean War was in progress and most navy radiomen were assigned to shore stations. Hal got on board the HMCS Ontario as a quartermaster to ensure he got to sea and to Korea. He saw much of the world and enjoyed assignments on shore at HMCS Cornwallis and HMCS Naden. When his five year stint was up in 1955, he decided that trucking is the life for a man who loves to be free and on the move.

Fulfilling his dream of many years, he obtained his Ham licence in 1974. Hal's home station, just a few yards off the main Vancouver International Airport runway, includes an FT-101B and a Wilson System 40, 10 element tri-bander on top of a 48 foot Delhi tower. The 'Hot' antenna is to offset using a linear. It is so good, he relates,

that he has been accused of working non-existent DX as listeners couldn't hear the DX. When 10 metres was open a few years ago, Hal acted as the western anchor for the Trans-Canada 10 metre net.

He travels with a Yaesu 757 HF and a Kenwood 80 watt TM-2570 two-metre rig in his large cab over 475 HP Kenworth K-100 Aerodyne tractor. Hauling trailer loads 20 tonnes and over 500 miles a day is normal for Hal who often takes XYL Pennie along to share the driving. Pennie holds a Class 1 trucker driver licence. The air-conditioned cab-over-tractor contains comfortable, well-appointed upper and lower sleeper bunks which Hal frequently uses as he will not drive if he is the least bit tired.

I travelled with Hal from Vancouver to Prince George and back in late July. His rig scanned the two metre band and locked on each active repeater as

we moved along. A call on 146.52 simplex near Boston Bar in the Fraser Canyon alerted VE7JV's XYL Gail, who in turn alerted Bill, her RCMP OM, so that we could meet for supper at the favourite truck stop. After a lively discussion about reflecting radio signals in the depths of the canyon, we moved up the road to Cache Creek where Hal had a QSO with Al VE6AGM from Three Hills, Alberta who was in Kamloops using the 146.96 (VE7RLO) Mount Lolo repeater. This scene repeated itself many times over the next few days as we talked to Hal's friends sprinkled in the towns and out in the open spaces of B.C.

Hal has helped in many highway emergencies over the years including pulling a driver out of a burning car just before it exploded. He used his rig six times in one month to bring police and ambulance to the aid of accident victims on the treacherous winding Hope-Princeton highway. He seems to be constantly on the road arriving in Vancouver with one delivery and then hooking up and heading out in an hour or two on his way again to Kelowna, Kamloops, Seattle or Portland.

His secret stamina comes from the wisdom of many years. He follows his body rhythm and pulls over to sleep at the first sign of a yawn and stops to eat when he is hungry regardless of where he is. He is a cautious, professional driver, never exceeding the speed limit, courteous to other drivers regardless of how heavy the traffic or how provocative the circumstance. He keeps in touch with his fellow truckers with a CB rig, learning about road conditions, accidents and the latest exchange of news of families and friends. Hal is critical of hams who mock CBers and calls it a brand of elitism ham radio could well do without!

VE7AEI's personableness and friendliness is well-known and appreciated. He knows every active Ham on two metres and is in-tune with hamdom happenings in every area of the province. Both a CARF Life Member and CRRL Member, he is strong on a merger for the two

national organizations. He is a member of the Richmond ARC. Hal would appreciate learning about other 'trucker Hams' who would like to form a national association in support of their band of fun and service through 'hamming and hauling.'

Sur la route et sur les ondes

J.F. HOPWOOD
VE7AHB

Vous plairait-il d'exercer votre profession tout en pratiquant votre hobby en même temps? Tous les habitués des répéteurs sur 2 m et des nouvelles liaisons VHF/UHF qui fleurissent autour de la Colombie Britannique connaissent Hal Garvie VE7AEI, de Richmond, B.C. Hal, c'est l'aimable camionneur qui peut se trouver à tout moment n'importe où pour se joindre à votre QSO tandis qu'il parcourt les routes au volant. Il a 31 ans de métier, beaucoup de souvenirs et d'amis tout au long de kilomètres et de kilomètres d'asphalte dans des paysages les plus pittoresques du monde. Hal, c'est le vrai 'pro', non seulement comme chauffeur de premier ordre mais comme radio-amateur expert.

Né à Viking, Alberta, en 1933, Hal a passé son enfance à Kelowna, B.C., où il s'est découvert très jeune une passion pour la radio. Pour satisfaire à sa 'bougeotte', il s'engage en 1950 dans la Marine Canadienne et devient opérateur radio. C'était alors l'époque de la guerre de Corée, la plupart des opérateurs se voyaient affectés à des

stations côtières. Hal se fit embarquer sur le HMCS 'Ontario' comme intendant pour s'assurer de naviguer et d'aller en Corée. Il a visité de nombreux pays et a profité d'affectations à terre avec les HMCS 'Cornwallis' et 'Naden'. A la fin de son engagement de cinq ans, en 1955, il décida que la conduite d'un poids lourd correspondait à son idée d'une vie libre et en mouvement.

C'est en 1974 qu'il obtint sa licence de radio-amateur, réalisation d'un rêve de plusieurs années. La station fixe de Hal, à son QRA, à quelques mètres seulement de la piste de l'aéroport international de Vancouver, est équipée d'un FT-101B, d'un système Wilson 40, une beam 10 éléments perchée sur un pylône Delhi de 16m. L'usage d'une antenne aussi performante dispense de l'emploi d'un linéaire. Son antenne est si efficace, nous dit Hal, qu'on l'a accusé de faire semblant de faire QSO avec des DX imaginaires que les autres n'entendaient pas... Quand la bande 10m était ouverte il y a quelques années, Hal servait de point de départ

Continued on next page

Right: Two CARF Life members, Hoppy VE7AHB and Hal VE7AEI.
Below: Hal VE7AEI and the ham shack on wheels.



British Columbia & Yukon

► SUR LA ROUTE (cont'd)

ouest pour le réseau 10m Trans-Canada.

Sa station mobile est équipée d'un Yaesu 757 HF et d'un Kenwood TM-2570 pour le 2m et est placée dans la vaste cabine de conduite de son tracteur poids lourd Kenworth K-100 Aero-dyne de 475 CV. Remorquer 20 tonnes de fret sur plus de 800 km en une journée constitue l'activité quotidienne de Hal qui emmène souvent son XYL Pennie avec lui dans ses randonnées. Pennie est titulaire d'un permis poids lourds de 1ère classe. La vaste cabine climatisée comprend des couchettes étagées confortables souvent utilisées par Hal qui s'arrête de conduire s'il se sent le moins du monde fatigué.

En fin juillet, j'ai fait la route avec

Hal de Vancouver à Prince George, aller et retour. Sa radio balayait la bande 2 m et se fixait sur chaque répéteur actif rencontré au cours du voyage. Un appel sur 146,52 simplex près de Boston Bar, dans le Canyon Fraser, permit de prévenir Gail, l'XYL de VE7JV qui alerta à son tour Bill, son mari, de la GRC, de manière à se rencontrer pour souper à leur restaurant routier favori. Après une discussion animée sur les possibilités de réfléchir les transmissions radio dans les profondeurs du canyon, nous avons repris la route pour arriver à Cache Creek où Hal est un QSO également animé avec Al VE6AGM de Three Hills, Alberta, qui se trouvait alors à Kamloops et parlait sur VE7RLO, le répéteur sur 146,96 de Mount Lolo. Nous avons pu faire de

nombreux autres QSOs dans les mêmes conditions au cours des jours suivants avec les amis de Hal dispersés dans toutes les localités et les campagnes de la Colombie Britannique.

Hal a prêté maintes fois son concours au long des années au cours d'accidents de la route, notamment en sauvant un conducteur de sa voiture en flammes quelques secondes avant l'explosion. Il utilisa son mobile six fois en un seul mois pour appeler police et ambulances à l'aide de victimes d'accidents rencontrés sur la dangereuse et sinueuse autoroute Hope-Princeton. Hal paraît passer sa vie sur la route, arrivant à Vancouver pour prendre une autre remorque et repartir en moins d'une heure ou deux pour Kelowne, Kamloops, Seattle ou Portland.

Le secret de son entrain réside dans les leçons de l'expérience. Il suit fidèlement les avertissements de son organisme et ne manque jamais de ranger son camion sur la route pour dormir dès que le moindre baillement lui indique sa fatigue. Il s'arrête aussi toujours pour manger s'il se sent en appétit, quel que soit l'endroit où il se trouve à ce moment. Hal est un chauffeur professionnel prudent qui ne dépasse jamais les limites de vitesse, qui se montre courtois envers les autres, quelle que soit la densité de la circulation ou la tentation de se fâcher.

Il garde le contact avec ses collègues routiers grâce à sa CB qui lui donne l'état des routes, les bouchons causés par les accidents et qui lui permet aussi d'échanger des nouvelles sur les familles et les amis. Hal ne partage pas l'avis de ces radio-amateurs qui se moquent des cibistes. Pour lui, il s'agit d'une manifestation d'élitisme dont la radio-amateur pourrait fort bien se passer!

L'amabilité et la gentillesse de VE7AEI sont bien connues et appréciées. Il connaît personnellement tous les amateurs actifs sur la bande 2m et est au courant de tous les événements concernant la communauté des radio-amateurs dans chaque région de la province. Membre à la fois du CARF (à vie) et de la CRRL, il se déclare vivement en faveur de la fusion des deux organisations. Il est également membre du Radio-Club de Richmond. Hal aimerait bien entrer en contact avec d'autres radio-amateurs routiers qui souhaiteraient former une association nationale pour encourager leur manière de servir et de se distraire à la fois, sur la route et sur les ondes.

Traduction B. Malandain VE1BQL



Shack of the Month

This month we feature the shack of Armand F. 'Wiggy' Wigglesworth VE1US (ex VE3YE). The QTH is Summerville Beach, Queens County, Nova Scotia.

Located on the ocean, Wiggy calls this his 'retirement shack'. The equipment includes a Yaesu FT 501 with an FL 2000B linear; a Yaesu FT101ZD with external VFO; Yaesu FT-77 mobile rig; old faithful Heath HW101 with SB200 linear and a Midland 25W, 2 metre rig. Note the old Hammerlund HQ150 receiver on the right.

Other equipment includes an antenna tuner, phone patches, an Autek QF1A Filter and a Datong RF Clipper.

Antennas on a two-acre property are a 204 BA 20M Monobander and mounted above that is a 10/15 High

Gain 3 element yagi. There is also an all-band trapped 'V', dipoles for 160M and 80M, and a 13-element, 2M beam. The tower is 48-foot, self-supporting, and the rotator is a Tail Twister.

Wiggy operated from Toronto when he was the Regional Director for Emergency Planning Canada in Toronto; and later in Ottawa where he was National Director of Operations for 7½ years, as VE3YE.

He held the VE1US call for 25 years before moving to Ontario, and was fortunate enough to again be allocated VE1US upon his return to his native province. He is a member of CRRL, CARF, the Nova Scotia Amateur Radio Association, and the QCWA, National Capital Chapter.

Thanks 'Wiggy', your CARF hat is 'in the mail'... Editor. ■

Ham Radio alive and well in the Yukon

BY BRIAN WARNER VY1BE & RON MCFADYEN VY1AD

When you live so far away from Ottawa that many don't know you are part of this vast country of Canada (yes, VY1 is a Canadian region), you have to make your own fun. What better fun than climbing HF and VHF towers at -45°C , or installing repeaters. Why can't this work be done in the summer?

The VY1RBW, 28-88 VHF repeater was installed in the CBC television building on a cold night in 1978, a visiting KL7 said, "Sure, my big Ford will go up the mountain." With VY1AD and then VY1BJ in the middle, VY1BQ got the job of holding the door closed while looking down the precipice. The truck had snowdrifts coming over the hood blocking out the headlights. It was only a 10 mile drive, but it will be a night Yukon will long remember. The old Motorola repeater was operational in three hours. (This has since been replaced by a solid state unit, installed under similar circumstances!) Transport to the 34-94 site is comparatively easy, only because the sole means of access is by helicopter, although the constant gales at the top of this 7,000 ft. mountain make standing difficult at times.

The repeaters were built with emergency service in mind; both have autpatches, but are frequently used by local Amateurs and tourists alike. If you are in the area, give us a call. While the repeaters are ideal for local communications, we have not yet figured out a way to talk to Vancouver with a rubber duck, so, of course, HF communications play a big role here.

Radio conditions in the Yukon are either very good or very bad. With the long hours of daylight in the summer, the lower bands are almost non-existent, while the upper bands including 20 metres are sometimes spectacular.

In the winter, 40 and 80 metres often give good results, even some of the rare DX is heard. How many southerners would like to drop in on a net with half a dozen VY1s having a rag chew? A net has been operating on 3.782 on Mondays, Wednesdays and Fridays for about 12 years.

The Yukon Amateur Radio Association has been a vital link for Northwestel on at least two occasions

when their microwave services have failed. With over 209,000 square miles and only 40 hams, our resources can be stretched to the limit.

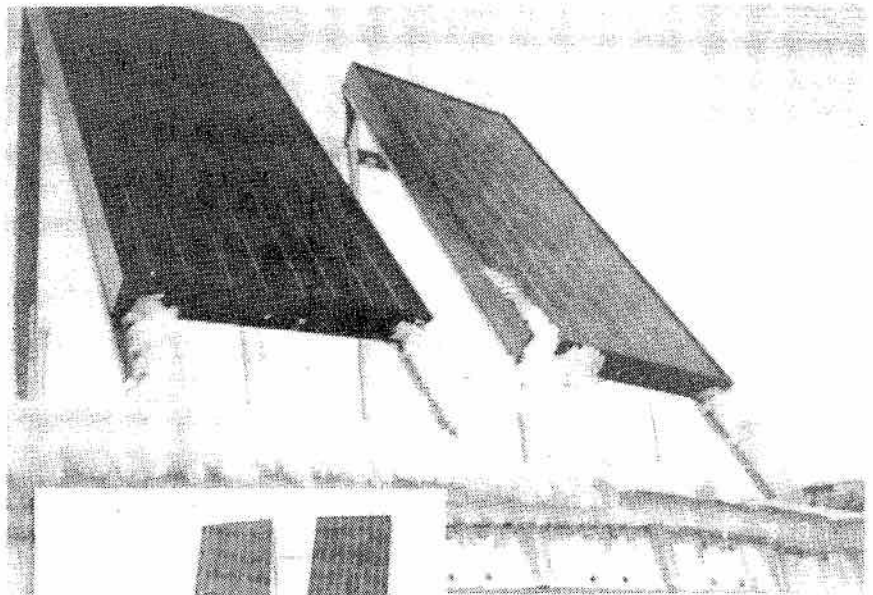
Brian Warner VY1BE, the Club President, and Bill Maylor VY1DU, along with help from other members, are trying to bolster the ranks with an Amateur radio course. The instruction for about a dozen hopefuls began in November and even as you read this article, most should have received their ticket. The course has been offered about every two years.

The Government of the Yukon has been most helpful to the Yukon Amateur Radio Association. A full station with HF, VHF, including standby power, is located in the main administration building, one of the

few capital buildings with a tri-band beam on top. There is also a complete portable package ready to go.

YARA has a brand new club headquarters with antennas at 4,000 ft. Well, okay, it is located halfway up a mountain. If you think installing repeaters is a hardship in the winter, how about placing a 60 x 12 foot house trailer over a six-foot bank in the middle of the winter? Blood, sweat, broken air lines in the trailer, all made for an interesting day. The Club trailer is the home of VY1DX, already with quite an antenna farm.

For those of you who ask, "Where are the VY1s?"... please put your fingers on the rotor control and turn northwest. The Trans Canada net is a good spot on Saturdays and Sundays.



Above: Solar panels for VY1RPT 34/94.



Left: Brian Warner (left) with Nick Renyk at VY1RPT. There was a very strong wind when this photo was taken.

A Story from Prince George

BY LARRY BARNETT
VE7EQL

When first asked to write for *The Canadian Amateur*, my immediate reaction was sheer panic. After a few calls to some of our more senior Hams in Prince George, I settled down for what turned out to be some very interesting history lessons on the Fort George Amateur Radio Club, or FGARC. The club official call, VE7FG, was obtained from a long-time resident dentist, Dr. J. Hocking. He was the first Amateur in Prince George, dating back to the 1920s. In 1936, Dr. Hocking was given an award as the Most Outstanding Amateur in B.C. When the FGARC was formed in 1965, Mrs. J. Hocking was brought to Prince George from her Kelowna home to officiate at the first meeting and to dedicate the club and its call to her late husband. The first President of the club was Carl Storm VE7BXC. Every winter, Ham classes were held, and soon the Ham population grew.

The first 2M repeater was established on Tabor Minor in 1975. It is now located on Pilot Mountain on a frequency of 34/94 and is linked with a 20/80 repeater on Sinkhit Mountain in Vanderhoof. With these two repeaters we have excellent coverage from all four points of the compass. A link with Williams Lake may also be a possibility in the not-too-distant future. As one can see, the technicians are hard at work and doing a fine job.

Some of our club activities include Field Day and providing communications for events ranging from parades to ski events. One of our members, Stan VE7EOC, has been operator-in-chief for the Scout Jamboree on the Air for a good number of years. We also have a 2M net which meets Sunday mornings at 10 a.m. sharp (thanks to net controller Frank VE7DSN). The official meeting night is the first Tuesday of each month and we have a coffee meet at a local Inn on Saturdays. This has proved to be a great success. We are more than pleased to have visitors drop in and join us. Several members of our club are very active in the PEP organization, and have been instrumental in establishing a comprehensive communications centre at PEP headquarters. The club is at present running a Ham class at our college. There are 17 students,

two of whom are going for their advanced ticket.

Individual pursuits vary from contesting at the contest club fondly known as Zulu Zulu Zulu (VE7ZZZ) located at Lynx Lake, to RTTY and Packet. One of our members, Teruo Kubota VE7FZO ex-JH6, is an avid and somewhat well-known hot-air balloonist. A number of our members assist him on his flights as ground crew and trackers. Last fall the club set up a booth at the P.G. Exhibition to promote public awareness of Amateur Radio and to generate interest in our Ham classes. At the same time we put a display in the public library. The operating station at the fair and the library display were great successes.

So, there you have it! To all who assisted me on my fact-finding missions, many thanks. To any Hams out there who may be visiting Prince George in the future, by all means give us a call on 34/94, drop in at a meeting or join us for Saturday coffee break; we welcome you to the friendly city of Prince George, Spruce Capital of the world. As you approach the city from the east, you may ask, "What's cooking?" Don't worry, it's only the pulp mills.

A special thanks to Ross Goodwin for supplying the photo of Dr. Hocking. Ross was introduced to Ham Radio by Dr. Hocking and was licensed in 1935 as VE5RK, now VE7RK. Congratulations, Ross, for 52 years of Hamming. ■



Above: First Prince George Amateur and pioneer dentist, Dr. J. Hocking VE7PG.
Below: The Prince George gang— Hal VE7AEI (visitor), Pat VE7FAM, Laurie SWL, Rip VE7DSM, Al VE7APN, Ann VE7?, Franz VE7EOF, Chris VE7EQN, Bill VE7EMR, Graig VE7EAP.



Photo: VE7AHH

Vancouver Communications Group



Photo: Peter Witzke VE7FRT

Lynn Wold VE7CYJ coordinates from the cab of the Red Cross vehicle.

BY MICHAEL CROWE VE7FHU

The Government of British Columbia has given Hams a specific role in emergency communications.

The agency responsible for coordinating and supporting municipal emergency planning and services in the province, the Provincial Emergency Program (PEP), has its headquarters in Victoria. One branch of PEP is the Amateur Radio Service (ARS). PEP has divided the Province into regions and for each region, an Amateur Radio Service Regional Coordinator has been designated. He, in turn, appoints an ARS Emergency Coordinator for each municipality in the region. That coordinator is

responsible for recruiting and organizing other Hams into a communications system for use by the local public agencies and emergency services during disasters and emergencies.

PEP, although centered in Victoria, relies very much upon local efforts. Like the other emergency services set up in each area, the organization and facilities established by the several Ham ARS Regional Coordinators vary across the Province. The most advanced are those in the heavily populated regions. The Lower Mainland (Powell River to Boston Bar) ARS Regional Coordinator is Bob Smits VE7EMD. Each municipality in his region has its own Group to

correspond with local emergency plans and agencies.

As part of the Lower Mainland Region of the PEP, the Vancouver Communications Group (VCG) is responsible for communications and message transmittal services in and about the City of Vancouver. The coordinator is Donn Louie VE7CXI. In an emergency or disaster, the VCG would serve several public agencies and, in particular, we have been designated by both the B.C./Yukon and Vancouver branches of the Canadian Red Cross to handle messages transmitted for its registration and inquiry role, and by the

Continued on next page ►

British Columbia & Yukon

Emergency Social Services Department of the City of Vancouver to serve the emergency communications needs of its disaster services.

In addition, for practice and as a public service, we stand ready to provide communications to public events, especially long distance races and outdoor sports. Our volunteers have established operating procedures and techniques to enable us to serve most areas and even to operate several separate nets, all under individual control. In the past year alone, we have assisted at 32 sporting, cultural and social events in Vancouver, and have had a great time. Public events have, of course, been the largest part of our effort to date, and we look forward to continuing this service. Not only does it assist the community and give us practice, it also introduces many people to Amateur radio.

At the moment, operations are conducted from Red Cross House, centrally located in the City of Vancouver and, while not the highest point, it is elevated above much of the city. Also, the building is surrounded by parkland, beyond which are four of the city's hospitals. We have installed links to our system in the Vancouver Police Headquarters and the Social Services Department at City Hall. Access to the Police link is closely controlled as they seem to be somewhat skeptical of Amateurs running a real service.

There is also some competition between us and Ham emergency groups in the other nearby municipalities. Currently we are trying to determine some way to install in advance a skeletal communications system at likely relocation centres and food distribution points, among other places in the city. In that regard, we are looking into placing antennas on the roofs and running leads to convenient rooms for later use as radio centres.

The VCG has a fully equipped emergency communications motor home (on loan from the Red Cross Society). This is driven to events and is equipped to act as a mobile communications centre on all VHF frequencies (several at the same time if necessary), as well as on UHF. Most of the radio equipment to date has been donated by Com-West Radio Systems Ltd. (the local Icom dealer), R.P. Electronic Components Ltd. and Canadian Larson Antennas Ltd. The motor home also has an HF receiver (and even an 11 Metre Rig) and TV set, but no HF transmitter. We are still looking for a generous benefactor.



Carol Enright VE7CCF and Jan Wong VE7JAN supporting emergency preparedness.

Our next major project is a two-metre repeater for use during events or a disaster. There are, of course, many repeaters already operating in the Lower Mainland, and by informal arrangement, each would be put at the disposal of a particular ARS coordinator in a real disaster. The new repeater would be capable of covering the entire Greater Vancouver area with built-in redundancy, and have a sophisticated, flexible controller to face whatever emergency occurs. The equipment is nearing completion and should be in operation by early 1988.

Money, of course, remains a problem. There is none from the province and city funds are minimal. Most of our equipment has been scrounged or built and installed by volunteer Hams. We have just established a non-profit Society, the Vancouver Emergency Communications Society, to help fund our activities. We hope to receive charitable status and then solicit donations and contributions to be used to support the VCG. Unlike the Group, which is organized from the top down and subject to instruction from above, the Society would be open to all and run by its members. The Society is also the owner at law of our facilities and equipment, so that some stability of ownership can be achieved, as well as sparing us from liability. Incidentally, before assisting at public events, we use the overall aegis of the PEP to obtain Workers Compensation Board protection for our members. We also try to shelter under the city or the Red Cross, or event organizers, to avoid personal liability problems.

We did, of course, transmit many hundreds of messages for the Red Cross in the aftermath of the Edmonton tornadoes during the July 31, 1987 weekend. To our chagrin, some of our plans did not work as well as we had expected, and we hope to do better the next time. Recently, some of our members attended a simulated disaster in Washington State to see how the Ham emergency services in the U.S. operate. Most of the Group's work in the past few years, though, has been providing communications for public events, in order to be ready for the next emergency. Our greatest assets are the 70 Amateur radio operators who volunteer their time to organize our service, maintain and improve the equipment and, most importantly, devote long hours to actual communications at events.

We extend a welcome to all Hams in British Columbia to join our ranks; call Bob Smits or Donn Louie, and they will be glad to put you in touch with your local ARS Coordinator. ■

A DOLLAR A WATT!

Commissioner G.H. Payne of the FCC had proposed a bill to tax radio stations on the basis of operating power. Low-power stations would pay a dollar a watt, medium power at two dollars, and 'big guns' at three dollars. The revenue produced would be millions, Mr. Payne told Congress. "It is, at best, a small return for using the people's airwaves," he argued. Fortunately, this report in *Radio* of June, 1937, didn't become law in the United States. —VE7TG

Radio Advisory Board of Canada

Annual Meeting Dec. 3, 1987

BY RALPH CAMERON
VE3BBM

ITEMS OF INTEREST

There is concern for EMC problems in the vicinity of airports in Canada. Studies are presently being done by National Defence. Of particular interest and concern is the siting of shopping centres close to airports. Some cases of arc welders and diathermy interference have been severe enough to cause problems already.

AIR MOBILE QSO

KI6EZ/AM: TNX for the report. Your signal is 59. We are flying 3200 ft. above San Francisco

VE6ARE: TNX for the report. Are you in a Beachcraft Baron or Piper Cub?

KI6EZ/AM: No pipers in sight, I am in a 747.

VE6ARE: That's great. Did you get special permission from the pilot?

KI6EZ/AM: No

VE6ARE: What type of rig are you using?

KI6EZ/AM: It is a Collins Rig; it comes with the plane, I am the pilot.

VE6ARE: Oh!

At that point I became so embarrassed that my eyes started to water. I quickly ended the QSO and turned off the radio. I had reached my embarrassment quota for the year. KI6EZ (Alex) probably smiled his entire flight.

— Rob Smith VE6ARE

NEW YORK ON 2M!

George VE7GQ reports that he recently worked a station in New York state on 2M packet!

He achieved this remarkable feat by linking southward on the west coast NETROM network to Palo Alto. From there it is sometimes possible to connect to the 'wormhole,' a satellite link from Palo Alto to the University of Maryland. A packet bulletin board on the east coast provided a map of their packet network, which enabled George to link eastward to New York state.

Zero Beat

Similar concern has been shown for locating high power radar transmitters close to shopping centres where electronic as well as health considerations need attention. Health and Welfare guidelines exist for frequencies and field intensities for the frequency range 10 MHz-300 GHz.

HDTV

High definition TV policies are under development and the implementation guidelines for Canada should be ready by March 1988.

BC BAND EXTENSION

A final position on extending the broadcast band to 1605-1705 kHz should be firm by April 1988. In the U.S. several commercial uses of this space are being made including short distance advertising of real estate. This might be a good area to experiment with SSB BC?

The long awaited reaction from the DOC on the Radio Advisory Board's recommendations contained in the Immunity Report emerged like a semi-wet noodle. Bob McCaughern, Director of Engineering, stated the Department is currently reviewing the Report and various proposals for regulatory changes to the Minister's powers.

There are also current discussions which are debating the merits of mandatory transmitter identification which may eventually apply to all mobile radios. The problems and issues relating to immunity have been segmented toward specific known noise sources. This approach tends to affect and involve the sources having the highest potential for seriously degrading communication circuits. There appears to be little concern for appliance malfunction and certainly little sympathy from the legal system, which has difficulty with such esoteric topics.

Noise produced by high voltage power lines and digital apparatus have been singled out as well as the forthcoming RF excited utility lighting.

Proposed legislation should be available for discussion by the third quarter of 1988. RF lighting has been the subject of considerable discussion

in the U.S. The FCC saw fit to regulate allowable harmonics falling in the BC band when these were found to be objectionable. While the BC bands have been protected, the harmonics can still be heard throughout the 160 and 80M bands.

The current review of the *Radio Act* is progressing well. Departmental spokesman David Dawson stated some fragmentary but welcome news that, "the Department is addressing the immunity issue."

"The Department will address the immunity of appliances and most important, the Department will ensure that licensed users will not be victimized by susceptible equipment." (Let's hope that music to our ears is not just another intermod product.) When all the smoke clears from the discussion surrounding these issues, it will be published in the *Canada Gazette*. An election would suspend it indefinitely.

There are now in excess of 790,000 licensed stations in the country—a formidable policing job, when funds are scarce and enforcement becomes a secondary priority. In fact very few new inspectors are being recruited these days. One wonders how far one can deregulate without some enforcement?

In the area of spectrum control, the issue of Amateur sub band deregulation will soon be decided for us. Both 18 and 24 MHz may well serve as examples of things to come.

There's hardly a day goes by that someone doesn't mention intermod from paging transmitters. The complaints may be well founded. Some 20% of interference complaints come from excessive ERP while lack of proper identification of the paging Tx accounts for 22% of the total complaints.

An opportunity was shared to meet the presidents of the Ontario DX Association as well as the General Radio group under John Karine. Both organizations have joined the RABC as users of our spectrum who are concerned with the health of the spectrum. A closer relation with these groups is long past due. They represent potential Amateur Radio operators as well as a sounding board for potential users of the spectrum. We need each other. ■

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CALL US FOR IN STOCK M.F.J. PRICES !!

Specially bound into this issue of TCA is the new 1988 MFJ Amateur Radio Accessories Catalog featuring the latest in Tuners, Antenna Switches, Meters, Interfaces, Keyers and much more.

Remove your personal copy of this MFJ Amateur Radio catalog by firmly grasping the entire 20 pages and pulling it *slowly* out of the issue. The issue itself will remain intact as will the catalog.

Butternut Verticals

Butternut's HF Verticals use highest-Q tuning circuits (not lossy traps!) to outperform all multiband designs of comparable size!

Model HF6V \$229

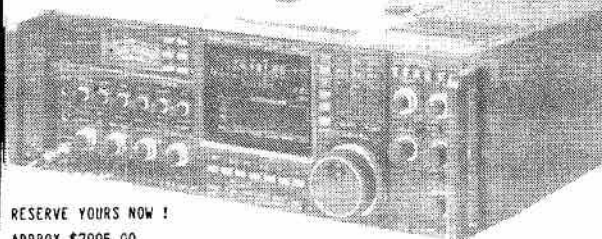
*80, 40, 30, 20, 15 and 10 meters automatic bandswitching
*Add-on kit for 17 and 12 meters available now
*26 ft tall

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*Designed for the low band DXer
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ICOM's advanced IC-02AT, compact IC- μ 2AT Micro, and rugged IC-2AT dominate the 2-meter bands from 139.0-163.0MHz.

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PS-740 20 amp Internal Battery Charger. Was made to fit inside PS-750. Will require slight modification. Or use PS-740 in a place with fan. \$300 Value Now.

220MHz

ICOM's deluxe IC-03AT and dependable IC-3AT are the perfect choices for 220.0-224.995MHz.

Introducing the only mobiles that double as answering machines.

Now you can stay in touch—even when you're away from your radio.

With Yaesu's 2-meter FT-212RH and 70-cm FT-712RH, an optional, internal digital voice recorder serves as a convenient answering machine for you and your friends. And that's just the beginning!

High performance mobiles.

The FT-212RH features wideband receive coverage of 140-174 MHz (144-148 MHz \times), while the FT-712RH covers 430-450 MHz.

An oversize amber display includes an innovative photo-sensor which increases the display brightness during the day. The function buttons are arranged in a chromatic musical scale—ideal for visually-impaired operators. You get 45 watts output on 2 meters, 35 watts on 70 cm.

An autodialer DTMF microphone with 10 memories, each ready to store telephone numbers up to 22 digits long.

And, like our FT-211RH Series mobiles, you'll enjoy surprisingly simple controls, yet highly sophisticated microprocessor-based flexibility. Including 18 memories that store frequency, offset, PL tone, and PL mode (CTCSS unit optional). Band or memory scanning. Offset tuning from any memory channel. Memory channel lockout for scanning. High-low power switch.

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Digital voice recorder option. Only Yaesu brings you the advanced technology found in our digital voice recorder option.

You can store messages or your call sign—in your own voice, not a synthesized replica—or give your friends a private code for leaving messages on your radio. All they need is a DTMF microphone! Then you can play back your messages either in-person, or remotely by using another radio with a DTMF microphone. And you've always got security because you can command your radio to respond only to in-person playback requests.

FT-747GX



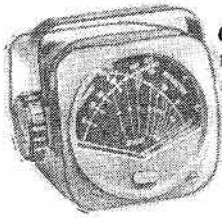
FT-747GX New HF Transceiver

The all new 747 will be priced HF transceiver. Coverage receive on 160m still have a lot of features. 100kHz-30MHz RX, TX on 160m bands. Dual VFO's, 20m filter (500kHz), 6kHz W

List Price \$1349.00
CALL FOR INTRODUCTORY

DAIWA Ham Equipment

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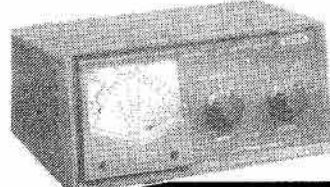
Compact meter for mobile and base use. meter panel back-lighted.

CN-410M \$119.95
3.5-150MHz 15/150Watts

| MODEL | CN-410M |
|-------------------------------------|------------------------------------|
| FREQUENCY | 3.5-150MHz |
| INPUT/OUTPUT IMPEDANCE | 50 ohms |
| RATIO OF FORWARD VS REFLECTED POWER | 3:1 |
| POWER RANGE | FORWARD 15/150W REFLECTED 8/50W |
| TOLERANCE | Better 1% 1:1-1 |
| SWR MEASUREMENT | 3W min |
| SWR DETECTION SENSITIVITY | 80-250 |
| CONNECTION TYPE | SO-239/1 type |
| DIMENSIONS (W x H x D mm) | 71 x 78 x 100 |

| MODEL | MS-660A | MS-663A |
|---------------------------|-----------------------------|------------|
| FREQUENCY | 1.8-150MHz | 140-525MHz |
| POWER RANGE/FORWARD | 30/300/3kW | 3/30/300W |
| TOLERANCE | ±10% at full scale | |
| SWR MEASUREMENT | 1:1-10 | |
| SWR DETECTION SENSITIVITY | 8W min. 1.0.8W min. | |
| INPUT/OUTPUT IMPEDANCE | 50ohms | |
| INPUT/OUTPUT CONNECTORS | M type (SO-239) M or N type | |
| DIMENSIONS AND WEIGHT | 184W x 95H x 152D mm, 1.1kg | |
| ACCESSORY | A lead with DC plug | |

MS-660A 1.8-150MHz
30/300/3kW
\$199.95
MS-663A 140-525MHz
3/30/300W
PL-259 \$229.95
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| MODEL | CS-201/201G | CS-401 |
|-------------------------|------------------|----------------------------|
| FREQUENCY RANGE (UP TO) | 600MHz/1.3GHz | below 1.12 1800MHz |
| VSWR | 2.5kW PEP 1kW CW | 50ohms |
| POWER RATING | 2.5kW PEP 1kW CW | Less than 0.2dB |
| IMPEDANCE | 50ohms | better than 50dB at 300MHz |
| INSERTION LOSS | 50ohms | better than 45dB at 450MHz |
| ISOLATION | 50ohms | adjacent terminal |
| CONNECTION TYPE | SO-239/1 type | SO-239/1 type |
| OUTPUT PORT | 2 | 4 |

RX-110g 2M Ga-As FET Preamp. RF activated I/R switch. \$99.95

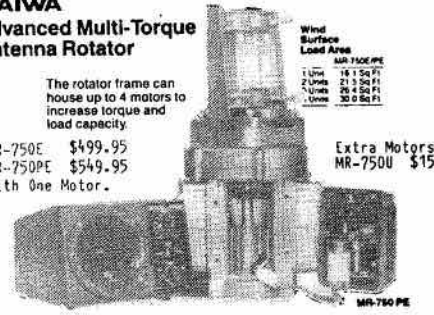
DAIWA Advanced Multi-Torque Antenna Rotator

The rotator frame can house up to 4 motors to increase torque and load capacity.

MR-750E \$499.95
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With One Motor.

Wind Surface Load Area
MR-750E PE
1 1/2" 16.1 Sq Ft
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4 1/2" 30.0 Sq Ft

Extra Motors
MR-750U \$159.95

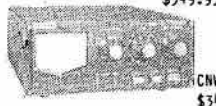


Each motor is equipped with a Super Wedge and Clutch brake system (Sip clutch type) that works independently from the main frame gear train and protects the rotor mechanism from excessive torque.
Low voltage (24VAC) motors... low-cost 6-wire control cable... can be installed on the same base as a TELEX unit.

ANTENNA TUNERS



CNW-518 \$549.95



CNW-419 \$349.95

| MODEL | CNW-518 | CNW-419 |
|---------------------------|-------------------------------|--|
| FREQUENCY | 3.5-30MHz (18 bands) | 1.8-30MHz (continuous coverage 17 bands) |
| POWER RATING | 1kW CW (50% duty) | 200W CW (1.5 30MHz) 100W CW (1.5 30MHz) |
| INPUT IMPEDANCE | 50 ohms | 50 ohms |
| OUTPUT IMPEDANCE | 10 250-25 100ohms (on 3.5MHz) | 10-250ohms |
| SWR | 20/200/1kW | 20/200W |
| METERING RANGE | 225 x 90 x 275 | 225 x 90 x 245 |
| DIMENSIONS (W x H x D mm) | | |

Specifications

Rotator Unit

| | MR-750E/PE |
|-----------------------|---|
| Rotation time | 60 Hz: 58 seconds (60 Hz input) 50 Hz: 70 seconds (50 Hz input) |
| Output torque | 1 motor: 610 inch/lbs 2 motor: 5,200 inch/lbs 3 motor: 9,600 inch/lbs 4 motor: 18,300 inch/lbs |
| Brake power | 1 motor: 1,200 inch/lbs 2 motor: 9,600 inch/lbs 3 motor: 18,300 inch/lbs 4 motor: 2,400 inch/lbs |
| Rotation angle | 375 degrees |
| Permissible mast size | 1 1/2" - 2 1/2" inch (38 - 63 mm) < diameter > |
| Control cable | 6-wire cable 0.5sq - 1.25sq (AWG 16/18/20 etc.) |
| Continuous operation | 5 minutes Max. permissible |
| Dimensions | 15.6" H x 18.43" W x 6.43" D (397 mm x 214 mm x 214 mm) |
| Unit weight | 16.5 lbs (7.5 kg) < with 1 motor unit fitted > |

MR-750E Control is similar to HAM IV
MR-750PE Control can be PRE-SET to a heading and will then rotate to it. (Ideal for Blind)

FREE WORLD MAP PLATE FOR CONTROL HEADING...

STRENGTH WITH:
1 MOTOR - HAM IV
2 MOTORS - TAILWISTER
3 MOTORS - ++
4 MOTORS - ++++

The significant difference with the DAIWA Multi-Torque Rotor System is the ability to spread the torque of the motors along many more places on the shaft compared to a single strong motor... a definite advantage...

ACTIVE AUDIO FILTERS & KEYERS

AUDIO FILTER



AF-606K \$199.95

The AF606K features PLL Tone Decoder circuitry for the ultimate in CW reception. The PLL locks onto the desired CW signal and reproduces it with unbelievable clarity! QRM and QRN are blocked out completely. Listen to what you had been missing with DAIWA active Audio Filter which gives the great difference. A built-in speaker is included.

*NOTCH/CENTER FREQUENCY: 300-3000Hz WIDTH/50-600Hz at F = 750Hz - 20dB HIGHPASS: 500Hz - 8dB SSB/LOWPASS: 2500Hz - 10dB, 2000Hz - 10dB, 1500Hz - 10dB CW/BANDPASS/CENTER FREQUENCY: 500-1200Hz BANDWIDTH: 140Hz - 3dB, 10 Hz - 3dB, 60Hz - 3dB PLL/CENTER FREQUENCY: 500-1200Hz LOCK RANGE: 70Hz INPUT VOLTAGE: 0.1-2V TONE FREQUENCY: 500-2500Hz *MAXIMUM INPUT VOLTAGE: 4V (2W) *POWER OUTPUT: 1.7W/8 ohm Maximum *POWER CONSUMPTION: 13.8V DC (12-15V) *200mA *DIMENSIONS: 150W x 62H x 150D mm

KEYERS

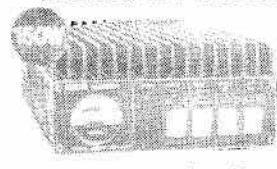


DK-210 \$139.95

DAIWA made CW easy with the DK210 electronic keyer. The keyer do most of the work for you by eliminating fatigue and improving your "list". Features include semi-automatic and tune modes as well as dash/dot memories, 8-50 WPM capability, and LED speedmeter, and two types of keying outputs. A variable frequency sidetone monitor is also included.

*SPEED: 8 WPM *SIDE-TONE OSCILLATOR FREQUENCY: 500 = 3000Hz *KEYING OUTPUT CIRCUITRY: GRID BLOCK - 150V 10mA max. DIRECT: + 300V 100mA max *POWER CONSUMPTION: 13.8V DC (0-15V) 200mA (DK-210) (or 9 volt battery can be installed inside cabinet) *DIMENSIONS: 150W x 62H x 150D mm *LED SPEED INDICATOR

LINEAR AMPLIFIERS



LA-2155E with RX \$399.95

*Freq: 144-148MHz *Preamp gain: 15dB *Input power: Low 10W/High 25W changeable *Input power 10W = Output power 100W/25W *Output power 25W = Output power 150W *13.8V DC/20A Max. *170W x 79H x 250Dmm



\$229.95

LA-2065R with RX (available in U.S.A.)

*Freq: 144-148MHz *Preamp gain: 15dB *Input power: 1-14W *Input power 10W = Output power 60W *13.8V DC/5A Max. *122W x 45H x 175Dmm



LA-2155H with RX (available in U.S.A.)

*Freq: 144-148MHz *Preamp gain: 15dB *Input power: Low 1.5W/High 25W *Input power 1.5W = Output power 150W/25W *Output power 25W = Output power 150W *13.8V DC/27A Max. *170W x 79H x 250Dmm



\$129.95

LA-2035R with RX (available in U.S.A.)

*Freq: 144-148MHz *Preamp gain: 15dB *Input power: 1-5W *Input power 1.5W = Output power 30W plus *100W x 35H x 140Dmm

LA-2060 3w in gives 50w out \$199.95

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On Exams

The Editor,
The Canadian Amateur

Dear Sir:

This has reference to the article on page 33 of the December 1987 edition of *The Canadian Amateur* entitled Looking Around. The article deals in part with the DOC Amateur exams. As the Manager responsible for these and related matters I would like to provide another perspective.

While it begins and ends with the disclaimer that only one man's opinion is presented, the tone of the article may lead your readers to believe that DOC relations with the national Amateur organizations are less than cordial. I am further concerned that readers may conclude, from the 'sample questions', that the DOC Amateur exams are in a poor state.

The specific questions indicated in the article are, admittedly less than perfect. They are not, however, a fair representation of the questions on the exams or even of the question banks. Questions for exams are drawn at random by computer from amongst hundreds of questions in the banks; most of these are good questions, many written by Amateur radio operators. A departmental official proofreads each exam to find questions such as those in the article. These are rejected and replaced. The exam banks are reviewed and questions are rewritten or removed as appropriate. As well, questions received from Amateurs, usually through CARF or CRRL, are reviewed and incorporated into the bank where appropriate.

The results of the completed exams are sent to DOC Headquarters where analysis of quality for each question is undertaken. The officer looks for questions which were generally answered incorrectly, those which everyone answered correctly, and those which the successful candidates failed (and vice versa). As well, the average pass rate is calculated. This process results in exam papers being replaced with improved versions and additional poor questions being removed or rewritten.

Recently, we made the exam bank available through CARF and CRRL.

The fact that this was done illustrates the good working relationship between the Department and the two national Amateur organizations. When we took this step, and indeed on previous occasions, we indicated that we are open to constructive comments. Happily, in this regard we have received excellent co-operation from both CARF and CRRL.

Learning from the pages of a magazine that, "CARF officials... are not happy", troubles me greatly. We have met jointly and severally with CARF and CRRL whenever asked. We have also called meetings ourselves. As well, we are often in touch with Amateur representatives by telephone wherever an issue

requiring immediate treatment occurs. The average Amateur is probably unaware that he is well represented and that we do listen.

Regulating the Amateur radio service, including setting the exams, is solely the responsibility of this department. I sincerely hope that the process continues to include frank and open consultation with CARF and CRRL. I also hope that constructive comments, especially in the form of suggested questions, continue to be received.

Yours truly,
M.K. Nunas,
Manager
Spectrum Management
Operations Division

How fair was your test?

BY JOHN ILIFFE VE3CES

From time to time we at CARF receive complaints about the fairness and balance of particular Amateur exams. To find out just how the DOC is going to ensure fair exams in the future, *The Canadian Amateur* spoke with Hugh Clarke VE3WM of the DOC.

A few years ago there was indeed reason to complain about certain examinations. The DOC attempted to remedy that with a review process which involved both National organizations. During 1986 some problems were encountered when new questions were not submitted soon enough for the number of exams required in that year. DOC was forced to create new questions and prepare unreviewed examination booklets. This led to the famous 'all tube' examination.

With the new examination procedures, several examination booklets are prepared and kept in readiness in the various offices for candidates as they arrive. The booklets can be used several times, so a continuous flow of new material is not required.

Since the questions are now in the public domain and can be obtained from CARF for the cost of the copying,

there is every reason to believe that potential Amateurs and their instructors can adequately prepare for the examination.

DOC has gone a step further. Each exam written is monitored and the results of each question are compared. In any fair exam about 70% of the candidates should be able to answer any given question. The DOC then checks to see what the actual pass percentage is. Questions which are answered correctly by most of the candidates are removed because nothing is gained by asking them. Questions with too low a passing percentage are also removed since they are defective in some way—in wording, content, or appropriateness.

One of the DOC charts is shown in the illustration, the actual exam book to which it applies has been blanked out. You will notice that questions 10, 20, 34 and 48 through 50 are all answered correctly by 85% or more of the candidates. It is likely that these will be removed from the question bank at the next revision. For the opposite reason, questions 4, 27, 37, 40, and 46 seem to be either too difficult or are not adequately covered

Continued on next page

EXAMS (cont'd)

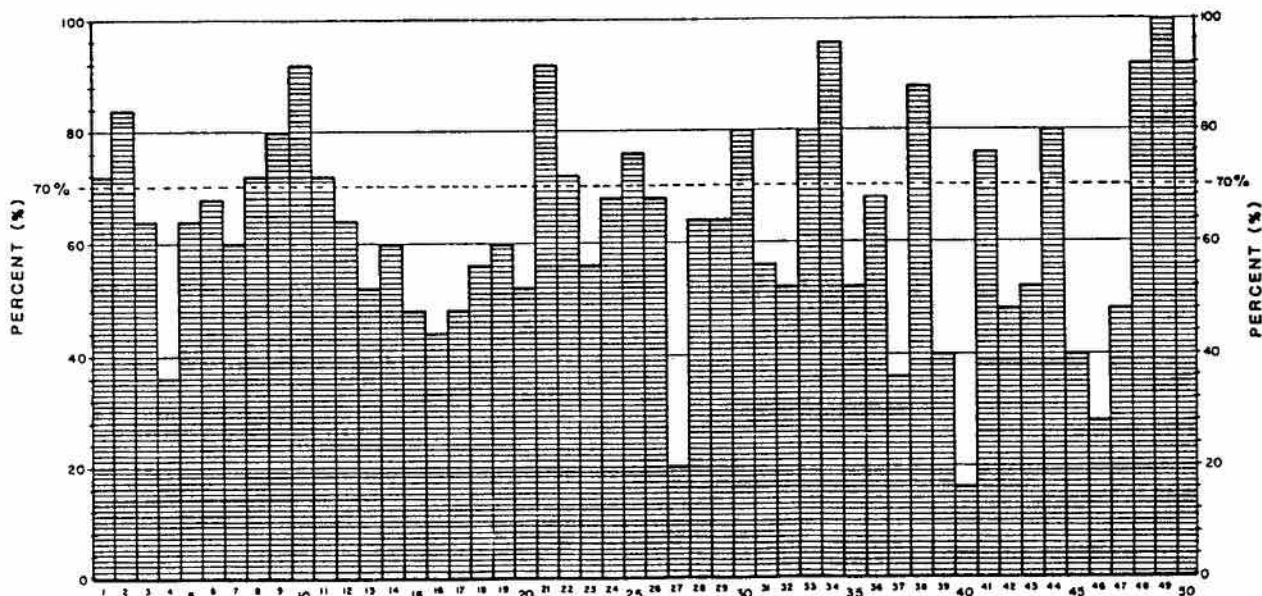
in current study guides. These may also be removed at the next revision.

CARF is convinced that fair examinations are a critical part of

attaining a growing Amateur radio fraternity. To this end we have appointed a vice-president, Earle VEGNM, to handle our responsibilities toward education.

The DOC has come a long way toward improving the examinations; we wish you good luck on your next one!

AMATEUR EXAM STATISTICS BOOK



ZL1MA HONoured BY THE QUEEN!

Congratulations to Terry Small ZL1MA who has been recently awarded the Queen's Service Medal in recognition of his outstanding efforts working with Braille, the written language of the blind. Terry spent many years serving on committees for the handicapped and the blind. Terry's friends in VK and ZL were overjoyed at the news of this high honour from Queen Elizabeth II, as are his many Canadian Amateur radio friends. Terry is a white cane Amateur.

A LITTLE TUNE FOR YOU

Do you know what a 'tune' is? (No, it's not that lid who tunes up on your QSO while it is in progress!) In the early days of wireless, wavelengths were referred to as 'tunes' which makes sense, having in mind the equipment used. That was before we had bands, also. —VE7TG

CALL SIGN LIST

The DOC has been directed not to release the Amateur Call Sign and Address list as it is a violation of the Privacy Act. CARF believes this is an inappropriate application of the Act and is working with the Minister and the DOC to reverse this decision.

SWAP SHOP

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 pocketwatch. I am willing to buy and/or trade equipment. Please write to Chris Bisaillon VE3CBK, RR#1 Old Carp Road, Kanata, Ont. K2K 1X7.

FOR SALE: FOXX transceiver kits are available from Frank Hughes VE3DQB, Box 855, Hawkesbury, Ont. K6A 3C9. Diode tuner kit \$40, variable capacitor tuning \$50. Either kit \$5 postage and packing.

WANTED: HF Ham band transmitter, 100 W approx. CW only. E. Epp, 30 Nairn Ave., Kenora, Ont. P9N 3M2. 807-468-5725.

WANTED: Copy of service or operating manual for Monsanto model 8530 counter/timer. Brian Henderson VE6ZS 403-278-2084.

TO VE3TRM: I'm now in MTL as VE2TRL, Alain.

WANTED: Wiring schematic for a Viewstar inc. linear amp. PT-1000A. Will pay costs. Geo. Towns VE3NIJ, 6 Horizon Cres., Agincourt, Ont. M1T 2G3, 416-293-2038.

WANTED: Marconi Wireless equipment by collector. A. Nolf, 539 Kastelic Pl., Burlington, Ont. L7N 3R5. Phone 416-639-4768.

FOR SALE: Hygain TH6DXS, like new. See Jasper Petrus VE7BMR, 21 South Thylin Street, Campbell River, B.C. V9W 2J8.

RAVENSCROFT APPEAL

The Ravenscroft appeal judgment has been handed down. Full details will appear next issue, but the main points are:

The appeal was allowed in part. The injunction was termed inequitable. Basically the original judgment was considered unfair. Ravenscroft has been ordered to pay for the modification of the plaintiff's appliances to DOC standards within 90 days. Non-compliance will mean a permanent shutdown of VE3SR at its present address. If the plaintiffs do not allow reasonable access for these modifications within this 90-day period the injunction will be lifted permanently.

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- AL-1500 with 8877 tube - full legal output with 65 watts drive.

SPECIFICATIONS ON REQUEST



- | | | |
|------------|--------------------------------|----------|
| MJF 1274 | A3 3el Tri-band | \$489.00 |
| PACKET | A4 4el Tri-band | \$589.00 |
| CONTROLLED | A744 40mtr.adapter re A4 ... | \$149.00 |
| UNIT | R3 14,21,&10mtr. Ringo | \$495.00 |
| \$269.00 | AV5 10-80mtr. vertical | \$209.00 |
| | FM ANTENNAS | |
| | ARX-2B Ringo 2 mtr. | \$79.00 |
| | A147-4 4el beam | \$59.00 |
| | A147-11 11 el beam | \$95.00 |
| | A-147.20T twist. | \$159.00 |
| | AFM-4D "four pole" | \$159.00 |
| | BOOMERS | |
| | 215WB 15 el. 14+148 MHz .. | \$179.00 |
| | 32-19 deluxe 16.2DB | \$219.00 |
| | AOP-1 Oscar Satellite pack ... | \$295.00 |
| | 424B 24 el 70 CM | \$185.00 |

**ALINCO ALR 206
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- ZA-1 super 1:1 balun \$37.00



Special on glass Advantu
2 mtr ant \$65.00

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- MFJ-1229 deluxe interface
- MFJ-1224 RTTY interface
- MFJ-901B Versatuner
- MFJ 941D
- MFJ-949C Super deluxe tuner
- MFJ-422 Econo c/w Bencher key ...
- MFJ-407 Deluxe keyer
- MFJ-484C Deluxe Memory Keyer ..
- MFJ-962B 1.5 KW Versatuner
- MFJ-989 3 KW Tuner

Rotors

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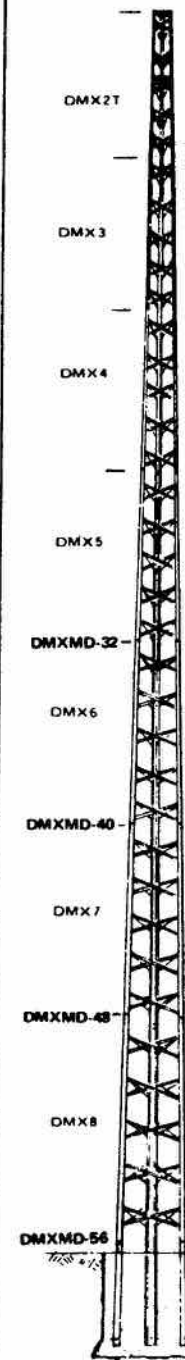


TELEX hy-gain

- 402BA 2el 40 mtr beam
- EX-14 4 el. 20-15-10 mtrs
- TH7DXX 7el tri-band beam ..
- TH5DXO 5 el. tri-band beam ..
- TH3Jr. 3el Tri-band
- 204BA 4el 20M beam
- 205 BAS 5el. 2M beam
- DB-10-15 duoband beam
- 18AVT/WBS 80-10M vertical ..
- 2BDQ Trap doublet 80&40 ...
- 5DBQ Deluxe 10-80 doublet ...



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SPECIFICATIONS AND PRICES
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VE2FMA: Mission Accomplie

Le 25 février 1987, naissait le regroupement pour concours et événements spéciaux VE2FMA. Le but de cette association était principalement de mettre sur pied les structures nécessaires pour les célébrations du 50^{ème} anniversaire de la municipalité de Fleurimont.

De fait, le 24 février 1987, René Biron VE2AHC, Sylvain Latulippe VE2FOT, ainsi que Normand Boisvert VE2FQX, rencontraient l'exécutif en charge des festivités du 50^{ème} anniversaire de Fleurimont, afin d'exposer le projet de l'exploitation d'une station radio amateur sur le site principal des activités.

C'est avec enthousiasme que les parties concernées ont établis une entente. A partir de cet accord un certificat 3 couleurs fut réalisé et imprimé en 360 copies. Bien entendu il fallait publicisé cette activité. C'est pourquoi, radio amateur et écouteur d'onde courte furent rejoints via différent clubs et revues internationales dont le TCA.

Le 24 Mai 87, le groupe VE2FMA se rendit au hamfest de Sorel, Québec. Une rencontre agréable avec Mike Masella VE2AM et son groupe fut réalisé. Mike nous confirma une excellente collaboration de CARF. Beaucoup de document écrits furent

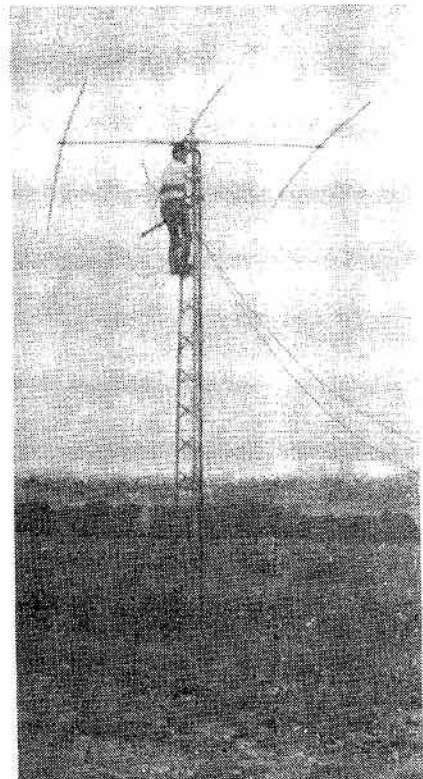
gracieusement donné (livres, écussons, crayons, dépliants, feuilles de messages, etc).

Au moment où le groupe avait le vent dans les voiles, une mauvaise nouvelle assombrie cette enthousiasme. En effet René VE2AHC fut demandé par la garde côtière Canadienne pour effectuer un voyage sur le NGCC Pierre Radisson. Sylvain VE2FOT ainsi que Normand VE2FQX, ne reculant devant rien, décidèrent de poursuivre le défi.

"9 Août 1987 VE2FMA en onde": Après 6 heures d'installations d'équipements et d'antennes, Sylvain, Normand et Pierre un vaillant écouteur d'onde courte, effectuèrent les derniers essais avant la mise en onde de la station officielle "VE2FMA".

Norman Boisvert VE2FQX terminant les installations d'antennes.

Sylvain Latulippe VE2FOT, René Biron VE2AHC, Mike Masella VE2AM, Normand Boisvert VE2FQX; Hamfest de Sorel 1987.



MORE ON HAMS

Thanks to Chas. Palmer VE3AZA for bringing to our attention an article from the August 1984 issue of the Peel Amateur Radio Club Bulletin. It was very similar in nature to the one which appeared in the January 1988 issue of *The Canadian Amateur* entitled: 'Why are Amateurs called Hams?'. The PARC version was researched and written by Mary Drummond VE3IYY (now a silent key). Our article came to us via *The Ontario Amateur*, London ARC and NPARC. Although the two articles differ in length and actual words, the content is basically the same. We agree with PARC historians. Let's give Mary credit! Editor.





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UHF Utilization

Communique from the Adhoc Committee

It is hoped that this communique on the Environment Canada, Atmospheric Environment Service (AES), Wind Profiler System for meteorological research, to be installed at Egbert Ontario, will serve to inform the Amateur community, and perhaps will clarify certain erroneous information that has been both written and reported over the air, at club meetings, etc. The main purpose of this Wind Profiler is for better tracking of tornados— not low level 'wind shear' for aircraft safety as some have thought. Although the first one will be at Egbert, a network of systems is planned across the country.

In December of 1986, although no attempt had been made by DOC to contact either of the national organizations (CRRL and CARF) on this matter, a rumour came to the attention of Stu Beal VE3MWM and Dana Shtun VE3DSS. After a cursory investigation, all feedback at that time indicated it was just a rumour.

But the rumour persisted; so in June of this year Mr. Shtun contacted AES and the DOC. The DOC reminded Mr. Shtun that 430-450 MHz was allocated as Radiolocation 'primary', and Amateur Radio 'secondary', and that they had the right to license primary systems anywhere within the band. Having classified the meteor-

ological Wind Profilers as 'Radiolocation' devices, they planned to allocate a frequency within this band. They would, however, be interested in working with the Amateurs to find a suitable frequency. It was no longer just a rumour!

After checking into spectrum allocation, Mr. Shtun again called the DOC in July to suggest the possibility of placing it on 404.37 MHz. This suggestion was rejected on 'Life Safety' grounds, due to COSPAS SARSAT (Search and Rescue Satellite) at 406.05 MHz.

Mr. Shtun, as Chairman of the CRRL VHF/UHF Advisory Committee, undertook a study of the potential impact on the Amateur service of a Wind Profiler System. Although the Wind Profiler is beaming straight up plus or minus 15 degrees, this study included computer modelling of the Wind Profiler's low angle radiation and the Amateur utilization of the frequencies from 430-450 MHz. Analysis of the results indicated that any frequency within this band would have the potential to interfere with Amateur operations of one sort or another. These findings were discussed with Ray Perrin VE3FN.

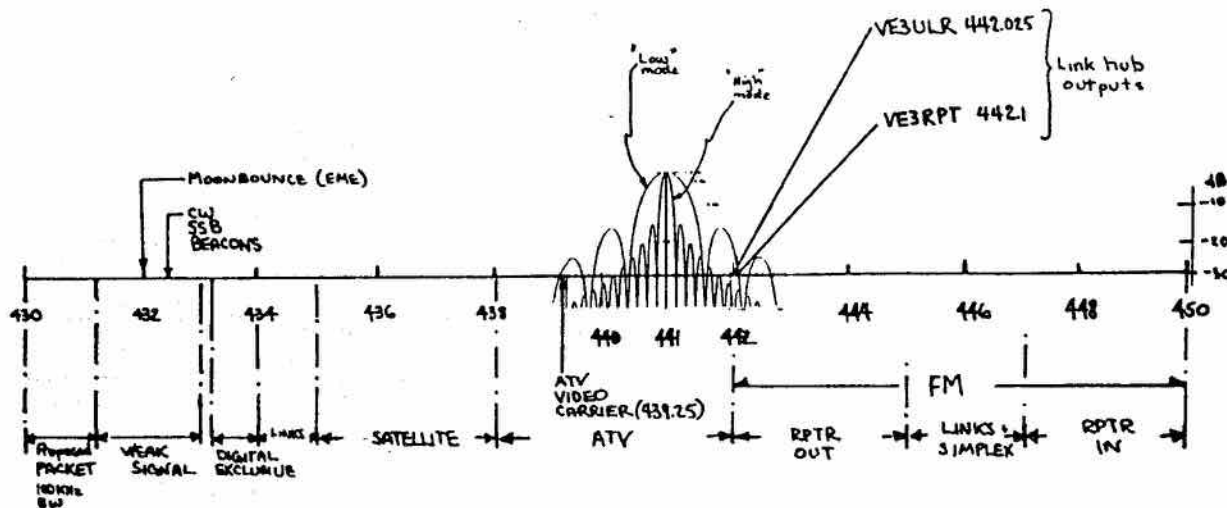
Realizing that the intended location for this Wind Profiler was centred between a few of the linked repeaters

on the VE3ULR Repeater network, in July Mr. Perrin called and met with Bob Miller VE3CFM. After discussions with Mr. Miller and, subsequently, a number of those who might be directly affected by this initial (Canadian) Wind Profiler, the CRRL called the DOC requesting adequate time to work on this. In September, both CRRL and CARF separately and independently expressed opinions to the DOC as did a number of individual Amateurs and groups.

During the latter half of September, the DOC called Paul Smith VE3PS and Mr. Shtun to request that a committee representing the wide range of Amateur organizations and activities on 70 cm study the issue, and determine the frequency that would have the least impact. The results were to be given to DOC by Oct. 9.

An ad hoc committee was formed with representatives of CRRL, CARF, RSO, Amateur Radio Emergency Services, Toronto VHF Society, Western N.Y. Southern Ontario Repeater Council, and two major repeater linking systems— the VE3ULR network and the VE3RPT network.

Continued on next page ▶



UHF (cont'd)

Members of the committee included messrs Smith, Shtun, Beal and Miller, and John Iliffe VE3CES, Bill de Carle VE3OBE, Eric Meth VE3NUU, Gordon Fraser VE3HSF, Hans Peters V3CRU, Terry Darling VE3CAB, Bill Johnson VE3ID, Bob Weir VE3WY, Richard Staron VE3FAC, Casey Coley VE3NGT, Paul Caccamo VE3KOI, Tony Sheppard VE3DIR, Bill Bouwhuis VE3YR, Lyle Stanway VE3LHS and Cam Grant VE3LCC. Among this group were Amateurs involved with every aspect of our use of 70 cm, with the exception of ATV. Try as they might, in the limited time available they could not find an ATVer able to attend the meetings (although a couple were invited). The Committee did, however, consider the ATV requirements throughout their deliberations.

After the first meeting, the committee requested and was granted an extension of the deadline from Oct. 9 to Oct. 20. As they continued to meet and study the situation, it became apparent that there was good reason to continue suggesting the Wind Profiler be placed in the 404 MHz region. Thus the task became dual-purpose:

- a) to find the frequency between 430 and 450 MHz that would have the least impact and affect the fewest number of Amateurs;
- b) to support our contention that the Wind Profiler should be placed

around 404 and not in the 430-450 MHz band.

In attempting to determine the frequency within our 70 cm band, the only non-Amateur criteria was that it had to be greater than 1 MHz from the band edge, as the Profiler has an anticipated bandwidth of 2 MHz or greater. Consideration was given to our satellite operations, our emergency communications services, the potential for interference to weak signal operations within and beyond our borders, the numbers of Amateurs involved with the various separate uses of the band, the bandwidth required for each use, and the susceptibility to interference of each of the modes we employ on 70 cm. With this in mind, 441.0 MHz was chosen.

To support placing the Wind Profiler around 404 MHz, Mr. Shtun was able to obtain information on the existing network of six American systems (expanding to over 30 systems). There, these systems, classified as 'Meteorological Aids', are placed at 404.37 MHz. A study had been done which determined that they should not interfere with SARSAT, but as an added precaution they employ a computer to track the satellite and shut the Profiler transmitter off when it is within 30 degrees of being overhead. A sub-committee of the ad hoc committee prepared a letter and supporting documentation for submission to DOC, with a copy to

AES by Oct. 30. This submission concentrated solely on placing the Wind Profiler on 404.37, similar to the American approach.

The DOC met with the sub-committee on Nov. 12 and presented their reasons for wanting to place it between 430 and 450 MHz. They feel (although the Amateurs are unconvinced) that the Radiolocation classification is the correct one, and that the Americans only placed their systems at 404.37 because they had no other choice (due to pressure from the U.S. military whose radar is a primary operation in the 420-450 MHz band and also forces the curtailment of certain Amateur operations within this band). Canada does have a choice, however, and with due regard to the 'life safety' aspect of SARSAT, will place the Wind Profilers in the 430-450 MHz band, as our northerly latitude means that the polar orbiting SARSAT satellites would be 'overhead' a greater percentage of the time than is the case with the U.S.

The DOC have agreed to approve our chosen frequency for the Egbert site and to set up a meeting between the ad hoc committee and AES to discuss our concerns and to determine if there are reasonable steps which could be taken during installation to minimize the potential interference to Amateur operations. AES appears willing to participate.

SIGNED BY THE ADHOC
COMMITTEE ON UHF
UTILIZATION
PAUL SMITH VE3PS, Chairman

Antenna Report

The DOC has just released the 109-page Townsend report on guidance for municipalities regarding antennas and antenna supporting structures. In a few words, the report says that a municipality may not control the operative capacity of a licensed or unlicensed radio station. The report includes these highlights:

- Local ordinances prohibiting the siting of licensed or unlicensed antennas are ineffectual.
- Municipal rules may not expressly control or limit the height of an antenna system for aesthetic or any other purposes.
- Local administrations have no lawful jurisdiction over the structural adequacy of an antenna or its supporting structure.
- If an antenna is close enough for an antenna, ice or other debris to fall and cause damage to a neighbour's property, third party liability insurance may be required by a municipality.
- Where an antenna and supporting

structure is to be sited within or immediately adjacent to an area where a strong and compelling local interest exists, such as a residential, heritage or recreational area, painting and screening of the antenna and support structure may be required by a municipality so long as the operative capacity of the radio station is not impaired and the cost is not unreasonable.

- Where an antenna and its supporting structure are to be mounted on a building, a municipality may set certain structural requirements regarding the strength, lightning grounding, etc. of the existing building.

Amateurs concerned with a specific problem should refer to the full report rather than this brief summary.

DOC has invited comments and should have them by April 30. Copies can be obtained from any DOC Regional Office and DOC Information Services in Ottawa. ■

MS-DOS TIPS

The following tip is for the growing number of Amateurs with IBM PCs and compatible computers.

It describes how to protect a file from accidental changes and deletion. You need DOS version 3.1 or later to use it. Assume you had a file called AMATEUR.EXE. For example: You'd simply type the following line at the DOS prompt to protect it.

```
ATTRIB +R AMATEUR.EXE
```

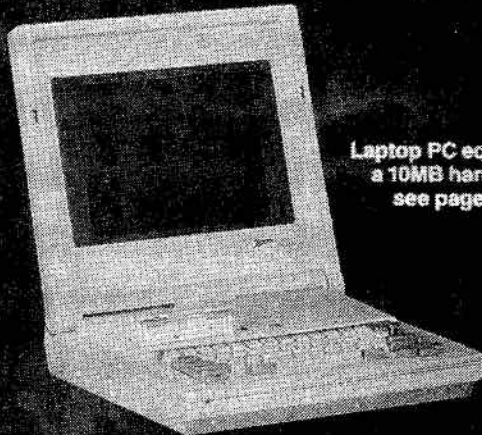
Then if you tried to delete or modify the file, you'd get the message ACCESS DENIED, and the file would be unharmed.

— VE7FSK in *Zero Beat*

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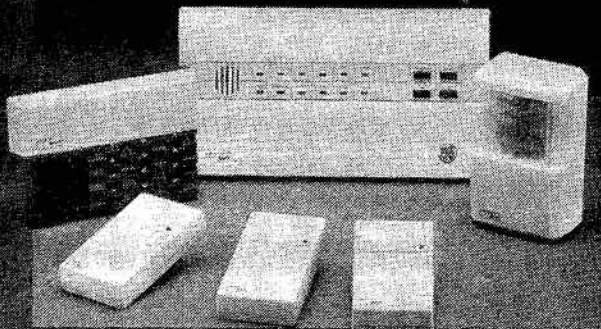
To send reminders to you all by mail costs thousands of dollars a year. By using the label to carry the message, CARF can afford to serve you better!



Laptop PC equipped with a 10MB hard disk – see page 84



Analog Trainer and Backpack – see page 58



Wireless Security System – see page 102



Logic Analyzer converts PC into a test instrument – see page 42



Pack-Kit Multi-Mode TNC and 1KW Linear Amplifier – see pages 32 and 36

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The Bulge

BY MARY HOLLAND
VE3SBJ

My introduction to Ham Radio occurred when I became acquainted with my future husband. On our first date, we attended a play at the Grand Theatre in Kingston. While driving there I noticed a peculiar bulge under Bill's sports jacket. My curiosity got the better of me, and abandoning the usual reserve attached to a first date, I questioned him about it. Bill opened his coat and showed me his two-metre handheld.

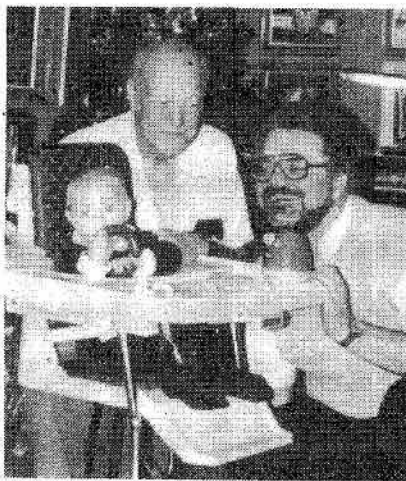
From the explanation and demonstration which followed, I learned of the existence of Ham Radio. I soon began to appreciate its versatility. I was fascinated by some of the things that I saw were possible; Bill demonstrated how to make telephone calls to his parents through the autopatch, and the ease of communication possible via the area repeater.

As our courtship continued, I learned that Ham Radio was a mainstay in Bill's family. His father has been an active Ham since 1934. By the time we reached the wedding stage, I had made up my mind that I wanted to participate with Bill and my future father-in-law in this fascinating and fun hobby!

In the fall of 1985, I attended the Amateur theory classes offered by an Amateur Radio club near our home. Bill also attended, because he wanted to provide additional instruction in the subjects covered in class.

When my work schedule made it difficult to maintain regular class attendance, we opted for home instruction. This proved to be a bonanza of help to me! My father-in-law made up morse tapes, provided samples of various electronic components, and sent code practice for me during regular QSOs with Bill. Howie Furnell VE3FKF, a friend of the family, also helped in this activity. Bill made up quizzes and mini tests as I progressed in my theory and regulations studies. Ever present was the incentive provided by watching Bill during his many QSOs at home and in the car.

There were some inactive periods in my studies. One time was occasioned by the birth of our son in July '87 and the subsequent 'reasoning' of the new



Frank Holland VE3DVB, Bill Holland VE3BAQ and Billy.

parents. I was also seeking work at this time. Throughout this happy chaos, Bill and Dad were so supportive. If I was despondent over my progress, they were quick to assure me that I was not unique in this; they had "been there too!"

I discovered that learning morse code was not a steady incremental progression of proficiency which could be plotted on a graph. When I became exasperated with my inability to copy morse at a speed which I could handle perfectly only the day before, Bill was always there to explain that morse was like that; lots of frustration, but skill was being acquired, nonetheless. In retrospect, I now agree with Bill.

I received much encouragement and assistance from the many Hams I met through Dad, Bill and the local Amateur Club. They provided helpful books and tapes for practice.

The picture included with this article was taken at Christmas, 1987. It was an occasion of great happiness in several ways. First, the photo shows three generations of Hollands—Dad VE3DVB, Bill VE3BAQ, and grandson Billy. Second, I had successfully completed the theory portion of the exam three weeks prior to Christmas and the only outstanding item was the Regulation. Finally, this was Billy's first Christmas.

We have noticed recently that Billy

is appearing very interested when Mommy or Daddy go on the air! Who knows? Maybe he will become the third generation 'Holland Ham'!

Bill VE3BAQ is a DOC Radio Inspector working out of the Belleville, Ont. office and a very active Amateur in the Belleville/Kingston area... Editor. ■

TUBES WITHOUT FILAMENTS?

Wonders never cease—in radio! A new and startling idea has been developed by two prominent radio engineers, C.G. Smith and Dr. V. Bush, of the Amrad research staff at Medford, Mass., in the shape of a new audio that will rectify, oscillate, amplify, and otherwise perform the work of modern three-electrode vacuum tubes, all without a filament. The tube was displayed and explained at a recent meeting of the Boston Section of IRE and the paper delivered there will soon be available to the radio public in the Institute's Proceedings.

As yet, we have only bare details of the 'S-tube', as it is called, but we are asked to imagine a couple of metallic salt-shakers as used in any home, separated by a distance equal to the thickness of a sheet of paper and enclosed in a cylindrical glass tube containing neon or helium gas. The field of a powerful permanent magnet is directed across the gaseous space between the two electrodes and apparently causes the liberation of electrons through ionization due to atomic bombardment. Just how this action is controlled to produce oscillations we do not know, but the chief interest in the Amrad Company is now centering on the use of the new device as a rectifier.

Tubes without filaments would certainly be a blessing, and we will await developments with interest.

Radio Magazine Article, 1921
from Roy VE7TG

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

LOOKING AROUND

Robert Dewar, in his excellent Editorial in the December 1987 issue of *The Canadian Amateur*, gave a non-Amateur view of our hobby. The points made included: (1) to non-Amateurs, Amateur Radio and GRS are the same; (2) the defensive outlook of the average Amateur and stress made on supply of communications in emergencies although this 'activity' forms a very minimal part of total Amateur activities; (3) the lack of positive Amateur publicity with consequence that the average citizen equates Amateurs as nuisances causing TVI, home entertainment and antenna problems; (4) there is a strong possibility that we will lose Amateur frequencies above 30 MHz; (5) the number of Canadian Amateurs has remained constant (23,000) for some years and will probably decline under existing conditions. One point not mentioned is that the Amateurs of Canada are not united, with our two national organizations having less than 20% support each, and less than 33% support combined.

The nature of Amateur Radio—personal communications—fosters a spirit of independence—one Amateur working one Amateur—and the diverse aspects of the hobby created groups having relatively narrow interests. For example, my local club, in the 60s and 70s, established and maintained auto-repeaters and, consequently, many local Hams did not support it "as the club was only interested in two metres." Similarly, on the national level, there are pro-ARRL/CRRL and pro-CARF groups, but in recent years a new group—pronified society—has come into being. On the surface, this lack of national support is idiotic as Amateur Radio activities are federally regulated and, when changes in regulations are made that an Amateur disagrees with, the response is always, "Why didn't CARF (or CRRL) do something?"—although the Amateur does not support either organization.

The average Amateur is willing to spend hundreds of dollars to upgrade his/her station but unwilling to spend

the very small cash required to demonstrate support for a national society. Almost all Amateurs I have talked to express concern over the many problems encountered by our hobby, but they are seemingly not aware that a very strong national voice is required to overcome these problems. There are two needs to create this strong national voice—support of your national society and a resumption of growth in Amateur numbers. I have mentioned these needs several times in past columns, so will not belabour the point.

One point that I will dwell on is the lack of positive publicity for Amateur Radio. Generation of publicity is a function of the local club, not of the national organizations. CARF can fill the pages of *The Canadian Amateur* with details of the good services that Amateurs perform but this is not generating publicity to the general public. It is up to the ARCs to contact their local media—newspapers, radio stations, cablenet bulletins, etc.—and advertise what the local Hams are doing, public services performed, notice of meetings of interest to the public, courses available, involvement in municipal emergency training exercises, etc.

With a little effort, good publicity can be obtained. My local club, Kingston ARC, decided to sponsor a course on Amateur Radio to commence in early January 1988. To publicize local Amateur activities and the course, an article was written for the *Journal* of St. Lawrence College, a notice was sent to the Cablenet Bulletin service, and a Letter to the Editor, giving details, was forwarded to the daily newspaper.

Additional benefit occurred when a reporter from the weekly newspaper contacted the club to gain more details of Amateur Radio and the proposed course, wrote an article about this for her paper and asked to be kept informed about future activities and progress of the course. Because of this excellent publicity coverage, the course commenced with 22 students, double what had been forecast. Incidentally, over 30 people attended the registration night, but several did not have the spare time available for the course. Previous experience with club courses brought out that instruction could not be rushed and so the 1988 course has 30 nights, each having a half-hour period for Morse code and two hour-long periods for technical, etc., instruction for a total of 75 hours of classroom time. Note that this course is 50% longer than courses

run in the 1970s before requirements and examination procedures were changed and Canadian Amateur growth virtually ceased.

There is a tendency among Amateurs to quietly provide public service communications and participate in emergency training exercises with the unfortunate result that, to the average citizen, the adverse publicity generated, in years past, by a small number of GRS operators, also applies to Amateurs. I remember talking with a stranger at a party and asked if he knew anything about Ham radio. His reply was to the effect that Hams played around on the short-waves and exchanged post cards to display on the walls of their basement! If this is the image we present to the public, this is also the image we present to politicians and, if it comes to a political decision concerning retention of our frequencies, not many would support Amateurs against commercial interests. As stated before, it is the function of the ARCs to generate positive publicity for our hobby and it may be vital that this be done for the continued well-being of Amateur Radio.

Take a good look at your own club... are the meetings attractive to the average Amateur? Are the meetings publicized to all the Amateurs in the area or does support depend on word-of-mouth publicity? Does your club seek support by mailing notice of special interest meetings, etc. to all the local Amateurs? The response from these queries will undoubtedly be the costs involved, so let us look at this aspect. Say your dues are \$12 per year and there are 100 Amateurs in your local area who do not support the ARC. It would cost about \$30 to publish and mail a notice, bulletin, etc. to these non-supporters but, if only three new memberships result, costs are recovered. And there is something wrong with your meetings and activities if you can only generate 3% support!

As a final note—if you do not think that there will be problems in retaining our frequencies, take a look at the table on page 18 of the December 1987 issue of *The Canadian Amateur*. Particularly note that there are 182,404 commercial users of an average 4 MHz band above 30 MHz while there is only a total of 23,660 Canadian Amateurs spread out over all our frequencies. A frightening statistic, all the more serious due to lack of positive publicity of Amateur operations and a unified voice to government. ■

HELP WANTED

The CARF Office needs the current addresses of the following Amateurs, listed by name and last known address: Lazlo Reffalvi VE5BP, 235 Lenor Dr., Saskatoon, Sask. Please tell Debbie if you have any information. Her address is P.O. Box 356, Kingston, Ont. K7L 4W2.



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| | <p>IC-900 REQUIRES AT LEAST ONE OF THE FOLLOWING BAND UNITS:</p> <table border="1"> <thead> <tr> <th>Model</th> <th>Power</th> <th>Reg.</th> <th>SPECIAL</th> </tr> </thead> <tbody> <tr> <td>UX19A</td> <td>10 Meters 10W</td> <td>439.00</td> <td>365.00</td> </tr> <tr> <td>UX29A</td> <td>2 Meters 25W</td> <td>495.00</td> <td>399.00</td> </tr> <tr> <td>UX29H</td> <td>2 Meters 45W</td> <td>549.00</td> <td>469.00</td> </tr> <tr> <td>UX39A</td> <td>220 MHz 25W</td> <td>565.00</td> <td>485.00</td> </tr> <tr> <td>UX49A</td> <td>440 MHz 25W</td> <td>565.00</td> <td>485.00</td> </tr> <tr> <td>UX59A</td> <td>6 Meters 10W</td> <td>549.00</td> <td>469.00</td> </tr> <tr> <td>UX129A</td> <td>1.2 GHz 10W</td> <td>875.00</td> <td>719.00</td> </tr> </tbody> </table> | Model | Power | Reg. | SPECIAL | UX19A | 10 Meters 10W | 439.00 | 365.00 | UX29A | 2 Meters 25W | 495.00 | 399.00 | UX29H | 2 Meters 45W | 549.00 | 469.00 | UX39A | 220 MHz 25W | 565.00 | 485.00 | UX49A | 440 MHz 25W | 565.00 | 485.00 | UX59A | 6 Meters 10W | 549.00 | 469.00 | UX129A | 1.2 GHz 10W | 875.00 |
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John Connor VE1BHA
18 Deerfield Dr., Apt. 1112,
Nepean, Ont. K2G 4L2

CONTEST SCENE

To begin this month, a brief reminder that the RSGB Commonwealth Contest will be held this year on the 12th and 13th of March. Complete rules were published in last month's column. This contest is a good opportunity to pick up some of the rarer DX countries in the Commonwealth, especially some of those semi-rare African countries.

The month of March means WPX time to testers. This March 26 and 27 will see plenty of activity on phone, with the opportunity for plenty of QSOs and some good DX. Propagation is definitely improving, and there is a very good possibility that ten metres will see some good openings.

Scoring in this contest is quite simple. Contacts with stations on the same continent are worth two points on 28, 21 and 14 MHz, and four points on 7, 3.8 and 1.8 MHz. Contacts with stations on different continents are worth three points on 28, 21 and 15 MHz and six points on the low bands of 7, 3.8 and 1.8 MHz. Your final score is the sum of QSO points times the total number of prefixes worked. A prefix is the letter/number combination which forms the first part of an Amateur radio call sign (N1, VE1, KH6, W2, IT9, Y22, Y23, HG19, etc.). Prefixes are counted only once, not once per band. That is, if you work a 9J2 on both 15 and 20 metres, then that is only one 9J2 prefix multiplier.

The exchange for this contest consists of a signal report and a three-digit serial number, beginning with 001. If you make over 999 QSOs, then carry on with a four digit number.

Serial numbers are great. If you are tuning around Saturday afternoon feeling pretty proud of your 800 QSOs and you hear VE6OU/3 giving out 591237, you know right away that you can quit contesting and go skiing on Sunday afternoon.

If you plan to do any serious or even semi-serious work in this contest, I would urge you to read the full rules as published in January CQ.

For those who are really serious, or maybe just curious, a list of the current Canadian records is presented here.

QRM

Aside from the above, there doesn't seem to be a preponderance of information this month. For those who like to participate in some of the smaller European Contests though, a note from Marvin VE3VEE may be of some interest. Marvin is an ex-OK, and passes along the news from a

Czechoslovak magazine that the Eastern Europeans are thinking of organizing one big contest to replace the smaller national contests, such as the OK DX, YO DX, Y22 and so on. If this comes about, it would be some time around 1990. Sounds like an interesting idea, and it will be worth watching to see what becomes of it.

Speaking of spending all weekend sitting in the shack with the transmitter on most of the time, there was a curious little item carried in the local paper last week which cited a study in the States on cancer rates among Amateur radio operators. It seems that we die of cancer at a higher rate than the average population. This report had studied the impressive number of some 70 cases.

This reminds me somewhat of a report I read on the deadly effects of the common pickle. Think about it. Undoubtedly, of those 70 cases, very probably every one of those people had at some time eaten a pickle. This is highly suggestive.

The conclusion is obvious. If you insist on exposing yourself to strong RF fields by contesting, don't eat pickles during the contest. Oreo cookies are much better, and they have the side benefit of attracting DX. This is a little known property of Oreo cookies, but it is true. I have personally verified it. Peanut butter cookies can also work very well. A peanut butter cookie attracted the first KH6 that I ever worked on 80M SSB.

A further point on this cookie phenomena. A certain well-known DXer/contester currently residing in Aylmer seems to be quite fond of cookies. Is this merely a coincidence? NOT LIKELY.

Admittedly, there is much research left to be done in this area. Myself, I'm

on a diet, so I can't pursue it any further but would be quite happy to hear the results of other investigations. Knowing my luck, the really rare DX will be attracted to coconut. I hate coconut.

Maybe this helps to explain why so many big gun DXers are fat. Cookies and DX. Think about it.

A new feature of 'Contest Scene' is Frank Anzalone W1WY and the 'Contest Calendar.' Frank comes to us courtesy of CQ Magazine.

CALENDAR

Mar. 5-6 ARRL DX Phone Contest
Mar. 12-13 QCWA Phone QSO Party
Mar. 12-13 RSGB Commonwealth Contest
Mar. 12-13 Maine QSO Party
Mar. 13 ZERO District QSO Party
Mar. 19 YLRL East Meets West SSB
Mar. 19-20 Bermuda Contest
Mar. 19-21 BARTG Spring RTTY Contest
Mar. 19-21 Virginia QSO Party
Mar. 20-21 Wisconsin QSO Party
Mar. 26-27 CQ WW WPX SSB Contest
Mar. 26-27 UBA SWL Phone Trophy
Apr. 6-8 DX YL to NA YL CW
Apr. 9 Israel ARC Contest
Apr. 9-10 ARCI QRP Spring CW Contest
Apr. 9-10 Alabama QSO Party
Apr. 13-15 DX YL to NA YL Phone
Apr. 16-17 IBM QSO Party
Apr. 16-17 Georgia QSO Party
Apr. 23-24 Swiss Helvetia Contest
May 28 ARCI QRP CW Sprint
May 28-29 CQ WW WPX CW Contest
May 28-29 UBA SWL CW Trophy
July 16-17 CQ WW WPX VHF Contest

RSGB COMMONWEALTH CW CONTEST

1200Z Sat. to 1200Z Sun., March 12-13

Only RSGB members residing in the United Kingdom and radio Amateurs licensed to operate within the British Commonwealth and British Mandated Territories are eligible to participate.

Contacts between stations in the same call area are not permitted. All the British Isles count as one call area, except GB5CC, which counts as a separate call area.

Activity will be CW only 3.5, 7, 14, 21, 28 MHz, within the lower 30 kHz of each band (except Novice contacts).

Exchange: RST plus a QSO number starting with 001.

Scoring: Each contact is worth 5 points. In addition, a bonus of 20 points may be claimed for the first 3 contacts with the same call area on each band.

Each band is scored separately and totaled. Just add the total QSO and bonus points for your final score.

Continued on next page

WPX SS CONTEST

CANADIAN RECORDS

| CATEGORY | CALL | SCORE | YEAR |
|----------|--------|------------|------|
| All Band | VE6OU | 5,253,399 | 1982 |
| 10M | VE3BMV | 2,796,255 | 1980 |
| 15M | VE3BMV | 3,690,450 | 1982 |
| 20M | VE1NG | 3,916,965 | 1986 |
| 40M | XL7SV | 3,454,864 | 1986 |
| 80M | VE3BMV | 1,928,720 | 1986 |
| 160M | CG3MFA | 319,140 | 1985 |
| MS | VE1DXA | 8,272,704 | 1982 |
| MM | CK7WJ | 16,545,370 | 1979 |

CONTEST (cont'd)

There is no multiplier. You can request a single band be judged for awards. Only single operator entries will be accepted.

Unmarked duplicate contacts for which points have been claimed will be penalized ten times the number of points claimed, with possible disqualification if in excess of 5 duplicates.

Use a separate log sheet for each band, and include a summary sheet showing the scoring and a signed declaration that all rules and regulations have been observed.

Awards: Certificates to the first-, second-, and third-place winners in each call area, both single and multi-band. There are three Rose Bowl Trophies for overall winners.

There is also an SWL section with rules and scoring the same as above. If both stations in contact are heard, they can be reported as separate entries for credit on each band.

Logs must be received by April 11 and go to: HF Contests Committee, Att: Alan Gray G4DJX, P.O. Box 73, Lichfield, Staffs WS13 6UJ England.

CQ WORLD-WIDE WPX CONTEST

SSB: March 26-27 CW: May 28-29.
Starts: 0000Z Sat. Ends: 2400Z Sun.

Rules are the same as those used last year with the same format that has been in use these past many years. Therefore, it would serve little purpose to repeat them again, since they are well established world-wide. Following are a few points to keep in mind.

Only 30 hours out of the 48-hour contest period may be used by single operator stations. Off times can be taken in up to five periods, but off periods must be a minimum of 60 minutes in length. Multi stations can operate the full 48 hours.

The QRP section has become very popular and is worth your attention.

The definition of the prefix multiplier is spelled out in detail and is not to be confused with the interpretation used by the CQ WPX Award program.

A prefix is the letter/number combination which forms the first part of a call.

Also bear in mind that stations in call areas different than that indicated by their call signs are required to sign portable.

The multiplier is determined by the number of different prefixes worked and is counted once only, regardless of how many times it is worked on other bands.

Another point to keep in mind is that in the multi-operator, single transmitter category only one transmitter

and only one band may be used during the same 10-minute period. Picking up a new multiplier on another band during the same time period is definitely prohibited.

An alphabetical/numerical check-list of claimed prefixes is a requirement and must be included with your log.

An updated trophy and plaque awards list now shows over 40 awards. Be sure to check the awards that are available.

Deadline for submitting your SSB entry is May 10, and July 10 for the CW section. Be sure to indicate SSB or CW on the envelope.

All logs go to: CQ Magazine, WPX Contest, 76 North Broadway, Hicksville, NY 11801 U.S.A.

Questions pertaining to the WPX Contest can be sent to the WPX Contest Director, Steve Bolia N8BJQ, 4121 Gardenview Dr., Beavercreek, OH 45431 U.S.A.

BERMUDA CONTEST

0001Z Sat. to 2400Z Sun., March 19-20

This is the 30th year for this popular contest open to Amateurs in the U.S., Canada, United Kingdom, West Germany and Bermuda.

Stations in the U.S. and Canada may work the U.K., West Germany and Bermuda. The U.K. and West Germany may work the U.S., Canada and Bermuda. Activity will be on the 3.5, 7, 14, 21 and 28 MHz bands. Cross-band or cross-mode contacts are not permitted. The same station may be worked on each band, phone and again on CW, providing there is a 30-minute separation between contacts on the same band.

You are limited to 36 hours out of the 48-hour contest period. Off times of no less than three consecutive hours must be clearly indicated on the log. Participation is for single operator stations only and must be from their own residence.

Exchange: RS(T) and QTH. Parish for VP9, state for the U.S., province for Canada, county for the U.K., and DOC number for West Germany.

Scoring: Five points for each QSO. Multiply total by number of different VP9 stations worked on all bands. (Note: It's each VP9 station, not each parish.) Counted only once per band regardless of mode used.

Awards: Certificates to top scoring stations in each U.S. state, VE province, U.K. county and DL DOK (minimum of 100 QSOs). The overall winner in each of the above countries will receive a trophy to be presented at the Society's Annual Dinner in Bermuda Oct. 16-22. Round-trip transportation and accommodations will be provided for the winners.

(Winners in '83, '84, '85, '86 and '87 are not eligible.)

Use a separate log sheet for each band and a dupe sheet for logs with 200 or more contacts. A penalty of three contacts will be deducted for each duplicate contact for which points are claimed. An excessive number of claimed duplicates means disqualification. The usual signed declaration is also required.

Entries must be received no later than June 1 by the Radio Society of Bermuda, Box HM275, Hamilton HM AX, Bermuda.

The Worked All Bermuda Award can no longer be obtained by contest log information. Proof of contact with all nine parishes is required in the form of QSL cards. Send your application to the above address attention the Awards Manager.

Trophy winners in the 1987 contest were K1ZM, VE3OZB, G4LJF, DK8ZB and VP9IX.

CONTACT LENS ALERT

Two recent incidents have uncovered an important safety hazard. The first was an electrical worker who threw an uncovered electrical switch into a closed position that produced a short spark. The second involved a welder who flipped open his protective face shield to better position a welding rod. The rod contacted the metal and also produced a spark. Nothing was unusual except that both men were wearing contact lenses.

On returning home, they each removed their contact lenses and the cornea of the eye was removed along with the lens! The result was instant and total blindness in each man's affected eye.

Later investigation showed that in both cases the electric arc generated microwaves that dried up the fluid between the eye tissue and the contact lens and bonded the cornea to the lens. Unfortunately, the trauma is painless, so the individual never knows that an injury has occurred until he tries to remove the contact lenses.

When these incidents were reported, the phenomenon was unknown to federal safety and health agencies. In the interim, don't wear contacts if you are subject to electrical sparking!

REPEATER DIRECTORY

1988 Repeater Directories are now available free from the CARF office. Send an SASE to Box 356, Kingston, Ont. K7L 4W2.

Paul Cooper VE3JLP
RR 2 Metcalfe Ont.
KOA 2P0

•CQ DX•CQ DX•

IN SEARCH OF BETTER SELECTIVITY

Improved selectivity is something all DXers crave, no matter what rig or filters we are using. We are bit like a bunch of junkies always searching for something with a bigger kick. It's also the old problem of familiarity breeding contempt. I can recall the delight I felt as I started to use my brand-new TS 830S, without any extra filters, after years of using an old Yaesu FT200. What was the point of fitting an optional pair of CW filters to my 830?, I thought, I can just fiddle with the variable bandwidth and IF shift and pull anything through I want to work. What a tremendous improvement it was over the FT200!

That's what I felt for the first few months, anyway, until I really got used to the selectivity of my new rig and then I started to have doubts. Maybe I could have separated that weak VS6 from the W6 that was pounding in only a few hundred cycles up the band? Perhaps I should reconsider those optional filters? A kind friend heard my complaints and loaned me his spare 830S already equipped with a pair of CW filters. It was quite a revelation; I'd almost decided to take the plunge and buy a pair when along comes an intriguing article by Tom McShane NW6P in the January *DXer* all about the 'SuperSCAF' audio filter.



Now I used to use an audio filter back in the days when I was still fighting the poor selectivity of the FT200. I had very mixed feelings about the unit I'd bought which, I admit, was not very sophisticated. Other strong signals in the IF passband often used to knock back the gain of the rig and make copy impossible even though the audio filter was doing its best. However, there are audio filters and audio filters and the SuperSCAF sounds like something rather special.

Apparently it was first described in a technical article in the April 1986 *QST*. The authors got so many requests that they started their own company, Afonics, to market a kit version of the filter. Another good source of information is Lew McCoy's review of the unit in the November 1987 issue of *CQ*. It's not particularly cheap, \$136.95 (U.S.) including postage. However, IF filters can cost that much or more so, whichever way you go in your search for improved selectivity, you are going to have to pay.

For the technically-inclined, the unit is built around the comparatively

KHMER RADIO AMATEUR ASSOCIATION

XU1SS

ANKOR WATT TEMPLE

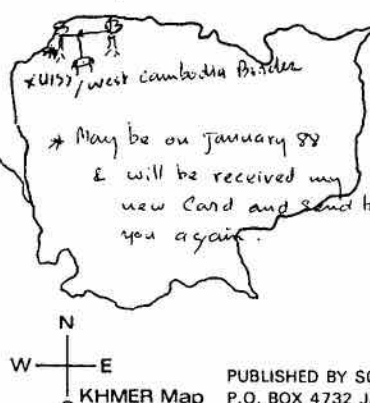
KHMER PEOPLE NATIONAL LIBERATION FRONT

POST CARD

CAMBODIA TO A.R.S. VE3JLP

DEAR, ...Gentleman... Paul.....

PLEASE
STAMP
HERE



KHMER Map

DATE = 20.10.87
Time : 13.25UTZ
Freq : 14.165
Mode : SSB
RST : 4 x 1
Rig : IC 730
ANT : Single Dipole, obt 7mts high

Many ths for ur kindness Om Paul
& im sorry my Card is finished
& im looking forward for my
new Cards from My Friend JAU KFA
May God be with U

SETH

PUBLISHED BY SOEBIJAKTO ADINEGORO OP. OF YB B BCA
P.O. BOX 4732 JAKARTA 10001 - INDONESIA

A welcome arrival in your DX Editor's mailbox. See the story under XU, Kampuchea in this month's column.

new design technique of switched capacitor integrated circuit filters. The SuperSCAF uses two of them, one for low pass, the other for high, and in combination they produce a variable bandpass filter with some very impressive characteristics. The roll-off slope of the passband is 150 dB per octave without any detectable ringing, distortion or noise while the attenuation provided by the filter is a healthy 51 dB. Using four thumb-wheel switches you can slide the filters up and down and in and out, making them as narrow as 30 Hz or as wide as 3,900 Hz.

After recommending the filter, even if you only operate on SSB, Tom goes on to describe its performance on CW with words like 'awesome,

spectacular, unreal'. So there we are, another device to help us in our never-ending search for improved selectivity. Now if only I can persuade that friend of mine to get one of these units so I can compare it to the IF filters in his TS-830S!

OKIMNO TORI-SHIMA

Readers of the December column may remember I briefly noted the Japanese government's plans to save this 'wet rock' from finally disappearing beneath the surface of the Pacific Ocean. It used to have DXCC status as JD1/7J1 but was deleted some years back probably in recognition of the fact that wet rocks are not really islands at all but more

Continued on next page ▶

DX (cont'd)

reefs, barely awash at low tide. The interest in saving Okino Tori-Shima reef has nothing to do with Amateur radio, though we may ultimately see its DXCC status restored. It has everything to do with Japanese fishing rights and the possibility that the surrounding area may contain seabed deposits of manganese and cobalt. These rights are considered valuable enough that the government has budgeted over \$300 million to be spent over the next three years to conserve this Japanese territory. It's going to be a tough job, not unlike a dentist putting a cap on a crumbling tooth. They plan to build two large steel and concrete blocks, 50 metres in diameter, to cover the existing high points of the reef which lie 1,280 metres apart and stick up a little more than half a metre above the water at high tide.

Apart from the difficulty in moving the building material into place across a shallow reef, the structures themselves will have to be extremely sturdy, since this part of the Pacific is notorious for its fierce storms that often send 20-metre waves pounding against the reef. I guess we should all wish Masash Waki, the civil engineer who will oversee the project, the best of luck. When he has finished, his artificial islands will be a comfortable(?) one metre above high water level. On a calm day a DXpedition might even be able to keep its feet dry while handing out contacts, any volunteers? By the way thanks are due to VE2ZP for spotting this item in the *Montreal Gazette* which in turn credited the *New York Times*.

73 MAGAZINE, DX ISSUE

One of the magazines I don't subscribe to is 73. I have nothing against it, I just had to draw the line somewhere with about eight regular magazines and newsheets crossing my desk every month. What I'm leading up to is that I've only just discovered that the January issue of 73 was devoted to DX and, by the sound of it, they filled the pages with many interesting articles on the subject. For example there is a piece on the Colvins, Iris and Lloyd W6KG/W6QL, and their many years of DXing and DXpeditions all over the world. (By the way they are currently on the road again, this time in Asia, hoping to get permission to operate from S2, Bangladesh. Before this they were active from 9M, Nepal, but I haven't seen any detailed reports of this part of the trip yet.)

Some of the other goodies in this special issue of 73 include QSLing tips, a list of DX nets, an article on 10

metre DXing for Novices and something called 'In praise of DX and WAS Nets' — we are all a bit puzzled about this last one! All in all, it sounds like an issue you should track down either on the newstands or in your local library.

XU KAMPUCHEA

I hope you all noticed the card that illustrates this month's column. I'm happy to say that it confirms a contact that I made, albeit via a DX Net, with one of the rarer countries in Southeast Asia. As far as I know, Seth XU1SS is currently the only station active from Kampuchea. The way I got the card is a small story in itself. Regular readers will know that I have a special correspondent in Thailand keeping an eye open, on my behalf, for anything that has the remotest connection with Amateur radio. This is, in fact, daughter number three, Julia. Noting that the DX newsheets had several minor variants on Seth's address, all in Nonthabury, Thailand, I hit on the idea of using Julia as a local intermediate post office. She would forward my card by local mail, with a few words in Thai, to Seth's QTH and ring the changes of those address until she hit one that worked. Well, it seems that she hit the right one first time and back to her came his card together with a personal note from Seth himself beginning "Dear Gentleman Paul, Hello sir!..." and continuing for half a page before signing with "...May God be with you and yours, yours very truly, 73s Seth".

It seems that Seth has his problems. He talks of "...living along the border like the frog in the well" and running his station, an IC730, on battery power into a dipole at seven metres only... small wonder his signals are so weak! On the day that he wrote to me, Dec. 8, he already had a backlog of 87 QSLs to rely to, but was waiting for his own new cards which he hoped would arrive in January from his friend JA4KFA. He said he would send me one of the new cards when they arrived. He told me that he is 26 years old, single and alone and closed with the words "...I want to do more on AR Ham, but I'm so poor with Battery Power and the currency to send cards back."

I have written back to Seth thanking him for his charming letter and his efforts to keep XU on the air. I've also enclosed an M/O which should help to keep him in cards and stamps for a few months, anyway. The address I used this time is the latest one I've seen in *QRZ DX* which is: Mr. Chou Hieng (P.S.), P.O. Box 17, Aranya-prathet Prachinburi 25120, Thailand. It appears that the earlier

address in Nonthabury has been 'compromised'.

P4, ARUBA

For those of us struggling up the DXCC ladder, the big news of the past few months has to be the announcement of yet another DXCC Country. The DX Advisory Committee recommended that Aruba should be added to the list and the ARRL Awards Committee didn't waste any time endorsing this unanimously. Aruba is now quite separate from the Netherlands Antilles, PJ2-4, and credit for contacts dated Jan. 1, 1988 or after will be accepted by the DXCC desk.

There are some 'administrative procedures' of which you should be aware before you send in that card. The ARRL news release describes the rules of the game:

"(1) Do not submit cards for Aruba credit before April 1, 1988;

"(2) Before Aruba credit can be given to those who already have credit for Netherlands Antilles, a Netherlands Antilles card must be RESUBMITTED. Therefore, along with the creditable Aruba card, please also resubmit any card confirming contact with Curacao or Bonaire, or an Aruba card dated Dec. 31, 1985 or earlier."

BITS AND PIECES

SLIM AGAIN— I have to take my hat off to the ingenuity of some of the pirates that have recently been logged by readers of *QRZ DX*. Apparently one of them was signing with the call RG8U. Now this *could* have been a legitimate Russian call, however, when he indicated that QSLs should be sent to COAX...!

VP2M MONSERRAT— If you regularly monitor the CW portions of the HF bands and listen for stations in the Caribbean, you can hardly have missed Ursula Sadler VP2MDY. She is on almost every day sending impeccable code and often working friends she has made in the Royal Signals ARS. You may remember I ran a picture of her in her shack about a year ago and told readers of her background as a WW2 radio operator.

The point of this item is to tell her many friends that she now has a new call, VP2MT. (Does one graduate to a two-letter call in Monserrat after a certain number of years operating? Seems a bit unlikely, doesn't it?!)

CEO, EASTER ISLAND— Some interesting statistics on Amateur activity on Easter Island are in the latest issue of *QRZ DX*. There are currently eight Amateur stations on the island with a total of 28 licensed operators. At least two of these operators are a husband and wife team, Sergio and Patty, CEONKY and

Continued on next page ▶

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

EMI IN THE SOVIET UNION

In the two to three weeks prior to Christmas it was not unusual to hear one or more Russian Amateurs using VE2CRA, the repeater sponsored by clubs in the Ottawa area. These Amateurs were the advance party led by Leonid Labutin UA3CR. Leonid is well-known in ham circles and is a senior radio operator and Chief of the Club Radio Station of *Komsomolskaya Pravda* newspaper in Moscow.

PRESS CONFERENCE

During the course of the press conference held to introduce the media to the 'Polar Bridge' transpolar expedition, four other radio operators were present and met before the conference took place. UW3GZ accompanied Leonid along with several operators who would be working from the Arctic. Several Olympic-calibre Russian cross-country skiers attended the press meeting as well as Tom Atkins, President of CRRL. Tom has played a major role in bringing this venture together and spoke well of the Amateur commitment to providing the communications. Tom also played a tape recording of the voice of 'Digitalker', as it had been downloaded from space via the UOSAT. It is not generally known that schools possessing a 2M receiver will be able to hear the position and time via voice, over the University of Surrey satellite. As a casual observer, I would say the local Press did not grasp the technical achievement of the demonstration; although, one could tell the Russian press used plenty of videotape to record the event.

EMI/EMC

As a member of CARF, I felt the opportunity might be available to

CROSSWAVES

discuss common problems of EMC with one of the UA hams. It was easier than I thought. A call to the embassy placed me in touch with the Press corps. It was at the suggestion of Mr. Bodganov, head of the press contingent that I accepted his invitation to speak directly with one of the hams involved. It turned out to be Leonid UA3CR.

Since Leonid has been licensed since 1940 and I got my ticket in 1947, we had some common ground. Leonid is also an excellent technical man and knows his CW onions. He has also been engineer for many years and was well aware of the universal curse of EMI.

When asked whether there is much EMI in the U.S.S.R., Leonid explained there have been many, many cases. He also explained that 10 years ago there was much more than today. Two reasons seem to offer an explanation. There are no Far East consumer electronics permitted in the U.S.S.R. and the Russian-designed TV sets have been designed to incorporate some basic immunity. The only design differences seem to be that good filtering and shielding techniques have been maintained rather than dispensed with. Imagine, this happened 10 years ago!

APARTMENTS

Some of the worst problems occur in the popular apartment buildings seen in many photos published here. This is not surprising. How much success have hams had here operating from apartments? Too often we are told we are 'interfering' when the problem is due to lack of immunity in the

appliance. Some day that definition will have legal status.

INVESTIGATIVE PROCEDURE

In the U.S.S.R. an Amateur group first investigates complaints of EMI. In turn, they make recommendations to a *Government* committee that decides what steps will be taken. If the Amateur is deemed responsible, he pays for any high pass filters for his neighbours. Not a bad deal if the manufacturer has some designed-in immunity. In severe cases the Amateur has had it. Kind of refreshing to see the problem solved by technical means when reason is used. I could have spent quite a lot of additional time with UA3CR; he is very knowledgeable about Amateur Radio in a part of the country we seldom discuss in detail, due to lack of facts. He did mention that most transmitters were still being built at the radio clubs using tubes. With the scarcity of tubes, solid state will soon make an appearance. Perhaps these techniques are archaic in our terms, but without many imports there's not much else one can do.

ENDED ALL TOO SOON

The end of the conference was quite chaotic and it would have been fun to be able to sit and ragchew with so many UA Amateurs. Dr. Shparo, head of the Soviet delegation, who also holds a callsign as well as the coveted Order of Lenin, found time to introduce himself and generally act like a ham when out of town. What better way to communicate?

I'll be looking for UA3CR using EKOCR and UW3GZ using EKOGZ while crossing the vast Polar wastes.

USSR/Canada Skitrek

DX (cont'd)

CEOGHO. It sounds as though the Chilean government is very supportive of the hobby on the island since the report speaks of their work renovating a 70-year-old stone building which will house a club station when it is completed next year. Look out for a special certificate for contacting Easter Island stations during 1988. This will commemorate the 100th anniversary of Chilean sovereignty.

Thanks are due to the following sources for some of the material appearing in this column: VE2ZP, *The Montreal Gazette*, *The New York Times*, *The DXer*, Julia Cooper XU1SS, ORZ DX. ■

Planning for the Amateur Radio communications network in support of this expedition is now in its final stages. The skiers will leave Cape Artichesky on Severnaya Zemlya about March 1 on their 1750 kilometre journey over the North Pole to Cape Columbia on Ellesmere Island.

For the more than three months of this hazardous journey across the polar ice, daily radio communication will be maintained between the expedition and the teams of Soviet and Canadian Amateur Radio operators at base stations in Severnaya Zemlya, Resolute Bay on Cornwallis Island as well as Moscow,

Dikson, Ottawa and Toronto.

The Amateur radio equipment is being provided by Icom and includes HF and VHF base stations, amplifiers and 2 metre handie-talkies for communication with the supply drop aircraft.

Using the facilities of SARSAT/COSPAS, the search and rescue satellites, as well as the Amateur radio satellite called UoSAT 11, with its 'talking computer' on board, it will be possible for the trekers to hear their location read to them over the 2 metre handheld radio, as UoSAT passes over them about every 200 minutes.

Al d'Eon VE3AND ■

From the Clubs...

George Morgan VE3JQW
687 Fielding Dr.
Ottawa K1V 7G6

First of all, a couple of items from the Regina ARA's *Guywire*: "One of 1987's biggest news stories has been Rick Hansen's final Canadian leg of his 'Man in Motion' tour. Amateur radio accompanied Rick in his journey across Saskatchewan, providing communications between the Hansen entourage and the communities along the route.

"In recognition, the 26 Amateurs who volunteered their services to participate in this event were recipients of a Certificate of Appreciation from the Telephone Pioneers of America, Region 1, Canada.

"Rick's father, Marvin, is a telephone pioneer in Williams Lake, B.C. Several years ago the B.C. chapter of Telephone Pioneers designed and built Rick's trailer exerciser, a device that allowed Rick to practice wheeling while remaining stationary.

"Certificate recipients include VEs AAN, AAT, ABC, ACA, ACC, AEL, GOO, AQ, AU, DC, FM, HB, HM, IG, IQ, KZ, LB, PQ, PV, RD, RN, RS, TA, TH, WJ and WM."

And the following: "Trick-or-treating and food sharing marked Halloween in Regina and Amateur Radio was there.

"Starting with the Scout and Guide Food Bank drive on Oct. 31, a total of 15 hams provided radio communications at Regina's six fire departments, the Food Bank, and Scout-Guide headquarters. The drive started at 10 a.m. and continued until completed around 6 p.m.

"Following the door-to-door food drive, seven hams took part in the 'Z909 Streetwatch,' covering six areas of the city, to watch out for the ghosts, goblins, witches and monsters out trick-or-treating. The purpose of the watch was to ensure that Halloween was a safe and happy event for children and at the same time giving their parents some comfort as they send their children out."

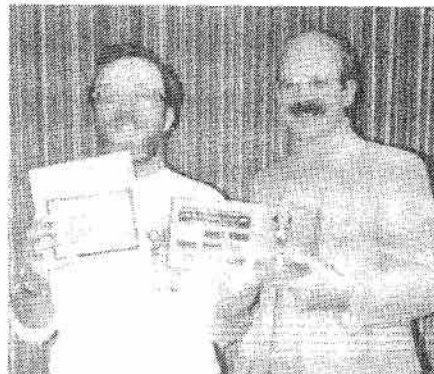
"Thanks to the following: VEs AAA, AAD, AFQ, AGM, AHW, ELJ, GHC, WWW, BW, CS, GF, IQ, OI, RN, TH, TO, EE and WM."

And from further west, Herb VE7WI indicates that the Shuswap ARC has had a very busy year working in the community. In February the club provided communications for the third year in a row for the Larch Hills Ski Marathon; on Father's Day it provided communications for the Shuswap Flying Club's Fly-in and Pancake Breakfast; in August it handled communications for the



Manitoba Marathon volunteers— Front Row, l to r, Bruce VE4AGR, Roy VE4AEP, Adam VE4ANG, Gilles VE4ANP. Middle Row: Al VE4AJO, Yori VE4ACK, Gord VE4GD, Bob VE4AOJ, Jim VE4MT, Charles VE4FG, Dick VE4HK, Bill VE4KZ. Back Row: Jack VE4AJG, Stan VE4AFJ, Wally VE4ACY, Fred VE4ACT, Art VE4ART, Tom VE4SI, Keith VE4BC, Tom VE4AHQ.

Dick VE4HK (left) receives the 1986/87 OSCAR award from club president Bill VE4KZ.



Shuswap Triathlon; and in September it served the Salmon Arm Fall Fair. In addition, the club took part in Field Day in June and put on its annual hamfest in September. Not bad for a 'small club'.

This month I received a report from the Winnipeg ARC, prepared by Ed VE4YU. Ed writes that (as if I didn't know) the Winnipeg ARC is alive and well with a membership of just under 100.

"The big event of the year, which uses the services of about 60 of the club's members, is the Manitoba Marathon, and it is coordinated very ably by Dick VE4HK. Dick was the also the moving force behind the public service offered to relatives of those caught up in the Edmonton tornado disaster. Working in conjunction with the local Red Cross and the Winnipeg Senior Citizens Radio Club, Dick and his volunteers helped pass traffic in and out of Edmonton while normal communications were snarled."

"Appropriately, Dick VE4HK was the recipient of the club's prestigious OSCAR award for 1986/87. OSCAR stands for Outstanding Service

Concerning Amateur Radio"

I would like to pass along my congratulations as well. I am well aware of Dick's many activities and have described a number of them in this column.

I also received a letter from Geoff VE3KCE with a list he had prepared of Amateur radio clubs in Ontario for visitors to VE3CNE at the 'Ex' in Toronto. I have seen a couple of attempts to put together such a listing, which I feel would be very useful, but each has been very local in nature. Perhaps we could put together a national version.

If you are interested in such a publication, send me the following information: a) club name and mailing address; b) date, time and place of club meetings; c) callsign and frequency of club repeater; d) any special club activities; e) name, address and telephone number of a contact person. You might also indicate whether or not your club is a CARF affiliate.

Based on the response I get, I will get in touch with the Publications people to see if there is a possibility of putting together something. ■

Cathy Hrischenko VE3GJH
2 Dalmeny Rd.
Thornhill, Ont. L3T 1L9

'87 CELEBRATION

The message sent out was "Come to CLARA '87 Celebration and pick up a passport for a fun-filled weekend. Sept. 11-13, 1987."

The plans and preparations had been in the making for over a year. I wanted this 20th year celebration to be special and a little different.

Clare EI7CW arrived on Thursday. Mike VE3DJG picked her up from the airport and brought her to our place. This was really appreciated as it saved me a couple of hours of time. Yes, I was still preparing! Carol W8WRJ and Phyllis and Jim from Ohio came in Thursday and called for a few directions, and after doing some shopping, came out to the house. I told them that they were welcome, but I would put them to work while we visited. We packed over 100 goodie bags as we gabbed and answered the phone umpteen times.

Friday morning we were at the Sheraton Parkway Hotel by 9 a.m. It looked like we were moving in permanently with all our boxes marked Registration, Hospitality, Albums, table favours for Fri. night, Sat. lunch, Sat. night and Sun. Bon Voyage breakfast, as well as many boxes of prizes.

Each registrant was given a real passport with the weekend's activities listed, and the passports would be stamped as they took part in the various activities. Name tags were made out of PC boards, Canadian flags, and they also received a goodie bag and some other freebies!

A fantastic dinner buffet was served with lots of great food. After dinner, the entertainment started. We had clowns from Clown Alley, one of which was our daughter Dottie VE3HUO. There were balloon sculptures, a professional magician, an exhibition of Scottish country dancing. The men were in full kilt dress and the women in long gowns. To finish, Jeannette (the teacher) taught the 'Gay Gordon' to all. We had a Crazy Tie contest and the men modelled their creations. The winners were Tom VE3GZV and Jim K8BLB. The Monty Python Silly Walk contest was won by Stan W8NZE and Mary VE6CFE. Next on Friday night's agenda was the Monte Carlo Games, with blackjack, crown and anchor and CLARA bingo.

Everyone received five \$20 bills with their registration in play money— Clara 20s to represent our 20th. This was truly a fun and games night— not a money-grabber! At the end, Carol W8WRJ broke the bank.

Continued on next page

YL News & Views



Above: Cathy VE3GJH and daughter Dot VE3HUO.



Above: Thelma VE3ARG, Jeanne VE2JZ, Mary VE3EQE, Cathy VE3GJH and Pauline VE3LQA.

Right: The crazy tie contest winners, Tom VE3GZV and Jim K8BLB.



MICROWAVES

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

While much of the microwave activity on 10 GHz FM occurs from mountaintop locations to take advantage of the longer line-of-sight distances, operation from the home QTH is also possible, with reduced range. Why leave all that equipment gathering dust in the basement through the winter months when you could get on and make a few contacts on a regular basis?

To approximate the distance you can work from a given height on a mainly line-of-sight path, use the formula:

Distance in miles =
square root (2 x height in feet)

To see if you can work another station from your home, perform the same calculation for the other station and then add the two distances together. If the sum of the distances

calculated is greater than the distance between the two stations, you have a good chance of making the contact. If there are no intervening obstacles such as high buildings, mountains, etc. and you can clear local obstructions, have enough power, antenna gain and a sensitive receiver, you are well on the way.

Let's say you want to be able to work other stations in the January VHF contest without spending hours outside at the top of a ski hill in sub-zero temperatures. You live in the suburbs of a major city and have a 50-foot tower and want to make contacts with other stations that can get antennas up to the same height.

From the equation above, you determine that, from 50 feet, your range is about 10 miles. Adding this distance for the two stations you

should be able to work stations with antennas at the same height out to about 20 miles.

Checking the specifications of a pair of 10 mW Gunnplexers using the standard 17 dB horns and AAR 30 MHz receivers, we find the maximum separation is about 25 miles for a 10 dB signal-to-noise ratio of FM.

This is about the same distance as the path you would like to cover.

Chances are there are several other Amateurs within range that can be worked to provide the additional points most welcome in a VHF contest. If you need to reach out a little further, using a two-foot dish at either end will provide another 15 dB of gain over the horn antenna and a pair of dishes will get you 30 dB above a pair of horns. (Watch the wind loading of the tower with the larger antennas.)

Going to SSB or CW would be the ultimate solution, but let's keep things simple and stick with FM in this example. A 30 MHz IF preamp can be added at the IF output of the Gunnplexer to boost the received signal and overcome feedline losses on the real weak ones.

If you lie near the grid square boundary and can talk another ham into a brief portable operation to the other side of the line, there's another grid that certainly won't hurt the multipliers. Getting back to reality, it might be easier to find this volunteer in June so let's concentrate on getting the home station going.

The Gunnplexer and horn can be mounted on the mast of an existing tower using a U-bolt and plate attached to the Gunnplexer cavity. A small weatherproof insulated enclosure can be built to protect it from the elements and plastic tape used to close off the end of the horn to prevent drifting due to temperature changes from the wind. Three cables will be required to link to Gunnplexer to the receiver in the shack; a run of coaxial cable for the IF signal, one Gunn voltage line and one varactor tuning voltage line. It is recommended that the voltage lines also be shielded to prevent unwanted modulation of the Gunnplexer from line pickup.

So there you have it, 10 GHz full duplex FM from the comfort of your own shack, just like any other band and no mountains to climb until summer. ■

Send Letters to the Editor to:
Editor, *The Canadian Amateur*, Box
356, Kingston, Ontario K7L4W2.

YL (cont'd)

Saturday luncheon— I dressed a large doll with a white lace top, full red circular skirt with CLARA repeatedly printed around the bottom of the skirt, and a black bow tie at the waist. This will be our CLARA travel doll. It started at the '87 Celebration with a sticker with my first name and call. As the doll travels from one YL to another, their name and call will be added. It will be interesting to see how much CLARA travels to promote International YL Friendship. Carol W8WRJ took the doll to the Cleveland, Ohio hamfest at the end of September. There, Verline K18V from Michigan took CLARA for the next trip, so she's on the move.

At the luncheon we had Joan Howell, Chief Commissioner of the Canadian Girl Guides, Barbara Meisner from the Girl Guide head office, and the deputy sheriff from Richmond Hill at our table.

This was followed by a CLARA general meeting and presentations. Lois Hancey, deputy sheriff and regional councillor for Richmond Hill, presented CLARA with a proclamation from the town of Richmond Hill declaring the weekend of Sept 11-13 as Canadian Ladies Amateur Radio Association weekend. Lois also presented a proclamation from Brian Mulroney, Prime Minister of Canada, declaring the weekend of Sept 11-13 as Canadian Ladies Amateur Radio Association weekend with a tribute to Amateur Radio.

Greetings were received from CARF, CRRL, TOT Sparkettes, Buckeye Belles, Floridoras, Mimi ZS5YO, Susan VO1OI, Betty VESFI, Diana ZS6GH, Iris ZS2AA, ZL2BOA,

Alma VE7EKV, Cathy WA4BAV, Usha VU2GH, Rita G3NOB, Anny DF2SL, Marilyn ZL2BOA, Mae VESOH, National Research Astronaut Program, Diana G4EZI, Christel DF1LV, Aola ZL1ALE and others.

Marg VE3EQE pleasantly surprised me with a President's award— it is a beautiful music box with the CLARA Logo. The dedicated member plaque was presented to VESFI. The Chief Commissioner of the Girl Guides presented me with a framed Girl Guide Service Award.

Chris VE1AKO received a prize for growing the largest oak tree. All past-presidents were presented with a past-president plaque.

The first forum was on emergency procedures presented by Marion VE3NLN and Gail VE3GSQ. They had a videotape of the Barrie Tornado disaster and brought forth ideas and problems to be dealt with... the most important being that we must take every opportunity to enlighten the public of the service that we can supply.

Saturday Night Dinner and Dance— After dinner we had several dances by Dahlia from Morocco. Then there was dancing to a DJ for the rest of the evening. We were well-represented by other organizations such as CARF, CRRL, RSO and others.

Sunday morning Bon Voyage Breakfast— We enjoyed a delicious buffet breakfast. Thank-yous were extended and I received three cheers from the group at the request of Mary VE6CFE.

From the response, it seemed that '87 Celebration was a success. I thank all those who helped in any way. ■

The Ultimate Multibox

BY JOHN HUGHES VE6MT

With the introduction of computers to the world of Amateur radio and the 'new' RTTY and CW modes, the problem of changing cables to operate either mode became a nuisance. The need for fast, reliable switching called for investigation of possible solutions that did not have high cost and elaborate circuitry.

The initial layout for the switchbox had to have the capability of both microphone and speaker switching from SSB to RTTY. This part was easy. The circuit was made up and tested. Good, no feedback or ground loops.

Then came the question from the guys at the radio club. What happens if you want to run RTTY on 2 metres? Back to the drawing board. Again, the solution wasn't too tough. Another couple of switches and some reworking of the circuit and I could change modes of operation on both HF and VHF, instantly.

One Sunday morning I was copying a W7 sending pix at 100 baud and when he finished, a W2 asked if he could get a copy. The W7 said, "Sure, I have it on tape." Again the light went

on. I had to be able to tape incoming signals and had to be able to playback both to the interface and the transmitter, independently or at the same time. The main circuit was revised and reworked to include the additions.

I could now do the following just by operating switches.

Change modes, SSB or FM to RTTY or CW.

Record incoming signals on tape. Playback on the air, SSB, FM, or RTTY signals.

Relay RTTY info for on tape to the interface for review on screen.

This was working perfectly until I decided to build a phone patch. Phone patch use is most prevalent on HF, although sometimes handy on VHF. These features were deemed necessary in the multibox.

A review was in order, so the circuit was studied and possible future additions were contemplated.

Cross-linking between HF and VHF had been mentioned in some publications and this feature was also to be included. Two additional switches would provide this function.

Initial tests with cross-linking were quite good and reports received indicated that as long as microphone and speaker levels were set properly, quality was acceptable. Further experiments with L pad resistor networks for impedance matching showed no great improvement in audio quality.

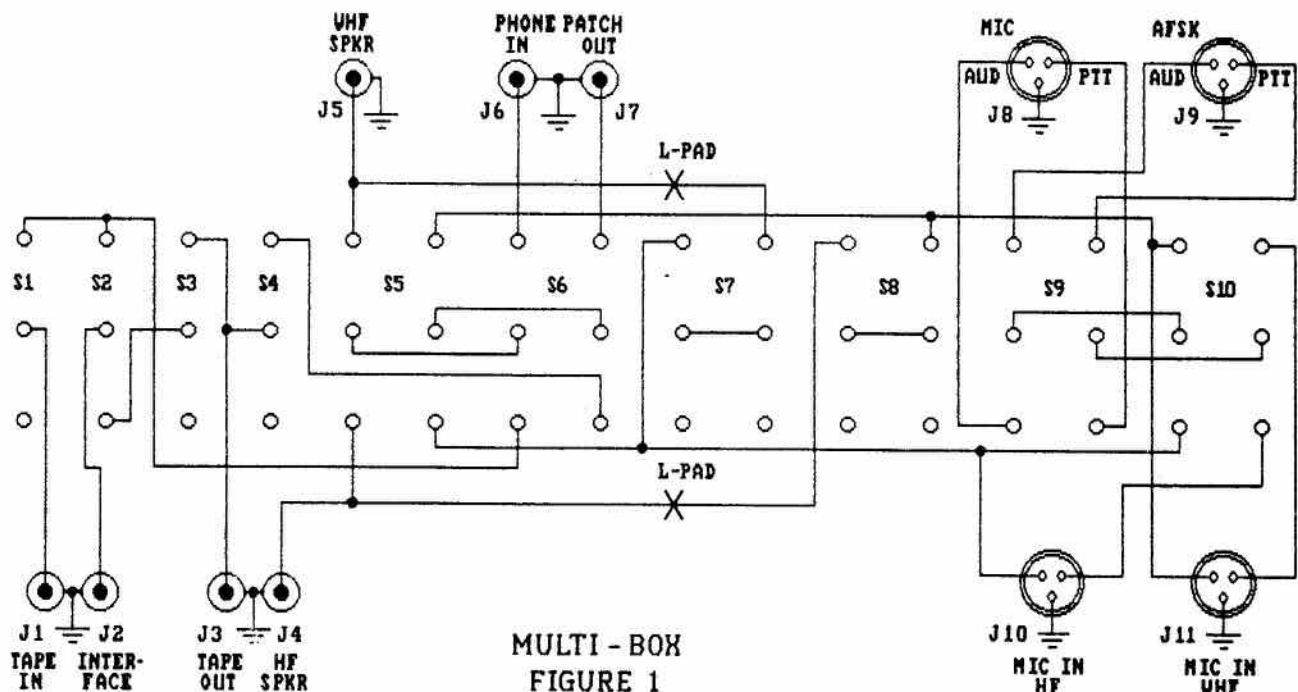
A computer program in Basic is included if anyone wishes to experiment with L pads for impedance matching.

It was also discovered that if both the HF and the VHF transceivers had VOX capabilities, these units could be set so as to allow automatic operation. For sets that don't have VOX, the operator will have to control the changeover by the PTT switch.

The final version of the Multibox has now been in use for two years. The unit has been used with many of the popular types and makes of equipment and no problems have been encountered.

I understand some of the new rigs have isolated microphone shields.

Continued on next page ▶



MULTI - BOX
 FIGURE 1

This must be maintained in the multi-box if present in the radio, otherwise ground loops can be created and this results in hum.

SWITCH FUNCTIONS

SW1 on- Record incoming signals.
 SW2 on- Transfer incoming signals to the interface.
 SW3 on- Transfer information on tape to interface.
 SW4 on- Transfer information on tape to transceiver.
 SW5 off- HF receive mode.
 SW5 on- VHF receive mode.
 SW6 off- Normal operation.

SW6 on- Phone patch operation.
 SW7/8 off- Normal operation.
 SW7/8 on- Crosslink operation.
 SW9 off- Microphone input.
 SW9 on- AFSK input.
 SW10 off- HF unit transmit mode.
 SW10 on- VHF unit transmit mode.

For some functions, various combinations of switches will be required. E.g. To receive and transmit RTTY on HF, SW2 on, SW9 on, all others off. To add taping function, SW1 on.

To transmit RTTY information stored on tape, SW3 on, all other switches off, press play on the tape

deck, and the information will be transmitted to the monitor.

Experience will provide familiarity with the multibox's many abilities.

PARTS LIST

3¼ by 2¼ by 4 minibox-270-251.
 4 SPDT switches- 275-8064.
 6 DPDT switches- 275-8067.
 7 RCA phono jacks- 274-346.
 4 three-conductor open circuit jacks- 274-312.
 #20, insulated hookup wire.
 Note- All part numbers are Radio Shack.

BASIC L PAD PROGRAM

```

10- REM THIS PROGRAM COMPUTES THE VALUES OF
20- REM THE TWO RESISTANCES TO CONSTRUCT A
30- REM PAD OF MINIMUM LOSS
40- PRINT "1ST IMPEDANCE"
50- INPUT Z1
60- PRINT "2ND IMPEDANCE"
70- INPUT Z2
80- LET R1=Z1*SQR(1-(Z2/Z1))
90- LET R2=Z2/SQR(1-(Z2/Z1))
100- LET M=SQR(Z1/Z2)*SQR((Z1/Z2)-1)
110-LET L=20*(LOG(M)/LOG(10))
120- PRINT "COMPONENTS OF THE L PAD"

130- PRINT "RESISTOR 1=":R1
140-PRINT "RESISTOR 2=":R2
150- PRINT "LOSS IN DECIBELS=":L
160-PRINT
170-PRINT "TYPE 1 TO CONTINUE,0 TO STOP"
180- INPUT X
190- IF X=1 THEN 210
200- STOP
210- PRINT
220- GOTO 40
230- END
  
```

Learning Morse Code

I learned Morse code with the aid of a computer, and have been using one ever since. I became very interested in writing basic programs, have many original and practical ham programs and some that have been improved. The one that I am most pleased with is a code teaching program for beginners.

This program has the letter speed set at 15 wpm. That is the slowest letter speed available unless you modify the program. From tests and comments, this seems to be the best sound for learning. You can change letter speed, letter space, sound tone and copy lesson at any time with the touch of a key.

The program has five built-in programs. It contains letters at random, five together, five-letter words, five random letter groups, the Q code, and twelve copy programs. It also contains all the questions and answers from the CRRL manual, thanks to Oz Blanchet VE6BBO, who did all the typing. You may also write your own lessons.

The average age of Amateurs is increasing every year, therefore we have to enlist the younger generation. They are more interested in computers, but with packet coming on stream, more are turning to ham radio. Morse code is a stumbling block! This program will ease the pain. It is for the Commodore 64, a popular model and not hard to come by.

There are 19 other programs on the disk, mostly ham and home related... electronic calculations, antennas, log, car gas metric miles, mortgage calculations, etc.

The CW program is very useful, and will be a great help for beginners and upgraders. The others are all basic so you will have few problems working them. The programs are menu operated and need no documents.

Call me or write to the following address for a copy of this Ham-Plus disk at cost: Elmer Lodmell VE6BLO (403-454-7870), 10608-135 Street, Edmonton, Alberta T5N 2E1.

BLOOPER?

To keep Amateur radio from getting a black eye, we suggest that you do not try to copy the signals of planes attempting trans-oceanic flights with a radiating blooper, unless you live at least 100 miles or more from any population centre, or airways station. An RF stage ahead of the 'blooper' regenerative detector will cut down radiation from the receiver, but not eliminate it, and the receiver may cause interference to others trying to receive weak signals.

The signals of a plane, on a recent trans-Atlantic flight, were obliterated during part of the flight by several radiating receivers. There were many 'birdies' on the frequency.

The AP press dispatch stated that "Amateur Radio men were trying to pick up Frank Merrill's plane, making it increasingly difficult for officials to receive the plane's signals."

That sort of thing does Amateur Radio no good.

—Radio June 1937

A \$5 100 watt amplifier for 2 metres

BY IAN BURN VE6OB

Over the past few months there have been two antenna building workshops sponsored by the Northern Alberta Radio Club in Edmonton, Alberta. At each workshop, 15 two-

metre yagis were constructed. The spacing and element lengths are fairly standard but the construction methods are unique. The original intent was to construct a small yagi that could be easily disassembled for

portable use. A number of these antennas were used for permanent base use after completion and performance has been quite good.

MATERIALS

The boom is 1/2" type M, thin wall copper tubing, at least 48" long. A piece 6" to 8" longer would be preferable if proper mounting methods are to be used. This is detailed in Figure 5.

The elements are made of 1/8" diameter brass rod. This material is relatively expensive but amounts required are low, so cost should not be a problem. Element lengths are 40", 38", 36", and 35 1/2".

The gamma match is made of a 3/4" length of 1/16" brazing rod, a 10 or 12 pF disc ceramic capacitor, a shorting bar and a small screw-type hose clamp.

CONSTRUCTION

The boom is prepared by drilling 1/8" holes on 16" centres. This can be done with a drill press or a hand drill. Since most people don't have a drill press, a method is presented here which will allow accurate location of the holes in the boom to keep all elements in the same plane.

First, scribe a circle around the tubing at each of the four element positions. After this, lay a straight-edge along the tubing and centre punch the location of the four holes. These holes can now be drilled but only through one side of the tubing. Now rotate the boom and mark and drill the holes on the opposite side of the boom.

The elements should be cut to the appropriate length and a small piece of wire wrapped around the element and soldered as shown in Fig. 2. Note that these are not at the center of the elements. They are slightly offset to allow proper positioning when inserted through the boom. For a permanent installation, they could be soldered to the boom. For portable use, gravity holds the elements in place. When the antenna is disassembled, the elements are stored inside the boom and retained by corks inserted in each end of the boom.

Continued on next page

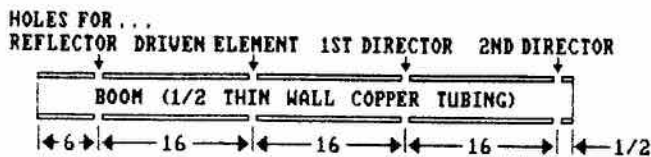


Figure 1 - All dimensions in inches - Not to Scale

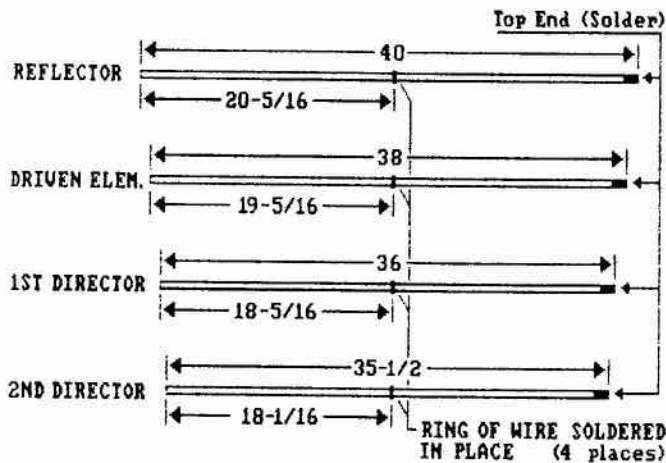


Figure 2 - All dimensions in inches - Not to Scale

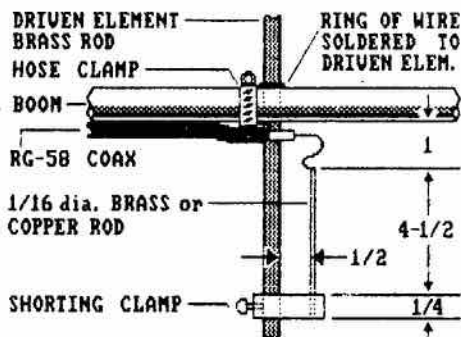


Figure 3 - inches - Not to Scale

As can be seen in Fig. 3, the gamma match is very simple. Measurements should be followed closely. The shorting clamp can be made in a number of ways. A solid block of brass can be drilled to accommodate the driven element and the gamma rod with a set screw to hold them in place. A simpler method is to fold a piece of thin brass or copper over both rods and clamp them together with a bolt through the copper strap.

The hose clamp which connects the shield of the coax to the boom should be located as close as possible to the driven element. The feed line can be dressed in either of the configurations shown in Fig. 4. The configuration in Fig. 4A is preferred.

For base station use, I have fastened the boom directly to the boom of the tribander. This is shown in Fig. 5.

RESULTS

At a recent 2 metre antenna testing workshop, the beam provided a 10 dB improvement over a reference dipole. There is no doubt about the 10 dB figure although the efficiency of the test dipole is in question since theory says this antenna will not provide a 10 dB gain. Regardless, for a cost of about \$5, the antenna proves to be a very satisfactory investment. ■

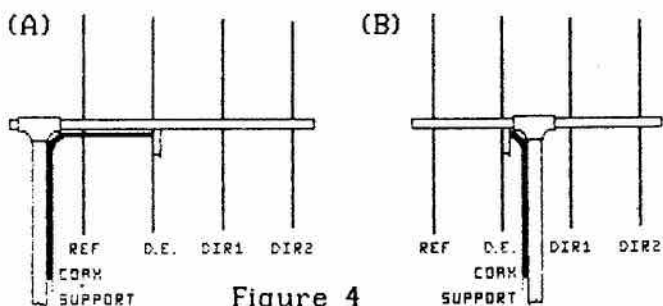


Figure 4

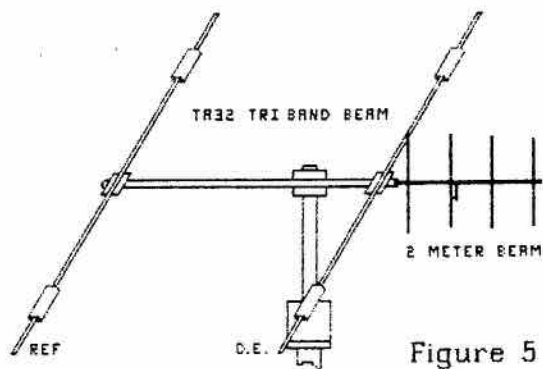


Figure 5

Simple 7 element 2 Metre Yagi

BY HUGH JACKSON VE3EVJ

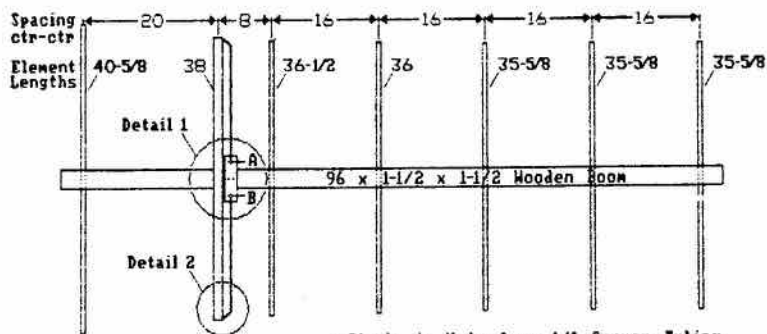
The original design for this antenna was by WA2ACN. Several of these antennas have been constructed in this area and all have performed well. A metal boom can be used, though dimensions for the elements will change. Mine was built as follows.

A straight grained cedar 2x2, 8 feet long, and well varnished, was used for the boom. Reflector and director elements were 3/16 welding rod. For the driven element, a piece of 1/4" copper tube was used for the top part and 1/8" copper tube for the bottom part. The ends were flattened, drilled, and bolted together. A piece of bakelite was used at the center. Minor changes to the spacing between the two parts of the driven element may be required to obtain the lowest SWR.

Feed for the antenna was with 50 ohm coax to a 27" balun as shown in the accompanying diagrams. SWR was very close to 1:1 and performance was very acceptable.

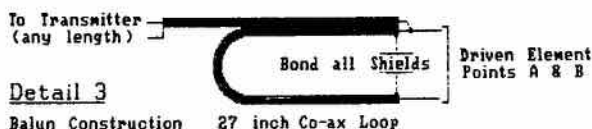
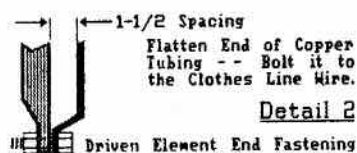
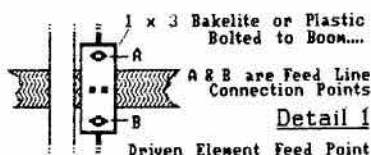
TECHNICAL ARTICLES

The Canadian Amateur welcomes technical articles. Please send them to the Technical Editor, Bill Richardson VY1CW, RR1, Site 20, Box 63, Whitehorse, YT Y1A 4Z6.



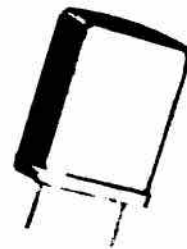
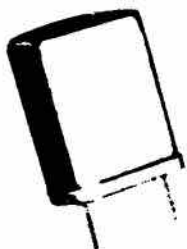
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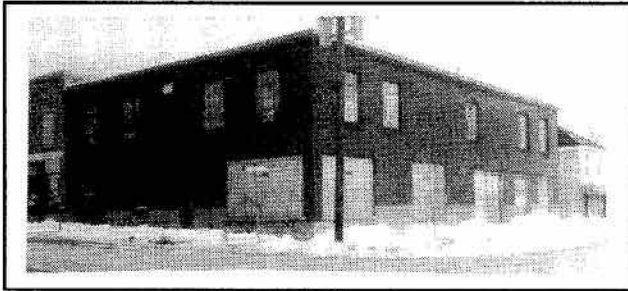
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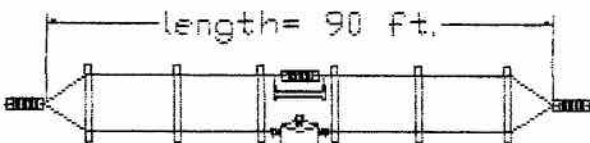
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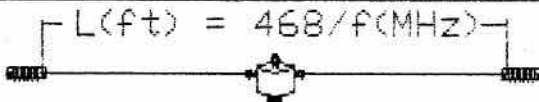
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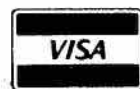
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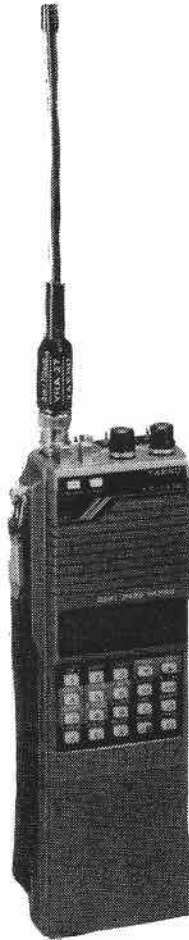
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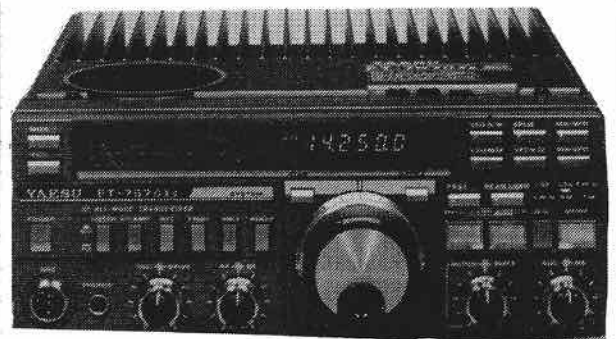
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