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THE CANADIAN AMATEUR

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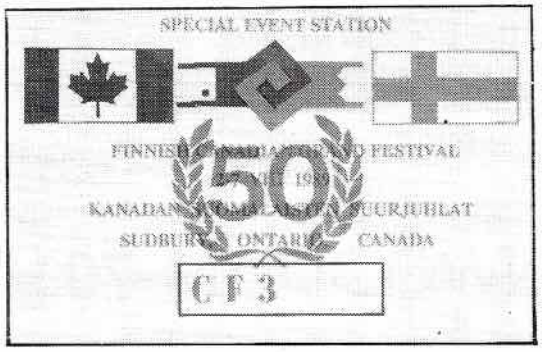
MARCH 1990

Canada's Amateur Radio Magazine

La Revue des Radio Amateurs Canadiens



Finnish Canadian Grand Festival

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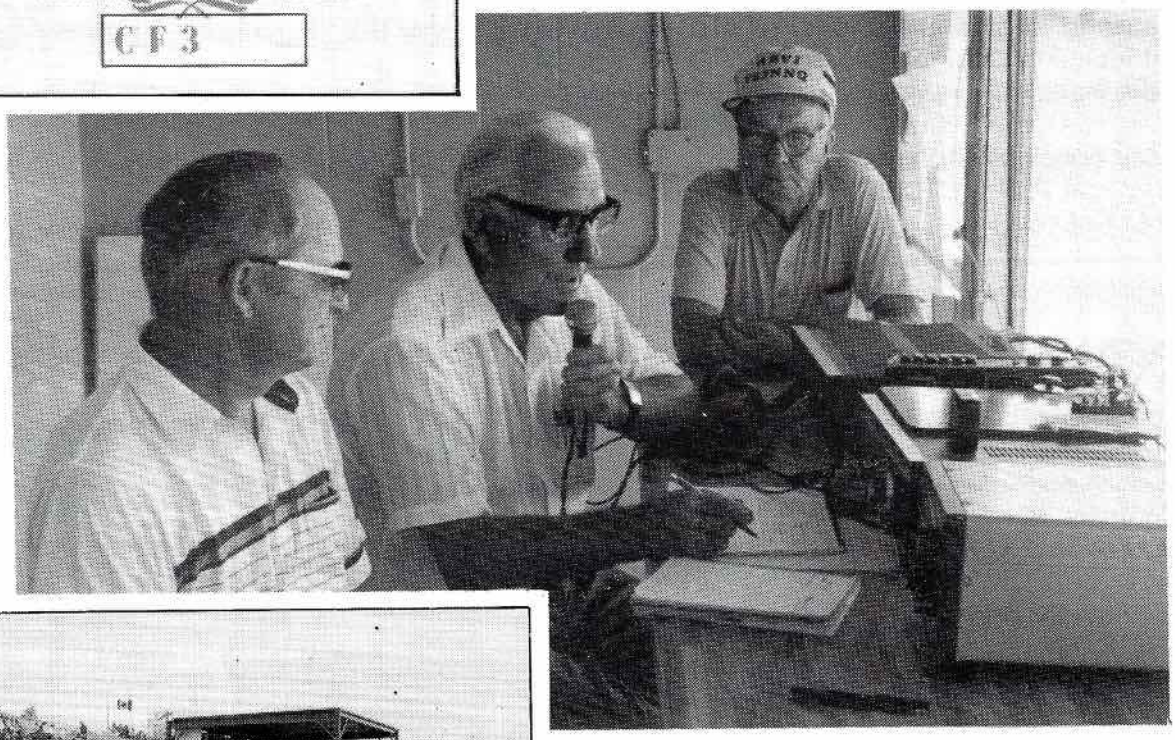

Centre: Is Finland out there? Left to right: Leo Trusz VE3MOK, Reino Martin VE3AC and Arvi VE3NNQ.

Top inset: A special QSL for the special event station.

Bottom inset: Laurentian University's track facility at Sudbury, Ontario.

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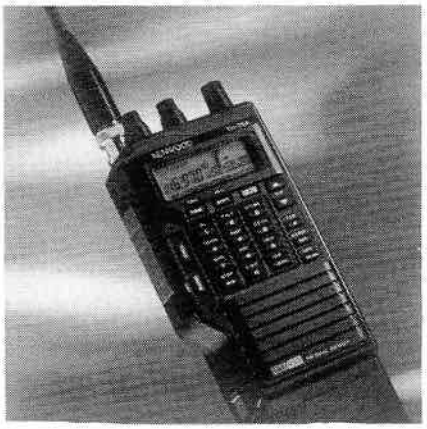

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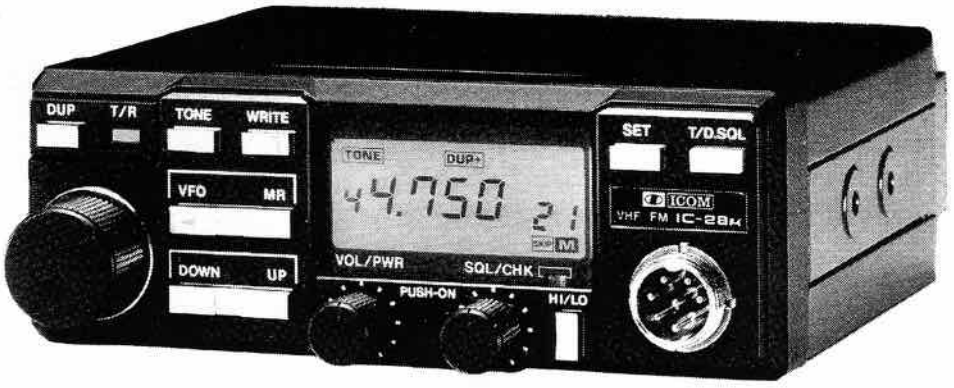

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CIRCULATION OFFICE
CARF Head Office
P.O. Box 356,
370 King St. West,
Kingston
Ont. K7L 4W2
613-545-9100

EDITOR
George Sansom VE3GWS

ASSISTANT EDITOR
Debbie Norman

COLUMN EDITOR
Clayton Bannister VE3LYN

CONTEST SCENE
Dave Goodwin VE2ZP

CROSSWAVES
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AFFILIATE CLUBS
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OVER THE HORIZON
Bob Brown NM7M

TECHNICAL EDITOR
Bill Richardson VE6PN,
Box 68, Grimshaw,
Alberta T0H 1W0

LOOKING AROUND
Art Blick VE3AHU

THE GAIN GAME
Gerry King VE3GK

INDEXING
Bill Watts VE3DWV

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

PRODUCTION
Steve Campbell,
County Magazine Printshop Ltd.
P.O. Box 30, 71 Main St.
Bloomfield, Ont. K0K 1G0
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Please address correspondence to the Editor at Box 356, Kingston, Ontario K7L 4W2, telephone 613-545-9100.

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Canada's Amateur Radio Magazine

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CARF INC. EXECUTIVE

C.A.R.F. PRESIDENT
John Iliffe VE3CES, 387 Selby Crescent, Newmarket, Ontario L3Y 6E2
(416) 898-4875

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

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

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

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

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

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

CARF Committee Chairmen

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

D.O.C. Liaison: Bill Wilson VE3NR
News Service: Bernie Burdsall VE3NB, Box 356, Kingston, Ont. K7L 4W2
Electromagnetic Interference: Ralph Cameron VE3BBM
CSA Committee: Ivor Nixon VE3IHN, 17 Romney Rd., Islington, Ont. M9A 4E9
Canada Winter Contest: J. Parsons VE6CB, RR#1 Oxford Mills, Ont. K0G 1S0.
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EDITORIAL

Thoughts on Amateur Radio

By Moe Lynn VE6BLY

Elsewhere in this issue is the Thomas Alva Edison Foundation Book Review. Another idea for motivating youngsters toward Amateur Radio was written up in *Worldradio* from an article in the Wayzata/Plymouth, MN. *Sailor* of March 27. It seems the students in the 5th and 6th grades of teacher Marylou Simonson N0JAL communicate via Amateur Radio around the world. They not only learn from their contacts, but are also having to study more about their home state history in order to pass along some intelligent information. They tend to study geography, history and current events much more seriously. Amateur Radio could become an important learning tool in other schools around the world as an exciting way to learn via today's technology.

Edmonton Amateurs have combined their radio expertise with the Edmonton Space Science Centre. Members of the Northern Alberta Radio Club (NARC) man a station with the call sign VE6SSC for a total in excess of 12 hours on three days. Earle VE6BGQ, the president of NARC, needs about 40 volunteers available at varying times Saturday, Sunday or Tuesday. Readers may recall that our Space Sciences Centre is the magnificent structure designed by world-renowned Douglas Cardinal, a native Albertan.

The present population of 490 Amateurs in Edmonton proper and another 100 from outlying districts would be doubly proud to have a part of the building dedicated to Amateur Radio. However, the present temporary project is on the verge of closing unless a suitable number of people volunteer a few hours toward Amateur Public Service.

The potential for attracting people to become Amateurs is tremendous as anyone will agree who has attended one day's session. This is not its only function but could contribute toward drawing more patrons to our Space Science Centre. Then the onus would be on the City of Edmonton to allocate permanent floor space for the station and possibly a museum for locally built Amateur Radio equipment as a start...

Erecting towers and setting up Amateur Radio stations at various Red Cross Houses will only parallel present circuits and could eventually lead to their applying for assigned frequencies within our present Amateur Radio spectrum, or the setting aside of certain portions of each band strictly for their use during simulated or actual emergencies. They might then even decide what messages would be passed through the system leaving legitimate welfare traffic to jamb what little space is left for general use elsewhere on our bands.

Amateur Radio Emergency Services should be just that and integrated using manpower already trained and prepared for any emergency. To maintain this nucleus of highly trained Amateurs, we have to lean toward the first Public Service performed by Amateurs, and that is message handling! Start now to bring yourself up to date; get on a net; even if you do not deliver messages just copy them and see how soon you progress toward accepting and delivering Public Service Messages.

Make it a fun thing if you like and originate or solicit Public Service Messages for no other reason than to build up the net totals. I can assure you there are a considerable number of Public Persons who would appreciate receiving an Amateur Radio Public Service Message. Don't, whatever you do, sit back and say, "packet will handle it" because some messages placed on a packet circuit three years ago have yet to be delivered. Too many messages are festering on a Personal Bulletin Board System and unless we jump in somewhere along the line, Amateur Radio will again suffer the consequences. Would one such consequence be the loss of an entire Amateur band to some Commercial Operation, The Red Cross or Emergency Disaster Services? THINK ABOUT IT! PARTICIPATE! ■

LETTERS

NEWS FROM SCOTLAND

The culture capital of Europe is Glasgow, Scotland. Special stations will be operated and a draw will be conducted for a free seven-day trip to Scotland.

Requirements: Must work at least five special event stations. One must be GM90CC. The others can be from these: GM4CEE, GB2CCE, GB6CE, CB0CCE and 26 others from GB8CA to GB8CZ. No QSLs needed, just send one QSL with the five reports to: P.O. Box 599, Glasgow, Scotland G1.

Frequencies: 14.240 SSB-14.040 CW; 21.240 SSB-21.040 CW; 28.480 SSB-28.040 CW.

Report must reach Scotland by April 30/90.

Dave Digweed VE3FOI

CF3— FORESTRY CAPITAL

In reference to (a letter from the Algoma Amateur Radio Club) requesting a special Amateur radio call sign prefix to mark the City of Sault Ste. Marie, Ontario being named the Forestry Capital of Canada for 1990... I am pleased to advise you that the special Amateur call sign prefix 'CF3' has been allocated to commemorate this special event. This prefix is authorized for use by all Canadian Amateur radio operators within the municipal boundaries of Sault Ste. Marie, Ontario for the period June 15-24, 1990, inclusive. This period will coincide with the June 18-23, 1990, Forestry Capital of Canada Week celebrations.

D.K. Slomke
Supervisor
Spectrum Control
Ontario North District Office,
Department of Communications

XM1 FOR MONCTON

Please be advised that the Special Amateur Call Sign Prefix XM1 has been assigned to City of Moncton Amateur Radio Club for the month of April, 1990 to commemorate the City of Moncton Centennial Year.

Al Daly
Regional Manager
Authorization
Atlantic Region,
Department of Communications

CQ ALL ONTARIO AMATEUR RADIO CLUBS

Dear Fellow Amateurs:

While this letter is addressed to Amateur Radio organizations, it is really addressed to all Amateur Radio operators in general but particularly those in Ontario.

VE3CNE is a project of the Toronto Presidents' Council of Amateur Radio Clubs. The Council is open for membership to all Presidents, or their representative, of any Amateur Radio club, repeater group or other similar organization.

The station is operated throughout the year by an Executive Comittee, with the welcome assistance of interested Amateurs. Any Amateur or SWL is welcome to the activities of the Executive Committee.

This past year has been a most interesting and challenging one. To begin with, the station was moved to a new location in the Arts, Crafts and Hobbies Building. Then the antenna transmission lines were moved... strangely. Also because of that, the antenna rotor would not move the beam antenna. And so on and so forth, ad infinitum, ad nauseam.

However, we did have a very successful year due, in a large part, to the staffing assistance that was received from the Amateur community. We believe that you, the Amateurs, realize that this is probably the finest 'showcase' for our hobby.

We are now on the brink of not only another year but another decade. The present Committee has tried hard to provide a broad view of Amateur Radio, of interest not only to the public, but also to those staffing the station.

But time passes quickly! It is time for new ideas, a fresh approach and a look ahead to not only the '90s but to the next century.

To solve these problems we look to you, the Amateur Community, for the answers. New ideas and suggestions are welcome from any source. We guarantee that any will be considered.

This year we are considering dividing the station into two sections; one a

DIRECTOR NOMINATIONS

Nominations for Directors closed January 15, 1990. The following nominations had been received:
Atlantic Region: Nathan Penney VO1NP
Ontario Region: Robert C. Bishop VE3JAB
Pacific Region: H.F. Hopwood VE7RD

VE3CNE - 1990

Name of Organization: _____

Address: _____

_____

1. Our club/organization has supported VE3CNE in previous years: Financially: Yes ☐ No ☐ Staff: Yes ☐ No ☐

2. We will support VE3CNE financially this year: Yes ☐ No ☐ Not Known Yet ☐ Will advise you by _____

3. If response to (2) is yes, what will be the amount of your support $_____

4. Is your club/organization willing to staff VE3CNE for a complete day? Yes ☐ No ☐ 5. If yes, then what days would you like? Please give us your 1st, 2nd and

3rd choices. For those clubs who have participated before, we expect to give you the same day(s) that you had last (1989) year. Please contact the Secretary about available days.
CHOICES: 1st _____
2nd _____
3rd _____

If your group is unable to take a complete day, then perhaps your members may want to take a part day or fill in where necessary. Again please contact the Secretary. Remember, Amateur Radio Operators are always welcome to operate at VE3CNE.

6. Please provide the name, call sign, address and telephone number of the member of your group who will act as Liason Person for your group with VE3CNE.

7. Admission will be provided for all persons staffing VE3CNE. Seniors are free until 12 Noon and are urged to take advantage of that privilege.

PLEASE RETURN THE FORM TO:
VE3CCO, Audrey McDermott, Secretary
VE3CNE Executive Committee, 27 Amulet Street, Agincourt, Ont. M1T 2E5
Telephone: (416) 293-0194

traditional ham shack as it may have been at the beginning of the '80s, and one as it may be in the year 2000.

YOU can have a big part of this by contributing your ideas, talents and if at all possible, your time. For time is passing, and not only are we, the present Committee, in need of new ideas, we are in need of new talent.

The time required is modest and we think the reward in satisfaction is substantial.

To all who read this, especially the clubs, etc., we request your help. If this great 'showcase' is to continue, new ideas and new talent are essential. Please bring this to the attention of your club and friends, as soon as possible.

Enclosed is an Information Sheet for clubs or other organizations. It will be very helpful if it is completed and returned as quickly as possible.

For those near Toronto who can give some help to the committee, the Executive Committee meets on the first Wednesday of each month at the Canadian National Institute for the Blind (CNIB) Building, 2109 Bayview Ave. (North of Eglington Ave. East).

Evan Herriott VE3IND
Chairman,
Executive Committee

IARU BANDPLAN

I was reading the June issue of *The Canadian Amateur* which has the IARU Bandplan Opinion Poll, and thought I would like to comment on this even though I am rather late.

This bandplan is not exactly the one we currently use, but it is very close to it and I think that we should use it with minor changes for Canadian use after deregulation. Therefore, I would vote Yes to item number 3 of the opinion poll.

I think it would be a grave mistake to completely deregulate the bands and allow phone operation from one end of the bands to the other. Can you imagine the confusion on 20 metres with SSB, CW, RTTY and Packet all mixed up on a busy weekend?

160 metres is an example of a band which has no sub-bands and it does seem to work fairly well, mainly because 160 is not very popular for CW operation. Phone operation does occasionally go down to the bottom of the band during contests and CW operation is not possible at these times; meanwhile the top end of the band will be quite free of interference and there is really no need to operate phone down at the bottom end.

The 30 metre band is only 50 kHz wide and is an excellent band for CW and other digital modes. Allowing phone operation on this band would destroy it for use on other modes as it will only support a few SSB stations, especially if they run high power.

One other point. If we allow random SSB operation on the bands I think the American operators will start demanding more phone bands for their own use. As you know, when the Americans move into a section of the phone bands, they more or less 'take over' and we would lose the 'haven' we have on most of the phone bands.

So you see, I believe we do need some form of sub-band regulation and not throw everything wide open as has been suggested in one editorial in *TCA*.

Gerald W. Dixon VE5DC

ABEGWEIT AWARD

I am writing on behalf of the Prince Edward Island Amateur Radio Association to request a notification of correction be published in your magazine.

There was a 'Generic QSL Card' provided by our Local Department of Tourism, which has invalid information printed on it. This information pertains to the 'Abegweit Award'. The QSL Card states that only contacts after Jan. 1, 1989 are valid for this award, this should have read Jan. 1, 1960. About 10,000 of these cards were produced and distributed to Island Amateurs.

We would appreciate your co-operation in trying to rectify this statement for those Amateurs who might wish to apply for this award.

For your information, and possible use, here is the exact wording that should have been printed on the card:

PRINCE EDWARD ISLAND ABEGWEIT AWARD REQUIREMENTS:

VE1s, VY2s and VO1s— QSO all 3 P.E.I. Counties.

The rest of Canada and the United States QSO any 3 P.E.I. Stations.

DX Stations QSO any 2 P.E.I. Stations.

Contacts made after Jan. 1, 1960 will count.

Submit logs, certified by two other Amateurs.

QSL Cards must be in possession.

Send $5 or 10 IRCs to: Awards Manager, P.O. Box 1232, Charlottetown, P.E.I., Canada C1N 7M8.

For more information on this award, please write to PEIARA, Box 1232, Charlottetown, P.E.I. C1A 7M8.

Dave Smith VY2CW
President PEIARA

REPLY TO JIM DEAN

Your open letter in the January issue of *The Canadian Amateur* does hit home. The use of the airwaves by many Amateurs is nothing short of disgusting. I refer primarily to the :VOICE: group, many of whom will spend hours on a frequency, on subjects of a personal matter that should be better discussed over the Bell phone system. But, whose fault is it?

My licence is not yet two years old, so I can remember the course I took and the examinations very well... During the course which was taken at one of the local High Schools, there was not a session given to Morse Sending. There was nothing on call procedures either for Morse or Phone. When I went for the DOC sending test, of the six people who also took the test, five failed, two of them for the second time. I invited one of them to my home for an hour on Sending, and he passed the following week on a Club exam.

Some two months later, I received a call from a friend who had just got her licence. She plaintively said, "I've got my Licence and I am sitting in front of my Rig... NOW WHAT DO I DO?"

We cannot blame DOC, I have found them extremely cooperative and kind, going out of their way to help. We can blame ourselves for allowing a teaching and examination process that completely ignores operating procedures and ethics and, incidently, politeness.

On the same page as LETTERS: 'One view in return', I agree 100%. Thanks to Bren Adams.

Charles Leggatt VE3CFL

MASSE ANNOUNCES INCREASE FOR CBC

Communications Minister Marcel Masse has announced an increase of nearly $81 million to the CBC budget over the next five years in government support for the Canadian Broadcasting Corporation, to meet increases in operating costs.

"Recognizing CBC's role in the cultural life of this country, we have taken into account the operational cost increases faced by the Corporation, such as higher salaries and new telecommunications charges, and approved an increase in resources of $81 million over the next five years, i.e. $16.3 million for the current fiscal year and $16.1 per annum thereafter," the minister said.

Mr. Masse noted that the government is responsible for the sound management of the economy and therefore expects the CBC to continue its efforts to reduce administrative costs in order to help in the national challenge of deficit reduction, but recognized that certain expenditures are inevitable. The effect of this latest increase will be to raise the corporation's total resources to $1.365 billion in the 1989-90 fiscal year, from $1.278 billion last year.

IARN BROADCASTS

The International Amateur Radio Network broadcasts and coordinated nets may be heard on 3.975, 14.275 and 28.475 at 1400, 1800, 2200, 0100 and 0500 UTC. One hour earlier during Daylight Saving Time.

VE3ULR/VE3RTR
A Super 2-Metre System

By Dave McMillan VE3MIM

Amateurs are a 'special' group— none of us will deny that— but those of us within range of the VE3ULR link system have really got something 'special' going for us. To paraphrase Winston Churchill, and with apologies, we are indeed among 'those lucky few'.

Located near Aurora, the VE3ULR UHF repeater acts as 'hub' for a communications network unsurpassed by any in Ontario, or probably the western hemisphere.

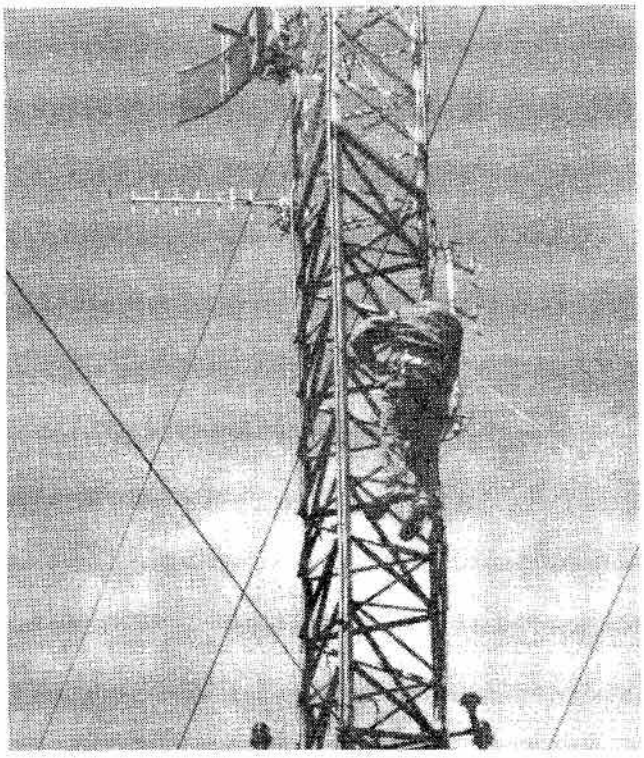
On the VE3ULR link network, comprised of independent associated repeaters tied into the ULR repeaters, it is possible to communicate on 2 metres from within the range of Kingston VE3KER in the east to London VE3SUE and VE3TTT in the west; to Hamilton VE3DRW, Toronto VE3GER and VE3TTR; north to Collingwood VE3MTR, Shelburne VE3ZAP, Midland VE3UGB, Barrie VE3TTB; and to the east Peterborough VE3PBO, Campbellford VE3KFR, Kingston VE3KER, Picton VE3RAA and Cobourg VE3RTR. A link to the shores of Lake Huron is in the works.

While the VE3ULR hub is the kingpin that ties this fabulous system together, VE3RTR 145.150 just north of Cobourg is something really special and deserves more than just casual mention!

Until November 1989 when the antennas were moved to a new 500-foot tower, the range to mobiles was roughly from east to Oshawa on Hwy. 401 to about the Marysville Road in the vicinity of Napanee with some spotty areas along the way. Station-to-station contacts of course were possible over greater distances and with inversion, contacts have been made with Ottawa, stations west of Buffalo and of course in the golden horseshoe area of St. Catharines.

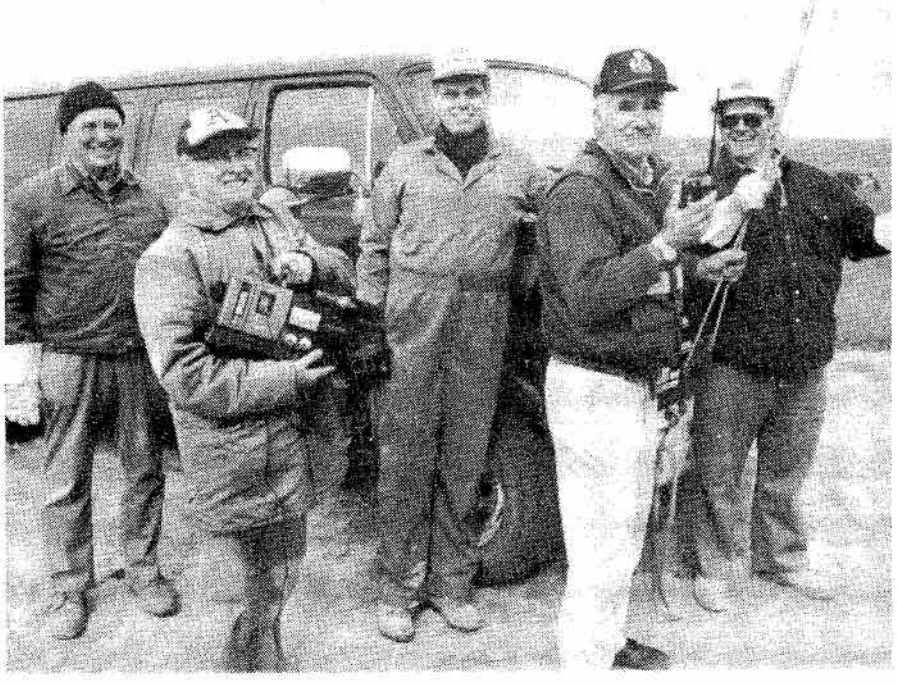
Moving from one tower to another is not just as simple as saying it, particularly when all work on the new tower was to be done by professional riggers.

Back in early summer, preliminary work was put in motion. Coax, multi-couplers and racks were brought down from Toronto and stored, racks cleaned and painted and finally on the big day, one cool and windy day in July, Amateurs gathered from all over to help Terry VE3CAB get it together and make their way up a twisty back road to the repeater site where all that had to be



Right: Tower work at 200'; Cold & Windy. Cam VE3LCC.

Below: Some of the happy group this July at RTR site. Left to right: John VE3MRF, Al VE3ASU, HARC Historian, Phil VE3DQK, Bill VE3MDE, John VE3KZT.



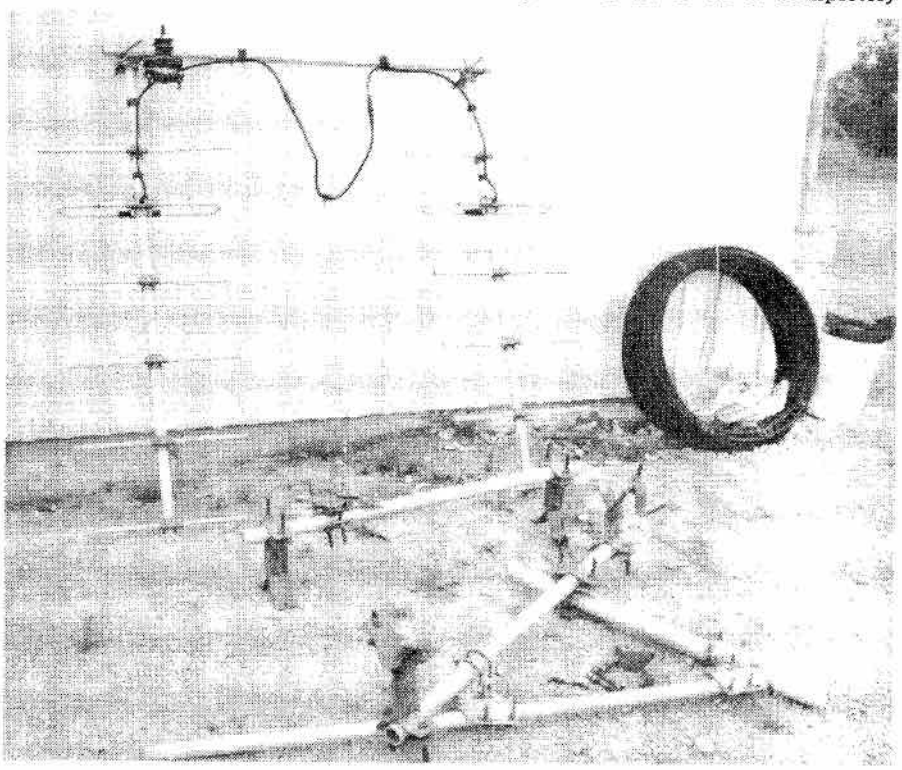
done to prepare for the riggers was made ready. Now all that was left to do was wait!

It's not just Amateurs who do their antenna work in the worst weather possible and it wasn't until November that the riggers did the final change over and the new set up was on the air. Then even at a temporarily reduced output of only four watts, the increase in coverage was phenomenal!

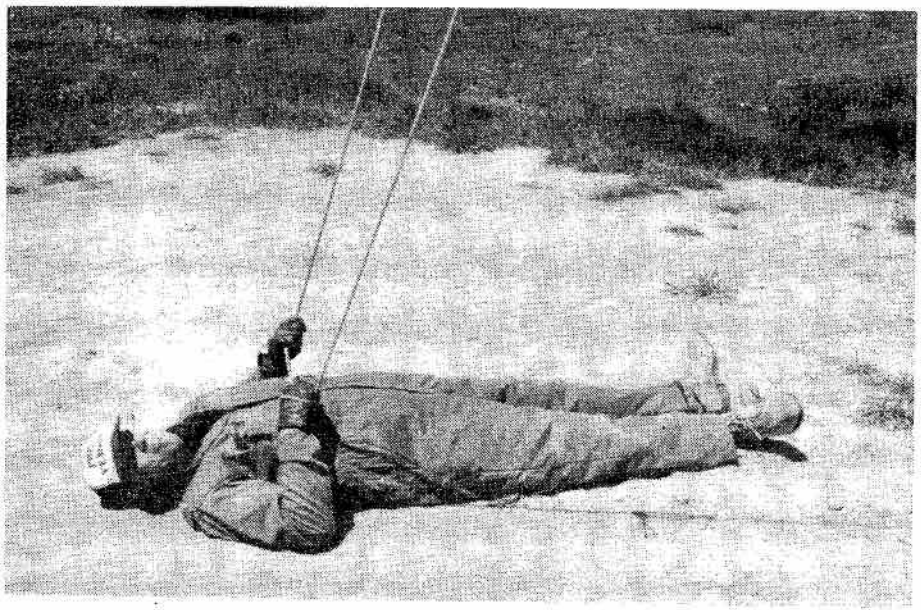
Now at increased power it is possible on 145.150 to regularly work direct to Kingston, St. Catharines, Niagara Falls and QSOs have been made with mobiles on Ellesmere Ave. in west end Toronto. The few blind spots on 401 have been eliminated.

The RTR repeater is a standard RPT 10 at 100 milliwatts driving a Motorola MICOR PA at 50 watts into 5 UHF multicoupler cans with a 3 dB loss to produce 25 watts output.

Talk about Amateurs not building their own equipment anymore! The controller is the key to the whole show. It is a 280 based micro processor built by Terry VE3CAB. It is a completely customized control, all logic wire wrapped by Terry. It is probably the only one of its kind in Ontario and permits a single code to destination. The computer does all the work! "How sweet it is!"



Above: Antenna array and hardware. Below: Some people always find the easy way to do things... Phil VE3DQK.



The 220 link is a Clegg FM76 10W to a pair of Sinclair 6 element horizontally polarized stacked array at 85 metres beamed at Kingston.

The link to ULR is a Motorola Syntor 40 Watts with a 7 element Sinclair vertically polarized antenna at the 71 metre level.

As mentioned, with ULR, all this gives that fabulous coverage from London to Kingston and RTR itself gives that fabulous coverage from Oshawa to Napanee. Next time you travel Hwy. 401 east of Toronto, check in on 145.150; you should find a friendly voice to help pass the miles away! Coverage is also possible from highway 7 east of Peterborough and well north of the Liftlock City!

The VE3ULR Repeater Association owns and maintains three repeaters: VE3ULR near Aurora, 145.47 & 224.88 & 442.025 with autopatch into just about every Toronto and environs exchange; VE3TTB near Edgar 145.19 with autopatch into Barrie, Orillia, Midland, Moonstone, Elmvale, Oro, Port McNichol-Victoria Harbour and Coldwater telephone exchanges; VE3RTR near Cobourg 145.150 provides SOLID mobile coverage on 401 from Oshawa to Napanee. Licensee is Terry VE3CAB.

The Association just recently spent over $5200 on improvements to the RTR set up. The unbelieveable part to all this? The cost for membership is only $10 a year! $20 with autopatch privileges. Yes Virginia, there is a Santa Claus!

NOTE: Anyone interested in more details of this extraordinary system may write: The VE3ULR Repeater Association, P.O. Box 1026, Station 'F', Toronto, Ont. M4Y 2T7 ■

ILLEGAL TAXIS

The New York City FCC Field Operations Bureau office is asking Amateurs in the area to help it rid the 10 metre band of illegal taxicab dispatchers. Since April the New York City Office has been investigating complaints by area Amateurs alleging illegal use of 10 metres by New York City taxicabs and other for-hire vehicles. Several illegal stations were closed down as a direct result of the investigation.

However, the illegal operations are continuing and the commission indicates that the next step may be to be prosecution of the operators.

Finnish Canadian Grand Festival

By Antti Haaranen VE3ANH

For the past three years, a large committee had been planning a special celebration marking the 50th anniversary of the Finnish Canadian Grand Festival to be held at Sudbury, Ont. The idea was to stage the event during the civic holiday weekend in August 1989. The Grand Festival, consisting of track and field events, gymnastics, folk dancing, theatre, singing, etc., had first been organized in Sudbury 50 years ago. Since then it has annually toured the various Finnish communities throughout Canada. After 50 years, the festival was to complete a full circle, once again visiting the place of its birth!

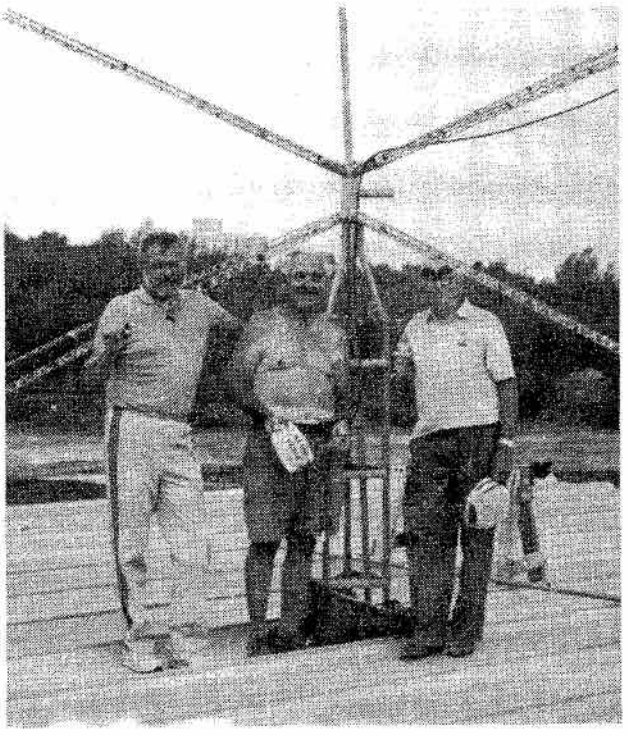
While the committee was busy with planning in the early months of '89, DX conditions into Finland (OH land) were consistently good. It naturally followed that an Amateur Radio station should be seriously considered as part of the 40 events scheduled for the Grand Festival. There were going to be hundreds of visitors and performers coming to Sudbury from Finland, many of them from Sudbury's sister city of Kokkola, a city of 35,000 located on the western coast. A ham radio station located at the main site of the festivities, Laurentian University campus, would help keep the visitors in touch with their homeland. At the same time, closer ties could be established between the two countries using the Finnish Canadian Grand Festival as the catalyst.

Initial plans called for just a portable station so the idea of any special prefix wasn't considered. However as time passed and the number of prefix inquiries from OH stations grew, it was decided to approach Communications Canada. To everyone's surprise, this festival fit all the requirements for a special prefix call. It was noted that the festival was "...an historical and cultural event... municipal event...and ... 50th anniversary (golden)..."

We applied for the special prefix as late as July 24, 1989. The application was written up immediately, approved and footnoted by Steve at the local DOC office and sent away through channels for consideration. It is hard to believe, but verbal approval was received by July 28 and written approval prior to the start of the special prefix allocation period. The special prefix CF3 was granted for the duration of the Grand Festival from Aug. 2 through to the 7th. All hams residing within the municipal boundaries were eligible to use the prefix with their own calls.

Left: Standing, left to right, Pertti Lemettinen from Toronto, his XYL Liisa and cousin Allan Hannula; Seated: Arvi Hautamaki VE3NNQ, Finn Choir Member Voitto Luoma-aho OH6UG.

Below, left to right: Bob Tekauc VE3IFQ, Reino Martin VE3AC, Arvi Hautamaki VE3NNQ.



Wednesday, Aug. 2, 1989 was antenna erection day with the generous assistance of Reino Martin VE3AC, Bob Tekauc VE3IFQ and Arvi Hautamaki VE3NNQ, on an extremely hot day on a very hot metal roof of the grandstand! After seven hours of work, a two element, triband Gen Quad was erected and operational. When the Drake TR7A was turned on and tuned across the 15M band, Bob PI4GV from the Hague came in loud and clear. That confirmed that the station was working well! Bob was given the privilege of being the first station to work CF3ANH. He was my first PI station ever worked!

The Special Event Station at Laurentian University Campus was on the air daily from 1300 UTC to 1900 UTC from the 3rd through to the 7th of August. The prime purpose of the station was to attempt to make contacts into OH land and its objectives were realized even though the DX conditions were not very good. There were a total of 44 QSOs to OH land with a total of 30 different stations from various parts of Finland. In addition, there were an additional 40 QSOs to Canada, the U.S.A., Europe, Great Britain and the U.S.S.R. The Quad antenna was stationary, fixed on Scandinavia. There was some obvious hesitation on the part of many OH stations to respond to the special prefix because it hadn't been publicized, and they didn't know what it was all about.

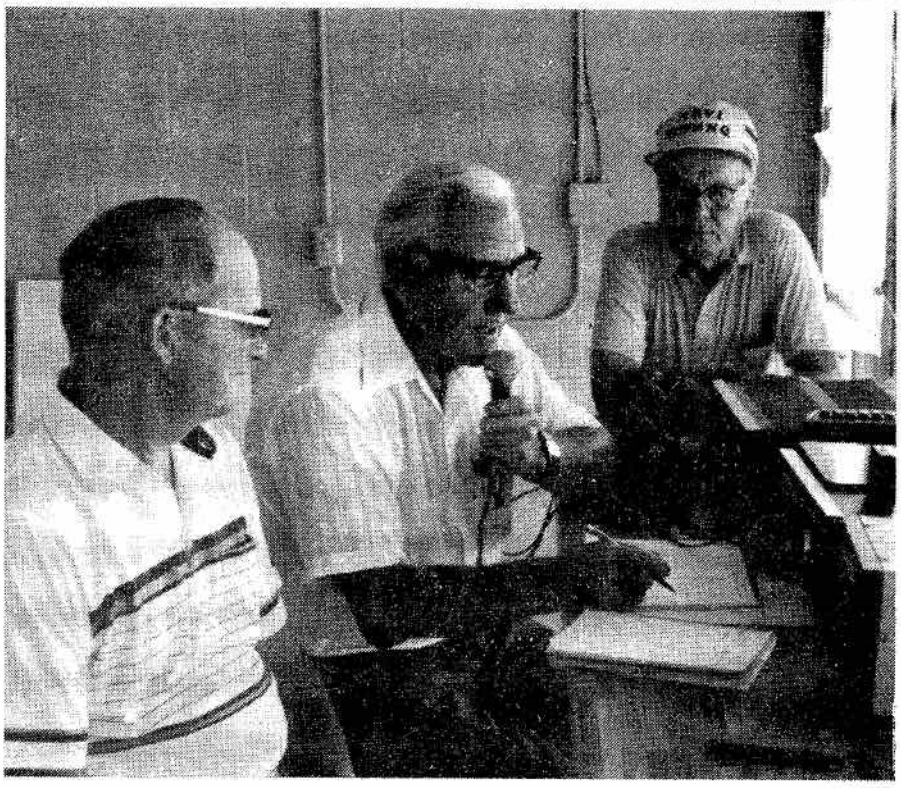
Several members of the Sudbury Amateur Radio Club came out to man the station during the Festival. A special note of gratitude to Arvi VE3NNQ who attended every day during all the hours the station was operational. That includes set-up and dismantling. He was always there to answer the numerous questions that visitors asked, as well as keeping SARC members informed via the two metre system.

Reino VE3AC figured out the correct Quad wire lengths, helped erect the antenna, and worked a real pile-up on 20 metres. Others who assisted included Bob VE3IFQ, Leo VE3MOK, Alex VE3ASP, Vik VE3KBU, Jean VE3ZOO, Barry VE3ZLB and Claude VE3CPD. The latter two had provided another station and a ground plane antenna for the site in case conditions were satisfactory to operate on two bands. However, the propagation was so poor, we left that particular station in the box!

Of special interest during the Festival was the arrival, from Finland, of Voitto OH6UG. Voitto is a member of the Vimpeli Male Choir which was one of many choirs performing at the Festival. Voitto had a chance to contact numerous friends of his in OH land. He also managed to contact his son Pasi OH2IW in Helsinki. A happy coincidence! Another ham who operated the station was Pertti OH9SS formerly from Rovaniemi, Finland but currently in Toronto where he has been living for about a year. He has no station set up in Canada as yet and he was able to contact several friends in OH land as well. Other hams who visited the station included Ivar VE7AVH from Burnaby B.C., Paavo VE3EQL, Myra VE3HEI both of Sudbury, and Markku W8ICJ from Detroit, Michigan. Markku W8ICJ recorded some of the contacts for his Finns Focus radio broadcast which he hosts in Detroit. Non-ham visitors to the station dropped in from as far away as Australia.

On the last day of the event, contact had still not been made into Kokkola, so a special call was put out for any OH6 station in that area. With the assistance of OH2 hams around Helsinki, word was put out through their 80 metre net that our station was trying to work into that area on 20 metres. Lasse OH6SU came on and we asked him if he was familiar with any hams in the Kokkola area. He named a couple of stations and offered to make a telephone call to one of them, even though that ham was 100 km away. His offer was declined because the situation was not critical. Despite that, Lasse made a quick call and in less than an hour Kalle OH6OC came on the air from Kokkola to make a QSO in the midst of a thunderstorm! Greetings to Kokkola were passed and in return, greetings were conveyed to Esko Lankila, Mayor of Kokkola, who was here in Sudbury as one of the many visiting dignitaries.

All in all, the Finnish Canadian Grand Festival was a very exciting time for anyone of Finnish extraction, and as the local media mentioned on numerous occasions, everyone in Sudbury had some Finnish blood in their veins during this festival period! The media gave superb coverage to the festivities and estimates had attendance near the 10,000 mark with well over 1,000 visitors from Finland. A special QSL card had been ordered, sponsored by the Grand Festival Committee. A final thank you to all who contributed in any way to make this Special Event Station such a success! ■



Is Finland out there? Left to right: Leo Trusz VE3MOK, Reino Martin VE3AC and Arvi Hautamaki VE3NNQ.

MORE CROSS MOD

Communications Minister Marcel Masse announced the issuing of nine licences for new nationwide paging services that will use new technologies and radio spectrum to provide one-way alerting radio paging. Two licences are for services on frequencies shared with the U.S.A., and seven on exclusively Canadian frequencies. The call for applicants to supply such services on the newly designated 929-932 MHz channels was published in the *Canada Gazette*, May 13, 1989.

Canadian Hams lead the way!

IPARN gets off the ground!

By Bob VE7EYF

Jan. 1 1990—

Canadian Amateur Radio Operators can remember that date with pride. The Inter-Provincial Amateur Radio Network established the *FIRST* 24 hours daily, VHF 2M radio network via geo-synchronous satellite... anywhere!

The link was established between the VE7FVR and the VE6TWO 2 repeater systems via ANIK C2 (110°W), about 2000 miles west of Galapagos Is., on New Year's day, and was an immediate success, limited only by the usual constraints of local VHF communications. Amateurs in B.C. and Alberta, able to make the repeaters, had a ball initiating 'firsts' between the provinces.

Lots of traffic has passed through the system, particularly from the B.C. lower mainland and the Calgary, Alberta areas. Vancouver Island operators joined in from time to time, and good signals were heard from Medicine Hat and Lethbridge. I personally had a fun QSO with VE6CKR/Mobile 5, near Leader in Saskatchewan. Warren was really bubbling over with excitement, having to watch his driving, ward off his energetic family and try to absorb the wonderment of the contact with the west coast from out on the bald prairie.

Thursday, Jan. 4 saw Bill VE7CQ handle over two hours of explanations and questions, during the evening. Basil VE7BYH, speaking for Nexus Eng. Corp., pledged further support where possible. Bill CQ had earlier mentioned the contribution of equipment this firm had made, without which this early date would not have been achieved. Many of those calling in to Bill were enthusiastic and ready to take out membership in IPARN, now they could see it actually work.

Mention was made of some of the dedicated Hams helping make history. Individuals sacrificed the seasonal holidays to make this endeavour fly. The Alberta contribution was gratefully acknowledged. Recognized also were those 'Founder' members who had the initial faith in IPARN. An all-round team effort.

IPARN Board of Directors: Pres. W. Blake VE7CQ, Sec. D. Gillis VE7ICA, V.P. D. Auld VE7FKX, Treas. K. Russel VE7AIP. Directors: R. Bradford VE7FGA, F. Orsetti VE7CJG, E. Dunham VE7CIO, A. Stimpson VE7CGL, B. Haycock VE7EKX, G. Wainwright VE7AMT, J. Johnson VE7CSJ; Prov. Coordinator, Alberta Section, M. Foreman VE6AMC.

The present arrangement will be in service until the end of January. Additional repeaters may be added before the satellite rental term is up. Meanwhile, evaluation will go on, and Hams are requested to use it as much as possible, to help in this work.

It doesn't take much imagination (now we've been shown in a most practical manner) to foresee the possibilities of Canada-wide 2M QSOs, if the Ham community gets behind IPARN.

Commercial and Government interests are observing also the progress, as Amateurs again are in the van of new developments. As Bill CQ said, Canadians, due to the terrain, are acknowledged pioneers in long distance communications. The 'footprint' of the satellite covers most of our country so, when you use this medium, your signal is actually present throughout the nation! Talk about DX! A round trip of about 50,000 miles... how about that? and 2M yet!

If you're not yet a member of IPARN, and would like to be in on the cutting edge of brand new Amateur Radio experiments, you can get information by writing to IPARN, P.O. Box 3156, Langley, B.C. V3A 4R5.

System access at this time is wide open. Likely only by DTMF codes when it is permanently established. ■

— from *VE7SAR Communicator*, Surrey ARC

What is IPARN?

COMMON QUESTIONS AND ANSWERS

IPARN (pronounced 'I-parn') is an Amateur Radio organization for Canadian Amateurs. Headquartered in Langley, British Columbia, IPARN is administered by a Board of Directors made up of Amateurs from a wide sector of the community.

What will IPARN do?

The prime objective of the organization is to esbalish and maintain a 'full-time' Canada-wide communications network. IPARN will do this by using a geo-stationary satellite to interconnect existing terrestrial networks. Additionally, IPARN will oversee the operational and administrative aspects of the system.

Where will the system reach?

Eventually the system will reach all parts of Canada that have local terrestrial networks wishing to be part of IPARN. In addition, there may come a time when IPARN can include individual repeaters in remote areas that are not part of a network.

When will this happen?

In a young organization, progress is determined by how quickly the organizational work itself is done. IPARN is moving ahead quickly, establishing itself with a firm foundation from which to work. At the same time we are working to establish the first satellite interconnect as soon as it is financially possible. The step-by-step process has already begun with the acquisition of the first satellite terminal. With the continued support of a growing membership the network will become operational much sooner than initially expected.

Will we need control codes to access other parts of the network?

Yes. The use of DTMF to control the system is of prime importance to IPARN Co-ordinated coding has already been established and those codes will be made available to all IPARN members.

Is there a regular publication?

Yes. It is called *NETWORK*. The publication is free to all members and is the primary source of information on the activities of IPARN. It has received considerable praise from the membership and continues to progress with each issue. In addition to covering the achievements of IPARN, the bulletin contains numerous articles of general

Continued on next page ►

IPARN *(cont'd)*

interest to Amateurs. These include technical sections, news items, satellite related topics, up to date information on DTMF codes, and descriptions of networks across the country.

If I develop a small VHF/UHF Network can it become part of IPARN?

Yes it can. IPARN will simply look at each network to evaluate its compatibility with the IPARN system. To explore that aspect of the development plan, you should contact your local Provincial Co-ordinator, or IPARN directly, for the initial information regarding such projects.

What is a Provincial Co-ordinator?

The administration of IPARN is the responsibility of the Board of Directors. They in turn provide liaison with Provincial Co-ordinators who then communicate with the membership in their province. The role of the Provincial Co-ordinator is quite dynamic and includes such items as: working with local groups to expand the terrestrial capabilities, providing membership information, co-ordinating the solution of local problems, relaying of questions and information to IPARN headquarters, and also include some financial activities.

What does the future hold for members of IPARN?

Much of this depends on you. As a member of IPARN, you will be supporting the development of the network. As the system is developed, members may look forward to:

- Nets/traffic
- Data transmission
- Better emergency communications
- A reliable addition for the HF traffic operator

With IPARN, Canadian Amateurs will be leading the world in networking technology. As much as possible, the technical details will be made available to the membership.

How can I become a member of IPARN?

IPARN is looking for support from Amateurs across Canada to make this exciting project a reality. Choose from the following membership dues: 1 Year $36, 3 Years $95, 5 years $150.

That works out to $3 a month or less! All members will receive a QSL size membership card and the latest issue of *Network*. Furthermore, those people who join IPARN at this important time in the organization's development will receive a 'Founder Member' stamp on their membership card. To become part of this innovative organization, simply fill out an application form and put it in the postage paid envelope with your cheque or money order. If you do not have an application form please contact your Provincial Co-ordinator or IPARN directly so that one can be sent out. ■

ITU OFFICIAL ELECTED

At the 12th Plenary Metting of the ITU Plenipotentiary Conference, Dr. Pekka J. Tarjanne of Finland was elected Secretary-General of the ITU at the first ballot. 130 delegations of Member countries of the Union took part in the vote.

Dr. Tarjanne took over from R.E. Butler (Australia) on Nov. 1, 1989. Mr. Butler has had a 25 year career in the world of telecommunications within the United Nations System, culminating in his being elected Secretary-General of the Union in 1982.

Since 1977, Dr. Tarjanne has been Director-General of Finnish Posts and Telecommunications, the country's largest employer with 44,000 employees. He was born in 1937 in Stockholm. At the age of 24 he became the youngest doctor of technology in Finland. After his doctorate, he devoted himself to research and teaching in Denmark and the U.S.

Dr. Tarjanne was professor of theoretical physics at the University of Oulu and at the University of Helsinki. He was also Minister for Transport and Communications and Minister responsible for Nordic Cooperation.

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

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

WANTED: Old telegraph bugs (speed keys) such as Xograph by Rolph Brown, Wilcox by Fred Wilcox, Dow bent and rotatable by Dow or help in locating such, 73. Smiley, P.O. Box 5150, Fredericksburg, Va. 22403, U.S.A. WB4EDB.

FOR SALE: Kenwood TS-940S/AT transceiver, SP-940 Speaker, Shure 444D Mic, all in excellent condition c/w original shipping cartons. Contact Wil VE5ZJ, 27 Delaronde Rise, Saskatoon, Sask. S7J 3Z4. 306-374-8919.

FOR SALE: Kenwood 2 metre TR7200G transceiver. Excellent, with manual and crystals for 9 channels plus simplex, $150.00. Cushcraft 15 metre 4 element monobander. Used very little, excellent, $90.00. Cushcraft 10 metre 4 element monobander. New, still in original box, $75.00. Converted 440 transceiver, presently tuned to 444.5 with mike and corner reflector ant. $40.00 or best offer. **WANTED:** Good used keyer, any make. Phone 519-845-3517.

FOR SALE: SB102 transceiver, power supply, desk mike, hand mike and SB 610 scope. Both complete with manuals, $425.00. SB200 Amplifier with spare set of finals and manual, $350.00. 48' HD Delhi tower, Ham II rotor, TH3MK3 beam, with manuals, 100' coaxial and 100' rotor wire, $650.00. Harry Skead VE3HWR, phone 705-286-2663.

FOR SALE: Bancroft area QTH, 1984 custom built bungalow, 2600 sq. ft., self-contained apartment, garage, 200 amp. service, deep well pressure system, Jacuzzi, Satellite system, electronic security, appliances, woodland, garden area and pond, 2 acres. 60 ft. Samson tower, TH6DXX yagi, Ham IV control. Clean air, clean water, clean DX. Contact Werner VE3HIV, (613) 332-3598 or Dave/Diane (613) 474-2091.

WANTED: by enthusiast. Vacuum tube equipment, any model or condition. Especially AR88, HRO 60, NC183, NC400, 75AI, 32VI, 51J4, R390A, SX28, SX62A, SX88, SX115, HQ180, SP600, PRO 310, any Eddystone model, Viking 500, Mohawk, AR3, High power AM transmitters. Semi-automatic keys. Write with details, price. Jim VE5BQ, Box 658, Rosthern, Sk. S0K 3R0.

Please send your 'Swap Shop' notices to the The Canadian Amateur Swap Shop, Box 356, Kingston, Ont. K7L 4W2. Single insertion is $1.00 minimum (10 words) and $1.00 for each additional 10 words. To renew, send copy and payment again. Please TYPE OR PRINT CLEARLY! and put your membership number and call (not counted) at the end of your ad. Include your full address with postal code; if using a phone number, include the area code. The Canadian Amateur accepts no responsibility for content or matters arising from ads. This feature is for the use of members wishing to trade, buy or sell personal radio gear. It is not open to commercial advertising. ■

Some Truckin' Rhymes

By Rudy Melanson VE1WV

Al Jolson once said, "You haven't heard anything yet!" He must have been referring to the frequency of 3760 Down here in the Atlantic area.

If you happen to be mobile and have HF equipment, try tuning to this frequency. It is a hotbed of activity from early morning until late evening, non-stop.

All this activity is centred around an 18-wheeler and its driver VE1WY, name of Roger. Roger covers all three Atlantic Provinces and is known by all Radio Amateurs, having at one time conveyed equipment for a good many of them and his only charge is a smile.

It's Amateurs like this who make 3760 the most listened to frequency down east. If you have a problem, someone on frequency can usually supply an answer, making one wonder if they should not be rated professionals.

The following poems entitled '3760' and 'The Happy Trucker' were put together by me to show my appreciation to the group which haunts 3760.

'3760'

It's great to sit and listen
To Three Seven Six and 0
To hear from friends throughout the years
That we have come to know.

You will hear from Fred & Erskine
From Louis, Bud and Moe
From Max, Dick and Leo
And maybe AGU will show.

The AGU is like good weather
That never stays too long
But seems to make his appearance
To let George know he's wrong.

You may hear Strugg from Woodstock
But he doesn't always show
The boys claim he's too busy
Too busy making dough.

Roger will be wheeling
With mobile mike in hand
Heading down the highway
Busy monitoring the band.

Then early in the evening
The working group we hear
Like Frankie, Britt and Gordie
Then George and Dave appear.

You will hear from boys with knowledge
And some with a yen to learn
But one thing you can rely on
Is friendship of real concern.

So if you can come join us
I'm sure you will agree
The Lord designed this frequency
For Nuts like you and me.

THE HAPPY TRUCKER

Here is a little ditty,
I'd like for you to hear.
It's about a special Amateur,
And his special kind of gear.

If you listen to the frequency,
Of 3 - 7 - 6 and 0.
You will hear a happy trucker,
A chap that we all know.

He drives an eighteen wheeler,
And delivers from place to place.
Talking to friendly people,
Or eyeballing face to face.

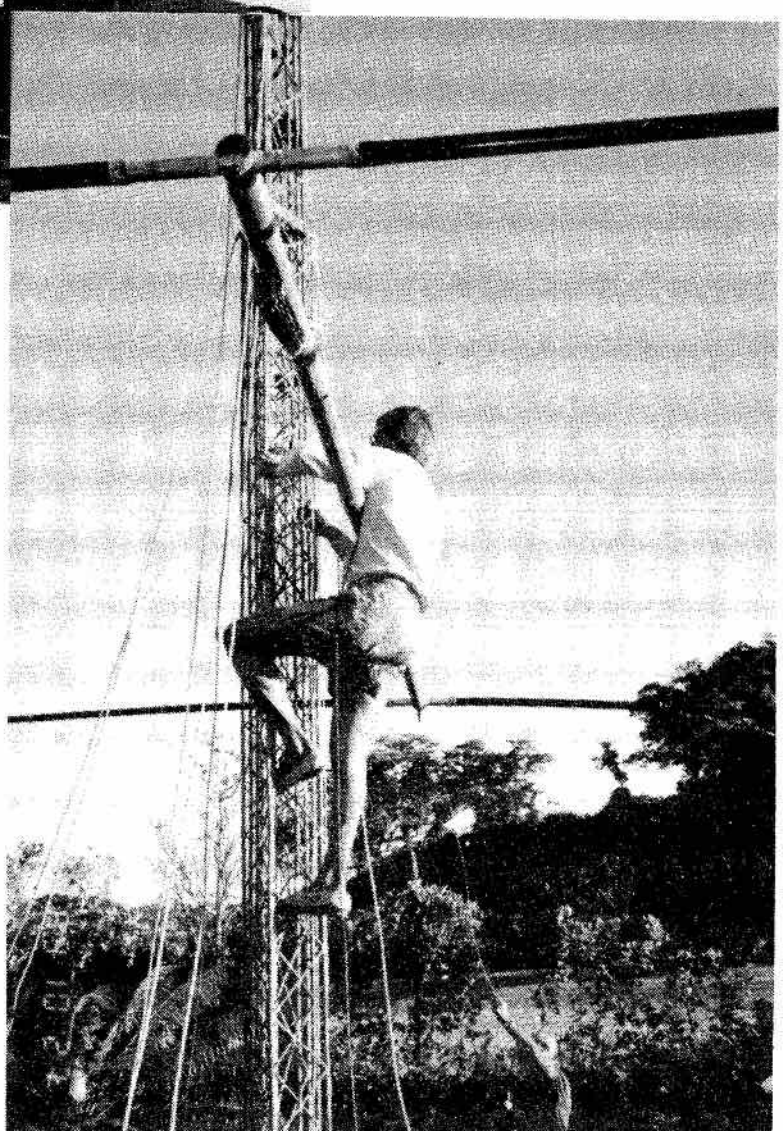
His face has a built-in smile,
No matter where he goes.
And he keeps the frequency humming,
On 3 - 7 - 6 and 0.

There is no one more deserving,
Of our special thanks.
For the service that he renders,
To the members of our rank.

So here's to the happy trucker,
Who's always on the go.
And makes for happy listening,
On 3 - 7 - 6 and 0.

Big Signals from the South Pacific

Above: Roy YJ0AR/VE7TG, Port Vila, Vanuatu Republic, with plaque carved by awards manager and artist Simon Pearl YJ8GP, on Roy's fourth visit to Efate and Irirriki Islands.



Right: Pekka Kolehmainem YJ0R, OH1RY, climbing Merek's tower at YJ8NMB, Port Vila, with the two element 40 metre beam for the CQ WW Contest. Pekka piled up 7,000 contacts in the two days of the contest.

By Robert Leong YJ8NRL

Vanuatu Republic, formerly the New Hebrides Islands, has been making Amateur news.

After several tries by members of the Port Vilo club, which failed owing to high winds, floods or drowned equipment, Merek YJ8NMB operated from Torres Island, using YJ1TRS in December.

Merek flew up to Torres in a twin otter, managing to land after several tries, getting on the air in mid-December.

Pekka Kolehmainem YJ0R/OH1RY had arrived earlier in Vila, with a mountain of gear for the CQ WW Contest. He brought along a two-

element 40 metre beam, a tri-band beam for 10-15 and 20 metres, and dipoles for the other bands, including 160 metres. Pekka operated right through the two day contest making 7000 contacts.

Roy YJ0AR/VE7TG visited Port Vila, for the fourth time, using gear borrowed from Robert YJ8NRL, Rod YJ8RN and Merek YJ8NMB. He was able to give many U.S. and Canadians other first Vanuatu contact.

Roy was presented with a hardwood plaque by artist and awards Manager Simon Pearl YJ8GP on his departure for Fiji where he uses the call 3D2AR.

VANUATU AMATEUR RADIO SOCIETY AWARD

The Award: The award is a standard size certificate printed in the four colours of the Vanuatu flag and containing a scale map of the archipelego.

Award Rules: 1. The award is offered to all licensed Amateur Radio operators who qualify

2. To obtain this award, the Amateur operations must have made not less than six contacts with Vanuatu stations carrying the YJ8 callsign and who are members of the Vanuatu Amateur Radio Society. Contacts made from Vanuatu (July 30, 1980 are acceptable.

3. Contacts may be made by SSB, CW or RTTY.

4. Two contacts with any one YJ8 station will be accepted providing these contacts are made on different days and on different bands or modes.

5. A log extract from the applicant showing the contacts claimed. And certified by two other licensed Amateurs will be accepted. This record will be checked with the logs of the YJ8 stations worked.

6. Endorsements for all one mode, all one band or all additional stations worked are available.

Award Costs: The cost of the award is $2 U.S. (or its near equivalent, or 10 IRCs).

Award Address: Please address all inquiries and submissions to:
Awards Manager, V.A.R.S.,
P.O. Box 665,
Port Vila,
Republic of Vanuatu.

Current VARS Members: YJ8DX YJ8IND, YJ8JOA, YJ8AA, YJ8A5 YJ8BA, YJ8DE, YJ8EK, YJ8FB, YJ8GK, YJ8GP, YJ8RN/NRN, YJ8PE, YJ8NRL, YJ8NRM, YJ8VOB, YJ8NMB.

Former VARS Members: YJ8CW/NCW, YJ8JG, YJ8JH, YJ8JS/NJS, YJ8Z, YJ8PM, YJ8PS, YJ8EM, YJ8KM. ■

— Roy Parrett VE7TG/YJ0AR

FAMOUS HAM/SKIPPER DIES

Capt. Henrick Kurt Carlsen W2ZXM died Oct. 1, 1989, at age 75. In 1952, Kurt was a 37 year-old sea captain who gained international attention for staying aboard his slowly sinking American freighter, the *Flying Enterprise* for several days. A storm in the English Channel had ripped open the ship's hull. After ordering the crewmen and passengers overboard, he remained with the ship so that it could not be claimed for salvage by another company.

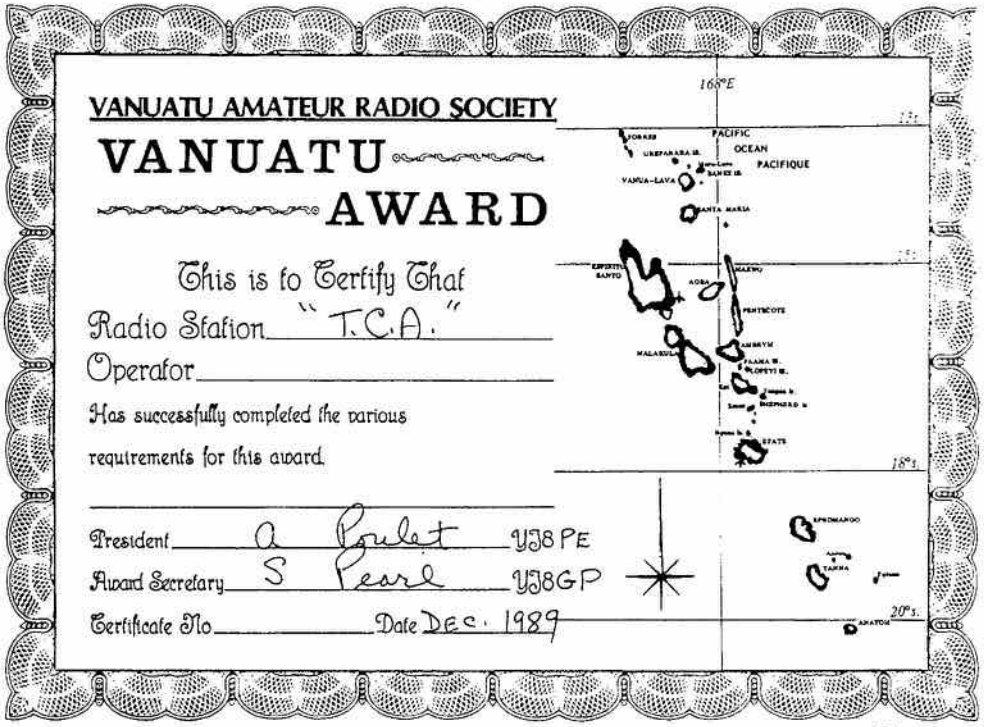
A second storm soon finished the destruction of the *Flying Enterprise*. He jumped overboard and watched it sink from a tugboat's deck near Falmouth, England.

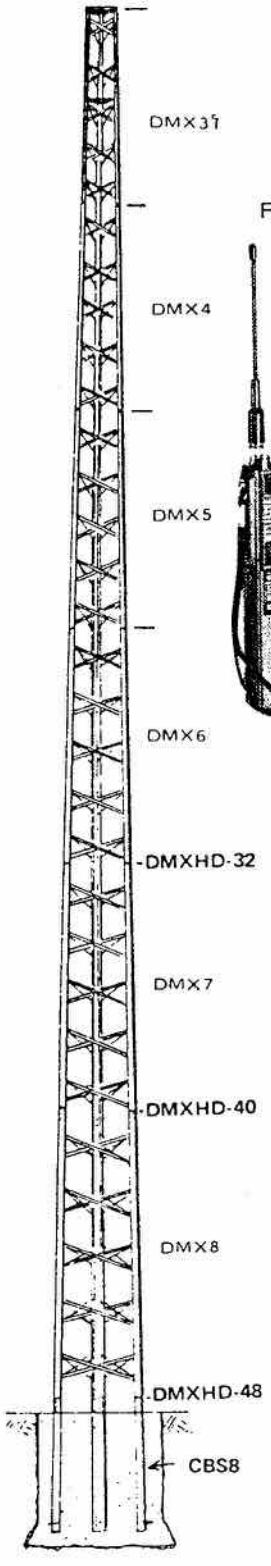
Kurt returned to sea again on the new *Flying Enterprise II* with all the latest radio gear. For many years after he was frequently heard and contacted by hams worldwide that enjoyed hearing details of the sinking of the *Flying Enterprise*.

Kurt died at his home in Woodbridge, New Jersey.

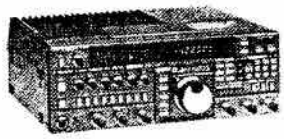
— *W5YI Report*

Above: Independence Day QSL card by the Port Vila club celebrating the founding of the new republic, formerly the New Hebrides Islands. Japanese Amateurs and UTA French Airlines assisted the Vanuatu Amateur Radio Society celebrations.

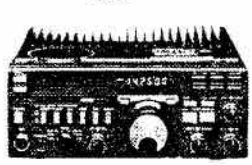




YAESU



FT-767



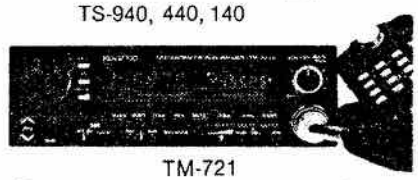
FT-767GX, 757GX, 747GX

FT-23R, 33R, 73R

FT-727R
DUAL BAND HT

KENWOOD

TS-940, 440, 140



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

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

TH-25AT, 45AT

Rotors

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TS-940SAT Deluxe Transceiver C/W auto tuner etc.	2995.00
TS-140S HF transceiver, General coverage RX	1195.00
TM-721 2 mtr./70cm. 45 Watts 2 mtr. 35 W 70cm clearout	895.00
TM-701A 2 mtr./70cm. 25 watt dual bander	795.00
TM231A 50 Watt 2 mtr. mobile	579.00
R-5000 deluxe HF receiver Regular $1289 Special	1169.00
R-2000 Receiver C/W VHF converter, used (new set warranty)	995.00
R-2000 Receiver (demo) Regular 995.00 to clear	895.00
TR-751A FM.CW. SSB 2 mtr. mobile transceiver	879.00
Yaesu FT-441 2 mtr, hand held with 140-174 RX coverage	449.00
Ameritron AL80A 1000 W. P.EP. Linear 160-10 mtrs.	1595.00
Ameritron AL-84 600 Watts P.E.P. HF linear	795.00
A.E.A. PK-232 All mode controller C/W 'Pak-Mail'	549.00
MFJ-1278 All mode controller with 'Mail-Box'	449.00
MFJ-1229 Deluxe RTTY & CW interface to clear	269.00
MFJ 1224 Rtty & CW interface C/W software for C-64 etc.	169.00
MFJ-407 deluxe keyer	129.00
MFJ-401 economy keyer	89.00
MFJ-422 Bencher BY-1 key and piggy-back keyer	229.00
MFJ-941D 300 watt tuner with SWR meter, etc.	179.00
MFJ-949D 300 watt tuner deluxe meter and dummy load	259.00
MFJ-989B 3 KW crossneedle meter, rollor inductor, etc.	595.00

FULL LINE AVAILABLE

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ELH-260 60 Watt amp for Handhelds, super buy	239.00
ALR-72T 70 CM FM mobile, to clear	539.00
ALR-24T 2 mtr./70 CM 25 watt mobile, clearout	695.00

H.C. MacFarlane Electronics Ltd.

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Airborne Radar in World War II

By Charles Whittaker VE7DGI

By early 1941, research and development of radar systems was proceeding at a rapid pace. It soon became evident that a vast number of personnel would be required for servicing the equipment. The available manpower in Britain appeared to be insufficient, so a request was made to Canada for assistance.

The RCAF responded by advertising for 'Radio Mechanic' trainees. The universities were asked to provide some training facilities. The job description was somewhat vague, so we assumed that we would be repairing radios.

In April, 1941, the first intake of 150 recruits received some initial service training at Jericho Beach air station. After four weeks we went out to UBC for 13 weeks of math, physics and electronics. The university provided labs, classrooms and some top-flight instructors, including Dr. Walter Gage (who later became President of the University) and Dr. George Volkoff who had initiated a great deal of research in projects related to physics.

We were housed in an old forestry camp, about 1½ miles from the campus, so a lot of marching back and forth became the pattern throughout the summer. Toward the end of the course, there were some evening study sessions in the library.

Following embarkation leave, we went by train to Halifax and then to Liverpool by troopship in a small convoy. There had been numerous losses to submarines, but this trip proceeded without incident.

At this point, none of us had any idea of the type of work that we would be doing; and aside from the background knowledge received from the university, we were untrained. There had been guarded reference to a mysterious device called a 'Cathode Ray Tube'.

From Liverpool we went by train to Bournemouth, which was an RCAF reception centre for aircrew and ground crew people. There followed an interval of waiting for training, and we were sent to various RCAF squadrons in different parts of the country.

A few of us arrived at Dyce, a station near Aberdeen in Scotland. By this time, it was winter and we were billeted in a suburb of Aberdeen (no room on the station). We stayed with a fisherman's family, who received 6d per day for our accommodation. Meals were received at the station.

405 Squadron was in Coastal Command and it was suddenly moved to the Shetland Islands, to a location called Sumburgh Head. 405 operated Blenheim light bombers, and there was also a Polish Spitfire squadron on the airdrome. The winter conditions were appalling. While here, my mail from Canada appeared and at one point I received 85 letters!

In early February, 1942, I was sent to #1 Radio School at Prestwick, on the west side of Scotland. The trip over to Invergordon on a small ship in gale force winds was one of those experiences which are better forgotten.

The course at Prestwick was four weeks of fairly intensive training on ASV (Air to Surface Vessel). This was an introduction to pulse transmission

Continued on next page

#514 R.A.F. Squadron radar section, dated about February 1944. This was a group of 22 Canadian, British and New Zealand personnel. Note Lancaster aircraft in the background.

RADAR *(cont'd)*

technique. The equipment consisted of a transmitter sending out pulses at a frequency of about 50 MHz, with a pulse width of 40 microseconds. The returning (reflected) pulse was picked up on a pair of yagi antennas suspended beneath the aircraft, and sent via receiver unit to the 'indicator' which employed a cathode ray tube about 5" in diameter.

The vertical trace displayed the transmit pulse at the bottom and the reflected pulse further up on the trace line. If the detected object was off to starboard, then the pulse would protrude farther on the right side of the trace. The operator would then advise the pilot to steer to starboard, say 10 degrees. When there was an equal amount of pulse on either side of the main trace, then the aircraft was proceeding directly to the detected object (hopefully, a submarine). Distance was determined by markers which were electronically superimposed on the vertical trace.

The two antennas were mounted at a slight angle to the centre line of the aircraft (looking outwards) so as to achieve better separation of the reflected signals.

This was Mark I ASV and it was used by Coastal Command *Catalina* and *Sunderland* flying boats on anti-submarine patrols.

From Prestwick, I was sent to an RAF Bomber Command station called Scampton, near Lincoln on the eastern part of England. I had expected to go to Coastal Command, so it seemed as if some mistake had been made. The squadron was #83 and it was in the process of converting from Manchester to Lancaster aircraft. So, I never did work on ASV equipment!

But shortly, the squadron began to be equipped with a navigation device called Gee. Invented by Robert Dippy in 1937, it was first known as Trinity. Now, aircraft navigation became a top priority item and eventually all Bomber Command aircraft used this device.

On board was a receiver, a cathode-ray type indicator and a whip antenna mounted on top of the fuselage. On the ground were three pulse transmitters operating at 50-60 MHz. 'A' was the master station which triggered stations 'B' and 'C', located some distance away. The received pulses were displayed on two horizontal traces on the CRT. In effect, a measurement was taken of the time difference in receiving the signals. The resultant numerical information was applied to a locator grid which was superimposed over a map of the area. This produced a fairly accurate fix.

Later on, even greater accuracy was provided by carrying a master 'A' transmitter on board, and using two slave stations on the ground. This was called G-H, and it was used by some squadrons to provide accurate target marking.

By this time, we were known as RDF (Radio Direction Finding) mechanics, later changed to Radar (Radio Detection and Ranging). The latter term was created by the Americans who were also involved with similar projects.

The Telecommunications Research Establishment (TRE) at Great Malvern provided short courses on the equipment, but for a while the servicing was a case of experimentation. Most of the problems were associated with the metal valves which often became microphonic due to vibration, in spite of spring-mounted racks. Power for this equipment was obtained from an 80 volt generator, driven by the port outer engine on the Lancaster. There was a voltage control unit which used a carbon pile to maintain a steady voltage.

For on-the-ground testing, there were portable generators on a 2-wheel cart, with a 2-cylinder Douglas motorcycle engine for power. The fuel was often low-grade and it was often a struggle to keep these motors running. It was necessary to throw a long cable up to the pilot's window, for connection to the equipment.

At first, Gee equipment was highly secret. Provision was made to destroy it by an explosive charge in the event of a descent into German territory. Triggering could be by pressing a control near the wireless operator position, or this could be done automatically by an impact switch called a Gravinor switch. The circuitry had to be tested daily and activating plugs inserted in the units before operational take off. There were two pencil-sized charges located under the chassis of the receiver and the indicator.

In August of 1942, 83 Squadron shifted from #3 Group to #8 Pathfinder Group and we moved from Scampton to Wyton, which is near Huntingdon in Cambridgeshire. Both of these stations were permanent RAF bases, and the brick buildings and hangars were more comfortable than the temporary locations.

All of the bomber aircraft carried IFF (Identification, Friend or Foe). This consisted of a transponder or transmitter-receiver unit located near the wireless operator's position. The purpose was to prevent the aircraft from being shot down by our own anti-aircraft guns or by our own fighter aircraft.

The unit operated from the aircraft 24 volt DC supply, and it would sweep across the frequency range 157-187 MHz, thus covering the band used by our GCI (Ground Control Interception) radars. On receiving a radar signal, the unit would transmit a pulse on that frequency. The result at the ground station would be a brightening of the blip on the PPI (Plan Position Indicator) tube. The pulse could be coded also, and so the aircraft would be identified as friendly. Sometimes the wireless operator would forget to switch it on, with unfortunate results...

For on-the-ground testing, there were two heavy boxes carrying battery-powered receiver and transmitter. These were set on the ground near the tail of the aircraft, one box on each side and about 20 feet away from the fuselage. The IFF and the portable transmitter were switched on, and the mechanic would listen on the receiver for a squawk from the IFF. This would indicate that the unit was functionining properly.

By late 1942, Canadian radar mechanics were appearing in large numbers. They were responsible for a large percentage of the radar maintenance in bomber, fighter and coastal commands, as well as on the ground stations. To assist in the training, the RCAF established a training unit at Clinton, Ontario.

Another radar device which appeared at this time was oboe. This was used by Pathfinder Mosquito aircraft for marking targets and it was probably the most accurate device in use during the entire war. It was extremely secret, and there are still not many details as to how it operated. Essentially, the two ground stations sent out radar beams designed to intersect over the target. The aircraft equipment provided visual indication to the crew for the exact moment to drop the target indicators.

A countermeasure called 'window' was first used during a raid on the

German research station at Peenemunde, in 1943. This consisted of hundreds of strips of paper-backed aluminum foil, cut to the wavelength of the German radar system. The effect was to cover the CRT screen with multiple blips, thus screening the approach of the bomber force. This system was used for some time, until the Germans developed a method to counteract it.

By the spring of 1943, the squadrons began to receive equipment designed to provide blind-bombing capability. The GEE units were being jammed over Europe and much of the bombing was not too accurate. The new gear was usually H2S and introduced centimetre technique. Basically, it provided downward-looking radar which would produce on a CRT screen, an approximate picture of the ground below. Built-up areas, rivers and coast line would show up very well.

There was the usual receiver, indicator, unit, a transmitter operating on 10 cm and a scanning antenna located in a plastic bubble under the aircraft. To obtain output power in the order of 50 kW, a magnetron was used. Energy was transferred not by cables, but by waveguides (hollow metal tubing).

H2S was reasonably successful, and some improvement was made with the introduction of Mark II, which used 3 cm. Unfortunately, the German air force fighters appeared with a device which would detect the H2S emissions and allow the fighter to home in on the bomber.

In addition to navigation and blind bombing equipment, the aircraft carried certain counter-measures. 'Boozer' was a receiver which would tune to the German anti-aircraft radar, and the fighter interceptor radar. On receiving a signal from either a light would be illuminated as a signal to commence evasive action.

'Monica' made use of surplus AI radar from fighter command. Installed in the tail of the bomber, it would give indication of the approach of a fighter from the rear. This was observed by the wireless operator on a CRT similar to the ASV device.

'Mandrel' was carried on certain aircraft and consisted of a high-powered transmitter which emitted a band of RF noise to blank out the German ground radar receivers. It was also used on great numbers of ships taking part in the invasion in 1944.

Bomber Command finally had eight Groups, of which #6 Group was entirely operated by the RCAF. The other groups were RAF, but Canadians were serving in all of them, both in the air and with the ground staff.

Toward the end of 1944, there were indications that the war in Europe would wind down before too long. Some planning was undertaken to send some Bomber Command squadrons to the Far East to participate in the war with Japan. But this never occurred.

Also, at this time, RCAF personnel who had served three years in the U.K. were given the opportunity to apply for repatriation. I therefore returned to Canada in December, 1944, and I spent the remainder of the war on leave, or on a ground radar course, and on Abbotsford air station with a Liberator O.T.U. I finally returned to civilian life in August, 1945. ■

CBC BROADCASTING ON 80 METRES

Canada signed the 1979 WARC international frequency agreements but added a footnote which took 3950-4000 kHz from the Canadian Amateur assignment and allocated it to broadcasting. It was to be used by the CBC which had hopes of erecting an antenna array to service the Far North. But modern science came to the rescue and the Canadian North was plugged into the CBC by piping programs via satellite to low power community stations.

Recent stories that the CBC was indeed using the 80 metre part of the spectrum prompted an inquiry of the CBC International Service in Ottawa. The program office told Doug VE3CDC that the Corporation is using the 80 metre band for Japanese language broadcasts.

It won't worry Amateurs in Canada or the U.S. as the programs are sent by satellite to mainland China where they are rebroadcast on various frequencies to Japan. For SWLs or interested hams the schedule given by the CBC is:

Time (UTC)	Frequency
0800 - 0900 hrs	3925 kHz
	6055
	9595
1330-1400 hrs	6150
	9535

Revised Ham Count

By Ed Gareau VE3EDG

This is my version of the chart on page 17 in the September 1989 issue of *The Canadian Amateur.*

(A) Population of Canada by area and total.

(B) % by area of the total population of Canada.

(C) Amateur population of Canada by area and total.

(D) % of hams in an area compared to total hams in Canada.

(E) % of Hams in an area compared to total hams in Canada.

"This (E) is equivalent to the column (E) in your chart except your chart shows only the ratio and not the %. It needs to be multiplied by 100 to be defined as a %.

It is interesting to note that:

(1) While Ontario has 36% of the people of Canada, it has 38% of the Amateur Radio population of Canada.

(2) While Quebec has 27% of the people of Canada it only has 17% of the Amateurs of Canada.

(3) Amateurs comprise .0946% of the total population of Canada; and Manitoba, Newfoundland, Quebec and Saskatchewan fall below that average.

(4) While the 5 Maritime provinces have 9.4% of the people of Canada, they have 10.90% of all the Amateurs of Canada.

(5) And while the 3 Prairie provinces have 16.4% of the people living there, they have 15.0% of the Amateurs. ■

APPROXIMATE POPULATION TO HAM COUNT IN CANADA

BY VE3EDG

DATED AUGUST 29 - 1989

PROV	(A) POP'N	(B) % POP'N TO TOTAL	(C) HAM POP'N	(D) % HAMS TO HAM TTL.	(E) % HAMS TO AREA POP'N
YUKON	23740	0.09%	49	0.21%	0.2064 %
N.W.T.	42230	0.17%	85	0.36%	0.2013 %
P.E.I.	112340	0.45%	224	0.94%	0.1994 %
B.C.	2670380	10.66%	4216	17.79%	0.1579 %
NOVA SCOT.	901400	3.60%	1135	4.79%	0.1259 %
ONTARIO	9026190	36.02%	9014	38.03%	0.0999 %
ALBERTA	1997740	7.97%	1986	8.38%	0.0994 %
NEW BRUNS.	737620	2.94%	715	3.02%	0.0969 %
NFLD.	609110	2.43%	509	2.15%	0.0836 %
SASK.	1007490	4.02%	787	3.32%	0.0781 %
MANITOBA	1116600	4.46%	809	3.41%	0.0725 %
QUEBEC	6817050	27.20%	4176	17.62%	0.0613 %
TOTAL	25061890	100.00%	23705	100.00%	0.0946 %

REVIEWS

NOW DIGICART > 64

An announcement by Barry N. Kutner W2UP, 614-B Palmer Lane, Yardley, PA. U.S.A. 19067 arrived Jan. 11.

It is an autobooting cartridge making it ideal for unattended operations utilizing a C64 such as mountain or hilltop digipeaters. In case of a power disruption, the program and parameters will re-boot automatically in 2-3 seconds according to this latest letter.

Unique Feature

DIGICART is designed to rewrite and save parameters without disk access or need to reburn an EPROM. This new cartridge version uses the Electrically Erasable Programmable Read Only Memory (EEPROM) chip 2864 for primary storage.

Cartridge

The popular DIGICOM64 V2.03 is contained in DIGICART plus read and write utilities. Other enhancements of V2.0 are additional password control of remote access features, several parameter ranges extended, and more CTRL codes. It is a double-sided board with plated through holes so don't make a mistake and solder in the wrong component. The board is also solder masked, silk screened with gold plated edge connections. An instruction book of over 25 pages comes with each DIGICART.

User Port

No mention is made of where the DIGICART plugs in, but presumably it is the User Port. and then again it might even be the Cartridge Expansion Slot, although that would be a lot of gold plating for those 44 contacts. If anyone writes Barry, please ask and let us know, and tell him you saw it here.

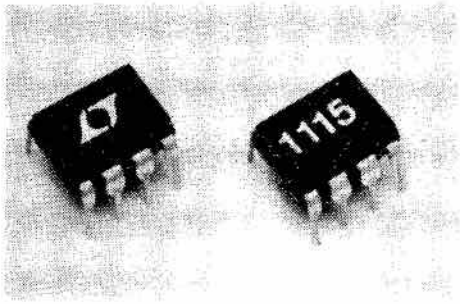
Prices

These are quoted from the same letter. DIGICART kits are $49.95 U.S.; an assembled and tested version is $69.95 U.S. Then you must include shipping and handling fees to Canada of $5 U.S., to U.S. points $2.50 and other destinations $15. U.S. Domestic orders go via UPS or USPS and overseas are air parcel post insured (where availabel). When writing Barry for further information or clarification of any point, he asks that you include SASE or green stamp, which is normal these days.

— Moe Lynn VE6BLY

ULTRA-LOW NOISE AUDIO OPERATIONAL AMPLIFIER

An audio operational amplifier with 0.9 nanovolts (rms) noise over the DC to 10 kHz audio spectrum has been introduced by Linear Technology Corporation. The new audio op amp is designated LT1115.



LT1115

According to Walter Jung, staff scientist at Linear Technology, "This is the lowest noise operational amplifier in the world. Referred to the professional audio standard, its wide-band noise is 136 dB. Driving a typical 600 ohm load, the total harmonic distortion of the device is less than 0.002%, at 10 kHz. Typical CCIF inter-modulation distortion is less than 0.0002%.

The LT1115 is in a class by itself and is intended for use in the highest quality professional equipment such as audio and video mixers, where extremely low noise and distortion are absolutely required. In those applications, this inexpensive part can replace a hybrid or modular op amp that costs up to $100.

Other applications for the LT1115 includes high-end pre-amplifiers, CD audio players, CD video players, digital audio tape recorders and players, hydrophones, infrared detectors and low noise frequency sythesizers where extremely low noise and distortion are also necessary.

The minimum slew rate of the LT1115 is 10 volts per microsecond and its minimum gain-bandwidth product is 40 MHz. Minimum voltage gain is 2 million.

The LT1115 is available in 8-pin plastic dual in line packages and 16 pin small outline packages. 100-up pricing in the 8-pin package is $2.95

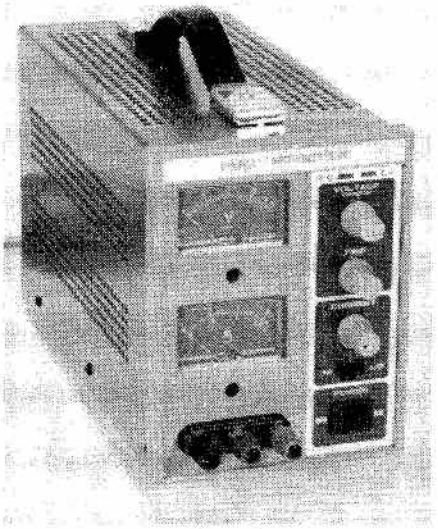
Linear Technology Corporatin was founded in 1981. The Company's products include such high performance commercial, industrial and military grade CMOS and bipolar integrated circuits as precision operational amplifiers, instrumentation amplifiers, voltage regulators, switching regulators, voltage voltage references, precision comparators, high performance monolithic switched-capacitor filters, pulse-width modulators, serial communication interface circuits, high-current and high-frequency voltage converters, sample-and-hold devices and monolithic data-acquisition systems.

NEW CATALOGUE SUPPLEMENT

A new six-page colour catalogue supplement is available from Alexander Batteries. The supplement introduces more than 35 new batteries for portable two-way radios and cellular phones and announces increased capacity of 45 existing models.

New batteries include nickel cadmium alkaline, mercury and lithium models for radios such as Motorola MT1000, MTX800 and MTX900, Saber and STX; EF Johnson, Midland and Yaesu. The catalogue equipment also lists new cellular batteries for Motorola 8000 Series, 850 Express and 9500 phone models. Also included are new safe models for radios such as Motorola HT600, Saber and Radius.

The supplement lists capacity increases of more than 45 of Alexander's most popular batteries. To receive your free supplement, contact: Alexander Batteries U.S., P.O. Box 1508, Mason City, IA 50401 or Alexander Batteries U.K., P.O. Box 10, Peterlee, Co. Durham, England SR8 2HR.

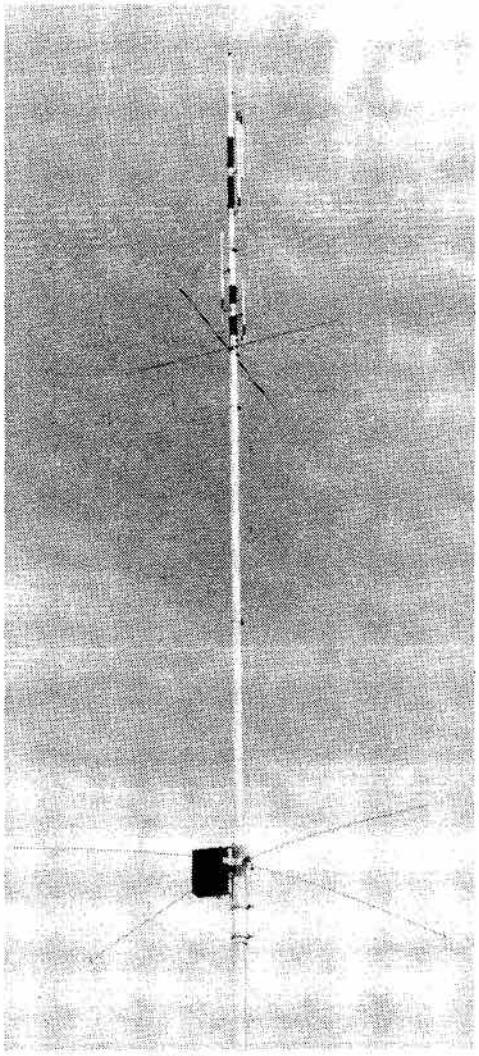


Brunelle Power Supply

REGULATED DC POWER SUPPLIES

We recently added a whole new series of regulated Power Supplies to our line. These units have been designed for laboratories, production and test bench applications. Among the features we find, short-circuit protection, over voltage protection, constant current and voltage output, very low ripple, coarse and fine controls on voltage. Twelve models are available in four voltage ranges from 0-18 volts to 0-150 volts. Current as high as 10 amperes is available. These units are contained in

a rugged metal case with a carrying handle to make transportation easy. Output current and voltage is monitored by the analogues panel meters.



Cushcraft R5

NO-GROUND RADIAL VERTICAL

The new Cushcraft R5 for 10, 12, 15, 17, 20 metres is a third generation development of the highly successful ½ wavelength no-ground radial vertical antenna.

The R5 has optimum current distribution for low angle radiation and excellent DX. The antenna is ony 17 feet total height. It can be used for either portable or fixed operation and weighs only nine pounds.

Automatic frequency selection of all 5 bands is accomplished through high Q traps and a broadband solid state impedance matching network that accepts 50 ohm input through a PL259 connector.

By incorporating a unique counterpoise ground system, using four 48" stainless steel rods, the antenna offers excellent RF decoupling for mounting in any location from ground level to rooftop.

The R5 is ideal for limited space applications like apartments, condominiums and small lots. It is easily transported for portable or motorhome operation.

It is available through Amateur Dealers worldwide.

CS28M

The ideal companion for that new ten metre mobile transceiver is the CW28M (magmount) antenna.

The CS28M is a new adaptation of the popular Cushcraft/Signals mobile antennas recognized by professional users around the world for their rugged looks and dependability.

The antenna comes with a 49" stainless steel whip and spring, a standard 3/4" (brass base) 90 pound pull, chrome plated magnet, mylar pad and 15 feet of quality RG58AU with PL259 connector.

Whether it's local rag chewing or working exotic DX on your way home, the CS28M is the answer! It is available through Amateur Dealers worldwide.

MEMBERS' SPECIAL QSL CARD

Jeff Parsons of O.M. Press has made available this special QSL card for CARF members.

The layout is as shown. The card is light yellow bristol with logo and lettering in CARF blue, your callsign and QTH in red. Quantity of 500—$34.95 ppd. Ontario residents add 8% sales tax. As this is a special offer there can be no changes to design, colours or quantity. Allow 4-6 weeks for delivery. Order direct from O.M. Press, R.R. #1 Oxford Mills, Ont. K0G 1S0. Please print call and QTH clearly.

MOBILE PHONE ADAPTER FOR FAX, LAPTOP COMPUTERS

Cellabs has introduced the Datajack data adapter for transmitting fax and laptop computer data through cellular phones, IMTS phones and full duplex SMR mobile radios. It provides the mobile telephone/radio user with an RJ11 (standard telephone line) jack for connection and operation of office equipment such as facsimile machines and laptop computers.

CS28M

The small (1"x 2.8"x 5") unit provides the often necessary loop current that many fax machines require to properly communicate, as well as automatic silencing of the mobile telephone/radio handset so as not to interfere with the

Continued on next page

QSL Cards

CANADIAN AMATEUR

CARF LOGO

MEMBER

VE3IWF

PSE QSL TNX

73.....

JEFF PARSONS
R.R. #1
OXFORD MILLS
ONTARIO K0G 1S0

TO RADIO	DATE			UTC	MHZ	RST	MODE
	DAY	MONTH	YEAR				

Datajack

REVIEWS *(cont'd)*

fax or data transmission. Connection is accomplished by simple manual dialing or answering of a call.

The Datajack can be used with virtually every mobile and transportable cellular telephone and with many IMTS and SMR radios in the market. Professional installation is not required and no modification of the cellular telephone is required. The product is made in the U.S.A.; for further information, contact Al Blackford at Cellabs, 6433 Topanga Canyon Blvd. Ste. 152, Canoga Park, CA 91303.

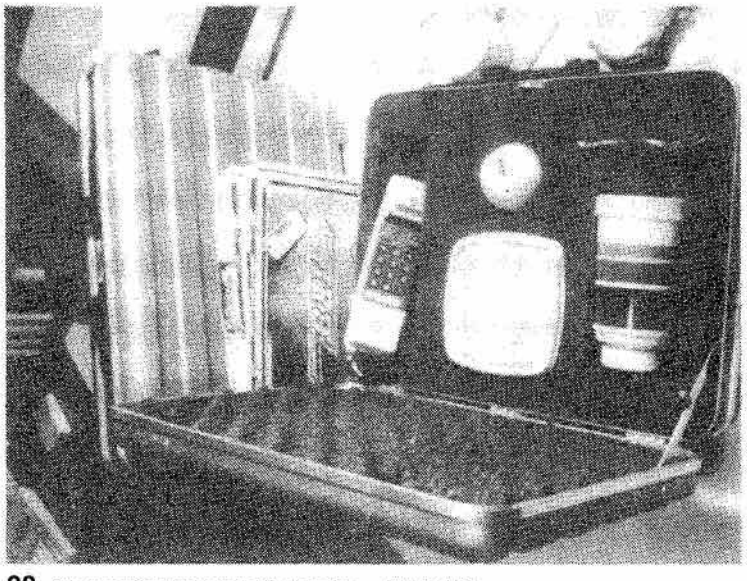
EXECUTIVE LUNCH BOX OR MOBILE HAM STATION?

A new Executive Lunch Box styled to look and feel like a brushed aluminum attaché but weighing less than four pounds is now available from the William Bal Corporation. The Executive Lunch Box combines the equipment necessary for a BALanced lunch with ample room for long sheets, QSL cards, mag mount antenna and a portable radio.

The 14 x 18 x 4" case, priced at $49.95(U.S.) was designed with inserts to gently cushion a standard one pint thermos, a fruit and sandwich. It combines stength, dent resistance and thermal stability with handsome styling and light weight. The shell is molded from a synergistic composite that has the look and strength of aluminum. The latches, hinges, locks, keys and handles are of the finest quality and complement the sleek silhouette.

The William Bal Corporation, founded in 1898, manufactures reuseable industrial shipping containers, carrying cases, tote boxes, sample cases and vacuum molded cases and ATA 300 cases for the airline industry.

For further information on the EXECUTIVE LUNCH BOX and to get a free copy of the new BAL Product Protection Shirtpocket Handbook and Buyers Guide for airline and industrial engineers, specifiers and buyers, write the William Bal Corporation, 947 Newark Avenue, Elizabeth, N.J. 07208.



Mobile Station?

LAST MINUTE AMATEUR LICENCE FEE INCREASE ANNOUNCED

In December 1989, the *Canada Gazette* Part 2 carried a DOC item revising the licence fee schedules for many radio services including the Amateur Radio Service. While fees for many other services were increased, the Amateur licence fees were left untouched. Since Part 2 notices report government decisions rather than proposals, we took this as final for the year 1990-91 and reported that Amateur licence fees would not be raised. In a January item in *Canada Gazette* Part 1, DOC, acting on instructions, has just proposed for the year 1990-91 to raise the Amateur renewal licence fee to $22.00 and the issuance fee to $29.00. The short term fees will be increased accordingly. Many other radio licence fees are to be increased also, a few as much as 250%. Some allowances will be made for the lateness of the *Gazette* notice. Since the last Amateur licence fee increase was in 1984, and this amounts to an annual increase of much, much less than the cost of living, DOC is not expecting much reaction from Amateurs.

AMATEUR RADIO ASSISTS MOTOR VEHICLE ACCIDENT VICTIMS

On Dec. 9, Yellowknife Amateur Radio operator Terry Keim VE8TF came across an accident near Kakisa on Highway 2 shortly before 9 p.m. The occupants of the rolled vehicle were very cold as the temperature was minus 3 Celsius, but thankfully they were not hurt. Several messages between Keim and the RCMP were passed via Ft. Providence and Hay River repeaters through local Mark Perren VE8IAM, Ft. Providence and Stewart Munro VE8CM Hay River Amateurs. Aptly the newly established high frequency Amateur Net was also used to co-ordinate message handling. "The Amateur system worked," Keim said, "and it all turned out okay." The messages handled were very important to the accident victims and they were grateful to Keim and the Amateur Radio system.

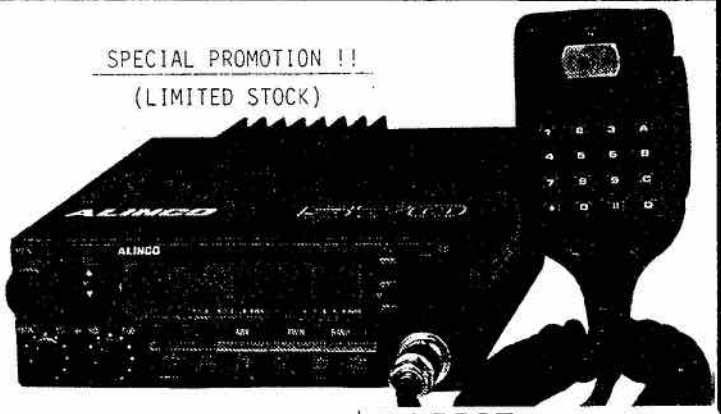
THE CANADIAN AMATEUR ANNUAL INDEX, 1989

FEATURES

FEATURES (Cont.)

TECHNICAL

SPECIAL PROMOTION !!
(LIMITED STOCK)



DR-570T $849.95

Set your sights for dual!

The Alinco DR-570T "Twin Bander" has dual LCD readout, volume, squelch and tuning controls. Double barrelled power with 45W on 2M and 35W on 70 cm, plus simultaneous receive on both bands or intermix with four modes of scan. The DR-570T will win the "battle" with its illuminated front function panel and LCD readout, readable in any lighting conditions. Don't let the "Tiny" DR-570T fool you! It's fast, and leaves the competition in the dust with many standard features you expect. Cross band repeat with the flick of a switch. Full duplex, 20 memory channels, call channels, 16-key DTMF Microphone, and subtones are just a few. "Reach" for the DR-570T today!

DR-510T $729

Best Dual Value on the Market!

The Alinco DR-510T has most of the outstanding features of it's sister the DR-570T, including 14 memory channels, cross band duplex and cross band repeat. The multi color LCD display, and simple tune control panel makes simplicity the key word. The DR-510T with 45/35 watts is the best, feature-packed dual bander on the Amateur market today. See the DR-510T along with the other Alinco "Magnificent" ones at your favorite dealer today!

ALR-22T 2M FM Mobile-$449
ALR-72T 440 Mobile---$399
ALD-24T 2M/440 Mobile$599

ALINCO ELECTRONICS

DJ-500T $599.95

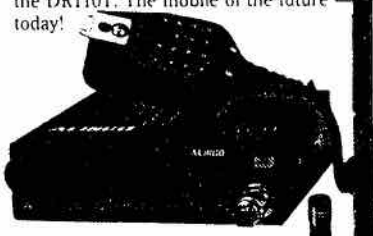
Power-Packed Dual Handi!

20 Memory channels, subtones, built-in DC to DC, 700 mah nicad battery, LCD readout with 6W on 2M and 5W on 70 cm (with optional battery) call channels, DTMF Touchtone, and direct keyboard entry, are just the few winning features of the Alinco DJ-500T Dual Band Handheld. Easy to use, and Value Priced at your Alinco Dealer.

DR-110T $499.95

Tiny 2M Power From Alinco!

DR-110T, this 2M Alinco, enters the nineties a proven winner with the "reputation" of best value. The DR-110T packs a powerful 45W on 2M and sports all the features you expect in todays transceivers. Tuning is a snap with the multi-functioned easy-to-see keyboard, 14 memory channels, subtones, scan, multi-colored LCD readout, reverse, are a few of the many features of the DR110T. The mobile of the future — today!



DJ-100T $349.95

Best 2M Micro Value Anywhere!

The Alinco DJ-100T is "Magnificent" for its tiny size, but stands up to the competition with power and capability. 10 memory channels store offsets and subtones. Has LCD readout with call channel and reverse at your fingertips. 500 mah battery with direct DC to DC is standard. 3W on standard battery, 6W on optional battery leaves the competition in the dust!

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IC-725 $1199

ECONOMY HF

IC-735

PROVEN WINNE

IC-3210 $799

DUAL BAND MOBILES

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SUPER SPECIAL HANDY IC-02AT 5W WITH BP-7 $479

IC-2SAT $539
IC-2GAT $549
IC-32AT $749

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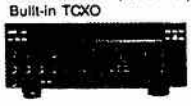

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THE CANADIAN AMATEUR ANNUAL INDEX, 1989

·CQ DX·CQ DX·

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

BOUVET ISLAND DXPEDITION

There is not much doubt that the DX event of this winter has been the Bouvet Island DXpedition. As most of you will know by now, only one of the two expeditions managed to get to the Island and put it on the air. The Indianapolis Group, under W9SU, who would have used the call 3YOB issued a press release on Dec. 22, 1989, which announced that their proposed effort was "... postponed indefinitely and perhaps permanently." I thought the text was interesting enough to print the whole thing, hence the box on this page.

The LA group had better luck and spent some ten days on the island working enormous pile-ups with patience and good humour. Talking to DXers in the Ottawa area, I found quite a few who had managed to work them. Most of these contacts were on 10, 15 or 20, but VE3JKZ and VE3CRG reported 80 metre contacts and a neighbour in Navan, VE3EK(?), managed to get through on 160 metres, congratulations to all! Certainly the conditions were excellent for most of the time the DXpedition was there. I spend about six hours, over a number of days, listening to the pile-ups and their signals were consistently between S7 and S9.

Several friends remarked on the 'zoo' atmosphere on 3Y5X's transmit frequency. Apart from the inevitable policemen, we had a continual stream of Amateurs who thought 3Y was operating simplex and insisted on calling on his frequency. I suppose we have to admit that for these people we did need at least one policeman to point out quickly that 3Y was 'listening up'.

Policemen on the CW pileups had an easier task, 'UP' can be rattled off in a very short time and most of the misguided, to use a polite term for these fellow DXers, took the hint and joined the crowd up band. Yes, if there had been just *one* policeman, things wouldn't have been too bad. Instead we had what sounded like 50 to 10 of these busybodies who frequently got into shouting matches with each other or with the 'misguided' to the point that sometimes it was difficult to copy 3Y5X at all.

I heard some deliberate interference too, however, all in all, I don't think things were any worse than the other major pile-ups I have monitored over the past few years. This is, in fact, a rather sad reflection on the conditions we have all been forced to get used to when we try to contact a DXpedition. I don't know what the answer is. I'm afraid what we have here is a tiny minority of DXers who, for all kinds of odd reasons, get their kicks from this sort of anti-social behaviour and spoil things for the rest of us.

A nice card I received from SM7PKK for his mini-DXpedition to American Samoa in October 1988.

The DXpedition operators kept their cool and, as far as I could hear, did a fine job under what must have been very difficult physical conditions, quite apart from the nonsense I've just been talking about.

Back to the pile-ups for a minute, as I do have a few small beefs. I would have liked to have heard the operators on Bouvet more frequently narrowing their

Continued on next page ►

3Y0B and VP8 DXpeditions postponed indefinitely

In a joint decision made by organizers this morning, the Post Society's planned expedition to Bouvetoya and the South Sandwich Islands scheduled for early 1990 has been postponed indefinitely and perhaps permanently.

The reason for this action is the loss of use of the sea vessel *S.A. Deep Salvage 1,* Capetown, Republic of South Africa. While the original arrangements to use this vessel through the middle of February was still intact, the desired expansion of this effort to include other sub-Antarctic destinations (including the British South Sandwich Islands and the South Georgia Group) would require a longer use of the ship. Ocean Offshore Ltd., Director Malcolm Griffin informed us early in December that the vessel had been leased for five months beginning Feb. 15 to conduct support operations for a South Afrian diamond-mining operation along the Namibian coastline.

A month-long search for an alternative boat with sufficient passenger accommodations, experienced crew, hull rating and cruising range has been unsuccessful. Accordingly, we feel that it is appropriate to halt planning for the expedition until different arrangements can be made.

Meanwhile, we would like to encourage support for the Norwegian expedition to Bouvetoya which is currently underway, and to express our apologies to those supportive persons and institutions that have helped to fund and co-ordinate this venture for the past two years.

Michael R. Koss
Expedition Director

focus and working by call districts to cut down the QRM a bit. I did hear them do this occasionally but as often as not they just took calls from anywhere. This must have been fine for the big guns but it made life much more difficult for those of us with just an average station.

I also think they could have been stricter with those who choose to call in spite of a request for 'South America only', for example. I remember particularly one 45-minute period when they said they were working South America only and in that time they took four VE calls! I know we VEs usually assume that 'U.S. only' means US + VE, but I think we are really stretching things if we think we are part of South America!

The LA group were also responsible for the very successful Peter 1st Island DXpedition of three years ago. I was fortunate enough to hear their talk and see their excellent slides on that DXpedition when I attended the Visalia International DX Convention. I'm now wondering if the Visalia organizers have asked the LS group over for a talk on Bouvet at this year's convention? Since I have tentative plans to be in California this April, I'm keeping my fingers crossed!

NEW YEAR'S RESOLUTIONS

It's that time of year, isn't it? I was reminded of this by a particularly sensible page of suggestions that Chod Harris VP2ML published in his DX column in January's *CQ Magazine*. This might be an appropriate moment to welcome Chod aboard *CQ* where he has taken over the DX column from long-time DX columnist Hugh Cassidy WA6AUD.

While Hugh's column certainly contained useful information for the DXer, I found his style, particularly his long, rambling conversations between the 'Old Timer' and his various visitors, more than a little tedious! Chod brings a breath of fresh air to *CQ* and I encourage all my readers to dig out the January issue and read the text of his nine resolutions. Just to whet your appetites and avoid copyright infringement (!) here are the nine headings:

1. I resolve not to tune up on top of a DX station.
2. I resolve to listen more and transmit less.
3. I resolve to stay well informed.
4. I resolve to refrain from making duplicate contacts.
5. I resolve not to be a 'DX Policeman'.
6. I resolve to be courteous at all times.
7. I resolve to follow proper QSL procedures.
8. I resolve to keep my station technically clean.
9. I resolve to send my complete call.

Now if everyone followed these nine suggestions, wouldn't DXing be transformed for the better?

BITS AND PIECES

KH5 Palmyra Island— *QRZ DX* has just published January, 1990, a letter from AH6IO (T32IO) describing his plans for a trip to Palmyra and Christmas Islands. He hopes to be on Palmyra around March 11-17 and on Christmas in time for the CQ World Wide contest on March 23-24 when he will be using the prefix T32.

If funds and interest allow, he might even extend his activities to include Kingman Reef and more time on Palmyra. Icom is supporting this DXpedition with IC781 or IC765 rigs and linears for each operator. At this time the dates are all tentative, but by the time you read this column let's hope the group will be all ready to start.

1S Spratley Islands— Yet another rumour, this time it's about a group of operators from the Philippines who hope to put Spratley on the air in March. I'm not holding my breath on this one!

ZD9 Tristan Da Cunha— I read in *QRZ DX* that ZD9BV often meets his manager, W4FRU, on 28.466 MHz on Sundays at 1700 UTC. He will take calls AFTER his sked with W4FRU. This is good to read, as activity from ZD9, in contrast to ZD7 and ZD8, seems almost nonexistent! I did however, spot a mention of this station on 21.335 MHz at 1746 UTC during December. The Amateur who worked him was in W8.

ST0/6U0 Southern Sudan— Here is another one to look out for this month. John PA3CXC hopes to be active for a period of 14 days starting in the middle of March, 1990. Look for 6U0DX on SSB and 6U0CW on CW. This operation will be in conjunction with a fund raising project for Sudanese relief and John will be joined by Hans PA3DFT and Jacky F2CW. The 6U0 prefix is, I suppose, one that has been chosen by the 'rebel' regime in the Southern Sudan who have been at war with the official Sudanese Government, capital Khartoum, for several years now.

JT Mongolia— Illusive Zone 23 is becoming much easier to work these days due to the activities of a group of Hungarian hams HA0MM, HA2TD, HA6KNB and HA6NF. They have put JT0DX on the air on a number of bands. The details are as follows: 28.016 MHz at 0106 UTC, 21,226 MHz at 0024 UTC, 21.235 MHz at 2300 UTC, 14.015 MHz at 0154 & 0242 UTC and 7.005 MHz at 0001 UTC. JT1BS has also been heard on 14.236 MHz at 2351 UTC.

Thanks are due to the following sources for some of the material appearing in this column: *QRZ DX, Long Skip,* W9SU and *CQ Magazine.* ■

Ten Metre Motorcycle operation

By Bill Leyland VE7HBL

I am a motorcyclcle 'nut', having owned and operated a machine of one type or another for the past 40 years, I am now also a 'ham' nut, especially on ten metres. So, why not enjoy both activities together? I now do just that.

First of all, what kind of a rig and antenna to use? Well, I have what I think is just about the ideal one, a Radio Shack HTX100-5-25 watt SSB-CW, drawing only about 3 or 4 amps on peaks: very important when you consider my Suzuki motorcycle's battery is only 10 ampere hour. There is no kick start now on modern bikes so I try to arrange to have a down grade handy to start the bike, just in case. The other main factor is, of course, an antenna. Well mates, I tried various types, and remember, one can't carry much in a back pack.

I found finally that the best results were obtained using a simple inverted V wire dipole with about 30 feet of rope to throw over the nearest tree branch; feed line is about 20 feet of thin coax for direct feed to the Rig. I started out using a tuner and VSWR metre also, but soon found that they were not required at all, so confirming the idea of 'keep it simple'. Now my back pack contains only the Rig, antenna, folding stool, log book etc., and usually a couple of cans of liquid refreshment, usually Mexican beer.

As for locations, well, the higher the better, of course, and there is no shortage of sites in this area. Anywhere the bike will go is usually okay; I have operated from as high as Mt. Kobo (6250 feet) and as low as Pitt Meadows (zero feet).

Have I made any QSOs using this Rig? You betcha, hundreds, from the usual VS contacts, to many VKs, ZLs, and LV Antarctica, and a BY5, mainland China.

It works, and it's good fun; the only other thing needed is a nice sunny day. So that's it lads, now if only I could stop smoking...

Setenta e tres e hasta Luego, comprados. ■

— Burnaby ARC
Connection

CONTEST SCENE

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

CONTEST CALENDAR
Mar 3-4 ARRL DX SSB Contest
Mar 9-11 Japan Int'l CW DX Contest
Mar 10 County Hunters 10M CW QSO
Mar 10-11 QCWA SSB Party
Mar 10-11 Commonwealth Contest
Mar 10-11 Wisconsin QSO Party
Mar 17 YLRL East Meets West SSB
Mar 17 County Hunters 10M SSB QSO
Mar 17-18 Bermuda Contest
Mar 17-19 BARTG Spring RTTY Contest
Mar 17-19 Virginia QSO Party
Mar 20-21 AC-DC CLARA CW Contest
Mar 24-25 CQ WW WPX SSB Contest
Mar 27-28 AC-DC CLARA SSB Contest
Apr 11-13 YLRL DX-YL to NA-YL CW
Apr 18-20 YLRL DX-YL to NA-YL SSB
Apr 21-22 MARAC County Hunters SSB
Apr 28-29 Swiss Helvetia Contest
May 19-21 Michigan QSO Party
May 26-27 CQ WW WPX CW Contest
Courtesy John Dorr K1AR and CQ Magazine

CQ WPX SSB

At time of writing, the 1989 results have not been received, but based on the high-claimed scores, the new records table should look something like Table I.

Full results, with an amended records table, will appear here as soon as they are available.

The score to note is Dale XL7SV's incredible 6 Meg on 21 MHz, which nearly doubled Yuri VE3BMV's old record, but is actually higher than the All-band record. In fact, there were only five all-band scores *worldwide* that were higher than Dale's single band score. Will Dale make the same sweep of the records Yuri did in the 80s?

1990 looks like it will be the third 'best year ever' in a row, according to all the propagation sages, so watch for more records to fall this year.

COMMONWEALTH CONTEST

As I have mentioned in a few previous columns, RSGB's Commonwealth Contest, a CW-only 24-hour event involving only Amateurs in the Commonwealth is a great low-pressure contest occasioned by some semi-rare DX. Canada, Australia and the U.K. are the mainstays of activity in the 'BERU', and RSGB is quite concerned about what they perceive as a contest in decline. They are considering a number of changes to the rules to try to make it more popular. Until then, however, the old rules still apply, and they appear in abbreviated form below:

Date: 1200z 10 March to 1200z 11 March
Classes of Entry: Single Op only, all or single band.
Bands: CW only 80, 40, 20, 15, 10 metres.
Exchange: RST and Serial Number
Score: 5 pts/QSO. 20 bonus pts. for the first, second and third QSO with each Commonwealth call area on each band.
Entries: Use separate logsheets for each band. Include dupesheets and a checklist of claimed bonus QSOs.

Entries must be RECEIVED within one month of the end of the contest by A.K. Gray G4DJX, 44 Sherwood Ave., St. Alban's, Herts., AL4 9PQ, England. (This address was correct for the 1987 Contest. RSGB's *Radio Communications* magazine will have accurate info.)

Commonwealth call areas are all Commonwealth countries on the DXCC list, plus call areas in Canada and Australia. The U.K., the Channel Islands and the Isle of Man count as only one call area. If you think ZSs count, it's time to read a newspaper.

So there, in highly abbreviated form, are the rules for the Commonwealth Contest. People will still call CQ BERU, recalling the British Empire Radio Union, despite the fact that the Commonwealth is hardly British, there is no empire, and one day a year makes a pretty poor union. Traditions die hard, however, but there are a few radicals calling CQ CC out there.

Of minor historical note, there was a short-lived attempt to create an SSB Commonwealth Contest by CARF in the early '80s. It was a resounding flop, and after the first go in 1981, it never attracted more than token participation.

As CW contests go, the activity is moderate, pile-ups rare, and the tempo slow. If you are not a very confident CW operator, the Commonwealth Contest is a great place to try your hand. you never know, you just might win an award, and pick up a new country or two in the process.

U-QRQ-C

Finally, Brian VE3CRG asked me to include the rules for the U.S.S.R. High-speed CW club's (U-QRQ-C) annual contest.

Date: March 18, 1990, 0200Z-0600Z
Bands, 80, 40, 20, 15 and 10 metres, CW only.
Exchange: RST, QSO number, name. U-QRQ-C members will also send membership number.
Classes of entry: All classes are all-band: A— U-QRQ-C members; B— single op. non-members; C— Multi-op.; D— SWL. Score: Total QSOs multiplied by U-QRQ-C members worked on each band. Multipliers count double on 80 and 40 metres.
Entries: Must be postmarked by April 18 and sent to: K. Khachaturnov UW3AA, P.O. Box 1, Moscow, U.S.S.R.

Brian is believed to be the only North American member of the U-QRQ-C, and is also a member of the DARC-supported Extremely High Speed Club, which requires members to demonstrate proficiency at 60 wpm.

RSGB COMMONWEALTH CONTEST

1200Z Sat to 1200Z Sun., March 10-11

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.

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.

Continued on next page ➤

CQ WPX SSB - CANADIAN RECORDS

		Score	QSOs	Px	Year	
A	VE6OU	5,253,390	3175	591	1982	
28	VE3BMV	2,796,255	2120	495	1980	
21	XL7SV	6,248,682	unofficial		1989	*
14	VE1NG	3,916,965	2223	689	1986	
7	XL7SV	3,454,864	1770	436	1986	
3.5	VE3BMV	1,928,720	1239	388	1986	
1.8	CG3MFA	319,140	522	162	1985	
MS	VE1DXA	8,272,704	4285	704	1982	
MM	CK7WJ	16,545,370	10486	590	1979	

* based on high-claimed scores CQ, August 1989, p.50

Each band is scored separately and totalled. Just add the total QSO and bonus points for your final score. 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 9 and go to: HF Contests Committee, Att: Alan Gray G4DJX, P.O. Box 73, Lichfield, Staffs. WS13 6UJ England.

MARAC COUNTY HUNTER'S 10M QSO PARTY

CW: 1200Z Sat.-2400Z Sun. Mar. 10-11
SSB: 1200Z Sat.-2400Z Sun. Mar. 17-18

This is a new event sponsored by the Mobile Amateur Radio Awards Club. The object is to work as many U.S. counties, U.S. mobile stations, and fixed stations worldwide as possible.

Exchange: RS(T), Station Designator (F— Fixed, M— Mobile), and QTH (County for mobile stations, state, province or country for others).

Scoring: All fixed station QSOs credit 1 point, 3 points for each new U.S. State/Canadian province, 5 points for each DX QSO and 15 points for each U.S. Mobile contact. Final score is total number of U.S. Counties times QSO points.

Frequencies: CW-28.150-28.200: SSB-28.330-28.380. Mobile window frequencies are 28.155-28.165 on CW and 28.340-28.355 on SSB.

Awards: Plaques will be awarded to the highest scoring U.S. mobile, fixed, U.S., fixed Canadian, and fixed DX station. In addition, a variety of certificates are available.

Mobile stations may be worked each time they change counties. Pre-arranged QSOs are not permitted and there is no multi-operator/transmitter operating allowed. Final results must be received by April 23, 1990. Be sure to include a #10 SASE for final results. Send logs and comments to: E.R. 'Skip' Gee N4FSZ, Rt. 1 Box 297 Bassett, VA 24055.

EAST MEETS WEST SSB CONTEST

1800Z to 2200Z Sat., March 17

This one is sponsored by the YLRL and is open to YLs only. East works West, and vice versa. The same station may be worked once on each band. No cross band, net or repeater contacts allowed.

Those considered 'East' are 1st, 2nd, 3rd, 4th, 8th and 9th call areas: VE1-3, Europe, Africa, South America, Caribbean, and Central America (except Mexico). 'West' are 5th, 6th, 7th, 10th, KL7 and KH6, VE4-0, Asian Oceania, Australia, New Zealand and Mexico.

The maximum power output that may be used at any time during the contest is 1500 watts PEP.

Exchange: RS, QSO number, name and state, province or country. Scoring: One point for each different YL contacted on each band (no multiplier). Frequencies: 3955, 7255, 14265, 21395 and 28395. Plus or minus 15 kHz.

Awards: Winners will receive YLRL postcards. Print or type original log and check for duplicate contacts. The operator's signature is required. Logs must be received by April 17 and go to: Dana Tramba, c/o Dandy's, 120 No. Washington, Wellington, KS 67152.

BERMUDA CONTEST

0001Z Sat. to 2400Z Sun, March 17-18

This is the 32nd year for this popular contest open to Amateurs in the United States, Canada, the 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 60-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 once only per band regardless of mode used. VP9 Novices count as double multipliers.

Awards: Certificates to top scoring stations in each U.S. state, VE province, U.K. country, and DL DOK (minimum of 100 QSOs). The overall winner in each of the above countries, however, will receive something more substantial— a trophy to be presented at the Society's Annual Dinner in Bermuda in October. Round trip transportation and hotel accommodations will be provided for the winners. (Note: Winners in '85, '86, '87, '88 and '89 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. Enclose 4 IRCs for acknowledgements. Trophy winners in the 1989 contest were N2NT, VE3XN, G4OSY and DK8FD.

BARTG SPRING RTTY CONTEST

0200Z Sat. to 0200Z Mon. March 17-19

This contest is sponsored by the British Amateur Radio Teleprinter Group and is being administrated by Peter Adams G6LZB. The contest is open to all Amateurs in three classes— single operator, multi-operator and SWL.

Activity will be on all bands 3.5—28 MHz, but no 10 MHz. Operation is limited to 30 hours out of the 48-hour contest period. The 18 hours off may be taken at any time, but not less than 3-hour periods.

Exchange: RST plus a three-figure contact number and time in GMT (full four figures).

Points: Contacts with stations within own country 2 points. With stations in other countries 10 points. And a bonus of 200 points for each country worked on each band including your own. The same station may be worked on each band for QSO and multiplier credit.

Multiplier: Total number of countries worked on each band and number of continents worked (continents are counted once only). W/K, VE/VO, and VK call areas will be counted as separate multipliers.

Final Score: (a) Total QSO points x country multiplier. (b) Country multiplier x bonus points x continents worked. Add sum of (a) and (b) for your final score. Shortwave listeners must show call of station being heard, report of message being sent, and call of station being worked.

Awards: Certificates to the top-scoring stations in each class and to the continental leaders. Also in each W/K, VE/VO and VK call area. Use a separate log sheet for each band and a summary sheet showing the scoring, etc. Log forms are available from

Continued on next page

G6LZB; include 6 IRCs to cover postage.

Logs must be received by May 27 and go to: Peter Adams G6LZB, 464 Whippendell Road, Watford, Herts. England WD1 7PT.

CQ WORLD-WIDE WPX CONTEST

SSB; March 24-25; CW: May 26-27. Starts: 0000Z Sat.; Ends: 2400Z Sun.

Here 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 now also being used for the CQ WPX Award program.

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

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

TRANSPROVINCIAL NET

The Transprovincial net on 7.055 SSB is *bigger and better*. It is now operating from 1000 to 1600 hrs daily. This activity should enhance the operating capability on the 40 metre band.

Denny VE3EUI and his hard working controllers continue maintaining the Net operation in grand style. It is amazing the commitment and dedication these people have (YL, XYL and OMs). Tip of the old power supply to them. First Sunday of each month, following the Net, Manager VE3EUI operates a Manager's meeting with the Controllers.

We hear many VE1s, VE2s during the Net 'warm-up' with Walt VE3OED, prior to the Net each A.M. but where are you out there in VE4 land? Let us hear from you.

YL News & Views

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

How times have changed! I was going through the files on YL certificates and came across one which said: "Send QSLs to Ruth with 10¢ to cover mailing of certificate"!

Don't forget that the 6th of each month is YL day around the world. On the hour is the best time to check. The 10 metre frequency is now 28.688.

Some of you may remember back around 1970, when Darleen, then WN6FSC, travelled around the world, operating from 39 countries and covering 50,000 miles. She wrote a book called *Globetrotting via Amateur Radio*. She mentioned in her book that she hoped that her daughter would someday join the ranks of Amateur Radio. Darleen (now WD5FQX) is proud; the day has arrived. Diane, now 16, is active on the air as KG5CS. She participates in contests and has a rig in her car. Lately she has been spending a lot of time in Washington, D.C. as a U.S. House of Representatives 'page'. Diane agrees that no matter where you travel, you will always have friends in the Amateur fraternity.

I like to encourage young people in Amateur Radio when and wherever possible. If you know of a young YL, please send me some information and pictures if possible. Guides on the Air and the Scout Jamboree are great starters.

CHANGE OF DATE

The Ontario Trilliums will celebrate their 25th Anniversary with a banquet April 21, to be held at the BoPeep Restaurant. The address is 2283 Kingston Rd., Scarborough. Eyeball at 6 pm Roast Beef dinner at 7 pm. This is being held in conjunction with the Scarborough Amateur Radio Club. Tickets are $25 each, and are available from Thelma Woodhouse VE3CLT, Coordinator. Send your cheque to Thelma at 44 Innisdale Dr., Scarborough, Ont. M1R 1C3. Please make cheque payable to Scarborough ARC.

That is it for this time. 73/33/88 as the case may be! ■

Joe WD5HIL, Diane KG5CS and Darleen WD5FQX.

ARES AMATEUR RADIO EMERGENCY SERVICE

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

NANAIMO ARES

Recently a number of the members of the Nanaimo Amateur Radio Group participated in a field exercise to determine the effective coverage of their 2 metre transceivers. Group members travelled south from Nanaimo to Ladysmith, Yellow Point, Cinnabar Valley Extension, South Wellington Extension and Nanaimo Lakes. Other groups travelled north to Lantzville, Nanoose, Parksville and Coombs and to the west of Brannen Lake. The main control station under the supervision of Al VE7BEQ was located in the main Nanaimo Fire Hall. Other monitoring stations were located at the Moose Hall in Chase River, at the new Fire Hall on Labeaux Road and in the College Heights area.

Ian Heatherington of the Nanaimo Search and Rescue Group was an interested observer of the exercise. Wilf VE7US, the coordinator of the Nanaimo ARG, participated and recorded the results for review at a later date. The information developed will be most useful in planning for effective communications in the event of an emergency.

Several Nanaimo Amateurs were able to assist in providing emergency communications in connection with the recent earthquake disaster in San Francisco. Ian Heatherington contacted Wilf VE7US and requested assistance in determining the welfare of several people in the quake area for concerned Nanaimo residents who were unable to make contact by telephone. James VE7DFY also handled a number of welfare messages with the disaster area. Thanks were received from many for the assistance. Cecil VE7FDJ relayed a number of messages between San Francisco and Santa Cruz when radio contact between these areas was knocked out by the big solar flare which affected radio communications in a major way for several days just after the earthquake. Bill VE7JY conducted a seminar for Nanaimo Amateurs to review the experience gained from handling traffic for the earthquake disaster.

MAYDAY CALLS

Lorne Bowers VE1AII was the key control station involved with the rescue of Bert Wilson VE3OBH when he was badly burned on his yacht *Sodie* in mid-Atlantic last July. Those who monitored this operation will recall Lorne's professional handling of communications with the crippled yacht. Further evidence of Lorne's approach is apparent in this list he has prepared of steps to be taken on hearing a Mayday or Emergency call:

1. Respond promptly with your call letters.
2. When the call comes back from the person or persons in difficulty, only the station called should answer. No-one else who hears the Mayday call should try to connect.
3. When the contact has been made with the control station, the other operators who can copy should try to keep the frequency clear of all other traffic.
4. The control station should try to determine the location of the incident and establish the situation that led to the emergency.
5. Having learned the above, the control station should then advise the appropriate authorities. For a sea rescue this would be the nearest coast guard station; for an aeronautical mobile it would be the nearest flight control or air force station; and for a highway accident it would be the nearest RCMP or provincial police station.
6. During the time the authorities are being advised of the emergency, another operator who can copy the distress call should make contact, and keep him or her occupied in responding to questions until the controller returns to the air.

It is the responsibility of each operator on the rescue frequency to:
- keep the frequency clear of all except traffic connected with the emergency.
- avoid contacting the emergency situation unless requested to do so by the rescue control station.
- relay any transmissions back to the control station if control does not copy.

IDENTIFIERS

The Amateur Radio Society of Dryden has developed a nifty communications vest for its members. The colour is blaze orange. The vests have the owner's callsign, the club logo, the ARES patch, a pocket for paper and pen and a pouch for a handheld. For more information, write to Stan Grenda, c/o Lloyd Montgomery VE3JJA.

Sounds like exactly what's needed to identify us to other emergency response groups and to the general public!

CANWARN

Our congratulations to the Windsor, Ontario gang who are now completing the second year of operation of their Canwarn weather network. This is Canada's first weather network. It is manned by volunteers who are trained as weather watchers. The NCS summarizes their reports, and passes the summary to the Windsor weather office of Environment Canada.

The only other weather net of which we are aware is Canwarn Eastern which commenced operation last February. This net, which covers five counties in Eastern Ontario, averages over 15 check-ins each day. At the conclusion of the net, the summarized reports are telephoned by the NCS to CFB Trenton before 0900 hrs. Operation of the net was described in last May's ARES column.

PUBLIC SERVICE

Under EC Bill Hardie VE3EFX, the Bruce County ARES group provided communications for two public events last Fall. In September, six members kept track of the annual Terry Fox run using 2M repeater VE3TIV. In October, seven of their members, braving rain, hail, thunder and lightning, provided communications for the Ontario Cross Country Championships. Using 146.52 MHz simplex, they kept the race officials informed of progress, and also reported injuries to the first aid post.

Further west, in Dryden, Ont., Lloyd Montgomery VE3JJY reports that the ham fraternity once provided the Town's annual Christmas Parade. They have provided this service every year since 1983.

It is hoped that this column, which is being submitted to both The Canadian Amateur *and to* QST Canada, *can become an ongoing source of news and information for members of both organizations on ARES activities across Canada. ARES members and particularly ECs are invited to send along information on what they are doing and on any developments they would like to share with other ARES groups. Bob Boyd VE3SV will pull this together in future columns, all with the objective of increasing our collective ability to serve our community and our nation, should disaster strike.* ■

ARRL DX CC

Congratulations to Bob Billings VE1YX for earning the ARRL DX CC award for his achievement in contacting 100 countries on 6 metres.

CROSSWIRES

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

TOROIDS

Several Amateurs have either written or called to say that buying toroids locally that are suitable for EMI suppression is almost an impossibility. With this in mind and by use of other Amateurs and fortunate circumstances there should be a quantity of small and large diameter toroids available by the time this column is printed. We'll have to figure out a 'distribution channel'.

At the moment I have a few hundred toroids made by Siemens using their material, 'Sifferit', a ceramic with permeability of 2000. These toroids are small diameter, 3/8 in. o.d. with a hole size of 3/16 in. This type has previously been characterized by use of a network analyzer and found to provide very flat insertion loss from about 1.8 MHz to 200 MHz. They only require nine turns of #20 or #22 a.w.g. enamelled wire equally spaced on the form to provide this characteristic.

Uses include series inductors for each line of the telephone, small speaker lead isolation, decoupling Vcc or B+ or even isolating electret microphones which rectify like 'crazy'. A smaller wire diameter and 15-20 turns should be great for attenuating broadcast signals that get into audio amps.

Next time you check the rear of a new computer, take a look at the leads going to the monitor or, in the case of a lap top, the charger line. In both cases you will probably find a toroidal cylinder encapsulated in plastic, very close to the body of the instrument. It didn't take the commercials long to catch on that Canadian digital emission standards and FCC part 15 require a reduction in noise emission.

TELEPHONE FILTERS

Several times I have attempted to put down on paper a few filter diagrams that have been successful on telephone lines. I have been somewhat reluctant because telephone lines are the property of others and impedance unbalances and mismatches play havoc with the network. Two things to bear in mind if you must use telephone suppressors... Most of the lack of immunity comes from the curly cord—pickup gets worse the further the cord is extended. Ever take a close look at some of these imported phones? Notice the wire size? It not only stands up to fewer flexes but is made with cost in mind, i.e. as cheaply as possible.

Since modern Canadian-made phones are vastly superior to most of the imported variety from the Far East, let price be one measure of quality and immunity. Don't expect a $10-15 phone to have any shielding and even less suppression. The filter networks shown have been used successfully in Barrhaven where high power BC transmitters from the low end of the band to 16 MHz (CHU) have been encountered. They have been quite successful.

The discrete filter is quite an expensive approach and is much more brute force than necessary. The resonant chokes are peaked to the particular band causing the problem, 20M seems bad in this respect, although my neighbour's phone 'goes bananas' whenever I operate 40M. I would bet that a small toroid placed on his incoming cable drop would completely cure the problem.

As a matter for suggestion, most Northern Telecom phones are now meeting an in-house voluntary standard of 5 volts/metre and if they still act up when you go on the air, Bell will repair them. Good recommendation, I'd say.

IMMUNITY PROBLEMS AT VHF

A recent opportunity arose to see how effective toroids would be at 144 MHz. In this particular location the TV set was on cable and located about 80 feet from a tower mounted array with lots of ERP.

The TV in question was a Sony Model KV-1926R/RM717, P3 chassis. It is identified as being a 'Canadian Model Chassis No. SCC-A49-A'. (See partial schematic.)

The TV was connected to cable and, in its living room position, the rear of the cabinet faced the Amateur's home. This set was purchased to replace another from the same manufacturer which was of older vintage. The intention was to eliminate two problems when the antenna array was pointed directly toward the wall of the house where the set was situated.

The set malfunction was audible sideband 'burble' at any setting of the volume control, even with the set 'off'. The video was visibly impaired with vertical modulation of the scene, on audio peaks only. Short transmissions, such as those which occur at contest time would not have been too disturbing, but the audio sensitivity to RF was something that was annoying and disturbing.

To begin to isolate the problem, the cable was removed and the audible impairment all but disappeared. It did not go away completely.

It was observed that, by standing between the back of the TV and the path of the beam antenna, almost all the visual impairment disappeared. Good case to suspect poor shielding.

A half hour was spent under the watchful eye of the Sony technician as aluminum foil was added to most of the inside of the TV back cover. This was affixed with some highly perfumed glue which the homeowner noted upon return. (Mention should be made of the absolute co-operation of the neighbour— lucky to have this neighbour.) A small drain wire is essential to earth/ground the metal screening. Note: Check that chassis ground is earth ground— avoid unforeseen fireworks.

A quick on-air check noted a slight drop in visual malfunction. Audio was unchanged. This was a little puzzling because the foil screened the wire bundles leading to the CRT, a common pick-up mechanism, especially at VHF.

Several other reports from Amateurs relating to late model TV sets from this manufacturer indicate the audio module used is uncommonly sensitive to RF energy. The audio module is no different than many other hybrid ICs. It

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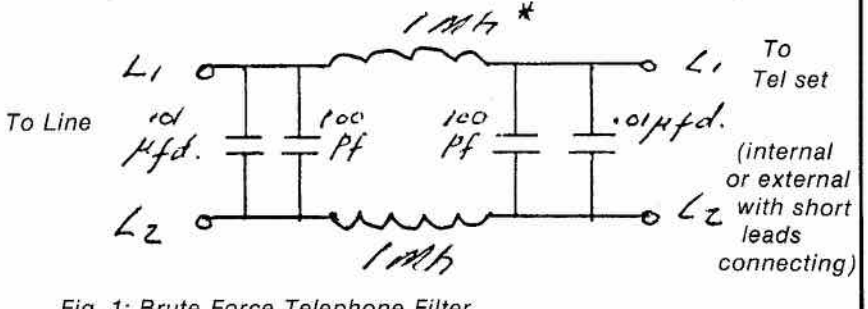


Fig. 1: Brute Force Telephone Filter.
** Hammond 1 Mh RF chokes (1536Z). All capacitors rated 400 WV or more.*

is mounted vertically to the rear of the chassis and makes use of a metal mounting bracket to provide heat sinking. The disturbing audible signal did not increase with increase in the volume level. This would suggest audio output leads as well as any leads leading into the IC that would permit bypassing the vol. control function.

IC601 which is the audio IC, carries the designation STK 583FST. It combines a voltage regulator, standard voltage reference, audio driver and AF output. There are 12 in-line contacts to this IC. It is mounted for servicing by hummingbirds, which describes the needed soldering agility.

On three different occasions it was necessary to remove the set completely from the cabinet in order to install 100 pF capacitors on what were believed to be sensitive points of RF ingress. How wrong we were (I was!).

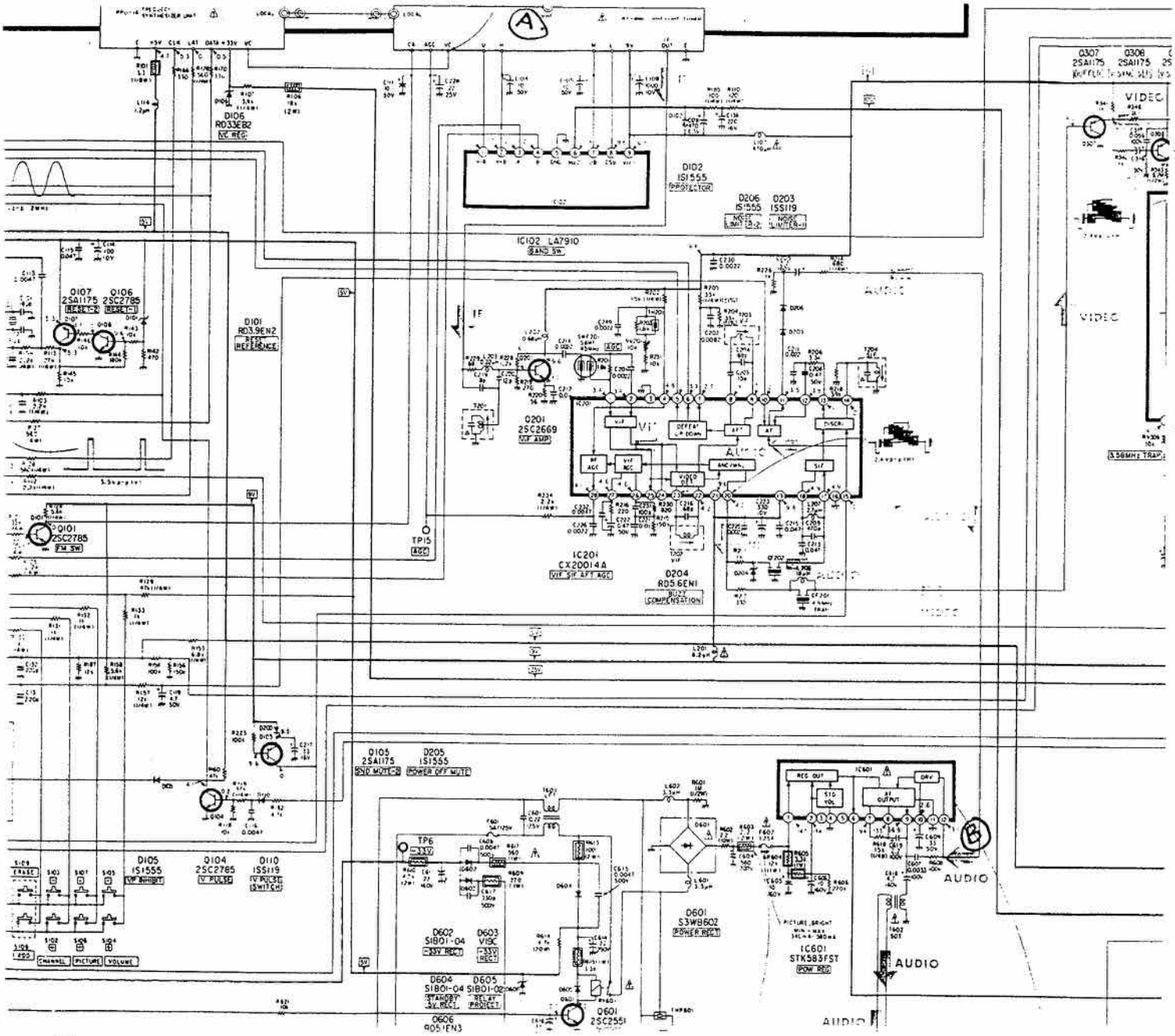
At this point a toroid was placed on the power line and nothing apparent happened. When you really think about it, how else could energy get into the set if it weren't by direct radiation?

SONY TV— AUDIO SUSCEPTIBILITY

A toroid was placed on the incoming cable, 'for fun' and lo and behold the offending audio disappeared completely! Eureka, ut toroidum vincit, as Caesar would have said. Or as the man at Sony would say, "Sono toroida wa yoku shimasune! (This toroid works well!) One problem solved. It is obvious a ground loop is being generated by energy conducted on the sheath of the incoming cable. Once it gets on the chassis it can take many paths to the sensitive audio circuits.

The visual impairment dropped considerably and could be tolerated for

Portion of Sony KV 1926R TV schematic. Antenna enters at (A). Ground Loop exists between (A) and (B). Toroid on Ant. lead in breaks this loop!



short periods without a tad of audio problems. That evening, to complicate matters, there were cable distribution problems on every channel so that white streaks would occur. These usually coincided with our testing and resulted in some rather colourful repartee among myself, the Amateur and the Sony serviceman. The cable problem continued all that evening but disappeared by next morning. The remaining video problem was felt to be beyond our collective expertise and patience and the job was terminated so as to not wear out our welcome.

CONCLUSION

The final result was not a complete solution. It probably never will be because of several factors not the least of which is a poorly shielded TV set. The set itself has no shielding whatsoever. The one main motherboard sits on insulating material, suspended in mid air with a great network of leads and plugs connecting everything. No question, the set has been designed with the serviceman in mind. It even boasts transformer isolation and hi pass filter at the external antenna input. Chances of fixing something like this completely would be the luck of the draw— it must be designed to be immune!

The Amateur is faced with the knowledge he tried to fix the problem (with great co-operation from the local Sony Manager). The Amateur can operate at full power toward his neighbour's house knowing he will cause some visual impairment. It only occurs in that limited direction. What recourse does the Amateur have? Even under the new Radiocommuniction Act, DOC may find the TV set to be radio-sensitive. How many Amateurs would deliberately provoke a neighbour under the co-operative circumstances which exist? Not many I suspect. Had the neighbour and the manufacturer not appeared so willing to assist in tests, it may have been a different story. The story can end here or two things can happen.

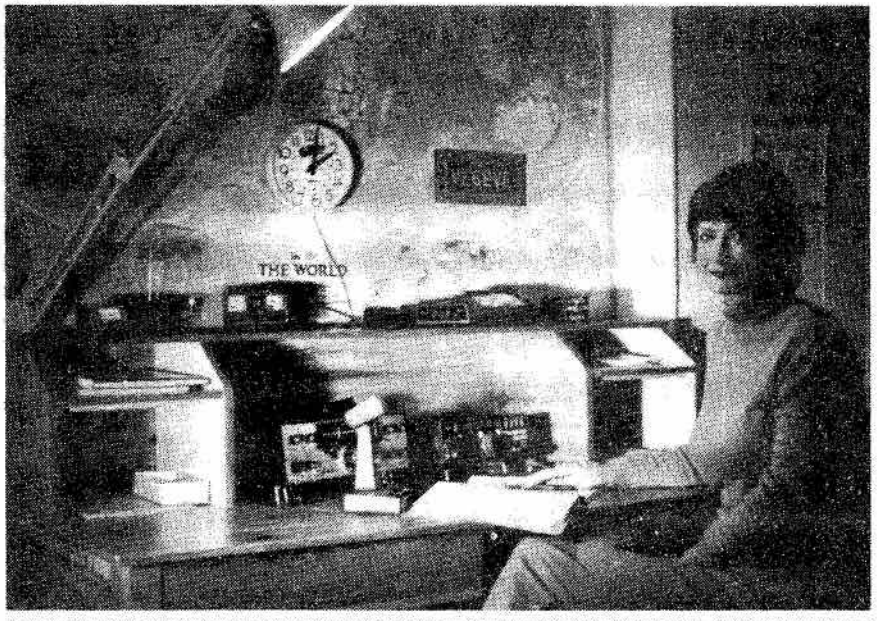
The Amateur can reduce his power to an amount which does not cause perceptible impairment, in the direction of his neighbour's house. The neighbour can live with the small inconvenience of occasional video impairment. Reasonable people will seek a reasonable solution. How much reason is a function of the social relationship you enjoy with your neighbour? The total solution really has to be at the design stage. ■

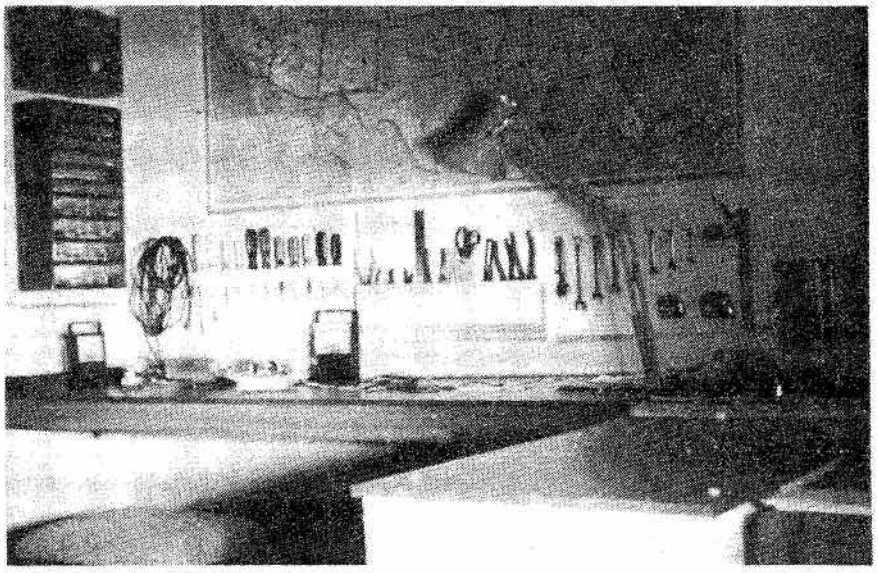
Shack of the Month

This month's Shack of the Month belongs to YL/OM Combination Phyllis VE6EVE and Tony VE6TFC Day. Phyllis writes:

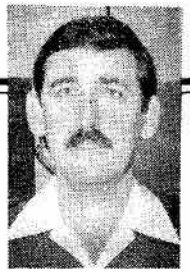
"My husband and I are both fairly new hams, since June and July 1988.

"The station is very simple, a TENTEC 540 and a Yaesu 747GX. On the other side of the room, my husband Tony VE6TFC has his workbench. The Yaesu 747GX runs off a battery bank." ■





CLUB CORNER



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

SIGNAL HILL
NATIONAL
HISTORIC PARK
ST. JOHN'S, NEWFOUNDLAND

SITE OF MARCONI'S FIRST TRANSATLANTIC WIRELESS MESSAGE

Since my last column appeared, I had the pleasure of attending the November meeting of the Society of Newfoundland Radio Amateurs (SONRA) in St. John's. The highlight of the evening was the presentation of several awards. Honoured was Eric VO1KR who was presented with the Bob Lewis Award for Outstanding Contribution to the Society. Certificates of appreciation were presented to Charlie VO1LD, Bob VO1BL, Art VO1AX, Max VO1WP and Nigel VO1NR. Quite a few of the Society's members were involved in the International Marconi Day activity with the club station VO1AA active from famous Signal Hill.

YOUNGEST VP

The Surrey B.C. Club believe they have the youngest club vice-president in Canada. He is 15-year-old Steven Draper VE7EZD.

THE TRENT REGATTA

Members of the Peterborough, Ontario, Club, organized by Larry VE3NTQ, provided communications for the Annual Trent Regatta. An estimated 1,000 rowers from Ontario and Quebec took part in the eights, fours, doubles and singles competitions. Four stations were set up, one at the start, one at the boathouse, one at the Athletic building and one at the finish line. Amateurs taking part were: Jim VE3JLL, Keith VE3IKE, Bob VE3GEE, Gord VE3LKG, Ollie VE3MT, Bob VE3RHG, Elmer VE3PXY, Mac VE3PBM, Rick VE3IQZ, John VE3ROW, Jim VE3JLL, Jack VE3BLL and George VE3AKS.

A LOT OF HOT AIR

The Windsor Ontario Club had a first this past Fall; they were involved with the hot Air Balloon Race which was part of the International Freedom Festival. Attempts were made to secure a position in one of the gondolas for an Amateur, but concerns with the legality of doing so stopped the club from pursuing this plan.

Another event that turned out to be a lot of fun was the Marine Day Tug Boat Races. This time the club did manage to get one of its members off the ground. Bob Gammon VE3CJX was aboard one of the chase planes during the sky jump segment of the day and was able to give good advance warning for the jump.

The Automan Triathlon also featured something new this year. For the first time the club had a direct link with the Windsor Police which was provided by Carl Speranza VE3WPD.

TELEPHONE PIONEERS

I received a news bulletin from Hoppy VE7RD, concerning the formation of an Amateur Radio Club associated with British Columbia Chapter 53 of The Telephone Pioneers of America. Nomination and election of an executive is to take place soon. The club already has its own Two Metre club repeater VE7TEL and also holds the callsign VE7TPA for the club's station.

The Club also plans to co-sponsor the Lower Mainland Amateur Radio School at the B.C. Tel Education Centre. There will be no club membership fee, so any Pioneer Amateur in B.C. who would like to join in the fun and fellowship can get in touch with Hoppy.

FREDERICTON, N.B. CLUB NEWS

I received a very nice letter from Michael Rochon who is an associated member of the Fredericton Club. Although not an Amateur, Michael has had a strong interest in Amateur Radio since 1976 and hopes to someday get his ticket. The Fredericton club has about 50 members and is very active.

This summer the club took part in Field Day activities with club station VE1ND burning up the airwaves. Les VE1ZC organized communication support for the Moosehead Car Rally, and as usual Amateur Radio played a vital part in the success of this activity.

While on the subject of Field Day, it's an ideal time to get to work and get some free publicity for your club. Just look at the newspaper clipping concerning Field Day activities of the Halton Club. It's an excellent example of what I think will go a long way to educate the community about Amateur Radio. It's short and to the point, yet everything is covered. This same type of article could

Fredericton Amateur Radio Club Field Day Contest 1989— Front Row (L-R) VE1TE's son, Gordon VE1CE, Brent VE1APG, Don VE1SH, Gerry VE1CD, VE1BRV's son. Standing (L-R): Gerry VE1DE, Rick VE1NH, Murray VE1TE, Mike VE1MS, John VE1BF, Greg VE1XH, David VE1BRV. The Sign: 20 Metres.

apply to any public service activity your club understands:

As a test of the emergency broadcast system around the world, 15 members of the Halton Amateur Radio Club tried for 24 solid hours to stay in contact with the ham radio operators around the globe.

The 24 hour radio marathon started at 2 p.m. on Saturday as the first crew erected two antennas at a farm on Trafalgar Road just south of Highway 24. They then opened the first network and began communicating with the world.

The rest of the crews had to keep the waves open for 24 hours non-stop.

By the end of the 24-hour period, the local operators managed to contact 650 other crews from around the world. They had 49 contacts in the United States but for some unknown reason were unable to contact South Carolina.

"The furthest contact we made was New Zealand," Club president Andrew Senior said. "The whole purpose of this exercise was to sharpen the skills of the operators so that in case of an emergency we can provide radio communications with other towns or cities."

Four years ago the club was the first to set up a communications line to other towns during the tornado that hit Grand Valley. — *The Advocate*

By the time this column appears, it's time your club should already be planning its Field Day activity. It's never too late...

PARTING WORDS

Since taking over this column, just a little over a year ago, I'm continually impressed with the quality of the bulletins I am receiving. And yes, editors, I do read each and every bulletin from cover to cover. The availability of computers and desktop publishing software has certainly been put to good use by some clubs.

Drop me a line and let me know what your club is doing, if I'm not already receiving your club bulletin. Black and white photos of club activities are most welcomed.

I'm in the process of setting up a database of Amateur clubs in Canada, with the objective of putting together a handy reference guide for travelling Amateurs. This would be like the present Canadian Repeater directory, but would concentrate on meeting nights. Many Amateurs do a lot of travelling and such a guide would allow individuals to possibly take in club meetings while on the road. The information I require is as follows: Club name, date/time/place of meetings, club repeater frequency, date/time of FM net. Again, I only need this information from clubs who are not sending me copies of their bulletins.

That's it for this time and don't forget to get involved with your club. Your support is needed.

WHAT KIND?

Someone has said the membership of an organization is made up of four bones.

There are the wishbones, who spend all their time wishing somebody would do the work.

There are the jawbones, who do all the talking but very little of everything else.

Next come the knucklebones, who knock everything that everybody else tries to do.

And finally, there are the backbones, who get under the load and do the work.

What kind of a member are you?

Author unknown

■

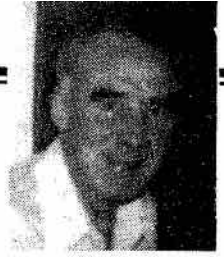
VE3PHL'S DICTIONARY

Faraday Rotation: Rotation of the plane of polarization of an electromagnetic wave when travelling through a magnetic field. In space communications, this effect occurs when signals traverse the ionosphere.

— via *Hi-Q*

QRP

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



Here we are well into the '90s awaiting the Ides of March. Someone in the British patent office tendered his resignation after processing the patent application from James Watt for his steam engine. The reason for resigning was given as, 'no further patents are likely to be needed now'! DIGICOM 64 (mentioned in a previous issue) is not patented but should be classed up there with any of today's Amateur Radio accomplishments. See a follow-up article elsewhere in this issue on the latest announcement being DIGICART (a cartridge kit or assembled) now available.

COMPUTER ASSISTED DRAWING

It was anticipated at one time that a program called Sketchpad 128 would allow me to draw schematics with my Commodore C128. A letter from Free Spirit Software begins, "I regret to inform you that Sketchpad 128 will not work with your printer. We will forward your second letter to the Whiz Kid who wrote the original program." So I am back to the drafting table if anything comes along that needs drawing.

NEWS IN OUR TIME

This is the title of the Royal Bank Letter for Jan/Feb 1990 and opens with a story about a news reporter. He was covering the Franco-Prussian War of 1870 and after the decisive battle of Sedan, he rushed back to England by train and ferry boat, staying up all night to write his account of the German victory. Alas, he had arrived too late as the competitor's newspapers were on the street two days earlier. They had received reports of the event by electric telegraph! When you consider two to three days and sometimes never for a packet message from VE3 or W7 to VE6, we have not improved much over the invention by SFBM.

FAR CIRCUITS

Far Circuits, 18N 640 Field Court, Dundee, IL. U.S.A. 60118 sent their list of available printed circuit boards plus a line of IC breadboards. The latter sell at $5 U.S. each starting with a single IC size, then dual IC and a four IC board. All PCBs are G10/FR-4 and solder coated for use with projects from *Ham Radio Magazine, 73 Magazine, QEX, QST* and a recent *ARRL Handbook*. Some boards go as far back as the 1982 *Handbook*, Oct '85 for *Ham Radio*, Sep '72 for *QST*, Jun '87 *QEX* and Jun '85 for *73 Magazine*, so there is quite a selection for any homebuilder. The single sheet (printed both sides) brochure mentions a number of other services and asks for $1.50 U.S. for shipping and packing.

An SASE to me will bring you a photocopy of their brochure and then you can get started. Sorry to say we are unable to share circuits or news from G-land QRP as *SPRAT* (the G-QRP Club newsletter) has not yet appeared in my mailbox to date.

GLEANINGS

Harry VE3GRO from CRRL and *QST Canada* phoned me to ask for identification of who took the picture of Alberta Disaster Service's rotary beam and other fixed aerials beside their headquarters building. See *The Canadian Amateur* for January, page 31, and correct the caption to read 'behind' instead of on top of the Edmonton headquarters building and blame me for not indicating them as such for Bob VE3SV.

Earle VE6NM called to say hello and 'good show' from a contented reader who now finds himself reading QRP articles in other magazines as well.

Roman VE6BRQ presented a verbal bouquet recently at one of the weekly 'coffee klatch' gatherings held in the Edmonton Flying Club restaurant each Saturday. He also warned me not to expect many kudos but lots of bad reviews and that he found it the most interesting column so far.

Debbie from our CARF head office wrote offering a 'care package' of their material for display at the above-mentioned Saturday get-togethers of Radio Amateurs, Amateur Aircraft builders and General Aviation flight crews.

Bill W7GHT mentions in his monthly IMN (Idaho Montana Net) newsletter that this last Christmas was the first time digital stations looked upon their mode as just another one rather than the 'only' one. A welcome sign, he says, as it is normal with AMTOR 'mailboxes', called APLINK, who accommodate NTS (National Traffic System) and makes it work. Total messages seemed to be the same as or above previous years due to the trade between digital and CW/SSB handlers... Jerry and Gwen at the Mobile QSL Bureau sent a nice computer generated laser printed multicolour Greetings of the Season. It is they who handle the County Hunters cards seeking confirmation of contact whether QRP or not.

QRP HINTS

Whatever you do, try to have your work area well lighted. Scientists believe you can improve performance with special lighting and even beat winter blues. They admit to being Amateurs in the stategic use of lighting but suggest one day psychiatrists and architects will work together designing home lighting systems that help people improve their moods during the dark days of winter. This is now being called SAD (Seasonal Affective Disorder) and strikes about 35 million North Americans. Among the typical symptoms of SAD are social withdrawal, oversleeping, sadness, fatigue, overeating, decreased libido and a strange craving for carbohydrates.

When selecting crystals for your home projects, do not expect much 'swing' from the old dependable FT-243. Best results are obtained from HC-17/U and HC-32/U type crystals.

Are you getting into someone's TV with your QRP signals? Figure 1 is a simple highpass filter anyone can build for the connection between the TV antenna and receiver. It attenuates all signals below 50 MHz and best results

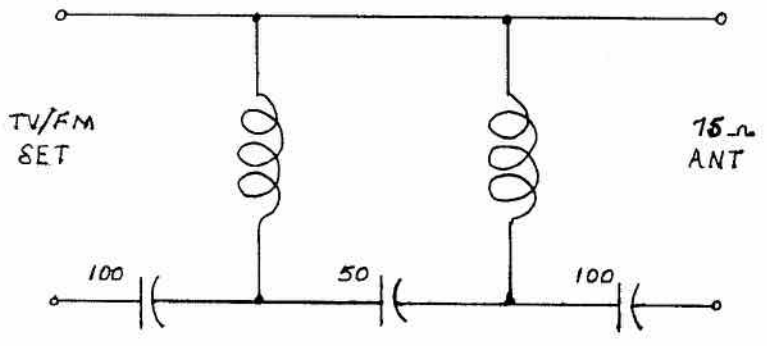


Fig. 1: Capacitors are in pico Farad and silver mica. Coils are #14 wire wound on a ¾" (1.9 cm) form. Wire turns should be space 8 turns per inch (2.5 cm) for each coil of 3 turns.

are obtained when the assembly is contained in a metal enclosure. User reports are welcome from all parts of Canada.

Al VE6AXW dropped off the information kit on the W7EL transceiver he bought from Small Parts Centre. There are 7½ pages (4 sheets printed on both sides) so send me enough postage if you want to read all about it first. Al also presented a theory about why the surrounding area of the sun is hotter than the surface itself. He very much enjoys this type of discussion with his scientist friends and can banter along with some of his more notorious friends in the field.

QUAINT RELAXING PLEASURE

Don't wait any longer or the next decade will have elapsed before you enter the world of QRP. Anyone who has been thinking about it need only ask himself if he is a good enough operator. Venturing into the unknown would be a lot harder and we do it everyday that we cross the street, drive a car or ride a bus! Just because no one answers your first call or an S9 + 10 dB station didn't come back doesn't mean QRP is not worth it. Just weigh the pros and cons of the particular time of day, propagation or whatever.

The main thing is there is a certain mystery involved each time we set out on any new adventure. Keep trying and have lots of patience while reading up on propagation and listen, listen, listen! You will end up developing your own personalized method for snagging the big ones or just a QSO each time you press the key at the right time. Roy VE6EA could present some very serious arguments in favour of QRP if you meet him on the air sometime.

COMPATABILITY

Bill VE3NR, a retired Director General, Telecommunications Regulation, Department of Communications Ottawa has written a very informative pamphlet entitled *Successful Electromagnetic Compatibility* being Guidelines for the Radio Amateur. Actually a lot of the information sounds like exactly what a QRP operator does as normal routine. Electro-Magnetic Interference (EMI) enters the picture and he has some good suggestions for resolving most encounters. His last suggestion is probably the least practiced by most Amateurs and this is, "Use no more power than is needed for the communication." In other words don't be looking for a 30 dB over S9 from each station you work. Test your blower fan on the finals less regularly and so on. Don't take it from me, just send $2 to CARF, Box 356, Kingston, Ont. K7L 4W2 for your postpaid copy! Tell them you saw it here.

Remember the QRP frequencies when you get your low power rig operating and give a call sometime. Or tune around 14060 kHz each Sunday at 1900 UTC for the VE-QRP net and don't be shy, give a call and see what develops. Then at 2330 UTC tune on or around the same frequency for TCN which is the Amateur Radio Club International (ARCI) QRP Transcontintental Net usually run by Roger W5LXS and/or Bob NM7M. As for my luck as Net Control Station since working Stan VE6SW in December was the following week when Carl KF6TB from Los Angeles reported from his condominium with a 569 using an indoor antenna, albeit not QRP.

ISRAEL QSL

If you are writing for a QSL card for working the Crusader Fortresses in Israel last year, they are on the way via the bureau. There were 40,000 QSOs made.

TCA COPIES

Copies of articles from *The Canadian Amateur* from Vol. 1 No. 1 Jan. 1973 are available. One article per issue $2 post paid.

BACK ISSUES

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

Hello, Hello... is anybody there?

Contact with Panama keeps radios abuzz collecting news from the troubled Central American country. An article from the London Free Press by Don Collins.

"Victor Echo, Three Foxtrot Queen Victoria."

No response.

Bill Birchall wasn't getting through to Panama from his 11th floor apartment in northwest London Wednesday.

But a steady stream of others were— all of them ham radio operators in the United States.

The concern of America for the well-being of its people in Panama was showing up in bits and pieces between crackles and whines on the radio equipment that sits within reach of Birchall's kitchen counter.

It was a day of heavy conflict as U.S. troops, backed by planes and helicopters, went in search of General Manuel Anontio Noriega, the elusive Panamanian strongman.

"There have been some silly questions," said Birchall, manager of the Ontario Amateur Radio Service Network. "They (American ham radio operators) have been asking things like 'what's going on there?' They're being told, 'I can't give you those kind of answers.' "

Military information was taboo, even though the ham radio operators in Panama all appeared to be Americans.

Birchall tried again with the code for his own call letters— Victor Echo Three Foxtrot Queen Victoria.

Still no answer.

In the course of half an hour, others in Detroit, New York, St. Louis and somewhere in Alabama were getting through.

Their replies came from Hotel Papa, the HP identification for their counterparts in Panama.

"It is difficult to locate individuals there, especially if they're in the military," said an operator somewhere in the U.S.

"I have a request for a person at the air force station in Panama," said a voice from St. Louis. "Do you copy at all?"

The man he wanted to locate was a John Hager. He gave two phone numbers.

"If you want to stand by a second we'll see if we can locate him," said a radio operator in Panama.

Soon after, the St. Louis man said, "Thanks so much for your help."

The happy tone was interpreted by Birchall as a sign of success.

"He must have got through to his party," he said.

Then came an urgent plea from a woman in New York.

"I'm calling for people that have health and welfare (concern for the safety of relatives or friends). Can you tell them the area's okay?"

"It's a little difficult to give you that information," said someone in Panama.

While he couldn't be specific, he finally said it was "just like it was this morning— okay?" That seemed to be what she wanted to hear. The morning news had apparently been good.

Someone with a similar question received a more definite answer.

"Everybody's okay in the area," said a Panama radio man.

The little drama continued through the day, minus military news, but sometimes offering hope to anonymous people who had been concerned about other anonymous people.

Birchall gave it another shot— Victor Echo Three Foxtrot Queen Victoria.

There was a whine and a crackle. Nothing else. ■

PACKET RAP

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

GRAPES 56 KBPS PACKET MODEM UPDATE

Doug Yuill VE3OCU, an active member of the Ottawa Packet Working Group, provides us with the following update on high speed packet networking. The Packet Working Group in Ottawa has assembled and tested a repeater based on the WA4DSY 56 Kbsp modem.

The system uses a regenerative design. After down conversion from 220 MHz to 28 MHz on the repeater input, the signal is fed into the DSY modem for demodulation. The synchronous output from the modem is fed into a FIFO shift register which is used to buffer the data as the modem uses separate clocks for the modulator/demodulator. After buffering, the data is sent back out to the modulator. The 28 MHz modem output is up converted to 70 cm (10 w) and voila! The advantage of this design is that it is possible to 'siphon off' the bits after demodulation so that the bits can be fed to the Packet Group's IP router/gateway/name-saver/network wonder object thereby allowing the ability to have a node at a repeater site without investing in another DSY modem.

Operating split band eliminates the need for a duplexer and the carrier detect in the modem comes in handy for keying the repeater's transmitter. Rumour has it that Phil Karn is working on a linear translator which, of course, does not require a DSY modem at the repeater site.

The linear translator may also reduce the chance of packet collisions. While a regenerative design does increase the chance of packet collissions by introducing additional time for carrier detect through the repeater, early tests show that little or no increase in *txdelay* is required over a half duplex DSY modem. Also, the full duplex design of the repeater will allow some clever programmer to write a driver for NET that checks for packet collisions in real time, which should make up for the slower carrier detect. Please contact Barry, VE3JF if you are interested in his design of the regeneration shift register.

All the rest of the setup is pretty much off the shelf. User testing of this system is now underway (as of Jan. 11, 1990). More information on this fascinating project will be forthcoming in future columns. To my knowledge, this project may be a 'world first'. If fact, even the GAPES folks who originated the DSY 56 Kpbs modem have not yet implemented a full duplex repeater. Congratulations go out to Barry VE3JF, Doug VE3OCU and Marcus VE3MDL!

DOSGATE REVIEW

I have been experimenting with a very neat software package called DOSGATE. DOSGATE essentially allows you to remotely run an IBM PC or IBM Clone computer from a serial line instead of from the main console. This software package is written by Rich Bono NM1D.

This software package is for various TNCs. A mail system is also included as well as a user HELP facility which can be tailored by the owner of the PC. Rich goes to great lengths to explain how to provide security on your DOC PC so that users connecting to your PC via the packet radio network or via a dial modem won't be able to erase any of all your files on your PC disk.

DOSGATE is *shareware*. The price is $20 U.S. for support although Rich waives this fee if you are a ham radio operator using the package for ham usage. If you wish a copy of DOSGATE, send an SASE diskette mailer (better to send a dollar if you do not have any U.S. stamps) and a formatted IBM PC 5¼-inch diskette to Rich Bono NM1D, 7 Redfield Circle, Derry, NH, 03038. This program opens up all kinds of possibilities.

I use DOSGATE to remotely access my IBM PC at home via a phone line. Once connected, I can use the KA9Q NET package to connect to the ham radio packet network. This allows my packet station to be operated remotely from any location.

Of course, you need access to a telephone and an ASCII terminal (or equivalent) with the appropriate modem to perform this 'magic' feat. You should also password protect any dial in modem line so that unauthorized 'hackers' won't be able to have access to your IBM PC and potentially destroy your files or infect your PC with a computer virus.

COMPUTER VIRUS UPDATE

As many of you already know, certain computer programs may be carriers of a 'computer virus'. A computer virus essentially modifies your computer files in such a way that it can 'attach' itself to other programs, or worse, alter or destroy the data on your computer. There are of course, various virus 'detector' programs that *may* detect (and sometimes destroy) certain viruses that may exist on your computer.

Once a computer virus is in your computer, it may be too late to remove it. In extremely nasty cases, the only way to remove the virus is to completely reformat your computer disk where the virus exists. The rule to prevent an infection is quite simple: 'Never trust *any* piece of software until you check it out with a good (trusted) virus detector program'.

This computer virus business is becoming quite an issue. People who invent and propagate virus programs are now subject to being prosecuted by the courts. These virus 'inventors' are now subject to severe penalties. In fact, in one extreme case in the U.S.A., a computer hacker (a ham by the way) was sentenced to a lengthy jail term for penetrating U.S. government computer systems and altering records.

Some young people in the 12 to 20 year old range appear to enjoy the 'thrill' of inventing new computer viruses or breaking into computer systems. If you know of anyone in the 'computer virus creation' business, tell them that they may end up having a criminal record if they get caught!

FEEDBACK REQUESTED

I really do need reader feedback regarding this column. Is the information presented here at the correct level? Do you want more news on what people are doing? If so, I need news from your area. Don't worry about your ability to write. Just get the information down and send it to me. I will take it from there. Are there any special topics that you would like to see? This is *your* column— I just write it up. So... get your pen and paper out and write me now. Of course, you can send me messages via the worldwide ham packet network. My packet address is: VE3FWF@VE3JF.ON.CAN.NA or VE3FWF@VE3JF (depends on what type of software is running on the BBS that you use to send the message). ■

HELP WANTED

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

Craig McLaughlin VO2AM, 392 Airport Road, Apt. 317, North Bay, Ont.

LETTERS TO THE EDITOR

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

Listening To The World

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

I hope by now that most of you DX hunters will have recovered from the hunt for the Bouvet Island DXpeditioners. I did manage to hear them on both 10 and 20 metres during their stay on the island. Being a listener as opposed to an Amateur, I don't have to subject myself to the endless pile-ups trying to contact the rare ones. Once I confirm the call and get it into my log, I'm off in search of the next hot station.

I do a fair amount of ham band DXing. I have even modified a copy of the Amateur DXCC country list to which I have added columns for mediumwave, shortwave and utility stations, in addition to the already present Amateur bands. I maintain this as sort of 'countries heard' log much like the lists which Amateurs keep for their countries worked. A nice combination of all my types of monitoring.

COUNTRY OF THE MONTH

As our thoughts begin to think of spring and warmer weather, I'd like to take you off on sort of a Caribbean holiday this month. Our focus this month will be on the island country of Cuba and their international shortwave broadcast station, Radio Havana Cuba.

Cuba is one of the few countries in the Caribbean to have shortwave transmissions beamed to the rest of the world. On May 1, 1990, Radio Havana Cuba will celebrate its 29th anniversary of broadcasting. RHC does not detail the exact location of their transmitters, but they are on the island itself. It is more commonly known that their high powered transmitters are Soviet made and supplied and range from 50 to 500 kilowatts.

Unlike so many of the changes taking place in the Communist world in Eastern Europe of late, Radio Havana Cuba is still a throwback to the cold war, with much of their news and commentary being heavily laced with propaganda. In their station IDs they still refer to Cuba as 'the free territory of the Americas'. But once you cut through all the 'Red Tape', RHC can be quite an entertaining broadcaster, particularly for those with a flair for the Latin lifestyle.

Much of the programming at RHC introduces the listener to the lively nature of the Latin Americans. For the music lover, some of the best traditional music on shortwave can be heard from RHC. There are many feature music programmes of popular and traditional music, salsa and wonderful Cuban jazz, much of it not heard often in North America. Many programmes feature the island itself, promoting Cuba as a tourist destination. The programmes are well produced and the announces are fun to listen to. The interspersed doses of propaganda make for some comic relief from time to time.

Radio Havana Cuba is presently running a listeners' contest where the top prize is a two-week, all-expense-paid trip to Cuba. Entries must be received by April 30, 1990. To enter you must write an essay, answering the following question: Radio Havana Cuba changed its programming on September 8, 1988. How do you evaluate this change? Give it a try, somebody has to win!

RHC also encourages listeners to write with comments and reception reports. Their address is Radio Havana Cuba, P.O. Box 7026, Havana, Cuba. The station is very easy to hear in North America. A nightly evening transmission to North America begins at 0000 GMT (UTC) and runs straight through to 0800 UTC. The main frequency is 11820 kHz until 0600. At 0200 to 0450, 9710 kHz is added and from 0400, 11760 kHz is added. From 0600 to 0800 UTC you can tune to 11835 kHz. A broadcast can often be heard from 1900 to 2100 as well, this on 11800 KHz.

For those who understand Spanish and would like to hear what domestic radio is like in Cuba, you can tune to a shortwave relay of a mediumwave station called Radio Rebelde on 5025 kHz during the evening hours. This one will be tougher to confirm, but you can send a reception report to Radio Rebelde, Apartado 6277, Havana 6, Cuba.

WRTH UPDATE

As mentioned last month, the new 1990 edition of the *World Radio TV Handbook* is now available. Published annually for the last 44 years, this reference book is used around the world, both professionally and by the radio hobbyist as the source of detailed schedules, frequencies and, perhaps most importantly, addresses of radio stations around the world on longwave, mediumwave and shortwave, as well as details on worldwide television stations. I hoped to have a review of the book ready for this column but that will have to wait until next month. If you just can't wait, or should you already be familiar with the publication, you can order your copy now from me for $27.50.

I continue to receive a growing number of letters from readers of this column who are either just getting into shortwave monitoring as a result of this column, or from those who are getting back to monitoring, an activity which got many of you started in Amateur radio many years ago. Many of you have requested information on obtaining a general all purpose introduction into the world of shortwave monitoring.

The book I recommend to people is a small publication called *So you Bought a Shortwave Radio!* As the author, Gerry Dexter puts it, "here is a light and easy introduction to the galaxy of stations, sounds and services in the wild world of shortwave radio. This book gets you on the fast track to full enjoyment and appreciation of the most exciting kind of radio anywhere."

The book is a basic language introduction to shortwave with chapters on the following subjects: The Shortwave Difference; Making the AM/FM Transition; What you can Hear; Where to Get Equipment; Sources of More Information; Local time vs. UTC; Shortwave Broadcast Stations; Utility Stations; Clubs for Shortwave Listeners; and What Those Knobs and Switches Do. The book is easy to follow for readers of all ages. It is excellent for the beginner.

In fact, I make this book compulsory reading for the students in my course 'International Radio Monitoring' which I teach in the Montreal area. The book is good value for the money at $8.95 per copy. I often find the book extremely useful even for those who have been in the hobby for many years as it serves as a reminder to some of the basics which we may have already long forgotten. If you'd like a copy of this publication, forward your cheque or money order, payable to me, for $8.95 at my address indicated above.

I am constantly in search of new and useful publications for the radio hobbyist in Canada, many of these publications are not available elsewhere in Canada. I am in the process of putting together a catalogue of the various books which I carry. If you'd like to receive a copy of the catalogue upon its release shortly, please send me two units of postage (78¢) and I'll get one off to you in the mail.

Keep your letters and comments coming. I always appreciate receiving them. Also if you have any questions

Continued on next page ►

Book Reviews

THE THOMAS EDISON BOOK OF EASY AND INCREDIBLE EXPERIMENTS

By The Thomas Alva Edison Foundation, published by John Wiley & Sons Inc., Toronto, 1988.

The cover flyleaf tells us Edison patented 1,093 inventions and more chemistry experiments than any other scientist ever! This book has over 100 illustrations plus photos of the legendary inventor himself. Experiments presented include electrochemistry, physics, energy, electricity, chemistry and environmental studies. There are ample ideas for science fairs and 'extra credit' projects for grades 4 to 11.

The Thomas Alva Edison Foundation headquarters is at 5773 Circle Dr., Southfield, MI. U.S.A. 48075 and is active in 23 nations by sponsoring science institutes, educational conferences, the Edison/McGraw scholarships and other programs in science education for teachers and youth. The Edison Electric Institute, 1111 19th St. NW, Washington, DC. U.S.A. 20036 still makes individual booklets of experiments available.

Canada is looking for ways to motivate the young people going through school toward Amateur Radio and this type of book could be the answer. Starting with experiments such as making an electromagnet, electroplating, building a carbon transmitter (microphone), it progresses on up to building a simple telegraph relay, secret door lock, pinhole camera and an electric motor.

In Part 4, experiments vary from an electric pen to a simple radio and cigar box microphone. Part 5 is headed 'Energy For The Future' with associated experiments as well as how to build and weatherize a model house, then convert it to a solar garden. Part 6 covers Alternative Energy Sources with simple experiments like turning trash into useable energy, a model Geothermal Steam Engine, and making a fuel cell. Part 7 (and the last of over 100 pages 8½"x 11") is Nuclear Experiments beginning with an Oil-drop Model of a Splitting Atom ending with a real true Gieger Counter as a class project.

An Alphabetical Listing of recommended Science Publications is followed by a chronology of events in the life of Thomas Edison. Born Feb. 11, 1847, he was active from 10 years of age right up to Oct. 21, 1929 when he re-enacted the making of the first practical incandescent lamp. He died Oct. 18, 1931 at Llewellyn Park, West Orange, NJ. U.S.A. at the age of 84.

— Moe Lynn VE6BLY

OUT OF THIN AIR

Out of Thin Air, a biography and history written by Betty Rogers and Tom Crothers and published by Applecross Press, is now available through P.E.I. bookstores and mail order. The large format 172-page paperback book is filled with pictures of early radio equipment, broadcasters, and entertainers, and is based upon the life and achievements of the late Keith Rogers VE1HI, a true radio pioneer.

Out of Thin Air contains the story of Keith's radio history, both Amateur and commercial and the formation and history of CFCY radio. It covers the early days of radio following the outbreak of wWI, and leads up to the formation of CFCY TV shortly after Keith's death in 1954. It is probably the best, most authoritative history of early radio communications in the Maritimes yet released. This book, of interest to all Amateur radio operators, is available for $16.95 (postpaid) through Applecross Press 1989, Unit 9, University Ave., Charlottetown, P.E.I. C1A 8K3

Every amateur radio operator, no matter where he lives, could benefit from this book, by being put in touch, once again, with radio's humble beginnings.

— This Month in Amateur Radio in Charlottetown

LISTENING *(cont'd)*

regarding the radio monitoring hobby, please feel free to write. I'll do my best to supply you with the answers, or at least put you on to the sources who can help you the best.

Finally, I'd like to remind you to tune in on Sunday mornings at 1500 UTC on 7240 kHz in the 40 metre Amateur band for the Association of North American Radio Club's Shortwave Listeners Network, operated by Bob Brown KW3F in Lansdale, Pennsylvania. You can learn a lot from this net each week and I encourage any of you with 40 metre capabilities to participate. Until next month! ■

Nine Canada-wide paging licences

Communications Minister Marcel Masse has announced the issuing of nine licences for new nation-wide paging services that will use new technologies and radio spectrum to provide on-way alerting radio paging. Two licences are for services on frequencies shared with the United States, and seven on exclusively Canadian frequencies.

A call for applicants to supply such services on the newly designated 929-932 MHz channels was published in the *Canada Gazette*, May 13, 1989.

"Radio paging systems will eventually permit instant dissemination of business messages, stock market quotations, airline schedules, or even sports scores, to virtually all parts of North America," the minister said "For industries concerned with mobile communications, such as the Canadian trucking industry, these services can improve communications along major highway routes, at affordable rates."

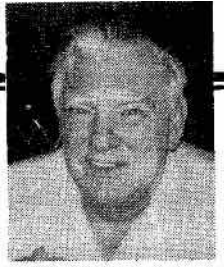
Canada-wide and compatible U.S.-Canada services are expected to promote mass production of paging devices, leading to reduced prices. Recent technological advances have already opened the door to paging receivers which can provide enhanced services and be more spectrum-efficient than most current pagers.

Each of the following will be authorized for one of the two Canada-wide frequencies shared with the United States: Cantel Incorporated, and MBM International Network (consortium of Motorola Canada Limited, MacLean-Hunter Communications Incorporated and the Beeper People Incorporated).

Applications for a licence on a third frequency shared with the United States did not meet the government's expectations. Therefore, the process for licensing the frequency will be re-announced in the near future.

Each of the following will be authorized for a Canada-wide frequency: Maclean-Hunter Communications Inc., Telelink Canada Limited, Cantel Inc., CNCP Telecommunications, The Beeper People Inc., Motorola Canada, La corporation Scotpage limitée. ■

LOOKING AROUND



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

There is a type of diode— the Zener diode— that takes advantage of the avalanche/zener characteristics of a reverse-biased diode. Zener diodes are solid state devices that have unique properties and provide, among other useful functions, a constant reference, or voltage, control element over a wide range of voltage and power levels. The Zener diode is basically a rectifier but with its unique properties derived from a silicon semiconductor P-N junction that operates in the reverse breakdown region with special techniques in its makeup to create the desired properties.

The active portion of the Zener diode is the P-N junction and zener characteristics are obtained by reverse-biasing the junction. Fig. 1 shows the voltage/current characteristics of a Zener diode and note the breakdown in the reverse direction.

Depending on the impurities present in the materials that form the P-N junction, the reverse voltage breakdown can be caused by a 'zener breakdown' (voltage breakdown decreases slightly with temperature) or 'avalanche breakdown' (reverse temperature characteristics). Zener diodes, operating below 7 to 8 volts, exhibit zener breakdown while those above 8 volts exhibit avalanche breakdown. The breakdown voltage is called the 'Zener voltage (Vz)' whether the breakdown is the zener or avalanche type. Zener diodes are available with voltage ratings from about 2.5 volts to 200 volts with power ratings from milliwatts to 50 watts with power rating decreasing with increasing ambient temperature.

Zener diode specifications include: 1. nominal voltage rating (Vz) at a specified zener current (Izt); 2. DC

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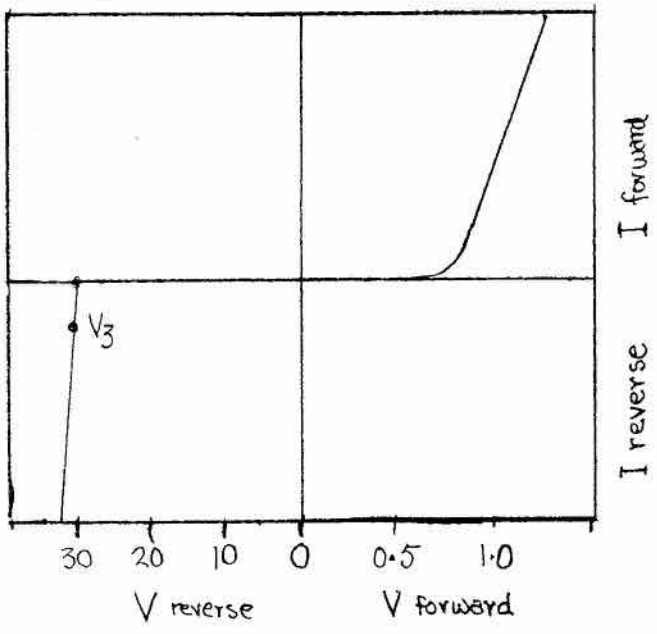

Fig. 1: Zener Diode Characteristics

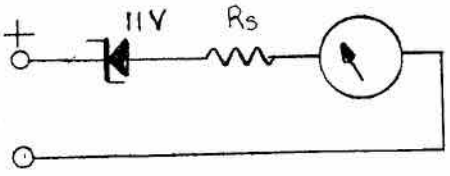

Fig. 2: High resolution Voltmeter (11-16 V)

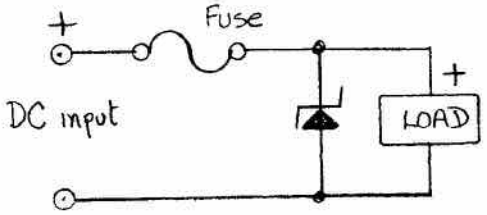

Fig. 3: Over voltage protection

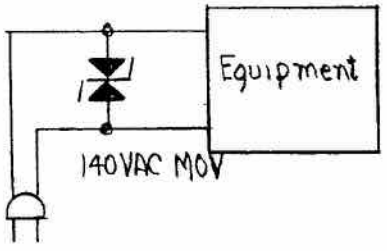

Fig. 4A: Single Transient Suppressor

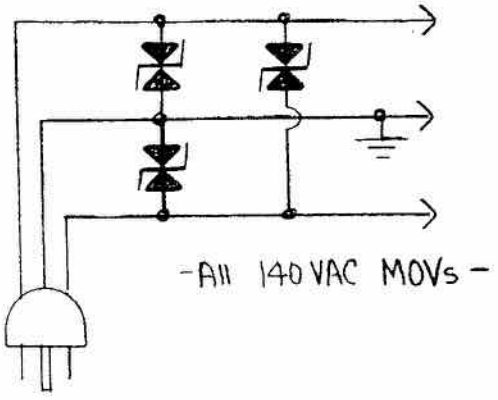

Fig. 4B: Maximum Transient Protection

power dissipation (watts); 3. tolerance in per cent of Vz. To find maximum current that the Zener will handle, divide the DC power dissipation rating by the nominal voltage rating— Imax = P/Vz.

When used as a voltage control element, good practice is to have a minimum current flow, derived from a series dropping resistor, of at least 5% of maximum current rating. As well as serving as a voltage reference, or control, device, a Zener diode can be used in other circuits of value.

1. A High Resolution Meter

Obtaining accurate readings from a normal voltmetre, say with a range of 0-20V, to check voltage from a battery (12.6V) or 12-15V DC power supply, is difficult as the range desired, 11 to 16V, only covers a small portion of the meter scale. A high resolution meter can be readily constructed using a milliamp meter, with a series resistor so that meter reads 0-5V and an 11V zener diode. Fig. 2 shows circuit. The meter will now read from 11 to 16 volts over the full scale enabling much greater accuracy of readings.

2. Voltage protective device

Infrequently a DC power supply will go haywire and provide a much higher voltage to the equipment it is powering, with, sometimes, disastrous effects. Fig. 3 shows a simple protective circuit to overcome this occurrence. To protect a 12-14V supply, such as is used to power portable or mobile equipment, a 15V zener diode is used. If the output voltage exceeds 15V the Zener diode conducts heavily and blows the fuse.

The power dissipation rating of the Zener should exceed the current rating of the fuse (normally slightly higher than the maximum current drawn by the equipment) times the normal voltage output of the supply, otherwise both the fuse and zener could require replacement if over-voltage occurs.

3. Transient, or spike, protection

A special type of a dual zener diode, called a 'varistor', 'MOV' or 'surge suppression diode', can be used to protect equipment powered by A.C. (See Fig. 4a.) To protect 117VAC lines, a varistor rated at 140VAC is used and maximum protection is obtained by using three varistors, as shown in Fig. 4b. Usually, varistors resemble ceramic capacitors and can be easily wired into AC outlets or power socket strips. ■

DOC RELEASES AMATEUR STATION TEST REPORT

This reports the results of a study of the HF (3.5-28.5 MHz) electromagnetic environment around typical Amateur stations in urban areas.

To understand why this was done, we have to go back about ten years when complaints of interference involving DOC and radio susceptible consumer electronic equipment began to increase rapidly. DOC released *Electromagnetic Compatibility Advisory Bulletin #1,* called EMCAB 1 for short, to tell manufacturers the magnitude of urban transmitted radio frequency fields in which their electronic products were likely to have to operate. EMCAB 1 received worldwide attention.

It was the first step towards the establishment of susceptibility standards for radio susceptible equipment now authorized in the new Radiocommunication Act.

Because some questioned the validity of the HF fields, DOC ran the above reported tests using actual operating Amateur stations in Toronto and Ottawa during 1986-87. The report has generally confirmed the validity of the field strengths ascribed to Amateur stations in EMCAB 1.

For those who are interested in what typical HF fields around their station at their lot line might be, here are the results. Bear in mind that these values include the effects of antenna types, height variations and orientation, as well as structural environments around typical Amateur stations.

The majority (about 60%) of stations without amplifiers, normalized to 100 watts, will create a field of between 0.1 and 1 volt/metre. The highest field reported around a 100 watt station was 28 volts/metre at 3.75 MHz.

The majority (about 60%) of stations with amplifiers, normalized to 1591 watts, will create fields between 1 and 10 volts/metre. The highest field reported for a station using maximum power was 112 volts/metre at 3.75 MHz.

Interference, disturbance or what?

By Bob Eldridge VE7BS

The following item appeared in the MEC Report section of the Australian magazine *Amateur Radio.*

"There are still many people, including some who should know better, who mix up the term Citizen-Radio and Amateur-Radio. It is even more important to teach the public the difference between 'interference' and 'disturbance' (lack of selectivity or too much susceptibility). Interference can only be caused by an illegal transmitter transmitting on the allotted frequency of a legal transmitter. Disturbance is caused by design deficiencies of an appliance, resulting in susceptibility (to) unwanted signals which are not transmitted on the operating frequency or channel used by the appliance. Disturbances can also be caused by susceptibility of electronic equipment which should never receive signals from legal transmitters, or be affected by them.

"By using the technically correct term, we state clearly who is responsible for an undesirable situation. This is vital if the legal profession wishes to administer justice."

Perhaps Ralph Cameron would like to comment on this. The idea is sound, but I don't know whether we have in Canada a specific definition of 'disturbance' like this; and I know for sure that in international and Canadian usage 'interference' can come from legal as well as illegal transmissions. The ITU definition of 'interference' includes "the effect... upon reception in a radiocommunication system...", so it would seem the word could not be used for the effect of a radio transmission upon an electronically controlled furnace, but it could be used for the effect of emissions from a furnace upon radio reception.

Unfortunately, the IEEE definition of 'disturbance' as used in communication practice includes the words "... that tends to limit or interfere with the interchange of intelligence". So what is the word if no intelligence is involved? If we don't have an officially defined word for the effect described in the Australian item as 'disturbance', it sure would be useful to have one.

In Canada we have an additional complication. There are several words to play with in the French language; interference, perturbation, brouillage for example all have their place in this context. And 'perturbed' (in English) is used in the electrical power industry in relation to electric and magnetic fields.

You think all this is academic stuff that doesn't matter much to the Amateur? Don't forget the point made in the Australian magazine: use of the right word may make it clear who is responsible for fixing the undesirable situation. ■

TECHNICAL SECTION

Bill Richardson VE6PN, Box 68, Grimshaw, Alberta T0H 1W0

Reversible AC Electric Motors, Door Openers and Antenna Rotators

or "Keep the Baby, not the Bath Water"

By Ken Rolison VE3CRL

An interesting corollary to our study of Simple Harmonic Motion and Sine Waves is the use of sine waves of current to produce a rotating magnetic field, and from that field, rotary mechanical motion. Both the magnetic field and the mechanical motion can be defined by rotating vectors.

Alternating current motors are constructed with two or more pairs of Field Coils spaced evenly around the axis of the motor. In large industrial motors these are usually three, or sometimes six, pairs of field pole windings, each pair of field coils connected to the correct respective phase of a three phase AC power supply. The currents in the respective three phases of the supply are 120 electrical degrees out of phase with each other. This type of connexion produces a magnetic field of constant flux which rotates at constant speed about the motor axis and armature (rotor). The interchange of any two phases, or the transposing of the two connexions to any set of single phase field coils will cause the magnetic field, and hence the motor rotation, to reverse direction. This phenomenon occurs not only in three phase motors, but in all polyphase induction motors.

Most reversible garage door opener and antenna rotator motors are two phase units, powered diretly, or indirectly using a transformer, from the common 115 volt 60 cycle single phase household supply. In the case of the antenna rotator, the single phase 115 volt supply is first converted by a transformer to a low voltage of about 25 volts AC for safer transmission up the tower. The small two-phase induction motors have two field coil pairs set mechanically at electrical right angles, or at 90° electrical and mechanical phase displacement to each other.

But how do you power a two phase motor from a single phase supply? That's where the technical ingenuity comes into play. The secret is in the capacitor, that simplest of electrical components. You should recall from your theory classes on capacitance and capacitative reactance that the AC current flowing into and out of a capacitor leads the voltage drop (DROP, not circuit voltage) across the capacitor by 90 electrical degrees. The magnetic field created by the current through a field coil pair which is supplied via a capacitor will lead the

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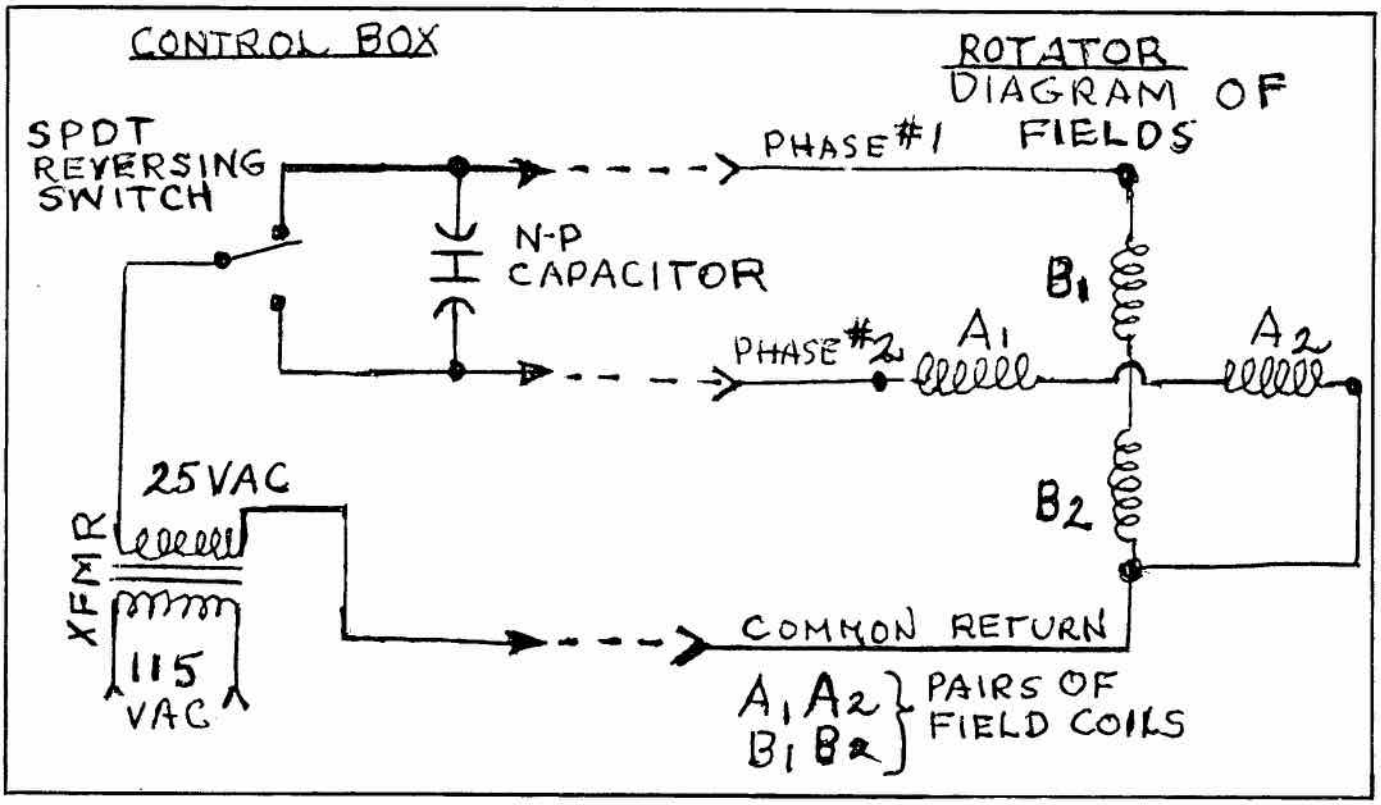

MOTORS *(cont'd)*

magnetic field of the other field coil pair, DIRECTLY powered from the same source, by about 90°. The result, when the two sinusoidal magnetic fields combine vectorially, is a single physically rotating magnetic field of constant flux. It is this rotating field which causes the motor armature to rotate, as the rotor squirrel cage conductors attempt, per Faraday and Oersted, to reduce the large short circuit current induced in them by the rotating flux.

The phasing capacitor gives us another bonus. By connecting it between the corresponding ends of each of the field coil pairs (see diagramme) and providing a simple single pole double throw switch we can directly connect the AC supply conductor to either field coils A or B. We can now decide which field coil set will have leading current at any time. This simple circuit permits us to reverse the rotation of both the field flux and of the motor.

The phase change capacitor used for the small two phase motors is subject to AC voltages. Because of the capacity needed, a NON-POLARIZED electrolytic capacitor is required. The size of capacitor used for antenna rotors is usually from 125 to 150 mfd. In an emergency, or as a temporary replacement to test the rotator, two capacitors, each of double the required capacity, can be connected in series with polarities reversed. In the rotator application, both the phase shift capacitor and the reversing SPDT switch are located in the control box, rather than in the rotator.

The capacitor often dries out in time and is probably the most common but least suspected single cause of rotator failures. Because of its location, it is readily accessible and easily replaced. Be sure to test the capacitor first, before climbing the tower, or heaven forbid, dismantling the rotator! A very good friend of mind who shall remain nameless and call-less fell into that trap. As a result, I now have a duplicate control box (with new capacitor) for the AR22 at our cottage, and my friend learned that next time one should not 'throw out the baby and keep the bath water'. A costly lesson, but, on the plus side, the inspiration for this little supplementary article.

In the case of garage door operators, the motor is a larger fractional horsepower type, located in the actual opener mechanism housing. The door opener capacitor operates at fill line voltage, so special care should be used in replacing it with an identical capacitor. Make sure that the power is off, and that the capacitors are discharged!

This monograph was written as a pre-Xmas supplement for my class in Amateur Radio, a course offered by the Etobicoke Board of Education, Continuing Education Department. ■

JAPAN

Amateur Radio is sure alive and well in Japan. There are more than 1,600,000 licensed operators (about half of them with individual stations— the others have an operator's licence, like having an Amateur certificate but no station licence). The breakdown is as follows:

First Class	13,000
Second (100 W)	50,000
Third (10W telegraph)	90,000
Fourth (10W phone)	1,500,000

The First Class licence requires a high level of technical knowledge, regulations, 12 wpm International Morse, 10 wpm Japanese Morse. The holder can operate all bands, any mode, with no power limit.

The Second Class requires High School physics level technical knowledge, regulations, 9 wpm International Morse. 100W output is permitted on all bands, all modes.

The Third Class requires radio knowledge at Junior High School physics level, regulations, 5 wpm International Morse. 10W output on all bands except 10 MHz and 14 MHz, all modes.

The Fourth Class requirements are similar, except there is no code test and CW operation is not permitted.

The vast majority of Japanese Amateurs operate on the VHF and UHF bands (144-146, 430-440 and 1260-1300 MHz). They have no bands at 220 or 902 MHz.

The largest age bracket in the ham population are between 15 and 20 years old, and the next are between 40 and 50. Japan probably has more technicians, engineers and scientists per capital than any other country. There are many active ham radio and school radio clubs. The monthly magazine *CQ Ham Radio* runs 500 pages, about half of them advertising. The articles are of high technical level.

Foxtrot Yankee India

We occasionally receive letters at CARF HQ from members complaining that they have not received an issue of the magazine. Others are annoyed that they are a week behind in receiving it, as their friends have already received theirs.

I will endeavour to explain how *The Canadian Amateur* is mailed each month. C.A.R.F. Publications Ltd., like most publishers, is not equipped to mail the many thousands of magazines each month so the job is contracted out. CARF Publications Ltd. produces *The Canadian Amateur* and CARF Inc. looks after the subscriptions and produces the mailing labels.

CARF Publications Ltd. has Second Class mailing privileges from Canada Post which allows it to bulk mail at a reduced rate. In return for this reduced rate, magazines have to be sorted into the proper postal code areas. This job is done by the Production staff who group thousands of labels each month into the correct postal regions, as determined by the forward sortation code. This is the first three characters of your postal code; the other three characters are your home address.

The sorted labels are then forwarded to a labelling and mailing service in Gananoque, Ontario, where the labels are affixed to magazines, which are then bundled and bagged. These mail bags are then sealed, sent to the Gananoque Post Office, and will not be opened again until they arrive at the designated post office sorting rooms as shown by the labels on each bag. If your subscription has not run out (your expiry date is shown on the label) and your postal code is correct, slow or non-delivery can be caused by the postal system.

— VE3NB

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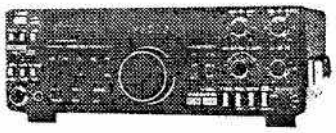

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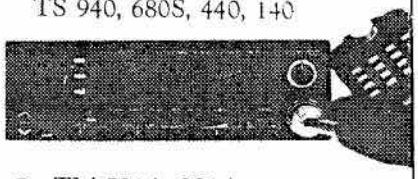

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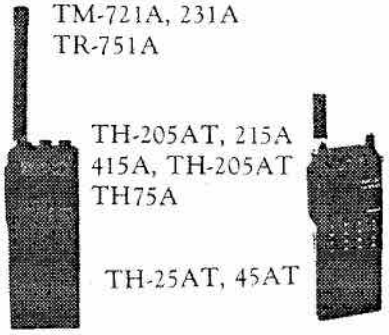

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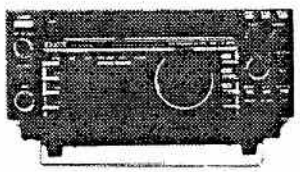

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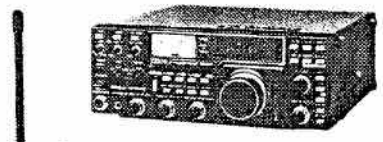

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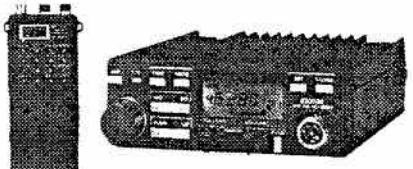

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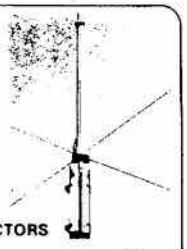

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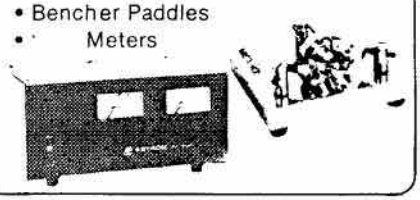

PUBLICATIONS

- ARRL
- Radio Amateur Callbook
- World Radio TV Handbook
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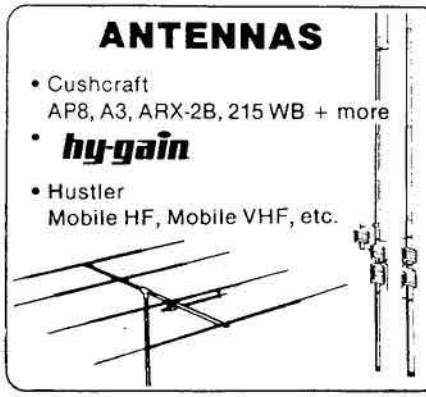

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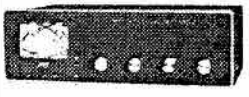

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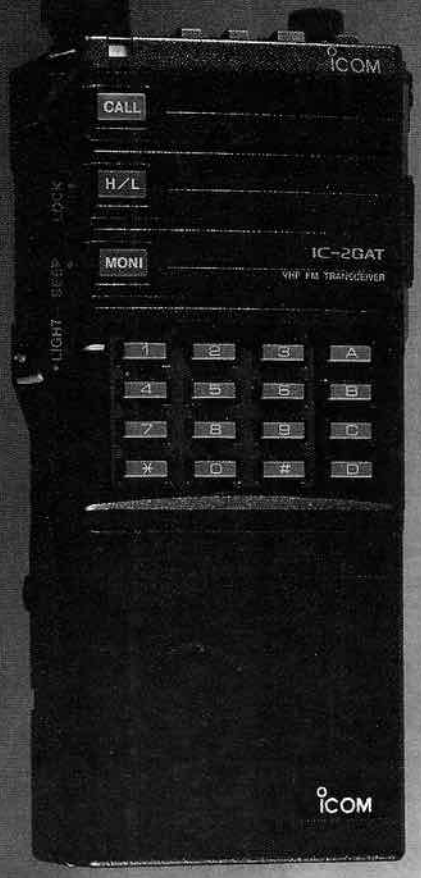

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