Second Class Mail Registration
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TCA

JANUARY 1986

The Canadian Amateur Radio Magazine

La Revue des Radio Amateurs Canadiens

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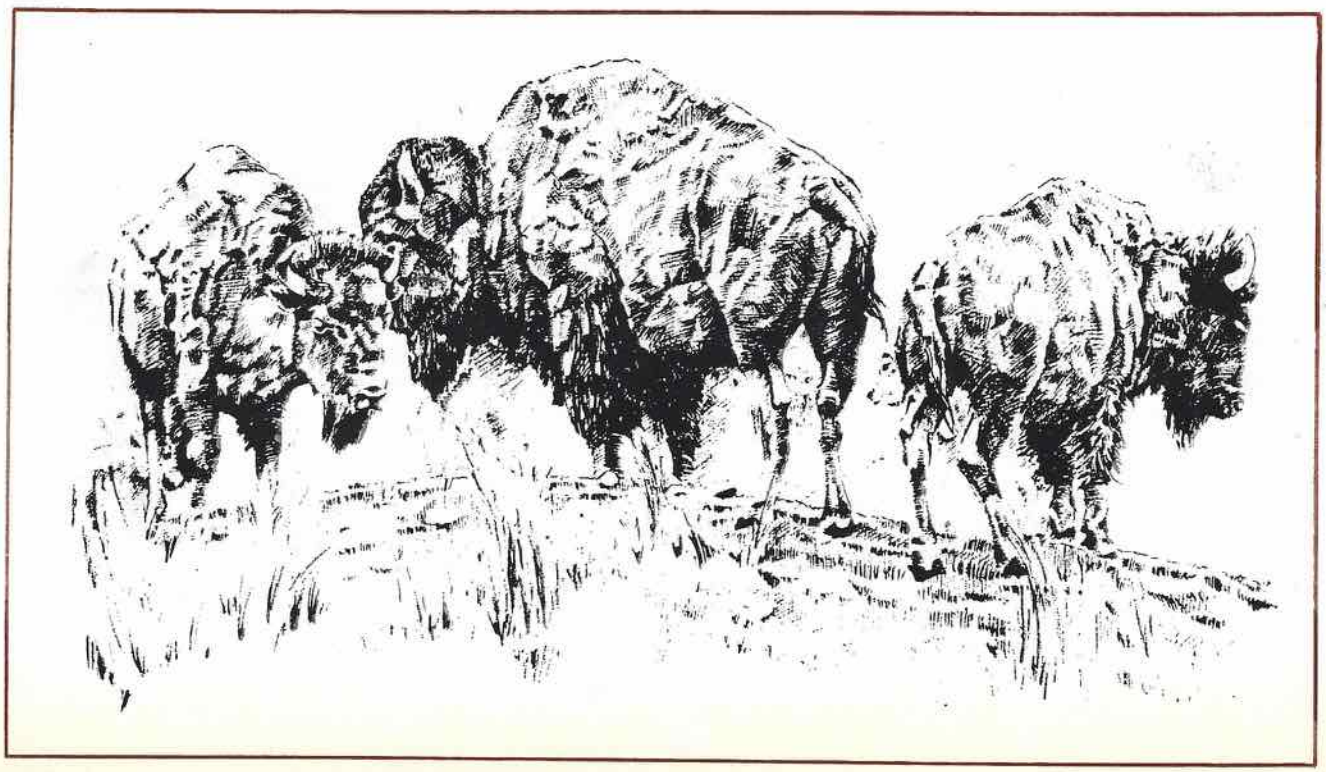

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You told us what you wanted in an HF rig that operates both in the car and at home. We've answered with the FT-757GX: a compact 12-volt transceiver with all the extras built in. Features you'd normally pay a lot more for.

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The FT-757GX's high-performance general coverage receiver lets you listen from 500 kHz up to 30 MHz. The transmitter covers 10 to 160 meters, including the new WARC bands. Dual VFOs and single-button VFO/memory swap make split-frequency operation easier than ever before.

Use the 8 memories to store your favorite frequencies on any of the bands. Then touch a button to jump to any programmed frequency without worrying about a bandswitch.

For base-station use, the space-saving FP-757GX flatpack power supply shown in the photo is ideal. With this supply, the rig delivers 100 watts output on sideband, FM and CW.

In addition, a massive heatsink permits continuous RTTY operation at full power output for up to 30 minutes. Full power for long periods does require the use of the FP-757HD heavy-duty supply.

To the right of the transceiver is the FC-757AT, a fully-automatic antenna tuner designed especially for the FT-757GX. This optional tuner stores in its memory the antenna selection and matching network settings for each band. When you operate that band again, the tuner automatically recalls the matching network settings and chooses the proper antenna.

With an optional interface unit, you can control VFO frequency and memory functions via your personal computer.

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

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

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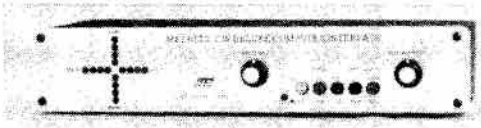

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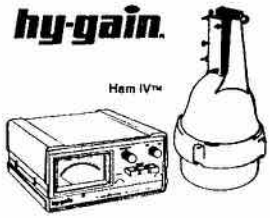

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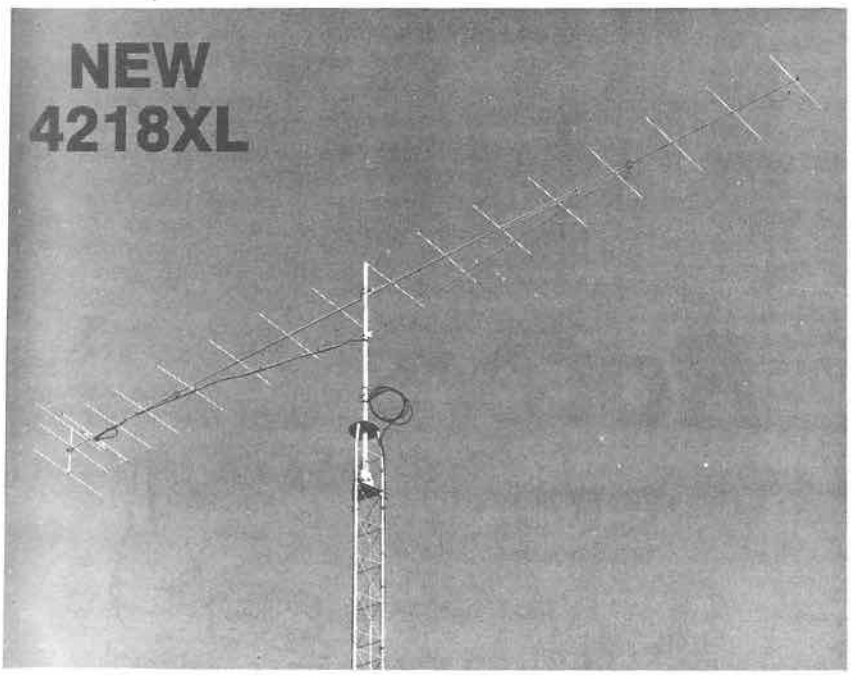

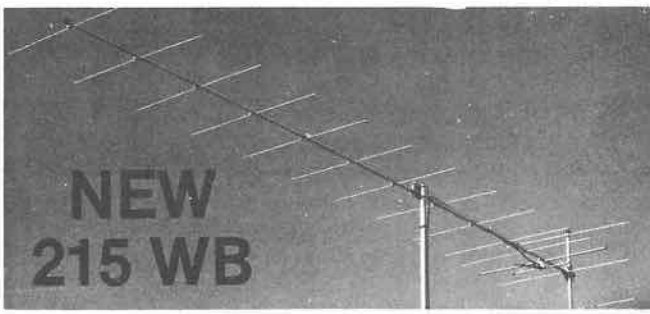

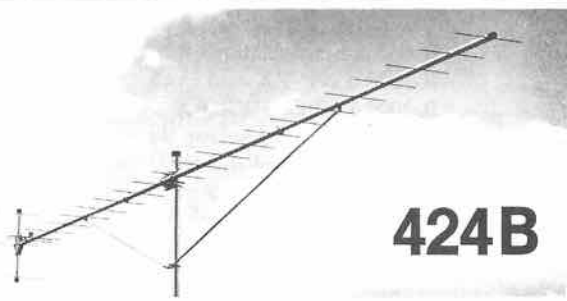

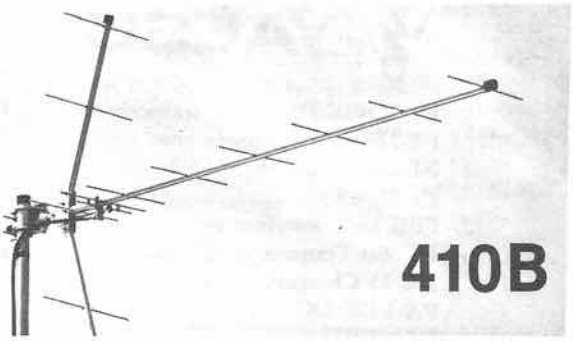

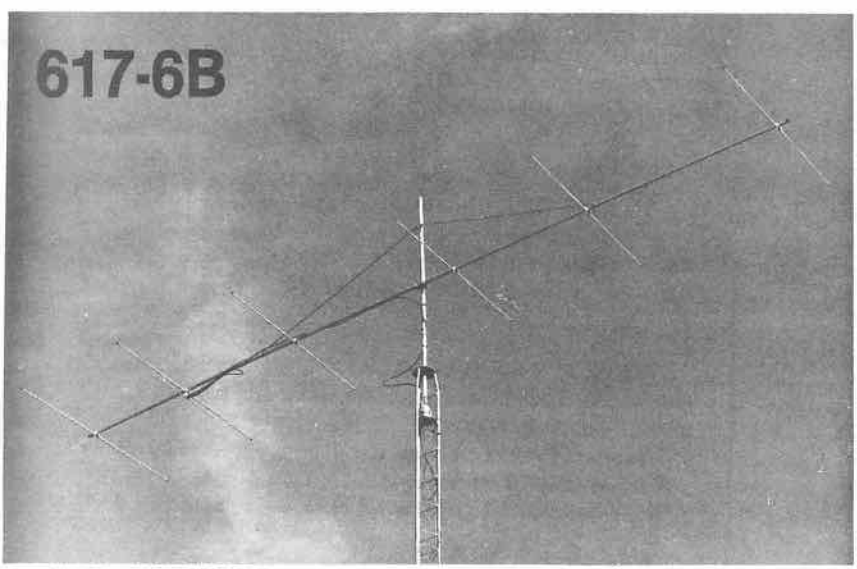

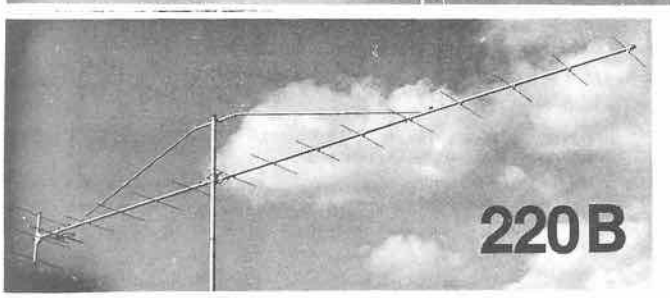

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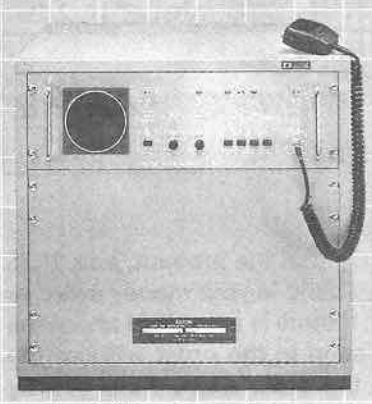

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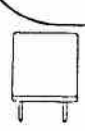

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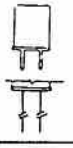

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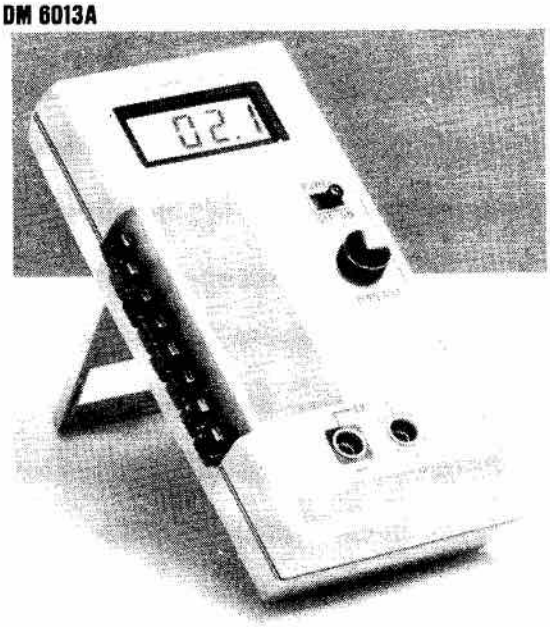
DM 6013A



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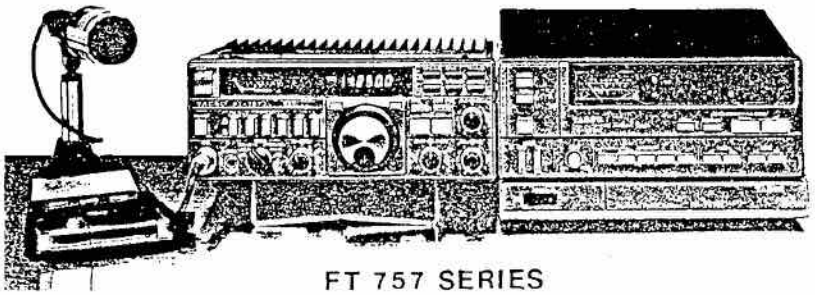

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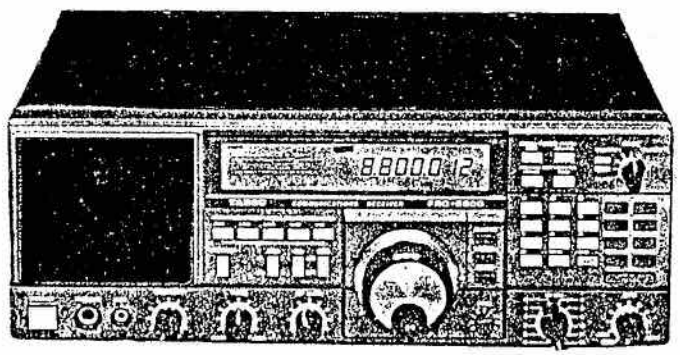

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Radiotelephone, HF 1.6 to 3.5 MHz. Partial solid state, built in spkr. and pwr. supply. Size 20 x 11 x 14 deep. Nice cabinet. $30.00.

Antique (?) Fisher type S potentiometer. Black bakelite panel mounted in black finished wooden box with hinged lid. With instructions. Size 7 x 10 x 13. $20.00.

Volt ohmmeter, AVO Type D. British Air Ministry, wooden case, still with RCAF tag dated Feb. 1949. size 9 x 5 x 7. $15.00.

Impedance Bridge made by Solar Electronic Model 6363-1. No data available. Front panel knobs include phase angle, impedance magnitude, impedance multiplier, frequency. Appears to cover 15KHz to 25HMz in 4 bands. Metal cabinet 12 x 9 x 5. $50.00.

Signal generator, military type TS-419. Covers 900 - 2100MHz. Calibrated output att. Pulse and CW. $110.00.

Raytheon xmtr approx. 2300MHz. Complete unit with magnetron, HV & fil pwr. supply variac controlled, timer, % pwr. meter, blower etc. Co-ax output. For the experimenter?? $20.00.

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Receiver WW11 BC969A. Covers 15KHz-150KHz in 4 bands. Requires pwr. supply 12VAC & 250DC. Size 12 x 19 x 14 deep. $35.00.

Receiver made by Canadian Research Enterprises. Canadian WW11 equivalent of the BC1068 radar rcvr. Olive drab paint job. Built in AC pwr. supply. Tuneable in area of 175MHz. $10.00.

Radar set, WW11 Type SCRL43. Olive drab paint job. Consists of 4 ft. FM80 rack, BC1293A control drawer, 1221A indicator drawer, BC1267A xmtr/rcvr drawer and pwr supply drawer RA105A. Pwr supply & xmtr/rcvr basically complete. Indicator & control unit have been cannabilized at sometime about 5% & 75% respectively. Appears to be 1943 vintage or earlier. $50.00.

Signal generators, HP Model 606A. Covers 50KHz to 65MHz in 6 bands. Cal. output 0.1uv to 3 volts. AM & CW. Cabinet style 20 x 12 x 15 deep. With copy of manual. $200.00.

Signal generator, Polarad 1108 covering. 6.95 to 11 GHz. Three place mechanical digital tuning. Variable output attenuator. Size 5 x 17 x 19. Wt 50 lbs. $180.00.

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Parallel printer, Centronics Model 306C. On floor stand $150.00.

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XY plotters, HP Model 136AM, 2 pen metric. Electrostatic hold down. 11 calibrated ranges 0.2 to 20 V/cm in 11 ranges. Size 14 x 18 x 6 high. Table top model with accessory kit 136A and manual. $200.00.

XY plotter, HP Model 7201A-002. Electrostatic hold down. Table top style with operators manual. Accepts IBM Communications Terminal at 14.8 characters (EIA RS232). $275.00.

Keyboard display units, Decscope Model VT52AA. Table top version, 11" diagonal CRT. $100.00.

Receivers, Collins VHF aircraft Type 51X2. Covers 108 to 135.95 MHz in 50KHz steps. Size 8 x 4 x 14 deep. Wt approx. 12 lbs. $25.00.

Transmitters, Collins VHF aircraft Type 17L7. Covers 118 to 151.00 MHz in 50 KHz steps. Uses 6884 tube in final, also has BNC coax relay for antenna. Weight 15 lbs. $25.00.

Sony TV camera Control Unit, Model DXC 1600. Size 7 x 6 x 13 deep. Solid state. $25.00.

Sony TV camera AC colour adaptor Model AC3000. Size 7 x 6 x 13 deep. Solid state. $18.00.

Sony TV camera AC adaptor Model AC1600. Size 7 x 6 x 13 deep. Solid state. $14.00.

Signal Generators, HP Model 608E. Covers 10 to 480MHz, AM/CW, calibrated RF output. Table cabinet size 13 x 16 x 21 deep. $200.00

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Transmitter HF exciters, Racal Model MA 7917B. Selection of LSB/USB/ISB with choice of AM/pilot/suppressed carrier. Built in sideband test tone facility. 6 channel capability. Rack mounting, size 19 x 3-1/2 x 16 deep. Solid state. $75.00.

Oscilloscope, Benrus Model RA840A. Solid state XY type, square crt approx. 1-1/2 x 3. Overall size 5-1/2 x 3-1/2 x 14 deep. With cables. $75.00.

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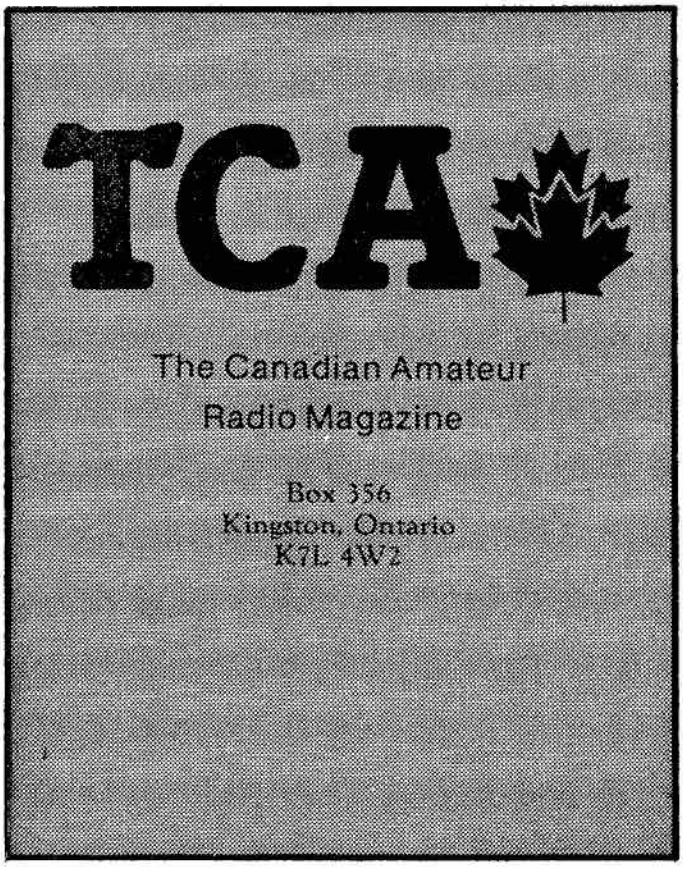

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TCA

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Please address correspondence to the Editor at Box 855, Hawkesbury, Ontario K6A 3C9, telephone 613-632-9847.

COVER

Buffalo! Harbingers of another Western *TCA*. Thanks to Norm VE6VW for doing so much of your editor's work for him this month. Hope you enjoy it as much as he does.

QUA CARF

The 86% Solution

The 'press-run' for the May 1985 issue of *VE6* magazine was 2,025 copies. Discounting about 30 that go out of the province and about another 20 for overlap— where-in an Amateur in Alberta may have received two copies because he is the holder of a repeater licence, gives us total of roughly 1,975 Amateur Radio Operators in VE6 Land. Of this total our membership in May was 281!

ARLA's objectives and endeavors are published monthly on the last page. They are for ALL Alberta Radio Amateurs, to recap:

ARLA was the founding organization in the formation of the Canadian Amateur Radio Federation (CARF).

ARLA offers financial assistance to groups establishing 2 metre repeaters in areas not served by a repeater.

ARLA has a VHF Advisory Committee to offer advice and assistance for 2 metre problems.

ARLA represents Alberta Amateurs at the DOC and CARF in all matters of a provincial or national concern.

In other words 14% of the Amateur Radio Operators in Alberta work hard and diligently for ALL the Amateur Radio Operators in Alberta. We know we are good! but just a little help in the form of joining ARLA would go a long way in supporting the League. Just think what it would be like if the percentage ratios were reversed and the 14%ters were the 'free riders.'

I hope this is more symptomatic than real— else I would hate to be Jack Ravenscroft VE3SR— awaiting help from apathetic, lethargic VE6 Land. Seems the expression from WWII "Let George do it" is still apropos!

73, Dave Roberts VE6XY

Δ

Pareto's Law

Pareto's Law tells us that in any organization, 80% of the work is done by 20% of the people. (No, Mark, I am not making this up. Vilfredo Pareto was an Italian engineer who turned to the study of economics and of 'indifference curves.' Pareto's Law is of startlingly wide application.)

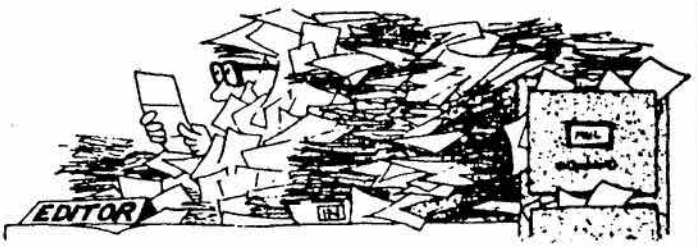
In any machine, 80% of the trouble is caused by 20% of the parts. Think back to your schooldays: of every five teachers one was a prince (or princess), three were so-so, and one was a stinker. That's Pareto's Law.

So don't be surprised that only 14% of Alberta Amateurs support their provincial organization. True, the proportion is a little low, and you may well, with a little luck and a lot of effort, bring that up to 20.

TCA is written for *all* Amateurs. So, for the 20% at the *other* end of Pareto's scale, here are the rules to follow (from *Canadian Executive* Magazine): (1) Stay away from meetings. (2) If you do come, find fault. (3) Decline office or appointment to a committee. (4) Get sore if you aren't nominated or appointed. (5) After you are named, don't attend board or committee meetings. (6) If you do get to one, clam up till it's over. Then sound off on how things should have been done. (7) Do no work if you can help it, and when the Old Reliables pitch in, accuse them of being a clique. Oppose all new programs as being a waste of members' money. (9) When nothing new happens, complain that the officers are a bunch of old sticks. (10) Read mail from headquarters only now and then. Don't reply if you can help it.

—VE3DQB Δ

LETTERS



RAMBO, EXTRA CLASS

After operating daily on a frequency of 3758 KHz, for more years than many of its present members can remember, the British Columbia Public Service net has been forced to move.

This move, from its traditional, long established frequency, was brought about by extensive QRM from U.S. stations, much of it deliberate.

Net Manager Ford VE7DDF, called for a vote on the matter during the week ending Oct. 12 and the results were an overwhelming 165 in favour of moving and only 60 opposed to the proposition.

During this past week I called, via telephone, two W5's who were causing havoc on the net. The first one readily acknowledged that he could hear the net activity when he fired up his rig, but as that was the frequency he and his friends monitored, he went ahead and called anyway. When I suggested that he could do the more than 200 members of the net a big favour by QSYing, he responded by saying that, as his friends had not answered after 30 minutes of calling he was going to QRT anyhow. The following day, Friday, Oct. 11, the station that was being called the previous day was on and calling the original W5 station, along with several others. I telephoned him and made the same suggestion that he should QSY. He too acknowledged that he heard the net, in fact the net was causing him some QRM, but, as he said, he and his friends lived only a few miles apart and they were all running sufficient power that the QRM was easily being overridden. His response to my request to QSY was, "This is the frequency I have chosen to operate on, I have every right to operate on this frequency and I have no intention of moving." To say the least, I was very surprised at his hostile reaction.

When I reminded him that it was contrary to FCC rules to cause deliberate interference, he told me that he felt sure that neither he nor the FCC had the slightest interest in whether or not he was causing interference to "a bunch of foreigners."

As it was becoming obvious that the only thing I was going to accomplish with this phone call was to increase my indebtedness to the telephone company, I terminated the call.

I regret now, in hindsight, that I had not taped this telephone conversation. I would have loved to be able to publish a certified transcript here in *TCA*, as well as sending copies to the ARRL and their Canadian clone, the CRRL. I wonder what sort of reaction, if any, it would have elicited from either organization.

Of course this move down to 3729 kHz will cause a problem for many American novice operators, and that is most regretful, but they have only their own ARRL to blame for the situation.

By the way, I might point out, this deliberate, malicious QRM is being caused by EXTRA class operators, the alleged 'cream' of U.S. Amateur operators.

I have also noted increased incidence of interference on the Trans-Canada net, and with those attempting to pass traffic off the net frequency. With American phone stations pressing us from the top, and American teletype and CW stations moving up above 14.100 kHz, it is becoming increasingly difficult to conduct traffic handling on 20 metres at all.

At one time, in the dim past, we used to refer to the "Gentlemen's Agreement" as almost a sacred obligation. One would no more think of breaking this voluntary agreement than one would think of breaking the regulations. It is now distressingly obvious that, insofar as this elite class of U.S. operator is concerned, we are no longer dealing with gentlemen.

I certainly won't pretend to know what the answer to this question is. Moving down to the traditional Novice Band is not the response that I would have liked to have seen, but on the other hand I am at a complete loss as to what other solution could have been used. It's just too darn bad that the U.S. novice must suffer because of the arrogant attitude of an allegedly superior class of operator.

Here's a new word for you that seems to describe the situation pretty accurately. ALLOPATHY— (Gr. allos, (other) and pathos (morbid condition). That method of treating disease by which it is endeavored to produce a condition of the system different from, opposite to, or incompatible with the condition essential to the disease.

Moving away from the source of interference to an area where you may be causing interference to others who did not previously experience that type of interference certainly seems, to me, to fit the description of allopathy.

The B.C. Net certainly covers a very wide area of this country, from Victoria to Regina and beyond and from the north-western States to well north of Prince George. A lot of traffic is handled on this well run net. It is certainly regrettable that this fine net has been forced to move from its traditional frequency down into what has traditionally been novice territory.

Ford VE7DDF, Net Manager of the British Columbia Public Service Net,

SILENT KEYS

I'm sorry to announce to you the death of Georges H. Imbeault VE3KHI. Yours truly, Pierre Imbeault.

It is my sad duty to inform your readers of the recent passing of our good friend and fellow ham, Vern Bower VE1CAQ of Wolfville, N.S. Vern had been ill for a number of years, but always was a cheerful voice on a number of local repeaters in spite of his obvious progressing disease; indeed, Vern even served as Secretary-Treasurer of our Club until his deteriorating condition forced his resignation. My thoughts go back to our March meeting when Vern had made elaborate plans to attend largely because of our special speaker that night, Doug Conrad VE1ZL. Our hearts ached for Vern when it became obvious that he would not be able to attend the meeting because of a sudden downturn in his condition. When in Halifax hospital, his handheld was always by his side, and the local hams listened eagerly for his signal on 2 metres. Thankfully the end, when it came, was fairly swift. His call and voice have been sadly missed on the air. He was a credit to our club and ham radio.

73, Lysle VE1BZE

invites all Canadian Amateurs, phone and CW, to check into the B.C. Net on their new frequency, 3729 kHz between 0200Z and 0300Z daily. The net, quite typically, has 150 plus checkins nightly.

In closing, for the history buffs, I will add that this is the second time in the history of the net that it has been forced to move. The original net frequency, 3775 kHz, was swamped by TV birdies and the net was forced to move to 3758 kHz.

In closing, I would also like to extend an invitation to all to listen out for, and to check into, the Alberta Public Service Net, meeting on 3772 kHz daily at 0130Z.

Again Frank, it was a pleasure having the opportunity to chat with you today. I am looking forward to receiving the 'new look' *TCA*.

VY 73,
Fred VE6XX

MEXICAN TRAFFIC

On Sept. 26, 1985, VE4AEE handled eight pieces of traffic to Mexico City for an exchange student and on Oct. 1 located three cousins, presumed lost, for the same student.

He had been to Red Cross and a local TV station trying to find a way to make contact into Mexico City.

73, Cecil VE4AEE

There was a note in the last *TCA* that we should write in if we handled any Mexico earthquake traffic.

I, VE7BCU and Brian Curtis VE7OJ with the help of Peter Pel VE7DLM and the station of Rod Reid handled some 40 pieces for Mexican families in the Kamloops area. Most of the traffic was referred to us as my wife is Guatemalan and we speak Spanish at home. Brian spent literally a week and a half in front of the radio handling traffic.

Last night my wife and I were guests at a surprise dinner put on for us by the Kamloops Mexican community to say thank you for traffic handled. It was most gratifying since some of the people were in Mexico City at the time and were ones we had sent inquiries about— and we met them. It was most touching to meet people (a couple) who had started to cry when we passed the original message that their daughter visiting in Mexico was OK.

I do not want to appear like I am basking in the attention from handling earthquake traffic. We already did a presentation to the Kamloops Amateur Radio Club about the experience. It was a very powerful moving one; somehow the desperate pleading phone calls in the middle of the night had made this hobby so worthwhile.

Brian VE7OJ spent many hours communicating with the local Latin community. We are well known now, but the most rewarding thing was we were able to use our hobby for such good at a horrible time.

Rod VE7PR had just purchased a brand new linear amplifier, and gave us full use of his station, no questions asked; I would have been a little nervous myself.

Also, a toast to the Mexican traffic handlers who were superb and took a lot of abuse from the W's. I noticed the Spanish nets were much calmer and organized and handled larger volumes of traffic.

Enclosed are two newspaper articles— in these I put my name first because I had to give it a local flavour. In the Kamloops paper, we listed Brian first to give it a local flavour there.

73, y que Dios les tendiga!

—Dwight Morrow VE7BCU

P.S. Brian VE7OJ was on the TV and radio in Kamloops several times. He also advised Mexican Consulate in Vancouver when we had replies so the inquiries would not be retransmitted. D.M.

In response to your request for information regarding Amateur participation in traffic handling for the Mexican earthquake relatives of Canadians of Mexican origin, I am enclosing newspaper clippings from two local papers. I was fortunate in being able to obtain information for four different families here.

The real heroes and heroines were at the Mexican end of the traffic system for they did an enormous job. Fortunately, too, all of my requests for information brought good news.

73, Glen VE2AEQ

A BOUQUET

Congratulations on, what seems to me, to be a world class *TCA* magazine; I have enjoyed the last couple of editions immensely; I have always been gladdened by the sight of the magazine in my mailbox. I had hoped that the *TCA* executives had not been disheartened by the sometimes unfounded criticism levelled in the past; I am glad that this appears to be the case. Best wishes to all *TCA* staff.

73, Lysle VE1BZE

JUNIOR AMATEUR?

VE2AM's editorial appearing in *TCA* October was excellent. It shows that Amateurs are thinking of their hobby, and are willing to do battle to preserve it.

Another category of Amateur should have been created a long time ago, but I guess now is as good a time as any.

I'm not sure what the new category should be called, maybe it should be called Junior Amateur?.... Of course, the code requirement should be mandatory at level of, say, 7½ wpm.

The examination, which is mandatory, should be less stringent than the Amateur class which, I'm sure, would be worked out by the Federation and the DOC.

The exam process should be administered by Clubs, which would take some of the load from the DOC examiners, and, at the same time, hold the Amateur community more responsible. Privileges would be 80-10 metres CW only with phone, CW on VHF-HF frequencies and above.

After one year of operating the Junior class Amateur should have the right to sit for the Amateur class exam, and receive Amateur class status, but as a Junior class Amateur, he should not be compelled to up-grade.

I believe that the exam is too stringent for the younger people, and now, I think that this would be an incentive for them.

The notion that the hobby is dying, may be correct, and if so, it is not for the reason stated in the editorial. I think it is for different reasons.

I would have liked to discuss them here, but I will just say the major one is 'morale.'

I noticed that a number of Amateurs have become inactive, although they may maintain the licence; Amateur Radio has changed dramatically!

It is my sincere hope, that, if at all possible, Amateur radio would return to what it once was; not technically, but humanly.

73, Maurice Iness VE2ESK

PICIDAE

The Association of North American Radio Clubs has established a committee to address the interference problem created by over-the-horizon radars such as the Soviet woodpecker. The Chairman is: Robert Howitz, 1634-15th St. N.W., Washington, D.C. U.S.A. 20009.

I don't know how much weight they will carry with the Kremlin and the Pentagon but perhaps the radars could be operated in a way that causes least interference to other services.

73, Gordon VE3CSH

Not only the Soviets, the U.S.A., and Australia employ the odious system, and Britain and Japan will soon get them. Write the Chairman if you would like to help the committee. —Editor.

Radio Advisory Board of Canada

Many organizations concerned with the use of the radio spectrum belong to the Radio Advisory Board of Canada. Naturally, CARF is a member. As a member, CARF alerted the board to the possible consequences of Ravenscroft case.

Discussion Paper

A restructuring of the Amateur Radio Service

The proposal from DOC

Here is the DOC's proposal for the changing of our regulations to bring our certification procedures up to date.

We have until May 1986 to comment to DOC about these proposals. They ask that you send them your comments. What they are looking for is an individual, reasoned reply; they won't be much interested in comments like: "I like it," or "I don't like it."

Whether you agree with their proposals or not, you will surely agree that the Department has produced a rational document, after a most careful study of the problem.

Introduction

Over the years, Amateur radio operation has benefited from continuous developments in technology. By periodically amending regulations and updating the content of examinations for operators, the Department of Communications (DOC) has kept pace with these gradual changes. However, the rate of technological change has recently accelerated, and public interest in electronics, specifically high technology, has increased. This necessitated a review of the current structure of Amateur certificates with respect to today's environment and the associated knowledge requirements.

Officials at DOC recently completed a review of the development of the Amateur radio service in Canada, from its inception to the present, along with a review of structures in other countries. This paper provides a summary of their findings.

History and Development of Amateur Radio Operator Certification in Canada

In Canada, Amateur radio was formally regulated for the first time in 1914. At that time, the examination of Amateur radio operators consisted of a simple inspection of the station and a Morse code sending-and-receiving test at a speed of five words per minute. In the early 1920s, examination procedures were formalized with a written test covering regulations and simple theory and a practical test evaluating the candidate's ability to properly adjust and operate the apparatus. In the mid-1930s, the on-site practical examination was replaced by a written test to verify the candidate's ability to draw, from memory, schematic diagrams of the equipment that he proposed to operate; an oral test on the function of the various components or stages used in the design of that apparatus; and an increase to 10 words per minute in speed of the Morse code test. Upon successful completion of the examination, the operator was issued an Amateur Radio Operator's Certificate, which permitted Morse code privileges on all the Amateur bands. After a period of operation and the passing of another series of tests (Morse code at 15 words per minute, plus more-detailed regulations and theory), the Amateur operator could have the certificate endorsed for radiotelephone operation.

In 1955, the procedure of granting this endorsement for full radiotelephone privileges was replaced by the issuing of an Amateur Radio Operator's Advanced Certificate.

In 1978, DOC introduced the Amateur Digital Radio Operator's Certificate, an innovation to encourage the certification of individuals whose primary interest was in computer-oriented communications. This was a departure from the traditional procedure where the only entrance examination available for a potential Amateur was through acquiring the Amateur Radio Operator's Certificate. Potential Amateurs, following the computer hobbyist route (obtaining this Digital Certificate), are now not required to take a Morse code examination because they conduct their experiments in the radio spectrum above 30 MHz. This is in accordance with ITU (International Telecommunication Union) Radio Regulation No. 2735.

During the consultation process leading to the Amateur Digital Radio Operator's Certificate, the possibility of introducing a novice-type certificate (with requirements similar to those in other countries that have this certificate) was also discussed; however, in the absence of a favourable consensus, the matter was not pursued.

Since 1979, the department has been offering three certificates for Amateur operation: (a) the Amateur Radio Operator's Certificate, (b) the Amateur Radio Operator's Advanced Certificate, and (c) the Amateur Digital Radio Operator's Certificate.

The examination for an Amateur Radio Operator's Certificate consists of:

1) a written multiple-choice test on radio regulations;
2) an essay-type examination on electronic theory; and
3) a sending-and-receiving Morse code test at 10 words per minute.

Holders of this certificate are permitted to use all types of emissions (radiotelephone, telegraphy, teleprinter, etc.— above 30 MHz but are restricted to Morse code (radiotelegraphy) operation below 30 MHz. After six months' experience, the holder of this certificate is eligible for an optional endorsement that allows radiotelephone operation in the bands 1.8 to 2.0 MHz (160 metres) and 28 to 29.7 MHz (10 metres), and frequency-shift keying emissions (teleprinter) in most of the high-frequency bands allocated to the Amateur service. After one year's experience, another optional endorsement is available for fast-scan television in the band 430 to 450 MHz.

After one year of experience, the Amateur is eligible to write an examination for the Amateur Radio Operator's Advanced Certificate. Although the examination for this certificate covers the same topics as the Amateur Certificate (that is, regulations, theory and Morse code), the depth of knowledge for the theory portion is greater and the Morse code test is conducted at a speed of 15 words per minute. This certificate permits the use of a full complement of emissions in the Amateur bands below 30 MHz.

Eligible applicants, whose primary interests are computer communications, may write an examination for the Amateur Digital Radio Operator's Certificate, which is a 'no-code' certificate (not requiring a knowledge of the Morse code). This

examination consists of three parts:

1) a multiple-choice test on the regulations (at the Advanced Amateur level);
2) an essay-type test on electronic theory (at the Advanced Amateur level); and
3) an essay-type test on digital communications theory.

Holders of this certificate are permitted to operate using a full complement of emissions in the Amateur bands above 30 MHz and, after one year's experience, are eligible to take a Morse code test, at a speed of 15 words per minute, to qualify for an Amateur Radio Operator's Advanced Certificate.

2. The Regulation of Amateur Radio in Canada

The Amateur service is governed by two sets of regulations pursuant to the Radio Act:

1) the General Radio Regulations, Part II, (GRR II); and
2) the Radio Operator Certificate Regulations (ROCR).

The GRR II defines the Amateur Service as:

"... a radiocommunication service for purposes of self-training, intercommunication or technical investigation carried on by persons who are interested in radio technique solely with a personal aim and without pecuniary interest."

The GRR II regulations govern:

1) the use of frequencies and emissions,
2) necessary qualifications of operators,
3) interference protection to other users of the radio frequency spectrum,
4) apparatus and technical characteristics of Amateur stations, and
5) general provisions such as identification procedures.

The ROCR specifies the examination requirements for obtaining radio operator certificates. The subject matter contained in these regulations is expanded upon in a syllabus for Amateur certification entitled "Information on Amateur Radio Operator Examination" (TRC-24). As indicated in this TRC (Telecommunication Regulation Circular), the examination is primarily technical in content. The emphasis on the technical aspects of the hobby is not due so much to the current nature of this service, but to its past history when Amateurs built their own stations.

Canadian Amateurs pursue their hobby in one of the most deregulated environments in the world. As Canadian Amateur licensees demonstrate that they can handle this deregulated environment with minimum day-to-day intervention from DOC, the department periodically revises the regulations to extend further privileges or delete restrictive provisions. In fact, the more than 23,000 radio Amateurs in Canada cause relatively few interference complaints and demonstrate noteworthy public relations and self-policing capabilities.

One of the major reasons for this is undoubtedly the existence of local, regional and national associations and clubs. These organizations provide excellent training courses for aspiring Amateurs, guidance for new operators, and remedial assistance to those operators who overstep the bounds of the regulations or good operating practices. Examples of these practices are the local television interference (TVI) committees that eliminate technical problems before they become complaints, and the "gentlemen's agreements" in current Amateur operating procedures. Through such agreements, Canadian Amateurs have developed their own frequency-band plans without the need for government regulation.

3. Amateur Certification Structures in other countries

DOC has collated information on Amateur certification from 16 foreign countries, and has observed that there is wide variation in the various structures; one nation offers two Amateur certificates, another offers five and the remainder range between those two figures. No other country issues an Amateur Digital Radio Operator's Certificate or equivalent.

Most administrations offer a 'no-code' certificate and, with one exception, permit operation under such a certificate only on VHF (Very High Frequency) and higher Amateur bands. In most instances, the written portion of the 'no-code' certificate is the same as that of the 'code' certificate and an Amateur may upgrade from a 'no-code' to a 'code' certificate simply by taking a Morse code test (in most cases at 12 words per minute). On successful completion, the Amateur is issued a certificate allowing full privileges.

Many administrations offer a 'novice' certificate. In most instances, the examination consists of a Morse code test at a speed of five words per minute and a simple theory and regulations test. The greatest differences appear to be in the privileges accorded to the novices. For the most part, novice operation is restricted to radiotelegraphy in small portions of the high-frequency Amateur bands and some operators are further restricted to using only crystal-controlled transmitters. On the other hand, some administrations grant VHF and even high-frequency radiotelephone privileges.

In general, most administrations have three levels in their certificate structure: novice, general and VHF-only. Flexibility for the individual is enhanced by the practice of permitting a candidate to select and write any level of examination. In most countries, it is not necessary for an individual to obtain prior operating experience at an introductory level in order to be eligible to write the examination for a certificate according greater privileges. Moreover, there is no evidence to indicate that other administrations follow an endorsement procedure similar to that contained in the Canadian regulations.

Finally, there does not appear to be consistency in the maximum power levels permitted for Amateur operation; levels range from 100 watts to 1000 watts d.c. input power to the final stage, with most being about 500 watts, and the majority of administrations increase the maximum power commensurate with the grade of certificate issued. Canada, therefore, appears to be one of the few nations that permits a maximum power of 1000 watts d.c. input regardless of the certificate held by the Amateur.

4. Current Issues

The primary interests of Amateurs in Canada include:

1) **public service**, which includes volunteering for Emergency Planning Canada, community events, disaster preparation and message handling;
2) **recreation**, which includes participating in Amateur radio contests, communicating with friends and acquaintances; and
3) **technical experiments**, which include designing and constructing equipment from magazine articles or kits, propagation studies and antenna experimentation.

There are many others, and Amateurs are not restricted to any one area. Amateur radio attracts enthusiasts from various backgrounds, with a wide range in level of interest or expertise in the technical aspects of Amateur radio. Because of this diversity, DOC has received suggestions for changes in a number of areas from both aspiring and existing Amateurs. Morse code and technical standards are frequently mentioned, with both support for and objections to current certificate requirements.

It is suggested, for example, that a Morse code test, especially for high-frequency operation (below 30 MHz), is irrelevant now that there are devices capable of transmitting and receiving Morse code automatically, and that the Morse code requirements be waived for candidates who will equip their stations with such devices.

Continued on next page ▷

However, it should be noted that Morse code testing is required by Canada's international obligations as a member of the ITU. We must therefore adhere to ITU Radio Regulation No. 2735, which states:

"Any person seeking a licence to operate the apparatus of an Amateur station shall prove that he is able to send correctly by hand and to receive correctly by ear texts in Morse code signals. The administrations concerned may, however, waive this requirement in the case of stations making use exclusively of frequencies above 30 MHz."

Because technology is advancing so rapidly, DOC must update the examination content more frequently and thus require a broader knowledge by candidates. In this respect, it has been pointed out that some aspiring Amateurs, particularly senior citizens, have not had any recent formal education and are at a disadvantage in attempting to absorb the amount of material necessary to pass the technical examination. Comments received state that the technical content of the examination is inappropriate for those whose primary aim is to communicate, and that the traditional role of the Amateur as a designer and builder of stations is no longer the primary activity. At present, Amateurs seem to be increasingly engaged in public service and recreational communication activities using commercially manufactured and serviced equipment.

The incorporation of computer technology into Amateur activities has hastened this change in role. As a result, today's Amateurs have the opportunity to operate stations that are smaller, more stable, reliable and versatile than those of 10 years ago. In addition, there is heightened interest in radioteleprinters, AMTOR (AMateur Teletype Over Radio), machine-generated Morse code and packet radio communications. The increasing use of digital technology by Canadian Amateurs is attributed less to the availability of the Digital Certificate than to affordable personal computers. In fact, there is a similar increase in the use of computers in Amateur radio in countries where there is no equivalent to Canada's Digital Certificate. To date, only 50 individuals have entered Amateur radio via the computer hobbyist route; that is, they took the examination and obtained the Amateur Digital Certificate. DOC statistics show that approximately 75% of the 198 Digital Certificates issued since 1978 were to individuals who already held another Amateur certificate.

Amateurs and their associations have stated that newly certified Amateur operators do not have sufficient knowledge of correct operating procedures and practices, and that the examination pass-rate is too low. This low pass-rate may be attributed partly to the practice of granting candidates one year's credit for any successfully completed portion of the Amateur examination (Advanced Amateur examination credits are valid for life). Although this practice may have some merit, it tends to encourage individuals who are not sufficiently prepared to repeatedly try the examination. Nevertheless, this does indicate that too much emphasis may have been placed on the technical aspects and not enough on the operating portion of the examination.

5. Proposals for Restructuring the Amateur Service

Based on the foregoing, DOC wishes to respond to the comments of both existing and potential Amateurs. In so doing, any proposal that the department might implement must:

1) conform with the provisions of the regulations made under the International Telecommunication Convention;
2) not increase demands on departmental resources and, if possible, reduce these from the present level;
3) provide maximum benefit to an optimum number of qualified applicants, thereby encouraging radiocommunication skills; and
4) wherever possible, institute a general policy of deregulation that retains or enhances the role or Amateur organizations.

With a view to meeting present and future requirements and in light of the foregoing, the Department offers for comment a proposal to restructure its examination requirements by eliminating endorsements and the current certificates. In lieu thereof, a structure consisting of three certificates is proposed:

1) Certificate 'A'—
certifying an individual to operate a basic modern Amateur station (privileges accorded above 30 MHz only);
2) Certificate 'B'—
certifying an individual (who also holds Certificate(s) 'A,' or 'A' and 'C') to operate below 30 MHz (Morse code test);
3) Certificate 'C'—
certifying an individual (who also holds Certificate(s) 'A,' or 'A' and 'B') to construct and operate any station or to be the licensee of a repeater or other non-standard station.

5.1 Detailed Proposals

The examination to certify a candidate for the operation of a basic, modern Amateur station (Certificate 'A') would consist of:

1) installation and operation of modern Amateur stations; including proper interpretation of meter readings such as Automatic Limiter Circuit (ALC) and Standing Wave Ratio (SWR) and the adjustments necessary to prevent interference; proper grounding techniques; and correct installation practices from transceiver to antenna, including auxiliary devices such as low-pass filters and antenna tuners;
2) basic electronic theory, safety practices when working with simple circuits; tracing and correcting interference problems such as audio rectification and receiver front-end overload;
3) antenna and propagation theory, including types of antennas, feedlines and characteristics of propagation phenomena; and
4) international and domestic regulations applicable to the Amateur service.

It is estimated that approximately 40 hours of instruction would be required to obtain the basic knowledge necessary to pass this examination. Successful candidates would be issued Amateur Certificate 'A' and would have the following privileges and restrictions:

1) the transmitter portion of the station, from the microphone or keying input of the transmitter to the final output, would have to be commercially built and marketed specifically for use on the Amateur frequencies. All other components of the station, such as the receiver, filters, antennas, computer interfaces, etc., could be home-built;
2) no emissions would be permitted below 30 MHz, but all would be permitted above 30 MHz;
3) stations would be limited to a maximum power input of 250 watts d.c.; and
4) licensees would be limited to operating stations under their physical control, but not repeaters or remote base stations.

The examination to certify a candidate for operation in the spectrum below 30 MHz (Certificate 'B') would consist of a Morse code examination at a speed of 12 words per minute.

Successful candidates would receive Amateur Certificate 'B' and, providing they held Certificate 'A,' would operate under the same conditions as those granted by that certificate, except that they would be allowed all types of emission on any Amateur band.

The examination to certify a candidate to construct and operate any station or to be the licensee of a repeater or other non-standard station (Certificate 'C') would consist of:

1) advanced electronic theory, to

augment that required for Amateur Certificate 'A,' with a degree of difficulty somewhere between the present Amateur and Advanced Amateur Certificates.

This would accommodate the many Amateurs who are more technically oriented and wish to construct their own stations. Successful candidates would be given Amateur Certificate 'C' and, provided they held Certificate(s) 'A,' or 'A' and 'B,' would be permitted to:
1) construct their entire stations;
2) sponsor and operate repeaters and remote base stations; and
3) operate their stations with a maximum of 1000 watts d.c. input.

5.2 Implementation

Candidates writing examinations under the above-proposed structure would be allowed to write any or all of them at one sitting. However, the minimum qualification for a station licence would be Amateur Certificate 'A.'

Existing Amateurs holding either an Amateur Radio Operator's Certificate or Amateur Radio Operator's Advanced Certificate would be deemed by regulation to have all the privileges of the three proposed certificates, and those holding the Amateur Digital Radio Operator's Certificate would be deemed to have all the privileges for Amateur Certificates 'A' and 'C.'

6. Public Comments

Given the nature of these proposed changes, DOC wishes to obtain input from all interested parties. In framing comments on this discussion paper, the following list of questions may be helpful. However, comments need not be restricted to these points.

1) Are there other significant factors that may affect this proposed structure? If so,
   (a) How could the proposed structure be improved? or
   (b) What are your suggestions for a new structure? Please give a detailed description.
2) If you are an aspiring Amateur, would this new structure encourage you to become an Amateur? Why?
3) If you are currently an Amateur radio operator, would the proposed structure better reflect your normal operations and the equipment used in your station?
4) What would be the effects upon Amateur radio in the future if this structure were implemented?
5) Would this proposed structure accommodate special-interest groups or should the department consider the retention and extension of certificates like the Amateur Digital Radio Operator's Certificate?
6) Would Amateur radio in Canada benefit from the introduction of a novice certificate?
7) If you feel positive about question 6, how could a novice certificate be accommodated within the proposed structure?

The department invites comments from all those interested in Amateur radio. Persons wishing to comment may do so in writing before May 15, 1986 to:

The Director General
Radio Regulatory Branch
Department of Communications
300 Slater Street
Ottawa, Ontario
K1A 0C8

Mark envelope: DOS-PR. △

SWAP SHOP

FOR SALE: Radio College TV service manuals #1 thru #176— Excellent shape— $250 or best offers— Bill VE3NXK 416-792-7204.

FOR SALE OR TRADE FOR HAM GEAR: Marconi CR91-A all band RX, plus TMC SSB Adapter Model GSB-1 c/w manuals, S Meter, speaker $300.00 OBO for both. HRO, black case, speaker, PSU, full set of coils from 50 kHz to 30 MHz incl. four band spread. In good working order, unmodified. Price $200.00 OBO. Solid state brief case direction finder made by Telefunken. Complete with all coils, manual, wristwatch 'S' meter, loop antenna, etc. Very suitable for clandestine location of illegal TX or any TX using CW, SSB or AM. Will consider swap or cash for any or all of the above. S.T. Chisholm VE7KZ, 10327 Bowerbank Rd., Sidney, B.C. V8L 3L2.

WANTED: F 455FA-05 500 Hz Collins Mechanical CW Filter; F 455FA-40 4000 Hz Collins Mechanical AM Filter, George McKenzie VE2YE, 1540 Du Mont, St. Bruno, Quebec J3V 4L5, Phone (514) 653-2288.

LOG/DUPESHEET software for your Apple II+/c/e computer. One keypress to see callsign list. 500 QSOs per band. Fast sorting. Prints logs and dupesheets. Will not allow dupes in contest log. Diskette $25.00 VE3GN, 298 Warden Avenue, Scarborough, Ont. M1N 3A4.

FOR SALE: High power Linear, 2 x 8877, all vacuum capacitors and relays. All components overrated, Floor model, very heavy. $2500— pick-up only. Model Robot 800, RTTY, CW, Slow Scan with manual and cables $275. Eric VE3CTP, 416-291-0088.

FOR SALE: SB104A (xcvr) + PS + speaker, 400 cycle CW filter, all FT mode $475.00; Ten Tec VMNL V series B xcvr (160-10m), all filters, + PS (252MO) $695.00; FT 290R 2 metre multi-mode rig + nicads + charger + Mutek pre-amp. $490.00; 432 mc xvter, 28 m.c. IF, 10 watts out, v.c. receiver, Modular Electronics design, $125.00. D. Butcher VE1LT, RR 2 Porters Lake, Nova Scotia B0J 2S0, 1-902-435-7285.

WANTED: 40 to 50 ft. crank down or tilt-over Ham tower in good condition. Les Nelson, 81 Marlborough Rd., Guelph, Ont. N1E 3X9. (519) 822-1975.

FOR SALE: Yaesu FT-221R Multimode 2 M transceiver, mint condition, $300. Doug Wismer VE3EHC, 18 Sheldon, Kitchener, Ont. N2H 3M2. 519-579-0536.

WANTED: Information, schematic, software to up-date Macrotronics Terminall T2 used with Apple II Plus for AMTOR. A. Robinson, 20378 41 Ave., Langley, B.C. V3A 2Z4.

SACRIFICE: HW-101. 400 Hz Filter. PS-23 AC Supply. HP-13B DC Supply (New— never used). Heathkit Mobile Mount (New— never used). Johnson Desk Mike. Armaco Mobile Mike. Realistic DX-160 Receiver. Speaker. All excellent. Package deal $500.00. Norman A. MacLeod VE7KY 415 El Carlo Road, Kelowna, B.C. V1X 2R5. Telephone (604) 765-7179.

FOR SALE: VHF Uniden AMH-350 Xcvr, 30 Watts O/P. 142-174 MHz, covers Car Telephone Freqs/Alberta Telephone Freqs PLUS up to 23 additional programmable channels with or without CTCSS using a separate entry keypad. Unit is Microprocessor controlled. Has Scan and priority capability. Outscan. Horn & Home Options. Unit could be used for Car Telephone/Amateur & Commercial Freq use. Complete with Programming Keypad, Service Manuals and Programming Instructions. Price $600.00 (I'll ship) Anything less, You pay shipping OR would consider TRADE for Daisy Wheel Printer (Centronics Compatable). Norm Freidin VE3CZI, 42 Lesterwood St., Hamilton, Ontario L8V 4P5. (416) 388-9813.

Send your 'Swap Shop' notices to the TCA 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.

QUA CARF

Annual General Meeting

June 15, 1985, Park Lane Hotel, Ottawa

Meeting opened at 9:35 a.m. by President, Ron Walsh VE3IDW.
Comments re: guidelines for meeting. Welcome.
Previous AGM minutes presented for approval.
Motion: Geoff Smith VE3KCE: "acceptance of minutes."
Seconded: John Iliffe VE3CES.
Comments: The tape recording from the previous meeting is blank on two seconders. It was determined that Geoff Smith VE3KCE is the seconder for one motion, the other remains unknown.
Carried.
President's report was tabled and read by Ron Walsh VE3IDW.
Motion: Ron Walsh VE3IDW: "acceptance of President's report."
Seconded: Geoff Smith VE3KCE.
Carried.
Motion: Doug Burrill VE3CDC: "to thank Ron for taking over as President."
Seconded: Frank Hughes VE3DQB.
Carried.
Ray Perrin VE3FN, noted that he was attending as a CRRL observer, and thanked CARF for the opportunity.
Treasurer's report and Auditors' report. (Lorna Hill VE3IWH)
Motion: Lorna Hill VE3IWH: "that the Canadian Amateur Radio Federation financial report for '84 be accepted."
Seconded: Francis Salter VE3MGY.
Carried.
Motion: Lorna Hill VE3IWH: "that the annual report for CARF Publications Ltd. for 1984 be accepted."
Seconded: Francis Salter VE3MGY.
Carried.
Selection of Auditors for 1985
Motion: Ron Walsh VE3IDW: "that the Canadian Amateur Radio Federation ask Bernice Burdsall VE3NB, and Wilf Hill VE3ICQ, to continue as Auditors for the following year."
Seconded: Geoff Smith VE3KCE.
Carried.
General Manager's Report. (Verbal)
Motion: Geoff Smith VE3KCE: "a formal vote of thanks to Ms Hill and Ms Norman and associates for the way in which order has been brought out of chaos."
Seconded: Ron Walsh VE3IDW.
Carried.
Changes to By-Laws and Regulations. Four motions arising from private Board of Directors Meeting prior to AGM.
Motion #1: John Iliffe VE3CES: "the President be appointed as a 'Director'."
Seconded: Geoff Smith VE3KCE.
Carried.
Motion #2: John Iliffe VE3CES: "that the Ottawa and Kingston Committees be abolished. Other committees must have their mandates reviewed at the AGM each year."
Seconded: Bruno Molino VE2FLB, and Mailes Dier VE3AP
Carried.
Motion #3: John Iliffe VE3CES: "expenses must be approved in advance, i.e. budgeted, by the Directors at an AGM or via telephone or other means and the General Manager as to the availability of funds."
Seconded: Francis Salter VE3MGY.
Discussion: major objections.
Motion: Barc Dowden VE3TT: "this motion be tabled, re-worded, and brought back at the next executive meeting."
Seconded: Bruno Molino VE2FLB.
Carried.
Problem: John Iliffe VE3CES: "adjustments to by-laws, etc., can only be agreed to at an AGM, and can be tabled to next AGM only."
Re-discussion of original motion.
Decision: President, Ron Walsh VE3IDW: "to re-convene discussion of original MOTION #3 later in the meeting."
Introductions
Ralph Cameron VE3BBM.
Ralph will be relieving Barc Dowden VE3TT of some of the duties in the Ottawa area. (RABC; EMI Committee for CARF; CARF Rep. for CSA/EMI Committee) Barc will be a back-up for Ralph.
Gary Warren, Legal Counsel
Update, Hamtraders Suit:
Don Slater VE3BID informed group that we are hopeful for dropping charges and countersuit. We are "sitting on things for the time being."
Adjourned for Coffee Break.
Meeting re-convened.
Motion: Ron Walsh VE3IDW, on behalf of Barc Dowden VE3TT: "that Ralph Cameron VE3BBM be approved to take over the Chairmanship of the CARF EMI Committee and our representative to the Radio Advisory Board of Canada."
Seconded: Mailes Dier VE3AP.
Carried.
Radio Advisory Board of Canada Report.
Thank you to CARF for support from Ralph Cameron VE3BBM, on behalf of the Ravenscroft Case.
Re-convened discussion of MOTION #3 from earlier in meeting.
Motion #3
Reworded: John Iliffe VE3CES: "Expenses must be approved in advance, budgeted, by the Directors at an AGM or via telephone or other means and the General Manager as to the availability of funds. It is anticipated that this by-law will be modified as necessary from time to time by the Board of Directors in accordance with the then existing financial condition of the Federation."
Seconded: Bill Carew VE3MEW.
Carried.
Motion #4: Withdrawn by John Iliffe VE3CES, in accordance with Lorna Hill VE3IWH, General Manager.
President, Ron Walsh VE3IDW requested that the balance of items from Norm Waltho VE6VW, left over from the Board meeting, would be covered at the next Board meeting and could be covered under "Directors at Large." Norm Waltho VE6VW agreed, and items were held for later meeting.
Committee Reports:
DOC Liaison: Art Stark VE3ZS.
Publications: John Iliffe VE3CES.
Update on 'Tapes for Blind.'
Motion: John Iliffe VE3CES: "acceptance of publications report."
Seconded: Ron Walsh VE3IDW.
Carried:
TRC-24:
Bill Roork VE3MBF, (not present).
President, Ron Walsh VE3IDW, would: "Particularly request it to be in the minutes that he would like to compliment Bill and his committee on the work they have done."
QSL Service: Jean Evans VE3DGG.
Adjournment for lunch and Official Photographs.
Meeting re-convened.
—Emergency Communications Report: Ken Kendall VE3IHX. Report not available.
—International Affairs: Bruno Molino VE2FLB.

QUA CARF

Our Certificate of Thanks

Do you know anyone who instructed an Amateur radio class last fall? If you do, please let Debbie know, for they surely deserve one of these certificates.

Write Debbie at Box 356, Kingston, Ontario K7L 4W2.

—Contest Report: Norm Waltho VE6VW.
Authorization was given to Norm Waltho VE6VW to purchase 'logo plate' for CARF plaques.
—Canadian Repeater Advisory Group: Cary Honeywell VE3ARS. Report presented by Doug Burrill VE3CDC, in Cary's absence.
—CARF 1985 Symposium Report: Bruno Molino VE2FLB.
—VE3VCA Report: Ron Walsh VE3IDW.
Introduction:
Gordon Murray VE3JSJ: Parks Canada Report.
Jack Ravenscroft update: Doug Burrill VE3CDC.
Motion: Doug Burrill VE3CDC:
"that CARF make a donation of not less than $100.00 to the Jack Ravenscroft Susceptibility Defence Fund after the President has discussed the matter with the President of CRRL with the objective of ensuring that the amount donated by each organization is the same in order to forestall criticism of this action."
Seconded: Art Stark VE3ZS.
Motion withdrawn before it was put to a vote.
Motion: Ron Walsh VE3IDW:
"that we approve George Morgan as the person in charge of 'affiliate clubs'."
Seconded: Doug Burrill VE3CDC.
Carried.
Frank Hughes VE3DQB suggested that: "CARF send a Certificate of appreciation to instructors of new and advancing Amateurs, signed by the President." It was suggested that the Certificate should be publicized.
Motion: Norm Waltho VE6VW:
"that the Saskatchewan Amateur Radio League (SARL) be approached to run the '87 Symposium."
Seconded: Geoff Smith VE3KCE.
Carried.
Update on 'Electronic Mailbox': Mailes Dier VE3AP.
Business from the floor:
—Comments and plaque from Scarborough Radio Club in appreciation of CARF at flea markets. (John Iliffe VE3CES.)
Motion: Don Slater VE3BID:
"that the 1985 AGM be adjourned."
Seconded: Bruno Molino VE2FLB.
Carried.

Try these/Essayons

21. Which of the following statements is false?
When an emergency situation exists, the operator of an Amateur station may use his station to communicate
a) any type of message for himself.
b) any type of message on behalf of third parties.
c) any type of message without any form of remuneration.
d) any type of message so long as he uses secret code.
21. Lequel des énoncés suivants est faux?
En cas d'urgence, l'opérateur d'un station de radioamateur peut utiliser sa station pour communiquer
a) n'importe quel genre de message pour lui-même.
b) n'importe quel genre de message au nom de tierces personnes.
c) n'importe quel type de message sans accepter aucune sorte de rémunération.
d) n'importe quel type de message pourvu qu'il utilise un code secret.

What does regulation 64.5 require?
Que demande la regulation 64.5?

Answer/Réponse:
21. d
The licensee of an Amateur station shall notify the Department of any change in his postal address.
Le titulaire d'une licence de station d'amateur doit aviser le ministère de toute changement d'adresse postale.
And while you're about it, let Debbie know, too: Box 356, Kingston, K7L 4W2.
En avise-toi Debbie, aussi. B.P. 356, Kingston, K7L 4W2.

For TCA Subscription problems, call the Kingston office *613-544-6161* anytime.
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NEED A SPEAKER?
Clubs within driving distance of Newmarket Aurora: If you need a speaker for a meeting, a CARF presentation on Printed Circuit Boards, give CARF a call!

Need a project for 1986? Try for the CANADAWARD!

Mexico

Amateurs serve world-wide

The burden of communication with earthquake-ravaged Mexico was carried by numberless Amateurs. Here is a report on the activities of a few Montrealers in that disaster.

Translation of Jean Paul Rabouan's Letter to the Ambassador.

To the French Embassy in Mexico.
Attention: His Excellency Mr. Bernard Bouchet, French Ambassador to Mexico. Mexico, October 1, 1985

Dear Sir,

May I in a few lines inform you of transmissions accomplished from September 19 to September 29, 1985.

1. Messages received:	2864
Messages sent:	3337
Total:	6201

2. Messages forwarded to 26 countries, most to France and Quebec.
3. Telephonic communication was at first accomplished on a single telephone line by my wife, aided later by my secretaries and by other helpful people using two supplementary telephone lines rapidly installed.
4. The radio transmissions were accomplished on the 14 MHz band using my Mexican Amateur call XE1BZK.
5. Equipment used:
ICOM 745-100 WHF transceiver
3 element antenna at 25 m.

I remain, Sir, your obedient servant,
Jean Paul Rabouan

MUTUELLE LEROY-SOMER
BOMBAS GUINARD
DE MEXICO, S.A. DE C.V.

AMBASSADE DE FRANCE A MEXICO
15 Havre. Col. Juárez

AT'N.: Son Excellence Mr. Bernard BOCHET
Ambassadeur de France au Mexique

NUESTRA REF:

SU REF:

ASUNTO:

Mexico, le 1er. Octobre 1985

Monsieur,

Par ces quelques lignes je me permet de vous rendre Compte des transmissions effectuées du 19/09/85 au 29/09/85.

1) Messages reçus : 2864
Messages transmis : 3337
T O T A L : 6201

2) Messages transmis dans 26 pays, la plus grande partie vers la France et le Québec.

3) Les communications téléphoniques ont été effectuées en premier sur une seule ligne téléphonique par mon épouse, aidée par la suite par deux de mes sécrétaires et du personnel bénévole (IFAL et particulier) avec deux lignes téléphoniques suplémentaires installées très rapidement.

4) Les transmissions radio ont été effectuées sur la bande radio Amateur 14MHZ avec mon indicatif méxicain de radio Amateur (XE1 BZK)

5) Matériel utilisé : Emetteur-Récepteur ICOM 745-100WHF
Antenne : 3 éléments à 25 m. du sol.

Restant à votre disposition, veuillez croire, Monsieur,à mes sentiments devoués.

JP Rabouan

Jean Paul Rabouan L.

BERLIN 95-60 PISO, COL. JUAREZ, 06600 MEXICO, D. F. TELS.: 598-05-13 / 598-09-56 TELEX 1779839 EPGME

(English begins page 29)

Réseau de communications d'urgence Mexico-Québec-France (RCUMQF)

By Frédéric VE2HAF

Du 19 au 30 septembre 1985, un réseau de communciations d'urgence entre les radioamateurs du Mexique, du Québec et de la France est mis sur peid et opéré par des stations canadiennes. En voici l'origine, la mise sur pied, le fonctionnement et le bilan.

Origine

Le jeudi 19 septembre, en soirée, je reçois un appel téléphonique d'Alicia LORIA et de Francisco MONTES, d'Oka, amis de longue date, qui me demandent si je peux entrer en contact avec les radioamateurs du Mexique, où se trouvent leurs familles, étant donné que tous les autres moyens de communications sont alors hors d'usage.

Sans tarder, je passe aux actes et contacte un ami, VE2RP, qui demeure relativement proche de chez moi. Cela va nous permettre de communiquer en direct sur THF. De plus, cet ami possède un bon équipement et maîtrise très bien la langue espagnole et la langue anglaise.

Entre temps, VE2RP reçoit lui aussi une demande d'amis mexicains de la région qui connaissent son intérêt pour la radioamateur. Nous unissons donc nos efforts et tentons en vain de rejoindre des stations mexicaines, de 22 heures à 3 heures le lendemain 20 septembre.

Nous reprenons nos activités vers les 10 heures (heure de Montréal) dans la bande des 20 mètres, puis, après quatre heures d'efforts, nous établissons contact avec la station

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CONSULADO GENERAL DE MEXICO

1000 OUEST, RUE SHERBROOKE, BUREAU 2215
MONTREAL, P.Q., CANADA
H3A 3G4

Numéro: 0669

Dossier:71-12/593"85"

Le 23 octobre 1985.

Monsieur Michael Masella
19, Pheasant
Dollard-des-Ormeaux, Québec
H9B 2T4

Monsieur,

Nous désirons par la présente vous exprimer notre plus sincère gratitude pour votre précieuse collaboration avec le Mexique à l'occasion du désastre sismique du 19 septembre dernier.

C'est seulement lors de catastrophes de l'étendue du tremblement de terre qui a frappé notre pays qu'il est possible de soupeser l'importance vitale des télécommunications et, par conséquent, il est possible d'apprécier l'aide clef que vous, comme radio-amateur, avez procurée au peuple du Mexique.

La tranquilité de nombreuses familles mexicaines et la réduction des heures de douloureuse attente a été atteinte grâce à la coopération des radio-amateurs qui, comme vous-même, ne se sont pas faits prier pour donner généreusement leur temps et leurs efforts jour et nuit. Pour votre collaboration solidaire et désintéressée pendant une période tellement cruciale pour nous, veuillez accepter la reconnaissance et la gratitude du peuple et du gouvernement du Mexique.

Nous vous prions de bien vouloir agréer, Monsieur, l'expression de nos sentiments les plus distingués.

Le Consul général du Mexique,

Rodulfo Figueroa

Translation of the Mexican Consul-General's Letter

Mr. Michael Masella.
Dear Sir— We would like by this letter to express our most sincere thanks for your invaluable help to Mexico during the earthquake disaster of Sept. 19 last.

Only during catastrophes of the magnitude of the earthquake that struck our land is it possible to gauge the vital importance of telecommunications, and, consequently, to appreciate the crucial help that you, as a radio Amateur, have provided to the Mexican people.

The peace of mind of many Mexican families and the shortening of their suspenseful waiting time was due to the cooperation of radio Amateurs who like you yourself, did not have to be asked to give their time and efforts, day and night, so generously. For your joint and disinterested collaboration during so crucial a time for us, please accept the thanks and the gratitude of the people and the government of Mexico.

Yours,
The Consul General of Mexico
Rodulfo Figuera

mexicaine XE1SY (LILIA) et qui achemine quelques messages pour nous. En retour, elle nous demande de prévenir plusieurs familles habitant le Canada, les Etats-Unis et l'Europe que leurs parents de Mexico se portent bien.

Bientôt, un autre amateur mexicain, XE1ALF, nous retrouve sur la même fréquence et nous demande d'acheminer pour lui plusieurs messages afin de rassurer d'autres familles vivant hors du Mexique.

Nous arrêtons nos communications à 18 h 43 et commençons une première série d'appels téléphoniques aux familles mentionnées dans les messages reçus. C'est ainsi que lors d'un appel chez madame LORIA pour la rassurer, elle me demande si je peux continuer le lendemain, samedi, à transmettre des messages pour le compte du comité AYUDA MEXICO nouvellement formé à Montréal. A la suite de ma reponse affirmative, on me livre une première liste d'environ 40 personnes a contacter.

La même situation se présente pour Pierre (VE2RP) qui, lui aussi, reçoit des demandes qui abondent dans le même sens. D'un commun accord, nous décidons de poursuivre et, le 21, à 11 h 37, nous contactons XE1OT, Alain, d'origine française et travaillant à Mexico. La ligne téléphonique d'Alain est défectueuse, mais il réussit à amener un ami, également d'origine française (XE1BZK— Jean-Paul RABOUAN), à se joindre au groupe.

Jean-Paul, aidé de son épouse Maryse et de quelques employés de sa firme, met sur peid tout un système de collecte de messages, d'appels téléphoniques à partir de son appareil et de cabines publiques, afin de répondre au plus grand nombre d'appels possible lui parvenant.

Entre temps, le consulat mexicain à Montréal communique avec monsieur John MARTIN MELVYN (V2EDC). Ce dernier transmet le numéro de téléphone de deux autres radioamateurs du Québec: VE2AM et VE2GBG; deux de plus qui se joignent à notre réseau.

Parallèllement, l'ambassade du Mexique à Ottawa prend contact avec VE3AUM; lui aussi se joint au réseau.

La grande efficacité du système téléphonique, mis en place par XE1BZX, fait en sorte que les demandes que nous avons pour le Canada sont très vite acheminées. Cependant, cette efficacité est aussi la cause d'un problème, à savoir: la constante sollicitation par les stations Françaises et Européennees, des conditions de propagation médiocres, la difficulté de se faire entrendre de Mexico, et le manque d'organisation et de discipline tardent à produire le rendement espéré.

Les stations du Québec sont bien situées géographiquement pour contacter à la fois le Mexique et l'Europe. De plus, elles ont une puissance plus grande que les stations européennes, donc, un meilleur confort d'écoute pour notre collègue du Mexique. On nous demande de rester en fréquence pour lui prêter main-forte en relayant les messages qui lui sont destinés. Avec le concours de VE2RP, j'improvise sur le champ un système de contrôle de réseau: mes antennes vers le Mexique, celles de VE2RP orientées vers l'Europe et une liaison THF entre nos deux stations.

Les opérations de ce samedi 21 septembre se terminent à 20 heures (heure de Montréal) et un rendez-vous est donné pour le lendemain avec Jean-Paul (XE1BZK).

Compte tenu de cette expérience, VE2RP et moi, après consultation mutuelle, élaborons sur un système de relais que nous allons mettre en place le lendemain, afin de faciliter la tâche pour tous, c'est-à-dire, établir la fréquence du réseau (14,107 MHz), obtenir le maximum de rendement des opérations et faciliter la tâche de la station XE1BZK. Cette nouvelle situation demande la présence continuelle des stations du Québec et représente donc un surcroit de travail. Mais tout ceci est nécessaire si nous voulons continuer relayer nos propres messages provenant des diverses organisations centrales canadiennes.

Mise en Place

Le dimanche 22 septembre (9 heures, Montréal)
MESSAGE D'INTERET GENERAL A DESTINATION DES STATIONS EUROPEENNES.

La fréquence de 14, 107 MHz sera utilisée exclusivement par XE1BZK qui contrôlera le flot de message à destination des stations canadiennes VE1, VE2, VE3, et les stations PCT F2, F4, F5, F6, stations officielles de la protection civile françaises.

Toutes les autres stations sont priées de ne pas émettre sur cette fréquence.

Les fréquences de 14,101 MHz, 14,104 MHz, 14,110.5 MHz et 14,114.5 MHz seront utilisées par les stations VE2 qui achemineront vers un point central tous les appels en provenance de l'extérieur pour Mexico; ces messages seront retransmis sur 14,107 MHz (XE1BZK).

Les stations qui attendront une réponse à leurs messages sont priées de se porter à l'écoute sur 14,107 MHz et attendre que le contrôleur VE2 les avise que la fréquence est maintenant libre.
FIN DE MESSAGE

Le contrôleur VE2 est en liaison avec les autres stations du réseau via les répéteurs THF suivants: VE2RBH (RIPON) et VE2RM (RIGAUD). L'équipe est alors composée de VE2AM, VE2GBG, VE2GCG, VE2RP et VE2HAF.

Le système en place et les opérations se déroulent sans trop de problèmes, jusqu'à la tombée de la propagation vers 21 heures (Montréal).

Fonctionnement

LUNDI 23 SEPTEMBRE: Début des opérations à 8 h 30 (Montréal) pour acheminer vers un poste central tous les messages en provenance de l'Europe.

Un incident technique survient à ma station lorsque mon émetteur manque de mettre le feu aux rideaux. Heureusement, grâce à la gentillesse de VE2BRI (Roger Belleau), voisin et ami, qui accepte de me prêter le sien, je reprends les opérations à 12 heures.

Les stations PCT françaises font savoir que F6FAO (Gerard Auvray), opérateur de secours mobile, est parti à destination de Mexico emportant de l'équipement.

Quant à XE1BZK, il fait la demande aux stations françaises PCT de lui envoyer un amplificateur et un coupleur, afin d'augmenter sa puissance qui n'est que 80 watts. Demande acceptée, et répondent que l'expédition se fera dans les plus brefs délais.

La journée se déroule sans autres incidents et les opérations se terminent à 21 h 30 (Montréal).

Mardi 24 Septembre

Début des opérations vers 8 h 30 (Montréal)— VE2AWS vient se joindre à l'équipe VE2.— VE2RP a des problèmes avec son amplificateur de puissance et doit réduire la puissance de sortie.— Les secours français arrivent à Mexico et constatent l'efficacité du réseau qui fonctionne à merveille; F6FAO opère en tant que deuxième opérateur de XE1BZK.— Le colonel AUJOULET, commandant en chef des forces de secours françaises, installe son PCT au domicile de XE1BZK.— Les stations PCT françaises précisent que le coupleur demandé a été trouvé et le lui font parvenir sans délai. Cependant, point d'amplificateur linéaire. VE2AWS est d'accord pour fournir cette pièce d'équipement mais nous devons trouver une façon de dédouaner et d'expédier rapidement.— Fin des opérations à 20 h 45 (Montréal).

Mercredi 25 Septembre

Début des opérations à 8 h 30 (Montréal)— Grâce à l'intervention de monsieur le Consul général du Mexique à Montréal auprès du directeur de la compagnie aérienne IBERIA, et de madame SALINAS,

l'amplificateur sera expédier cet après-midi, à 14 heures. C'est VE2AWS qui assure le transport de l'appareil jusqu'à l'aérogare de MIRABEL et qui assume les frais d'expédition.— La journée se déroule sans incident et les opérations se terminent à 21 heures.

Jeudi 26 Septembre

VE2RP, a toujours des problèmes avec son amplificateur et nous informe de plus que sa clientèle professionnelle est en train de le quitter et doit impérativement s'occuper de cette clientèle. Néanmoins, il sera là une bonne partie de la journée. Heureusement, la présence de VE2AWS compense pour cet état de choses.— L'amplificateur de VE2AWS est bien arrivé à Mexico et, malgré l'absence du coupleur français, est mis en service permettant ainsi à XE1BZK d'opérer avec 250 watts PEP.— La journée se déroule comme il a été prévu et les opérations cessent à 20 h 35.

Vendredi 27 Septembre

Début des opérations à 9 heures (Montréal).— Grâce à l'intervention conjointe du Colonel AUJOULET, de monsieur le Consul général du Mexique à Montréal, de la Délégation générale du Québec à Mexico, et des autorités locales, deux lignes téléphoniques ont été installées dans la soirée d'hier au domicile de XE1BZK. Jean-Paul RABOUAN, appuyé sur le plan technique par Gérard AUVRAY (F6FAO), et entouré d'une formidable équipe de téléphonistes— composée de son épouse Maryse et de quelques secrétaires de sa firme à Mexico— continue inlassabalement d'acheminer tous les messages qui lui parviennent.— La journée se termine sans problèmes vers 20 heures (Montréal).

Samedi 28 Septembre

Un incident survient en fréquence lorsqu'une station vient brouiller les émissions sur 14,107 MHz avec des transmissions numériques d'essai. La bande des 20 m Amateur est surchargée et il nous est impossible de changer de fréquence pour les raisons que vous savez. La station créant le brouillage refuse de s'identifier. Heureusement, il est possible de la décoder et nous réussissons à l'identifier; il s'agit de W4KDK, de Nashville dans le Tennessee. Finalement, grâce à l'intervention de madame SALINAS, du Consulat mexicain à Montréal, de monsieur Mitchell du Consulat des Etats-Unis à Montréal et aux services de contrôle des émissions de radio américaines, l'émission de la station cesse à 11 heures (Montréal.) Les opérations vont donc se poursuivre et nous terminons sans autres incidents vers 21 heures (Montréal).

Dimanche 29 Septembre

Début des opérations à 10 heures (Montréal). Comme les listes de messages ont considérablement diminué et que les unités de secours français sont en phase de rappatriement, le périple tire à sa fin; il semble que le TELEX fonctionne presque normalement.

Le réseau se termine beaucoup plus tôt (vers 17 heures), car tous les messages sont acheminés. Jean-Paul (XE1BZK) tient à accompagner son co-pilote Gérard (F6FAO) qui doit prendre l'avion de retour au cours de l'après-midi.

Lundi 30 Septembre

Début des opérations à 10 heures (Montréal).

La confirmation nous parvient que le TELEX fonctionne à nouveau normalement et même certaines lignes interurbaines sont rétablies.

Nous mettons la touche finale aux derniers messages passés la veille et nous avisons toutes les stations que l'état d'urgence est officiellement terminée. Le trafic normal de type Amateur peut donc reprendre, et sauf demande expresse des autorités concernées, XE1BZK ne prendra plus de messages.

Fin des opérations à 15 heures (Montréal).

Bilan des Opérations

Au moment d'achever les opérations, Jean-Paul Rabouan (XE1BZK) nous informe que le nombre de messages reçus et transmis approchait les 6000. Les données suivantes se veulent le plus près possible de la réalité. Il est cependant difficile de présenter une comptabilisation précise ou absente d'erreurs, compte tenu de la situation.

VE2AM
MICHAEL MASELLA, 19 Pheasant, Dollard-des-Ormeaux (QC) H9B 2T4
Opérationnel du 20 au 26 septembre
50 messages pour le Consulat général du Mexique à Montréal
18 messages en provenance de l'Europe
132 messages reçus et transmis

VE2AWS
MARC DARDE, 2854, boul. Perrot, NDIP (QC) J7V 5V6
Opérationnel du 24 au 29 septembre
250 messages en provenance de l'Europe
30 messages du Consulat Mexicain à Montréal (via VE2GBG)
14 messages officiels pour la Protection Civile Française
588 messages reçus et transmis

VE2GBG
ALLAIN VINCENT, 4550 Lake Road, Dollard-des-Ormeaux (QC) H9G 2N5
Opérationnel du 20 au 26 septembre
85 messages du Consulat général du Mexique à Montréal; en partie acheminés vers les stations VE2RP et VE2AWS
170 messages reçus et transmis

VE2GCG
GAETAN BRIAND, 23, rue Gordon, Lachute (QC) J8H 3M5
Opérationnel le 22 et le 26 septembre; le 28 septembre, à la station de VE2HAF
25 messages de familles canadiennes
40 messages en provenance de l'Europe
10 messages de XE1BZK pour Haïti via VE2HAF
150 messages reçus et transmis

VE2HAF
FREDERIC PROSPER DORVAL, C.P. 104, St-Rémi-d'Amherst
(QC) J0T 2L0
Opérationnel du 19 au 30 septembre
410 messages pour le comité AYUDA MEXICO (Montréal)
290 messages en provenance de l'Europe
65 messages de XE1BZK à destination du Canada, des Etats-Unis et l'Europe
8 messages officiels pur le CODISC, à LEVALLOIS (France)
2 liaisons téléphoniques en direct pour CODISC (Paris)
2 liaisons téléphoniques en direct pour le sous-ministre des Affaires extérieures du Québec monsieur YVES MARTIN
1 raccordement direct pour la station commerciale CKAC (AM) (reportage)
1556 messages reçus et transmis

VE2RP
PIERRE ST-JEAN, Côte-du-Front, Montebello (QC) J0V 1L0
Opérationnel du 19 au 26 septembre
370 messages en provenance de l'Europe
30 messages pour des familles des environs
40 messages officiels (CODISC, PCT, Dél. générale du Québec)
20 messages en provenance de XE1BZK à destination du Canada, des Etats-Unis et l'Europe
2 liaisons téléphoniques pour la station de radio CKAC (AM)
15 messages journalistiques divers
954 messages reçus et transmis

VE3AUM
RONALD BELLEVILLE, C.P. 531, Russell (ON) K0A 3B0
Opérationnel du 19 au 30 septembre
220 messages pour l'ambassade du Mexique (Ottawa)
200 messages de sources diverses (locales, des Etats-Unis et l'Europe)
840 messages reçus et transmis

Conclusion

En terme de trafic, le compte total atteint 4390 messages (comptabilisé comme suit: pour un message reçu, une réponse est transmise. A cela, il

Continued on next page ▷

faut ajouter un nombre indéterminé de messages acheminés par un grand nombre de stations canadiennes qui ont pu utiliser le réseau RCUMQF (sur 14,107 MHz). Le nombre indiqué ci-dessus est certainement dépassé par un autre millier de messages. Parmi ces autres stations présentes, nous en nommons trois en particulier.

VE2ADL
BERTRAND DUFOUR, 355, 62e rue Est, Charlesbourg (QC) G1H 1R2
Opérationnel pour la région de Québec

VE2ALT
GREGOIRE LUSSIER, 1013, rue Kingston, Sherbrooke (QC) J1H 3S2
Opérationnel pour la région de l'Estrie

VE1KG
SERGE, du Nouveau-Brunswick, un ami dont j'ignore le nom, mais dont je tiens à signaler son dévouement.

En tenant compte de tous les chiffres avancés jusqu'à maintenant, je peux affirmer que la quasi totalité du trafic radio de XE1BZK est passée par le réseau RCUMQF. De toute façon, il sera intéressant de comparer ces chiffres avec ceux contenus dans le bilan de la station XE1BZK.

De plus, il est important de préciser, en ce qui concerne le réseau RCUMQF et en termes de messages réels, que le nombre dépasse largement les 9000. Car plus de 50 pour cent du trafic radio de ce réseau implique deux messages transmis pour deux messages reçus.

Enfin, j'aimerais souligner que nous sommes tous fiers du travail accompli, car bien que n'ayant pas participé directement au dégagement des personnes ensevelies, nous avons néanmoins ressenti le bonheur en rassurant plusieurs milliers de familles. Bien entendu, tout cela ne pouvait se réaliser sans la participation des stations canadiennes, et plus particulièrement de VE2RP, VE2AWS et VE2AUM. Tous ont fait preuve d'un grand dévouement, de discipline, et surtout, d'efficacité.

Je tiens à signaler aussi le gros travail de centralisation de la part des stations françaises de la PCT et par F6ATQ, F6CNN, F8US, ON5KY, pour ne citer que les principales. Il faut compter aussi les nombreuses stations belges, françaises, espagnoles, suisses et italiennes qui ont apporter leur précieux concours.

VE2HAF
FREDERIC PROSPER DORVAL

REMARQUE: Le réseau a utilisé principalement le poste répéteur de VE2RWC, de Brownsburg, près de Lachute, pour ses liaisons locales. Un grand merci aux propriétaires de ce répéteur, ainsi qu'aux propriétaires de VE2RM et de VE2RBH. Δ

La catastrophe de Mexico vécue du Manitoba

"Ici Winnipeg!"

Le mot s'est vite passé. Ivan Morin, un technicien pour Radio-Canada à Winnipeg, pouvait communiquer avec les victimes du tremblement de terre au Mexique. Et plus encore.

Quand on parle de la radio amateur communément appelée en anglais ham radio, on imagine la scène suivante: "Allô, Dakar, ici le Canada. Est-ce qu-il fait beau là-bas?"

Ivan Morin fait de la radio amateur depuis trente ans et admet que c'est souvent un jouet, un hobby. Jouer aux échecs avec quelqu'un en Union soviétique ne changera certes pas le monde!

N'empêche que Ivan Morin reconnaît l'importance de ce médium durant un désastre à l'étranger. Non, il n'appellera pas le Mexique pour demander aux gens comment on arrive à vivre là-bas. C'est à la radio publique à envoyer des journalistes!

Mais pour Eva Bérard à Saint-Boniface, native du Mexique, Ivan Morin a mis la machine en branle. "Ca fait du bien de pouvoir aider quelqu'un. De leur laisser savoir que leur parenté est bien."

"Opérer une radio amateur, c'est un privilège. Ca enlève de la pression sur le gouvernement et aide beaucoup d'individus."

"Lors de l'inondation au Manitoba en 1950, nous avons beaucoup utilisé la radio amateur. Et c'est pareil pour tous les désastres."

Grâce à Ivan Morin, Eva Bérard a pu communiquer avec sa mère. C'est un cas seulement. Il y en a eu plusieurs, des milliers!

Puisqu'elle parlait seulement l'espagnol, j'ai rappelé le curé pour traduire. Ils avaient besoin d'un médicament pour une jeune mourante. J'ai su qu'on fabriquait ce médicament à Montréal. À midi le lendemain, le produit était dans l'avion."

Bien entendu, Ivan Morin a toutes sortes d'histoires. Après tout il y a à peine une demi-douzaine de pays sur cette planète qu'il n'a jamais rejoint via la radio. Δ

Happy news from Mexico

A local ham radio operator does a newlywed a big favour

A HAM comes through in a jam... It was a happy coincidence, the way Eva Berard found out that her mother was alive and uninjured amidst the death and destruction of last week's Mexico City earthquakes. Berard is a Mexican-born Winnipeg woman who has lived in Canada for 22 years. Last Friday CBWFT, the Winnipeg French channel, interviewed her about the frustration and fear she was feeling. Later that night she received a call from a man named Ivan Morin. He is a CBWFT news editor who had handled the story. He's also a ham radio operator. Morin volunteered to do what he could to locate her mother. Saturday night about 8:30 he called to say her mother had been located and she was fine.

At Berard's request, Morin also checked on the fate of other people in Mexico City, including the parents of a Mexican woman who only arrived in Winnipeg Wednesday. She was married to a Winnipeg man Saturday and didn't want to leave on her honeymoon until she found out how her parents were.

Morin said he contacted another ham radio operator in Mexico City shortly before 2 p.m. Sunday giving him the name and phone number of the woman's parents. By 7 p.m. he heard this answer on his radio.

"Tell the young lady to have a very happy honeymoon. Her family is OK."

"It gave me goose bumps," Morin recalled.

The Tale End...

A 32-year-old Winnipeg woman named Joanne Aguirre called the other day with some good news from Mexico City.

She said she read a column earlier this week about local ham radio operator Ivan Morin contacting earthquake devastated Mexico and locating people for worried Winnipeg relatives.

She was concerned about her 30-year-old husband Marco who was in Mexico City. She had tried the government, the Red Cross and other ham operators with no success.

So she called Morin.

And within half an hour he called back. Her husband was fine. And he was leaving that day for Winnipeg. What made the news even better was yesterday the couple celebrate four years of marriage.

"It was just a super anniversary present."

Aguirre feels Morin deserves a medal. Failing that she wants to take him out for dinner. Δ

TNX Winnipeg Free Press

(Français page 25)

Mexico-Quebec-France Emergency Net (RCUMQF)

By Frederic VE2HAF

From Sept. 19 to 30 1985, an emergency net between Mexico, Quebec and France was set up and operated by Canadian Amateur Radio stations. Its origin, organization, functioning and balance-sheet follow.

• Origin:

On the evening of Thursday, Sept. 19, I received a telephone call from Mrs. Alicia Loria and Fransisco Montes of Oka, long-time friends, who asked me if I could get in touch with Mexico, where their families were, by Amateur radio, since all other forms of communication were out of service.

I went to work without delay, and proceeded to get in touch with a friend, VE2RP, who lives nearby: we can keep in touch by VHF. Moreover, he has excellent equipment and is fluent in Spanish and English.

At his end, VE2RP had also received a similar request from local Mexican friends who knew him as a Radio Amateur.

We combined our efforts, and tried to reach Mexico from 2200 to 0300 local on Friday, without, however, any success.

We called Mexico again on Friday, Sept. 20, on 20 metres at about 1000 h Montreal time and finally, after four hours of effort, made contact with XE1SY, operator Lilia, who could pass on several messages we sent, and who asked us to let several Canadian, U.S., and European families know that their parents in Mexico were safe.

Another Mexican Amateur station, XE1ALF, joined us soon after on the same frequency. He too had several messages of reassurance for families outside Mexico.

When I called Mme Loria to reassure her, she wanted to know if I could continue to pass messages the next day for the Ayuda Mexico committee, just forming in Montreal. Naturally, I responded positively to a request of that kind, and we cleared an initial list of some 40 people to call on Saturday, the 21st.

On his part, VE2RP had also received calls, so we decided to go ahead and got in touch with Alain XE1OT, French by birth but working in Mexico. His telephone was out of commission, but he found another friend, another Frenchman working in Mexico, Jean-Paul XE1BZK, who with the help of his wife and some of his Company's employees, had set up a system for collecting messages and telephone calls. He used his own telephone and public call boxes to pass on the calls that came to him.

Coincidentally, the Mexican Consulate in Montreal had got in touch with John VE2DC, who passed on the telephone numbers of two other Quebec Amateurs, VE2AM and VE2GBG, who soon joined us on frequency.

Again, the Mexican Ambassador in Ottawa had got in touch with VE3AUM, who also joined us on frequency.

The high efficiency of the telephone system put in place by XE1BZK ensured that the calls we had for Canada were quickly on their way.

However, this same efficiency led to a problem: his station was in great demand from all over, notably from France and other European countries who moreover, taking account of propagation difficulties, had great trouble being heard in Mexico, and whose lack of organization and discipline retarded traffic more than a little.

The Quebec stations were geographically well situated to reach both Mexico and Europe, and moreover had far more powerful stations than the Europeans. So, for easier listening for our Mexican colleague, he asked us to stay on frequency to give him a hand, and to relay his messages.

I improvised on the spot with VE2RP a net control system; we used a VHF link, VE2RP turned his antenna towards Europe, while I myself beamed on XE1BZK, on the same frequency.

Saturday operations concluded at 2000 h (Montreal time) and we set up a schedule for the next day with Jean-Paul.

We reviewed this experience, and VE2RP and I set up a net relay system between us, which we put in place next day. This was to control the working frequency (which was set at 14.107 MHz) to ease the task of our friend in Mexico, and to maximize the efficiency of the operation.

This new set-up required the continual operation of the Quebec stations, and a substantial increase in the work. But this was necessary if we wanted to continue to despatch our own messages arriving from various channels in Canada.

• Setting up

Sunday, Sept. 22, 1985 0900 h (Montreal time): General call to all European Amateurs:

a) the frequency of 14.107 MHz will be utilized exclusively by XE1BZK who will control his own traffic destined for stations in VE1, VE2, VE3, Canada, and F2PCT, F4PCT, F5PCT, F6PCT, official French Civil Defence Stations.

b) All other stations are requested not to transmit on this frequency.

c) On frequencies of 14.101 MHz, 14.104 MHz, 14.110 5 MHz, 14.114 5 MHz, there will be VE2 stations who will channel all calls from outside to Mexico, and will retransmit them after collection to XE1BZK on 14.107 MHz.

d) Stations waiting for a response to a message are requested to monitor 14.107 MHz, and to wait until they are informed that the response frequency is free by the VE2 response station.

End of message.

Internal control of the VE2 net was assured by VHF liaison by way of the repeaters VE2RBH (Mount Ripon) and VE2RM (Rigaud Mountain); the team was composed of VE2AM, VE2GBG, VE2GCG, VE2RP and me, VE2HAF.

The system was set up and operations went forward without many problems all day, and until the propagation failed, around 2100h local.

Monday, Sept. 23, operations began at 0830 h, for collation of messages coming from Europe.

A technical detail befell my station when my transmitter lacked sufficient power to set the house on fire. But thanks to the help of Roger Velleau VE2BRI, my neighbour and friend, who freely loaned me his own transmitter, I could start work again at 1200 h.

The French PCT stations let us know that F6FAO, Gerard Auvray, mobile emergency operator, had left for Mexico with some equipment.

Continued on next page ▷

For his part, XE1BZK asked the French PCT stations to send him an amplifier and an antenna coupler, so as to augment his power, then about 80 watts. The request was accepted: they responded and sent the equipment without delay.

The day passed without any further incident and operations ended at 2130 h (Montreal time).

Tuesday, Sept. 24, operations began again about 0830 h. VE2AWS joined the VE2 team and VE2RP found some problems with his power amplifier which obliged him to reduce power a little.

French help had arrived in Mexico to put the finishing touches on the efficiency of the network. The setup functioned perfectly. F6FAO became second operator at XE1BZK.

Colonel Aujoulet, Commander-in-Chief of the French Assistance Force, installed his PC communications at the house of XE1BZK.

The French PCT stations told us that the antenna coupler requested by XE1BZK was found and that it would be sent as quickly as possible. However, they had not yet found a linear amplifier. An arrangement was soon made with VE2AWS who agreed to provide this equipment. It was up to us to solve the problems of fast despatch and of customs.

End of operations at 2045 h.

Wednesday, Sept. 25, operations began at 0830 h.

Thanks to the intervention of the Consul General of Mexico in Montreal with the director of Iberia Airlines, and of Madame Salinas, the amplifier could leave that afternoon at 1400 h. VE2AWS secured the carriage of the equipment to Mirabel airport, and paid the charges of its despatch from his own pocket.

The day proceeded without incident, and operations finished at 2100 h.

Thursday, Sept. 26: operations began at 0830 h.

VE2RP, who was having small problems with his amplifier, told us moreover that his professional clientele were about to leave him, and that it was imperative that he dealt with them immediately. Nevertheless he was there a great part of the day.

Happily, the presence of VE2AWS in the team made up for this very well.

VE2AWS's amplifier arrived satisfactorily in Mexico, and in spite of the absence of the French coupler, it was possible to put it to work. XE1BZK operated thereafter with 250 watts PEP.

The entire day continued as foreseen, and operations ceased at 2015 h.

Friday, Sept. 27, operations began at 0900 h.

Thanks to the intervention of Colonel Aujoulet, and of the Mexican Consul General in Montreal, of the general delegation of Quebec in Mexico and local authorities, two telephone lines had been installed in the afternoon of the day before at XE1BZK's house. Jean-Paul, supported admirably by F6FAO Gerard Auvray, especially in technical matters, and surrounded by his formidable telephone team comprising his wife Maryse, and several secretaries of his firm in Mexico, continued to pass all the messages arriving there untiringly.

The day finished as before without any problems at about 2000 h.

Saturday, Sept. 28: operations began 0900 h.

An incident occurred on frequency when a station began to interfere with the 14.101 MHz transmissions by the transmission of test numbers. The 20 metre Amateur band was desperately over-extended and the interfering station refused to stop. Happily, it was possible to decipher the call and identify the station. It was WD4KDK, a Nashville, Tennessee station. Finally, thanks to the intervention of Madame Salinas of the Mexican Consulate General in Montreal, of Mr. Mitchell of the Consulate General of the U.S.A. in Montreal, and the FCC, the emissions of the station ceased at 1100 h.

Operations could now continue, and finished without any other incident at about 2100 h.

Sunday, Sept. 20: operation began at 1000 h.

The lists of messages had diminished considerably, and the French aid organization was now being repatriated. The circle was nearly complete and it seemed that the Telex lines now functioned almost normally.

Operations finished very soon after (about 1700 h), because all messages had been passed and Jean-Paul XE1BZK had to accompany his co-pilot Gerard F6FAO to take his plane back that afternoon.

Monday, Sept. 30: operations began about 1100h.

The confirmation that the Telex lines now worked normally again and that even some inter-urban telephone lines had been repaired told us we were no longer needed. So we finished forwarding the last answers to the messages passed the day before and we advised all stations that the state of emergency had been officially ended.

Normal Amateur traffic was then re-opened and without an express request from the authorities XE1BZK took no more messages.

End of operations at 1500 h.

• Review of the operations:

At the time we finished operations, Jean-Paul XE1BZK told us that the number of messages passed by his station was about 6000 (questions and answers).

The figures which follow are as close as possible to the facts, however, it was impossible taking account of the situation, to provide a precise, error-free account.

VE2AM:
Michael Masella. 19 Pheasant, Dollard des Ormeaux, H9B 2T4
Operational from 20 to 26 September
50 messages for the Mexican Consulate General in Montreal, 18 messages from Europe.
A total of 132 messages and replies.

VE2AWS:
Marc Darde. 2854 Boul. Perrot, NDIP, J7V 5V6
Operational from 24 to 29 September.
250 messages from Europe
30 messages from the Mexican Consulate General in Montreal (via VE2BBG A. Vincent).
14 official messages for the French Civil Defence.
A total of 588 messages and replies.

VE2GBG:
Allain Vincent. 4530 Lake Road, Dollard des Ormeaux, H9G 2N5
Operational from 20 to 26 September
85 messages from the Mexican Consulate General in Montreal, partly despatched to VE2RP, and VE2AWS.
A total of 170 messages and responses.

VE2GCG:
Gaetan Briand. 23 Gordon, Lachute, J8H 3M5.
Operational from 22, and the 26 September as well as the 28 at the station of VE2HAF
25 messages from Canadian families
40 messages from Europe
10 messages from XE1BZK from Haiti, via VE2HAG.
A total of 150 messages and responses.

VE2HAF:
Frederic Prosper-Dorval. Box 104, St. Remi d'Amherst J0T 2L0
Operational from 19 to 30 September
410 messages for the Ayuda Mexico Committee of Montreal.
290 messages from Europe.
65 messages from XE1BZK from Canada, USA, Europe.
8 official messages for the Codisc a Levallois (France)
2 direct telephone patches for Codisc in Paris.
2 direct phone patches for the Quebec deputy minister for foreign affairs, Mr. Yves Martin.
1 direct telephone patch for the commercial station CKAC (am) reportage.
A total of 1556 messages and replies.

VE2RP:
Pierre St. John. Cote du Front, Montebello J0V 1L0
Operational from 19 to 26 September.
370 messages from Europe.
30 messages from local families.
40 official messages (CODISC, PCT, Del. General of Quebec.).

20 messages from XE1BZK from Canada, USA, Europe.
2 phone patches from the commercial station CKAC (am).
15 various news messages.
A total of 954 messages and replies.
VE3AUM:
Ronald Belleville. Box 531, Russell, K0A 3B0 Ont.
Operation from 19 to 30 September.
220 messages for the Mexican Ambassador, Ottawa.
200 messages from various sources (local, USA, Europe).
A total of 840 messages and responses.

• Conclusion:

In terms of messages, the overall total attains the figure of 4390 (this is calculated on the basis of 1 transmission and 1 reception per message).

To that must be added the uncounted presence of several Canadian stations which were able to use the net on 14.107 MHz (RCUMQF) and who certainly passed over 1000 messages in total.

Several stations were present but three particularly.

Viz:

VE2ADL:
Bertrand Dufour. 355 62nd St. E., Charlesbourg G1H 1R2
Operational for Quebec region.
VE2ALT:
Gregoire Lussier. 1013 Kingston, Sherbrooke J1H 3S2.
Operational for the eastern townships.
VE1KG:
Our friend Serge from New Brunswick, I do not know his address but I want to thank him.

Taking account of the accumulation of all these figures, I can say that nearly all of XE1BZK's traffic was handled by the RCUMQF net on 14.107 MHz. At any rate, it will be interesting to compare the figures with the conclusion of the report of the station XE1BZK.

Moreover it is important to note that in terms of actual traffic the figure attained by the RCUMQF net greatly exceeded 9,000.

Effectively more than half of the traffic handled by this net concerned European stations, which implies not just one transmission and one reception per message, but two transmissions and two receptions.

Finally I would like to underline that we were all proud of the work accomplished because, though we were not directly participating in the rescue of buried persons, we have nevertheless felt the happiness of being able to assure many thousands of families. It is certainly agreed all that could not have been accomplished without the participation of Canadian stations and particularly VE2RP, VE2AWS and VE3AUM but all have shown proof of great devotion, discipline and above all of efficiency.

The great work of organization affected the French PCT stations should be emphasized, as well as by F6ATQ and F6CNN, F8US, ON5KY, only to cite the principal ones. Also many other Belgian, French, Spanish, Swiss and Italian stations who collaborated in a most efficient fashion.

from VE2HAF, Oct. 6, 1985.
Frederic Prosper-Dorval.

* More: It should be noted that from Sept. 24, the network utilised principally repeater VE2RWC situated at Brownsburg near Lachute for internal liaison. Many thanks to the owners of this repeater as well as those of VE2RM and VE2RBH. Δ

From XE1BZK

Earthquakes of Sept. 19 at 0720 (1320 Z) and of Sept. 20 at 1940 (Sept. 21 0140 Z)
Transmissions completed by station XE1BK
1) Messages received 2864
Messages transmitted 3367
Total 6201
2) Frequencies used: 14 MHz Amateur band, mostly 14.107.
3) Messages sent to: France, Canada, U.S.A., Guatemala, Haiti, Martinique, Guadeloupe, Venezuela, Ecuador, Peru, Argentina, Brazil, Tahiti, New Caledonia, Australia, Belgium, Switzerland, England, German, Poland, Spain, Portugal, Italy, Morocco, Ivory Coast, and to the interior of Mexico.
4) Requests and answers retransmitted by 154 stations (mostly by VE2HAF, VE2RP, VE2AWS and VE3AUM, who ensured relays).
5) Official messages from these sources: French Embassy to Mexico, Mexican Embassy and Consulate in Canada. French Civil Defence in Mexico, Quebec General Delegation to Mexico, Mexican Association of Canada.

J.P. Rabouan XE1BZK
Δ

City Ham operator helps lady find Mexican family By Suzanne Steel

Without the help of an Oshawa Amateur radio operator, Olga Nagy would still be agonizing over whether her brother and other relatives had survived a devastating earthquake in Mexico last week.

"I called the Red Cross and the Canadian embassy and I still haven't heard back from them," Nagy, a native of Mexico, told The Times.

"I was very scared."

But with the help of a friend, she found Glen Flintoff who volunteered to reach Mexico by short wave radio.

Flintoff, 68, a retired Houdaille worker, contacted Red Cross volunteers in Mexico and, within an hour, had received assurance that Carlos Steck and his family had escaped the disaster unharmed.

"I was so happy," Nagy said. "He owns a garage right downtown in the area that was hit and he's very punctual. He goes to work very early in the morning.

"He said everywhere around him was destroyed but his garage is fine."

Steck also has a daughter living in Toronto who was quickly notified of her family's safety.

Flintoff has helped two local people locate Mexican relatives and said he would be glad to help any others still looking for family.

Ham radio operators in Mexico and almost every U.S. state have joined in the effort to track friends and family who were in Mexico at the time of the earthquake.

Nagy had been trying to call her brother day and night since last Thursday but lines to the area are not in service. Efforts to reach another brother living in a different part of Mexico were also unsuccessful because of overloaded telephone circuits.

"I called at every possible time in the morning, day and the middle of the night but I couldn't ever get through," said Nagy.

Radio operators send lists of people whose families are worried about them and sometimes team up to combine lists and free up more radio lines.

The Mexican embassy in Canada is also helping track families but the wait can be long.

For Flintoff, it was the first time in 50 years as a ham radio operator he had been involved in such a major disaster and he found the experience both exciting and intimidating.

"It was great to be able to help out someone obviously in need," he said, "But what if there was only bad news— if the people had been killed?"

If they had to find out sooner or later, Flintoff said he understood their need to know.

"I don't have a choice, they asked me and I would do whatever I could."

Even six days after the earthquake, Flintoff said radio operators are still extremely busy locating people. Nagy said if he had not intervened on her behalf, she still would be lying awake at night worrying.

—Oshawa Times Δ

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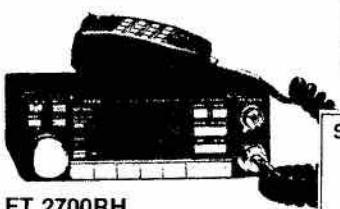

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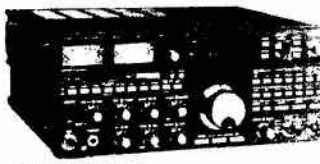

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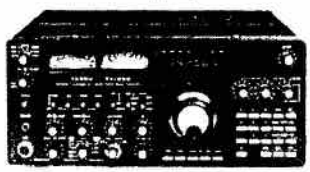

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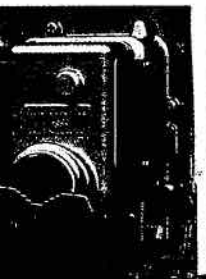

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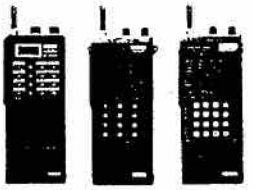

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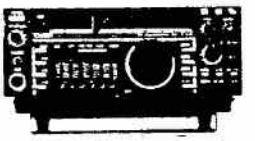

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MULTI TORQUE ROTATOR

MODEL **MR-750E**
DAIWA **MR-750PE**

		MR-750E/PE
Rotation time	60 Hz	58 seconds (60 Hz input)
	50 Hz	70 seconds (50 Hz input)
Output torque Brake power	1 motor $399	610 lbs/inch 5,200 lbs/inch
MR-750U Motor $129.00	2 motor $528	1,200 lbs/inch 9,600 lbs/inch
	3 motor $657	1,800 lbs/inch 13,900 lbs/inch
	4 motor $786	2,400 lbs/inch 18,300 lbs/inch

Rotation angle	375 degrees
Permissible mast size	1½ ~ 2½ inch (38 ~ 63 mm) < diameter >
Control cable	6-wire cable 0.5sq—1.25sq (AWG16/18/20 etc.)
Continuous running	5 minutes Max. permissible
Dimensions	15.6" H x 8.43" W x 8.43" D (397 mm x 214 mm x 214 mm)
Unit weight	16.5 lbs (7.5 kg) < with 1 motor unit fitted >

	CR-4 (for MR-750E	CR-4P (for MR-750PE)
Power source	117 V AC (50/60 Hz)	
Power consumption	200 W (with 4 drive motors)	
Motor running voltage	24 V AC	
Dimensions	4.9" H x 7.1" W x 6.9" D (125 mm x 180 mm x 175 mm)	
Weight	9 lbs (4 kg)	
Operation	Manual	Manual/Pre-set

Wind Load:
1 Motor 16.1 sq ft
2 Motors 21.5 sq ft
3 Motors 26.4 sq ft
4 Motors 30.0 sq ft

SAME MOUNTING HOLES AS TELEX-HY-GAIN

MAJOR FEATURES

1. The major rotator frame can house up to 4 motors to increase the torque and load capacity according to the requirements of your antenna system at present and in the future. (PAT. PEND.)
2. Each motor unit has its own brake system. "SUPER WEDGE & CLUTCH" which works independently from the main frame gear train. (PAT. PEND.)
3. The maximum brake power is 21,000kg/cm (18,251 lbs/inch) when 4 motors are installed. The main frame and reduction gear train have been designed to withstand this maximum requirement.
4. The motor unit can be easily dismantled for maintenance, if required.
5. Easy alignment of the mast and the rotator center without special tool. An antenna mast of 38-63mm diameter can be used. (PAT. PEND.)
6. Low voltage motor (24V AC) are used to ensure safety during installation work on the antenna tower.
7. Low cost 6-wire cable can be used thanks to the low voltage motor.
8. The direction panel of the controller unit can be easily removed to calibrate the direction pointer and change the great circle map. (PAT. PEND.)
9. The control knobs are of practical balanced type with lock mechanism on the both sides. (CW & CCW)

PATCH

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CANADA M3H 1S9
(416) 636-3636

The Mexican Connection

Imagine yourself having an immediate relative in the earthquake stricken area of Mexico City several weeks ago. The communications building has just fallen down, cutting off all telephone and telex lines to the outside world. You want to confirm that your loved ones are all right, but can't. This was precisely the situation encountered by some 40 B.C. Interior families.

Several local Amateur radio operators (hams): Dwight Morrow (VE7BCU) of Chase, Brian Curtis (VE7OJ) and Peter Pel (VE7DLM) of Kamloops were able to send numerous health and welfare inquiries into and out of the earthquake zone via Amateur short wave radio. Teams of radio operators in Mexico City, working 24 hours per day since the earthquake began, were able to contact almost all of the relatives of our local families.

By using the crippled local phone system, VHF radios, or sending a taxi or car to the houses when the lines or exchanges were down. The replies were then radioed directly or relayed back to Canada. This is especially remarkable if one contrasts the 18-million population with the 100 or so ham operators that were active in Mexico City. Waiting lists of up to several days to pass messages were not uncommon at the peak of the traffic. .

The Mexican Consulate in Vancouver was also sending messages through the Amateur radio stations at Simon Fraser University (VE7SFU) and Lester Pearson College (VE7LPC) in the same manner.

These emergency communications started on Friday, Sept. 20, 1985 and will continue until the resumption of normal commercial routes to Mexico City. This was an excellent example of the public service capabilities of ham radio, connecting the world in a time of need.

—Salmon Arm Shopper's Guide Δ

B.C. Ham radio operator signs off as Mexican link

Ham radio operator Jack Rothwell is closing down station VE7TK, which for the past two weeks has been one of Canada's main communication links with earthquake-devastated Mexico City.

"We've handled over 1,000 messages," Rothwell said at his Burnaby home Friday. "Now that there are telephone and telegraph lines into Mexico City there's no need for us."

When the quake hit two weeks ago, regular communications networks with the outside world were broken.

Relatives and friends of people in Mexico City deluged Canadian and Mexican government offices in Canada for news of their whereabouts.

"That's basically all we handled, requests for confirmation of the health and safety of people down there," he said.

Using his powerful equipment, plus stations set up at the two Lower Mainland universities, ham operators passed on messages to other operators in Mexico City, asking for a condition check on persons caught in the quake.

"These operators in Mexico were handling thousands of requests each day. The one I dealt with for the last batch of messages told me I was third in line. He had taken 1,100 that day from Spain, 400 from Portugal and I had about 80," said Rothwell, a retired electronics expert.

—The Vancouver Sun Δ

OLD BOOKS

The Halifax ARC asks each member to donate an old radio book to their club. The books will be given to prospective Amateurs during the fall and winter. The club will have a call sign i.d. plate made-up for every donor.

The New Novice Entrance Exam

(1) SAND	(2) MAN / BOARD	(3) STAND / I	(4) R/E/A/D/I/N/G
(5) HEAR / LONG	(6) T O W N	(7) KNEE LIGHT	(8) CYCLE CYCLE CYCLE
(9) MIND / MATTER	(10) 0 / B.Sc. Ph.D. M.D.	(11) R ROADS A D S	(12) IIII / 00
(13) CHAIR	(14) DICE DICE	(15) T O U C H	(16) DEATH/LIFE
(17) LE VEL	(18) HE'S/HIMSELF	(19) ECNALG	(20) GROUND / FEET FEET FEET FEET FEET FEET
(21) G.I. / CCCC CC C	(22) _____ PROGRAM	(23) L B O U S E	(24) YOU J U S T ME

QUA CARF

Long Delayed Echoes

By Doug VE3CDC

40 Years Ago— XTAL Magazine January 1946

January of 1946 saw XTAL Magazine agog with plans for fully reviving the publication. It had now become the official organ of the Canadian Amateur Radio Operators' Association, (CAROA) which had superseded the VE Operators' Association. Even in those days Canadian Amateurs wanted a strictly Canadian organization and publication. The small pre-war membership had reached nearly 1,500 and was rising rapidly. Advertisers went along with an increase in rates to cover the post-war costs and XTAL was off to a flying start. Rather optimistically a membership of 99% of 'active' operators was expected. The annual dues were only $1.00.

A news item noted the post-war release of 420 to 450 and 1215 to 1295 'megacycles' by the Department of Transport but only the dedicted experimenters ventured into those exotic regions of the spectrum. At least two of the dealers will be familiar to today's readers... Alpha Aracon and Canadian Electrical Supply.

The rest of the magazine was taken up by five lengthy first-class technical articles but there was little real news except for a three-page "report from the Nation," which was a run-down, by call-signs, of who was doing what across Canada.

Letters to the Editor contained at least one name familiar to Canadian Operators. Ron Hesler, then VE1KS ('One Kitchen Sink') later VE1SH and Canadian Director of the ARRL (now CRRL), who wished the fledgling CAROA "all the success and luck in the world for the future of this, OUR first all-Canadian Association". Unfortunately, the success was only temporary and in the end CAROA and XTAL foundered and not until CARF revived the all-Canadian concept were the expectations of Canadian Amateurs met.

35 Years Ago— Skywire Magazine January 1956

Thirty-five years ago, in 1951, CAROA and XTAL had folded up and SKYWIRE magazine, a less ambitious but longer-lived publication, took over the field and published monthly as the 'Canadian Radio Operators' Journal.' The big article in the January 1951 issue was 'Single-Sideband Suppressed Carrier— An Outline of the System and Its Possible Amateur Appliation.' This prophetic article foretold the passing of the old AM era and opened up a new vista of Amateur communication.

15 Years Ago— VE News January 1971

VE NEWS had been going since 1966 and had been helpful in getting CARF established in its difficult incubation stage and in this issue took on the task of being the official organ of CARF although it had carried CARF newsletters, written by the then president, Art Blick VE3AHU, since that organization started up. A story on the Amateur efforts in the Sudbury windstorm disaster noted the co-operation with the local EMO people in providing communications to and from points all over Canada for people enquiring about relatives who lived in the Sudbury suburb of Lively.

We would like help in finding old issues of various Canadian publications for Amateurs. In cleaning out old trunks and attics if you find any of the publications noted below we would be very glad to add them to the library we are gradually building up. They can be sent to Doug Burrill VE3CDC, 151 Fanshaw Ave. Ottawa, Ont. K1H 6C8.

XTAL Magazine: copies previous to January 1939, September 1946 Vol. 7 No. 7 and June-July-August 1939 Vol. 3 No. 6.

XTAL JR. We have only April 1940 No. 2 and October 1940 No. 4.

SKYWIRE: Thanks to Bill VE4BJ, George VE3AR, Larry VE7QFL and Bill VE3ARR for gifts of SKYWIRE. We still need all before September 1948 Vol 1 No. 9, all between that number and June 1950 Vol. 3 No. 4, and February, March, April and November 1951, and April 1952. All after April 1952.

VE NEWS: We need all before January 1969 Vol. 4 No. 5 and after January 1972 Vol. 9 No. 1.

Thanks to all donors of the original CANADIAN AMATEUR (we now have two complete sets), and to Don VE7FLA, Floyd VE7XN, L.R. VE2JT, Dave VE3CTT, Bill VE3TS, George VE3DIH, Garnett Redmand and F.W. Sealey.

Glenwood's table at the Kingston ARC Flea Market.

CHARGE IT!

It is now more convenient than ever to join CARF and to order CARF publications. When ordering, simply send your name, address, card number and expiry date, with your signature.

Social Events

Marconi Memorial

In the course of a significant ceremony, the Italian Ambassador in Ottawa, Francesco Paolo Fulci, has laid the first stone to a museum dedicated to Guglielmo Marconi in Glace Bay, Nova Scotia.

Here on Dec. 15, 1902 Marconi, not yet 30 years old, sent a message to the king of Italy and the king of England opening up the first true radio telegraph station in North America. The building is being erected on the same site of the station, traces of which are still visible and is the result of cooperation between the Federal Government, the Provincial Government of Nova Scotia, several private companies and the Italian communities across Canada.

The Ambassador of Italy in Ottawa has been the promoter and untiring coordinator for the last three years. Initial estimate of the cost of the project was $400,000 but $600,000 has already been raised and money is still coming in. Completion of the first museum in the world dedicated to Marconi will be in 1987 (that is the 50th anniversary of the scientist's death). It will house a permanent display of documents related to his work and equipment of the time.

Present at the ceremony on Table Head (name of the locality in Glace Bay) were several Federal and Provincial Government officials, representatives of the Italian Government, leaders of the Italian communities in Canada and officials of the Marconi foundation.

—Joseph Bucciol VE3NOT

NIAGARA PENINSULA ARC 1986 HAMFEST

The Niagara Peninsula Amateur Radio Club, Inc. will hold its 1986 Annual Ham Fest and Flea Market at the U.A.W. Hall, Bunting Rd., St. Catharines, on Saturday, Feb. 8, 1986, commencing at 08:00 Hrs. Local Time. Talk in service will be provided on VE3NRS, our club repeater, 147.240 MHz out, +600 in.

Brenda Davies VE3HUG got an Ontario Bicentennial medal. She is co-founder of the Ajax-Pickering Red Cross.

BANNED COUNTRIES LIST

The following countries have notified the International Telecommunications Union that they forbid radiocommunications with Amateur stations under their jurisdiction: Democratic Kampuchea, Iraq (Republic of), Libya (Socialist People's Libyan Arab Jamajiriya), Somali Democratic Republic, Turkey, Viet Nam (Socialist Republic of), Yemen (People's Democratic Republic of), Zaire (Republic of).

MOVING?

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

CALENDAR

1986

Jan. 16: Applications for DOC licence examination.
Feb. 8: Niagara Peninsula ARC 1986 Hamfest. Details January *TCA*.
Feb. 12: DOC licence examination.
March 19: Applications for DOC licence examination.
April 16: DOC licence examination.
May 21: Applications for DOC licence examination.
June 18: DOC licence examination.
July 12-13: Ex-Whitehorse RCAF Communications reunion.
Sept. 17: Applications for DOC licence examination.
Oct. 15: DOC licence examination.

Publicize your get-together here. Write the Editor, TCA, P.O. Box 855, Hawkesbury, Ontario K6A 3C9. Let TCA know about your events three months in advance to list them in the Calendar.

Contributors: Please note the next *TCA* deadline is Dec. 16 for February copy.

Kingston ARC Flea Market

Kingston ARC organized their First Annual Eastern Ontario Amateur Radio and Electronics Flea Market last Oct. 19. It was thoroughly successful and netted the club a useful addition to its kitty.

Bill Mason VE3NFU explored the flea market with his camera, with the results you see here.

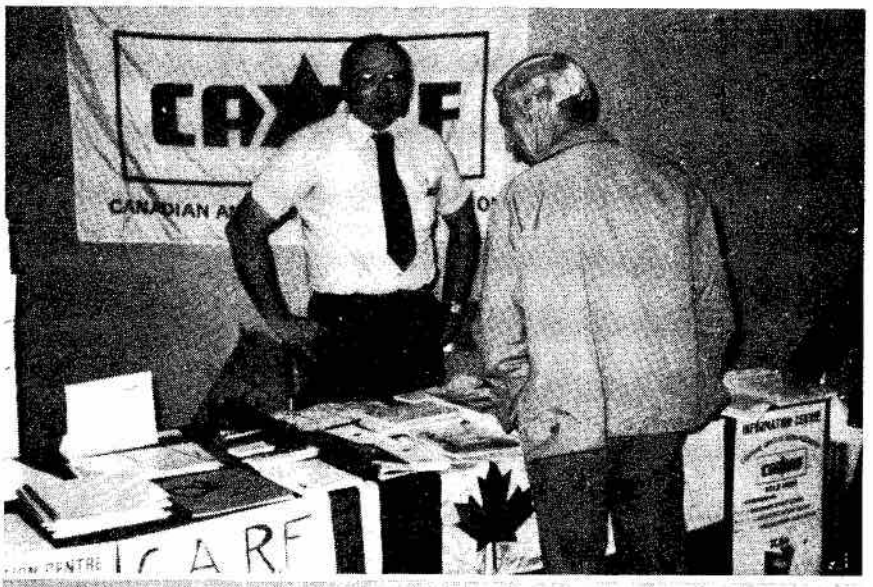
Norm VE3NW says 'hello' to the XYL of Jack VE3LYR, who's sitting in the middle. The other lad is George VE3EZB of Toledo, near Smith's Falls.

Naturally, CARF was there. Here's Ron Walsh VE3IDW, CARF's president, with Colin VE3CPX at the CARF table. (Top right)

Two Georges at the KARC fleamarket. George VE3FPV of Napanee, Ontario (with crutches) orders coffee from George VE3LXA, i/c kitchen. (Right, centre)

The event was organized by Jack VE3YC, shown here with his crew partaking of a little refreshment before finally closing the shop. (bottom right)

Garry VE3HWS looks on as his guest at the KARC flea market, Mrs. Florence Smith, shows a picture of the St. Mary's of the Lake Hospital. Mrs. Smith is a patient there, and collected donations for the hospital. (below)



Help

Can anyone help Debbie with correct addresses for the following Amateurs?

Name and last known address:

Joe Rieberger VE7CRJ, Box 32, Wycliffe, B.C. V0D 8M0

Ken Viger VE7EXM, 4037 Lakeside Dr. Victoria B.C. V8X 2J6

D. Parks VE3BVZ, 212-1962 Yonge St. Toronto, Ont. M4S 1Z4

Lawrence Lazarus VE3LLL, 2500 Bathurst St. #608, Toronto, Ont. M6B 2Y8

Don Bouce VY1AD, RR #1, Site 1, Comp 5, Whitehorse, Yukon, Y1A 3S7

Ken Bell, 844 Fairford E., Moose Jaw, Sask. S6H 0G4

L. Yater VE5MP, F4 TransCan Tr Cres, Moose Jaw, Sask. S6H 0N3

Ivan Dubinsky VE8ID, Box 1952, Hay River, NWT X0E 0R0

From the Clubs

By George Morgan VE3JQW
687 Fielding Dr.,
Ottawa K1V 7G6

John Dunham VE3AKL has informed us that a new club, the Mississauga Amateur Radio Club, held its inaugural meeting in September at the Huron Park Recreation Centre, 830 Paisley Blvd. West. Meetings are to be held on the last Thursday of each month at this location, at least for the present, with on the air meetings at 8 p.m. using repeater VE3RBW (145.43 with minus offset) on those Thursday evenings when meetings are not scheduled. Anyone wishing more information should contact the secretary, Roy Stokes VE3ESS, at 274-8203.

Elma Puhl VE7AYD reports that for three days, Sept. 21-23, over 50 cyclists from the Lower Mainland and Vancouver Island including a retired couple from Summerland, B.C., cycled about 44 km a day on a three-island tour, with enjoyable ferry rides between islands, and camping each night. Four members of the Clearbrook Seniors Amateur Radio club provided radio communication for this first B.C. Lung Association Bicycle Trek.

The four radio operators— Steven Hand VE7AIO, Margaret Hand VE7EYM, Charlie Puhl VE7AYC and Elma Puhl VE7AYD, were in vehicles communicating with each other, supplying information needed by the organizers and assisting in making everything run smoothly.

On the first day, Saturday, the group had an enjoyable tour of Saltspring Island. On Sunday they made a tour of San Juan Island and, in the evening, enjoyed a dinner at Roche Harbour with a group of about 250 American Bicycle Trekkers, accompanied by nine Amateur radio operators, from Washington who have been doing this for four or five years and were raising money for the American Lung Association.

On Monday the group took a ferry back to Gibson on Vancouver Island, then toured the Saanich Peninsula, returning home, tired but happy, by ferry from Swartz Bay at 1700 hours, looking forward to another trek next year.

According to the Niagara Peninsula ARC Feedline, the Boys and Girls club of Niagara held a bingo-nite fund-raiser at the Niagara Falls Arena on Saturday, Sept. 7 and volunteers from the NPARC provided an effective means of communicating the amount of ticket sales, the sections involved, the prize money, and general troubleshooting. Pete VE3DSW, Nick VE3MFQ, Kevin VE3MWS and Tom VE3OIG watched over rooms off the arena where the money from ticket sales for each game was counted. These amounts were then relayed to Fred VE3DVI in the control room, and the total amount of prize money was then forwarded to Kevin and Nick, who also doubled as stations by the number-caller. Don VE3OIH was given a workout by Paul, the volunteer who circled the entire arena a dozen or so times to keep things flowing smoothly.

This successful event raised $5,000 for the Boys and Girls Club of Niagara.

Co-Ed Slo-Pitch Tournament

The weather was great and the fans came to a hush (again, according to the NPARC Feedline), when the NPARC team arrived on the field. Their well-organized manner was a standout and they received many looks of appreciation as they went about their telecommunication business.

All joking aside, the NPARC did a simply MARVELOUS job at the G.M. Employees Second Invitational Co-Ed Slo-Pitch Tournament. Many of the team were rookies, out for the first time, and under pressure they came through with flying colours. Dave VE3FOI did the Saturday Net Control and Tom VE3OIG did the Sunday control.

All the proceeds from the weekend went to various charities, and General Motors has made, on behalf of the NPARC, a $500 donation to the Canadian Red Cross.

Thanks from GM to VE3's OZT, GUO, OCM, NYO, NDF, MFD, DSW, LWW, KYA, FOI, BTO, LWF, OCG, OIF, OIQ, BCA, NYI, OZE, NCH, DVI, KOZ, OIG, COP and LYI.

Congratulations to the Halifax ARC, which was the recipient of a plaque from the Navy League of Canada in appreciation of communications services rendered at the National Cadet Sailing Regatta held at Shearwater in August. Those individuals who participated also received a small medallion as a token of appreciation.

73 & 88 to all for now. △

Where are they now?

In the past month we have had mail for Les Sadler of the Ex-G Radio Club in Saskatoon, for the Slemon Park ARC in Prince Edward Island, for the Parksville ARC in B.C., and for the Sunnybrook Hospital ARC returned even though it had been sent to the addresses on our records. In the first case, the letter was marked 'No such address'; in the second, 'Moved. Address unknown'; in the third, 'Not at this address'; and in the last, 'Unclaimed.' As a result, each of the above clubs has been temporarily removed from the mailing list.

If you are an Affiliate Club but are not receiving the News Service Bulletin, chances are that we no longer have your current address. As soon as we hear from you, we will be happy to put you back on the mailing list.

Wheat City Award

BRANDON, MANITOBA, CANADA

Sponsored by The City of Brandon and the Brandon Amateur Radio Club.

Requirements

1. Date— Contacts made after Jan. 1 1967.
2. Log Data only required, Mixed Bands and Modes.
3. All VE Stations work five (5) Amateur radio stations in the City of Brandon.
4. All other stations work three (3) Amateur radio stations in the City of Brandon.
5. No charge— Free.

Send applications to:

Doug Bowles VE4QZ
1104 First Street
Brandon, Man., Canada
R7A 2Y4

We believe it would be helpful to all travelling Amateurs to have highway signs posted on the fringe areas of our repeaters.— Saskatchewan ARL's *QSO*.

Six Busy Months

The members of the Shuswap Amateur Radio Club have had a busy six months. In June VE7EIL and VE7BCU gave a very interesting talk on message handling and the net system. Field day brought a lot of hams out, and, although some antenna problems gave them a late start, they did manage to make a large number of contacts on SSB and CW. Rob VE7EJE's revised Apple logging program worked very well and saved a lot of time as it checked for dupes, automatically recorded the time and printed out the QSO's by band and call area at the end of the contest.

The Canada Day contest had many pounding brass, with VE7CAL winning the local grudge match.

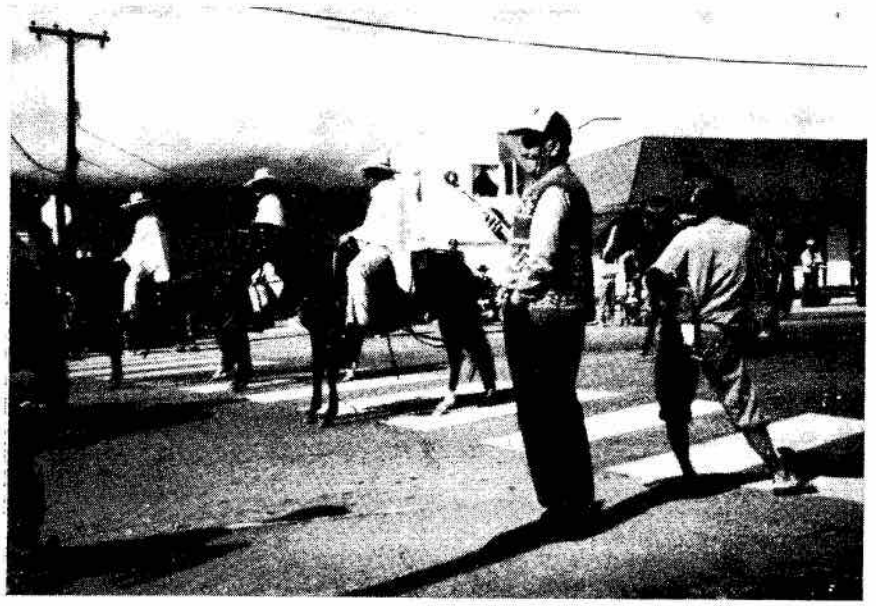
The SARC Hamfest (Sept. 13-16) was attended by over 60 hams from B.C. and Alberta. Hans VE7BOD and his XYL did a super job of organization. The bunny hunt (Steve VE7EJS was the bunny) was won by VE7EJE and a VE6 Amateur.

On Sept. 21 the club members handled communications for the fall fair parade. They actually had more hams than locations. Wow! What an eager group of Amateurs.

A high mountain repeater site and auto patch are becoming a reality. The local Chamber of Commerce has given the club the use of their TV repeater site in exchange for assistance with the maintenance of the site. The big talk in the region? Repeaters linking from Victoria to Alberta. What an awesome thought!

—Steve VE7EJS

Winners of the Shuswap ARC's bunny-hunt, VE6EJE and VE6CFO.



Vaquero! That's the ranchero's sombrero! VE7IW at the starting line, fall fair parade.

The best place to be. Steve VE7EJS was the bunny.

'WORKED ALL MANITOBA'

The WAM award will be issued for confirmed contacts with Amateur Radio Stations in a specific number of Manitoba Municipalities, Local Government Districts, Provincial Parks, Forest Reserves and National Parks in the following classes:
Class E. 50 contacts; Class D. 75 contacts; Class C. 100 contacts; Class B. 125 contacts; Class A. all 133 (Special Honour Plaque)

All contacts after Jan. 1, 1976 are valid. Record book, application forms, rules and conditions are available for a fee of $1 from:

Doug Bowles VE4QZ
1104 First Street
Brandon, Man., Canada
R7A 2Y4

WORKED ALL SASKATCHEWAN PROVINCE

The Regina Amateur Radio Association is pleased to announce the WASP Award which requires the applicant to accumulate a total of 100 points to qualify. Members of the Regina organization count 10 points each to a maximum of five contacts made with members of the group. Contacts with other Regina Amateurs score five points, while contacts with other Saskatchewan Amateurs count two points. There must be a minimum of ten QSOs made.

Send your list of contacts along with your confirmed QSLs and $1 to RARA Club VE5NN, 2827 Abbott Road, Regina, Sask., Canada S4N 2J9.

QUA CARF

Le service QSL de FRAC

Le but de cette note est d'expliquer la procédure pour l'utilisation du service QSL international de FRAC. Veuillez consulter le Manuel de l'opérateur pour l'utilisation du service QSL en général. Voir le chapitre sur la façon de faire parvenir vos cartes QSL.

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

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

1 Classer les cartes (DX) alphabétiquement par préfixe.

2 Classer les cartes canadiennes par ordre numérique de préfixe.

3 Veuillez placer les petites quantités de cartes dans des enveloppes en papier épais et bien scellées. Envelopper les grosses quantités de cartes avec précaution de préférence dans du carton. N'utilisez pas de brocheuse!

4 Veuillez adresser vos envois comme suit:

5. **NE PAS RECOMMANDER** les envois de cartes. Cette pratique est plus dispendieuse et occasionne souvent des retards et par conséquent, n'est pas réellement nécessaire.

6. Si vous désirez recevoir une preuve que FRAC a reçu votre envoi de carte QSL, veuillez inclure une enveloppe pré-adressée au une carte postale avec timbre avec le mot "RECEIPT" imprimé.

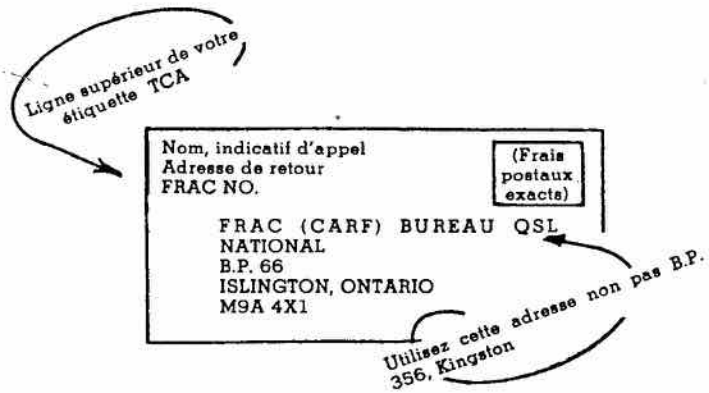
7. Si un colis etait endommagé sur réception (très rare), FRAC vous fera parvenir une liste des cartes reçues de sorte que vous pourrez vérifier s'il y en a eu de perdues dans le courrier.

Jean Evans VE3 DGG

Contribution de:

Terry VE6DBQ, Peter VE7BBQ, Ken VE3CRL

Traduction de: Jack VE2SF △



At the CARF Bureau

Several letters have been received at the CARF bureau stating each Amateur has not belonged in the past, nor does he intend in the future to belong to any association, club or etc. Each one believes all outgoing cards should be sent out free of charge. Each one said he believes outgoing should be handled as a PR project by any and all outgoing bureaus.

Most puzzling. I have written to each one, trying to point out the cost of postage, etc., that we are volunteers trying to do our part in PR in ham radio. That we process many thousands of cards which takes time on the part of many of us Amateurs. Also showed the difference between cards sent out directly or by a bureau. It is my hope the letters were enlightening. Always suggest if anyone cares to visit bureau and help with work, it is most appreciated. At first I thought the first letter was a humorous one, but when two more serious ones came in from different parts of Canada, it's left me puzzled.

Perhaps our postal system might be interested in this PR project for Canada.

Many letters of thanks are received from Amateurs across Canada. Invitations to visit are also part of the communications and my thanks to one and all who have been kind enough to drop a note of thanks in their outgoing.

The nicest help anyone can give us here, is to sort their outgoing as to prefix for world bureaus. Just keep your domestic QSLs separate, so we can separate them immediately from stack.

—Jean VE3DGG

KINGSTON
QSL BUREAU

Ted Toogood VE3HOC, Manager of the Kingston QSL Bureau, is retiring in December of this year.

We need volunteers for this duty. (Either a club or an individual.) If we don't find anyone, the cards will have to go on to Toronto and Jean's capable hands.

Net Directory Update

Here are the latest changes to the Net Directory printed in the September issue of TCA 1985.

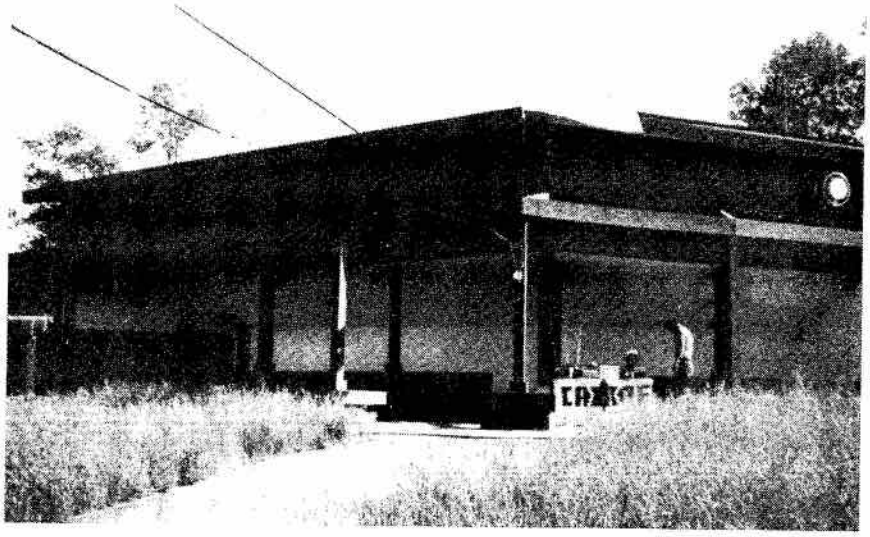
Royal Naval ARS	Sun	1900	14135 kHz
	Sat	1430	21360 kHz
	Wed	2330	7070 kHz
Peace Country Ragchewers net	Daily	0430 z	1.852 MHz
Vernon 2 M net	Sun	1745 z	146880 MHz
Salmon Arm 2M net	Sun	2400 z	146.760 MHz
Ontario White Cane Net	Wed	2000 L	3765 kHz
Champlain Reg Net	Daily	1845 L	147.060 MHz
Kingston Area ARES	Tues	1915 L	146.940 MHz
BC Public Service Net	Daily	0130z	3729 KHz
Kingston ARC Net	Tues	1915 L	146.940 MHz
Needle Net	Mon-Fri	0715 L	146.940 MHz
Ontario Quebec Net (OQN)	Daily	000z	3648 kHz
DELETE			
Quebec Section Net	Daily	0000z	3648 kHz

Let's keep this net list up to date so just drop me a note and I will keep these updates going. Norm VE6VW.

The Greatest DXpedition in the history of the National Parks

Safari in VE6

By Norm VE6VW



The native hut where we set up station.

VE6CB operating with VE5HG and a Parks Canada guide looking on.

In the deep, snake infested jungles of the far south, there was a short DXpedition by three Amateurs. They ventured out into the sticks to put a very rare callsign on the air-waves last Canada Day.

After fighting through the shark (pike) infested waters, the alligator (bullfrog) infested swamps and the dry, hot, mosquito infested air, we finally arrived at the site of the first settlers.

After the first hour of fighting off the natives and finding out where the facilities were, we finally got an adjustable dipole in the air.

Due to the tropical climate in this area, and it wasn't into the rainy season yet, we decided to set the operating position up in the partial shade of one of the buildings. The building housed the 50-man native-powered generator which was supplied by the chief on request.

Finally we got everything set up and we proceeded to enter the ongoing CARF Canada Day Contest 85 from this position.

We even let the partially native operator operate also— You may have heard him on the air at other times using the foreign call of VE5HG. For this DXpedition, Eric VE5HG was imported from Saskatoon and Jeff VE6CB was commandeered from the Leduc area. Yours truly, Norm VE6VW, did the more essential tasks of keeping the natives at bay, taking the photos and keeping the generator going.

The call we used was the official CARF call of XJ6VCA portable from the deep, snake infested, mosquito infested, alligator infested jungles of Elk Island National Park. The only National Park in Canada that is completely fenced.

73 and I'll see you in the December Contest.

PS: I am the QSL manager for the calls VE4VCA, VE5VCA, VE6VCA.

Δ

Third Party Traffic Agreements

Canada has concluded agreements with the following countries to permit Amateur radio operators to exchange messages or other communications from or to third parties: Australia, Bolivia (Republic of), Chile, Columbia (Republic of), Costa Rica, Dominican Republic, El Salvador (Republic of), Guatemala (Republic of), Guyana, Haiti, Honduras (Republic of), Israel (State of), Jamaica, Mexico, Nicaragua, Paraguay (Republic of), Peru, Trinidad and Tobago, United States of America, Uruguay (Oriental Republic of), Venezuela (Republic of).

Negotiations for the establishment of similar agreements or arrangements with Ecuador and the Federal Republic of Nigeria have been initiated.

Amateurs who wish to operate in Commonwealth countries other than those listed above should apply to the embassy in Canada or directly to the appropriate regulatory agency.

Δ

Late News

Another first for CARF. CARF and Travellers Canada offer a liability insurance policy to CARF members. $1,000,000 coverage against EMI suits, tower damage and similar claims. Premium: $26.00. Full details next month.

Amateur Radio in VE5-land

By B.J. Madsen VE5FX

This year's annual pilgrimage for our family to be somewhere other than here led us into eight states in the western U.S.A. Inquiries from some of the natives of "Where at are you all from?" produced a carefully pronounced 'Saskatchewan.' This created considerable confusion— was this in Florida? Colorado?— never heard of it!? Naturally, these geographically deficient individuals were not Amateurs— just university students. We know that all Amateurs know where VE5 is, don't we?

This sort of experience is humbling— just because VE5 is larger than Colorado and Montana combined doesn't mean that we have the right to make arrogant assumptions about our relative significance. Should Saskatchewan hams bury our heads, like the proverbial ostrich, in the sand of two-metre FM?

All this has led me to examine just what IS Amateur radio doing in VE5-land. What place DO we occupy in the world of hamdom? The data base I try to keep on all VE5s— for QSL bureau purposes— indicates that we have 841 licenses issued:
29 are repeaters
17 are clubs or schools
795 are individual Amateurs, of which:
545 are two letter suffixes
250 are three letter suffixes
39 are female
756 are male

This means that we average only 27 Amateurs per repeater but assuming that only half of us are active and/or have two-metre equipment, our repeaters are really serving 14 Amateurs each. Yes, there will be room for you to call in to a repeater as you are passing through Sask! The big question is— will anyone hear you?

A bit of nosing around and a few questions asked of the right people turned up a profile of Amateur activity in the province.

HF Operation— Traffic

The SARL 75 metre phone net meets nightly, at 0100z on 3753 KHz and typically draws 25-30 check-ins from all over the province, band permitting. During the winter months, following the net, VE5GF (Gord) runs a Sunday night Swap & Shop from his computer's data base. Plans are afoot to increase the scope of this operation to possibly include other provinces as well. For the CW operators, the Sask. Amateur Traffic Net's five or six check-ins meet nightly at 0400z on 3695 KHz and handle quite a lot of traffic. Every morning sees about 20 early risers swapping weather information at 1400z on 3780 kHz on the daily Prairie Weather Net.

HF Operation— DXing

Of our 795 licensed Amateurs, 536 have had cards come into the bureau this year, so there must be a healthy interest in Amateur Radio's noblest pursuit— DXing! Some, of course, are more active than others. At the top of the DXCC list is Al VE5RU with all countries worked and an all-time total of 353 countries— a feat outdone by only two other Canadians. We also have a holder of 5BDXCC— Doug VE5RA.

W: "Where you from?"
VE5: "Saskatoon, Saskatchewan."
W: "Oh, dear. Poor fellow doesn't speak English."

One has to have operated from VE5 to appreciate the determination required to achieve DXCC from the centre of the North American continent. No matter which direction you turn your beam, someone else has better propagation! When VE7BC was active from China, the DX window from here was measured at seven minutes (of listening to VE3s work China)! Despite these odds, six other VE5s are currently listed as members of DXCC— perseverance in the face of adversity.

HF Operation— Contests

Rarely does a major contest go by without a respectable representation from VE5 and often the trophy has found its way to Saskatchewan. Doug VE5RA has turned in world-class scores on occasion, from home as well as some DXpedition type operations (and receives bales of QSL cards as a consequence). Jim VE5DX is another very well-known contester who, until recently, has managed to insulate his walls with trophies and certificates. No, he has not retired— Jim is in the process of assembling some really serious hardware and will soon be back on the air from a new and radically improved location.

VHF-UHF Operation

Saskatchewan of course has its two-metre evening nets like everyone else and two-metre operation plays an important part in local parades, air shows and anywhere that reliable (and cheap) emergency communications is needed. There does not seem to be any problem in obtaining well-equipped volunteers for these worthy causes.

There has also been an increased interest in two-metre DXing. Several Amateurs throughout the province are equipped with multi-mode transceivers, low-loss cable and long horizontal beams and talk of 'grid-squares' may be heard on 144.2 MHz. This may be an interesting winter even if we are at the bottom of the sunspot cycle.

Ron VE5RG and Jim VE5DX have established a UHF repeater with some VERY sophisticated, state-of-the-art computerized capabilities. The versatility to this machine has numerous Amateurs in Regina running around with some extremely short 'rubber duckie' antennas.

Satellite Operations

Canada's satellite guru, Gordy VE5XU writes a regular column for *TCA* and is certainly well known to all inclined toward this mode. Anyone who has worked VE5 by satellite has probably worked Gordy. He is not alone, however— many listen and my neighbour, Dale VE5MJ, has just installed a pair of beams and is looking forward to some activity this fall.

What Else?

Doug VE5DA is one of several who are 'messing around' with packet radio. Glenn VE5GG has been operating an RTTY mailbox system in Regina for some years. Both ATV and SSTV systems are in operation in the province— perhaps even someone doing some moonbounce?

Have I missed anyone— sure, and I apologize, but it does illustrate that Amateur radio is alive in VE5-land. The average Amateur is a lot closer to his pension than his family allowance cheque and our ranks aren't increasing rapidly and probably won't unless the DOC experiences a change of heart.

A 'VE5 prefix' caught in a pileup is still worth an S-unit or two and often gains instant recognition. It's still nice to hear, "You are my first VE5— PLEASE QSL" and later receive an SAE and a 'greenstamp'. It's almost like being on a DXpedition! Δ

Saskatchewan Hamfest '85

By Bill Wood VE5AEJ

Saskatchewan Hamfest 85 was held in Regina on Aug. 2, 3, 4. Planning began back in the fall of 1984 when the Regina Amateur Radio Association struck its Hamfest committee. The year passed quickly and Hamfest 85 became a reality. Our hard work was rewarded with a good turnout from across the west. Displays, technical sessions, contests and fine food were enjoyed by Amateurs, families of Amateurs and prospective Amateurs.

As chairman, yours truly learned a great deal about the nature of hamfests and hams. When a club undertakes such an endeavor it requires the commitment of many man-hours. The Regina Amateur Radio Assoc. was no exception. Everyone rose to the occasion and the talent, experience and energy surfaced: a formidable task-force!

The fruits of our labours yielded a club station, VE5NN, developed in cooperation with Wascana Institute of Applied Arts and Sciences. The station is now equipped with HF and VHF with at least one further mode to go. If you hear VE5NN on the air, give a shout; our club station is young and full of energy and a little RF, Hi! Hi!

It was fitting that we should honour Vic Honeysett VE5EG from Assiniboia, in this, Saskatchewan's Heritage year. Vic has been on the air since 1921 and still has the enthusiasm and drive of a new Amateur. Vic was honored with a plaque at the Saturday evening banquet as well as a TV appearance in the official club station opening.

Andy Cobham VE4CCC, Regional Manager of Spectrum Control, DOC Winnipeg, was on hand to discuss concerns Amateurs encounter in their daily operations. Andy delivered the keynote address on Saturday evening with a thought-provoking overview of where we have come from and were we are going in our hobby.

Technical sessions on modes of communication, antennas and propagation were ably conducted by Tex Galpin VE4AB, Gordon Wightman VE5XU, Gordon Kosmenko VE5GF, Ray Bourne VE5FM, Bruce McCuskee VE5HI, Glenn Gorham VE5GG and Doug Appleton VE5DA. Contests, club station tours and technical displays were organized and carried out by other club members. We were pleased to see displays by the folks from Yaesu, Kenwood and Icom.

The Saturday evening banquet, awards presentation and dance rounded out events and we sent everyone home on Sunday with valuable pieces of equipment from the flea market auction. Yours truly will be back with my treasures to share them with those unfortunate fellows who didn't out-bid me.

Thanks to all who worked, attended and participated in Hamfest 85 in Regina and especially that hearty crew from Alberta who braved the grasshoppers to join us— thanks Bill and Norm. Δ

Above:
Left to right: Andy Cobham VE4CCC, Gordon Kosmenko, VE5GF and Tex Galpin VE4AB. "A toast to the experts."

Right:
Vic Honeysett VE5EG, left, a 64 year veteran of Amateur radio and fitting guest for Heritage 85 and Hamfest 85.

Bottom:
Bill Munday VE5WM held the CRRL fort.

RAMBLINGS FROM THE NORTH

Not too much new in the north (YUKON). Amateur activity is at an all time low, probably due to the lack of propagation. As far as I know, I am the only Amateur who has extensive low band antennas, particularly the 160 and 80 metre bands. The 34/94 repeater in Whitehorse is now back in operation with the use of solar power and a simplex autopatch. I am still waging the fight with CRRL/ARRL for the separate multiplier status for VY1 in the contests.

The Alaska Highway Net still operates on Monday, Wednesday and Friday evenings at 0400Z on 3782 kHz. Although there are very few check-ins, the net still operates regularly with the Net operator being VY1BE. Once again this winter I will be available for skeds on the 160, 80, and 40 metre bands.

To wind things up, look for the VY1CW, CC, CA operators on the air in all contests in which the VY1 prefix is a separate multiplier.

73s, Bill VY1CW

B.C. PUBLIC SERVICE NET
3729 kHz, 0130z daily

Calling the British Columbia Public Service Net. This is a directed net, that meets daily at 0130 Greenwich, on or about 3758 kHz, as a public service. All stations are welcome. All phone stations please net with this station. CW stations please net about one Kilohertz on the low side. Please do not interrupt roll call, except for emergency, to contact a recent check-in, or to correct an error. The word 'Contact' or your station call will get attention.

If you list traffic, either stand by, or cancel please. Stations listing traffic will set the frequency, except that phone stations will always set frequency for CW stations, to save time.

The use of phonetics will be appreciated. Tonight, your net control station is:
(1) Any emergency or priority traffic?
(2) Check-ins from mobiles with or without traffic.
(3) Open Channel until 0200, traffic or checkouts, any section.
AT 0200: This is the BC Public Service Net, and this is:
(1) Second call, emergency or priority traffic.
(2) Second call mobiles with or without traffic.
(3) Net Bulletins?
(4) Sick or injured Amateur reports?
(5) Traffic and roll call tonight in the order of:
(6) First roll call, then traffic and roll calls.

This concludes the B.C. Public Service Net for this evening. My thanks to relays, those handling traffic, and getting stations on the air, and those giving us a clear operating frequency. We close down now at , Universal Time.

Thank you. Good night. This is , and the channel is clear.

Sunday: North, East, South, Island
Monday: East, South, Island, North
Tuesday: Island, North, East, South
Wednesday: North, East, South, Island
Thursday: East, South, Island, North
Friday: South, Island, North, East
Saturday: Island, North, East, South

SASKATOON HAPPENINGS

The Saskatoon Amateur Radio Club was active again this year for Field Day. This year we operated jointly with the U. of S. club on the University campus. Our site was overlooking the South Saskatchewan River. We ran barefoot class using a four element monobander on 20 and vees for 80 and 40 metres for the SSB station, and for CW a G5 RV antenna was used.

Unfortunately I don't have a total of points or QSOs at present but conditions in general were good. We had the usual problem of lack of participants willing to spend the night but overall things came off well. The local Honda dealer in town donated two generators (brand new ones at that), Labatt's brewery in Saskatoon donated refreshments as did the Pepsi Cola dealer in town. John VE5BDY has to be salesman of the year again this year for his work in obtaining all of the above donations by approaching the various companies and 'making them aware of our endeavors.

John VE5BDY was also our Field Day co-ordinator this year. Not bad for a guy who just obtained his licence this spring.

Those who took part in Field Day were VE5 YK, HG, BAF, BDY, BBQ, CC, UK, BDT, BEM, BEO, BDV. We also had a number of visitors who just dropped by to see what was going on.

The Saskatoon Amateur Radio Club elected a new executive at the June meeting. The executive for 85/86 will be: President Mark VE5ZU, Vice President Martha VE5YY, Treasurer CY VE5BER, Secretary Stu VE5BDR, Directors, Blair VE5KI, John VE5BDY and Jim VE5KQ. The Past President who also sits on the executive is Ernie VE5BEO.

One more project the club has been involved with. Fred VE5UX and I handled over 200 messages, invitations to relatives of residents of the Lutheran Sunset Home in Saskatoon, an old folks home in the city. This was regarding an annual picnic held at the home. This is the second year we have done this. We also handled about the same number of Christmas messages on behalf of the home last year. They have become very appreciative of the service we are able to provide. We recently received a letter of thanks from the activities co-ordinator there.

73, Dave VE5BAF

Peace Country Public Service

Grande Prairie County Fair Parade

A County Fair organizer contacted her co-worker and local ham Don VE6ACT, to request the assistance of local Amateurs to supply radio communications and manpower in the organization of the local County Fair Parade. Don VE6ACT and Tony VE6ATB brought forth the proposal to the rest of the locals. It was a unanimous decision to 'go for it,' as this was a great way to promote the usefulness of Amateur Radio and gain some publicity for the Club. A van (VE6ATB's) bearing the Club banners (banners courtesy Dave VE6AL and XYL) was even 'sneaked' into the parade. It got a lot of 'hoots' and 'whistles' from the girls. Was it the banners, the van or the two heart-throb hunks inside? We'll never tell!

It was a seemingly impossible task to direct over 100 lost and misguided floats into their prospective categories. We prevailed and the end result was a parade that went like clockwork.

Many thanks go out to the guys for their invaluable efforts: Don VE6ACT, Tony VE6ATB, Mike VE6XD, Bob VE6WB, Sean VE6ACE, Blain VE6BFW, Dave VE6ALC, Earle

Norm VE6VW at the CARF table, Saskatchewan Hamfest.

VE6NM and Brian VE6VC using Club Call VE6ARC.

Also thanks goes out to those who were unable to attend but lent the use of their hand carried portables: Dave VE6XY and the Peace Country Amateur Radio Club, Northern Chapter.

With the knowledge and experience gained, it will be possible to make next year's organizing easier and more efficient. Once again guys, thanks for a job VERY well done.

73, Tony VE6ATB

Peace Country Road Rally

Participants from the Peace Country Amateur Radio Club involved with the communications for the Alberta Highway Patrol 500-km second annual road rally were: Earle VE6NM, Dennis VE6BGZ, Dave VE6XY, Albert VE6BII, Don VE6ACT, Dave VE6ALC and Brian VE6VC. With moral support and assistance supplied by Heinz VE6AND.

Checkpoints were set up at 6 a.m. and ranged from near Musreau Lake in the south to White Mountain in the Spirit River area and points in between. The checkpoints closed at 8 p.m.

The results of the race were tabulated well in advance as they were broadcast in on completion of each lap. We were also able to supply information on vehicles which were either lost or in trouble. We were advised that we saved the AHP and RCMP about 2000 miles of patrolling.

For those of us manning the base station, and those involved in tabulating the information as well as support staff, meals and refreshments were provided. The Peace Country Amateur Radio Club paid for a wrap-up meal for those manning the checkpoints in the field.

All in all, things went very smoothly, with VE6OL repeater getting a very good workout. Definitely something to look forward to for the next year. The Peace Country Amateur Radio Club thanks the Alberta Highway Patrol for inviting us to take part.

73, VE6VC

The Peace Country Ragchewers Net

This is an informal Net, organized for the convenience of Amateurs and to stimulate interest and use of the 160 Metre Band.

Net meets every evening at 04:30Z on about 1.852 kHz.

All Amateurs are invited to check in and give a few remarks. If you wish to contact any other station please advise Net Control and move to another frequency.

Net Control rotates each evening which gives everyone a chance to join the group and participate in the action.

Present Net Controllers are:
Mon— VE6COH Ken, Barons, Ab
Tue— VE5BEP Don, Rabbit Lake, Sask
Wed— VE7ETY Paul, Cranbrook, BC
Thu— VE6CNL Gerry, Raymond, Ab
Fri— VE7AJA Steve, Vernon, BC
Sun— VE6ACT Don, Gr. Prairie, Ab
Best 73 to all

Keith VE5VJ gets his QSL the easy way.

Much to everyone's surprise, we are happy to report that the 160 Metre Ragchewers Net has remained alive and well throughout the summer months. Although noise levels often reached S9 and static crashes pinned the needle, the persistent operator still managed to make it back to Net Control. Some of the worst evenings it even got to the point where relays were asking for relays. It was good to hear that the more ambitious hams were starting to build filters, underground receiving loops, etc., to see if they could cut the noise level. Through it all signals generally remained strong even with the noise.

On two occasions the Net was called from portable locations. During the Field Day weekend we operated from Grassy Lake (VE6ARR— QTH) using a horizontal quad which VE6AGH had supplied. It performed perfectly both on receive and transmit. Unfortunately just before Net time a gust of wind twisted the feed line changing the whole thing into a long wire. Nevertheless it worked well enough to have 18 check-ins from Regina to Victoria.

On July 17, Net Control moved to the site of the Waterton Glacier Hamfest. After a great deal of technical advice and a lot of physical effort, two rolls of bronze fishing line and some baler twine made a reasonable antenna. It was suspended 15 feet in the air over a road and followed a zig-zag path between some large trees. Considering that the area was completely surrounded by mountains, the antenna worked surprisingly well. A total of 8 check-ins on the air and 18 on foot. It was a good chance to meet a lot of the gang from 160 and see if they really look the way they sound.

As of Sept. 15, the check-in list includes 275 names of stations from Alaska to California and from the Queen Charlotte Islands to Quebec. The list continues to grow at the rate of 14 per week. Average nightly check-ins during March, April and May were 25 while the number dropped to 18 during July and August. September has shown an increase again to 28 on an average night. Most evenings the Net runs an hour to an hour and a half.

We would like to take this opportunity to thank all those who have taken the time to check-in and make the Net such a good place to spend an evening. Also for those who have not as yet been on we send an invitation to give a call. When you check in we appreciate remarks on who you copy and how well, as it provides everyone with a proving ground for rigs and antenna systems.

Please check in whenever the opportunity arises. It's always nice to hear you on.

73 and we'll catch you on 160. 04:30 Zulu, 1.852 MHz every evening.

Gerry VE6CNL

Δ

News Update, Oct. 28, 1985

J.R.S.D. Fund

Box 8873, Ottawa, Ontario K1G 3J2

Jack Ravenscroft VE3SR, of Kanata, Ontario, has lost Amateur Radio privileges at his home location, due to the temporary injunction issued against him on July 25, 1985.

Jack's station was given a clean bill of health by the DOC late last year; however, appliances in a neighbour's home lacked any form of immunity to electromagnetic radiation and as a result, use of his transmitter was deemed to cause a general nuisance.

Concern about this case has become more widespread as time progresses beyond one year. A commercial transmitter might have its licence to broadcast suspended for similar 'interference.' A permanent injunction would deny the technical reciprocity that exists between local electromagnetic radiators and appliances that have no immunity whatsoever.

The radio act permits legal discourse on technical grounds for infractions of the Radio Act, whereas this case involves a civil action and civil law.

Amateurs— and commercial operators, too— would do well to question the philosophy that on the one hand protect transmitter operations under the Radio Act but on the other ignores the susceptibility of electronic devices which by their very nature cannot reject radio frequency energy.

DOC has just completed an exhaustive four day test at the complainant's house— 191 separate tests were run consisting of 800-900 separate transmissions by VE3SR. One preliminary finding (prior to the issuance of their formal report) was the complete absence of any microwave oven interaction. Sincere thanks to the many Amateurs who witnessed these tests on 20 M and their indulgence while the tests were conducted. Jack had to apologize for being unable to acknowledge all the many good wishes heard in his receiver during this period.

There are two sides to an injustice— help support the side of Amateur radio in the court. A definite trial date should be known within the next 30 days. Don't expect an early conclusion. There's some educating to do.

Close to 400 Amateurs and Associations have supported Jack so far. Express your views through your Clubs and Associations. We invite you to support this cause.

Ralph Cameron VE3BBM, Chairman
Rick Van Gastel VE3HVA, Vice Chairman
Bruce Lauer VE3MJV, Treasurer.

Note: P.O. Box 8873, Ottawa, has been loaned temporarily by the Ottawa Amateur Radio Club. We have no other affiliation with a local or national organization but enjoy their support. Thank you.

(The fund reached $13K in mid-October).

Canadian JRSD Fund Contributors

VE1AEB	VE2SI	VE3CC	VE3ICP	VE3NQT	VE5AEG	VE7DLL
VE1AHW	VE2TY	VE3CDC	VE3ICV	VE3NSG	VE5GY	VE7EGC
VE1ANY	VE2WD	VE3CDI	VE3IHC	VE3NSJ	VE5YA	VE7EGO
VE1AWR	VE2WL	VE3CDM	VE3IO	VE3NVL	VE6AC	VE7EHI
VE1BZS	VE2XX	VE3CGT	VE3IPP	VE3NYA	VE6AFB	VE7EHJ
VE1BZY	VE2XYL	VE3CHJ	VE3JA	VE3OFP	VE6AST	VE7EHR
VE1CAJ	VE2YH	VE3CPG	VE3JBX	VE3OFY	VE6AUZ	VE7EQ
VE1CII	VE2YP	VE3CQV	VE3JDA	VE3OIN	VE6AVZ	VE7ERA
VE1SZ	VE2YU	VE3CUJ	VE3JE	VE3OIX	VE6BKW	VE7ESA
VE2ACT	VE2ZC	VE3DCN	VE3JGC	VE3OIZ	VE6BMM	VE7ESI
VE2ADK	VE2ZZ	VE3DCN	VE3JKC/2	VE3OMO	VE6CAG	VE7EV
VE2AEG	VE3AAC	VE3DGI	VE3JKF	VE3ON	VE6CBX	VE7EWR
VE2AEO	VE3ADB	VE3DMC	VE3JLI	VE3ONI	VE6CFQ	VE7EXK
VE2AXY	VE3AFY	VE3DME	VE3JLX	VE3OZD	VE6CPU	VE7FD
VE2AYU	VE3AFY	VE3DPO	VE3JMC	VE3PAW	VE6EC	VE7FFU
VE2BEM	VE3AHU	VE3DR	VE3JMT	VE3PIA	VE6FN	VE7FK
VE2BLW	VE3AHW	VE3DY	VE3JMV	VE3PR	VE6FY	VE7FNZ
VE2CP	VE3AHZ	VE3DZH	VE3JQT	VE3RU	VE6HA	VE7GK
VE2DAF	VE3AJA	VE3EH	VE3JRG	VE3STP	VE6NM	VE7JT
VE2DKH	VE3AJF	VE3EHV	VE3JT	VE3TL	VE6QW	VE7JW
VE2DTI	VE3AJN	VE3EQE	VE3KIZ	VE3TT	VE6SSB	VE7MAB
VE2DWG	VE3AJQ	VE3EQH	VE3KLK	VE3UX	VE6TF	VE7OA
VE2DWH	VE3AMN	VE3ET	VE3KMV	VE3VU	VE6XY	VE7PHD
VE2DYE	VE3AMT	VE3EVX	VE3KSH	VE3VW	VE6YU	VE7PU
VE2ESI	VE3ANL	VE3FFK	VE3KU	VE3XL	VE7AED	VE7PW
VE2EY	VE3ANO	VE3FHQ	VE3KYA	VE3ZC	VE7AKK	VE7RG
VE2GDD	VE3AOI	VE3FKD	VE3LAW	VE3ZS	VE7ALB	VE7WC
VE2GDQ	VE3ASO	VE3FKF	VE3LBJ	VE4AAU	VE7ALV	VE7WI
VE2GFK	VE3AXA	VE3FSO	VE3LC	VE4ADU	VE7AMW	VE8YQ
VE2GGO	VE3BAJ	VE3FSQ	VE3LC	VE4AEA	VE7APF	VO1AE
VE2GK	VE3BAK	VE3FUD	VE3LI	VE4AEE	VE7AWJ	VO1AT
VE2GKB	VE3BBL	VE3FXF	VE3LIK	VE4AET	VE7BEI	VO1AW
VE2GMQ	VE3BBM	VE3FXG	VE3LIK	VE4AJL	VE7BGP	VO1BD
VE2GTN	VE3BBM	VE3GG	VE3LKH	VE4AKH	VE7BRC	VO1CE
VE2GXF	VE3BGE	VE3GJH	VE3LKR	VE4AME	VE7BS	VO1CF
VE2GZH	VE3BHW	VE3GJY	VE3LMG	VE4AMI	VE7BSM	VO1DB
VE2HAX	VE3BID	VE3GL	VE3LNX	VE4AMJ	VE7BTL	VO1FF
VE2HBQ	VE3BIF	VE3GNU	VE3LXK	VE4ANW	VE7BXG	VO1GO
VE2HMB	VE3BK	VE3GNW	VE3LXZ	VE4BQ	VE7BZD	VO1IT
VE2HN	VE3BK	VE3GO	VE3LZS	VE4CR	VE7CBN	VO1JO
VE2KU	VE3BLD	VE3GRO	VE3MBF	VE4DO	VE7CDF	VO1KG
VE2ME	VE3BMN	VE3GT	VE3MFI	VE4FK	VE7CDV	VO1KP
VE2ON	VE3BTQ	VE3GX	VE3MR	VE4FT	VE7CFR	VO1LR
VE2OU	VE3BUU	VE3GXG	VE3MSW	VE4JK	VE7CN	VO1NU
VE2OV	VE3BVQ	VE3HC	VE3MW	VE4MG	VE7CQV	VO1OI
VE2QA	VE3BVW	VE3HCM	VE3NDF	VE4OK	VE7DDF	VO1OO
VE2QO	VE3BXD	VE3HNJ	VE3NK	VE4WR	VE7DFY	
VE2QX	VE3BYX	VE3HOK	VE3NMZ	VE4WT	VE7DGY	
VE2SH	VE3CBE	VE3HVA	VE3NPC	VE5ADF	VE7DLB	

Other JRSD Fund contributors

K1ZX (HOMESTEAD FLA.)
K2LG (LINCROFT N.J.)
K5WUF
K7TNE (TUSCON AZ.)
K8ANV
K8ANV (CINCINNATI OHIO)
KA2YKZ (TOMS RIVER N.J.)
KA9DLM (PORTAGE IND.)
KB4DHD
KC9WF (ROCKFORD ILL.)
KD2NI
KE5WA
KV5K (DENISON TEX.)
KZ1Y (HUDSON ME.)
N8FVG
NN7F (FLAGSTAFF ARIZ.)
ON5TW/PA (NEDERLAND)
WOEFK (MINNEAPOLIS MINN.)
W1CW (HOMESTEAD FLA.)
W1LID (LACONIA N.H.)
W1YL (HOMESTEAD FLA.)
W3VRZ
W6NBM (WILDOMAR CA.)
W7HT (TUSCON AZ.)
W7UU
WA5ZIJ (BATON ROUGE LA)

Calls in twice mean two separate contributions. The list is not complete: more lists will follow.

CONTEST SCENE

By John Connor VE1BHA
18 Deerfield Dr., Apt. 1112, Nepean, Ont. K2G 4L2

It's 1400Z on a Saturday at the end of October. Our hero, Joe Hamm, wanders into the shack, and flips on the rig. Following a habit that he picked up back around 1979, at the high part of the last sunspot cycle, Joe flips the band switch to 10M, planning to give the band a quick scan and then start working down in frequency to see what is happening on the other bands.

But wait! What's this? There are signals on 10M. Must be Americans. Who's this? Mumble burble glurk Juliett Bravo. Let's listen a moment longer. Ah, there he is again. 9U5JB??! Zone 36! It's Jim Bullington from Burundi, deep in the heart of the Great Rift Valley in Africa. Ten is open!

Yes, that was the reaction of many who turned on their rigs during this year's CQ WW Phone Contest. Griznoid, the benevolent god of propagation, smiled on contesters from Burundi to Coquitlam, and everywhere else too! Conditions were nothing short of incredible, with a solar flux of about 85 at contest time Friday night, and a K index near zero throughout the weekend.

Ten metres opened to Europe for about 90 minutes Saturday morning for those in Eastern North America, and remained open to Africa well into the afternoon. Lots of juicy DX with good signals showed up, including several TR8s, many ZS6s, CN, 5Z, 5N, ZS3, D4 and of course 9U5.

Conditions on both 15 and 20 were also good, although the European openings were not very deep. Fifteen opened to Japan for those in W5, and 20 opened both Saturday and Sunday to JA for eastern North America. As well, at least two BY stations put in an appearance on 20 metres Saturday night.

As if this weren't enough, the low bands were also in good shape, thanks to the low absorption levels. DX and multipliers were both abundant on 40/80/160.

One of the best propagation indicators (after the fact) that I know of is American Multi-Multi scores. N2AA, the top MM in the United States, made DXCC this year on 40M, 20M and 15M. They also worked 96 countries on 80M and 51 on 160M. N5AU in the Dallas/Fort Worth area found 63 countries on 10 metres.

Yet another indication of this year's good conditions is the fact that John K1AR broke the old American single operator all-band record by nearly 500k points.

Participation from Canada was good, with many VEs heard on all bands. It will be interesting to see if any Canadian records were broken.

I do have two early scores to report. They are both multi-single stations—VE3UOT with about 850 QSOs, and VE3JW with about 300 QSOs.

Nostalgia

Looking through my log for this contest from 1975, I am struck by how many calls from that log show up in this year's log. I don't think that conditions on 10 and 15 were as good then as this year. But on the other hand, I don't find any Angolan stations in this year's log, while CR6IK is there in the 1975 log, big as life.

Two questions come to mind as I write this. The first is, will conditions be as good for the CW Contest this year? Usually the Phone Contest gets better propagation than the long-suffering CW ops do. The second question is, what will propagation be like for the ARRL Contests coming in February and March? Of course, there is only one way to answer that question. Turn on the rig. Listen around, and if you don't hear anything, call CQ. You never know what may come back. Why, you might just get called by 9U5JB. You can never tell. Δ

The Accident Report

By Bill VE5WM

The scene opens upon an Amateur sitting at his desk contemplating how he should answer a letter from his insurance company. Eventually this is his reply...

I am writing in response to your request for additional information in block number three of the accident report form. I put 'poor planning' as the cause of my accident. You said in your letter that I should explain more fully, and I trust that the following details will be sufficient.

I am an Amateur Radio Operator. On the day of the accident I was working alone on the top section of my new 80 foot tower. When I had completed my work, I discovered that I had, over the course of several trips up tower, brought up about 300 pounds of tools and spare hardware. Rather than carry the now unneeded tools and material down by hand, I decided to lower the items down in a small barrel by using a pulley, which fortunately was attached to the gin pole at the top of the tower.

Securing the ropes at ground level, I went to the top of the tower and loaded the tools and material into the barrel. Then I went back to the ground level and untied the rope, holding tightly to insure a slow descent of the 300 pounds of tools. You will note in block number 11 of the accident reporting form that I weigh only 155 pounds.

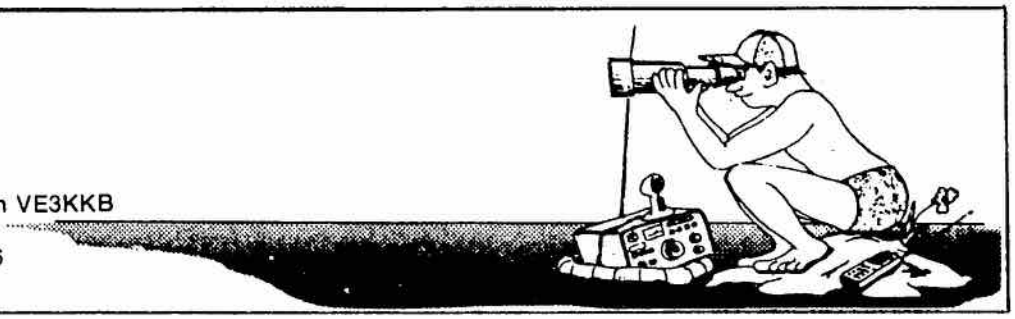
Due to my surprise at being jerked off the ground so suddenly, I lost my presence of mind and forgot to let go of the rope. Needless to say I proceeded at a rather rapid rate of speed up the side of the tower. In the vicinity of the 40-foot level, I met the barrel coming down. This explains my fractured skull and broken collarbone. Slowed only slightly, I continued my rapid ascent, not stopping until the fingers of my right hand were two knuckles deep into the pulley.

Fortunately by this time, I had regained my presence of mind and was able to hold onto the rope in spite of my pain. At about the same time, however, the barrel of tools hit the ground and the bottom fell out of the barrel. Devoid of the weight of the tools, the barrel now weighed about 20 pounds. I refer you again to my weight in block number 11. As you might imagine I began a rapid descent down the side of the tower. In the vicinity of the 40-foot level, I met the barrel coming up. This accounts for the two fractured ankles and lacerations of my legs and lower body.

The encounter with the barrel slowed me enough to lessen my injuries when I fell onto the pile of tools and, fortunately only three vertebrae were cracked. I am sorry to report, however, that as I lay there on the tools in pain, unable to stand, and watching the empty barrel 80 feet above me... I again lost my presence of mind, I let go of the rope... Δ

DX

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



As another year draws to a close, it is time to sit and reflect on the year ending, and to think ahead to 1986. While conditions were, at best, mixed in 1985, there certainly was lots of DX to work, even if it took a bit more planning and patience than in the past. Several big DXpeditions helped keep the level of excitement reasonably high.

What conditions will be like in 1986 is anybody's guess. Having never been through a sunspot minimum before, I really was at a loss to know first hand, but I must say that I expected conditions to be much worse than they have been so far. I expect that conditions will deteriorate somewhat further, particularly on the higher bands, in 1986. In October 1985, sunspot cycle 21 was 9.3 years old. Previous cycles have been as short as 9.0 years, and as long as 13.6 years, with an 11.1 year average length. One indication that the bottom of a solar cycle is near is when sunspots of the new cycle appear. The period of overlap when the new spots can be seen simultaneously with the old cycle's spots is about 2 years, and the appearance of the new spots occurs approximately 1 year before the minimum. At the time of this writing, (Oct./85), this event had not yet been observed.

While the irregularities of sunspot cycles make it very difficult to accurately predict what any given cycle will do (until it's already done—Hi!), the best prediction modelling suggests that the minimum for our current cycle (21) will occur in either December 1986, or early in 1987. It will be a couple of years after that before the higher HF bands return to their heyday of a few years back.

Appearing here is a compilation of the top 20 most needed countries in 1985. Their current rank is compared to that of the 1984, and 1980 rankings. This is only part of a list compiled by K1TN of the *DX Bulletin*, Andover, Ct., U.S.A. It originally appeared in its entirety in Issue 302, The *DX Bulletin*, Sept. 6, 1985.

COUNTRY	1985 Rank	1984 Rank	1980 Rank
ZA	001	001	004
7O	002	002	007
3Y	003	004	012
VU7/A	004	006	010
XV	005	007	017
YA	006	009	019
4W	007	008	020
XZ	008	003	003
5A	009	011	022
S2	010	013	049
XW	011	012	026
A6	012	015	030
XU	013	010	008
S9	014	016	072
A5	015	019	055
SV/A	016	018	045
1S	017	017	053
VP8 S.Ga.	018	023	053
ZS2M	019	022	N/A
VP8 S.Sand.	020	026	048

Bits and Pieces:

A71, Qatar— A71AD will be going permanently QRT the first week of December. He will be dismantling his station, and leaving Qatar for good later in the month. Anyone needing a QSL from either A71AD or A7XD MUST QSL NOW because when he leaves, the logs remain behind. QSL to: C.G. Mike Smedal, P.O. Box 4747, Doha, Qatar.

BV, Taiwan— BV2DA, a newly licensed operator, has been active on 40 M CW, after 1400Z. QSL via DL7FT.

CE9, Antarctica— CE9AA on 7.011 MHz from 0001-0300Z. QSL via buro.

DP0— DP0GVN has been on 7.005 MHz around 0001Z. QSL to DJ4SO.

FM, Martinique— FM5WD says that he is very active every night around 1880 kHz from about 0300z.

JY50, Jordan— JY50 was a special prefix used Nov. 7-21 in celebration of the 50th birthday of His Majesty, King Hussein of Jordan (JY1).

TN, Congo— TN8EE has been reported on 14.197 MHz around 2100Z.

TR, Gabon— In addition to TR8IG and TR8JYC, there has been activity by TR8SA (21.308 MHz); TR8RAL (21.208 MHz); and TR8AHO (21.253 MHz), all around 1900-2000Z. TR8AHO QSL Via DK1PO.

VQ9, Diego Garcia— VQ9LD has been active at the low end of 40 metres from 2100-0000Z.

3X, Rep. of Guinea— 3X0HAB has been very active around 7.001 MHz from 0001 to 0300Z.

5H, Tanzania— SM0AJU will be operating from 5H3BH through Dec. 2. No QSL route was mentioned.

9L, Sierra Leone— Bill 9L3MW is a new operator, and is active with Snookey's Net on 14.183 MHz, Friday afternoons around 2100Z. QSL via James Drage, 7138 Wilkinson Drive, Rockford, MI, 49341, U.S.A.

On Sept. 17, 1985, in a unanimous 7-0 vote, the Pribilof Islands (KL7) will NOT be given separate DXCC country status. However, don't throw away your cards, as nothing is cast in stone.

My thanks to the following for material appearing here:
Long Skip (CANAD-X), *QRZ DX*, *DX Report* (Now Defunct), *CQ Magazine*, and many off-the-air reports.

I hope that you all have a very Merry Christmas, and a Happy and Prosperous New Year.

With our apologies to VK-land

While browsing at an automotive supply outlet for a make-shift connector for my mobile rig, I was approached by the youthful salesman. He seemed amazed that I knew what I was looking for even though I couldn't name the part. When I finally found something that would do, the sales-clerk asked me what I was going to use it for.

"My ham radio in the car," I said.

"Do you talk right around the world?" queried the salesclerk.

"Yes, I do," I replied, preparing to pay for the purchase.

"What's the furthest?" he continued.

"Australia," I said proudly.

"Do they speak English there?" he asked. —VE3DZB

DX Trivia Quiz

The following questions are multiple choice type. Select the correct answer simply by circling it.

The ARRL DXCC Award— History

1) The ARRL DXCC Award was first introduced in *QST* during what year?
A) 1936 B) 1940 C) 1948 D) 1955 E) 1960

2) Who was the first person to achieve DXCC?
A) W6HX B) W8CRA C) G6WY D) HB9J E) W6AM

3) Who has achieved the largest country total in the history of DXCC? (Based on May 1982 Honor Roll)
A) W6AM B) W1GKK C) W0TJ D) W3KT E) W2PV

4) How many countries are on the current (May 1982) DXCC active list?
A) 316 B) 317 C) 318 D) 319 E)320

5) What year was the popular CW DXCC Award introduced?
A) 1936 B) 1948 C) 1970 D) 1975 E) 1976

6) What year was the 5B DXCC Award introduced?
A) 1969 B) 1970 C) 1971 D) 1972

7) Who was the first person to achieve 5B DXCC?
A) W4QCW B) W7PHO C) W1AX D) WBBT E) DL7AA

8) What country was the latest DXCC deletion?
A) 1A0 B) VS9K C)KZ5 D) 7J1 E) SP

9) In 1958 a novice with the call KN4RID became the first novice to qualify for DXCC. What is his current call?
A) KH6IJ B) K1ZZ C) N4KE D) W0ZV E) WB2JUQ

10) What is the call of the newest DXCC country?
A) 1A0KM B) VK9ZR C) BY1PK D) S83T E) KF1O/CE0X

The WAZ Award— History

11) During what year was the WAZ Award introduced?
A) 1931 B) 1936 C) 1956 D) 1966 E) 1970

12) What magazine originally introduced the WAZ Award?
A) Radio Magazine B) 73 Magazine C) CQ Magazine D) QST E) Popular Science.

13) How many people achieved WAZ prior to World War II?
A) 0 B) 3 C) 55 D) 132 E) 1211

14) Who was the first person to achieve WAZ?
A) W0DX B) W8OK C) ON4AU D) W6AM E) G2ZQ

15) Who was the first person to achieve the 5B WAZ award?
A) EA3SF B) ON4UN C) ZL2BT D) OH2BH E) EA8AK

16) Who was the first person in the US Zero (0) district to achieve 5B WAZ?
A) N0XA B) W0ZV C) W0SD D) K0RF E) N4RR/0

The WPX Prefix Award— History

17) What magazine sponsors the WPX prefix award?
A) CQ Magazine B) 73 Magazine C) QST D) Penthouse E) TV Guide.

18) Who was the first person to win the WPX Award?
A) W6AM B) W6KG C) W0TJ D) KH6IJ E) OH2BH

19) The WPX Award for the novice class is called the WPNX Award. Who was the first person to achieve it?
A) KN4RID B) WN8OEU C) WN7PHO D) WN3HUP E) WN0EZQ

Geography— The CQ zone map is divided into 40 different regions of the world. These regions (1-40) are the basis for the WAZ Award and are important multipliers during the CQWWDX Contest. For the following callsigns, in what CQ zone are they located?

UA1PAM (FJL) _____
UA0YAAD (TUVA USSR) _____
VK8CS (AUSTRALIA) _____
9X5LE (RWANDA) _____
BV2B (TAIWAN) _____
PJ5AA (SABA) _____
4U1UN (U.N.) _____
VU7AA (LACCADIVES) _____
XF4MDX (REVILLA GIGEDO) _____
ZA1BB (ALBANIA) _____
ZF2EO (GR. CAYMAN) _____
JD1ALP (OGASAWARA) _____
HK0AA (MALPELO) _____
FO0XH (CLIPPERTON) _____

You have been away from DX for a while and you hear a lot of new prefixes that have been changed over the years. Try to remember the old prefix for the countries listed below.

COUNTRY	CURRENT PREFIX	OLD PREFIX
Bahamas	C6	
Guinea Bissau	J5	
Tuvalu	T2	
Belize	V3	
St. Lucia	J6	
Virgin Is.	KP2	
Solomon Is.	H4	
Dominica	J7	
Sao Tome	S9	
Nicaragua	YN	

The following questions are related to random DX topics and require you to fill in the blank.

19) What was Gus Browning's favorite beverage? _____

20) Don Miller, the DXer, had what stateside call? _____

21) What is Bill (family hour) W7PHO's last name? _____

22) Tom Wong VE7BC can be associated with what rare DX country? _____

23) Name any of the three operators that operated from the 1979 Spratley (1S1DX) DXpedition? _____

24) Herbie WA6BJS is often the net control for what 15 metre DX net? _____

25) Dr. Vince Thompson prefers what mode during his DX operations? _____

26) The ARRL DXCC program is administered by Don Search. What is his call? _____

27) If you worked C7TY in 1948, what DXCC country did you work? _____

28) What was the original YASME? _____

29) Who writes the DX column for QST? _____

30) You have QSL cards from XZ5A, KF1O/CE0X, S83T, and G3JKI/5A. How many valid DXCC countries do you have? _____

31) Who furnished most of the equipment for the OE6XG/A, ABU AIL DXpedition of 1979? _____

32) His picture is on more QSL cards than any other individual. His call was RAEM. What is his name? _____

33) Contacts made between July 1, 1960 and July 1, 1962 will count for this extremely rare deleted DXCC African country? _____

34) What is the name of the husband and wife DX team that has most recently activated 3C0, 5X, and 8Q7? _____

35) Including deleted countries, what is the highest endorsement sticker for DXCC that you can obtain? _____

All answers can be obtained via VE5GF.

Canadian Time Service
Service Canadien de l'heure

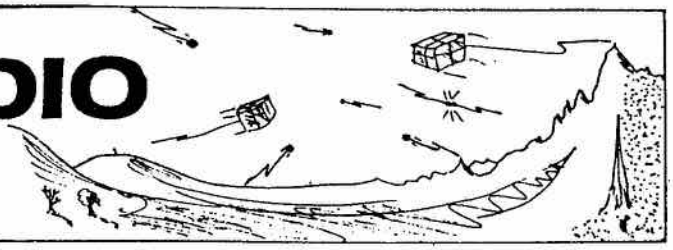
BULLETIN TF—B—155
Commencing Dec. 5 1985, 0h UTC
DUTI = UT1 — UTC will be
+ 0.3 seconds
The new value of DUTI, as given by the BIH Circular F 128 will be indicated on CHU by a split pulse on the 1st to 3rd seconds of each minute.

A partir du 5 décembre 1985, 0h UTC
DUTI = UT1 — UTC sera
+ 0,3 secondes
La nouvelle valeur de DUTI, telle que donnée par la circulaire F 128 du BIH sera indiquée sur CHU en divisant en deux, chacun des repéres, du 1er au 3e inclus de chaque minute.
Electrical and Time
Standards Section

Section des étalons
d'électricité et de temps

PACKET RADIO

By Brett Delmage VE3JLG
5-136 Woodridge Cres.
Nepean, Ont. K2B 7S9.



Packet Radio activity is now growing rapidly throughout Ontario, after a slow start, and the lack of sufficient interest in and subsequent failure of several earlier, pioneering systems. This month the current state of packet radio activity in several Western Canadian cities is presented. To start the year off, a fun look at past and projected numbers of packet radio operators worldwide follows.

Saskatchewan

Doug Appleton VE3DA informed me of the (lack of) packet radio activity in Regina. Doug has been active for several years and has demonstrated packet radio at local radio club meetings and the Saskatchewan Hamfest. Regular connections have been established with Jim Koehler VE5FP in Saskatoon. Jim indicated that there are currently four packeteers in Saskatoon, using TAPR terminal node controllers operating the AX.25 protocol. A small profit obtained from running an Amateur Radio course will be used to procure a digipeater, to be installed in spring at the top of the Arts building at the University of Sask.

Doug and Jim both expressed similar feelings about a 'lack of interest' in their areas.

Calgary

15 operators in the Calgary area are active on 146.70 MHz. Using a locally developed data communication system called HCOM, according to the digital group's chairman Dudley Craven VE6AAP. Operators felt that the TNC and implemented protocol typically used for packet operation was excessive and so a unique, 'home-brew' solution was developed to provide error-free transmission of text and data (computer files) between stations. HCOM operates at up to 1800 baud in a half-duplex environment and uses ARQ (Automatic Repeat reQuest) techniques to guarantee error-free transfer of information. HCOM software runs on CPFM based computers and IBM PCs and clones. By the time you read this it is likely that HCOM will be available from at least one Canadian Amateur Radio equipment supplier.

In addition to the HCOM communications there are two operators on the air in Calgary (callsigns unknown) using standard AX.25 node controllers.

Packet operation to the north of Calgary, in Edmonton is reported to be zero at this time. (Thanks to Dave VE6TG for Alberta information.)

PACSTAT

Harold Price NK6K, an active participant in Amateur Satellite and Packet Radio design, presents the following statistics and projections. Note the early Canadian participation!

How many TNCs are there? (And how many will there be?) Aside from being an answer to a trivia question, it is one of many items that must be considered by network planners. The installed base, as of the end of October, 1985, by my estimate is: 8750.

This number is based on actual TAPR numbers (3700), and information from other vendors. The other vendor numbers are a blend of (1) their numbers (high), (2) their competitor's estimate (low), and (3) various other information sources. These numbers are within 15%, and are conservative. It isn't sporting to break out the list by vendor.

An estimate of the money spent on TNCs so far is $1,892,000.

A little more than half of all TNCs in existence have been sold in just the last 6 months.

How long have TNCs been around?

Some major Amateur digital milestones.

Sept 1978— non-baudot digital transmissions made legal in Canada. Digital experimentation begins.

Jan 1979— VADCG group formed. This group produced the VADCG TNC, some are still in use today.

Summer 1979— Work begins in Ottawa and Montreal. Total North American digital users: less than 30.

March 1980— Ascii data legalized in U.S. Canadian missionaries armed with VADCG TNCs and software cross the border.

Dec 1980— first U.S. digipeater goes on the air in San Francisco, it uses homebrew hardware and software based on the VADCG protocol (now called V1).

1981— first great packet diaspora begins. VADCG distributes PC boards. Homebrew systems are developed. Most areas standardize on 1200 baud Bell 202 modems and VADCG compatible hardware. Locally maintained software versions in San Francisco, Washington DC, Vancouver, and elsewhere begin to diverge.

Oct 1982— AMSAT and AMRAD host another in a series of meetings to solve the divergence problem by developing a protocol standard. Other major goals include the desire to support more than the 32, 64, or 128 users allowed by then current V1 implementations. The AX.25 standard is born. Total North American digital users: no more than 200.

Jan 1983— After several months of design and testing, TAPR produces 170 assembled and tested TNCs.

Oct 1983— TAPR TNC kit (now called TNC-1) is beta tested by 19 users.

Dec 1983— 200 TNC-1 kits are shipped. In the meantime, more VADCG boards were assembled. GLB takes out first ad in *QST* for an assembled and tested unit. Total TNCs: about 650.

1984— TAPR begins to ship TNC-1 in bulk. They ship an average of 120 TNCs/month for the next 15 months. AEA announces an assembled TAPR TNC-1 clone at the Dayton Hamvention. Packet hits the big time when Lyle WA7GXD wins the Dayton Technical Excellence Award, he accepts on behalf of packet radio and TAPR. AEA legitimizes packet by placing the first full page ads in the big ham magazines. At the end of 1984 there are more than 2500 TNCs.

1985— Heath announces HD4040 TNC-1 clone kit. Begins shipping in April, sells out first 500 in three weeks. Kantronics announces 'Packet Communicator.' TAPR announces TNC-2. GLB announces PK1L. AEA announces PK-64 and PK-80. For a time in August, most of the packet industry is 'sold out,' with demand for exceeding production.

Summary:

1982: 200, 1983: 650, 1984: 250, 1985: 10000, 1986-????? tncs.

How far can we go? I believe our growth will peak somewhere between the number of RTTY units sold during the big computer—RTTY boom of a few years ago— a guess of 50,000 units sold to 30,000 individuals, and the total number of 2 metre HTs. I can't get a good guess for that last figure, anyone want to take a stab? Δ

YL NEWS & VIEWS

By Cathy Hrischenko VE3GJH

'Cause He's A Ham

He used to talk of many things
When we at first were married,
On any subject that came up
His interests— they were varied.
But that was before...

He listened very carefully
To all I had to say,
And remembered to do the errands
That had to be done that day.
But that was before...

He often helped with shopping
and piled the grocery cart high,
He even did it cheerfully
Without a groan or sigh.
But that was before...

He used to be ready for meals
While they were piping hot,
And say how much he enjoyed them
Whether they tasted good or not.
But that was before...

He spent time with the children
And questioned them each night.
About the things they did that day
And why they had a fight.
But that was before...

I used to understand him
He spoke the same to me,
He used ordinary words like location
And wife and frequency.
But that was before...

He used to buy nice new clothes
When we were in the mood,
And other silly little things
Like furniture and food.
But that was before...

Then after many weeks of listening
To dah-dit-dah-dit-dah,
He gradually began to change
Now this is how things are.
You guessed it— he's a ham!

His conversation, now of course,
Is on one topic only,
And I have to chat about it
Or else become very lonely.
'Cause he's a ham!

Now what I say goes in one ear
And quickly out the other,
And errands— well— they'll get done
One day or another.
'Cause he's a ham!

The shopping— it still gets done
But now of course it's me
Who pushes the old shopping cart,
He has no time, you see.
'Cause he's a ham!

And now when supper's ready
And the table is all set
He says, "I'll eat it later— cold,
I should check into net!"
'Cause he's a ham!

His time he spends with the children
Is used in a different way,
They listen politely to him
As he says "dit dah is 'A'"
'Cause he's a ham!

And when our paychecks arrive
Immediately I know,
That all our hard earned cash
Into radio equipment will go
'Cause he's a ham!

Do I exaggerate?
Well... Maybe a bit,
It's really a good hobby
I have to admit,
So I guess I'll let him stay around
In spite of what he does
And if you wonder why
Well it simply is because
He's still the same old ham!

Linda Brown XYL of VE5ACP

Be My Valentine

He wooed her long, and ardently pled;
Many gifts at her feet he spread;
But she turned on the rig as she shook her head,
And searched for DX as she firmly said.

"I like you darling— I think you're grand;
It gives me thrills when you hold my hand!—
I hate to refuse your plaintive demand—
But my heart belongs on the Amateur band!"

"A marriage certificate is very fine,
But certificates many are already mine;
There they hang on the wall, in varying design,
With a YLCC soon to add to the line!"

"April ninth might be fine for sealing our fate,
But the DX contest also falls on that date.
If conditions were good, I'd be sure to be late,
And the honeymoon, too, would just have to wait!"

"The language of love is sweet to my ear,
But ham parlance sounds even sweeter, I fear—
QRX— isn't that a rare DX I hear?
QRT— your QRM might interfere."

He went away sadly—but not just to mope;
He bought a transmitter, receiver and 'scope;
And he studied the code with a heart full of hope;
And with the R.I. was soon able to cope.

Back to her he went, with a kilowatt station,
And promises of a tri-quad installation.
"All this will be yours, if you give confirmation
That I'll be your partner at our new location."

Then she married him gladly— but blindly, 'tis true,
Never imagining what would ensue;
For by then the ham bug had bitten him, too,
And he spent all HIS time at the kilowatt new;
While she waited, disconsolate, 'till he was through!
As harmonics increased, her contacts became few,
For, with cooking and cleaning, the precious hours flew—
And if she went hamming she'd burn up the stew—
Or forget she had shopping or ironing to do—
And, as a consequence, trouble would brew—
'Till her dreams of DX all faded from view—
And at last from the YL ranks she withdrew.

The moral of this sorry tale is quite plain:
To be a YL you should single remain.
But, if you will marry, make sure that your swain
Prefers housework to hamming— and KEEP A TIGHT REIN!

—T.I.

TECHNICAL SECTION

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From The Bench

Why use PL on FM?

By Rob Bareham VE7CFK

What is PL?

PL (Private Line), CG (Channel Guard), QC (Quiet Channel) are all trade names for the same thing. Generically known as CTCSS (Continous Tone Controlled Sub-Audible Squelch) has been in use by commercial services since the 60s. Strangely, it has taken almost 20 years to make its mark on the Amateur bands.

PL—

- allows you to monitor a repeater or simplex channel without hearing annoying interference from intermod or adjacent channel interference when no calls are being received.
- eliminates the hearing of far away repeaters on the same channel as yours when your repeater is not being used.
- allows you to hear calls from your friends or select group when monitoring a repeater, while not hearing all the other calls or chatter you are uninterested in.
- if you are located in an area which allows you to key up two or more repeaters on the same channel, you can select any one instead of all of them.
- any or all of the above and many others for the imaginative Amateur.

How does PL work?

PL is quite a simple concept. It involves sending an audio tone from your radio along with your carrier. This tone is very low in volume and frequency. Nominally 100 hertz at 1/2 a kHz deviation. Each radio in the system has one tone generator known as an encoder and one tone decoder, mounted on a single board about the size of a package of penny matches. This board is mounted inside the radio.

Where do I obtain PL boards? How do I install one?

These PL, or let us use the proper generic term CTCSS, boards are available as optional equipment for most Amateur FM radios. Most are designed to simply plug into the transceiver on an internal plug. Some of the older radios that had no provision for CTCSS will necessitate the use of a universal type board (such as the Ferritronics Canada model FT128, $60 range) which must be soldered in. There are four connections to the radio excluding the power connections.

— Tone and audio output connects to wherever your Touchtone pad goes, which is usually in the microphone circuit.

— Two squelch control wires: open the connection from the discriminator to the receiver audio input stage. Connect one wire to one side of the break, and the other wire to the opposite side. The manuafacturer's instruction sheet will tell you which one goes to which point.

There are two pots on the FT128 board, one adjusts the audio level and the other sets the audio frequency to the tone you want.

There is one remaining wire, usually labeled 'Mike Hook Switch.' Connect this wire to a switch to turn the system off for normal operation. The other side of the switch usually goes to ground although in some models it goes to 12 volts.

There are other optional connections to play with but just these four will provide a working system.

Remember, these steps are for interfacing the universal board to any radio. If you purchase the proper board for your radio from the dealer, installation is usually only a matter of plugging it into an already provided socket in the radio and setting switches on the board to set the proper tone frequency.

Operation

The tone will be transmitted as long as you send your carrier. The tone should be low enough in volume and frequency as to go undetected by the listening stations. The decoder in the receiving station however, will be able to sense your tone immediately. If the other fellow has his CTCSS activated, his squelch will not open to any calls unless they are accompanied by the proper tone. Upon detecting the proper tone his squelch will open, allowing him to hear any modulation accompanying the tone, like your transmission. When his decoder no longer hears the tone, his speaker will silence until the tone is again detected. An unlimited number of people can use the same tone.

Some repeaters now use CTCSS access. This means you must send the proper tone to access them. Most all commercial repeaters use this system: not so much to prevent unauthorized use as CTCSS tones are easily measured by connecting a frequency counter and low pass filter to a radio speaker jack, but to reduce interference from and to other repeaters and many different users.

Anti PL

This is an innovative use of CTCSS where a radio's CTCSS board is configured to pass all signals except those bearing a specific tone. A useful feature for reducing interference (or in commercial service, a method of cutting off a customer who is delinquent in paying his monthly repeater bill).

Tone Tidbits

Have you ever wondered what the switch on your handheld labeled 'tone' was for? In Europe it is for a tone burst, here in North America and the rest of the world it is for CTCSS option. Both systems are optional equipment for these radios.

Of interest is the Icom ICO2AT handheld radio. It now comes with a CTCSS encoder as standard

Continued on next page ▷

Nickel Cadmium Batteries

Nickel Cadmium Battery failures are typically classed into the two major categories listed below.

- *Permanent*— Degraded performance caused by a failure which does not permit the battery to be reconditioned electrically to an acceptable performance level.
- *Reversible*— A normal performance level is not met but the condition can be corrected by electrically processing the unit, thus restoring the original performance level.

Permanent failures generally are caused by an internal short, open, or excessive loss of electrolyte. Although it is possible under controlled conditions to electrically remove internal short circuits, field repairs for this condition are not recommended.

Reversible failures are generally caused by repetitive use patterns on the order of repetitive depth of discharge or long periods of overcharge. This is commonly referred to as memory. Memory effect of a Nickel Cadmium Battery is described as a temporary loss of capacity, or an inability to deliver the proper voltage over the normal discharge cycle. (Refer to Fig. 1)

This phenomenon becomes apparent when repetitive shallow charge-discharge rate patterns are maintained. The battery becomes conditioned to deliver only slightly more voltage than its previous repetitive requirements. It is a completely reversible failure and can be 'erased' by cycling the battery through an extended discharge period followed by a normal charge period.

Discharging can be accomplished by placing a suitable load resistor across the battery positive and negative contacts. When the voltage reaches 1 volt/cell, remove the load, and recharge the battery at the normal rate. A fully charged standard capacity battery should discharge to 1.0 volts/cell in 60 minutes using this method. A heavy duty battery will require about 45% additional time to discharge. Two additional cycles will assure removal of all memory condition.

Although overcharging of nickel cadmium batteries longer than the required charge time will not permanently harm them, a loss of capacity similar to the memory condition can occur. Due to chemical processes within the battery, the internal resistance is increased, causing the voltage to drop prematurely depending on the length of overcharge time as indicated on Fig. 2, which shows the discharge curve at the C rate and room temperature. Recovery is effected in the same manner as previously described.

Δ

Fig. 1

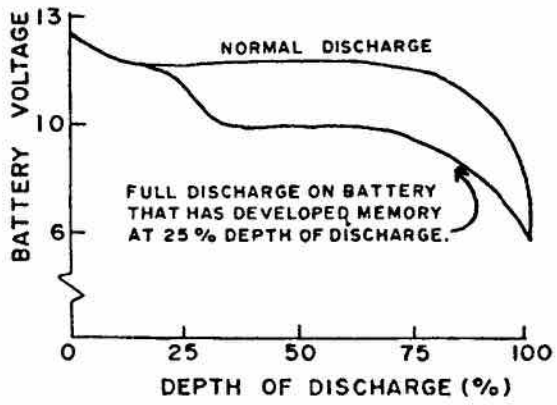
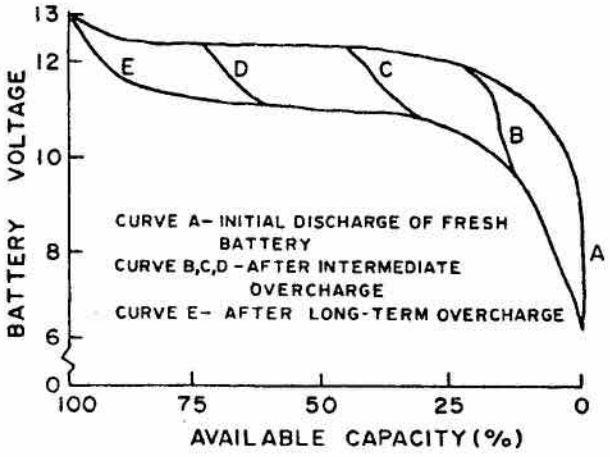


Fig. 2



▷ *Continued from Page 52*

equipment. The decoder board is optional equipment however.

Another variation of CTCSS is called DCS or Digitally Coded Squelch. First introduced in the late 70s, this system sends out a digital burst or word instead of a simple audio tone. The result is much the same. CTCSS is still the popular leader due to cost and ease of servicing.

These systems are not to be confused with Touchtone or DTMF (Dual Tone Multi-Frequency) which is generally used for specific repeater functions or Selcall (selective calling).

If you would like further information on this system or others please write to this column via the Technical Editor, Box 855, Hawkesbury K6A 2R2.

Standard EIA CTCSS Tone frequencies (in hertz)

67.0	100.0	146.2
71.9	103.5	151.4
74.4	107.2	156.7
77.0	110.9	162.2
79.7	114.8	167.9
82.5	118.8	173.8
85.4	123.0	179.9
88.5	127.3	186.2
91.5	131.8	192.8
94.8	136.5	203.5
97.4	141.3	

Chapter 5

Antennas for 160 Metres

By VE3DQB

Continued from November issue

Two verticals, spaced 1/10 wavelength or so apart, can be operated in phase to direct the radiation at right angles to the line joining them or, operated in antiphase, along the line joining them. Four verticals, at the corner of a square one-quarter of a wave on a side, can be arranged to radiate in any one of four directions at right-angles to each other. Similar techniques are used commercially to prevent interference between broadcast band stations working on identical frequencies.

At this frequency, it is practical to use the magnetic part of the transmitted signal for reception. This can be done by a frame antenna, or by using one of the magnetic cores available for portable DC radios. These can be rewound to tune 160 metres, and matched to the receiver input, Figure 50.

Such an antenna is not usable for transmitting, for it is far too small for efficiency. What it does do is to minimize the noise from ignition systems, motors and so on, and, having a sharp pattern, can be oriented either to maximize the desired signal, or to minimize an interfering one.

Surrounding the magnetic antenna with a U-shaped trough of non-magnetic metal will cut interference even further. However, surrounding the antenna completely will cut off signals completely, too.

The frame antenna can be used, Figure 51. It is much bulkier than the iron-cored alternative, which makes it less easy to alter in the shack. Much of the attractiveness of these antennas lies in the simplicity of changing them in moments to optimize the received signal. A frame is usually 2 to 3 feet square at the lower frequencies, and needs space to turn.

Both these antennas have extremely low terminal impedances. It is customary to wind them as transformers, to simplify matching them to the receiver.

The Beverage Antenna

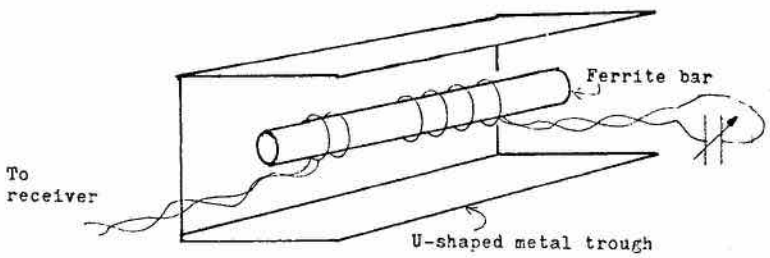
This antenna, useful only for receiving on 160m, consists of a wire several wavelengths long pointing in the desired receiving direction. The end towards the distant transmitter is grounded through a 200-400 ohm resistor.

For best results, the Beverage antenna should be made of heavy-gauge wire, supported by good-quality insulators 10-30 feet up. The ground connection at the far end should be the best obtainable. The antenna is coupled to the receiver by a broadband transformer.

The antenna works because the incoming wave has a downward slant, so the potential induced in the antenna differs from that on the ground immediately below. As the wave travels over the line, the potential builds up towards the receiver end. QRM from the opposite direction does the same, but this energy is dissipated in the far-end resistance.

Summary: the problem at 160 metres is to get as much conductor as high as possible, matching it close to the ground. Hertz antennas are impractical for Amateurs, so the provision of an excellent ground is a necessity.

Receiving antennas can be of the ferrite bar or frame type, if the transmitting antenna is too noisy.



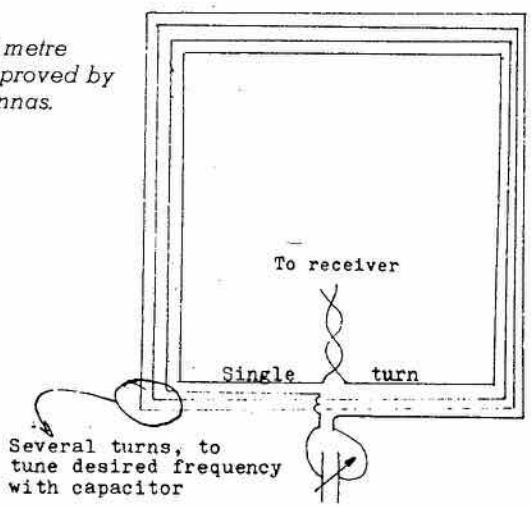


Fig. 50 and 51: 160 metre reception can be improved by ferrite or frame antennas.

Chapter 6

Antennas for 80 & 40 Metres

On these two bands, 80 and 40 metres, Hertz antennas are practical, directivity can be obtained, but rotatable antennas are not usual. Quarter-wave elevations are just practical on 80 metres (70 feet), and easy on 40 metres (35 feet.)

A dipole, 130 feet long, between 70-foot supports, forms the simplest full-size 80 metre antenna. It may be center-fed or end-fed, a choice probably dictated by the size of the lot.

The ends of the antenna can be lower than the center, with a little loss of efficiency, an arrangement often used as needing only one high support. This is called an 'inverted V' antenna.

The length between insulators of the 80-metre dipole is a problem, because the width of the band— 3.5 to 4 MHz, a ratio of 1:1.14— is the greatest of those available (to us). An antenna cut for 3.5 MHz would be 134 feet long. One cut for 4.0 MHz would be 117 feet long. Neither of them would be resonant at the other end of the band.

Those who only want to use one frequency in the band can cut the wire to length from the formula.

Those who want to use the entire band can fan the wire, using two wires separated at the far end by a spreader of at least 1 foot length. The wires are connected at the feedpoint, (Figure 52).

Such an antenna can show a standing-wave ratio (SWR) of less than 2:1 over the entire band, when fed with coaxial line through a BALUN— a special transformer to convert the energy from the BALanced antenna to UNbalanced coaxial line. Such broad-band capability is of great use to those interested in contests or DX.

A long and narrow lot, with the house at one end, may make it desirable to use the end fed arrangement for 80 metres. The feedpoint end can often be secured to a TV mast, the far end to a pole. As much of the antenna as possible, particularly the high current section— the middle— should be at least 40 feet above ground. Too low an antenna has a high radiation angle.

If the full run of 130 feet or so is not available, the antenna can be run down the mast at the far end, and at the feed end too, if necessary. In neither case should the vertical parts of the antenna be close to metal objects.

If the antenna is not well in the clear, far from other metallic objects, it may be wise to experiment with antenna length. If so, the little device shown in Figure 53 will be found invaluable. It consists of a small metal block, through which a hole is drilled at 45 degrees, and another an inch away from the first. The antenna is passed through the angle hole, through the insulator, and back to the block, where it is passed through the other hole and secured by being fastened to a small washer. The length of the antenna can now be adjusted a foot at a time until the best results are obtained, without cutting the wire, or doing anything else irrevocable to it.

If a horizontal antenna is not practical, verticals are to be considered as effective alternatives. A 50- or 60-foot antenna tower will load (take power) very well on 80 metres, and give a good omnidirectional pattern if working against a well-prepared ground. A tower, or the light-duty masts available, which can be used in their place, must have its several sections well bonded together. The usual bolt connections do not squeeze the tubes into good electrical contact. Better, use 6 inches of copper braid at each joint, fastened to both tubes by hose clamps. If the joints are soldered, they should be well painted over to resist corrosion.

A vertical quarter-wave

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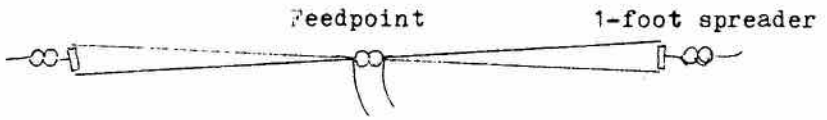


Figure 52: An 80 metre dipole may be broadbanded by the use of one-foot-long spreaders at the ends.

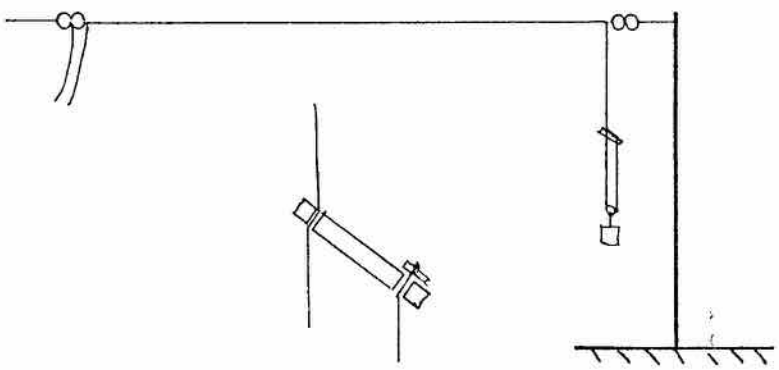


Figure 53: If insufficient space is available for the full 130 feet of antenna, part of it may be set vertically. The figure shows the method of adjustment to lengthen for the band section of interest. After adjustment, the antenna is cut to length and belayed to an insulator on the mast.

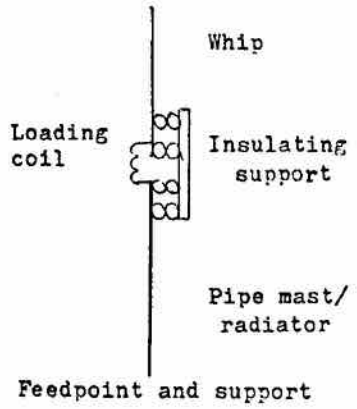


Figure 54: A vertical whip can be constructed from a pipe mast, an insulating support for the whip and loading coil, and...

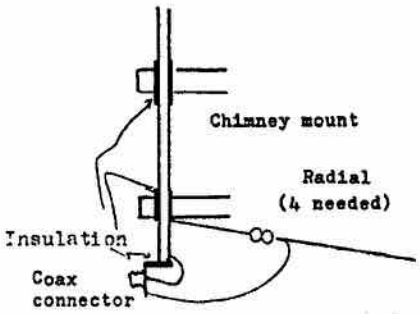


Figure 55: A chimney mount, all working against radials. The insulation at the mount is a length of rubber tube slipped over the pipe mast. A coax connector for the feedline connects to the pipe radiator and the radials. A ground mount on a short mast is practical, too.

antenna, shortened or full-length, can be used working against ground or a ground-plane. Shortened antennas can be made from a standard length of galvanized water pipe or EMT (Electrical Metallic Tubing). Two pairs of stand-off insulators are fastened to the top end of this; to one pair is fixed a loading coil to increase the electrical length of the antenna, to the other, the top-loading, Figure 54.

The coil should be of ample dimensions to carry the power required, and enclosed in a plastic box— a food container can be used. The lid of the box is sealed with epoxy after the coil is adjusted, and a hole is bored in the bottom to allow condensation to escape.

Top loading can be by a 96- or 102-inch whip antenna, sold for mobile use. Or an 8- or 10-foot length of light pipe or tubing will serve. Make sure that the insulators that support it are far enough apart to carry its weight during erection.

After assembly, the antenna is erected temporarily (at ground level, if that is not to be its permanent location) and its base is connected to ground through a small coil. The antenna is excited with a grid-dip oscillator, and its resonant frequency adjusted by tapping the loading coil a turn at a time until the desired frequency is reached. The coil is then cut at this size and securely fastened. Its connections to the antenna and whip are soldered, and the water-proof box fitted and sealed. The antenna is then ready for final erection, if the ground-plane design is to be used.

A standard chimney mount will support the vertical on the roof. The mount supports the antenna end over which a length of insulating tubing has been slipped, Figure 55. This is a low-voltage point, so the insulating requirements are not severe. The vertical is then secured to the stub mast with hose clamps.

A coaxial connector is fitted to the bottom of the assembly with its center connection soldered to the bottom of the antenna, via a short length of flexible wire or braid. The ground is soldered to the common joint of three or four radial wires.

Each radial is about 67 feet long, and goes out, ideally, horizontally from the bottom of the antenna and at right angles to the adjacent radials. Such perfection is rarely possible, and carrying them down to convenient anchorages, preferably 10 feet or more above the ground— the end of a radial is a high-voltage point, and should be out of reach— and at least 45 degrees from its neighbour. An insulator and rope guy holds the radials taut. At least three radials are necessary.

Three or four verticals, arranged at the corners of a triangle or square of 1/4 wave a side, can be switched and phased to give excellent directive patterns. This is perhaps the only practical way of attaining good directivity on 80 metres without excessive masting and real estate requirements.

Dipole and vertical antennas can be modified to work both 40 and 80 with the one antenna and feeding. A 40 m trap, inserted either side of the feedpoint of a center-fed dipole, as in Figure 56, automatically switches the antenna as the transmitter frequency is changed.

Traps

A trap is a tuned circuit that switches out part of an antenna. In Figure 56(a), the two halves of the antenna each contain a trap.

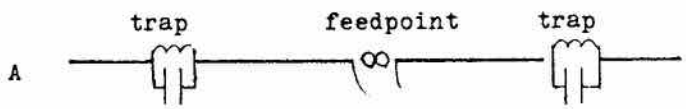
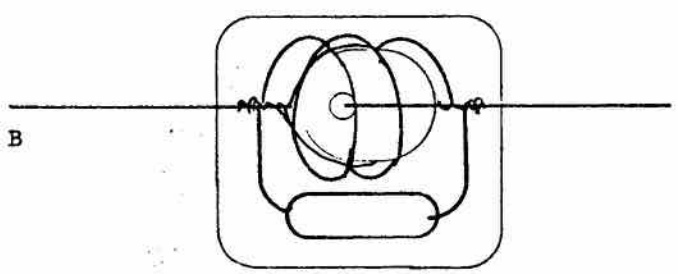


Figure 56(a): Traps can be inserted into a dipole to make it resonant on two (or more) bands. 56(b): Construction of a trap. The two parts of the antenna are connected mechanically by an insulator. The coil of the trap surrounds the insulator, and the capacitor is wired in close to the coil. All joints are mechanically and electrically sound. The trap is tuned by squeezing the coil. The unit is surrounded by a waterproof insulating box.



The trap is accurately tuned to, say, 7.1 MHz. At this frequency it presents a high impedance, so the effective length of the antenna is between the traps. This length is made resonant at 7.1 MHz (68 feet), and the antenna will work as a 40-metre dipole.

At, say, 3.6 MHz the traps act as loading coils and, with the antenna beyond the traps in circuit, the antenna acts as a shortened dipole on 80 m. In this way the antenna can do duty on two bands.

While this theory is simple, in practice there is interaction between the various parts of the antenna. The traps are accurately tuned to the desired center frequency before it is connected to the antenna. An accuracy rather better than is available from the usual grid-dip oscillator dial is needed, so the station receiver should monitor the procedure.

The inductors are cut rather larger in inductance than required, and then carefully pruned to resonate with the capacitor chosen (the capacitor must be a high voltage type).

The antenna is then assembled, and the Frequency vs. SWR graph is plotted near the two chosen frequencies. The wire sections are then altered in length (Figure 53) until low SWR is attained at both. The bandwidth is usually fairly narrow.

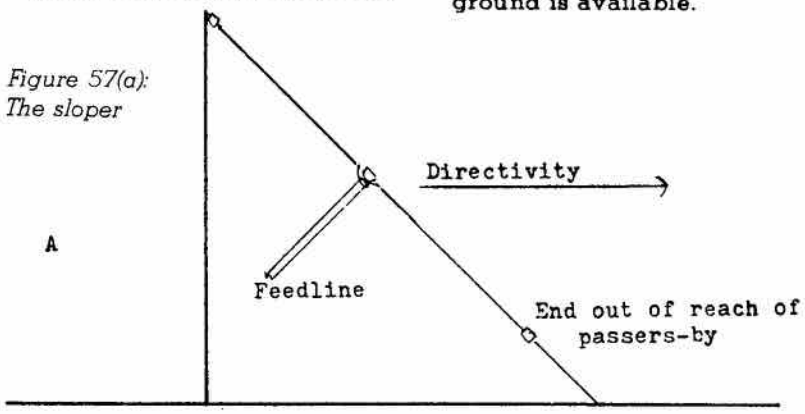
The technique may be used for any two HF bands, or extended by more than two traps for more than two bands. A five-band commercial trap antenna is available.

80-40 Verticals

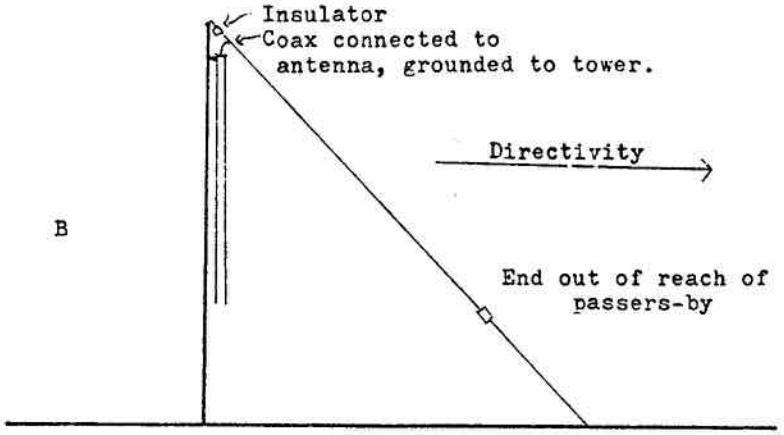
The 80 metre loading coil can be put at the base of a 40 m vertical, and switched in when needed. This is not so desirable as the trap technique, because of the lower efficiency of the base loading method. The switching may be done by going out to the antenna site and moving the contacts manually, or by a relay from inside the shack.

The vertical antenna can be even shorter than that described above and still reap contacts, as witness the several center-loaded mobile antennas commercially available. The home operator truly restricted for space might use one of these, if any acceptable ground is available.

Figure 57(a): The sloper



57(b): The half-sloper.



Slopers

Antennas do not have to be horizontal or vertical. The 'Inverted V' antenna has already been mentioned. Another slanting antenna is generally called the sloper, and is shown in Figure 57(a). If one tall mast is available, these antennas can be tried.

The 'half-sloper'— so called, though the wire is a quarter-wavelength long— can be used from a 50- or 60-foot mast or tower on 80 metres, Figure 57(b). The coaxial feedline is run up or through the tower and the center conductor is connected to the antenna at the top. The braid is grounded there, too, to the metal of the tower.

The full sloper, Figure 57(a), is usable on 40 metres from a tower— one tower or mast can support several such antennas. A sloper is supposed to give directivity in the direction away from the support, so several antennas on the same tower, in different directions, may be of use when operating.

Slopers must be adjusted to length individually. Their resonant frequencies are often far from those expected from their length. Use the trick in Figure 53 until the antenna works.

Forty metre antennas are half the size of 80 metre ones, and are effective at half the height. The 80 metre patterns can be scaled down to 40 without difficulty and erected as high as lot, buildings and finances allow. The 67-foot length of a dipole will fit into the suburban lot, and the 40-foot TV tower gives ample height.

Chapter 7

Antennas for 20, 15 & 10 Metres

This part of the spectrum includes the first readily rotatable antennas. Yagis for 80 metres have been built, and fallen in windstorms: 40 metre antennas have been designed to rotate, but their use is rare. A 20 metre, full size antenna, however, can be

Continued on next page ▷

rotated by a medium duty rotator, and supported by a TV tower. Combination 10-15-20 metre antennas are practical, too.

The directivity of the antennas becomes important here. On the longer wavelengths, ionospheric reflection is usually good enough to return the radiation to earth, even the higher-angle energy from the ends of the antenna. The shorter wavelengths, 20 metres and higher, are not usually so reflected and the signal is only useful for DX if aimed just above the horizon.

Wire antennas are easily made and erected for 20-15-10. Two 20 metre dipoles at right angles, at 30 feet or better, will often give excellent worldwide DX coverage. Local conditions must always be considered, so nothing beats trying it out. Theory cannot exactly predict how a given antenna will perform in your location.

However, most hams think in terms of a rotary beam on 20 metres. The standard beam is constructed from aircraft aluminum tubing, about 1 inch in diameter. The standard length is 12 feet, so a full-length element requires three lengths, two of which telescope into the third.

A single such element, mounted on a TV rotator, is a most useful, simple and cheap antenna, though bidirectional. A reflector or director requires a 2-inch boom, and mechanically sound fastenings. The simplest satisfactory fastening is a 1/8 inch metal plate and four U-shackles, sold for automotive muffler use. Do not drill an element to pass the U-shackles through, rather get the correct sized shackle. The element will fail sooner rather than later.

Since the driven element in this antenna is not cut in the middle, but continuous, it cannot be fed, like a wire dipole, with a 72 ohm line directly. Instead, the matching is done by the gamma match, described in Chapter 12.

Fifty years' experience with these two-element yagis is boiled down into three graphs, from which a yagi for any frequency can be designed. These are reproduced as Figures 58, A, B, and C.

They show that the best gain is attained between 0.1 and 0.15 wavelength spacing. A director gives a better front-to-back ratio at this separation than a reflector. A gain of 5.3 dB, a front-to-back ratio of 13 dB, and a radiation resistance of 15 ohms is obtainable with a separation of 0.1 wavelength.

The pattern of such an antenna is cardioid, 'heart shaped', Fig. 59. The pattern will be modified by the ground, and the vertical pattern found will depend on the height above ground of the antenna. Theory tells us the pattern to be expected above a perfectly conducting level ground of infinite extent: it cannot help us much when the ground is poorly conducting, and uneven, and modified by the wiring or steel structure of the buildings near which the antenna is erected.

Nevertheless, the two-element beam (and more complex ones) can give good accounts of themselves without the knowledge of the effect of the ground. However, with the knowledge, the Amateur can do the best possible at his location. Perhaps a dipole strung between two masts, trying various heights, may give the clues as to the best height for a beam.

Adjusting the beam to operate in the center of the 20 or 15 metre bands will usually give a low enough SWR for use anywhere in the band. 10 metres is too broad for this to work well, and the antenna should be adjusted for use in the most-used part of the band.

Adding a third element gives the three-element beam, perhaps the most popular type of HF yagi used today. As elements are

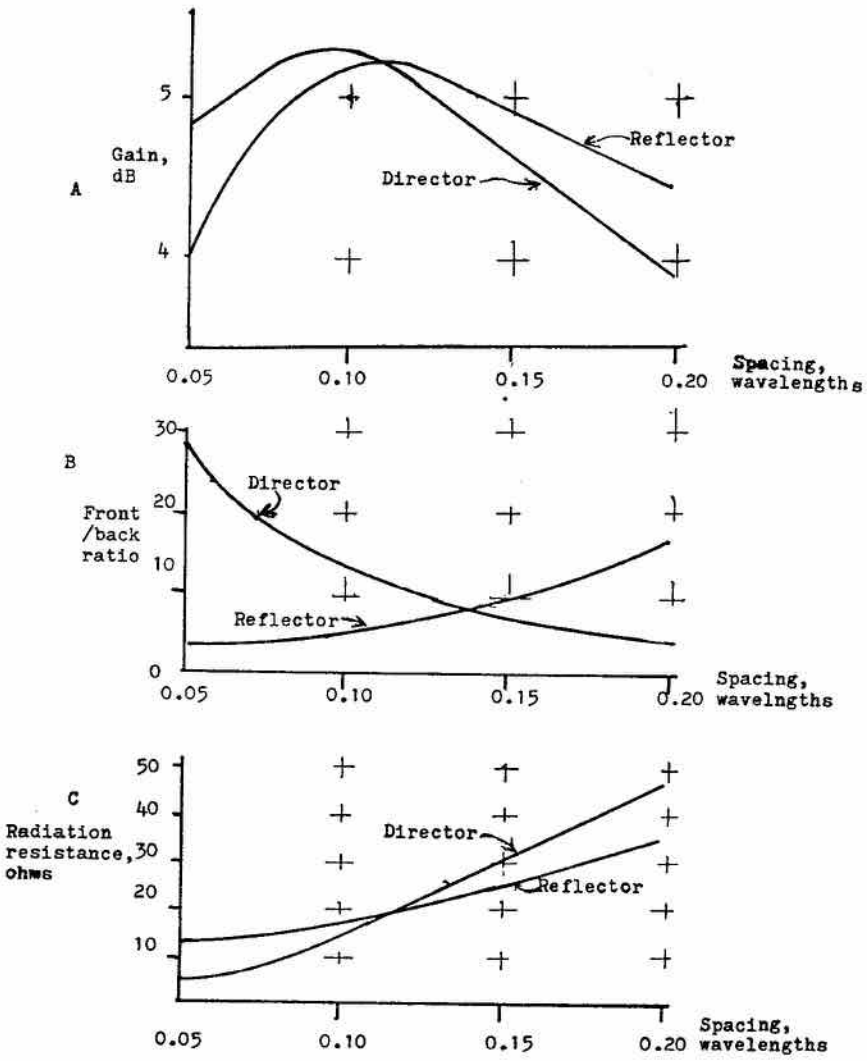


Fig. 58: These graphs predict the performance of two-element yagi antennas.

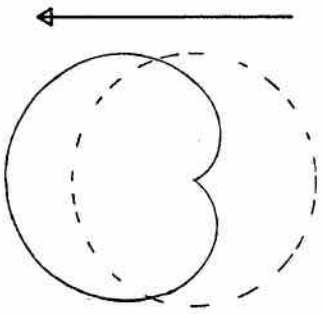


Figure 59: The radiation pattern of a two-element yagi.

added, the interaction of the various parameters— element lengths, separations, gains and front-to-back ratios, and feedpoint impedances— all make prediction of the performance of a beam difficult. It is probably best to take the dimensions found by experience to give good results and use them.

A boom slightly over 20 feet long will accommodate a 20-metre 3 element beam, about the longest practical size. Such a boom would also accommodate a 4 element 15 metre beam, and a 5 element 10 metre beam. This is probably the best rotatable beam assembly possible, though rather heavy.

The trap technique is usable to combine 10-15-20 metre elements. The traps act as electronic switches to isolate the unneeded lengths of element when operating on 15 or 10 metres. Element separation cannot be other than a compromise. The mechanical strength of the insulating joints must be enough to handle the weight and leverage of the element ends. Some power is lost in the traps. Nevertheless, these designs are in wide and successful use.

Any assembly of several antennas for different bands on the same boom means that only one of them can be at optimum height. If antennas for one band only (Monobanders) are installed on the same tower, the lower-frequency one should be on top, and be separated from the higher-frequency one by at least 1/4 of the wavelength of the smaller.

Quads

Another much-used antenna at these frequencies is the cubical quad. If a wavelength of wire is formed into a square and fed with a balanced line, it will radiate well. A second, parasitic (reflectors and directors are called PARASITIC elements), square of wire to form the edges of a box adds directivity, and this assembly is the quad.

The usual quad construction is either no boom or a short one, and eight spreaders, one for each corner of the box, Fig. 60. The spreaders may be of wood, bamboo or fiberglass. Such a structure is light, easily rotatable and supportable by a light duty mast. Its radius of rotation is roughly one-fourth that of a yagi cut for the same wavelength, with a consequent reduction in wind loading.

Several quads can be nested one inside another with little mutual interference. 10-15-20 designs are common. If the spreaders go out at an angle from the support point, as in Fig. 61, the various quads will have equivalent spacings in wavelengths. If the spreaders rise at right angles to a boom, the spacing between all quad elements is the same, so only one can be optimum.

Quads seem tolerant of such

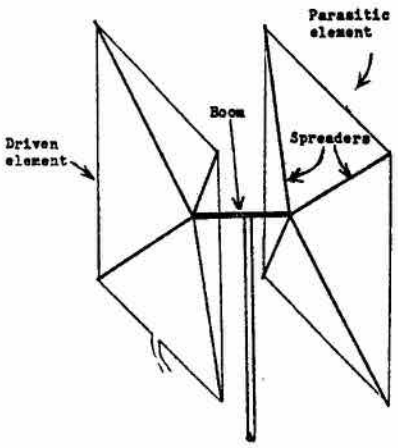


Figure 60: The parts of a cubical quad antenna.

variations. Their Q (the ratio of the antenna's reactance to its resistance) is low, so their bandwidth is wide. The feedpoint impedance is about 100-150 ohms, depending on the spacings. 150 ohm line or 72 ohm coaxial cable can be used for feedline.

The great advantage of the quad is said to be its better

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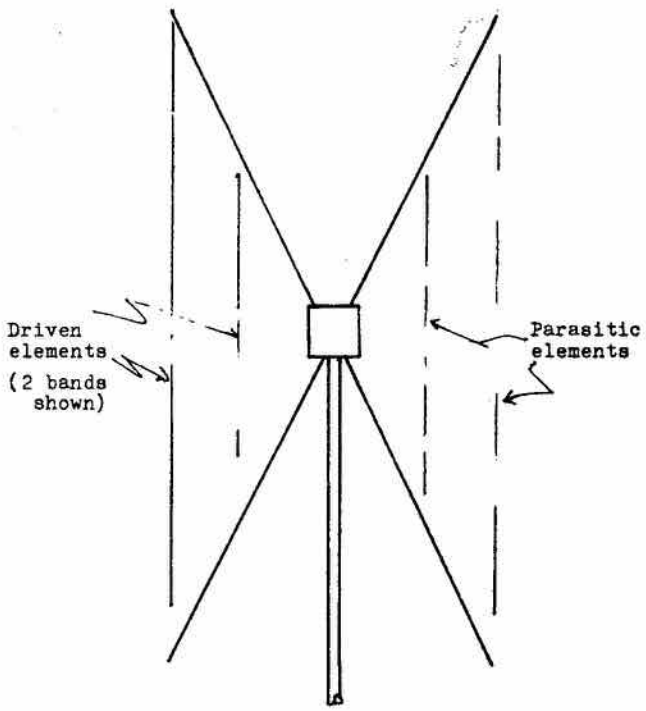


Fig. 61: How two bands are accommodated on one yagi frame. Three or more could be similarly supported.

performance at low heights, compared to a yagi.

Fed at the bottom, a quad provides a horizontally polarized signal; fed at the side, a vertically polarized signal.

Eleven metre 3- and 5-element yagi CB antennas are available. These can be cut down to wavelength for use on 10 metres, or extended for 15. Or a trap could be inserted in each element at 96 inches from the boom, to make a 10 and 15 metre antenna.

The 8JK Antenna

An excellent antenna, rarely used today, is the flat-top beam or 8JK, designed by W8JK, Professor John Kraus, of Ohio State University. It consists of two half-wave elements, one-eighth wave apart, fed in the middle of a phasing line, as shown in figure 62(a).

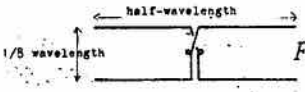


Fig. 62(a)

The 8JK is considered to have a gain of about 4.5 dB over a dipole, rather less than a two-element yagi (5.3 dB). Its pattern is bidirectional: that is, it receives off the back with the same gain as forward. However, this gain off the ends of the elements is near zero for all angles of elevation.

The pattern in free space is something like a balloon with a piece of string tied round its middle, like Fig. 62(b). This zero pickup is not affected by the ground. It means that a strong interfering signal not exactly in line with the desired station can be nulled out by rotating the antenna.

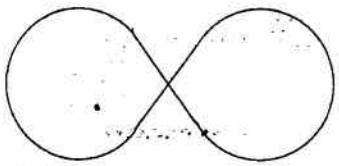


Fig. 62(b)

The yagi antenna, near the ground, always has minor lobes in its rearward direction. It is often impossible to null an interfering signal by rotating the antenna. With an 8JK even The Woodpecker can be cut down to size.

The 8JK is very broadband. If fed with open-wire line and an antenna tuner, it retains its pattern over a range of frequency of 2:1. Thus, an 8JK cut for 15 metres is usable on 10 and 20 as well, without the use of traps.

Long-Wire Antennas

A long-wire antenna, that is, an antenna several wavelengths long, has interesting properties. Combinations of two or four long wires give excellent directivity and are broadband.

An antenna one wavelength long shows a more complex radiation pattern than a simple dipole. If the technique shown in Fig. 17 is used to plot the polar of the 1-wavelength antenna, the result is a four-lobed pattern, Fig. 63. In free space, these two lobes fill space about the antenna, as can be visualized by thinking of the pattern that would be formed by twirling the antenna round its axis.

If the strongest signal strength only is considered, the pattern round a 1-wavelength free-space antenna is that of two cones tip to tip with the antenna on their axes, Fig. 64.

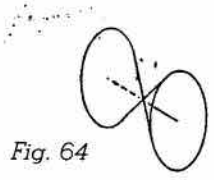


Fig. 64

A two-wavelength antenna develops yet more lobes, as shown in Fig. 65. The strongest signal now comes at an angle of 35 degrees from the antenna, not at right angles to it, as in a half-wave antenna.

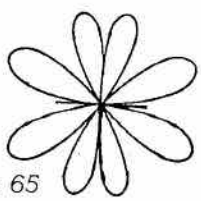


Fig. 65

If a two-wavelength antenna is set up, fed at one end, and TERMINATED at the other with a resistor to ground, Fig. 66, the pattern changes again. The energy travelling down the wire is not reflected from the terminated end, and this cuts down the size of the lobes in the direction away from the resistor. The resistor required is usually several hundred ohms, and dissipates up to half the energy supplied by the transmitter.

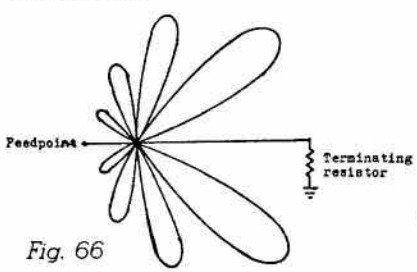
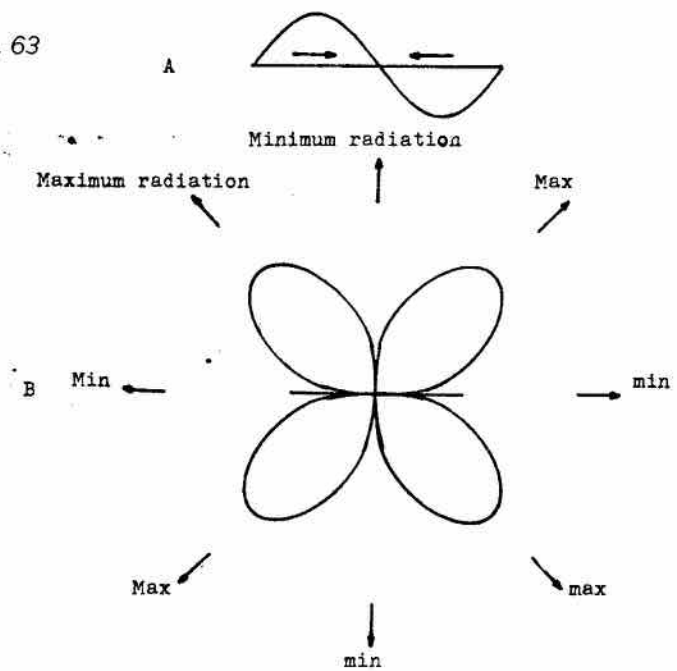


Fig. 66

Fig. 63



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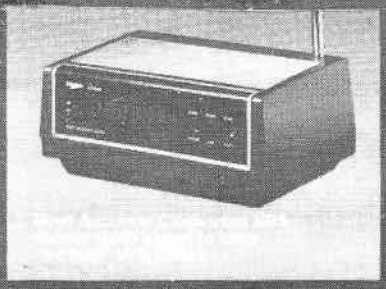

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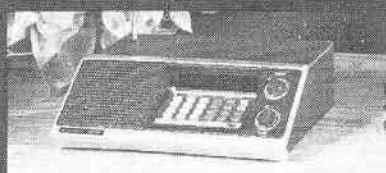

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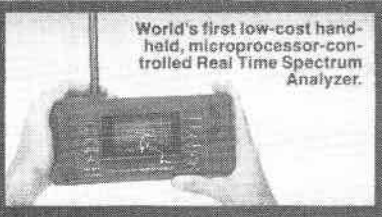

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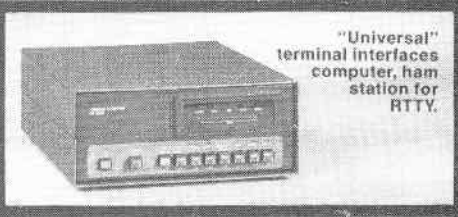

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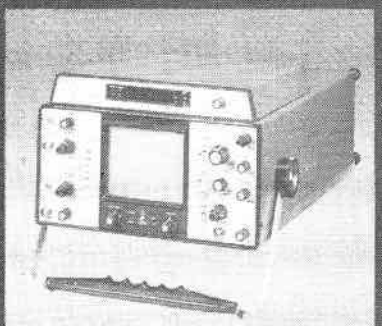

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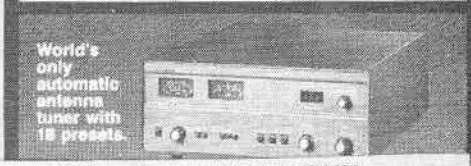

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