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The Canadian Amateur
Radio Magazine
La Revue des Radio
Amateurs Canadiens

SEPTEMBER 1986

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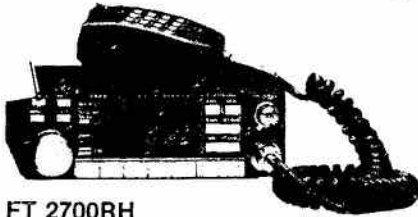
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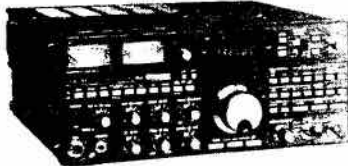
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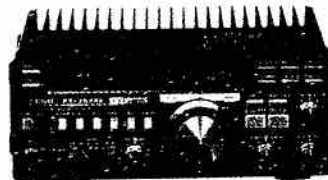


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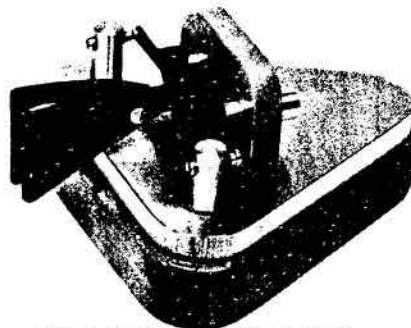
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September 1986

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

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WHAT IS ?

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

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

EDITORIAL

QUA



EMI Committee

to persuade manufacturers to take 'voluntary action' to meet a practical level of immunity. In a forthcoming issue of TCA we'll look at some of the things DOC told manufacturers about today's RF environment— things the Japanese are quick to incorporate.

A couple of things Amateurs should understand is that most of the larger manufacturers, and this includes the smaller importers, import their consumer products from Asia. If the real manufacturers ever believed they would lose the North American market share, because of electronic AIDS, they'd react without polling the world to quantify the problem. They are reacting now. It's the importers who can influence this trend by specifying the limits that need to be met. It has to be mandatory as the voluntary standards haven't worked. The same situation exists in the United States.

Immunity levels can be specified in several accepted ways, and who knows, before electronic AIDS is dealt with, we may find a few more ways (like the beef content in weiners!). There are conducted and radiated immunity levels that require definition.

Three years ago the minimum electromagnetic radiation in a modern city was accepted to be 1 volt/metre. I know of one test equipment manufacturer who believed his product would work in a 0.1 volt/metre environment. Did he get his due. When questioned, you should have heard the cries of anguish— and the excuses. The excuses came from the marketers and not the Engineers, who designed the unit. That's part of the reluctance to change. By contrast, one Canadian manufacturer is designing to meet 5 volts/metre. Yes, this is for consumer products.

Electronic AIDS seems to be endemic with small importers. You only have to go to the corner store to see the intrusion of these plastic encapsulated 'grab bag' electronic devices. Here's one source of electronic AIDS.

Fortunately, the United Kingdom is viewing an immunity level of 1.8 volts/metre as a suggested level. Australia is similar. Germany has strict standards owing to the size of the country and the high ambient levels of RF. Electronic products sold in Germany must be labelled in German, and the manuals must also contain a description of the particular standard met.

Radiated immunity levels of 2V/m are easy to meet by effective shielding. It need only be a sprayed conductive coating. It works with plastic cabinets. Almost all radiation below 30 MHz leaving an appliance is via the line cord unless, of course, high voltage for CRTs is involved and then it may be a combination of radiation and conduction. This is why line filtering must be done. Many commercially built line filters are available— all CSA approved. It would be simple for importers to specify their inclusion prior to manufacture.

Electronic AIDS are familiar to the Amateurs and the DOC as well as manufacturers. It seems the dealers don't know how to cope with it and you guessed it— John Q. Public knows nothing about it. To whom does the latter complain? How about that Radio Amateur for starters?

Realistic immunity levels are needed now, at least levels for conducted immunity. The standards can be thrashed out later for radiated limits because these are definitely more tricky to measure consistently.

We need this action before Canada becomes a 'dumping ground' for susceptible products. Radio Amateurs and others who share the spectrum have been victims of these nuisance appliances long enough. It must be bad when a Radio Moscow announcer admitted they too had electronic AIDS; although, the solution there might be considerably simpler. Now what was that word I learned when I passed my Amateur exam, "M'AIDEZ"?

BY RALPH CAMERON
VE3BBM

Medical AIDS is a pitiable disease. The victim's time is limited. A similar malady exists in the Amateur Service as an electronic analogue. I'm referring to the term coined by Jack Ravenscroft VE3SR. It's called, "Appliance Immunity Deficiency Syndrome."

Most, if not all, transmitter owners at one time or another meet and deal with problems of electronic compatibility. Chances are, nowadays, that no matter what transmitter is put on the air, some nearby electronic appliance will be affected. What do you do? Have you ever sought the reason?

Just as in human AIDS, cooperation is vital— so is education and awareness. It is difficult to understand why it has taken five years to attempt

LETTERS

NEWFOUNDLAND FIRES

Enclosed is a report I asked VO1U Harry Woodmore of Grand Falls to write, as I thought readers may be interested in what the Amateurs in Newfoundland did during the Fires we had in May.

Edit it if you want to use it in your wonderful Magazine, I enjoy every copy, keep up the good work.

73, Cliff VO1II

(See Page 29, Editor.)

TO BARRY BAGGS

Dear Barry: On behalf of the North Bay Amateur Radio Repeater Group, I would like to thank you for the CARF display at our Flea Market on Saturday, May 24, 1986. We appreciate your time and the information which CARF provides for the Amateur community.

Yours truly,
Don Meadows VE3LQS

BANNED COUNTRIES LIST

It is with some dismay that I have read the latest published list of banned countries issued by DOC as directed by member nations of ITU. This list is double the length of recent months. Why should we not communicate with Amateurs who are on the air if they are willing to talk to us? Why should I lose my license by talking to them, but they continue to operate?

If a foreign government does not want its nationals talking to Canadians, let them take steps in their own country, not tell ITU and DOC to restrict me.

The FCC no longer enforces a 'banned' countries list— neither should DOC.

73, Malcolm VE4MG

SECOND CLASS AMATEURS QUERY

I want to thank Bill VE7EJB, for reacting to the comments I reported in the March, 1986, TCA. I wondered if anyone was as shocked as I was.

The argument, used by an acquaintance of mine who is deeply involved with automobiles as a hobby, is, in my opinion, totally ridiculous and illogical, although my attempts to convince him of this fell on deaf ears.

But Bill, quite rightly, asks, "Does this apply to Amateur Radio?" And I answer, "Unfortunately, some Amateurs seem to feel that it does." I am fed up to the teeth with being told by certain members of the Amateur community, not always in so many

words, that because some of us are not experts in electronics, we are only second-class Amateurs, and really shouldn't hold a licence. I note that these same individuals also seem to be the ones who lead the attack against any efforts by DOC to turn Amateur radio into a hobby instead of maintaining it as a plaything for the technical specialists.

Thanks Bill.

George VE3JQW

THE RAVENSCROFT CASE

I am somewhat alarmed by the Amateur population's apparent lack of concern over Jack Ravenscroft's RFI problem. I see his case as the thin edge of the wedge that could well destroy our hobby if it is not resolved.

It is becoming obvious that we cannot depend on court decisions or for that matter on the DOC for the answer. It is also obvious that individual action is not the way to go.

The majority of Radio Amateurs are represented by C.A.R.F. and C.R.R.L. Therefore I consider these

SILENT KEYS

Mary Drummond VE3IYY became a silent key June 25, 1986. She died suddenly of a heart attack while visiting in London, Ontario. Mary became a ham late in life. Later she taught the Amateur Radio Course.

Our sincere sympathy goes out to her OM, Bob VE3ROB of Brampton.

Rose Ellen Bills N2RE became a silent key on June 18, 1986. She suffered from a rare form of cancer.

We extend our sympathy to her family.

CLÉ SILENCIEUX

Gilles Menard VE3KOG

organizations to be in the best position to take action. Why not start by initiating a petition to be sent to the Minister of Communications requesting changes to the Radio Act, requiring electronic devices to be adequately shielded against R.F.I.

I realize that there is strong political opposition to any regulation of domestic entertainment equipment. However I feel it must come



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May 10, 1986.

Our file: Notre référence:

Your file: Votre référence:

Canadian Amateur Radio Federation,
Box 356,
Kingston, Ontario.
K7L 4W2

Dear Sir:

On behalf of the Honourable Tom McMillan, I am pleased to enclose a certificate in recognition of your contribution to the celebration of the National Parks Centennial in Canada. Your help is deeply appreciated and greatly assisted in raising the awareness in Canadians of the extent and value of our heritage.

The success of the Centennial was due in large measure to the support we received from individuals and organizations across the Country and I want to express my personal thanks for your help.

Yours sincerely,

J.C. Christakos,
Director General.

Encl.

eventually, but only if there is a concentrated effort on the part of those involved.

I would like to know if CARF is planning any further action in this matter or are we all just going to sit back and adopt a wait and see attitude.

To conclude I see the RFI problem as perhaps one of the most serious threats yet to Amateur radio, and I cannot help but feel that we are not giving it the attention it requires.

Yours truly,
D.J. Morrill VE7FJM

Dear Mr. Morrill: Thank you for your letter!

The Amateur community and in fact the commercial broadcasters, equipment suppliers, U.S. Amateurs and even GRS Groups are contributing.

We are seeking assistance from

MANITOBA NEWS

News from QUA/Manitoba Amateur published by the Manitoba Amateur Radio Publications Group via Malcolm Timlick VE4MG, CARF assistant Regional Director. (Thanks Malcolm—Ed.)

The Winnipeg Senior Citizens' Radio Club, VE4WSC, is in the process of organizing a conference of Senior Hams from across Canada.

There is a 10 metre Ragchewers Net in Winnipeg on Sunday evenings at 0200Z in winter and 0100Z in the summer on 28.600 MHz.

The Manitoba White Caners' Amateur Radio Club holds an informal ragchew net on 146.580 most evenings in the Winnipeg area between 0200Z and 0300Z in winter and 0100Z and 0200Z in the summer.

The ATARI Microcomputer Net meets on Sundays at 1600Z on 14.325 MHz. Net Control is KD7VA, Dave. Net members call in from Canada, U.S.A., Mexico, Panama and Costa Rica.

There are also regional nets meeting on 7.230 or 7.235 MHz following the National Net (usually 1830Z). The official journal of the National net, AD Astra, is edited by Gil VE4AG, and is published bi-monthly.

SPACE HERO WAS HIS PAL

The headline is from the Daily News of Truro, N.S. It introduces a front page article on Bill MacDonald VE1WG, who worked and later met Yuri Gagarin, the first man in space.

RABC and manufacturing organizations. (Please contact Ralph Cameron VE3BBM for details.) We are also supporting an Ottawa Club motion and other proposals.

We are writing the Minister and, in fact, intend to have a direct meeting if necessary. We will initiate any action needed. A petition is not being considered at present.

We have done a lot of work in the background to support VE3SR, and get support for RFI problems.

NO! we are not adopting a wait and see attitude. We are quietly doing our job!

Sincerely,
R.E. Walsh VE3IDW
President, CARF

(And it's CARF's own TCA that lets Canadian Amateurs know about the case in detail—Editor)

READ THOSE 'EXTRACTS'

There is a nuisance here in Edmonton but I have not heard him on the air of late. Seems someone higher up saw fit to remove his beam (high winds) and no one has agreed to help him put up a new one recently purchased from an estate sale.

From first-hand reports, this so-called gentleman of the illustrious fraternity of Amateur radio enthusiasts, used to demonstrate his linear by tuning up on a couple stations engaged in a QSK/QSO and then press the key. "Watch this," were the words he used, then tossed his head back, gave out with a big guffaw and laughed till the tears rolled down his face. Other enthusiasts in his district literally shut down when the clown hit the air waves.

Someone hitherto as yet unidentified also closes the key and then twirls the VFO up and down the band. Could it be this same heinous person? Reports filtering down seem to bear out this suspicion as one visiting ham told him he had better not let 'X' catch him doing his thing! Maybe he has insurance and it will not be necessary to take up a collection.

Better yet we should lobby for legislation toward DOC doubling the present annual licence fee and have it paid monthly by anyone who runs over 50 watts, has a beam, uses a high power amplifier or indiscriminately employs a speech processor.

This is not my opinion alone but one shared (after reading an Ontario court file No. 1559/85) by an Amateur with a beam, who runs a maximum of 150 watts (barefoot), very seldom uses full power or his processor and, certainly not on 10, 15 or 20 metres during a hockey game or the daytime soaps, among other courtesies! Who is he to tell his neighbour the radio in the kitchen is a piece of junk or the kids

series string B&W should never have been sold in the first place!

Apparently too few licensed under the radio regulations of Canada are familiar with or care to read them.

Actually all we are required to follow (and read once in a while) are 'Extracts from the Radio Act.' For example, how many Amateur station operators have a copy of their licence with them when operating their hand-held or the two metre rig in their car? Just a small point and a minor detail you say, yet do we not agree it is the little things that add up and we overlook something bigger? Like when was the last time we delivered a message to our neighbour just to let him know what the Amateur Radio Service was all about? Don't say, "My neighbour doesn't force his drinking hobby on me so why should I involve him in my hobby." Simply because the Amateur Radio Service is NOT A HOBBY.

vy 73, Moe VE6BLY

... OR STUDEBAKER?

Caught VE2JD's letter in TCA for June 86. With respect to taxation of radio Amateurs, I must commend him on his innovative response to dealing with our annual \$20 gratuity.

I do agree that, from packet radio users, one must take a bigger bite!

However, a point arises towards the end of his proposal that leaves me somewhat confused...

At what level should one tax a rig mounted in an Edsel?

It is rare that one has the opportunity to get a specific answer from a guru!

I look forward to enlightenment.

G'day!

E.G. (Ernie) Kenward VE7BYK

TO RON WALSH VE3IDW PRESIDENT, CARF

Thank you for your letter of April 3, 1986 in which you express your concerns regarding paragraph 7.1 of the Amateur Morse Code Examination Guide.

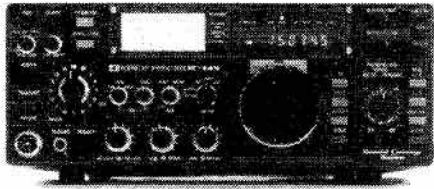
In consultations with our regional offices, it was pointed out that assembling three advanced Amateurs simultaneously might pose a problem to candidates. To provide a balance between access and control, it was agreed to accept testing at different times. We did not want to 'over-regulate' the program unless necessary. Should abuses become apparent, we will certainly review the control mechanisms.

Again, thanks for your comments.
Yours truly,
P.A. Carrey, Chief, Authorization,
Spectrum Management Operations
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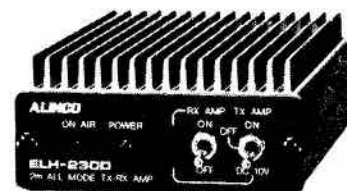


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DOC News

Before the Department of Communications, Ottawa, Ontario K1A 0C8 Discussion Paper on the Possible Restructuring of the Amateur Radio Service in Canada

To the Director-General, Radio Regulatory Branch Joint Comments of the Canadian Amateur Radio Federation, Inc. and The Canadian Radio Relay League, Inc.

A. INTRODUCTION

The Canadian Radio Relay League, Inc. and the Canadian Amateur Radio Federation, Inc., herein referred to as the 'national organizations,' principal representatives of over 20,000 radio Amateurs licensed by the Department of Communications, respectfully submit these joint comments in response to the Department's Discussion Paper on a Possible Restructuring of the Amateur Radio Service in Canada.

Over the past six months, the national organizations have been flooded with comments on the Discussion Paper. These comments have come from individual amateurs and from amateur radio clubs and groups. The national organizations found that there was widespread support for the Department's

objectives. However, the comments seemed to offer as many ways to reach those objectives as there were comments. For this reason, the national organizations used the comments first to identify the needs of the amateur radio community. Then, mindful of those needs, the needs of the Department, the Department's own proposals, and suggestions from the amateur radio community, the national organizations proceeded to develop a proposed structure that would meet all needs and incorporate the best of the proposals and suggestions.

In a restructured Amateur Service, the needs of the amateur radio community would include the following:

1. More and younger radio amateurs,
2. High standards for all classes of certificate,
3. Strong incentives to upgrade to the highest-class certificate,
4. A continuing role for Morse code,

5. A continuing stress on the experimental side of amateur radio: this would preclude any ban on the use of homebuilt or modified commercial transmitting equipment,
6. Compatability with structures in jurisdictions with which Canada has reciprocal operating agreements, and
7. Viability in the eyes of the international amateur radio community.

The needs of the Department would include the following:

1. Ease of entry into the Amateur Service,
2. Simplicity, resulting in less administration and lower costs,
3. Recognition of the fact that many amateurs and prospective amateurs are more interested in 'communicating' than in the technical aspects of amateur radio, and
4. A structure that will remain viable into the next century.

The national organizations believe that the structure described below will meet these needs.

B. PROPOSED STRUCTURE

OUTLINE:

The entry-level certificate would be called Certificate B or the Basic certificate.

There would be a written test based on 40 hours of study of basic electronic circuits, receiving and transmitting systems, antennas and propagation, station setup and operation, and interference prevention, as well as a regulations test.

COMMENTS:

Many amateurs suggested reversing the nomenclature used in the Department's Discussion Paper, reserving Certificate A for the highest-class certificate. The term Basic is psychologically good. It suggests something to build on.

There would be no code test. This would make the certificate attractive to computer buffs and others who may view Morse code as interesting but old-fashioned. 40 hours of study would ensure the high standards that everyone is seeking in an entry-level certificate. The written tests would likely be multiple-choice. They could be administered and marked by accredited amateurs. Receiving and transmitting systems would involve study of block diagrams only. MF-HF equipment, antennas, propagation, regs, etc. would be studied to give holders of Certificate B an overview of amateur radio, in the expectation that every holder of Certificate B would eventually upgrade. Station setup and operation would head-off problems on the air.

Holders of Certificate B would be permitted to use all modes on amateur frequencies above 30 MHz.

Holders of Certificate B would be limited to 100 watts to the final stage of the transmitter, and would not be permitted to become licensees of repeater or remote-base stations.

Homebuilt or modified commercial transmitting equipment would be permitted.

A 7 W.P.M. Morse Code Endorsement would be offered for Certificate B.

Holders of Certificate B with a code Endorsement would be permitted to use radiotelegraphy and radioteletype on amateur frequencies below 30 MHz, and radiotelephony in the 28-29.7 MHz amateur band.

Holders of Certificate B with a Code Endorsement would be permitted 250 watts input to the final stage of the transmitter.

Homebuilt or modified commercial transmitting equipment would be permitted.

It would be important to give holders of Certificate B access to the 144-148 MHz band to ensure that these amateurs come into contact with good operators who would serve as role models. Limiting these amateurs to 220 MHz and above, for instance, would create a 'ghetto' where they would likely develop operating procedures at variance with established practice.

Power might be expressed in terms of 'watts output.' 'Watts output' is more common on VHF-UHF bands. 100 watts input (about 50 watts output) permits the use of most commercially-built VHF-UHF transceivers currently on the market. It is also adequate power for satellite communications.

'Repeater stations' would not include 'digipeaters' which do not transmit and receive simultaneously.

Amateur radio publications constantly encourage building and modifying equipment, including transmitting equipment. It is an amateur radio tradition. A rule specifying commercial transmitting equipment, even for holders of Certificate B, would violate that tradition. It would suggest to newcomers that knowing how to build or modify equipment was not important. It would downgrade the Canadian Amateur Service in the eyes of the international amateur radio community. Even though few amateurs would take advantage of being able to build or modify transmitting equipment, amateurs feel strongly that they should always have that option.

As described, Certificate B would satisfy those who see a need for an attractive no-code entry-level certificate.

This could merit a separate certificate. However, such a certificate would have no value unless used in conjunction with a Certificate B and confer additional privileges. We propose to present it for what it is— an endorsement. 7 W.P.M. is psychologically good. With 12 W.P.M. for the highest-class certificate, it would preserve the 5 W.P.M. differential between the present Amateur and Advanced code requirements. It is 2 W.P.M. faster than what is required for the U.S. Novice and Technician-class licences. It would justify more generous privileges.

We would not favour special subbands for holders of Certificate B with a Code Endorsement. Access to entire bands would ensure that these amateurs come into contact with good operators who would serve as role models. Such contacts would lead to greater proficiency in Morse Code and promote further upgrading.

Fourteen jurisdictions around the world give holders of entry-level certificates radiotelephone privileges in the 28-29.7 MHz band. Such privileges are being considered in the U.S. In this structure, such privileges would be a strong incentive for obtaining a code Endorsement and joining the mainstream of amateur radio. They would also give beginning amateurs a sample of privileges available with the highest-class certificate and promote further upgrading.

Another reason to obtain a Code Endorsement. 250 watts input permits the use of most commercially-built MF-HF transceivers currently on the market. It is more than adequate power for worldwide communications. Certificate B with a Code Endorsement would satisfy those who see a need for a slow-code Novice-type entry-level certificate. Requirements for certificate B with a Code Endorsement would be in excess of requirements for a U.S. Technician-class licence. This would permit operation in the U.S. under the Canada-U.S. Convention.

The highest-class and only other certificate would be called Certificate A or the Advanced Certificate. There would be a written test based on 20-30 hours of study of advanced electronic theory, receiver and transmitter circuitry, and antenna systems. There would be a Morse code test at 12 W.P.M.

Holders of Certificate A would be permitted to operate all modes on all amateur bands using maximum legal power. They would be permitted to become licensees of repeater or remote-base stations. A candidate for Certificate A with no previous accreditation would be permitted to try the written tests for Certificate B and the written and Morse code tests for Certificate A at a single sitting. Upon passing, the candidate would be granted Certificate A. There would be no time limit on the validity of any certificate.

C. COMPATIBILITY WITH PRESENT CERTIFICATES

1. Holders of the present Amateur certificate would be deemed to have the same qualifications and be given the same privileges as holders of Certificate B with a Code Endorsement, except that the right to use maximum legal power and any privileges permitted by an endorsement (such as 160-metre radiotelephone privileges) would continue.

2. Holders of the present Advanced certificate would be deemed to have

the same qualifications and be given the same privileges as holders of Certificate A.

3. Holders of the present Digital certificate would be given the same privileges as holders of Certificate B, except that the right to use maximum legal power would continue. Holders of the present Digital certificate would be deemed to have all qualifications for Certificate A except the code. They could qualify for Certificate A upon completion of the 12 W.P.M. code test.

The national organizations realize that some of the above recommenda-

Two certificates: less administration and lower costs. Advanced is familiar terminology.

The Department proposed separating the written and code tests, issuing separate certificates. The entry-level written test with the 12 W.P.M. code test would have given full MF-HF radiotelephone privileges. This was one of the most common criticisms of the Department's proposal. First, it seemed illogical to grant full radiotelephone privileges upon demonstrating proficiency in Morse Code. Second, the privileges granted were so generous, there seemed to be no incentive to upgrade to the Department's highest-class certificate, Certificate C. To many amateurs, this left the ultimate quality of the Canadian Amateur Service in doubt. For these reasons, we would link the advanced written test and the 12 W.P.M. code test for Certificate A.

Here is the incentive to upgrade.

There would be no requirements that a candidate for Certificate A has operated for one year, etc.

This would simplify the Department's bookkeeping.

tions may be difficult to implement. The Department may have no choice other than to give a Certificate A to every holder of the present Amateur certificate. The national organizations have a concern that this may cause resentment among Amateurs who received their full privileges only after considerable extra study and a second examination. Whatever the Department decides, it will be important that no Amateur, as a result of restructuring, lose any privilege that he or she previously enjoyed.

D. CONCLUSION

The national organizations offer this proposal as a point of departure for future discussions with the Department. There is a strong hope that the Department will involve the national organizations in every aspect of the development of a restructured Amateur Service, including the syllabus for examinations.

The Canadian Radio Relay League, Inc. and the Canadian Amateur Radio Federation, Inc. would like to thank the Department of Communications for its continued interest in the welfare of the Amateur service, and for this opportunity to help shape its future. Respectfully submitted,
Ronald Walsh VE3IDW
President, The Canadian Amateur Radio Federation, Inc.
Thomas B.J. Atkins VE3CDM
President, The Canadian Radio Relay League, Inc.
1986 May 10

Phantom Phones

Santa Clara County (California) police have finally determined who has been making phantom calls to their 911 emergency number. It is the telephones themselves—sometimes assisted by household appliances such as microwave ovens, vacuum cleaners, blenders and refrigerators! Pacific Bell Telephone acknowledged it as a national problem. Cordless phones have a tendency to dial spurious numbers when their batteries are low and somehow are affected by appliances on the same electrical circuit. NEMA (National Emergency Number Association) says the problem is 'industrywide' and has nothing to do with the specific brand of telephone. APSCO

(Associated Public Safety Communication Officers) are trying to document the problem for the FCC.

From the W5YI Report

OUR COVER PHOTOGRAPH

Sonra's 1986 executive: Standing L to R, Directors Bob Lewis VO1BL, Melvin Mercer VO1FR, Ev Price VO1DK, Past President Gus Samuelson VO1MP; Seated L to R, Vice-President Eric Salter VO1KR, President Frank Davis VO1HP, Secretary Michelle Mercer VO1RL, Treasurer Gerry Hannon VO1BF.

SONRA assisted in the emergency communications during the Gander air disaster on Dec. 12, 1985, see TCA March 1986.

Extracts from the Canada Gazette

193 REGULATIONS CONCERNING ANTENNA SUPPORTING STRUCTURES AND SAFETY OF RADIO EQUIPMENT

Statement of Problem

The adequacy of regulations relating to antenna supporting structures and the safety of radio transmitting equipment have been of concern for some time both to the Department and to various interested parties.

Possible Action

Changing the Department's role and responsibilities in these two areas through appropriate amendments to the General Radio Regulations, Part II.

197 AMENDMENT OF THE RADIO INTERFERENCE REGULATIONS FOR HIGH VOLTAGE POWER SYSTEMS

Statement of Problem

Although a voluntary Canadian Standards Association standard has existed for some time, the number of radio interference complaints received by the Department that are caused by high voltage power systems has been consistently large. A regulation has been developed by the Department, in close cooperation with the Canadian Electrical Association, that will result in a lower

number of interference complaints and a reduction in the associated financial burden.

Possible Action

Amendment of the Radio Interference Regulations, sections 2 and 3; addition of 10 new sections and of new Schedules V and VI.

223 A RESTRUCTURING OF THE AMATEUR SERVICE

Description

Following the release of Telecommunications Regulation Circular No. 24 entitled 'Information on Amateur Radio Operator Examination,' and following the receipt of numerous representations from the public, the Department undertook an extensive review of the Canadian amateur service. In this review, particular attention was paid to those areas dealing with the examination and certification of both existing and potential amateur radio operators.

The Department has issued a discussion paper on a proposal for the restructuring of the amateur service in Canada. Comments received are now being analyzed.

224 MASTER ANTENNA TELEVISION SYSTEM RADIATION

Description

The distribution of TV signals on supplementary channels other than the standard channels 2 to 13, by Master Antenna Television (MATV) systems, increases the potential for interference to primary radio services.

Most MATV system operators are already distributing signals on all the standard channels and will therefore be planning to increase channel capacity. This will occur when a satellite receiver is added to the system or when any new services are considered.

The Department has therefore decided to undertake a study to determine the extent of signal radiation from MATV systems, the extent to which the interference potential will increase if and when more systems commence operation in the mid and super bands, and the extent and methods of control and regulation that may be required to ensure that interference would not occur to primary radio services.

225 GENERAL REVIEW OF THE AMATEUR RADIO SERVICE REGULATIONS

Description

The Department proposes to

undertake a general review of the amateur service regulations. The following regulatory initiatives, included in the May 1985 edition of the regulatory agenda, are part of the general review:

- (1) amendments to the General Radio Regulations, Part II, concerning the amateur service;
- (2) amendments to the General Radio Regulations, Part II, concerning operation of amateur stations on aircraft.

229 MORSE CODE RECEIVING TEST FOR ADVANCED AMATEUR RADIO CERTIFICATE

Disposition

Paragraph 28(b) of the Radio Operator's Certificate Regulations concerning the receiving portion of the Morse code test for the Amateur Radio Operator's Advanced Certificate did not refer to the requirement for the reception of figures, punctuation marks, 'Q' signals and emergency signals. The Regulations do cover this requirement for the Amateur Radio Operator's Certificate. Since this capability is considered necessary for holders of either certificate, the Department amended the regulations for the Advanced Amateur Certificate to include it.

230 EXAMS AND PRIVILEGES FOR HANDICAPPED AMATEURS AND RELAXATION OF REVALIDATION REQUIREMENTS FOR RADIO OPERATOR CERTIFICATES

Entry Number

COMISM-83-1-4-15

Disposition

1. The component 'Exams and Privileges for Handicapped Amateurs' has been postponed pending the emergence of a clearer picture of regulatory needs and possibilities in this area.

231 AMATEUR RADIO OPERATOR'S CERTIFICATE EXAMINATION REQUIREMENTS

Disposition

The requirements for an oral and practical examination for the Amateur Radio Operator's Certificate, as previously set out in paragraph 29 (d) of the Radio Operator's Certificate Regulations, was no longer considered necessary. This paragraph has been revoked accordingly.



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5-Yaesu FT225RD S/N-81030418 ID L.A.R.C.

6-Delhi Tower DMX54 no S/N no ID

7-Yaesu FT208R S/N-4E382683 no ID

8-Yaesu FRG-7 S/N-131087 ID-B.1947.29

9-Kenwood TR7950 S/N-3080499 no ID

10-Icom IC3200R S/N-3080499 no ID

11-Icom IC37A S/N-2677 no ID

12-Drake TR7 S/N-3013 no ID

13-Drake power supply S/N-3282 no ID

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15-Heathkit SB220 no S/N no ID

16-Yaesu FT208R S/N-4E382333 no ID

17-Kenwood TS830S no S/N ID sin. #426-451-118

18-Kenwood TS130S no S/N ID sin. #426-451-118

19-Yaesu mic. MC40 no S/N ID sin. #426-451-118

20-Diawa 2030 no S/N ID sin. #426-451-118

21-Kantronics interface no S/N ID sin. #426-451-118

22-RCA VCR VHF no S/N ID sin. #416-451-118

23-KDK 2015A no S/N sin. #426-451-118

23 Yaesu FT227R S/N-020487 no ID

24 Yaesu FT227R S/N-021205 no ID

25-Yaesu FT202R S/N-8K020111 ID inside case B04L9L4

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INSURANCE

Amateurs having property and liability insurance would be well advised to check with their agents to determine what the policy is governing the involvement in a civil liability suit similar to the Ravenscroft litigation.

A check by a couple of local Amateurs reveals that indeed homeowner type policies do cover this type of suit. One absolute requirement for the Amateur is to be sure the insurance company is involved from the beginning.

There may not be a necessity to take out separate coverage for the possible civil proceedings but, why not check now. Doing so could save you a lot of heartache as well as many many dollars. Thanks to VE3UD and VE3GG for the above tip.

— from Ralph VE3BBM, Chairman EMI Committee CARF

ONE LIVES AND ONE LEARNS

'Mr. Hamblin has six different keys and likes to spend his time "chewing the rag" with other radio operators. Depending on the type of key, a ham radio operator can send or receive signals around the world'

— *The Globe and Mail*

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The Eastern Caribbean Newsletter is full of items of interest to Amateurs planning a visit there. SASE to George Rand, 313E 10th St. Apt. 7, New York, NY 10009.

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FOR SALE: Drake TR7 transceiver, including new bands, filters, speech processor, external speaker. In excellent condition. Brian Toney, VE3MCV, 29, Viamede Crescent, Willowdale, Ontario. M2K 2A7 (416) 229-2489.

WANTED: Drake FS-4 Frequency Synthesizer. Good price paid. J.C. Beal, 2 Mowat Ave., Apt. 1204, Kingston, Ont., K7M 1K1. (613) 544-6898.

FOR SALE: Apple II plus based computer, RFI proofed, filtered and completely shielded, green screen monitor, disc drive, daisy wheel printer with 32K buffer, Apple-Insurance diagnostic card, software for RTTY, CW, slow scan TV, word processor and much more, includes desk and RTTY interface with tuning scope. All manuals included. \$1500 or best offer. Pick up. Eric VE3CTP 416-291-0088.

FOR SALE: Daisy wheel printer TTX 1014 with service manual, Centronics parallel input with interface card for Apple or clones— Like new— \$625 or offer. Eric VE3CTP, 416-291-0088.

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FOR SALE: Kenwood TS130S transceiver c/w narrow band filter. Kenwood PS30 power supply, Kenwood VFO 120 and Kenwood tuner AT-130 complete station, mint condition \$1400 complete. VE3KDU Gord Burley, RR1 Stroud, Ont. L0L 2M0. Phone 705-436-3428.

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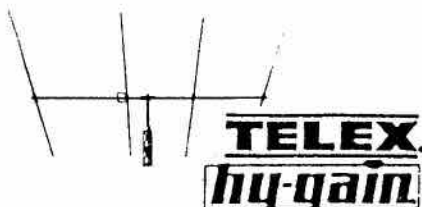
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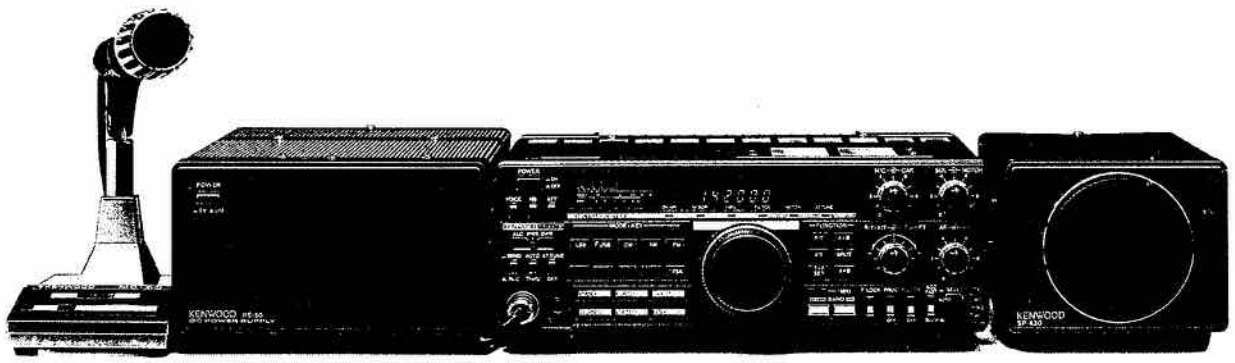
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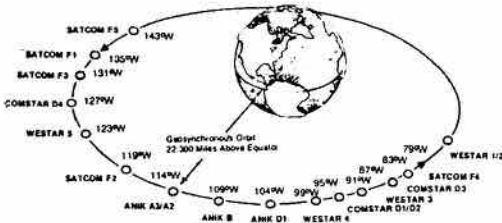


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RAVENSCROFT'S APPEAL

The previous article detailed some of the legal arguments which were used in the Ravenscroft-Houghtby case. Since an application has now been made to the Ontario Supreme Court, Appeal Court we will learn how effective these arguments will be, in a case of this type, when the Appeal is heard. Best estimate seems to be next February— because of present case load.

The Appeal Court consists of three judges who weigh the evidence that had been developed and heard in the lower Court. It is unusual for new evidence to be heard, except when it brings in new facts. Let's hope that some understanding can be achieved in the details of technical facts.

GROUND FOR APPEAL

The Grounds for Appeal have been published and so are in the Public Domain. The five grounds are as follows and are typed verbatim from the document:

1. "The learned trial judge erred in law in concluding that there was any substantial or unreasonable interference with the plaintiffs' use or enjoyment of their property amounting to a nuisance.
2. The learned trial judge erred in law in failing to consider the plaintiffs' failure to mitigate their damages.
3. The learned trial judge erred in law in failing to apply the defence of statutory authorization.
4. The learned trial judge erred in law

in failing to find that the Federal Government's power to regulate the radio spectrum as provided by s.91 of the *Constitution Act, 1867*, is paramount over the provincial common law of nuisance.

5. The learned trial judge erred in his assessment of damages and in issuing an injunction."

The lawyer now handling the Appeal is Mr. John Hylton Q.C., from the firm of Borden and Elliott, Toronto. Since Appeal court is near Toronto this will prove to be a convenience. Mr. Hylton is one of the top three communication lawyers in Canada and was formerly a Director of the CRTC. Tom Atkins VE3CDM was instrumental in obtaining such a well qualified person to represent Jack in this case.

MORE EMI

Not a day goes by without some reference to an existing EMI problem or a potential one. Not even the commercial services are excluded. A NOTAM, otherwise called a Notice to Airmen and Mariners mentions that the system used to provide automatic approach during landings at airports, ILS or instrument Landing Systems can be affected. The NOTAM issued by Transport Canada and dated Jan. 16, 1986, is entitled, "Caution regarding the use of ILS Localizers".

Some quotes from the Notam are worthwhile to reinforce our appreciation of the effects caused. Since part of the ILS Localizer is

nothing more than a sophisticated receiver aboard the aircraft— here's what happens when the receiver lacks immunity or the ability to reject undesired signals. "...effect of EMI, particularly on ILS system integrity, is becoming more significant. This is particularly true in built up areas where transformer stations, industrial activity, and broadcast transmitters have been known to *generate interference* which affects localizer receivers." (italics mine). Note that even though the inference is the above devices generate 'interference,' the cure is to fix the receiver. It continues, "The new ICAO standards for localizer receivers will, when implemented, alleviate the situation to some extent."

Lest one become upset that ILS receivers always act up, bear in mind that aircraft approaching the ILS from a wide cone of acceptance would probably never know any EMI existed.

A study on the effectiveness of toroids will soon be done and it is hoped will be ready for the next issue of *TCA*. It will cover two types of toroids and will provide, in graphical form, the effect of a given number of turns of the line cord vs frequency response. The latest (June 86) issue of *Radio Communications* makes a couple of points to observe in using toroids for full effect. Keep the ends well spaced; otherwise, the intertwining capacity will enable the RF to bypass the toroid— definitely undesired. We'll give details for a good general purpose line filter also, when high quality toroids are used in these filters they really work.

Canadian Radio Amateurs need solidarity. We need one voice to deal with problems arising from EMI/EMC and that whole new world of electronics developments which are coming fast. Our problems are not just electromagnetic— we've a lot of PR work to do. The hobby aspect of Amateur Radio is all we hear when we complain or when our neighbours complain. Let's change that. Start now! Pressure that inactive ham down the street, at work, or post a notice at your local parts store. Tell them to join CARF— we need support on a National scale. Every member should try to bring in one new Amateur every month. It will lighten the load we share. It will assure this Radio Service and the benefits it generates.

Eliminating EMI is like keeping out of other people's hair— I've solved the problem— how about you? All you need is a comb filter.

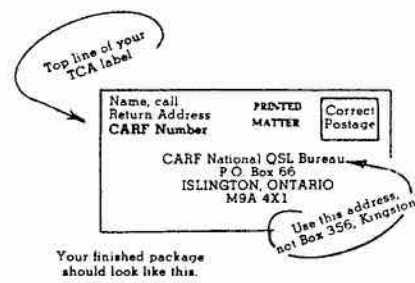
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1. Sort cards alphabetically by prefix.
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3. Place small lots of cards in strong, heavy envelopes and seal securely. Include the label (or copy or facsimile) from your current copy of *TCA*. Wrap heavier packages in strong paper or put in a cardboard box. Tie securely. **Do not staple.**
4. Address your package as shown in the diagram.
5. **Do not register the cards!** This only delays them, costs more and is not really necessary.

6. If you want proof that CARF received your cards, enclose a self-addressed, stamped postcard or envelope with 'Receipt' marked on it.

7. If a package should be damaged on arrival (very rare), CARF will send you a list of cards received so you can check to see if any were lost.



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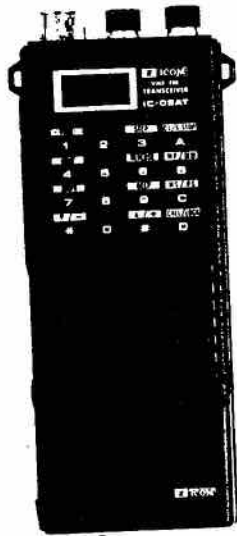
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VE7EXPO— Pride of Canadian Amateur Radio

BY J.F. HOPWOOD VE7AHB

Canadians are proud of the great success of EXPO 86. Record crowds beyond all estimates. Exciting pavilions, world class entertainment, cleanliness and courtesy throughout. Visitors almost without exception praise Canada's EXPO 86 as "the best ever." Canadian Amateur radio has the unique honour of being the only exhibit providing 'live' world-wide radio communications using almost every available mode of operation.

The unsung heroes are the hams who are staffing the station for five and a half months. It takes 70 licensed Amateurs per week to keep VE7EXPO operational 12 hours per day seven days a week. That's no mean feat! B.C. Amateurs are giving everything they've got including their normal vacations and evenings after work to make sure the very popular VE7EXPO meets the challenge for Canada.

The big 'surprise' is the amazing public response. Most of the communications exhibits at EXPO 86 are visual arts such as cinematography, graphic models and artistic displays. People find listening to QSO's and watching ham operators work the world exciting and interesting. They especially find listening to CW as mysterious and fascinating. In fact, VE7EXPO's operators are continuously busy answering the many questions the public ask about Amateur radio. To be sure they are given a full rundown on all the possibilities and enjoyment that ham radio has to offer. They are encouraged to contact a local ham club when they return home.

The media took two months to find us. Now we receive many requests for interviews and filming. Besides local radio stations, VE7EXPO has been interviewed nationally and internationally by CBC radio and TV, CTV, Radio-Canada (French Network) and the BBC. Wayne Greene W2NSD of 73 Magazine fame dropped by to operate and do a story. Gary Hammond VE3XN of CANADX and Long Skip logged several pages of QSO's. He planned to be back in the fall for more of the same. An Australian editor phoned long distance for article background material. Both *World Radio* and *Radiosporting* magazines featured VE7EXPO with a story for their readers.



Four of the many operators at VE7EXPO: Foreground, Darrell VE7FFS, at IC 751 Ron VE7EFU, on phone Tom VE7GY, Satellite Derek VE7QK.

So don't let anyone tell you that the public or the media find Amateur radio uninteresting! Not so! They just don't normally get the chance to see and watch us do our stuff. Yes, of course, we have a first class exhibit

and the DOC and ICOM generously met our need. But it took the dedication and pride of Canadian Amateurs to put it together and above all to keep it going.

Canadians are proud of VE7EXPO!

Police Chief seeks ban on police band monitoring

Toronto Police Chief Marks, although admitting that with today's sophisticated receiving equipment it may be impossible to ban eavesdropping on police nets, says he may 'push' for such legislation. All this has been tried before in Canada and it has proved to be a totally impractical approach. Maybe the chief should have attended a recent Ottawa exhibition by electronics firms dealing in defence equipment. The sophistication of mobile sets and even infantry walkie-talkies in

scrambling and resistance to monitoring is fantastic. Such rigs could probably solve his problem... albeit at a price. The frequency-hopping system, whereby a transmitter changes frequency about 100 times a second is one of the techniques used.

— Canadian Amateur Radio News

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FOXX Transceiver kits are available from \$40.; Box 855, Hawkesbury, Ont. K6A 3C9.

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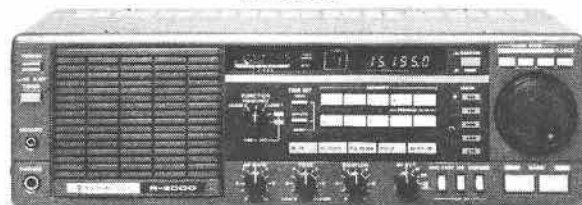
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R-2000



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Emergency Notes

Besides this directory and the CARF repeater directory, an Amateur's car should also carry a fire extinguisher, a first-aid kit, and a few flares. While on the road, the driver or passenger should know the frequency of the nearest repeater and the exact location of the care, that is, the highway it is travelling, the number on the last kilometre post, or the miles in km from the last town.

If you come across what appears to be an accident, appraise the situation quickly. Make radio contact before getting out of the car, especially if there are people walking about. Don't get out of the car unless you are sure it is safe to do so.

The information the police will want is, first, the exact location of the emergency. Tell the officer where you are as closely as possible. "Ten miles west of Regina," "Just past the 607 kilometre post on the 401," "half-way up Rogers pass." "Between Stellarton and Truro."

Then tell him how serious it is. Is it property damage (PD) only, or, more important, are there persons injured (PI)? If so, will an ambulance be needed? Is there spilled fuel, needing the fire department's attention? Is a tank truck involved? If so, what is its cargo? Is the road blocked? Is a wrecking truck needed?

If there are persons walking about, be seen to be using your radio.

If you are staying until the emergency is secured, park well off the road, and be ready to tell the police of any changes in the situation.

If the road is partly or completely blocked, place flares in the middle of the road 1000 yards in metres in both directions, if needed.

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The Canadian Amateur Radio Federation has available to Canadian Amateurs a variety of golf shirts, windbreakers, satin jackets and v-neck sweaters. These are available in various sizes and colour combinations. To order contact our office and we'll send you an order form.

Beginner? Want help? Write CARF.

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ARES	Daily		1100 to 2200	3.755
Trillium Net	Sat		1600	3.775
Ontario Southern Region Net	Daily	0300		3.667
Ontario Southern Region Net (Evening)	Daily	0000		3.667
Ontario Southern Region Net	Daily	2100		7.045
Ontario Phone Net	Daily	2100		3.770
Ontario ARS	Daily	1200		3.755
Northwest Ontario Net	Daily	0015		3.750
Laurention Net	Daily	2300		3.755
Grey Bruce Net	Daily	2315		3.645
Grey Bruce net	Daily	0300		3.645
ARES Net	1st Sun	1900		7.060
Champlain Rag Net	Daily		1845	147.060
Kingston Area ARES Net	Tues		1915	146.940
Kingston ARC Net	Tues		1915	146.940
Needle Net	Mon-Fri		0715	146.940
Trans Provincial Net	Daily			7.055(USB)
Kinsmere Traffic Net	Tues,Thur,Sat	0200		147.96/36
London Elgin Mdlsx Oxf Net	Sun	2345		147.66/06
Open Line Net	Daily	2330		147.66/06
Seaway Valley net	Wed	0130		147.78/18
Thousand Island Net	Tues,Thurs	0130		146.22/82
Twin Soo Mini Net	Daily	0200		146.34/94
Wise Owl Net	Sat	0100		147.90/30
York Region Net	Sun	0100		147.825/225
MANITOBA				
Manitoba Evening Phone Net	Daily	0100 W	0000 S	3.765
Manitoba Swap & Shop	Sun Wed	0100 W	0000 S	3.765
Manitoba Morning Net	Daily	1430 W	1330 S	3.765
Manitoba Traffic Net	Daily	0030 W	2330 S	3.660
Winnipeg Info Net				
WRIN & Link 147.81/21	Sun	1800 S	1800 S	146.01/61
Winnipeg Info Net				
WRIN & Link 147.81.21	Fri	0200 S	0200 S	146.01/61
BDN 2 Metre Net	Wed	0130 W	0030 S	146.34/94
SASKATCHEWAN				
Saskatchewan Phone Net	Daily	0100		3.753
Saskatchewan ARES Net	Sun	1530		3.780
Saskatchewan Amateur Traffic Net	Daily	0400		3.695
Prairie Weather Net	Daily	1400		3.753
Saskatoon ARC				
2 Metre Net	Daily	0300		146.19/79
Rock Point 2 Metre Net	Mon	1345		146.13/73
Regina ARA 2 Metre Net	Daily	0330		146.46/06
Moose Jaw ARC 2 Metre Net	Daily	0300		146.34/94
ALBERTA				
Alberta Public Service Net	Daily	0130		3.772
Alberta Traffic Net	Daily	0115		3.685
Wee Net	Sun	1605		3.770
Alberta 2 Metre Info Net	Tues	0130		146.46/06
Wild Rose Net	Mon	0300		3.775
Peace Country Ragchewers Net	Daily	0400		1.895
Alberta ARES Service	Sun	1525		3.750
BRITISH COLUMBIA				
B.C. Public Service Net	Daily	0130		3.729
B.C. Northern Net	Wed-Sun	0300		3.775
B.C. Emergency Net	Daily	0300		3.650
Alaska Highway Net	Mon,Wed, Fri	0400		3.782
Dogwood Net	Thurs	0300		3.775
Dogwood Net	Last Thurs	0300		3.675
VHF 2 Metre Vancouver	Wed	1400		146.34/94
VHF 2 Metre Kelowna	Wed	1400		147.00/60
Vernon 2 Metre Net	Sun	1745		146.88
Salmon Arm 2 Metre Net	Sun	2400		146.76
YUKON and NORTH WEST TERRITORIES				
Alaska Highway Net	Mon,Wed, Fri	0400	2000	3.782

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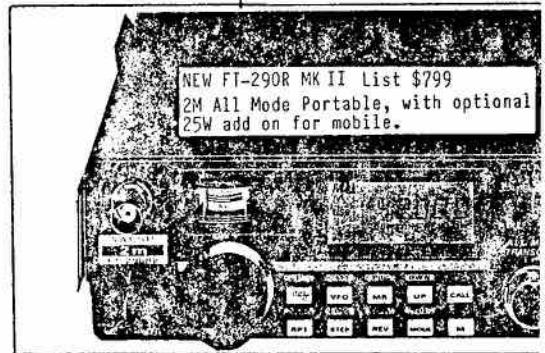
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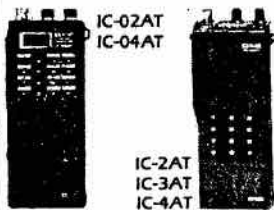
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- BP-5 425mA 10.8V Battery
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Net Directory

BY NORM WALTHO VE6VW

Here is your 1986 CARF net directory. If you find any omissions, please let me know, help me to complete the list.

It would be better if the net times were all in local. Again, please help. Let me know the times at which your net meets, and if there are any changes with the seasons. Write, phone or radio. me (Box 1890, Morinville, Alberta, TOG 1P0, 403-939-3514) with corrections or additions— Norm.

VE3VCA

CARF would like to invite Amateurs who are in the Kingston area to come operate the club station, VE3VCA. President Ron Walsh, reports that "our signal using a Viewstar PT-2000A and TH-7 is amazing." The station creates a pile-up every time it gets on the air. Ron reports that in one hour of operating on April 27, he worked TU210, EI4ZH, UQ1EWC, EA8BLP, GW4HSH, SH3BH and VE6JW/DL. If you'd like to visit the station, contact us and make an appointment.

MESSAGE FROM CARF NEWS SERVICE

We NEED more input from YOU! I would like to urge those clubs or organizations that receive the bulletin that I rely solely on your support for the material in these bulletins. I would like to hear from all of you. Let me know what you or your club is doing; many Amateurs would like to know. We are here for you; however we must hear from you in order to continue issuing these bulletins. Send your correspondence to our office or directly to Dino Moriello VE2FSA.

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NAME	WHEN	TIME-Zulu	Local	Frequency MHz
CANADA WIDE NETS				
Trans Canada Net	Sat, Sun & Hol	1800		14.140
Canada DX Net	Sun	1600		14.173
Aurora Net	Daily	0230		7.062 (USB)
Canadian 10 Metre Club	Sun	2100		28.400
Trans Canada Net	Daily	0230		14.040
Eastern Canada Net	Daily	0045		7.040
Eastern Canada Net	Daily	0230 & 0045		3.652
Clara Net	Tues	1900		14.133
XG Net	Sun	1730		14.105
Trans Provincial Net	Daily	All Day		7.055 (USB)
Royal Naval ARS	Sun	1900		14.130
Royal Naval ARS	Sat	1430		21.360
Royal Naval ARS	Wed	2330		7.070
NEWFOUNDLAND				
Sonra Sun Morning Net	Sun	1400		7.200
Newfoundland Phone Net	Daily	2230		3.785
Newfoundland Swap & Shop	Mon	2245		3.785
Humbars 2 Metre Net	Sun	2215		146.34/94
PRINCE EDWARD ISLAND				
Maritime Sparkets Net	Wed		1000	3.770
Prince Edward Island ARA Net	Mon	0100		146.34/94
NOVA SCOTIA				
Atlantic Province Net	Daily	0000		3.654
Cape Breton Net	Sun	1730		3.735
Happy Gang Net	Daily	0200		3.755
Maritime Phone Net	Daily	2300		3.750
Maritime Sparkets Net	Wed	1440		3.770
Maritime Swap & Shop Net	Tues	2330		3.750
Maritime Weather Net	Mon - Fri	1100		3.750
Maritime White Cane Net	Daily	2200		3.770
Nova Scotia ARA Net	Mon	2200		3.762.5
Old Timers Net	Sun	1200		3.750
Professional Loafers Net	Mon.-Sat.	1300		3.780
Jack's Net	Sun	1800		146.28/88
Sydney VHF Net	Sun	0000		146.34/94
Take 15 Net (Halifax)	Mon	0045		146.34/94
Truro Area Net	Daily	0100		146.19/79
NEW BRUNSWICK				
Loyalist City ARC Net	Sun	0000		146.22/82
New Brunswick ARA Net	Sun	1315		3.750
QUEBEC				
Ontario Québec Net	Daily	0300		3.667
Québec Radio Net	Daily	0030		3.775
Le Réseau du Québec	Daily	2345		3.780
Le Réseau de la Detente	Daily	2200		3.750
Le Réseau de la Métro	Tues-Sat	2320		3.780
Le Petit Train du Matin	Daily	1300		3.750
Happy Gang	Daily	1300		3.765
Western Québec VHF/UHF				
ARES Net	Daily	0030		146.40/00
Le Réseau VE2TA	Daily	0015		146.19/79
Le Réseau de U.M.S. (Mtl)	Sat	0030		146.10/70
Le Réseau de la Mauricie	Daily	0045		146.07/67
Montreal Region VE2REL	Daily		1815	147.915
Abitibi VE2RON	Daily		1815	146.820
Trois Rivières VE2RGM	Daily		1815	146.910
Beauce VE2FX	Daily		1815	147.330
Québec VE2UX	Daily		1815	146.820
Lac St Jean VE2ES	Daily		1815	146.880
Limouski VE2RWM	Daily		1815	146.610
Mont-Joli VE2RAC	Daily		1815	147.730
Percé VE2RLC	Daily		1815	146.790
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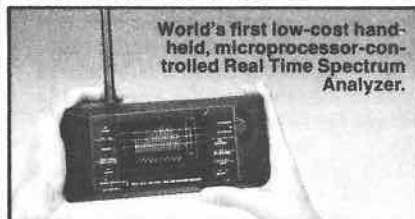


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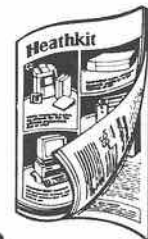


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Amateurs serve in New Brunswick

BY BRENT TAYLOR VE1APG

Most people like sunny dry weather, but there really can be too much of a good thing as the residents of Atlantic Canada found out during the week of May 11.

The sunny, dry weather combined with brisk winds served to dry out the forests in a matter of days. By the middle of the week the fire danger was listed as very high. Small spot fires began to break out in widely scattered areas of New Brunswick. The vast majority of those fires were extinguished before they could do much damage. A few got away.

The huge Gagetown Fire was an example started by soldiers conducting ordnance training in a remote area of the army base.

At first the blaze was confined to military property and the forces undertook to extinguish it themselves. After a bit of bad luck and a shift in the prevailing winds, the fire gained strength and raged out of control. In its path were scores of homes along route #102 and in Gagetown itself.

On Thursday, May 15 the Emergency Measures Organization decided to begin evacuating those areas deemed to be in the most danger. An emergency command post was established in a large gravel pit at the scene of the fire. EMO decided that Amateur assistance was required.

AMATEURS CALLED IN

Within minutes a call for assistance was made over the local Fredericton repeater. A short time later Amateurs were on their way from as far away as Saint John. By early evening Amateurs were staffing the communications centre at EMO Headquarters in Fredericton... other hams took to the field to keep HQ informed of the evacuation in progress.

That evening hundreds were moved from their homes to safe areas. Firefighters crews stayed behind to save what they could. As forest fires usually do after dark, the Gagetown Fire abated somewhat but still was out of control. A situation report issued at 10:50 pm forecast the fire to worsen at daybreak Friday.

At 7:30 the next morning EMO conducted a media briefing reporting little overnight activity. It was announced that choppers were already in the air 'dropping water on hot spots in the Gagetown area.' It looked to EMO like they would have a bad day on their hands.

Once again, a call went out for Amateur help. The Emergency Measures Command Posts consists of a large van equipped with transceivers covering the RCMP, ambulance and 2-metre Amateur frequencies. One Amateur was there at all times acting as net control. He was in constant communication with HQ in Fredericton and Amateurs in the field. Also in the van were officials from EMO, the Department of Health, firefighters, the RCMP and the military.

Because of the immensity of the blaze, fire trucks from as far as 50 miles away were called in for assistance. Under normal circumstances these various fire departments would never be working together in a coordinated effort. Because of that fact they had no way of communicating with one another... all being limited to their individual frequencies. It was up to the Amateurs to travel with these trucks and provide a means for intercommunications.

Also on the emergency net were VE1EA and VE1TU. Ken VE1EA was stationed at the Gagetown nursing home which was slated for evacuation, and Dennis VE1TU (a private pilot) was airborne with the Fredericton Fire Chief advising the Command Post of the progress of the fire.

LUCK CHANGES

By noon on Friday, May 16 the VE1SMT repeater was very busy with net traffic. VE1's BF, XH, KK, ADS, EA and TU were in constant communication with VE1AJJ and VE1APG at the command post. HQ was staffed by VE1's BOF, BCL, BHB, ASJ and WF also assisted.

By 2 pm our luck was changing for the better. A wind shift began to blow the fire away from Gagetown. The official word to hold the evacuation of the Nursing Home was issued over Amateur radio. Elsewhere the fire was still posing a threat to homes. Several times hams were cut off by the flames as the blaze jumped roads and crossed fields of dried grass. Gradually, over the next two hours, the danger to property subsided and the majority of the municipal fire crews, Amateurs in tow, were able to return to base.

A tactical meeting was held at 5 pm Friday. Following the meeting most of the crews were released from duty. By 7:00 Friday evening the Amateurs were officially told to stand down.

WHAT DID WE LEARN?

Here are some major points brought home during our de-briefing:

- If an Amateur is requested to travel with an official, every effort should be made to see that the Amateur goes in the same vehicle with that person, for those with handhelds it was no problem but could you remove your mobile rig from your vehicle at a moment's notice and install it in someone else's car? With emergency vehicles racing in all directions it is not wise to use two cars when one could have done the job.

- Two net frequencies should be set up. One could have been strictly for emergency use and the other for housekeeping duties.

- Getting to and functioning in an emergency can be a major problem if the authorities manning roadblocks don't know who you are. We are all issued EMO ID cards but it shouldn't be necessary to whip it out every single time an RCMP officer tries to evacuate you! What we have proposed is the use of specially marked armbands and signs for vehicles. In the days before most of the provinces switched to a system of personalized licence plates our call plates stood out from the crowd but now they don't even get a second glance. Don't depend on your call plates to get you through a roadblock in an emergency!

- Most repeaters in Canada have what is fondly called an alligator installed. This is the device which will shut the

Page 29

Amateur Radio Operators involved:

Brian Upton	VE1CGV
Gerry Moran	VE1BCY
Brent Taylor	VE1APG
John McKendy	VE1BF
Ken Melvin	VE1EA
Lewis Anderson	VE1BOF
Dennis Moore	VE1TU
Gerald Sharpe	VE1BGQ
Greg Gilmore	VE1XH
John Avery	VE1AJJ
Phil Loosen	VE1CF
Steve Moore	VE1BCL
Mel Ellis	VE1KK
Don Bunker	VE1BRD
Rick Kowalski	VE1ADS
Andy McLellan	VE1ASJ
Don Welling	VE1WF
Earl Meade	VE1BHB
Glen Taylor	VE1BDK
Les James	VE1MF
Dan Murray	VE1BUO

Fire In Newfoundland: Amateurs Respond

BY HARRY WOODMORE VO1JU
of Grand Falls

On Wednesday, May 14, 1986 a forest fire broke out behind and to the north of Red Cliff, a settlement west of Grand Falls and Windsor. The forest was dry, and the fire took hold and spread rapidly towards Red Cliff.

Next afternoon the fire had spread and intensified: Red Cliff residents were advised to evacuate the town. Explosives stored nearby were in danger.

The fire had increased on Thursday. Ground crews, water bombers, and helicopters battled the blaze, but could not stop it. By then both Grand Falls and Windsor were endangered. The Trans Canada Highway was closed west of Grand Falls and traffic was conveyed by the RCMP.

VO1JU checked into the Cod Jiggers Net at 0930 Thursday. He gave up-to-date information on the fires and warned traffic of the conditions on the Highway.

On Friday the wind increased, and the fire spread out of control towards Windsor. (Population: 7,000) Several homes were threatened, and the town looked like it would have to be evacuated.

COMMUNICATIONS NEEDED

Harry VO1JU tried to QSO Maurice VO1BM in Windsor, but he was at his summer home, 70 km away. Later, he was able to tell Maurice his home was endangered, and helped him route his return round the fires.

As the flames and smoke raced towards the towns, people were evacuated to safer subdivisions. Soon, the telephone system became overloaded, calls being delayed and

repeater down after a certain length of continuous transmission (eg. 3 minutes). In our case it was necessary, at times, to turn the mike over to the third party for his transmission. On one occasion the repeater was talked-out and some valuable information could have been lost. Repeaters likely to be used in an emergency situation should be equipped with a method, perhaps tone controlled, of disabling the alligator.

- Every club planning to volunteer for emergency communications should make an effort to build a portable repeater for use in areas where the nearest permanent repeater is not available. In our case this was not a problem.

- This one should be obvious! Every

interrupted frequently. The fire continued uncontrolled towards Grand Falls (Population: 9,000) and completely encircled the two towns.

A St. John's CBC representative contacted Oscar VO1DI, asking him to call Amateurs in the Grand Falls area to maintain communications if needed. VO1DI raised VO1JU on 80 metres and arranged the link. A call from John Greer, Director, EMO, St. John's, was routed through Siegfried VO1RI to the Grand Falls Hospital with traffic, and to initiate the emergency program, at about 1:30 p.m. on Friday. Lloyd VO1GI, called by VO1JU and Clyde VO1BS, went to the hospital with a 2 metre rig.

Andy VO1BJ, at his rig, monitored 2, 20 and 80 metres, relaying to VO1JU. Jerry VO1ET checked in. VO1JU set up a portable generator against a possible power failure, and, as net control, passed traffic from EMO, Central Newfoundland Hospital to the mayor of Windsor and the CO of the local militia. The Mayor issued a State of Emergency order.

FIRE THREATENS TOWN

Other Amateurs, notably Len VO1OW, Cliff VO1II, and Harry VO1QH checked in and the frequencies were monitored all night.

On Saturday the Windsor-Grand Falls fires were still out of control, but a shift in the wind diminished the danger to the towns, though the situation was still critical. At one time the flames had extended to a shopping centre: no buildings were damaged here, though one house was destroyed in Windsor. The flames now threatened Lewisport, 40 km east of Grand Falls. A fire started at Norris

community-minded Amateur should have a kit right in their vehicles. The kit should consist of... flashlight, detailed road map, foul weather clothing, first aid kit, back-up batteries for the handheld, snack foods, water, etc.

The consensus was that everything went extremely well. It was our first opportunity to show our stuff on a major scale. We were acknowledged by EMO as a key factor in the operation. We operated under the watchful eyes of government officials, reporters from TV, radio and print, and the general public. What made it all worth the time and effort were the overheard comments from the officials we were working with, "We couldn't have done it without the hams!"

Arm on Friday rapidly spread to the villages of Brown's Arm and Lawrencetown. Both had to be evacuated at 1 pm to Lewisport, 5 km away.

Lewisport itself was endangered and the inhabitants warned to be ready to move. As a precaution, the senior citizens were evacuated to Gander. VO1QG help to billet and feed the evacuees, and still found time to check in with VO1JU.

At 9 a.m. VO1JU updated the Cod Jiggers Net. Amateurs province-wide stood by, and traffic was passed through VO1s JU, OW, DI, LL, QG, RW, II, RI, with other stations on standby.

While conditions improved around Grand Falls-Windsor on Saturday, they worsened around Lewisport. VO1JU, VO1OW and VO1DI monitored 80 metres overnight in case VO1QG in Lewisport needed assistance. Sunday was a repeat of Saturday.

On Monday there was some improvement in the Brown's Arm area, and the evacuees were allowed to return to their homes there late that afternoon. The Seniors in Gander returned to Lewisport. The emergency net remained on standby until Tuesday afternoon.

At one time 12 water bombers, 20 helicopters and hundreds of firefighters and volunteers battled the 27 fires burning in the province.

Thanks to all who stood by, too numerous to mention individually, but who helped immeasurably. Property damage in all areas was amazingly light, and there were no personal injuries.

Several homes were lost and scores of camps and cottages were burned to the ground. Millions of dollars worth of valuable property and timber were destroyed, and millions more were spent to try and save the rest. Amateurs put in over 250 man-hours of volunteer time during that 24-hour period in the Fredericton area alone, not to mention those hams who were similarly involved in other parts of Atlantic Canada. The next time someone asks you what hams do, show him this article and others like it. We in the Emergency Measures Communications Group are pleased to add our names to the list of Amateurs around the World who have served their fellow man.



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MEMBERSHIP RENEWAL NOTICES

Effective with the OCTOBER 1986 issue of TCA, the C.A.R.F. Office will no longer be mailing notices to persons whose membership is up for renewal. We ask instead that our members pay attention to their magazine label, which will indicate in RED INK when it is time to remit dues for another year. When the label indicates that payment is due, please remove the form printed on the last page of TCA and send it in with the payment promptly, to ensure uninterrupted delivery. Enclosing the 'renewal notice' label will also speed the updating process greatly.

For those uncertain of when the subscription expires, the following sample top line of a label will explain where the date appears:

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TD-2005/S	\$ 127 + 6.90	1200FXX*	\$ 859 + 15.00
TD-2005/HD	\$ 137 + 7.90	1500FSX*	\$ 4,195 + 26.00
TD-160	\$ 57 + 6.90	EV-700*	\$ 889 + 9.00
GD-6/500W	\$ 99 + 6.90	EV-700DX*	\$ 1,590 + 18.00
GD-6/2KW	\$ 199 + 7.90	#303	\$ 49 + 6.90
GD-8/500W	\$ 119 + 7.90	#300	\$ 89 + 6.90
GD-8/2KW	\$ 219 + 7.90	#1211	\$ 49 + 6.90
GD-7/500W	\$ 129 + 8.90	#1213	\$ 59 + 6.90
GD-7/2KW	\$ 229 + 8.90	#1217*	\$ 69 + 6.90
GD-9/500W	\$ 149 + 9.90	105PSX*	\$ 139 + 7.00
GD-9/2KW	\$ 249 + 9.90	502PSX*	\$ 169 + 7.00
GD+2	\$ 29 + 6.90	*These items are not stocked regularly!	
GD+160	\$ 59 + 7.90		

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CALENDAR

Sept. 6: Niagara Frontier International HAM-O-RAMA. Details July/Aug. issue.

Sept. 6-7: Nanaimo ARC annual Hamfest, Nanaimo, B.C. Details May issue.

Sept. 17: Applications for DOC licence examination.

Sept. 20: Packet Radio Symposium and Flea Market, Barrie, Ont. Details June issue.

Sept. 20: Moncton Area ARC fifth annual flea market. Details this issue.

Sept. 27: Kingston ARC Flea Market. Details May issue.

Oct. 4: IEEE course on digital radio. Details July/Aug. issue.

Oct. 15: DOC licence examination.

Oct. 19-20: Jamboree on the Air, Scouts Canada.

Oct. 27-Nov. 2: ON4CLM award. Details June issue.

1987

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

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

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

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

JACK LONDON COMMEMORATION

The Valley of the Moon Amateur Radio Club will be operating a special event station, N6KM, commemorating world famous writer Jack London, author of *Call of the Wild* and *The Sea Wolf*. Operating from the Wolf House, his home in Jack London State Park in Glen Ellen, California for two weekends, Sept. 13, 14 and 20, 21 from 8 a.m. PDT Saturday to 6 p.m. PDT Sunday (1500 UTC Sat. to 0200 UTC Mon.), the club will operate stations in the general phone band on 21.360 MHz on 15M, 14.275 MHz on 20M., and 7.225 MHz on 40M, + or - depending on QRM. A beautiful 8" x 11" certificate, suitable for framing, with London's picture and history, and featuring a Jack London commemorative postage stamp hand-cancelled in his home town of Glen Ellen, will be returned for a QSL card and \$1.00 sent to VOMARC, 358 Patten Street, Sonoma, CA 95476. If you want the certificate returned unfolded, please also send a 9" x 12" SASE.

Social Events



Scouts at VE3VCA, Kingston

Jamboree On The Air

On the third full weekend in October each year, Scouts hold a Jamboree-On-The-Air, starting 0001 hours on Saturday and ending at 2359 hours on Sunday.

Scouts need the help of radio Amateurs to hold a JOTA. They may approach you individually or through clubs. Amateurs can volunteer their services without being asked, of course.

Naturally, the Amateur sets the hours at which he will be available for the Jamboree.

The JOTA is not a contest, but a learning-by-enjoying-yourself activity. Be prepared to demonstrate radio, to answer questions, and to allow Scouts to talk to other Scouts across the world. Some special stations:

DI1BSP - Boy Scouts of the Philippines
F6JAM - Boy Scouts of France
GB3BPH - Baden-Powell House, London, England
HB9S - World Bureau, Geneva, Switzerland
JA1YSS - Boy Scouts of Japan
K2BSA - Boy Scouts of America
LA1JAM - Boy Scouts of Norway
LX1JAM - Boy Scouts of Luxembourg
VE3SHQ - National Capital Region, Boy Scouts of Canada (located at National Headquarters, Ottawa)
VP9BS - Boy Scouts of Bermuda
XE1ASM - Boy Scouts of Mexico
ZS6JAM - Mafeking Boy Scouts

More from National Organizer, Jamboree-On-The-Air, Scouts Canada, P.O. Box 5151, Station F, Ottawa, K2C 3G7.

Tell the Scouts that TCA will give book tokens for the best 250 word reports and the best photographs submitted by Scouts to the Editor, Box 855, Hawkesbury, Ontario, K6A 3C9.

Official World Scout frequencies

Phone	CW
3,840 kHz	3,940 kHz
3,590 kHz	7,030 kHz
7,090 kHz	14,070 kHz
14,135 kHz	14,290 kHz
21,360 kHz	21,140 kHz
28,990 kHz	28,190 kHz

HALIFAX/DARTMOUTH AMATEUR RADIO CLUBS HOLD ANNUAL FLEAMARKET

On May 30-31, 1986 the fifth annual Halifax/Dartmouth Flea-market weekend was held at St. Mary's University.

Out of town and local Amateurs kicked off the weekend with a Friday pub night which included 'Amateur' talent and fish chowder. A large number of people enjoyed making new friends and renewing old acquaintances. In fact, we understand that some Amateurs continued this activity into the wee hours back at the university residence.

At 0700 hours the next morning, surprisingly enough most Friday night revellers were back on deck to set up their tables as general admission began at 0900 hours. At this time, the ribbon-cutting ceremony for the third edition of the *VE1 CALLBOOK* took place followed by the opening of the first box and the

ANNOUNCING CLARA 87 CELEBRATION A BLENDSHIP OF YL FRIENDSHIP

CLARA celebrates her 20th birthday in 1987. In honour of this, we are having an 87 celebration.

The dates are Sept. 11-12-13, 1987. It will be held at the Sheraton-Parkway Hotel, Highway 7 and Highway 404, Richmond Hill, Ontario. Just north of Toronto.

A full fun and entertaining program is planned. OMs are invited to join us.

If you'd like more information please send Self Addressed Stamped Envelope to: 87 Celebration. c/o Cathy VE3GJH, 56 Stockdale Cres., Richmond Hill, Ont. L4C 3S9.

AUSTRALIAN LADIES' AMATEUR RADIO ASSOCIATION

On June 30, 1975 a group of women interested in Amateur Radio met in Melbourne and formed an association known as LARA. The founding President was Norma VK9AYL (now VK2DO). Since 1975, ALARA (as it is known) has grown to over 200 members throughout Australia and around the world.

The main aim of ALARA is to encourage the active participation of women in Amateur Radio.

Why not try for their colourful award?

ONTARIO TRILLIUMS

New Executive as of June 1986.
President - Audrey McDermott VE3CCO
Vice President - Loreen Ambler VE3EAZ
Secretary - Irene Williams VE3AUR
Treasurer - Doris Cody VE3BBO
Editor - Stella Bradley VE3NXG.

selling of the first book to Herb Bradley VE1ADA.

In the afternoon the NSARA (Nova Scotia Amateur Radio Association) sponsored a mini-symposium under the guidance of President Peter Davanney VE1JI on the topics of maritime repeater linking and packet radio.

A dinner-dance on Saturday evening completed the fleamarket weekend activities.

The Fleamarket Committee of David Nimmo VE1NN, Chairman, and Jack Guilfoyle VE1OU, Kurt Arsenault VE1TT, and Tom Fullerton VE1CES



Mrs. Winnie Bryant, of St. Mary's Hospital, on her 79th birthday. Garry, Station Manager of VE3SMH, is looking for a Willowdale phone patch to Mrs. Bryant's family. She tells Garry that she has 50 grandchildren, 22 great grandchildren and seven great great grandchildren.

EPOUSE D'AMATEUR

1. La radio tu épouseras, Quand mari tu prendras.
2. Toute la soirée te tairas, Quand ton mari trafiquera.
3. Le désordre tu toléreras, Quand de radio il s'agira.
4. Les repas tu retarderas, Quand une liason il fera.
5. Les enfants tu écarteras, Quand leur bruit gênera.
6. Les sorties tu supprimeras, Quand radio il préférera.
7. À la technique t'intéresseras, Même quand rien ne comprendras.

8. Tout OM tu recevras, Même quand il te dérangera.
9. La voiture tu conduiras, Quand en mobile il transmettra.
10. Et jusqu'à sa mort tu patienteras, Car jamais avant ne s'interrompra.

—RAQI

RAFRCWR

James Wood, who was G3VG pre-war, is writing a book on the contributions of Amateurs who served with the Royal Air Force Civil Wireless Reserve, and with RAF 26 Group. Anyone who could help him is asked to write to him at 7 Sherring Close, Wick Hill, Bracknell, Berks. RG12 2LD, England.

EXPO QSL

The B.C. provincial government has printed 20,000 EXPO 86 QSL cards to be distributed by the Surrey Amateur Radio Club to B.C. Amateurs. The government is using the ham community to invite Amateurs around the world to this international event.

Does your local library carry the Radio Amateur Call Books? If not, ask them to!

deserve congratulations for a well-organized and successful weekend. Attendance figures for this year's fleamarket surpassed previous years in both numbers of buyers and sellers. (Reported by Bernie Conrad VE1BLM and Jim Cleveland VE1CHI)

MONCTON AREA ARC FLEA MARKET

The Moncton Area Amateur Radio Club will hold its fifth annual flea market on Saturday Sept. 20 1986, from 9 a.m. to 4 p.m. at Mountain View United Church, 85 MacBeth Avenue, Moncton, N.B.

10 DAY MONEY-BACK GUARANTEE

You may order any GARANT TD-Trap Dipole, any GARANT GD-Windom Dipole, any GARANT GB-Beam, or any EMOTATOR 105TSX, 502CXX or 1105MXX for a 10-day no-risk inspection. Have a look at them in the privacy of your home and if you don't like what you see return the item pre-paid to our warehouse. We'll refund the full purchase price less shipping charges. We trust in what we sell!

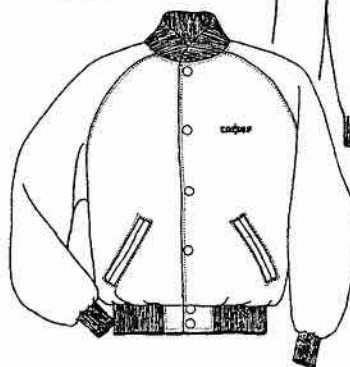
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FLEA MARKET**

SATURDAY, SEPTEMBER 27th, 1986

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•CQ DX•CQ DX•

Paul Cooper VE3JLP
RR 2 Metcalfe Ont.
K0A 2P0

Summer is here and the shack has to compete with all the usual outdoor activities we Canadians throw ourselves into for those few brief months when it is warmer outside the house than in. There are additional distractions at my QTH as I'm running a small beef cattle 'Cow-Calf' operation which at this time of year means regular checks of the cows about to calve and days of hard work in the hay fields.

Not only is time in the shack restricted but my big outside project, a new tower for my TH-6, is currently at a standstill. I have the ex-VE3QA tower which started life as the top half of a CBC AM transmitting array. It's a massively constructed self-supported structure, 65 feet high, weighing in at about 3000 lbs. so we shall have to get a crane in to hoist it up and place it on the footings I poured last Fall.

The major task remaining is the repositioning of the rotator to allow the installation of a 24 ft. mast on top so that the total height of the modified structure will be around 80 ft. A nephew has been imported from England for the summer and we are hoping to persuade him to repaint the whole thing, a daunting task that will take a good few hours and consume several gallons of paint.

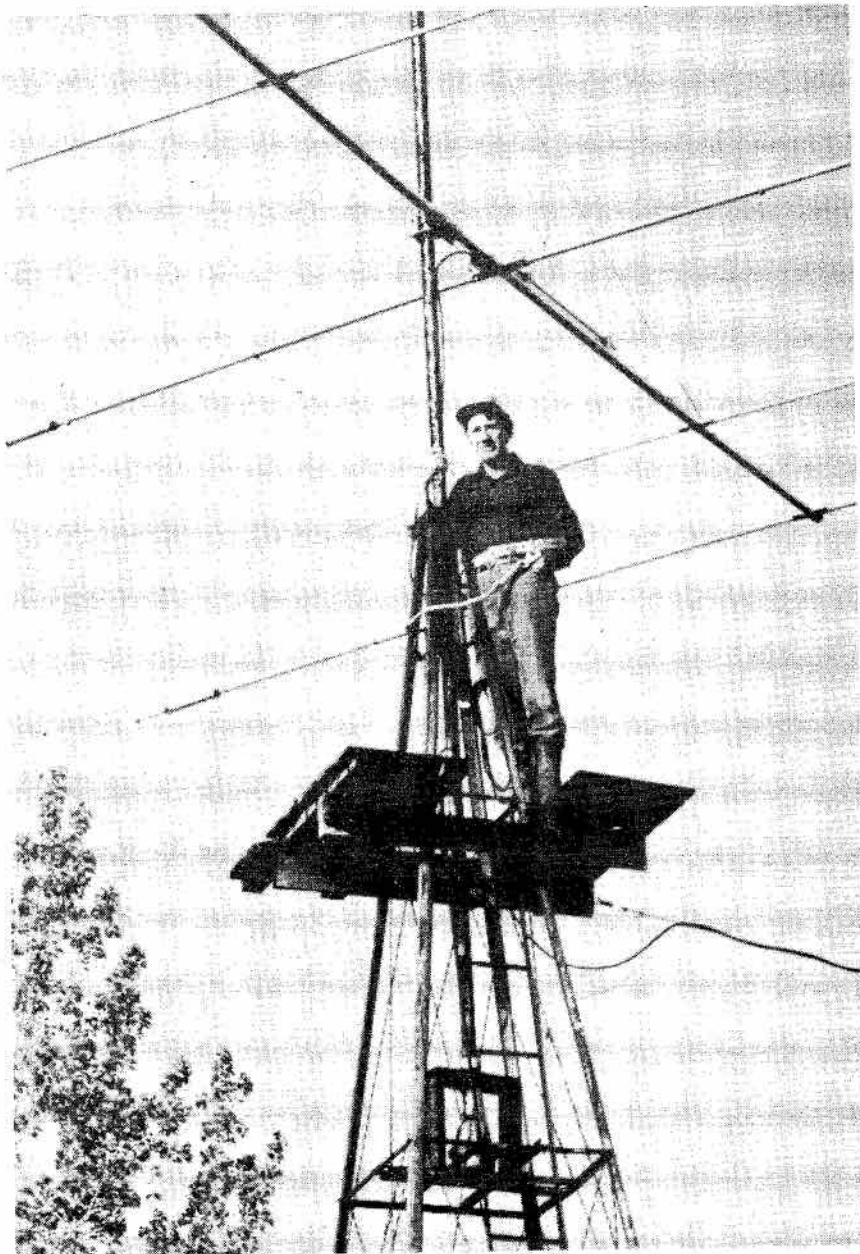
A tasteful shade of green has been chosen in the hope that the tower will blend in with the trees at the edge of our garden and be slightly less of an eyesore to my wife. The rest of the family, however, is looking forward enthusiastically to the tower going up since it has a nice little railed platform at the top with a very sturdy steel ladder leading to it from ground level.

The view from the top should be impressive and from a practical point of view it will be handy for spotting straying cattle and those pesky ground hogs. The latter require regular hunting to keep their population within bounds. However enough of these rural ramblings and on to DX!

CORRESPONDENCE

In an earlier column I asked you to write in with comments, suggestions and so on particularly with respect to QSLs. I'm happy to say this has resulted in a number of interesting letters, not only on the subject of QSLs but also on other aspects of DX. Let me say right away I'm delighted to get this feedback.

Your letters can be a valuable source of material for the column and I hope those of you who can find the time will grab a pen and drop me a line on anything to do with DX that



Here's Paul with his TH6DXX at a mere 45 feet. Just wait and see...

you've found interesting that you'd like to share with our readers. All your comments on QSLs will be incorporated into a future column we'll be filling the gaps you noticed here and there in that June issue. I'll also be covering several other articles that have come out recently in other magazines on the same subject, what's that old saying about "it never rains but what it pours"?!
Bob Eldridge VE7BS has written

twice and his letters contained a number of interesting comments which I hope to fit into future columns. I was particularly impressed with his list of stations worked last April and May on 160 metres including a long string of VKs. This whole business of Top band DXing should make a very interesting article for perhaps later this year. Bob also enclosed a photo of JA5DQH, Ari, who is attempting a WAS and WAVE with Amateur call vehicle licence plates. He tells that,

"This is my life work" and judging by the picture of his shack he has made an excellent start.

Any of you who happen to have an old ham call plate lying around the garage shack might like to set up a sked with Ari and then confirm it with your plate, only don't try sending it via the bureau!

SPOTTING BAND OPENINGS

In a future issue of TCA I plan to spend a little time delving into the esoteric world of Solar Flux, Sun Spot numbers, Alpha index, K index and RGNs and how to use them to improve your understanding of propagation. For today I pass on an easy to remember rule of thumb which will give you an immediate measure of whether band conditions are favourable for DX.

Tune in to WWV at 18 minutes past the hour and note the Alpha and K indices. Favourable DX conditions will exist when the Alpha figure is below 10 at the same time as the K figure is 2 or lower.

It might also be a good idea to make a habit of checking the 20 metre beacons which will, during their 10 minute cycle, give you a reception test over nine different paths to your QTH, for the 20 metre band anyway. For those of you who are not familiar with this excellent service, sponsored by the Northern California DX Foundation, look for the transmissions at the top end of the CW sub-band, 14.0996 on my TS-830s readout. There are presently 9 stations transmitting one after the other for one minute each in the following sequence:-

Station	Time
4U1UN/B	0000
W6WX/B	0001
KH60/B	0002
JA2IGY/B	0003
4X6TU/B	0004
OH2B	0005
CT3B	0006
ZS6DN/B	0007
LU4AA	0008

Each beacon transmission consists of a call sign followed by a series of ten second dashes at 100, 10, 1 and 0.1 watts respectively. The transmission ends with the beacon call sign again at full power. It is extraordinary how often, when a reasonable opening exists, one can detect the 100 milliwatt dash. It certainly makes QRP DX a lot more understandable. By the way the beacons all use a simple ground plane antenna and so represent a rather modest station in terms of effective radiated power. With most Amateurs nowadays using some sort of beam antenna on 20 the DX station you finally work, near the beacon, should normally be noticeably

stronger than the beacon signal you checked earlier. There are indications that a tenth beacon is planned for installation in Australia, watch this column for further news of this useful service.

COOPER'S BEEFS

Relax, readers, this will not be an account of my cow-calf operation but rather a corner of the column where we can all blow our steam about the annoying habits of a minority of our fellow Amateurs that make DXing more than a little frustrating at times. No names, no pack drill of course, I aim to give space to examples of bad operating practices that are unfortunately fairly common in the hope that some of the offenders will read the column, see the error of their ways and make the bands a pleasanter place for us all.

This month we focus on the 'Perpetual CQer.' I'm sure you have all met this chap, his CQ calls go on interminably, very often without his call sign until the very end. He is easy to recognize as you tune across the band and I now make a practice of giving him only ten seconds, if he hasn't sent his call sign in that time I carry on tuning and he has lost me as a potential contact. I think life is too short to have to sit there tapping one's pencil waiting and waiting for a station to identify itself.

Of course this leads to the question, how should a CW call be sent? Well using a CQ or CQDX call is not favoured by many DXers who prefer to listen and then pounce, I favour this approach myself.

However, there is a school of thought that points out that the rare or semi-rare DX station frequently gets fed up with working the pile ups that

result from his CQ calls. Sometimes he just wants to rag chew and on these occasions he does the listening and selecting and sometimes he will answer you if you happen to be calling CQ in his direction.

If you agree with this approach how should you structure your CQ call for maximum effectiveness and minimum interference to other band users? Here is my suggestion for a CQ call beamed to the Pacific. It can probably be refined by your ideas so let's call it a starting point for the optimum CQ call. I'll use CW for conciseness but the basic pattern and principles will be the same on phone:-

QRL? (Listen for any objections)
 QRL? (Listen again for objections, if none...)

CQDX CQDX CQDX PAC de VE3JLP
 VE3JLP VE3JLP DX PAC PSE K

(Listen, if nobody comes back repeat the CQ line again then listen again and so on until someone answers)

Using this technique we have first made sure that we don't start calling on top of an ongoing QSO... how many times has this happened to you... and that we make our transmissions as short as possible consistent with getting a reply.

Well that's the first 'beef'. Your comments, suggestions and particularly your own 'Beefs' would be most welcome and if of general interest will be featured in future columns.

BITS AND PIECES

D1 Minami Torishima— Further to the item in this section last month the call sign allocated to Rick, NJ7D, is 7J1ACH so don't go looking for JD1... The 7J series of calls are an alternative

Page 36



to the JD group for this island. Rick has been quite active since his arrival, I logged him on July 3rd at 1500Z on 14.002 MHz.

YB Indonesia— From my QTH anyway South East Asia is by far the most difficult part of the world to work. This being the case I was particularly pleased to hear Haris, YB3BVT, in Surabaya coming through with a

respectable signal late in June on 14.016 MHz at 1215 UTC.

OJO Market Reef— OH0MD/OJO is providing some welcome contacts from this 'wet rock' in the Baltic. On July 10th at 1703 UTC on 14.024 MHz I logged him working a big pile up of mainly Europeans although the odd North American station was also worked. Sadly, this expedition will

have left the Reef by the time you read this column but for those of you fortunate enough to have got through the wall of European QRM your QSLs should go to OH2BH.

UA Franz Josef Land— This is one of the more difficult Russian 'countries' to work so I am indebted to 'QRZ DX' for giving us a useful update on activity from this far northern group of islands that are on about the same latitude as Alert. Apparently there are three stations currently active with details as follows: UV1OO, active on all bands CW only. QSLs to UA9LBR: UA1OT, QSLs to UB5KW and finally RZ1OWA; no special QSL information.

KH9 Wake Island— Check the Brown Sugar net on 14.309 MHz for Bob NH6FU/KH9. CW contacts with Wake can sometimes be made by looking for WH9AAD on the 15 metre novice band, 21.1 to 21.2 MHz after 1030 UTC.

OY Faeroe Islands— While the Faeroes are not all that far from most parts of Canada there doesn't seem to be a great deal of Amateur activity from these islands so I was pleased to hear Martin, OY7ML, on 14.021 MHz at 2050 UTC early in July.

Y2-9 German Democratic Republic— I wonder if anyone else heard and worked Y86GST on the 20 metre band in July? Judging by the mini-pile up there was something special about this station. I suppose a special event call of some sort or other. QSLs to Y31KE, information on that call to your DX editor, please.

QSL INFORMATION

ZL1AMO reminds us that he still has logs and QSLs for a number of his past DXpeditions, the details are as follows:-

VR6HI (Mar/Apr '79); ZK1MB (Aug '79); ZK2EA, 5W1CW, A35EA (Aug/Sept '80); H44RW (Apr/May '81); VK4ANS/LH (Jul '81); YJ8RW (Nov/Dec '81); 3D2RW (Sept '82); ZK1CQ (Aug '79 and Apr '82); ZL1AMO/C (Nov/Dec '80 and Mar/Apr '83); ZK9RW (Oct '83); ZL8AMO (Mar '84); ZL7AMO (May/Jun '84); FW0BX (Oct '84); A35EA (Mar '85); 5W1CW (Nov '85); A35EA, 5W1CW, ZK3RW (Mar/Apr '86). He is also QSL Manager for ZL7AA. All QSLs to: Ron Wright, 28 Chorley Avenue, Auckland 8, New Zealand.

The QSL manager for TL8CK draws our attention to his new address: Debaert Xavier F6EWM, 6 Rue Voltaire, 93270 Sevran, FRANCE.

Thanks are due to the following sources for some of the material appearing in this column. VE7BS, VE7CDK, VE7AYJ, W6PHF, ASDQH, QRZ DX and the *Globe and Mail*.

Brasil



BRASIL: States, Territories, Federal District and Call Areas.

REGIONS	STATES	CALL AREAS
NORTH	AM Amazonas	PP8
	PA Pará	PY8
	AC Acre	PT8
	*AP Amapá	PJ8
	*RR Roraima	PV8
NORTHEAST	MA Maranhão	PR8
	PI Piauí	PS8
	CE Ceará	PT7
	RN Rio Grande do Norte	PS7
	PB Paraíba	PR7
	PE Pernambuco	PY7
	AL Alagoas	PP7
	SE Sergipe	PP6
	BA Bahia	PY6
	*FN Fernando do Noronha	PY0
MIDWEST	**DF Brasília	PT2
	MT Mato Grosso	PY9
	MS Mato Grosso do Sul	PT9
	GO Goiás	PP2
SOUTHEAST	MG Minas Gerais	PY4
	ES Espírito Santo	PP1
	RJ Rio de Janeiro	PY1
	SP São Paulo	PY2
SOUTH	PR Paraná	PY5
	SC Santa Catarina	PP5
	RS Rio Grande do Sul	PY3

* Territories
** Federal District

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

QRP

EVENTS & HAPPENINGS

Interestingly, during the recent QRP contest I was able to work all W call districts, one VE6 and heard a VE2 on 14060 kHz in less than 2 hours of operating time around 1530 UTC.

RSGB

Administration des examens de code morse.

"Le Ministère du Commerce et de l'Industrie (DTI) qui régleme tous les services amateurs de Grande Bretagne a designée; la 'Radio Society of Great Britain' pour administrer les épreuves de code morse.

A partir du 1er avril 1986, les épreuves administrées par la 'British Telecom International,' au compte de ce même ministère, auront lieu tous les deux mois, a chacun des 70 centres de la RSGBN.

Avant d'effectuer ces changements, le DTI a invité la ville de Londres, l'Institut des corps de métiers de la ville et la British Telecom International a soumettre de nouvelles propositions pour l'administration de ces épreuves de code. Le DTI conclue que les propositions soumises par la RSGB permettent d'offrir un meilleur service aux amateurs désireux de subir l'épreuve de code morse.

Nous adressons nos félicitations et nos vœux a la RSGB.

The IARU, no 132

La RSGB informe les membres des associations de la région 1 qu'à partir du 1er février, la bande de 6 mètres est disponible a tous les amateurs du Royaume Uni, détenteurs d'une licence classe 'A'. La portion de cette bande s'étend de 50.00 MHz a 50.50 MHz.

— The IARU, no 132

La Fédération des Radio Amateurs du Canada offre un éventail de vêtements tels que polos, pulls, blousons. Choix de coloris et de tailles. Appelez-nous et nous vous enverrons un bon de commande.

La sureté du Québec est maintenant a l'écoute du canal 9 sur la bande des 11 mètres en dehors des grands centres urbains. Le Québec se joint ainsi aux autres provinces en offrant ce nouveau service aux automobilistes.

Most stations were exchanging their ARCI membership numbers which was not a prerequisite. If these numbers are any indication (highest received was 5682) a lot of people somewhere are interested in QRP to belong to the Amateur Radio Club international.

The ARCI also sponsors a number of QRP nets as follows:

1500 UTC Saturday 3560 call GLN
1800 UTC Saturday 7040 call NWN
2300 UTC Sunday 14060 call TCN
0200 UTC Wednesday 3560 call GLN

Remember the international QRG, 3560, 7040, 10105, 14060, 21060, 28060 and give a listen or even a call or three, CQ QRP, CQ QRP de VE6BLY/QRP.

CHEW - QRP

The time has come when we must all band together in increased numbers and restore some semblance of order to our Amateur Radio Service. Anyone interested in further advancement of this worthy organization can, without monetary outlay toward forming a new club or duplication of existing services, help CARF (Voice of the Canadian Amateur) expand our national voice, TCA (The Canadian Amateur Radio Magazine).

CHEW - QRP, (Canadian Hams Experimenting With - QRP) will feature activities, equipment, photos and anything else pertaining to QRP. International flavoured experiments, contacts etc., are also acceptable as long as they are reported to the editor by a CARF member. As the membership in CARF increases, so will the space allotted CHEW-QRP grow accordingly.

REDUCED POWER

Operating with low power is not new by any stretch of the imagination, nor is operating WITHOUT a transmitter but only recently has QRP gained the limelight through the continued effort of a few enthusiasts. One such is G4FAI, author and international freelance writer who wrote me about another subject in *Dots & Dashes*, the official journal of the Morse Telegraph Club. Turns out he is a keen Morse historian among other attributes of which QRP is one so he rates first international mention. Anyone interested in reading his articles, may look at CQ June 1982, and the British magazines, *Amateur Radio*, May '86; *Everyday Electronics*, May '86; *Practical Wireless*, January '83 and February '86.

CLOSER TO HOME

We have a two page typewritten letter from Rick VE7FOU out on Hope Island. Their recreational antenna (3 el tribander) has been out of service for quite a while so he was end feeding a 60' piece of wire. He began ham radio three or four years ago as QRP using a discarded HW7. Testing it out across town proved fatal as he then proceeded to fill several pages in his log with 2 watt QSOs. When his year was up he wrote the advanced exam, while some theory was still fresh in his mind. After six months on SSB he was back to CW and ever since has indulged half his operating time with QRP.

FASCINATION

This was what he found in the reactions of the other stations. Besides being very friendly, they often seemed amazed when asking for confirmation of the quoted power level. They themselves had the irresistible urge to reduce power to a watt or two and ask for another signal report. Rick goes on to say he is non-competitive by nature and during most contests you will find him beating a hasty retreat to 10 MHz, where he gave me 589 for my 6 watts!

PARTING COMMENTS

"As for the ho-hum DX, working it is fun but now only becomes a challenge if using QRP! Why could we not have a few weeks during the year when no one used more than 5 watts output?" The 20 metre beacons have certainly proven 10 W is the maximum for round-the-world communications and one-tenth to 1 W would serve just fine for even general QSOs or even DX.

CONTRIBUTE

Your views and experiences are most welcome and keep in mind QRP could be our way of restoring public confidence in the Amateur Radio Service. Think how much more pleasant our neighbours or someone down the block would react to a Father's Day, Mother's Day, Valentine or plain old common everyday greeting message delivered by a QRP operator. "I didn't know there was a ham operator in the district" response would cut more ice than any number of court cases! QSLs are immediate either by phone or in person and anyone worth their salt can get a reply. This then is 200% return on your operating service without spending a lot of money in stamps etc.

CONTEST SCENE

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

QUESTION: How many hams does it take to screw in a light bulb?

ANSWER: Seven. Two to explain how it should be done, two to explain why it shouldn't be done at all, two to watch and one to do it.

ONLY KIDDING!

Now for this month's good news. The first sunspots of the new cycle have been seen. Now, that doesn't exactly mean that you should rush out and start working on your new ten metre array. But, it is time to start thinking about it. In a couple of years, we should have some propagation on the high bands again. But in the meantime, keep working on your low band totals.

Speaking of propagation, it sure was good in last year's CQ Phone contest. The high claimed scores have been published, and are listed in Table 1 for Canada.

These numbers really do deserve some comment. VE6OU/3 came very close to the single operator all band record. VE3NNR established a new mark on 160M. Yuri VE3BMV went to work and came up with the (so far) world high score on 80M. Both BMV and VE2HQ beat the old Canadian mark.

On the higher bands VE3CPA broke the old record on 20M and VE1BNN broke 100K on ten metres. In the multi-single competition, VE3BVD came close to the multi-single record. All these scores are of course not yet official, but the high claimed scores don't usually change too much. In any event, these are some of the best scores in several years. That is one of the things that makes HF

DXing and contesting interesting; we don't yet have propagation prediction down to an exact science.

Speaking of the CQ Contest, Jack VE7RG is giving up his sponsorship of the trophy for top single op all band operator in the Phone contest. If any one out there is interested in picking up this trophy, get in touch with W1WY at *CQ Magazine*.

WAE CONTESTS

August and September present two good opportunities for warming up for the CQ Contests in the form of the Worked All Europe Contests.

The general flavor of these contests is very much like the CQ Contests, and the activity level is very nearly as high. The exchange consists of a signal report and serial number. The multiplier is the number of European countries worked.

The unique feature of these contests is what is known as QTC. When working another station, you may report to him a maximum of ten previous QSOs, earning one additional point for each QSO you report. If you plan to work this contest seriously, official log forms are highly recommended.

This is one of the better contests known of for improving your CW. You have to really send some information in this one. You can't use a programmable keyer to send everything. (At least not very easily!)

Complete rules can be found in either *CQ* or *QST*.

SOMETHING NEW

A very different type of contest is slated for late September. It is the

Sep 13/14— WAE Phone
20/21— Scandinavian Activity
CW
27/28— Scandinavian Activity
SSB
— 10 GHz Cumulative
Contest

ARRL 10 GHz. No, not MegaHertz, but GigaHertz. (A gigantic number!) The idea is to encourage activity in our microwave bands. Scheduling is not only encouraged, it would seem to be a virtual necessity. Rules are somewhat complicated. If you are interested in participating, you will have to know some other people on 10 GHz. So it doesn't really seem necessary to publish the rules here.

If you haven't been active on 10 GHz but are interested, ask around and see if anybody in your area is operational on this band. If you find someone, they may be very willing to have you borrow some equipment and give them some points in the contest. This could be a good opportunity to explore a new area of the hobby.

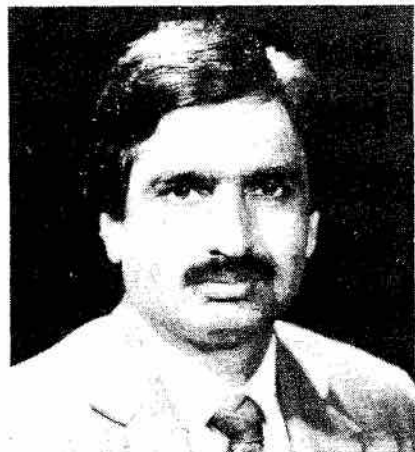
Now, I only have one question... does anyone have a 10 GHz kilowatt that I can borrow?

Well, that about empties my in basket for another month. Two items in closing: our west coast correspondent, George VE7EIK tallied 887k on 20M in the CQ WPX SSB. And from beautiful downtown Toronto VE3UOT rolled up a 1.5M point multi-single score in the same contest.

Back in a month.

AP2KD

Had there been a prize for the Amateur who had come the longest



distance to attend the recent flea market in Pickering, AP2KD Parvez would undoubtedly have been the winner. Parvez, whose homeland boasts less than 80 active Amateurs, was completely at home at Pickering High School in a friendly crowd many times that number. AP2KD, one of a small group of management trainees of the Pakistan Government Railways attending training classes under the auspices of CNR and CNCP, availed himself of the opportunity to attend a Canadian flea market with VE3CRL. He also tried out our 2-metre repeaters (there are no 2 metre repeaters in AP-land) and contacted Jean VE3DGG via his first phone patch. Note: Parvez took sample copies of *TCA* home with him and is interested in associate membership in CARF. — VE3CRL.

TABLE I

CATEGORY	CALL	SCORE
SINGLE OP	VE6OU/3	3,184,461
ALL BAND	VE3XN	2,119,312
160M	VE3NNR	47,880
	VE3OME	26,375
80M	VE3BMV	393,530
	VE2HQ	313,530
	VE1VIC	112,192
40M	VE2FU	126,549
20M	VE3CPA	971,442
15M	VE2PJ	252,518
10M	VE1NN	110,638
MS	VE3BVD	5,921,580
	VE3XO	5,384,132
MM	VE7ZZZ	3,252,315

George Morgan VE3JQW
687 Fielding Dr.
Ottawa K1V 7G6

From the Clubs

According to the Lakehead ARC's *Hi-Q*, there is a new club in Geraldton, Ontario. Congratulations to all, and I hope to hear about your activities. We would be happy to receive a request for affiliation.

I recently received an interesting letter from Norm Morgan, VE1BLG, (no relation as far as I know) who is the new editor of the Hart house (U of T) bulletin. Norm is preparing a history of the club as part of the 40th anniversary celebrations this coming fall, and is looking for anyone who might have interesting information on Amateur radio at U of T. He is also asking former club members who have not yet heard about the celebrations to get in touch with him at the club address.

HOLES IN THEORY

I don't usually share with you the wealth of humour that I find in the various club bulletins; however, I must relay the following item written by Mark Persons in a recent issue of *Radio World*, and reported in the Niagara Peninsula ARC's *Feedline*:

"For many years, young electronic

Lyle Blake, our computer columnist, has been in dock for repairs. He is now sitting up and taking nourishment, and he'd appreciate a card. He promises to be back with his column soon.

AMATEUR TEACHERS

Anyone who has used Amateur radio in the classroom, or who would be willing to answer questions from teachers who live nearby, or who would talk about and demonstrate Amateur radio to schools, please get in touch with Philip Gebhardt VE3ACK, *Grade Magazine*, 219 Connie Crescent, Unit 1, Concord, Ont. L4K 1L4.

VE1 CALLBOOK

The VE1 Callbook lists all the Maritime radio Amateurs, and is available for \$8.00 from VE1 Callbook, H.A.R.C. P.O. Box 663, Halifax, N.S. B3J 2T3.

DEADLINES

Here are the deadlines for the upcoming 1986 TCA magazines:

November	Sept. 19
December	Oct. 17
January '87	Nov. 21

Imagination is more important than knowledge.

technicians have been taught the 'hole' theory of electronics. This theory explains how electrons move along conductors and semi-conductors. The explanation has been good enough to satisfy or keep at bay anyone who might otherwise question the theory.

"However, after a number of years working in the broadcast industry, I have come to realize the 'hole' explanation may not be correct.

"My theory, which has been proven time and again by personal observation, is that electronics works on smoke. Yes, that's right. I recently learned that every manufacturer encapsulates a certain amount of smoke in every piece of electronic component he builds. The smoke is what does the work.

"You have probably noticed that a component will quit working when the smoke leaks out. I've documented this many times and it conclusively proves my theory. My theory sure beats the 'hole' theory. I've never seen holes in a wire, and why don't the electrons pour out of the end of the wire if the wire is broken?"

MOTION-PROMOTION

An item in the May issue of *Ragchew*, from the North Okanagan RAC leaves me a bit breathless.

"On May 4th an athletic event known as a 'Motion-Promotion' competition took place in the Vernon area. The event took the form of a relay race involving teams of athletes.

The first members started at Silver Star Ski Resort. They ran up to the top of the ski hill and skied down to the next members who went on the cross country ski run. The next members ran down Silver Star Road for 10 km where the next runners took over and ran another 10 km. Cyclists then raced about 25 km to Kin Beach where the final members of the team canoed some distance down Okanagan Lake, then across to the finish line at the Lakeside Inn.

Four members of NORAC assisted by providing communications. They were Stewart VE7BQY, Norm VE7EGO, Jim VE7EFM and Bob VE7ELR. The race went over very well and organizers are looking forward to a bigger and better event next year." Whew!

CIVIC ELECTIONS

The February issue of *Key Klix*, published by the Calgary ARA, describes in an article entitled 'Civic Elections 1986' an interesting service provided by Amateur radio in Calgary:

"Roy Hookham VE6RH (ex-VE6ALS), tied a mutual knot between the city of Calgary election office and the Calgary ARA way back in 1963 or 1964— it's been so long even Roy can't remember— to provide communications between polling stations throughout the city and City Hall in order to speed up the transmission of ballot count totals into the city computers. Prior to our involvement, all ballot totals were dispatched via telephone from each polling station to City Hall. Many additional telephone lines were required and installed at City Hall for election day. These telephone lines were always busy causing an extreme delay in traffic handling.

"Now enters Amateur radio, and Roy not only implemented a plan but also coordinated the whole event. At this time HF mobile stations on 75 metres were used to communicate between polling stations and City Hall. Only a handful of polling stations were then covered by Amateur radio.

"HF antennas were a little cumbersome at City Hall but this didn't stop Roy. The first time was so successful (in fact, perfect) that the city wanted us to cover more polling stations during the upcoming elections. The only real problem with taking on additional polling stations was manpower and equipment. As each election year arrived Roy would always double the amount of polling stations from the previous election. The last election year of 1983 was no exception, and Amateur radio covered 85% of the polling stations in the city.

"Over the span of 20 years Amateur radio has changed considerably, particularly in 2-metre FM communications capabilities. Now with repeaters functioning flawlessly on emergency power, transceivers with extreme sensitivity, high power and fully synthesized make it fairly easy to cover an event like the civic elections." (Any other city like to pick up this idea? —Editor.)

Incidentally, I got a chuckle over one short paragraph in the March edition of *Key Klix*: "Hasn't the weather been beautiful for the last little while? Mind you, by the time you read this, there could be a foot of snow on the ground again." Hmmm! But my XYL, who is a Lethbridge gal, agrees with the next comment: "...but who cares, one Chinook and it's all gone again." Maybe, but when do the lights come back on?

MICROWAVES

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

As noted in the July/August contest column, the first 10 GHz cumulative contest is to be held the weekends of September and October. These outings will combine the spirit of field day, the excitement of mountain climbing, camping, orienteering, and, different from other contests, will require participants to cooperate in order to be successful. This will require more planning than the average VHF contest. This month I will take you through some of the steps required to make these outings a success.

First obtain a topographical map of the area where you will be operating and note all possible operating locations. These can include sites that have already been used as well as prospective new sites. The coordinates of longitude and latitude should be recorded for each site. This will allow the computation of the last two digits in the grid square designation, required for the contest exchange. As the subsquares are only 5 minutes by 2.5 minutes, be sure to record them with enough accuracy to put you in the right square. See January 1983 *QST* Page 49 or January 1985 *TCA* Page 46 for method of calculating subsquares.

In choosing a site, you would like to be the furthest station from all other stations in order to maximize the distance points for each km. of separation. The site must be clear of all obstacles such as trees in the desired directions and not be blocked by intervening buildings or mountains.

Another consideration is the ease of access to the proposed site. While the

driveup mountaintop is most desirable, the existence of ski lifts or hiking trails should be noted and taken into account, especially if you plan to visit several sites during the same day!

For three roving stations, a route can be mapped that would allow them to earn additional distance points by moving at least 10 miles. If the station at the other end is high enough, the rover need not climb at all but could stop at 10 mile intervals in a circle around a high fixed station.

One of the most important things that should be done before the contest is to work out the actual beam headings that will be required between sites. There is nothing more frustrating than spending two hours searching for a station who has his dish pointed many degrees away from you. With 5 degree beamwidths, you can't afford to be very far off. Several excellent computer programs are available to calculate headings between two points on earth. They save a lot of time when computing many paths.

When the time comes to aim the dish, the 144 MHz beam on the talkback station can be used to peak the two metre signal from the other station. The dish can then be pointed in the same direction. This heading will not be as accurate as the compass method, due to the relatively wide beamwidth at 144 MHz, but it will get you looking in the right direction. Keep the talkback station on during the contest to the following frequencies: 144.23 SSB Horizontal or 146.55 FM Vertical.

One other element of the contact

that cannot be left up to chance is frequency. If at all possible get all the stations together before the contest to calibrate each transceiver to one reference source, at 10.250. Stations with a 30 MHz IF can use 10.250 and 10.280/10.220 while stations with a 10.7 MHz IF could use 10.250 and 10.260.7/10.239.3.

In addition to the normal full duplex communication between units with the same IF, this would be a good time to try contacts between different IFs. This is done by keeping one station fixed at say 10.250 while the other tunes off 10.250 by an amount equal to his IF. At this point the second station will be receiving the first. To complete the contact, the second station then moves his frequency such that the difference in frequencies equals the first stations IF, at which time the first station will hear him.

If you really want to get good at this you can record the voltage change required to move your station by the difference in the IFs: $30 - 10.7 = 19.3$ MHz. A simple switching circuit can even be installed to change the tuning voltage on transmit and receive for push to talk operation.

A 30 MHz IF station using a Gunnplexer and AAR board, will have greater electrical tuning range than a motion detector and 10 MHz board, so let the 30 MHz station do the tuning around and keep in touch with each other on the talkback frequency during the contact to alert each other when something is heard.

While temperature differences will cause changes to these readings at each site, at least you will know just about where to find each station without searching up and down the whole band.

I have put together the following short checklist for things to take along in the contest. If you notice anything critical missing, please let me know before the contest weekends!


"AND SIX WEEKS
AGO HE COULDN'T
EVEN SPELL
AMATEUR!"



10 GHz	Other
Battery	Maps
Microphone	Compass
Headphones	Logs
Tripod	Pens
Dish	Food
Transceiver	Drink
Key	Shelter

144 MHz
Transceiver
Beam Antenna
Coax
Mast
Microphone

Get Results!

USE THE
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ANTENNAS & ROTATORS

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GB43DX: 3el. beam, 40-20-15-10m,	\$ 525	\$ ASK
TD-2005/S: 5-band trap dipole, STD,	\$ 127	\$ 6.90
TD-2005/HD: 5-band dipole, HD,	\$ 137	\$ 7.90
GD-6/500W: 6-band windom dipole,	\$ 99	\$ 6.90
GD-6/2KW: 6-band windom, 2KW PEP,	\$ 199	\$ 7.90
GD-8/500W: 8-band windom, 500W PEP,	\$ 119	\$ 7.90
GD-8/2KW: 8-band windom, 2KW PEP,	\$ 219	\$ 7.90
GD-9/500W: 9-band windom, 500W PEP,	\$ 149	\$ 9.90
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Disc. 7-1	\$ 259	ASK
Disc. 7-2	\$ 599	ASK
5 BDQS	\$ 199	\$ 12.90
12 AVQS	\$ 89	\$ 10.80
14AVQ/WBS	\$ 139	\$ 11.90
DB 10-15S	\$ 299	ASK
64BS	\$ 109	\$ 12.90
66BS	\$ 197	ASK
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V2S	\$ 89	\$ 11.90
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ITEM	PRICE	S.H.I.
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1105MXX	\$ 749	\$ 11.00
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#1211	\$ 49	\$ 6.90
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CANADA'S ANTENNA PEOPLE!

Antennas

BY VE3DQB

CHAPTER 9 100 MILLIMETRES AND DOWN

The wavelengths below 100 mm or 3000 MHz (1000 MHz = 1 GHz, one gigahertz), are where the action is, in the 1980's. Transistors capable of working at these wavelengths are just coming on the market at affordable prices, and satellites make intriguing relays.

Thirteen bands are available above 1240 MHz, ranging through 250 GHz. There's an inviting list of records to be made and broken throughout this spectrum.

Here, dipoles and yagis are impractical. Their place is taken by printed-circuit antennas, horns and paraboloids.

Printed-circuit antennas can be of two kinds. Fig. 76 shows a conventional collinear antenna

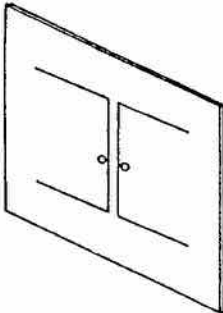


Figure 76— A Lazy-H antenna etched on printed-circuit board. This construction is far more robust than a wire antenna would be at millimetre wavelengths.

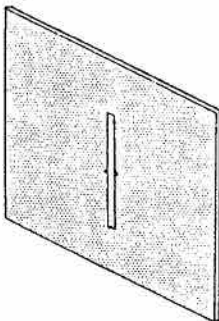


Figure 77— A slot antenna. Here a dipole has been etched out of the copper of a PCB. The feed is connected to the center edges of the slot. In this configuration, the vertical slot gives horizontal polarization, and vice-versa.

etched onto a board. The alternative is a SLOT antenna. If a slot, half a wave long and a twentieth of a wavelength wide is cut in a large conducting surface, it will act as a dipole if the feedline is connected to opposite sides of the slit, as in Fig. 77.

Such antennas become impractical above 10 GHz, where the half-wavelength is 3/4 inch long. Instead, horn and mirror antennas provide a practical system.

HORN ANTENNAS

A typical horn antenna is shown in Fig. 78. A wave travelling down the horn is received first at the rim of the horn and is converted there to current. As the wave penetrates deeper, more and more current is generated until nearly the entire energy of the intercepted wave enters the waveguide (see Chapter 11).

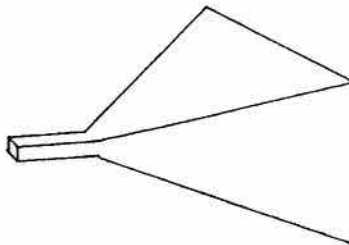


Figure 78— A horn antenna. At these wavelengths, the RF is piped to the antenna through a waveguide. A horn is an extension of a waveguide, tapered to launch the wave into space.

The energy that reaches the rim of the horn has to travel down the horn which, as Fig. 79 explains, is a longer path than the direct ray has to travel. If this extra path length is a half wavelength, the two rays will cancel, and the signal transmitted or received will be weakened, not strengthened. This

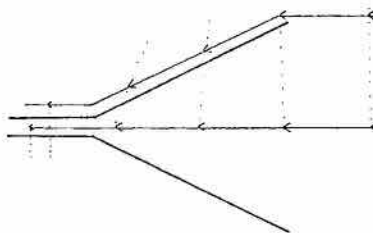


Figure 79— When a wave reaches a horn antenna (or is launched from it) the ray path lengths between those at the horn edge and the one in the middle are different. If the path difference is 1/2 wave, the rays cancel.

strictly limits the wavelength that a horn can accept. The path difference between edge and center must not exceed 1/8 wave for effectiveness.

Fig. 80 relates horn length and flare angle to the experimentally determined optimum performance. Beamwidths are noted.

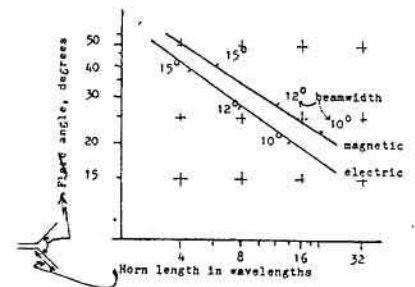


Figure 80— Experiment shows that a horn antenna performs well for these flare angles and lengths. Since the magnetic and electric fields are at right angles to each other, the sides of the horn are of different sizes from the floor and roof.

A practical horn, then is limited in its dimensions. For best performance, a long, narrow horn is needed. Convenience dictates a short one. So, for very high gains (40 dB or more) the horn is used only to feed a mirror.

PARABOLOIDAL ANTENNAS

Curved mirrors, like the ones sold for shaving, have the property of magnifying light. The same thing happens with radio waves. The best shape for magnification is the PARABOLOID, a curve that has the property of returning a bundle of parallel rays to a common point—the focus, as in Fig. 81.

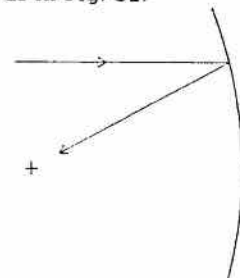


Figure 81— A paraboloidal mirror. Parallel rays arriving at a paraboloid are all reflected to one point—the focus. Energy radiating from the focus is converted by the mirror into a parallel beam.

TO BE CONTINUED

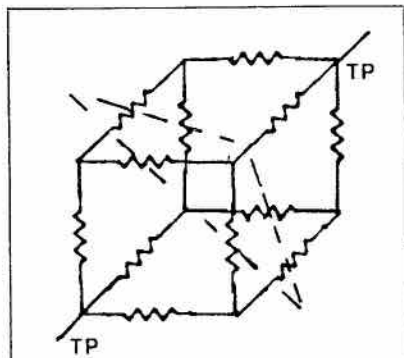
Bels, Decibels and Logarithms

BY VERNON L. DUTTON
VE4VQ

As a beginner in Amateur radio some years ago, succeeded in committing to memory the definition of a decibel (dB):

$$1 \text{ dB} = 10 \log(P1/P2)$$

Where P1 and P2 are two powers that are being compared.



TRY IT AND SEE

An old problem, what is the resistance between diagonally opposite corners of a cube whose edges are one ohm resistors? is recirculating. Unfortunately the answer given— $1\frac{1}{4}$ ohms — is wrong. The correct answer is $5/6$ ohm.

This is easily seen. The cube has several planes of symmetry, one such in particular, dashed in the figure, passing through the middle of each of the six resistors not connected to the test points. So, since the array is symmetrical, the three resistors connected to each test point carry equal currents, and the effective resistance of each set of three is $1/3$ ohm. Similarly, the remaining set of six resistors, those not connected to the test points, are effectively in parallel too, and their resistance is $1/6$ ohm.

So the total resistance of the cube is $1/3 + 1/6 + 1/3$ ohm, or $5/6$ ohm.

Later, I discovered that the decibel is one-tenth of a bel (abbreviated B). The *Illustrated Dictionary of Electronics* (Tab Books No. 1066) states that $1 \text{ dB} = 0.1 \text{ B}$. It also tells us that the bel was named after Alexander Graham Bell and that "1 bel is equivalent to a power gain of 10."

In Eshbach's *Handbook of Engineering Fundamentals*, the index sends the reader to *Intensity of Sound* for a definition of bels and decibels. This reference to sound must explain why the *ARRL Handbook* (at least in my 1979 edition) starts off its treatment of *The Decibel* by talking about sound, hearing, and the human ear.

Now I'm as interested in history as most people and, as a Canadian, Mr. Bell's researches into aerodynamics and acoustics take on a special interest. However, I remain to be convinced that beginners in Amateur radio are well served by technical references that, in introducing the decibel, confuse the issue by talking about sound and human physiology.

The problem that bothered me was that, if $1 \text{ bel} = \log(P1/P2)$, and if a decibel is one-tenth of a bel, then why is the decibel given by:

$$1 \text{ decibel} = 10 \log(P1/P2) \\ = 10 (1 \text{ bel})?$$

Since I was unable to find an answer to this question in the literature (and I searched through many books!) and because none of my ham acquaintances were able to explain this apparent anomaly to my satisfaction, I was forced to that most challenging of experiences, doing some original thinking for myself.

I realized that the basic problem in which I was concerned was to compare two powers. Not being interested in sound, my practical problems ran to the input/output power of a train of gears, or for a radio system. Since I was only trying to compare two quantities, what was wrong with simply using the standard technique of ratioing them?

$$\text{Power ratio} = P1/P2$$

My next thought process led me to try to plot the power ratio on a graph in a meaningful way. Since the cost of a system must be affected by the power ratio, I arrived at Figure 1.

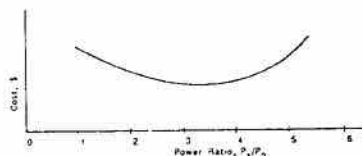


FIGURE 1

Putting a scale on the so-called horizontal axis led to the next question: How large can the power ratio become? My 1979 *ARRL Handbook* has a table of "Decibel Equivalents E, I, and P ratios" in which the power ratio goes up to 10^{10} which is a very large number. I quickly realized that I would have to change the scale on the x-axis. Figure 2 was the result.

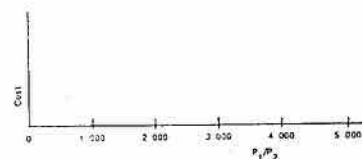


FIGURE 2

I still was not 'out of the woods' for now, I realized, small values of $P1/P2$ would be squeezed onto the left end of the axis. I also knew that the standard mathematical technique, in this situation, was to switch to a logarithmical scale (usually with a base of ten).

Now I am not sure how many scientists (Amateur or otherwise) still believe in guardian angels but it was at this point that mine led me to W.L. Hart's book, *Algebra, Elementary Functions, and Probability* (D.C. Heath and Co.). Here, I discovered *Inverse*

Functions. I learnt that the exponential equation, $x = a^y$, and the logarithm equation, $y = \log_a x$, are equivalent statements and that the exponential function and the logarithm function are inverses one of the other.

Figure 3 is a plot of these inverse functions where $a = 10$. I could have labelled the y-axis in bels. However, I was still trying to understand decibels which, I now realized, was associated with a change of scale on the y-axis.

Then came the flash of intuition. I wrote an exponential equation as

$$x = 10^{y/10}$$

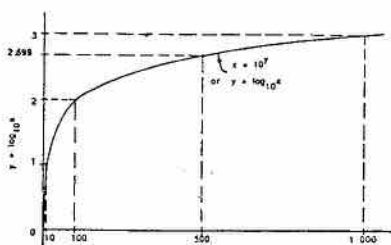


FIGURE 3

Taking logarithms of both sides gave $\log x = y/10 (\log 10) = y/10 \cdot 1$

or $y = 10 \log x$. Karambra! I now understood why the conventional definition of a decibel appears to be ten times as large as a bel. It was just a question of the bel producing too much compression of the scale on the y-axis. Figure 4 shows the final result. (The x-axis is distorted, near the origin, in order to show that all curves pass through $x = 1, y = 0$.) The exponential curve for voltage and current ratios ($\text{dB} = 20 \log (V_1/V_2)$ or $\text{dB} = 20 \log (I_1/I_2)$) is also shown.

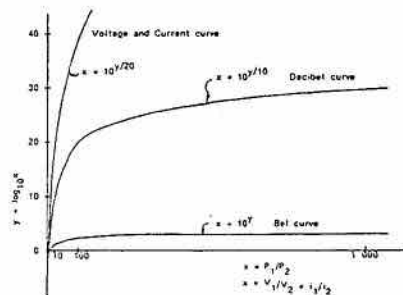


FIGURE 4

One final point should be noted concerning the calibration of the scales. In Figures 1 through 4, both axes are calibrated linearly, as I have attempted to indicate. However, because the *ARRL Handbook* has a non-linear scale on their Decibel-Ratio graph, Figure 5 has been drawn in this manner. The advantage of such a plot is that the curves are straight lines instead of being exponential curves. However, with today's scientific calculators, once you understand these various diagrams, I have no doubts that you will discard them and use your 'handy-dandy' instead.

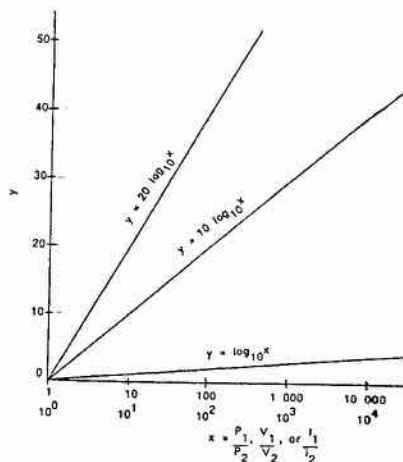


FIGURE 5

Packet Connect Alarm

BY JIM LESLIE VE2AQI

My workbench is not within sight of my packet station, so I wanted a means of knowing when another station had connected to my station.

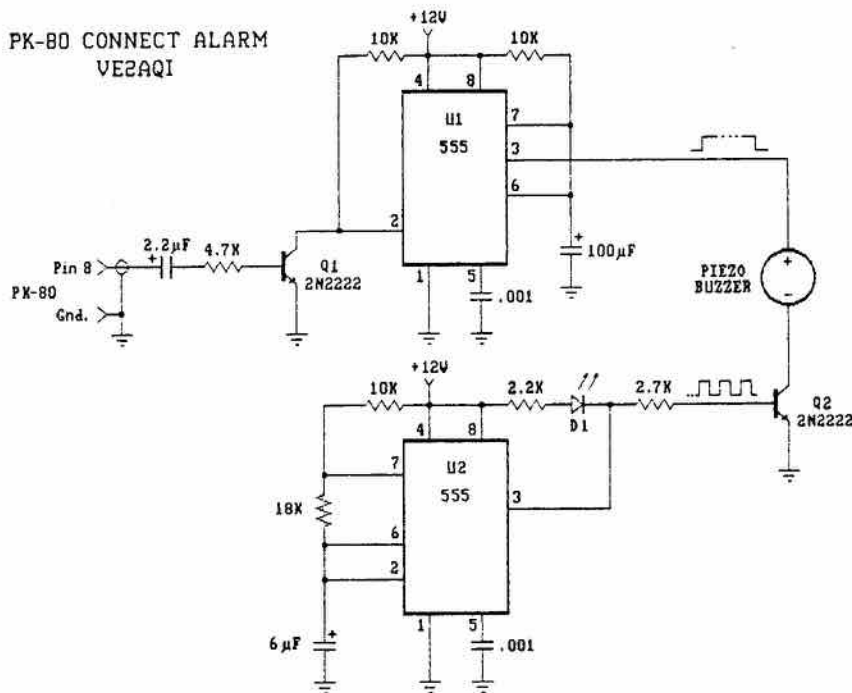
The circuit shown here provides an audible indication of a station connecting to your PK-80 TNC. When a connection is established, a piece buzzer will emit a beeping signal six times to indicate that a connection has been made.

Two 555 timers are used in the circuit. Circuit operation is as follows: U1 is configured as a single one-shot multivibrator and provides a positive going output pulse of about three seconds duration at pin 3. U2 is connected as an astable multivibrator

and oscillates at a rate of 2 Hz. This clocking signal is applied to the base of transistor Q2, turning it on and off. When U2, pin 3, goes positive, the piezo buzzer will beep. U1 is triggered by Q1 on the negative to positive transition of DCD from the PK-80. The LED flashes at a 2 Hz rate as a reminder to switch the unit off at night.

Connection to the TNC is via pin 8 of the PK-80 DB-25 connector. This pin goes high during a connect from another station. There are no critical areas in construction. The circuit could be built on a small piece of perf-board or on one of the many universal circuit boards available from most electronics parts suppliers.

PK-80 CONNECT ALARM
VE2AQI



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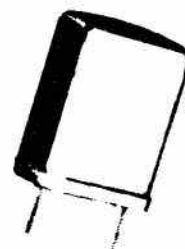


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