

XTAL

MARCH

1947

Vol. 9 No. 3

for the

radio amateur

Albert E. Yates,
232 Benson Ave.,
Toronto 10, Ont.

VE3B

7



Published by

THE CANADIAN AMATEUR RADIO OPERATORS' ASSOCIATION
TORONTO, ONTARIO





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2310	100	150	150	300	17
2320	175	200	200	400	28
2330	300	350	350	700	42
2350	500	500	500	1000	60

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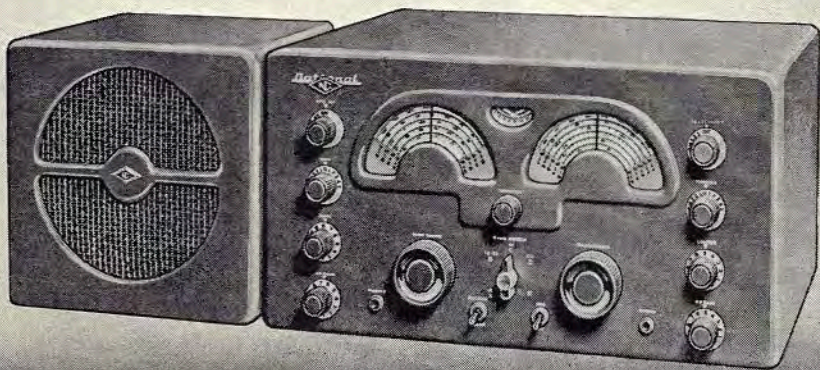
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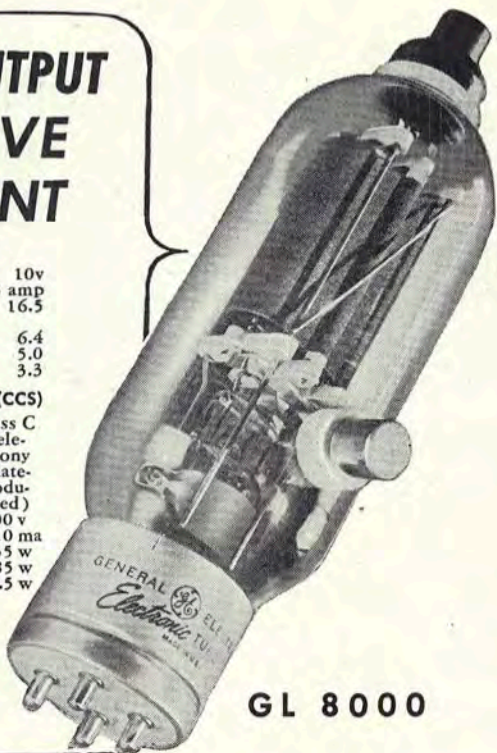
ELECTRICAL CHARACTERISTICS

Filament voltage.....	10v
Filament current.....	4.5 amp
Amplification factor.....	16.5
Capacitances:	
grid-plate.....	6.4
input.....	5.0
output.....	3.3

RATINGS FOR TYPICAL OPERATION (CCS)

	Class C Tele- graphy	Class C Tele- phony (plate- modu- lated)
Plate voltage.....	2,000 v	1,600 v
current.....	250 ma	210 ma
input.....	500 w	335 w
dissipation.....	125 w	85 w
Driving power (approx.)	8 w	8.5 w

NOTE — Extreme driving economy, and long life, result from operating the GL-8000 at CCS ratings. However, if maximum "punch" is desired, ICAS ratings allow 1-kw input on phone, or 1½-kw input on CW, for a pair of these tubes.



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Frequency at max. ratings ranges up to 30 mc, to include 10-meter work. At reduced ratings, Type GL-8000 will operate up to 100 mc, or well beyond the 6-meter band.

Sturdiness is a feature—triodes being characteristically straightforward in design. Also you get ease of installation. Hams know by experience that triodes usually "perk" the first time they're plugged in.

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R-347

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HEAD OFFICE — TORONTO



XTAL

[C R Y S T A L]

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HILITES

VE/W Contest Rules will be found on page 6. This event will mark the resumption of one of the pre-war era's most popular contests.

B.E.R.U. Contest dope is on page 7. Here's a chance for the low power boys to show their mettle.

XTAL CONTROL

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... recommendations ...

IN this issue we publish for your information two letters addressed to the Department of Transport, setting out CAROA's views on Canadian Amateur Regulations and suggesting a few amendments thereto. All of the proposed changes originated with the hams of this country, both members and non-members of this Association, and are not merely what the Headquarters staff thinks should be put into effect. We do admit, however, that we considered all points carefully, adding refinements here and there, and even discarding certain recommendations which had been forwarded to us, either because we felt that they would not receive majority support or because they might have resulted in less thorough consideration of more important ideas. Some elaboration on this correspondence might be in order here.

Around the end of December we received a request from DOT to co-operate in the preparation of a brief concerning regulations to be drawn up in conjunction with individual hams (as far as possible), organized clubs, and the CGM, and to be submitted to Ottawa by the latter on behalf of the Canadian amateur population. The deadline specified (January 31) rendered it impossible to take the matter up in the pages of XTAL, and by way of a compromise we asked all clubs to consider it at a special meeting to be called for the purpose. By the time their recommendations were in our hands in sufficient volume to start correlating them, the deadline had passed and the CGM had already forwarded his suggestions to the Radio Division. Some criticism may be directed at us for failing to take part in this submission, but we wished at all costs to make no representations until we were sure they had the support of our members. The suggested method of presentation, whereby all groups would get together and draw up a program acceptable to all is, of course, basically sound, and we are looking forward to such a procedure becoming standardized in the future. This time, however, it was necessary to forward our views separately because of the time element involved, and although they may not be regarded as the unanimous opinions of VE amateurs, we feel they are a useful contribution from the largest group of operators in this country. You will probably be interested in knowing how some of the conclusions outlined in our letter were arrived at.

Mr. G. C. W. Browne,
Radio Division,
Department of Transport,
Ottawa, Ontario.

February 20, 1947

Dear Mr. Browne:

As Mr. Reid has probably informed you, this Association was unable to formulate its decisions concerning amendments to Amateur Regulations in time to submit them to you jointly with those of the Canadian Section of the American Radio Relay League, as suggested in your letter of December 18. Being a relatively new organization, we preferred to rely on Mr. Reid's judgment, as in past years, rather than come to any conclusions which might not have the backing of Canadian Amateurs. We do believe, however, that we were instrumental in bringing forth the views of many of the Canadian clubs, and the Canadian General Manager has no doubt taken their submissions into full consideration.

As a result of opinions reaching us, we have drawn up several points which we would like to have on record for consideration at an appropriate time, and are forwarding them herewith:

1. As a measure to improve operating standards on the major telephony bands, and to assure that every licensed amateur is conversant with CW procedure, CAROA favours:
 - (a) Retention of the present code speed examination.
 - (b) Granting of permission to the new licensee to operate on CW only on amateur frequencies lower than 30 megacycles, and to use any type of emission legally authorized on amateur frequencies above 30 megacycles.
 - (c) Prohibition of the use of telephony below 30 megacycles until the licensee can show proof of not less than 90 contacts on CW in any period not less than six months in duration, said contacts to be made in amateur bands below 30 megacycles.
 - (d) Granting of permission to use telephony in the 10 and 11 meter bands after compliance with requirement (c), and after inspection of modulation equipment.
 - (e) Granting of permission to apply for unrestricted telephony privileges on all amateur bands after the licensee can show proof of not less than 90 contacts on telephony on the 6, 10 and/or 11 meter bands, in addition to the 90 contacts on CW specified in (c). No application for unrestricted privileges to be considered before one year from the date of issuance of station license.
 - (f) Granting of unrestricted phone privileges after the applicant has passed an examination covering the principles of radiotelephony to be conducted by the Department of Transport. Said examination to include methods used to prevent over-modulation and the radiation of audio frequencies above 4,000 cycles.
2. In order that the six-meter (50-54 mc.) band be developed to its maximum extent, we would recommend that all transmitting equipment used on this band be required to possess the stability of lower-frequency equipment. The use of modulated oscillators would thus be outlawed below 54 mc.
3. In view of the development of narrow-band frequency-modulation telephony and what is now known about its advantages and performances (see page 28, February, 1947, QST), we would suggest authorization of its use on all amateur telephony assignments below 54 megacycles, provided the band width does not exceed 8 kilocycles. Above 54 megacycles band width limits could be waived.
4. On the 27.185-27.455 mc. (11 meter) band we would recommend authorization of the following types of emissions: unmodulated carrier, CW and ICW telegraphy, AM telephony, FM telephony (band width limited to 8 kc.) and FM telegraphy (no limit on band width).
5. We would recommend the authorization of all types of emission on amateur frequencies above 54 megacycles, including television, pulse, radar and facsimile.

6. We would suggest that Canadian amateurs be permitted to use their call signs outside the district in which the call was issued, pending the issuance of a new call, or in cases where the change of address is only temporary. A portable designation would be employed such as used in the United States (VE3CW/5) and permission could be limited to a six month period.

7. The Association is strongly in favour of a reciprocal agreement with the United States whereby licensed amateurs of both countries could enjoy mobile and portable operation under their home calls anywhere in the U.S. or Canada. We also favour the issuance of new station licenses and call signs where a citizen of one country has reason to reside in the other. We understand these points are now under consideration.

The above may duplicate suggestions already received by you, and for this reason we sincerely regret our inability to take part in a joint submission. The above points, however, have been summarized from recommendations received by us from clubs and individuals, and can thus be regarded as representing the sentiments of a large section of Canadian amateurs.

Very truly yours,

I. H. NIXON, VE3ACL,
Secretary.

Mr. G. C. W. Browne,
Radio Division,
Department of Transport,
Ottawa, Ontario.

February 20, 1947

Dear Mr. Browne:

We would ask your permission to express at this time certain views in regard to the International Telecommunications conference to be held this coming day.

Like all other services using radio, this Association is alarmed at the ever-increasing usefulness and popularity of this medium as compared to the fixed number of frequencies available. With a record of service second to none, Amateur Radio feels that its claim to space in the radio spectrum is just, and we are consequently concerned about conditions in the coming years. For this reason we are highly gratified to learn that the Department of Transport will support the allocation of 21.0-21.0 and 29.7-30.0 megacycles to amateurs, as well as the retention of those bands currently available.

In addition, the imminent conference makes the present an opportune time to plan for the future when there will be, in all countries, many times the number of licensed amateurs that there are now. A partial solution will be technical progress, and amateurs, already noted for the efficient utilization of their allotted frequencies, will continue to adopt new techniques so that their bands can accommodate more and more stations. Nevertheless, we can anticipate the day when amateur bands will be rendered useless by overcrowding, and it is only natural for amateurs to look to those portions of the spectrum which are not being used to full advantage.

We refer, of course, to frequencies allotted to aircraft stations which are used only at certain times of the day; to bands assigned to television services where no television stations exist; to the portion 1.75-2.0 megacycles which is restricted to navigation devices, which are useful only in certain zones and at certain times; and other examples which could be pointed out. A system of "sharing" these inefficiently-used channels would be of considerable advantage to amateurs, and would probably be more acceptable to a World Conference than requests for additional exclusive amateur bands.

For example, amateurs could profitably use the frequencies assigned to FM and television in those areas beyond the range of existing stations; they could operate to advantage on the 1.75 mc. band during daylight hours, even if it should prove necessary to restrict the privilege to inland provinces and to limit power. Only an exhaustive study could indicate how far this procedure could be carried, and we are merely attempting to establish a basic principle rather than its concrete application. We would commend the idea to you on the basis of the logical fact that since no more radio frequencies can be created, more efficient use of those we have is essential.

Very truly yours,

I. H. NIXON, VE3ACL,
Secretary.

Proposal One is the result of a very pronounced feeling that our regulations should be reworded in such a way as to raise the standards in our major phone bands. As things

stand now, the new licensee can operate restricted phone operator has some experience on in that medium, as long as he has completed two years on CW. On the other hand, although he is required to pass a code examination, the present regs permit him to forget what he learned in this department if he so chooses. We are not in favour of going to either extreme, and our proposal would insure that the restricted phone operator has some experience on CW as well as on Class B phone; also that he has passed a phone examination. In this way it is felt that the necessary training period can be reduced from two years to one, and this may serve to encourage applications for amateur licenses from individuals who already possess radio engineering experience. These latter individuals may object to the six months compulsory CW, but we cannot help feeling that the recipient of a ham license should undertake, in return, to master such techniques as might prove useful to himself and his country in event of local or national emergency, and CW is still the basic means of communication by radio. Consideration of our proposal will reveal, however, that CW experience is not a prerequisite to UHF phone work, although the code exam would be retained. Only when the licensee acquires equipment for the low frequency band (80, 40, 20 and 10) would he be required to use CW on the air, and in this case his phone background on the UHF (if on the suggested stabilized six-meter band) would be acceptable as the phone experience required before he can apply for restricted privileges.

Proposal Two is felt necessary by many six-meter addicts in order to achieve the maximum usefulness from this popular band. It is true that xtal-control in this portion of the spectrum was not possible when our regulations first permitted the use of modulated oscillators, but this is not the case to-day, and technical progress dictates a change.

Proposal Three stems from the experimental work carried out by the ARRL, which indicates that the use of narrow-band FM in all amateur phone assignments might be beneficial rather than detrimental. In any case, provision for FM work in Canada is necessary, and the only way we can find out about it is to use it.

Proposal Four similarly provides for free experimentation in the 11-meter band along the lines permitted in the U.S. Proposal Five would allow even wider privileges above 54 mc. if Canadian hams care to use them. Numbers Six and Seven are self-explanatory.

You will probably notice that our brief does not touch on two important and controversial subjects, (a) the subdivision of bands between phone and CW, and (b) the maximum power allowed Canadian hams. The coming Interna-

(SY to page 10)

VE/W CONTEST

Starts April 4, 8 p.m. local time

Ends April 6, midnite local time

“CQ VE” and “CQ W” will be heard again for the first time since 1939 as renewal of this contest gets under way on April 4th. The all-time high of 574 participants will be topped if pre-contest interest is any indication. Leaders in 1939, VE3SF and W2IOP will have to look to their laurels to maintain supremacy!

Sponsored by The Canadian Amateur Radio Operators' Association, the first post-war VE/W get-together promises to be a highlight among operating activities in 1947. A “CQ VE” to raise Canadians; “CQ W” to raise United States stations will boost your WAS stock no end and provide you with operating thrills from the opening gun right down to the finish line!

The Contest Rules

Dates: Starts—Friday, April 4th, 8 p.m. local time. Ends—Sunday, April 6th, midnight, local time.

Operating Time Limit: Your period of operation must not exceed 20 hours.

Object: Each VE will work as many W stations as possible in as many United States A.R.R.L. Sections (see page 6, QST) as possible. Each W will work as many VE stations in as many VE Sections as possible.

Scoring: Message preambles will be exchanged. Each preamble sent will count one point and each one received will count one point. It is not necessary for preambles to be exchanged both ways before a contact may count, but one must be sent or received before credit is claimed. All preambles must be handled under approved A.R.R.L. procedure. Mark each new Section as it is worked. The “check” portion of the preamble will be the RST report of the station worked. On 'phone the “T” will be omitted, of course. Sample preamble: Nr 1 VE7AKK CK 589 Victoria, B.C. 8:02 P Apr 4. W stations multiply the final score by 8, there being approximately eight times as many U.S.A. Sections. VE stations multiply the number of points by the number of U.S.A. A.R.R.L. Sections worked.

Frequency Bands: Any or all amateur bands may be used.

Power Multipliers: Under 30 watts multiply total score by 2. Between 30 and 100

watts multiply total score by 1.5. Over 100 watts multiply total score by 1. In this case, watts shall be taken to refer to DC input to the final amplifier.

Operator Handicap: If more than one operator is used, the total score must be divided by the number of operators participating at that station.

Prizes: A Certificate of Merit will be awarded to the leader in each of the A.R.R.L. Sections. There will also be additional prizes for the highest scoring Canadian and American Stations.

Logs: All logs should be mailed to The Canadian Amateur Radio Operators' Association, 46 St. George Street, Toronto 4, Ontario not later than midnight April 30, 1947.

Operator's Certificates: The following certificate is requested on each log submitted: “I hereby state that in this contest I have not operated my transmitter outside any of the frequency bands specified on my station license, and also that the above summary are correct and true.”

You've been asking for it ever since the end of The Great Silence. Here it is! Let's see a big turn out for one of the most popular of all pre-war contests. April 4th-5th-6th—“CQ VE” and “CQ W”—20 hour time limit—Certificates of Merit—Prizes—MAY THE BEST MEN WIN!

B. E. R. U. CONTEST

DATES

APRIL 12 - 15

APRIL 17 - 20



EMPIRE SOCIETIES

Canadian Amateur Radio Operators' Association.
Canadian Section A.R.R.L.
Hong Kong Amateur Radio Transmitters' Society.
Irish Radio Transmitters' Society.
Newfoundland Amateur Radio Association.

New Zealand Association of Radio Transmitters.
Radio Association of Jamaica.
Radio Club of Ceylon and South India.
Radio Society of East Africa.
South African Radio Relay League.
Wireless Institute of Australia.

General Rules.

- The Event will be divided into three sections, namely:
 - Senior (High Power) Transmitting Contest.
 - Junior (Low Power) Transmitting Contest.
 - Reception Contest.
- The Contests are open to all British subjects living within the British Empire and British Mandated Territory (Egypt and Iraq are no longer considered as part of the British Empire), who are fully paid-up members of either the R.S.G.B. or one of the British Empire Societies listed on this page. All entrants agree to be bound by the rules of the Contests.
- Entrants who are not members of the R.S.G.B. must certify in the declaration overleaf that they were fully paid-up members of one of the Societies listed on this page at the time of the Contests.
- An Entrant not located in one of the prescribed Prefix Zones shall be considered as being in the Prefix Zone nearest to his station.
- Persons holding transmitting licences may not enter for the Reception Contests.
- Contacts with, or reports from, ships or unlicensed stations located in countries where licences are obtainable will not be permitted to count for points. The decision as to whether a station is to be classed as unlicensed will rest with the R.S.G.B. Contests Committee.
- Only one person will be permitted to operate a specific station for the duration of any section of the Contest.
- A Trophy will be awarded to the fully paid-up member of the R.S.G.B. scoring the highest number of points in each section of the Contest. Certificates of merit will be awarded to the first three stations in each Contest, and also to the leading station in each Prefix Zone, providing at least three entries have been received from the Zone in question. In addition, a second certificate will be awarded to each Zone provided ten or more entries are received from that Zone.
- Competitors may enter for both the Senior and Junior Transmitting Contests, but individuals are eligible to win only one of the Trophies. They will, however, be permitted to receive certificates of merit in both Contests.
- The declaration at the head of the Entry Form must be signed by the operator, who will be recorded as the competitor.
- Entry Forms, including the Analysis Sheet, unless completely filled in, will be disqualified.
- Separate entry forms must be used for each section of the Transmitting Contest.
- All entry forms must be posted within seven days of the close of each contest. No entry will be accepted at R.S.G.B., Headquarters, New Ruskin House, Little Russell Street, London, W.C.1, later than June 2, 1947.
- The judging of entries will be carried out by the R.S.G.B. Contests Committee. The President's decision will be final in all cases of dispute.
- No correspondence can be entered into regarding any decision made by the Council or by the President.

Rules for Senior (High Power) Transmitting Contest.

- This section of the Contest will extend from 00.01 G.M.T. Saturday, April 12 to 24.00 G.M.T. Tuesday, April 15, 1947. A maximum of 30 hours' operation may be selected from the total 96, and only stations contacted during this period may count for points. A line must be drawn across the log at the close of each spell of operation and the total hours to that point recorded in the margin.
- Fifteen points will be scored for the first contact with a British Empire station located in any Prefix Zone outside the competitor's own Zone, fourteen points will be scored for the second contact with the same Zone, thirteen points for the third contact, and so on, to the fifteenth contact, which contact will score one point. All contacts with that particular Zone thereafter will count one point each, and in all cases contacts will be irrespective of the frequency band used.
- Only one contact with a specific station may be made on each band during the Contest.
- Any amateur frequency band may be used, providing the input to the valve or valves delivering power to the

aerial is not in excess of that specified on the competitor's licence, and in no case more than 150 watts, and providing the entrant has permission to operate his station on the band or bands in question.

- The conditions laid down in the competitor's transmitting licence shall be observed.
- A serial number giving R.S.T. and the number of the contact must be exchanged before points may be claimed. The number shall comprise six figures (note 3).
- Specially appointed Band Monitoring Stations, under the auspices of the R.S.G.B., will be active during the Contests. Any station reported off frequency by these checking stations will be disqualified without appeal.

Rules for Junior (Low Power) Transmitting Contest.

The rules for this section of the Contest are the same as for the Senior Contest, except for the following:—

- The Contest will extend from 00.01 G.M.T. Thursday, April 17, to 24.00 G.M.T. Sunday, April 20, 1947.
- The input to the valve or valves delivering power to the aerial must not exceed 25 watts.

Rules for Reception Contest.

- The Contest extends from 00.01 G.M.T. Saturday, April 12, to 24.00 G.M.T. Sunday, April 20, excluding Wednesday, April 16. A maximum of 15 operating hours may be selected from each section of the transmitting contest, and only stations logged during this period may count for points. A line must be drawn across the log at the close of each spell of operation and the total hours to that point recorded in the margin.
- One point will be scored (in accordance with Rule four below) for each British Empire station heard working another British Empire station, providing the station heard is located outside the competitor's Prefix Zone.
- An additional 50 points will be scored for each Prefix Zone heard, irrespective of band, providing the station heard is in contact with another British Empire station, and providing the conditions laid down in Rule 4 are met.
- Before a point can be claimed, the following information must be logged:—
 - Call of station heard.
 - Call of station being worked.
 - Entrant's report on the signals of the station heard (Readability, Strength and Tone).
 - The Serial number given by the station heard to the station being worked.
- CQ and Test Calls will not count for points.
- The same station may only be logged once on each band during each section of the Contest.

NOTES REGARDING ENTRY FORM

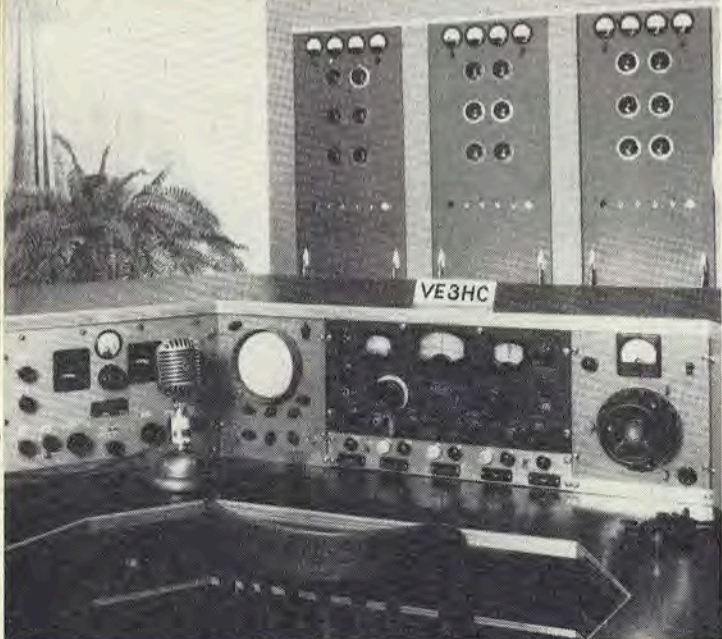
1. When the entry form is used by a competitor in the Transmitting sections of the Contest, the call of the station worked shall be shown in Column B. The serial received from the station worked shall be recorded under the column "Incoming," and the serial given to the station worked shall be recorded under the column "Outgoing." It will be noted that the outgoing serial number has been printed on the sheet for convenience.

2. When the form is used by a competitor in the Receiving section of the Contest, the call of the station heard shall be shown in Column A and the call of the station he is working shall be shown in Column B. The competitor's report of the station heard shall be recorded under the column "Outgoing," and the serial given by that station to the station he is working shall be recorded under the column "Incoming."

3. The serial number is made up of RST and three numerals. The first contact being 001 and so on.

4. Additional entry forms can be obtained from R.S.G.B. Headquarters or from the Secretary of any of the undermentioned Societies.

Logs and Entry Forms may be obtained from any of the affiliated societies at top of page.



● Operating Console
at VE3HC

DREAM STUFF!



JOHN Paddon came along one day and literally scooped us from our chair with a threatening: "Johnny you look like you'd fallen into a paste pot. You need air and sunshine for an afternoon. Come with me into Paradise for awhile"! What I was in for was hard to surmise. JP does things like that. His victims are always returned in good order and usually have an experience about which to brag for days to come. Bearing this point in mind I meekly surrendered while bleating about having so much work to do, or some such ineffectual defense.

We left HQ behind and tore out into the country and over the highways at a great rate and I had barely time to relax when we turned at an intersection over which presided a large sign marked "Guelph". Guelph has always meant two things to me: Ontario Agricultural College (I'm not an alumnus) and VE3HC. From all advance notice I began to realize the meaning of this "Paradise" business. For the first time I was going to meet Fred, Len and Ken Hammond after so many years of listening to them, and see just what made all the noise throughout the world every time the human voice was directed at one of 3HC's microphones.

We turned along a country road on the outskirts of the city, dipped through gentle roll of the road and emerged on the top of fair to middling rise of terrain. I was startled out admiring the beauty of the countryside by informative yip from JP somewhat like: "This it"! What I saw was PARADISE!

To the right was 7½ acres of what seemed to me to be nothing but 60' B.C. fir poles sup-

porting a variety of antennae ranging from 75 meter delta matched half waves to four-element close spaced 20 and 10 meter beams! What really was there is as follows: Three 60' poles erected in the form of a triangle support two 75 meter delta-matched half waves oriented to give all-around coverage on that band. A 42' tower is topped by a four-element close-spaced 20 meter reversible beam, and perched away up top of another 60 footer is a five-element, quarter-wave spaced continuously rotatable 10 meter beam! Both latter arrays use folded di-poles and quarter-wave matching transformers into a 470 ohm line remotely controlled from the console. You'll be hearing about that console later! These sky-wires are connected to transmitters or receivers by means of antenna relays and permit operation on two bands simultaneously since separate transmitters and antennae are used for each band.

Back to earth and in the middle of this forest of RF is a brick building with distinct eye-appeal to critters like yours truly (yep, I'm still looking for a house to live in!) landscaped and cosy as a Cotswold Cottage. What meets the eye as one crosses the threshold into its 25 by 18 interior is perhaps the most delightful thrill this side of meeting the Hammond boys themselves. I could see JP watching every reaction I had up until this moment. Now he was seeing emotion. I couldn't suppress a gulp. There in the middle of the room sat a console containing control of all gear, a Hammarlund Super-Pro; a Hallicrafter SX28A; a 'scope with built-in monitor; a Millen frequency standard; a calibrated frequency meter

QSY to page 16

VHF IN CANADA

Conducted by GORDON COLEMAN, VE3ANY

WE ARE approaching the Spring season, when all good VHF hams begin to get outdoors more and think of such things as portable rigs, new antennas, etc. The present time is not too soon to begin planning. According to latest predictions the middle to the end of April gives good promise of large scale DX openings on 50-54 mcs. This means regular contacts will be possible with W stations on skip DX. Let's not face the 1947 DX season with the same bad reputation for unintelligible signals that we had last year. There are plenty of good V.H.F. tubes such as 815, 829B on the market at War Assets prices now that would make a good final for the modulated oscillator.

Antennas have undergone a good bit of development during 1946 and parasitic arrays using grounded centres, so-called "plumber's delight" type, are the most practical and simple to construct. Fears that by grounding the centres of elements would introduce loading and transmission line problems have not been realized in practice. Folded dipoles at a good height above ground have gained wide prominence and have been accepted now as practically a standard for plain antennas and as the radiating element of parasitic beams.

A good stable signal, free from frequency modulation, seems to have no limit as to minimum power. Stations using as low as 5 watts with a stabilized signal have had remarkable results.

Receivers for skip DX should be selective, since sometimes QRM conditions, prevalent on 75 and 20 meter fone, are quite a problem. A converter is the answer, but sensitivity is not of the utmost importance. When the DX starts rolling through it is usually S9+!

So let's start thinking about it, fellows, and pile up a good score this spring and summer!

We would like to start a DX Derby and wonder how many stations have had skip DX contacts? Rules will be simple. There will be two classes: Temperature inversion and E layer skip. 50-54 mc. and 144-148 mc. contacts to be reported separately and not just as "V.H.F." contacts. The number of contacts made will be scored regardless of distance. In reporting, however, please signify what the call letters were so that we can keep our records straight. If your DX record does not appear in this column next month give us a blast.

50-54 Mc News

New on in Hamilton and putting out a nice signal is VE3BNQ. Brantford now has 6 meter

station in VE3LU who has worked Hamilton and been heard in Lakeview. From VE2KH, Montreal comes news of nice V.H.F. activity there, with VE2FK, VE2GT and VE2KH all xtal controlled and running 50 to 100 watts. VE2KH is building a beam. Nice going boys, let's hear more from the big city!! "Round table" time is Monday 10.30 p.m. on, so keep a lookout, Toronto boys, for some inversion bending or E layer skip from Montreal at that time!

News from VE4DG, Winnipeg, tells of considerable activity with VE4EA, CD, QE, QC, XH, and VE4DG holding forth nightly. Doug reports the "stabilization bug" has taken hold with supers and xtal rigs as well as M.O.P.A.'s now the order of the day. Nice going fellows!

Active in Brandon, Manitoba, are VE4AP, AU, NB, and VE4RK. VE4AP has worked W0ZJB with 2 watts to a 6J5 transceiver. We wonder if that isn't some sort of a record!

The Key Klick Klub of Toronto, now almost 90% V.H.F., held its regular meeting at the Walker House Hotel, February 21st. We wonder if there are any predominately V.H.F. clubs in other cities, and cheerfully invite correspondence.

144-148 mc. News

VE3ZI is new on in Toronto with S-37 receiver and Bendix transmitter. Putting out a fb sig and heard in W2 district, 3ZI is using a ground-plane antenna and putting a fb sig locally also. VE3BAX has a motor-operated selsyn-indicating 3 element rotary. VE3ADO keeps regular skeds with W2KHO, W2RGO, W2HNN, W2UHI etc. in Niagara Falls—Buffalo area. 3ADO uses remodelled Bendix receiver and transmitter into a 6 element "plumber's delight" array. A fb ham fest was given by Harry, Feb. 20th, with VE3's, AWC, ATB, UT, TY, EQ, AME, AVJ, BAX, and ANY, (all active on 2 meters) attending. QSO'd that evening were W2KHO, W2HNN and W2RGO.

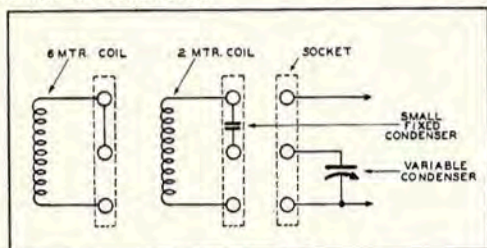
From VE2KH, Montreal, comes news also of 2 meter activity, with VE2FO, VE2AX and VE2GN active. VE2AX has vertical beam. We take back what we said in January's column re lack of Montreal activity. Hi.

Above 148 mc

We are anxiously awaiting news of activity above 148 mc. There should be some Klystrons and Magnetrons around the country. Certainly with the stimulus presented by Radar during the war, we have the "know how". Let's hear about it "microwavers"!

V.H.F. Wrinkles

How often have you built a plug in coil receiver for 6 and 2 only to find that while your coil condenser combination will give 60 degrees or more band spread on 6, you only have a few degrees on 2 meters? Here's a simple wrinkle that will allow you to keep the same tuning condenser for both bands and still be able to adjust the band spread to suit your needs. As can be seen in diagram the plug-in coil form has at least 3 prongs, two of which are used as coil terminals and a spare terminal to which the stator of the tuning condenser is connected.



VHF WRINKLE

For 6 meters the stator is shorted (in the coil form) directly to one side of the coil. For 2 meters the "short" takes the form of a small fixed condenser (10 mmfd. to 50 mmfd. depending on Circuit constants) which, being in series with the tuning condenser, reduces the overall tuning capacity of the variable condenser. In practice, with a 3 plate sub-midjet variable, 60 degrees bandspread on 6 meters reduced to 10 degrees on 2 meters. Installation of a 12 mmfd. series condenser increased the 2 meter bandspread to 55 degrees, and of course with the "short" in place for 6 meters, left the bandspread on that band as it was, at 60 degrees.

In superheterodyne receivers using the $\frac{5}{8}$ -inch diameter polystyrene coil forms, the same "wrinkle" can be used on both oscillator and mixer circuits.

EDITORIAL— from page 5

tional Conference will almost certainly result in some changes in amateur assignments, and there is little use in getting worked up about phone versus CW now if we are going to have to reconsider it in a few months' time. Item (b) is a question dear to the hearts of many of our members (some want to raise the limit and some want to lower it) but it's too hot a potato to fool with without a lot of mature thought. We will, however, have a suggestion to make in this connection very shortly which might offer a partial solution to the problem. We'll toss it into the ring and then stand well back, disguised as a water-cooler, while the battle rages!

—I. H. N.



VE6LL

THE Camrose Amateur Radio Experimenter's Club is proud of its 63-year-old President, Chris ("Pop") Langbell, VE6LL. Chris, or "Pop" as he is affectionately known to his friends, was born in Coal Harbor, Michigan in 1883 and moved up to Canada in later years, settling in Camrose, where he has operated Langbells' Photo Studio for many years.

He became interested in radio in its early days, having worked at radio broadcasting in the days of small stations.

After a lapse of some years he again interested himself in radio, this time in the activities of his son, Don VE6EL who has worked at radio servicing, radio announcing (CJCA) and in the past year or so has been working alongside Pop at his photo studio. When the Camrose Amateur Radio Club was formed in 1945 the boys elected Chris President, and the urge to the code, and finally passed his exam for his certificate in October, 1946, at which time he applied for his station license and obtained the call VE6LL.

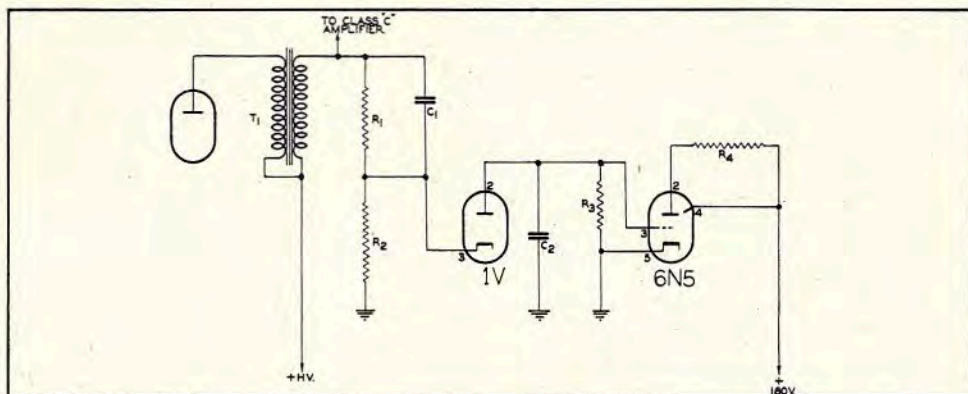
The Camrose Club threw a banquet in honor of Chris's achievements, which was attended by twelve members from the Northern Alberta Radio Club of Edmonton, and several other hams from the surrounding country. At this banquet Chris was presented with a beautiful Bug-Key by Ted Sacker VE6BW of Radio Supply Ltd., Edmonton, who had offered the bug as a prize to the first of the potential Camrose hams to get his "ticket". Yep! Pop led the field all the way.

You can hear Chris on Ten meter fone every day with a swell 200 watt signal from a rig engineered by Chris's bad boy, Don, VE6EL.

Our hats are off to Chris and his accomplishments, and the spirit which drove him on to make this write-up possible. —VE6LQ.

Overmodulation Indicator

By VE5RB



THE diagram shows a simple visual indicator of overmodulation which is one of the requirements for legal phone operation. No expensive meters are required; just two tubes and sockets, a couple of fixed condensers, and a few resistors. It will work equally well on low or medium power stations, but would require a different rectifier tube to stand the high inverse peak voltage of high powered stations. I use a 6N5 tube for an indicator but a 6E5 would work equally well. The whole thing could be built right into the modulator section of your xmtr, the 6N5 being mounted horizontally or in such a position that it can be seen at all times from the operating position. The eye will be open normally, closing in overmodulation.

R1, R2 are connected between the class C positive and ground as shown, so must have high enough wattage to stand the current from the high voltage as well as the audio signal which is applied across them. Their actual resistance is not important, but their

- T¹—modulation transformer.
- R¹— 50,000 ohms.
- R²—500,000 ohms.
- R³—100,000 ohms.
- R⁴—1 megohm.
- C¹, C²—.01 mfd.

ratio determines the amount of audio signal required before 1V draws current, biasing the grid of the 6N5 and hence closing the tuning eye. The values of these resistors can be changed so as to give an indication with any percentage of modulation desired.

Operation — R1R2 are a bleeder resistor across the full plate voltage. The 1V tube is cathode biased at 90% of this voltage. The full audio voltage is impressed across the rectifier via C1, C2. This audio voltage, of course, adds and subtracts from the bias. When the audio ac voltage becomes higher than the bias the rectifier conducts, and the current flowing through R3 biases the indicator grid, which closes the eye.

No doubt, this bias could also be used to control the gain of speech amplifier tubes, thus automatically preventing overmodulation. This would require proportioning R1, R2 so that the rectifier operated at a lower percentage of modulation.

ED'S. NOTE

Ratio between R¹ and R² can best be established for 100% modulation with a cathode ray 'scope.

C A R O A NATIONAL REPORT

VE1

Ronald J. Hesler, VE1KS

AC started operating his first rig on 40 meters during Christmas holidays. TS who has also just received his call letters is plugging away on 40 c.w. FC is working 20 and getting good results despite the fact that somebody walked off with his antennae New Year's Eve; he is using c.w. and phone. TE reports good results on 10. IL finds that he has worked 29 states since September and all on 20 c.w. CX active on 3.9 phone using a T-20 with 40 watts and will be broadcasting news of the Moncton Club each Saturday at 6.30 p.m. FT on 40 and 80 c.w. with an 807 and 50 watts. SU rebuilding with an 807 for 3.5 c.w.; has daily sked with W10UM for traffic with Anticosti Island. EU active on 80, 20 and 10 c.w. JG works 10 fone with an 807 and 60 watts; rebuilding new xmtr with a pair of 807's and an e.c.o. TN was recently appointed AFARS Flight Leader and is net controller for 75 fone, with 14 members active; Tommy solicits queries from all 75 fone men who are interested in this net. TN also wonders what happened to the nightly sked on 75 between himself and QF and KS of Sackville, and what the attraction is on 10 meters Ron's. CX is at present away on a business trip. GD doing fb job at Scoudouc with 300 watts in 75 fone. PA rebuilding, strictly Hammond, 811's and 200 watts anticipated. Ex G5FC ("Tug" Wilson) heckles Ottawa daily for the official call sign and in the meantime digs for six-volt winding. QS re-building now but advises worked SY and QF on 10 meter ground wave and round table heard by CI. QT will be on with 813 by mid-February—also rebuilding. RE's fb console portable xmtr taking shape but blows seven buck meters nightly with a cranky center tapped xformer. ST pulled big switch with next QTH Lethbridge (Your D.C.M. herewith wants to express his deep appreciation and thanks to Gord while he was Sec.-Treas. of the Lakeburn Club—best of luck Gord at your new QTH as hpe cu sn). AQ finally gets rig neutralized and snags good DX on 40. New owners of HQ-129X receivers are: GW, KN and KS.

QF planning to build small 10 meter phone rig for use on that band and thereby keeping his 500 watt "rock-crusher" active on 75. KS obtained a new Varimatch auto transformer to help his voltage regulation and is trying to think up a reasonable excuse to bill power company for same. KT newcomer in Sackville, getting going on 10 c.w. DO building rig and hopes soon to be active as soon as he can obtain a receiver. HV plans to stay home for a while after nearly joining "silent keys" on an expedition to Labrador, says that XYL now has a big ball and chain hooked on him. FN expects to go to G land soon; he will leave his big 810 rig behind but is going to try and hook up with the boys via GM8MN. PX active on all band mostly on fone; has been using and experimenting with all the known forms of modulation and is planning construction for six meters. SX has been using a 6V6 osc as 30 watts input to reach G3 in Hull and as far West as Iowa on 40; he has an 807 final all ready to fit into the rack. Following have been running test skeds on six meters with Chester, N.S.: QZ, SF, JK, QG, VH. Look to QZ to get out on six, his big rig and beam really have some power now. FB has 350 watts to an 813 and works VK's, ZL's, ZA2 and ZC1; he brings it in with a Super Pro and runs on 20 c.w. when his duties as Chief Eng. Officer in H.M.C. Dockyard permit him. VV has been very active and has some very good DX on 10 fone. The night owls (DQ, BC, ET, KY and FQ) have had their ranks swelled by numerous newcomers, mostly on 10 after the band folds up. The following have been heard on 20 c.w.: RP (pp 6L6's) HO (single 813) DB, RR (pp 813's). VO2AJ at Gander Airport would like a sked with Halifax, look for him on 3810, 3525 and 7066. 73—Ron.

Traffic: SU-6; EU-8; QF-2; KS-5.

VE2

C. W. Skarstedt—Montreal, Que.

LQ send interesting dope from Mont Joli. Says a lot of activity there and also up and down the St. Lawrence. He regrets business will prevent him from competing in the CW DX first week-end test but hopes to be back for the second one. And that reminds us that the ol' DX contest is here once more. The long war years seem almost forgotten with all this choice DX squeezing through ECO's, VFO's and the neighbour's new razor; they are just about as bad sez the old-fashioned CC exponent blushing. AX was heard knocking off some rare ones, J, XU, etc. BV wasn't doing too badly either. But the section on the whole appeared to ignore this golden opportunity to add a few new countries to the list. Perhaps the fone contest will stir up more interest. BE and DU went to Ottawa on important ham business and, although nothing official has been received at the moment of writing, the grapevine informs the trip was successful. By the time this appears in print the election for CGM has taken place. Whoever is the majority's choice let us stand undivided behind him. This is an important time in our existence and petty squabbling must be forgotten. KN deserves a lot of credit for his fine work in connection with the Air Cadet group. He has served as wireless instructor and now reports that this group has received a call and expects to be on the air soon. SC, our faithful at Perron, reports progress in formation of a bush net. It is hoped he is meeting support. Here's where ham radio can be of immense use, serving small communities whose communication facilities are not always too dependable.

In one way it is gratifying to learn that the SCM (SU) is also having difficulties picking up section gossip. This reporter is almost ready to christen it "THE SILENT SECOND" (a good title for a dime thriller) and if you guys don't soon limber up those frozen fists and throw a few crumbs our way you'll just have to remain content with this slush. As you know this is supposed to be a Section Activity report, not a Winchell column. UO at Sherbrooke is holding down the tlc end there admirably—Finally we would like to know who the local ham was that worked Anticosti Island and now intends going into the fish business. hi.—Profitable pastime this hamming, eh what? Tfc: DR 157, SC 38.

VE3

R. C. Hunt, VE3WX—London

This is an invitation for all VE's interested in traffic to join up with the BEAVER NET. Meetings are held each night at 7 p.m. on 3535 kc. with either VE3SF or VE3TM in charge. No formalities are involved, just answer the call of QBN and report to the net control station who will give you further instructions and introduce you to the rest of the gang. Don't let your inability to copy fast code keep you out and probably a week or two with the net will step up your copying ability. Let's make this net one of the best. BCS skeds HP, GN, BME and 211. HP skeds 211, BME, GN, BCS, and SF. Art makes a suggestion that a specific appeal be made for stations in some particular city or town. In line with this appeal may we suggest Ottawa, Windsor (CW) and Hamilton. ATR—we wish to pay tribute to REUB for his unflagging interest in Ham Radio and for his continued efforts to make it pleasant. If every station in the Province originated as much GOOD traffic we would have to run our Beaver Net overtime to take care of it. REUB makes a plea for those stations not wishing to participate in net activities to use some other frequency other than 3535 kc. during net periods. This co-operation would certainly be appreciated. DU—Dave still having

trouble with antennas but hasn't given up hope of making 80 with something more than a peanut whistle some of these days. OI doing some rebuilding again. Some of these guys are never satisfied to stay on the air more than two months at a time. Wonder what he will come up with this time. Mebbe an 80 meter beam!!!! TM hasn't stayed in one place for over one QSO since he got that VFO on the air. Sometimes not even for one QSO. Hi! CP visited WX together with XYL and Jr. Op. Young Tommie sure can put over a R9 plus signal on 3815. XO reports as back on the air 3539 kc. SF handles traffic for Yukon. Also Michigan and Indiana and points West. WM—three wise men heard frequently on 14 mc. BJT, Bill is putting out a nice signal on 7 mc. and is busy improving his code speed. I don't know whether you fellows appreciate the time and effort necessary in the preparation of these reports each month but if you did I am sure that you would make an effort to see that I get some information as to your activities. Most of the above information was obtained by eavesdropping on the air and as you know this takes a lot of time. Dave (DU) has the same trouble. Why not let us have your reports fellows so that we can make our reports more interesting. As mentioned before the QTH is 103 Garfield Ave., London, Ont. 73, Bob VE3WX. Traffic—SF64, WY14, BCS41, TM46, ATR107, WX192.

VE5

Bill Gordon, VE5MW—Oxbow, Sask.

New call in South Eastern Saskatchewan is 5BT at Glen Ewen. Roy has a small rig going and we should soon be hearing quite a bit from Roy. 5RB the wonder station at Windthorst has really been getting around with his five watts to a 6V6. Roy was a visitor to Regina during the bonspiel and while there he dropped in on 5LM. Ray hasn't said too much about how he came out in the bonspiel. 5GA and WQCR (Queer Cock Roach) are the executives of the 75 meter Skunk Network. To become a member you have to be a stinker. 5CM at Regina is riled up cuz they won't make him any more than a buck private in said net. Latest list of stinkers in the Skunk Net is 5GA, WQCR, 5QT, 5IC, 5FA, 4AC, 6ZI, 5GU. Any more stinkers? 5MW has a three element beam for ten meters completed and now has no place to put it. Please, please, Saskatchewan gang, send in your news or give it to us over the air. Don't forget also gang that there are plenty of appointments left in the Saskatchewan net. 73s. Tfc. 5MW-4.

VE6

W. Savage, VE6EO—Lethbridge, Alta.

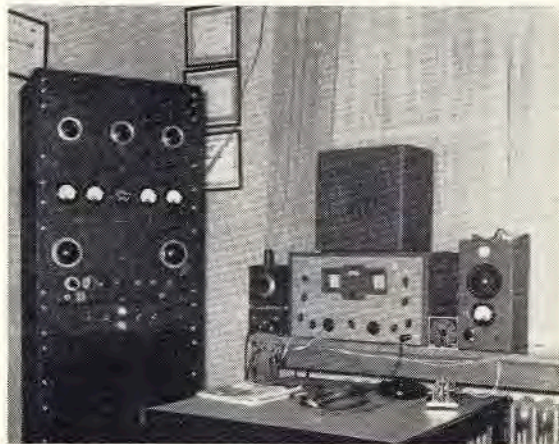
MW is active on 40 CW with an E.C.O. KI is banging out a signal on 40 with a pair of 813's. US is doing very good on 40 from his new qth. KO gets the bugs out of his speech-amp. and mod. ET has canaries in his CW transmitter. LX is heard often on 40 meter CW. NB is thinking of a portable rig for big game hunting trips to keep in touch with home. Ex-4AJQ expects to be on CW soon with an ECO and an 807 in the final. EL is running a pair of 813's in the final now. IV is pounding out CQ's on 40 meter CW. AC drops in for a qso while in the city and collects his qsl cards. Hi! ZI is very busy qsoing while the work is slack on the farm. EB is putting out a very nice sig on 75 fone. DN seems to be looking for 809's. MW is on 80 CW also KA and we hear BX batting it out. RH is still on 10 meter fone. EV is working out on 10 meter fone at nights with the local boys. It happened on February 11—UA shut his transmitter down to kill an arcover. Turning it on again he was looking carefully at the plate meter when the front exploded taking all the skin from his nose—moral, never look a readrite meter in the eye. EO works HB9X on 40 meter CW. OF is back from Montreal, he says the radio shop windows are much cleaner now after he finished window licking. Hi Ted! MN is back to work and is putting in the wiring for CJOC's new transmitter, and OG is very busy with the installation of the transmitter. SR must have been snowed in or else he is on 10 meters working DX. Wonder what FK is doing, haven't heard him for some time. AF gets home from work at midnight and then works ham radio till the wee hours. CY must be with the jyd joint now. EA and CE are still holding regular skeds. IC puts VR tubes in his receiver with good results. BC the Blonde Chasser is very busy turning out R.F. (the SAARC rag). HW seems too busy to get on the air much. SV is still working on his new transmitter. The following hams should send in envelopes and collect

the qsl cards awaiting them—CZ, HM, IU, KI, LE, OB, RB, WG, UP, VZ, and UT. There is some dandy ones for some of them. Well gang, let's make next month a big one. How about each one of you dropping a line and letting me know the news. 73.

VE8

Jack Spall, VE8AS—Whitehorse

From Aklavik, N.W.T., by way of NG comes word that NN and MZ are now adding to sigs from the far north. MZ mostly on 20. Jack also sent in a sizeable DX list along with news of his 75 fone activities on 3800 kc. Ft. Smith, N.W.T., NM has been worked frequently and promises lots of dope for next month. MV at Resolition also puts in good sig. hr. on 20 fone. Both OM and OW—AT from Selkirk (the 3.5 watt 75 fone man) visited the gang at Whitehorse. The XYL at AT and OA chew the rag nightly on 75 fone. AU Aishikik, Y.T., is on 80 and 40 CW and hopes to be on 20 very soon. AR had to give up during the cold weather as he could not keep the shack warm. BD Ft. Norman got a XT call but D.O.T. would not change it. BM Teslin hope to be QRMMing AI and AL of Teslin very shortly, has S 20 R receiver. AV and AZ of Watson Lake are going strong on 40 CW. BC Bear Creek hope to have his 809 going soon on fone and CW Whitehorse. The Whitehorse gang are wondering how much longer it will take BB to get his rig going. BH put out strong sig. on 20 and 40 CW. AN still sticking to 40 meters. AG is nightly quiet these days, must be getting lots of night shift brass pounding for D.O.T. AY sez make way for his push pull 813's. AW has 72 post-war countries on 20 CW. Oh yez, several WAC's. AJ is bidding his time for the fone DX test. AS anxiously looking for South America fone for WAC with new HQ 129x receiver. AO the old man of Lebarge still knocking them over on 10 and 75 fone. Interesting notes from AS. As manager for VE8, QSL cards notice several very funny calls which you might bring to the boys' attention as these are definitely bootleggers or could be mistaken identity. Such calls as VR, EE, EHL, CS, ZM, IDH, ZF have cards awaiting them from DX stations. There are two cards for VESZ, one from OZ7JQ, 1TIR. It seems logical to assume a bootlegger would pick on a VE8 because of the small number of stations on the air. On 20 fone I contacted a W2 in N.Y.C. and he said, you are my second DX QSO today, his first was a ZS! On Saturday or early Sunday morning a disastrous fire completely destroyed the RC. Signals station at Mayo, Y.T., cutting off all communication with the outside. AM, Ivor Mast, R.C.M.P., came to the rescue and established contact with AO and VEA-RC sigs, Dawson City, to flash news of the fire to the outside and kept contact on 80 CW till new equipment was flown in three days later.



VE3WY

Strathburn, Ontario—owned and operated by Tom Wylie. Can be heard on 80 frequently as member of Beaver Net on 3535 Kc.

HEADQUARTERS HAPPENINGS

ELECTION. On February 20th the results of the election for Canadian General Manager were announced by the ARRL. They showed that Alex Reid, VE2BE, and Len Mitchell, VE3AZ, have both been returned to office as CGM and Alternate respectively. The vote was reasonably decisive:

For Canadian General Manager	For Alternate
Alex Reid, VE2BE..... 406 votes	Len Mitchell, VE3AZ..... 413 votes
Tom Hunter, VE3CP..... 308 votes	Charles Harris, VE6HM..... 296 votes

XTAL LATE. After a prolonged struggle last Fall to get XTAL in the mail in the course of the month appearing on the cover of each issue, circumstances ganged up on us in January and we lost several weeks of valuable ground. We won't bore you with the half dozen reasons for this regrettable deal; suffice it to say that the difficulties facing the publishers of a small magazine are numerous and sometimes get out of hand. We are making strenuous efforts to overcome them, and expect to be back on schedule by next month at the latest. Your patience and co-operation will help to make a bigger and better XTAL.

LICENSES. It should not be necessary to remind you that all amateur licenses in Canada expire on the last day of March. Requests for renewal should be forwarded direct to the Department of Transport, Radio Division, Ottawa, together with your remittance for \$2.50. We would suggest that you send your application in early, and when your new license is received examine it carefully for possible changes in the regulations. In this connection, both CAROA and ARRL have forwarded recommendations; ours appears in this issue, and details for publication have been requested from the CGM. Any pertinent information will of course be printed in XTAL as soon as it becomes available.



DX'ers of THE MONTH

**Ve4RO
again!
with 42
countries**

Call	Jan. Total	Post War Total
Ve4RO	42	109
Ve3LZ	37	63
Ve3ACS	36	60
Ve3AAZ	31	35
Ve3ARM	29	40
Ve3BFBK	23
Ve3QB	23
Ve2GA	16
Ve3AJS	15	30
Ve3HC	15
Ve7EH	14	32
Ve3ARS	13	60
Ve8AS	12	22
Ve5AQ	12	15
Ve8NG	11	34
Ve3BBY	10	16
Ve2FG	9	12

**10
OR MORE
countries worked in a
month qualifies you. Let's
have reports.**

Ve4RO leads the pack again! Up from fifth into the second slot moves Ve3LZ who says he's out after Geo's scalp. Ve3ACS slipped into the show money by one country. Nice response from outside Ve3 territory. C'mon you 1's, 2's, 5's, 6's and 7's and show these Ve3's how to work DX!

Please remember to total your countries worked post-war when submitting scores.



DEAR OM

XTAL assumes no responsibility for statements made herein by its correspondents.

BROWNE OFF!

Toronto, Ontario.

Editor, XTAL:

The operation of an amateur radio station is a hobby enjoyed by thousands of Canadians both young and old. The ranks of the Canadian amateur are constantly being swelled by new enthusiasts who have caught up with the thrilling idea of being able to talk to some chap over the air waves making use of equipment built by you yourself and operated by you under license granted by the Department of Transport. You, as an amateur radio operator, have passed an examination which qualifies you to so operate and own an amateur radio station.

But there is a fly in the ointment which does not meet the eye from the outset and may cause you no end of grief before you're well away. It is the problem of Broadcast Interference which it is alleged you cause to the receivers of your neighbours for blocks or even miles around.

If you are a CW man this ugly monster may remain dormant because for some strange reason BCL's are unable to read the code. The leteters LSMFT are as well known to an ardent BCL as the letters CQ to a ham. But be that as it may, the fact that your neighbour cannot read the code does not guarantee you a safe haven from this thing called BCI. The causes of BCI via key clicks are known to be the fault of the construction and operation of your transmitter and so you haven't any come back when the RI calls you up on that score. It can be cured too which is a godsend!

However, there is a little thing called BCI which comes from the operation of a phone transmitter and that, my friend, is usually the one to beat. Generally speaking, it can be determined right at the outset whether or not your transmitter is in proper operating order. It should have been all along anyway so if you must check up on yourself don't tell anyone about it. Having determined that you are the golden haired brain child who couldn't possibly cause anybody any harm you wonder what the next step is. It could have been that the report of the alleged interference came by way of a third party having no authority and in that case you may just sit back and grin with satisfaction because it's a sure thing that you'll have a few more days of safe operating before anything else happens—if it does. Which it usually does. So now what's to do.

Well, the obvious thing is to call on the character who has the nerve to complain of your little hobby washing out his commercials. Perhaps if more amateur phone transmissions began on the hour and lasted for four minutes only there would be less complaint from BCL's. That rather restricts our activities and so we can hardly comply to such a rigid time limit. Now you've had a look at the offending set and see, in 99 cases out of 100, that it's one of these midget monstrosities, a fugitive from the Wartime Prices and Trade Board Regulations, which like Topsy—just grewed but should have been cut down even before the bloom of youth had ever appeared. Having been warned beforehand or having had this same experience before you are able to control your emotions quite well. They say you can fix some cases by by-passing the audio tube grid. So be it. You can also fix it by pulling out the audio tube—period. Unfortunately that will be a solution for nobody but you and your BCL friend (?) will be quite unhappy because now he can hear nothing. Wouldn't it be wonderful if we could shut off such receivers much the same as they do the flat rate water heaters. But back to our problem.

To try and convince our BCL that his receiver isn't worth the price of the \$2.50 he kicked in for a license is a long and wearisome task. It's always worth a try and you can usually determine in the first ten minutes whether there's any hope for you or not. To suggest then that he

pay the cost of the work you will have to do to remove the offending signal flashes through your mind but you just can't make yourself say so because so far it's the consensus of opinion that you are wrong and he is right. Which leads up to this—actually you are not wrong and neither is he—it's the back-room boys who designed the d—d thing and the little men who allowed those back-room boys to sell it as a bona fide radio receiver. Sure, it picks up signals but brother you never know for one minute which signal you'll hear next. The quality is good if your ear is flat from 200 to 3,000 cycles and the sensitivity is also good because can't you hear that Schick razor about a block away every morning about 7.15.

Ah me, to think that amateur radio would ever have to put up with problems like this. Why we graduated from crystal sets so many years ago even the circuit is hazy to me. And when we want to hear stations we build our receivers with selectivity in 'em and we shield 'em to keep out stuff that bothers us. All of which is considered good, standard engineering practice in modern times. But no, there's always some joker who wants to live in the past. I wonder if these back-room boys wear button shoes? So in heaven's name let's grow up as far as the construction of radio receivers is concerned and turn out something for sale that can really be called a receiver—not a bunch of wires and tubes that's so ashamed of itself that it needs a back cover for privacy. And furthermore, let's see a little getting together of hams to knock into a cocked hat this fallacy that it's the ham who is at fault and not the receiver. Tell the BCL to send it back—the dealer won't like it when he has his sets shoved back at him and by working from that end we may get some results. But let's do something now.

H. W. REID, VE3ADR.

LIVING ROOM

804 15th Ave. West,
Calgary, Alberta.

Editor, XTAL:

Congratulations on your fb rag. Would you kindly spare a few lines for a beef, in the hope it will come to the attention of Canadian manufacturers and dealers, the Canadian General Manager and VE hams.

The greatest single need of amateur radio today is more band space. This talk of having the pre-war bands back is nonsense. The 10 meter band is 300 kcs. short and the entire 160 meter band is used for Loran, with no sign of the 15 meter band we were rumoured to receive in place of it . . . The 75 and 20 meter phone bands are so hopelessly congested that many do not even bother with these bands, with consequent loss of much of the amateur market . . . An outstanding step toward international understanding and the objectives of the United Nations would be an enormous increase in international QSO's made possible by more generous treatment of amateurs in all countries.

Thus from the viewpoint of national defence and military expedience, from the commercial angle of communications equipment manufacturers and dealers, from the future of television, remote control and allied arts, from the ideal of the One World toward which humanity longs and strives, from all these things we get one conclusion, that amateurs should have a lot, a whole lot, more megacycles . . . I, for one of many, would like to see the editors of XTAL inaugurate a campaign to widen the 80, 40 and 20 meter bands and to allow amateurs the idle space in the erratic frequencies from 21 to 30 megacycles. Let's all get going. Write XTAL and your dealers and start the ball rolling. Are we nice or are we men?

W. K. ALLAN, VE6KQ.

DREAM—from page 8

and over-modulation indicator; a dual channel microphone pre-amplifier; a Variac line voltage control; beam control switches; transmitter remote control switches; a microphone and dad blast if nestling amongst all this well-groomed gadgetry there wasn't a telegraph key. CW FOREVER! (aside to KBW: "Danged if I wasn't happier than the proverbial pig when I discovered that"!)

I looked across the crest of the console and saw a complete wall of transmitters! Three at present, with more under construction. Each rig has 225 watt RF exciter unit using 6V6, 807 and 813, and a pair of 810's as modulators pushing up 500 watts of audio. The 75 meter final gives with a pair of 806's in PP, while the 20 and 10 jobs fire away with a PP stage of 304TH's each! A cool but devastating KW emits on all bands.

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Fred Hammond will conduct you through and insist upon you firing up the works yourself. It's that simple! He will likely take you down to the plant and have you meet brother Len who will most surely be found figuring out a new transformer design. Chances are that Ken will come ambling in with a photograph of one of Hammond's newest for next month's XTAL, while you rag chew.

I came to as we rounded into Queen's Quay and stopped at the Island Ferry Dock and somewhere in the distance I could hear JP'S fine Oxford saying: "Johnny, you're looking better". As I sit down to work the last pitiful 8 watts out of my 807 I often wonder if it wasn't a dream.

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For large resistors and heavy wire sizes the riveted type of terminal is quite suitable. In this style the terminal band is riveted in position around the ceramic tube before the winding is put on. After winding, the end of the wire is secured mechanically to a lug on the terminal band and soldered in place. This makes an extra heavy, stout connection,

and this is strong enough to serve as a mounting for the resistor if desired.

While we recommend the riveted terminal for heavy wire sizes, we have developed a unique die cast construction for small tube and fine wire sizes. In this construction the wire is wound on the tube first and the wound tube then placed in a mold, where the terminal is die cast around the winding, tube and all. This casting shrinks on cooling and grips the wire and tube with tremendous force. We die cast either wire lead pig-tails or soldering lugs in position. This process eliminates the need for handling and soldering fine wire sizes on the small resistors, thus keeping the resistance wire always flat against the tube, where it is completely covered and protected.

These designs would not be possible if it were not for the low temperature at which we process our cement coating. Our resistors never undergo the extreme firing temperatures which are necessary in putting the glazed finish on some types of units. This explains why our terminals retain their stiffness and strength. These are small details, but they are important in an article which must withstand rough service.

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