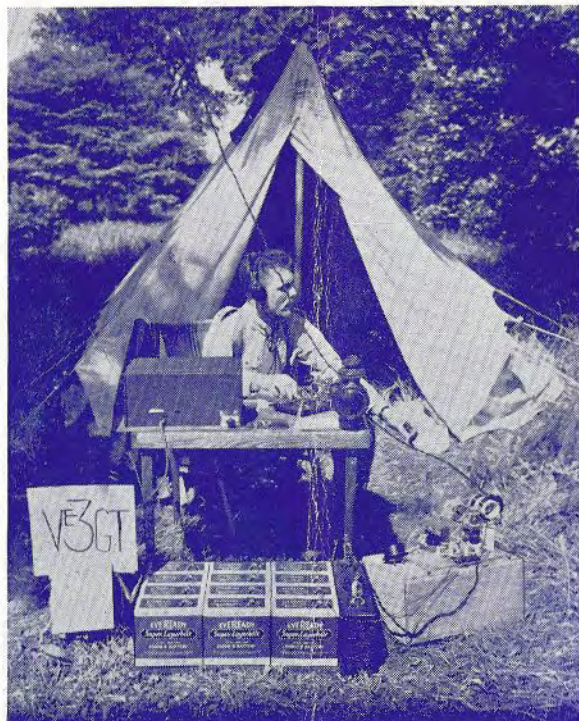


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During ARRL's Annual Field Day to test Portable and Emergency equipment, the twelve No. 386 "Eveready" "Super-Layerbilt" Radio 'B' Batteries shown in the photograph were in continuous operation for 27 hours. When meter tested at the conclusion of the trials, the original full 540 volts were still available. Here's still another proof of the efficiency of "Eveready" "Super-Layerbilt" Batteries.

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XTAL

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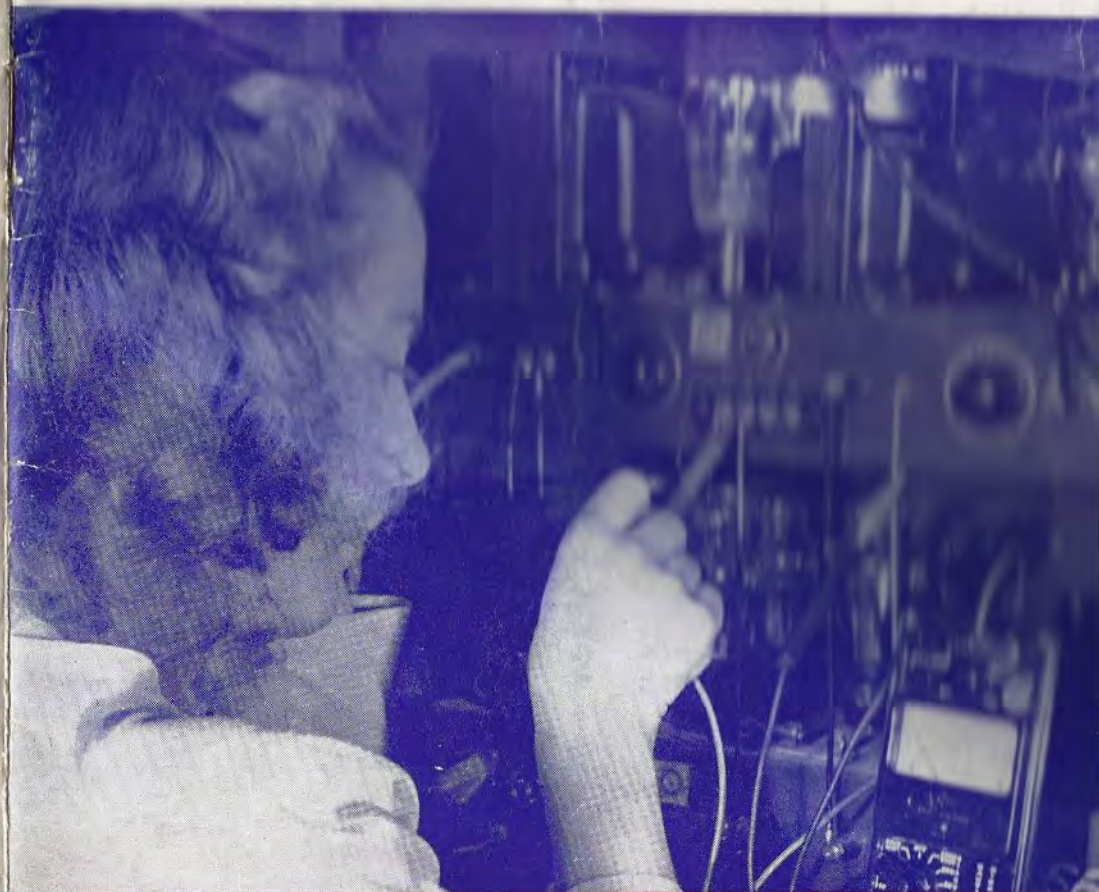
radio amateur

July-August

1946

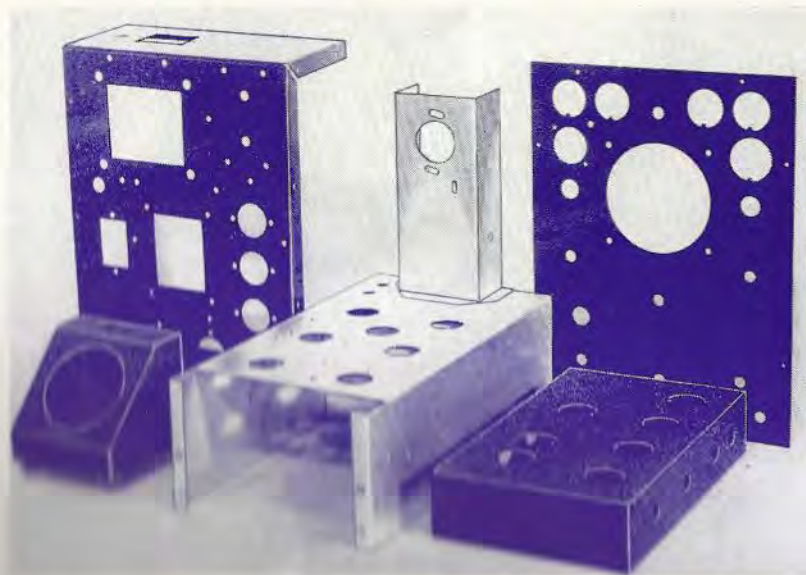
Vol. 7 No. 6

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



Published by
THE CANADIAN AMATEUR RADIO OPERATORS' ASSOCIATION
TORONTO, ONTARIO

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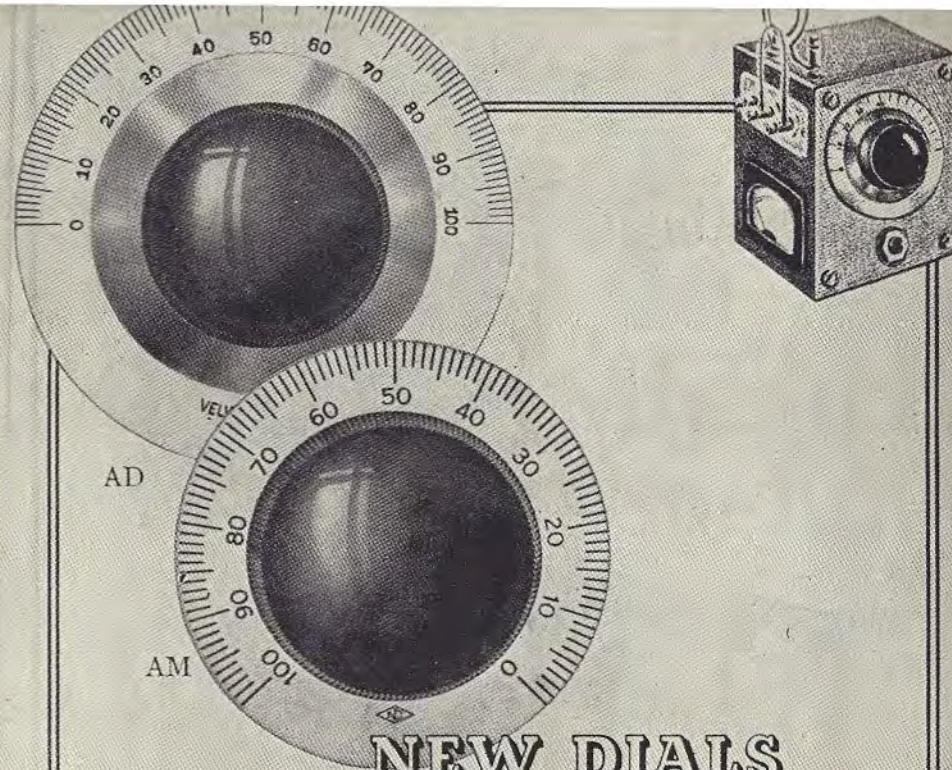
VE3YH

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Both are handsome in appearance and moderate in cost.

DIAL SCALES				
Scale	Divisions	Rotation	Direction of Condenser Rotation for increase of dial reading	
2	0-100	180°	Counter	Clockwise
3	100-0	180°	Clockwise	
4	150-0	270°	Clockwise	
5	200-0	360°	Clockwise	
6	0-150	270°	Counter	Clockwise



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QSO No 2 of a Series

I.R.C. rag-chews with XTAL readers

AMATEUR APPLICATION OF POWER RHEOSTATS

The equipment used by the majority of amateurs is usually limited by the amount of spare cash available for the hobby. This means that consideration should be given to all aspects of the application of any particular part in planned equipment. Elimination of an extra power rheostat may at first seem like real economy. That very rheostat, if it keeps the filament voltage of your transmitting tube within the manufacturers limits, will pay for itself many times over.

The most important phase of operating such tubes is to see that the filament voltage does not exceed plus or minus 5% of the tube rating. This applies to oxide-coated filament types as well as thoriated-tungsten. In other words an HK54 having a filament voltage of 5 should not be operated at less than 4.75 or more than 5.25 volts. An 811 tube's limits would be 6 and 6.6 volts, and an 813 tube 9.5 to 10.5 volts. If the voltage drops off more than 5% the temperature of the cathode is below normal and the electron emission is accompanied by a chemical change in the surface of the cathode. The useful life of the tube is drastically reduced. If the voltage is over the rate of tolerance, rapid evaporation of cathode material takes place, which naturally reduces tube life.

Filament transformers for this reason have two or more primary voltage taps. If the normal A/C line voltage is 115, then the 115 volt primary tap is used, for it

produces a secondary voltage within the tolerances required for proper operation. However, line voltage fluctuations due to heavy load periods often occur to such an extent that considerably more than 5% change will take place in the secondary. Most power supplies are so constructed that changing primary taps is quite awkward.

Power rheostats when employed in the primary circuit offer a simple method of maintaining filament voltage, thereby guaranteeing maximum life to your transmitter tube. When used, the filament transformer should be permanently connected at its maximum voltage tap. False voltage readings are eliminated by metering at the particular tube socket so that lead and other circuit resistances are taken into consideration.

Power rheostats have many other applications. Of course, they are used for controlling plate voltages (a real handy gadget in the primary of plate transformers for increasing or reducing power). Some OM's control excitation by means of a rheostat in the screen of the driver. Then, of course, there is a whole field of uses in controlling motor speeds as for example in rotating antennae.

I.R.C. power rheostats will give years of satisfactory service. Their novel design allows operation at rated wattage down to 25% of full rotation with low temperature rise. Pressure is provided by means of a separate steel spring thus separating the two functions of carrying current and applying pressure.



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GL-805



● Here is a leader in General Electric's highly developed line of transmitting tubes—the GL-805. It does a wide variety of jobs efficiently, from low-power stages of large transmitters to power amplifier in small stations. Being so versatile, the GL-805 is an excellent tube for amateur use.

Continuous ratings	Class B A-F service (two tubes)	Class C R-F service, plate-modulated	Class C R-F service, without modulation
Filament voltage	10 v	10 v	10 v
Filament current	3.25 amp	3.25 amp	3.25 amp
Max plate voltage	1,500 v	1,250 v	1,500 v
Max plate current	210 ma (per tube)	175 ma	210 ma
Max plate input	315 w (per tube)	220 w	315 w
Max plate dissipation	125 w (per tube)	85 w	125 w
Driving power (approx.), typical operation	7 w	16 w	8.5 w
Plate power output, typical operation	370 w	140 w	215 w

For further information contact your local G-E distributor

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Head Office: TORONTO

WR-846



XTAL

[CRYSTAL]

JULY-AUGUST
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HILITES

Cover shows Mrs. IKS a-bug-hunting while photographer-ham-DCM Hesler makes with the shutter. We're struck with the typically sharp Bluenose job of wiring!

Six meter addicts will endorse page 8. It works like a charm. Ask 3AXT. More dope on the activities of the Ontario gang in brackets "above 50" can be gleaned on page 18.

3ACL comes forth with an Overmodulation Indicator featuring the new 8016 type tube. Remembering his VFO article in May XTAL, few will want to miss the contents of page 10. Shucks! Open XTAL practically any place—and learn all about darn near anything in VE ham radio. In short, it's a good issue, cover to cover!

XTAL CONTROL

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... the status quo

BY this time the name of The Canadian Amateur Radio Operators' Association is probably familiar to the majority of VE's. The magazine XTAL has been welcomed everywhere as the first all-Canadian publication devoted entirely to amateur radio, and it is becoming increasingly obvious that it has won unanimous support. As a logical result of its activities to date, certain questions are being asked by members and non-members alike: what is the policy behind the Association? does it intend to restrict its efforts to the publication of a magazine? does it intend to seek recognition by the Department of Transport as the official representative of Canadian amateurs? This letter will attempt to answer some of these questions, which, we realize, have gone too long unanswered.

To start with, it has probably been made clear that the Association was formed by a very small group of Toronto hams who have no commercial interests, and who can lay claim to no more technical, physical, mental or financial qualifications than possessed by most hams in this country. They were, however, inhabited by the germ of an idea: the conviction that a national amateur association was desirable from many points of view, not because the work of the ARRL was considered unsatisfactory, but because its activities could be supplemented by an organization which would provide a medium for the expression of Canadian opinion on all subjects, as well as contests and other activities of prime interest to VE's. Last but not least, it would help to give the hams of this country a sense of nationalistic pride in their endeavours, distinct from those of any other country.

That the need did actually exist is corroborated by hundreds and hundreds of letters in our files. This, naturally, is gratifying to the group who originated the movement, but they do not feel that the response has empowered them to take matters into their own hands. Rather they feel, more than ever before,

subordinated to the wishes of over two thousand members. Lately, however, those members have been letting Headquarters know that they feel the need extends beyond the obvious one of a national publication. They want their Association to represent them at Ottawa when frequencies are being allocated, to negotiate changes in rules and regulations, to speak for Canadian amateurs at international conferences. Some come right out and say that they want the CAROA to supplant the ARRL in this country and to apply for membership in the IARU as a separate unit. Let's consider these matters briefly.

First, we think that the officers of any Association should act, as far as possible, as the members wish them to act. In accordance with numerous requests, a poll will be taken in the near future on a currently controversial subject, that of phone-cw allocations. When the results of this poll are received, they will be communicated to the Department of Transport and we have every reason to believe that they will be carefully considered.

Second, with regard to the suggestion that the CAROA replace the ARRL in Canada. We quote By-law 30 attached to the Constitution of the American Radio Relay League (revised to July 1, 1946):

"The policy of the League in Canada shall be that of a friendly hand for the amateurs of a sister country pending their growth to such numbers and strength that their ability to form and conduct a self-governing non-commercial organization throughout the Dominion is evident. The activities of the League in Canada shall be regarded as a temporary stewardship undertaken at the request of Canadian amateurs. Whenever Canadian amateurs shall petition for their own organization, and it is manifest to a majority of the entire Board of Directors that the success of a separate Dominion organization is assured, the Board of Directors

QSY to page 22

WHY JOIN A RADIO CLUB?

By Art Spence VE7ALQ*

A LOT of Hams ask themselves this question from time to time, even if they aren't conscious of the fact. And a very good question it is too. Why be bothered? It costs money—anywhere from a dollar a year up; time—maybe even five or six hours a month; effort—one must stay awake, more or less, during meetings, etc. Its so very difficult to arrange two or so free evenings a month etc. etc. and so on through all the dull, listless, ambitionless excuses with which a not very enthusiastic sad sack deludes himself.

But fortunately there is a bright side to the picture. The first and most obvious gain to most people is the direct return thru the benefit of pooled knowledge. Listen to the off stage talk of experienced Hams; it is a whole radio course minus all the costly and sometimes painful mistakes that a beginner can make—and not only beginners. Who knows all, has reached the ultimate, dizzy pinnacle of technical perfection? Have you? We all know some who think they have, and who speaks to these pompous asses? Pooling of technical knowledge is advocated by the world's greatest scientists. Who knows the full extent of the tremendous boost given to radio since its birth by a couple of Hams, here and there, getting their heads together and chewing the ears off a problem?

Next, but not so obvious, strength through unity. An old saw, you say! Sure it is an old saw, but try and prove it foolish! Most Hams who know the history of ham radio are familiar with the countless thousands of efforts to squash the Art. How about that crabby old guy next door? He is one of them. Where would the ham bands be today with the might of commercial radio trying at times to shove them off to infinity in the spectrum? That commercial guy did not know the mayor and M.P. were hams, did he! Sure they were, and got together to keep the hard won bands, and there will be more tries to be bucked in the future! Will you be there to help stop them? Or will you be

*The Vancouver Amateur Radio Club.

sitting back hoping those "organized boys" won't let the nasty old men take your bands away?

These are more or less obvious answers, but there are a lot of others. Organized activities that are fun—xmtr hunts—contests—movies—social activities—the fun of meeting 7XXX to whom you have talked many times on the air—the experience of serving on committees and organizations (things that will serve you well in business). How about the social aspect? To be valuable to any business, organization, a person must have that breadth of vision which comes with experience in meeting, talking and dealing with others in every walk of life. Ham Clubs are a pretty representative cross section of all walks of life, from the business executive to the school boy. Incidentally, but not least, they keep that same school boy out of a lot of mischief. I do not need to name them all. Think!—You will see all these and probably more for yourself.

You don't have to wait for that ticket, if you are really interested in a great art. Join now and be ready for the old man with the red pencil!

WHY JOIN A RADIO CLUB? HUH! NEED YOU ASK?

POSTSCRIPT

IF THE Editor might be permitted to raise his voice at this point, it would be to express approval of the sentiments outlined above. The various radio clubs across Canada are doing a Class A job of promoting ideas and activities amongst the ham fraternity, and we cannot help but agree with VE7ALQ when he says that amateur radio offers more than the pleasure of exchanging intelligence with some citizen of Upper Slobbovia. There is the thrill you get out of comparing circuits with the Joe from the other side of town; the satisfaction that is yours when you are able to explain to a beginner why he has trouble with key clicks; the kick that comes your way from the organization of club contests and hamfests. A taste of

QSY to page 26

A Simple Six Meter Receiver

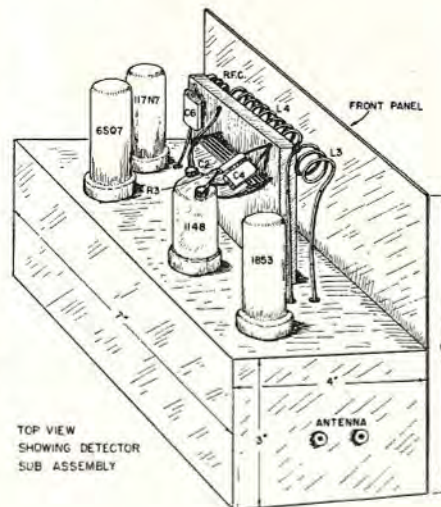
R. J. HOWARD, VE3AXT*

THIS receiver consists of a regenerative R.F. stage, followed by a super-regenerative detector, the output of which is coupled into the grid of the 6SQ7 audio tube, and then into the output section of the 117L7, to the speaker.

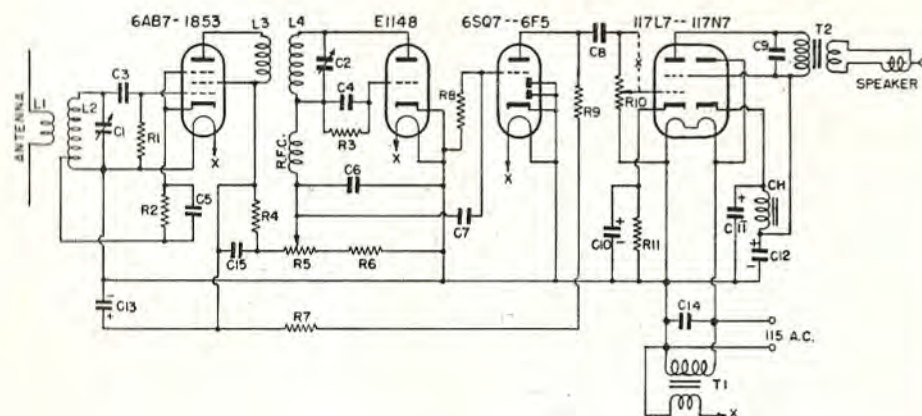
The B voltage is obtained from the rectifier section of the 117L7, after adequate filtering. The B- is one side of the AC line and is not connected to the chassis at any point, obviously for safety reasons.

The E1148 used is one of the inexpensive War Surplus tubes, and works well.

The receiver is built on a chassis 4" x 7" x 3". The R.F. coil and tuning condenser are mounted beneath the chassis near the grid of the 1853 R.F. tube. The plate lead and B plus lead are brought up through the chassis to the coupling coil



QSY to page 26



- | | | | | | |
|--------|----------------------------|---------|-------------------------------|--------|---------------------------------------------------------------------------------------------------------|
| L1 | coupling coil 2 turns | C6 | .006-mica condenser. | R7 | 10,000 ohm 1/2 watt. |
| L2 | 5/8" diameter. | C7-C8 | .001 paper condenser. | R8 | 5 meg 1/4 watt. |
| L3 | r.f. coil 8 turns 5/8" | C9 | .005 paper condenser. | R9-R10 | .5 meg 1/2 watt (see text). |
| L4 | diameter. Tap at 3/4 | C10 | 25 mfd 50 volt. | R11 | 250 ohm 1/2 watt. |
| RFC | turn, length 1 1/4". | C11-C12 | 40-40-200 volt electrolytic. | | (R10 can be replaced with a 500,000 ohm volume control in which case connection marked "X" is omitted.) |
| C1-C2 | 3 turns 5/8" diameter | C13 | 20 mfd 200 volt electrolytic. | T2 | output transformer on speaker. |
| C3 | at grid end of L4. | C14 | 250 mmfd mica condenser. | Ch | speaker field 450 ohms. |
| C4 | length 1 1/2". | C15 | 250 mmfd mica condenser. | T1 | Hammond output transformer #121D. |
| C5 | 2.1 mh r.f. choke. | R1 | 2 meg 1/4 watt. | | |
| C6-C14 | 15 mmfd tuning condensers. | R2 | 2000 ohm 1/2 watt. | | |
| | | R3 | 20 meg 1/4 watt. | | |
| | | R4 | .25 meg 1/2 watt. | | |
| | | R5 | 50,000 ohm potentiometer. | | |
| | | R6 | 20,000 ohm 1/2 watt. | | |

"CQ CAR"

Nine hundred and thirty-five QSOs by 24 stations reporting scores in the first annual "CQ CAR" Contest was indicative of the fun in the CAROA's June 8-10 funfest. Five of the twenty-four reporters completed the text "Are You A Member of CAROA?" Most difficult letter seemed to be "A" with "O" "M" and "Y" running a close second. One point was awarded for each letter in the text as well as five points for each QSO. In the case of ties, operating time was taken into consideration to effect a decision. VE3KE was high man with 87 QSOs and a completed text. Vic was a busy fellow, a proverbial flea on a hot griddle, with an ECO going up and down the band like mad—and being called like mad by everyone! VE3AYE's 85 QSOs and a complete text was runner-up. Congratulations to two FB Ops whose averages were better than 9 contacts per hour! VE3APF's 20 QSOs gave him 16 out of 20 letters in his text! W9KCY answering his first "CQ CAR" asked if we Canucks were plagued with an automobile shortage! Which reminds us that during the closing hours of the contest the Ws were in there pitching to help us add contacts to our scores.

lator and main filter. Surprised to see so many W stations get into the swing of the contest and some were really knocking off the VEs.—3AAG. "DOT haven't issued enough "A" calls!"—3ABM. "Gimme an ECO and a bag of crystals for the next one and I'll fill the Hamogram!"—3QU. "Here's to more of 'em in the near future."—2GA. "Thanks for such a swell contest and a stiff one too."—6ED.

"In my opinion VE3CAR was a splendid example of patience and all that helps to make a contest successful with no hurry and time for a few minutes' rag chew. Hats off to those who organized this one and it is hoped that there will be more of various kinds. Anything our efficient HQ staff dishes up will meet with approval and support."—3ATR.

"Input 12 watts and I worked VE3CAR!"—3IR. "Thoroughly enjoyed it all. Most difficult letter for me was "O".—3KE. "Am contemplating mayhem if I can find the neighbour with the spark transmitter! Anyone want to buy a couple of crystals cheap? From here in I get me a VFO and shift around with the other boys who snag 'em right and left. What do I get but sore ears!"

SCORES

Call	QSOs	Points	Call	QSOs	Points
Ve3KE	87	455	3ALO	38	204
3AYE	85	445	2GA	37	200
3CAR	68	359*	2FG	34	183
3AAG	54	285	3ATR	31	167
3TB	50	269	3ABM	30	165
6EO	48	260	3QB	27	147
3EF	48	260	3ANO	21	116
3BCO	48	257	3APE	20	116
3QU	46	247	3WT	20	110
6NT	41	225	3IR	14	81
3ADR	40	215	3ACB	5	29
3AEM	39	210	3GY	4	20

Here is what some of the victims say: "Hope you have another one soon."—3BCO. "It sure was a grand contest and I enjoyed every minute of it." 3AEM. "Found it hard convincing Ws but fun was had by all."—3AYE. "Blew oscil-

—3ALO. "Really had a lot of fun working and hearing calls never before heard. Contest must have dug a lot of lads out of hiding."—3ADR. "Sorry couldn't make it. How can you fellas keep your minds on your work with

*—Not in competition.

QSY to page 24

DURING the war quite a number of new tubes appeared without much publicity, and most amateurs are just beginning to get acquainted with them. One type which should find favour with phone hams is known as the 8016. Because of its unique characteristics, it is admirably suited for use as an over-modulation indicator in plate-modulated rigs running from 100 to 1000 watts input. Filament ratings are 1.25 volts at 0.2 amps., and this makes it possible to use the Class C plate current to heat the filament, thus eliminating one transformer. The unusually high peak inverse rating of the 8016 rectifier (10000 volts) permits it to be connected across the entire secondary of the Class B output transformer (as illustrated in Fig. 1) without danger of arc-back.

R2 can be a tapped bleeder across the output of the high-voltage power supply, or, as shown in Fig. 2, it can be made of six or seven one-watt resistors for inclusion in the modulator chassis. Although it would normally be considered that connecting the neon bulb directly to ground would cause it to flash at 100% modulation (because there is no positive bias on the rectifier), it actually takes quite a few volts to strike the neon, and labelling the first tap as 100% allows 100 volts for this purpose and provides a margin of safety. If provision for flashing the neon at different modulation percentages is not desired, the number of resistors can be cut down, although never beyond the point where any given resistor has more than

500 volts across it. If this last rule is followed, one-watters made up into a total of five megohms can be used safely up to 2500 volts.

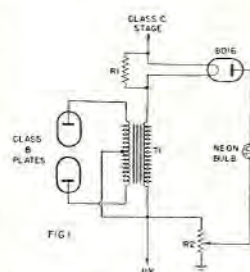


FIG 1
R1 - SEE TEXT
R2 - DETAILS IN FIG 2
T1 - MODULATION OUTPUT TRANSFORMER

Fig. 1

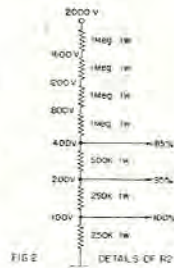


Fig. 2

R1 can be omitted if the final plate current is 225 ma. or less. Over that value the shunt would be calculated on the basis of 6.25 ohms filament resistance; i.e., 3.125 ohms for 300 ma. etc. It is probable that the 8016 will function satisfactorily with filament current as low as 175 ma.

The only other point to watch is the insulation of the 8016 socket. It should preferably be mounted on a bakelite subpanel to allow plenty of clearance between socket and chassis.

—VE3ACL.

ATTENTION ALL AMATEURS

NEW QTH OF C.A.R.O.A. HEADQUARTERS

46 ST. GEORGE STREET

TORONTO 5, ONTARIO

Write Soon
VE3CAR
Drop In

VE1

MARITIMES—DCM, RON J. HESLER, VE1KS—It is heard on 80. FL has a new phone rig on 75 with 807's in the final. SY is a new 75 CW station in Sackville with 300 watts and is planning phone as soon as necessary components are available. QF has a new Fb 75 meter antenna. IE is heard quite often from FL's station. KJ is the proud possessor of a new Hallicrafter Super Defiant receiver. LG is back on 75 meter fone once again. KC by the time you read this will have hit 75 fone with a new rig using 813's and a Hallicrafter Sky Champion receiver. KE is going to rebuild replacing his RK-20 with an 813. QF has completed a new V.F.O. MZ is now using a new RME45 and an army No. 19 set as a transmitter. KN has upped his power to 135 watts. KS is expecting a Hallicrafter HT-9 transmitter in August. ID is active on 75 phone. DU has been hard at work ironing bugs out of his speech amplifier. KY has returned to 75 CW and will soon be on phone he hopes. KE and LG were recent visitors at the shack of KS. LG has ordered a new WRL-150 transmitter and expects to have same on the air by September this year.

Once again I would like to draw your attention to the various appointments open to you in the Association. There are a number of appointments open in the Maritimes. How about letting me hear from you. Kindly send me in your reports on yourself and other stations, traffic, DX etc., by the 12th of each month. This column is yours—yours to make or break, so how about it fellows?

VE3

ONTARIO—DCM, ROBT. C. HUNT, VE3WX—3BEY looks at traffic skeds with longing eyes. 3WD getting ready with 814 final. 3AQC is new Amherstburg station. 3FP has FB skywire and may be found at CKLW transmitter house. 3AEP and XYL visit 3WX. Alice wants to go on fone. 3PU is increasing power. 3MY's XYL wants a mike after hearing Mrs. AEP. 3EN is looking for southern QSO's on 3520 kc. 3NI has plenty space for 80 meter rhombic. 3HI has new jr. op and is very QRL. 3ALE punches hole in ether with new Millen 90S00 exciter. 3TM hops over to see 3CO in Ridgeway. 3CP, XYL and jr. op visit 3WX. 3OI entertains Windsor Gang. 3WA wants invisible skywire. 3QK wants an abode in FB QRA. Field Day. 3ATB and 3ANY work six meters. 3TB, GT, and QK, along with 3BCZ ran 3GT on Look for six meter article by these boys this issue. 3ADR, 3AAG, 3QW, 3BAD, 3CAR, 3AXQ, 3KE, 3FQ, 3ARS, 3BSZ, 3HP, formed traffic net to assist Ontario Flying Club at Air Show in Oshawa. 3AVA and 3AZA are on from Malton. 3AZI building new high power rig of large proportions. 3HC is on trip through W-land. Traffic totals—3CAR, 69, 3ATR, 16.

VE6

ALBERTA—DCM, BILL SAVAGE, VE6EO—Let's have those reports! 60A and 6LQ are busy trying to get a network going. 6IN still in the R.C.A.F. 60G using VFO to dodge QRM. 6DV and 6FK are wondering who will grind their crystal first. 60D can't recognize his neighbour's voice over 6EO's rig. 6VR is moving to new QTH. 6IX doing fb with Bat power phone. 6SR is very active on phone and some CW. 6AC goes visiting to save his own electric light bill, also has a SX-28A receiver. 6HQ puts out a nice sig. 6VN is on 75 phone. 6LL has to fix the roof. 6JJ comes to rescue by phoning 150 miles to get 6HQ

in Whitehorse out of bed at midnight to talk with his son 8AO. 6NT puts in a wallop on 75 phone with his 500 watts. 6SL is on 80 mtr. CW, also 6GH. 6WC is on his holidays and is visiting all the stations he possibly can. 6RH is doing fb on ten mtrs. and has a big five watt rig on 75 mtrs. 6EV, a new call, has a ten mtr. rig going. 6EU has new receiver, but no xmtr. going. 6DR is trying to work out a HamFest for 1947 at Waterton National Parks. 6EB is doing nice job. 6HZ is going big guns on 10 and 75 mtrs. 6GD is active on 80 mtr. CW. 6BW, 6LQ and 6HM are on 75 mtr. phone and getting out fb. 6EO is looking forward to a nice qso with 6CE, what say, Alex. and Nancy.

Well, VE6GANG, this is the first report sent in for you to XTAL magazine. It has been gleaned from the air-waves, so please excuse me if you were not mentioned. Are you with me, gang? Let's put Alberta on the map, with a good juicy report each month. I cannot do this myself. I need your assistance, so please drop me a card or letter, and tell me what is doing. This is my first attempt at this job, and I am 100% for all 6 District Hams. Are you with me? If so, we should have a dandy report next month.

Calgary Hamfest

THE Calgary Amateur Radio Association's Hamfest of July 6th and 7th was the first post-war highlight of the 6th District ham affairs. Responsible for its success were Ve6AO as Manager and Master of Ceremonies, 6CY i/c Entertainment, 6TM as Publicity Man, 6HQ the Accommodation Manager and A. Graham, Sports Promoter. These lads deserve a word of praise for their hard work and splendid organization.

Following registration on the 6th, a general get-together for personal QSO's and a review of new gear which was well displayed accounted for the first hours of the shindig. At the banquet in the evening, a well planned programme, MC'd by 6AO was thoroughly enjoyed by all. High spot was the auction at which a transmitter was the object of bidding. Comedy element was supplied by the gang who filched auctioneer 6AO's transmitter, neatly covered it on the stage with canvas and sat back to laugh while owner George himself seriously sweated and strained for "who'll gimme's"! George was quietly carried away when it was unveiled!

50 prizes were distributed to lucky ducat holders. A recording of the 80 meter fone and cw band furnished mayhem on the PA system. Magician 6BW

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DEAR OM

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

Dear Om:

As a former temporary VE (1930-34) I was much surprised and pleased to receive the copy of XTAL today, and am losing no time in sending in my application.

Best of luck to all of you fellows north of the line, amongst whom I number some of my very best friends.

Vy 73,

W. GIBBS, W8AQ

NORTH SHORE RADIO CLUB

Representing radio amateurs in Oshawa, Bowmanville, Columbus, Ashburn, Ajax, Brougham and Whitby, Ontario.

July 12, 1946.

To:

All Canadian Radio Amateurs and
All Canadian Amateur Radio Clubs.

Dear Om:

The following excerpt is taken from the minutes of the ARRL directors' meeting appearing in July QST:

"Further on phone matters, the Board requested its Canadian General Manager to secure uniformity in the Canadian phone regulations to conform with those of the United States."

We have sent the following telegram to Alex Reid, ARRL Canadian General Manager:

"Reference Board report July QST to secure conformity to USA phone bands. North Shore Radio Club emphatically protests implied loss of phone frequencies outside of USA bands."

We believe this matter is of utmost importance to every Canadian ham.

We feel that all Canadian hams are interested in maintaining phone privileges

free of high power USA QRM due to economic limitations imposed by high cost of equipment in Canada.

Al. Derumanux, VE3JV, President, 680 Masson St., Oshawa, Ont.; Wally Colton, VE3QO, Vice-president, 264 Division St., Oshawa, Ont.; Ted Brant, VE3ADD, Secretary, 513 Dundas St. E., Whitby, Ont.; Mike Dzendrowski, VE3AGT, Treasurer, 463 Floyd St., Oshawa, Ont.

July 17, 1946

Dear OM:

At the regular meeting of the North Shore Radio Club held on Monday evening a copy of a letter from the Victoria Short Wave Club to yourself, on the matter of Canadian amateur representation in the International Amateur Radio Union, was read.

The North Shore Radio Club is in agreement with the resolution of the Victoria Short Wave Club and we also request that you make application for representation to the I.A.R.U.

We make this request as we feel that the CAROA represents the majority of Canadian radio amateurs and, being most familiar with our operating conditions and difficulties, is therefore best suited to represent us in dealing with the Dept. of Transport at Ottawa. In view of the ARRL stand on Canadian phone allocations we feel that our interests at Ottawa will best be served by a Canadian organization.

In a recent communication from Alex Reid he advises us that the request of the ARRL directors to line up Canadian phone band allocations has been made every year for the past ten years or more. Unless we take steps now and make our objections heard at Ottawa it

is not impossible that this request of the ARRL will be granted eventually.

We appreciate the efforts made on our behalf in the past by Alex Reid and the ARRL and thank them for the good job that they have done. However, we believe that the CAROA is now in a position to better express the needs and desires of the Canadian radio amateurs.

Ted Brant, VE3ADD

Secretary,

P.O. Box 427, Whitby, Ont.

July 3, 1946.

The President,
Canadian Amateur Radio
Operators' Association.

In accordance with a resolution passed at the regular meeting of the Victoria Short Wave Club held on June 28, 1946, I am writing to notify you of the content of the resolution.

We propose that the Canadian Amateur Radio Operators' Association shall represent Canadian Amateurs in the International Amateur Radio Union, and request that you make application for such to that body.

This is a matter which has been engaging our attention for some time now since the resumption of amateur activity, and has been discussed at several meetings of our club and its officers. It is our belief that the time has come for us Canadians to stand on our own feet and seek representation in the International Amateur Radio Union from among ourselves in preference to depending on the kindness of a neighbour. We feel that this is in keeping with the establishment of Canadian embassies or their equivalent abroad; with our plans to secure a distinctive national flag; and with our recognition as a member of the United Nations.

It should be noted that we intend no slight to Alex Reid, or the American Radio Relay League, both of whom have represented us very ably heretofore; that we appreciate the support the League has given Canadian hams, and hope for their continued support. Our understanding of the situation is as follows:

Alex Reid, as Canadian General Manager of the American Radio Relay League, has been recognized by our government at Ottawa as the representative

of the largest organized group of amateurs in Canada and therefore the logical person to speak for them when their desires are under consideration by the regulatory authorities of radio in this country. As such he is recognized and consulted by the Radio Branch of the Department of Transport, and he seeks the opinions of all Canadian amateurs, be they members of the American Radio Relay League or not, in reporting to the League Headquarters and the Radio Branch.

We think that the times and circumstances have changed somewhat since that system was inaugurated, and that the percentage of Canadian members of the American Radio Relay League in the ranks of the active amateurs has decreased considerably since the cessation of activities in 1939, while on the other hand we have an organization of our own which is growing steadily. A number of the older members of the Victoria Short Wave Club, for example, have been members of the American Radio Relay League for many years and have no intention of dropping out now, but the appeal of a national group of our own has attracted a considerably larger number of newer members of the club as well as old timers.

Cordially yours,

Victoria Short Wave Club,
1615 Pinewood Avenue,
Victoria, B.C.,

David Scholes, VE7DY,
Secretary.

Aug. 26, 1946.

Dear OM:

"... I wish to say that why can't we VE Ops hold our own QSL bureau, as we are getting stronger all the time. As active as I am, I would only be too glad to open and look after our own QSL bureau, if your Executive see fit..."

Al Pearsall, VE3BCB,
204 Ranleigh Ave.,
Toronto.

● Our Executive has decided that another QSL bureau in this country might result in confusion, and since the ARRL bureau is very efficiently run, it might not result in any substantial benefit. Many thanks, however, for your interest and your suggestion. Keep 'em coming!

FIELD DAY

VICTORIA SHORT WAVE CLUB

Our participation in the Field Day was a hidden-transmitter hunt, a scheme which has proven very popular in past years. VE7AAZ operated the concealed transmitter, which was ensconced behind a fire hall across the road from his home, and four engaged in the search.

All participants met at the V.S.W.C. Clubhouse at 10.30 a.m. to adjust their receivers to the transmitter frequency and take their preliminary bearings. At the conclusion of this everybody scattered to be in position for the successive transmissions, which were of two minutes duration at intervals of ten minutes. The transmitter used consisted of a four-watt phone rig operating on 3805 kc. into an off-centre-fed Hertz antenna, and using a PR16 receiver several QSOs were had. VE7DY was assistant op at the transmitter, and took photos of the search parties as they came in.

The first to arrive were VE7CH and VE7HR (President and Vice-president of the club, incidentally) at 11.45, an elapsed time of 45 minutes from the first transmission. They were followed eight minutes later by VE7AJG and VE7AKV. Next came VE7SW and VE7XX at 12.43, and last VE7EP and VE7PX at 12.53. VE7GO was a starter, but ran into receiver trouble and had to return to his home to locate a short circuit. He was qso'd from the hidden station and reported he was scratched.

The firemen of the Oak Bay Firehall entered into the spirit of the affair, and

misdirected the winners of third place when they enquired if a transmitter was located in the firehall, to the enjoyment of all at the transmitter who watched their departure, and further misdirected them by a brief call, and false directions. The last party to report in said they had run up a mileage of 35 miles in their efforts.

All agreed that VE7AAZ had chosen an ingenious QTH since they all thought he had been too lazy to move from his home, after plotting the location by direction-finder loops, only to be completely frustrated on arriving there and finding him and the station absent.

And here are some of the personalities behind the call signs. 7AJG is Victoria's leading exponent of 2 metres, and his D/F rig was a very compact affair consisting of a 9002 det. with phones, and the aerial a single wire loop 1 ft. dia., the receiver being inside a tin can on the outside of which was the loop mounted on feed-thrus. His side-kick is the son of the late NC-5CJ. 7SW is a well-known tfe and dx man of pre-war days, and his partner in the hunt, 7XX, is ex-VE3 of spark days. Their rcvr was a Sky Challenger, and they used the R-meter for bearings. 7EP is ex-SCM of B.C. and a well-known tfe man and trunkline op of Vancouver, and his collaborator was 7PX, original holder of that call. He was in RCAF radar in Europe and India, while 7EP is still in R.C. Sigs, having recently returned from VK.

KEY KLIK RADIO CLUB

Here is the gen on the club's first ARRL field day since the war. Our location was Stop 25, Kingston Road in Scarboro Heights, approximately 450' above lake level, so far as we know, the highest point between Ottawa and Toronto. Rigs on the various bands included 20 Watts on 75 phone and three 25 Watt rigs on 80 meter C.W. and an effort on 6 meter phone but for reasons beyond our control, we were forced to abandon the 6 meter band.

The Antenna system was a doublet half wave on the C.W. rigs and a full wave end fed on the 75 phone rig.

The power supply and emergency supply were as follows: one 1500 Watt Terry Generator which gave continuous service from the beginning to end, except for one hour at which time we tried our emergency equipment consisting of dual generators belt driven from the

QSY to page 28

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HEADQUARTERS HAPPENINGS

POLL. As mentioned in our editorial this month, we have undertaken to sample the views of Canadian amateurs in connection with the subject of phone-cw allocations. In consequence, if you are a Canadian member of CAROA, you received a questionnaire card in the June issue of XTAL. While we are primarily interested in the opinions of licensed hams, this card was forwarded to all associate members so that those who have received calls since joining the Association would not be excluded. We felt that this poll should be taken now rather than next spring for the reason that the forty and twenty meter bands, when returned to us in their entirety, will undoubtedly incorporate the latest ARRL proposals as far as the U.S. is concerned, and we see no good reason why VE's should not be ready with some concrete ideas of their own regarding Canadian privileges, if any. The result of this survey will be communicated to the Department of Transport and XTAL readers as soon as the cards are all in. Inasmuch as cards have been sent to non-member hams as well (as far as our list of addresses goes), we think that the outcome will be accurate enough to warrant inclusion in our regulations immediately that the remainder of the two bands are released.

STAFF CHANGES . . . Co-incident with moving to our new Headquarters at 46 St. George Street (come up and see us sometime!), we wish to announce that Jon Perdue, VE3QK, has taken over the full-time duties of Managing Editor of XTAL, formerly the responsibility of Sam Trainer, VE3GT. While this leaves our staff somewhat depleted, it is our intention to carry on, for the time being at least, by re-distributing certain work and relying on voluntary assistance. As we become better organized (and to 3GT goes the credit for much of our progress to date), we fondly hope that many of the difficulties which have beset us in the past will be ironed out, leaving the way clear for the Association to be of further service to Canadian amateurs. Our best wishes go with Sam in his new endeavours.

VE3CAR . . . Again due to our recent shift in QTH (it's a handy device to blame things on), we are temporarily unable to be on the air with a Headquarters station. However, our new location offers very excellent possibilities for sky-wire experimentation, and as soon as some agile steeple-jacks can be recruited from the local ham fraternity, VE3CAR will be heard again. Only a modest signal can be expected at first, as plans for the high-power job to cover the country have had to be subordinated to more important undertakings. Nevertheless, it will help us to keep in touch with members and handle a modicum of traffic when the occasion warrants. All calls will of course be welcomed. If it is found possible to resume regular schedules at a later date, an announcement will appear in XTAL to that effect. Visitors who wish to limber up their arms on the Hq key will be welcomed at any time, but we probably won't have much to offer the phone addicts for a while yet.

MEET THE PRES. . . . Due to circumstances beyond anyone's control, a majority of the names you see on page 5 are not active on the air, and therefore a word of introduction might be in order, especially for the benefit of those who dwell in points remote from Toronto. The fact that VE3ZE is silent these days can be blamed on the housing shortage. Tom's solution to the problem is one that might not occur to many of us timid souls: he is building his own house. A compositor by trade with the Toronto Daily Star, he treks up north (Lansing, that is) every night after cleaning up the last edition and puts in a few more man-hours as a self-made contractor. We are informed, however, that as Tommy taps out CQs on the cement blocks with his trowel, he is simultaneously laying the mental foundations for a super-rig that will cause the local QRM to take up stamp-collecting. Details: bandswitching from eighty to six. 809's in the final. In the meantime, the search for nails replaces the hunt for radio parts. Very annoying, the housing shortage.

HAMS . . .

are you receiving your copy of



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JANUARY,

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Capacitor Impedance and Resistance Measurements

PART II

By the Engineering Department, Aerovox Corporation

AT AUDIO AND RADIO FREQUENCIES
The impedance of electronic circuit components may readily be measured at power-line, audio, and radio frequencies. A variety of instruments and methods makes this possible. For any impedance measurement, there will generally be available in each laboratory or shop a sufficient number of instruments to allow choice of method. This article will describe the most important instruments and methods from a practical point of view.

VOLTMETER-AMMETER METHOD

The simplest method of measuring impedance is an application of Ohm's Law for ac. A known voltage is applied across the unknown impedance, which may be either capacitive, inductive, or a combination of the two, and the resultant current through the impedance measured. The impedance value may then be calculated from Ohm's Law: $Z = E/I$, where Z is

expressed in ohms, E in volts, and I in amperes. Apparatus required includes a source of alternating voltage of desired frequency, ac voltmeter, and ac ammeter (see Figure 1).

Impedances may be measured by this method over a wide range of frequencies. However, it is not advisable to employ test frequencies higher than about 50 kc, since at radio frequencies appreciable error is introduced by stray capacitances and skin resistance effects. Between 10 and 50 kc., greatest accuracy will be obtained with a vacuum-tube voltmeter and high-frequency type thermocouple ammeter.

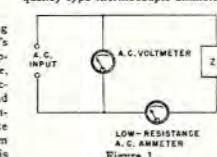


Figure 1

If the test-signal source is arranged to supply a continuously variable voltage to the test circuit, a wide range of impedance values may be covered. This is true because the input voltage may then be adjusted to pass a readable amount of current through any impedance. The test voltage may be obtained from the power line, a transformer secondary, or an oscillator. Test voltage may be adjusted by means of a potentiometer, attenuator, or variable auto-transformer (Variac).

The method of Figure 1 may be applied to yield direct indications of impedance in the following manner: If the signal voltage is always set to give the same ammeter reading (e.g., center scale), the voltmeter scale may be graduated directly in ohms impedance. In operation, the unknown impedance is connected into the circuit and the voltage raised from zero to the level required to deflect the ammeter to a reference point. The impedance is then indicated directly by the specially calibrated voltmeter dial.

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ONTARIO U.H.F. ACTIVITY

By VE3ANY and VE3ATB

SINCE the opening of the Ham bands, a group of Southern Ontario amateurs have been quite active on U.H.F. This may be news to some 80 meter traffic men but it was very apparent to one of the "die-hards", when out of curiosity he built a "swish-box" and was quite startled to hear VE3ATB, West Toronto, chewing the rag with VE3ANY near Port Credit. Curiosity got the better of him, and a visit to Bert's shack convinced him that we had something.

Some of the pre-war 5 meter boys started the ball rolling back last November and it wasn't long before the list had grown to quite sizeable proportions in the Toronto-Hamilton area. A glance at the following list of U.H.F. stations will convince the reader that not only is a serious effort being made on these frequencies but also, that QRM can be quite a problem. However, QRM has always fostered better equipment and the "World Above 50 mc." has certainly benefitted from this enforced improvement in equipment and technique. Although we are not all on the air at once the contemplation of the condition is disturbing.

These are the local U.H.F. "boys" who at one time or another are on the air.

VE3AVW—Toronto

" AEU— "
 " ATB— "
 " AVJ— "
 " AVQ— "
 " AXT— "
 " AID— "
 " TH— "
 " TY— "
 " UT— "
 " AWP— "
 " AWC— "
 " ANK— "
 " APN—Swansea
 " ANY—Lakeview
 " BDS—Humber Bay
 " AEM—Humber Bay
 " AIA—Fairbank
 " BBX—Mount Dennis
 " BAW—Mount Dennis
 " AFG—Malton
 Hamilton District
 " KM—Bartonville
 " DC—Dundas
 " CJ—Burlington

" NH—Hamilton
 " BFF— "
 " ARM— "
 " AND— "
 " BKM— "
 Oshawa
 " PF—

There may be others and if they were missed, our humblest apologies are extended.

Transmitting equipment is for the most part low power, using V.F.O. & R.F. amp. and usually is one of the U.H.F. tubes such as 815, 826, etc. However, some surprising results have been obtained using simple modulated oscillators. Three or four crystal-controlled stations are active and have been very welcome.

Receivers run from 12 tube FM-AM supers to the faithful little one tube superregenerative "swish-box".

Antennas vary from indoor wires of ambiguous lengths pinned to the wall-paper, to the more refined, folded dipoles, "J's" and tubular 1/2 wave doublets.

Any evening on six you will hear "3 ways" and "4 ways" and individual QSO's between Toronto, Hamilton and surrounding points. Don't ask what we talk about but rest assured it is interesting. Old man Polarity is always coming up as a strong argument with neither faction, as yet, giving in to the other. Antenna design is a hot subject. Mobile work by 3ATB, 3AVJ, 3NH, 3ALA, 3DC has been quite interesting and informative.

The band has not been without its anecdotes. VE3AVW was contemplating a pair of angel (?) wings the other night. During a severe thunderstorm, Cec. heard a crackling noise and awoke to find himself surrounded by a halo of corona discharge from the feeders for an unfinished antenna which he had carefully wrapped around his bed to save space! He just up and threw them out the window. Hi! When the gang was down on five the Toronto boys were wondering what had happened to the Hamilton group who just disappeared for ten days last March. Guess we would still be there if VE3TH and VE3ANY hadn't dropped in on VE3KM, Barton-



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ville one day and found them all on six! Rumours had been flying around but nothing definite was known. We were waiting for our R.I. to notify us about the changeover! Not a day goes by without some new development on these formerly lonesome frequencies.

There is some 144 mc. activity and since the good showing the Hamilton Short Wave Club made on that band during the recent Field Day contest, lots more activity is expected. VE3KM had several good W8 contacts up to 75 miles on 144 mc. that day! All R9 too with 15 watts input to an HY75 modulated oscillator.

DX so far has been good during temperature inversion "skip" with the following known score:

VE3ANY—W4FKN
 WOZJB
 WOYUQ
 VE3AVW—WOZJB
 WOYUQ
 VE3AEU—WOZJB

WOYUQ

Heard by W4FKN

Best local DX has been VE3AVW—VE3DC, about 40 miles, and that with 25 watts and no beam!

Well gang, this is a rambling chin-wag. If you are in favour, there may be more. Let the editors know what you think about it and what you know of similar Canadian activity.

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WHILE pouring over ideas for an introduction to RFTN this month, Bill Savage, DCM, of Alberta, comes to our rescue with a fine bit of emergency news, complete with press clippings! An ambulance plane flown from Edmonton to Worm Lake, some 30 miles from Lake La Biche in Alberta's Athabaskan region, encountered an 80 mile-an-hour gale over Lake La Biche on its return flight. Pilot Bob Hunter sensing trouble decided to try an emergency landing on the lake. Such a delicate operation required all the skill he could muster, especially with an ailing passenger, the victim of a heart attack. After numerous attempts, he set the ship down beautifully, but such a sea was running that waves overturned it. Passenger and pilot were pulled from the plane and despatched to the local hospital where examination indicated that no serious complications resulted. The gale had disrupted communications into Edmonton and it was 6PP's turn to add another laurel to the distinguished crown of Ham Radio. Gale had also ripped PP's antenna from its mast but he tied it to a nearby fence and called Edmonton. 6EY answered his QRR and by a stroke of fate was being visited at that very moment by 6AL who is a pilot. AL took matters in hand and arranged for another ship to fly to Lake La Biche and continue operations as originally scheduled. Hats off to VE6PP—Rev. J. E. McGrane, 6EY—Bill Carless, and Spencer Addeman at 6AL, and of course Pilot Bob Hunter.

At last the Old Man of the Mountain rises, stretches, and sends his stentorian voice a-thundering through the canyons of lower Horton Street and all London shudders. He, 3AJE that is—tells us that he awaits reports of AVS' work with XE or CM stations on 40 meter Fone! and that MRS. AJP enters her kitchen at the risk of being electrocuted! That he's just mad with green beuz the AOO's flaunt a shiny new Pontiac in his face wherever he goes, and further that HI will be told how to work ZELJU if he asks TOMOTM. He also can't figure out why GV has to QRT so many times because a dozen kids are clamouring all over his rig, especially when Greasy Vest never explains whose kids they are! Yeh he's even worried about getting DU, ole ARRL's SCM hooked up with a XYL and just to show how nosy he is he reaches all the way down into San Diego, Californi-ay and drags a buck out of W6CRT for a membership in CAROA! Whattaman! Aside to ex-VE4TG: "A man is judged by the company he keeps!" So much for the old scoundrel! From out Vancouver way we learn that ex-IDS will be signing a seven call soon as red tape's satisfied, and that dern BEATTY STREET RAG of Mac McLennan's continues to print the spiciest gags. We pulled the piano out to dust the wall the other day and dang if a whole pile of BSR's didn't plop all over the floor! 7EX is back on the air with a wife and two parasites, long war, eh George? We trust that 7AGP is back on the air again after a tilt with OM Appendicitis. 7UM is giving free advice on how to stay clear of high voltage . . . FLASH! 7JY of 750 Beatty Street, Vancouver, is new DCM of CARO's British Columbia district, D. E. McLennan is the name and he requests us to inform you all that he is volunteering to do the job until an election comes along, pinch-hitting to help us out until, in his own words, someone ties a can to his tail!

7AEZ broke existing six meter local records by working not one, but several W6s-1136 MILES! 8AR is working J's VK, ZL, K6 with 100 watts. 8AJ using new vertical with director getting out FB with 75 watts on 20 fone. 8AK waiting for new SX25. 8AY, a newcomer to the ranks, starts with hefty signal from 813. 8AS uses parallel 813s and works UK-KH. 8AO works out FB on all bands now. 8AM is RCMP at Teslin. HEAR YE! VESAS of Whitehorse, Y.T., is new DCM of North-

west Territories and Yukon. He will be glad to receive reports from the N.W.T. and Y.T. gang for XTAL from now on. Otherwise known as Jack Spall, used to sign 3ER in Toronto. 7AEC is on two meters with 16 element beam and 80 watts! Have an ear for him. 7AKI is on ten meter fone and cw but expects to be in VE6 and on 80 low power by the time this reaches print. 4AFX is back on from Prince Albert after a stint with the forces. 3BKR says that he was operating a continuous field day portable outfit in the Western Desert all during 1941-42! Among other things he lists his ex calls which were 4QS in 1933-34-35-36, 2nd op at G5QN in 1937-8-9, VE5XV in 1945-6 and finally to 3BKR latterly! W9BRD wants another VE/W Contest soon. Much thought is being given that matter, Rod. Look for some dope soon. 3BJA is on from Klotz Lake. From Ponoka, Alberta, comes word that 4AMB is there awaiting a VE6 call. G2IS returns from Ontario's Northland looking healthy and full of six meter ideas for 3QK. 3GT also returns from north country with busted digit. He says he got it scooping grounders in a ball game. We think he should stick to doin' the what-cums-naturally! 1ES wants more gen on our comely Frances. Space wouldn't permit . . . listing all the guys that do! An interesting letter from G5UB tells all about his return trip to England after spending the war years with RNV(W)R. 2RZ is Chief Engineer at CJAD. 2TH who was once known as 3APZ is an announcer at CJAD and conducts a Dude Ranch show on Saturday evenings (plug). 2TM, NW, TN, RM, PM, are recently added members from Quebec. 4AM is active in St. Vital and keeps us genned up on affairs from Manitoba. Still at Kingston is 4LT/3AXR and not in Calgary as recently reported in RFTN. KP4JA is new member from Santurce P. R. Is on ten meter fone and welcomes chats with fellow CAROAers. 3ACL demonstrates to 3CAR that VFO is the one and only way. 3CAR used VFO in ORS Party and worked 152 fellers in 42 sections! W8UZJ comes forth from Parma, Ohio, with FB compliments on ACL's VFO article in May XTAL. So does W8FX from Detroit. This man Nixon is becoming internationally famous! 3AHL works an F8 in Calais on 80! CP edits Frontier bulletin "MIM" . . . 3FW and 3ARB visit 3GG and have heap big rag chew. 3BCO QSPed tlc from 8MQ on Baffin Island to friend half mile from BCO's! 3BCL is back on after convincing a certain couple of nations that they were not so hot! Aside to 3BIJ: "It's XTAL, Al, not XTRAL!" . . . 3YY extends invitation to all interested to visit VE3BFI which is 2nd Divisional Signals station at Toronto at 185 Spadina Avenue any Wednesday or Friday evening. 5EH will be on soon from Berens River working all bands with new call in Manitoba district and hopes 6PP and 6JJ keep the fish stories going! KEEP YOUR DCM POSTED ON ALL YOUR ACTIVITIES. HE'LL WELCOME YOUR SUPPORT AND HELP YOU IN ANY WAY POSSIBLE. CUL, 73, 'TIL NEXT XTAL.

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CALGARY HAMFEST—from page 11

proved that the hand is quicker than the eye and we do mean "hand" because Jim Smalley, 6GD just about lost his keying hand in a trick guillotine!

A rendezvous at the Hotel Bliss on Sunday of all the hams in attendance was the jumping-off point for a trip and picnic in Bowness Park. Sports and 114 mc. demonstrations were the order of the day. Colossal Yegg 6CY's half-ton as anchor man won the tug-of-war for Calgary and words can't explain the intricate workings of the 7UP Contest which was enjoyed by all. Following refreshments the gang began to filter back to the city and the traditional visiting among the various ham shacks.

District Communications Manager Bill Savage of 6EO who attended with XYL and daughter and forwards this report, tells us that everyone had a most enjoyable time and wishes to thank the C.A.R.O.A. for all.

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STATUS QUO—continued from page 6
shall aid in establishing and pro-
claiming a separate all-Canadian
organization to operate under a
constitution similar in tenor to that
of this League; and this League
shall henceforth relinquish all direct
activity in Canada."

It is obvious from the above that no
political problem exists in this connec-
tion and that the door is open for the
CAROA to assume control in Canada.
But let's consider the responsibilities of
our Association if it were suddenly
confronted with the authority to repre-
sent Canada in amateur affairs. It
would need a good-sized staff of cap-
able men working full-time, and an
office of considerable proportions to ac-
commodate them. The staff must be
able to travel to Ottawa, to Hartford,
to meetings of affiliated clubs, abroad
if necessary. Its Directors must attend
regular meetings. A Headquarters sta-
tion must be operated, XTAL published,
votes taken, and so on. Now all this
isn't fantastic; a visit to ARRL Head-
quarters will reveal that even a non-
commercial venture has limitless possi-
bilities if intelligently managed. But
frankly the CAROA is not in this posi-
tion. Its troubles, admittedly, are in the
main financial. Starting with no capi-
tal, it has two sources of revenue; mem-
bership fees, and advertising income
from XTAL. It has unlimited sources
of outgo: EXTAL, which costs 15c per
copy to publish, but which is sold at
10c; a staff of three, which often has
to exist on faith, hope and gratuities;
rent, telephone, agency commissions,
stationery, postage, and so on and so
on. This picture, we believe, will im-
prove from now on, but inevitably it will
take time. We are not begging for
handouts, nor are we expecting miracles,
but we do want and need the support
of every ham in Canada. We want
your memberships, your club news, your
articles for XTAL, and above all, your
support and your patience. If you have
any suggestions for the Association's
management or the conduct of its ac-
tivities it is your right and duty to
communicate them to Headquarters for
consideration by the Executive. Every
effort is being made to expand the
Association's usefulness, but in the
meantime its limitations must be under-
stood.

—VE3ZE

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UNTIL this remarkable series of meters was announced,
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worse headache of trying to "get by" with short-lived instru-
ments of questionable accuracy. Then suddenly the big
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CQ CAR—continued from page 9

Frances around!"—2DR. "Ws were calling "CQ CAR" in closing hours—sounded like small version of SS."—3TB.

After our hard pressed little 807 cooled out and things began to sound natural around HQ, Frances thrust a dainty hand into G2IS's hat (he a welcome visitor) and withdrew 3AXQ—Ken King of Peterboro, that is, therefrom. Ken will be the recipient of the "Hubba Hubba Horror" in the VE3CAR QSO lottery. We have The Canadian General Electric Company to thank for their generous donations which have made it possible to give EVERY contestant a prize. To VE3KE, 3AYE, 3AAG, go a pair of 813s, to the balance of the contestants right down to 3GY's 20 points, who was cooperative enough to forward his log to facilitate contact checking, will have a choice of a single 813 or a pair of 826s. A letter indicating your choice must be in our hands two weeks from mailing of this issue. Toronto hams please pick up yours at Headquarters, 46 St. George, Toronto, Ont.

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D.C. Control Grid Current.....	15 MA
D.C. Screen Grid Volts.....	375
D.C. Screen Grid Current.....	22 MA
Driving Power.....	4.5 Watts
Power Output.....	130 Watts



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Canadian Representative

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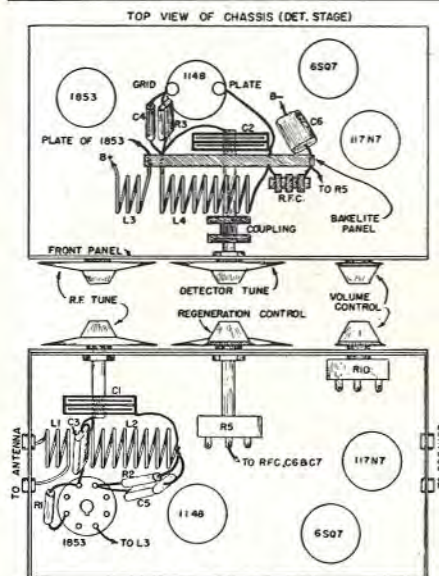
Westinghouse

CANADIAN WESTINGHOUSE
COMPANY LIMITED
HAMILTON CANADA

P.S.—continued from page 7
this sense of achievement will convince even the most anti-social individual that he should get out and meet his fellow hams much oftener. We might also mention that the CAROA has never thought of itself as competing with the local clubs, and intends to see that it never does, as far as social activities go. So we recommend that you pick out one of the clubs listed in every second issue of XTAL and go to it!

6 METER RCVR—from page 8

Ed. Note: On the schematic, there should be a lead connecting the junction of R7 and R9 to the positive side of C12. This will improve the operation by supplying plate voltage to the first three tubes!

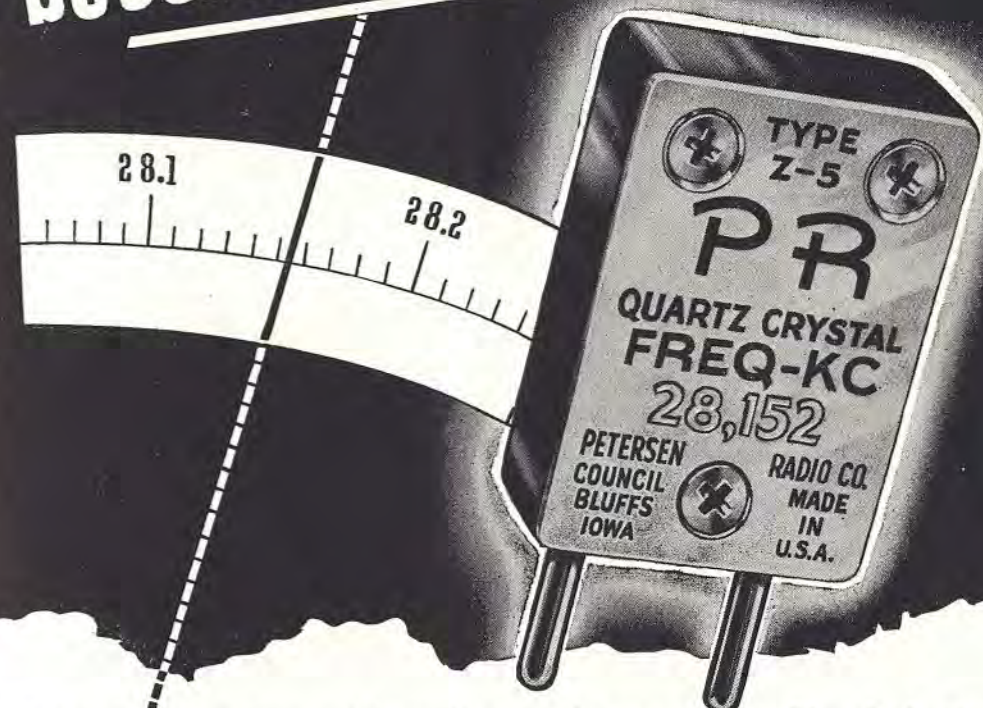


L3. The detector coil and tuning condenser are mounted on a bakelite square on top of the chassis. The R.F. choke and by-pass condenser C6 are also mounted on the same strip directly from the detector tuning condenser. The output transformer T1 is used for lighting the filaments of all the 6.3 volt tubes. The speaker leads are brought out to the rear of the chassis.

Of course, other layouts may be used, but the illustrations show my particular unit which works well at loudspeaker volume.

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KEY KLIK—Continued from page 14

drive wheel of a car which gave very stable performance.

The receivers used were as follows: one SX25 used with a VFO which snagged the boys at their back door, also a S20R and three other home built receivers.

The equipment was housed in three tents and two cars. These locations were inter-connected by a communication system controlled from the generator truck which was Headquarters to tally all QSOs.

The main operational headquarters was housed under a tarpaulin which drew a crowd three times a day giving the Cook General his quota of QRM. Although our 1680 points were not quite up to the mark of our opponents, West Side and Hamilton Clubs, to whom we wish to extend our congratulations, we feel that we did very well and expect to do much better on the next F.D. with new ideas and operating technique.

We gratefully acknowledge the assistance rendered by the following: Mr. A. M. Campbell, Stop No. 25, Kingston Road, Baldwin International Limited, and Canada Wire & Cable Limited.

West Side Radio Club

The ARRL Field Day is over for another year and Amateur Groups from coast to coast are slowly recovering. Everything from the final tank to the x-yl's can opener was thrown into the effort and now, on the one hand we are beset by the O.W.; and on the other by a desire to get back on the air. The stuff slowly turns up, however, so before long our rigs should be perking as of yore.

Around these parts enthusiasm was plentiful. The West Side Radio Club under the able guidance of President Harold McInerney and Vice-president Harold Benson 3HB spent long hours planning the outing down to the last detail. It was decided that the 1939 Field Day site, the Farr farm at Thistle-town, be the scene of activities again this year. An unused eighty foot windmill tower was the main attraction.

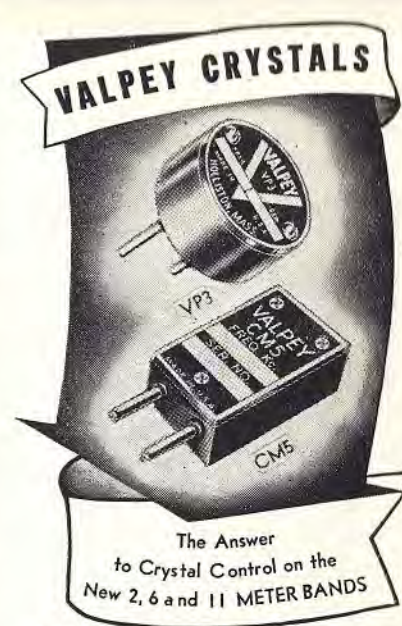
Some of the gang went out the preceding Sunday and erected the ten and eighty meter antennae. The aerial for

ten consisted of half inch aluminium tubing fed in the centre with co-ax and mounted horizontally on the top of the mast. The eighty meter "sky wire" was a half wave doublet centre fed with 75 ohm Amphenol twin feeder. This antenna was stretched between the windmill and a tree on top of a rise some distance away providing an almost perfect flat-top between sixty and seventy feet high.

The main party descended upon the once peaceful countryside on the following Saturday afternoon at one o'clock. (The eighty meter rig was tested in 3AHV's kitchen in the city at that time and several snags were found which delayed its arrival until later. One of the difficulties encountered was the O.W.'s attitude toward mixing radio and culinary matters while a meal was in preparation). A tent each was allotted to the six, ten, and eighty meter rigs and all the surplus man power was engaged upon erecting these while a small party strung out the power lines. The 5 K.W. alternator mounted on a truck was backed into place and much to everyone's amazement started at the touch of the starter button and didn't stop for twenty-six and a half hours. All rigs using the call VE3JJ were on the air when the contest began at 4 p.m.

The eighty meter setup consisted of an 807 driven by an ECO, modulated by class AB1 6L6s on fone; and running at an input of from eighteen to twenty-five watts. The receiver was an NC8IX with a separate antenna for break-in operation. Several monitors and numerous bugs and straight keys were available. To improve regulation and to provide light and comfort for the operators several large lamps and an electric coffee maker completed the installation.

On ten a crystal-controlled rig was used with a 6F6 tritet OSC., a 6F6 doubler, and an 807 final; with 6L6s for modulators and running an input of from twenty-five to twenty-eight watts. The receiver was an NC 101X with a quarter wave matching stub at the receiver terminals to match the low impedance coaxial line to the 400 ohm receiver input. The same antenna was used for transmitting and receiving with a knife switch to effect the changeover. Here again some ballast was placed as a load on the power line to improve regulation.



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6 "	25000 "	27000 "		6.10
11 "	6796.25 "	6863.75 "		3.80
11 "	13592.5 "	13727.5 "		4.75
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The six meter rig was of dubious parentage having been produced by 3AEM at the last minute without warranty. It consisted of the usual super regenerative receiver and a pair of E1148s in parallel as a modulated oscillator. A vertical folded dipole fed with 300 ohm twin feeder was fastened to the top of the tower.

Extremely good results were obtained on eighty. One of the stations contacted in the first hour of operation was a W4 in Virginia on CW with a 579x report. CW was used principally because of the speed of operating and the numerous stations available. The ECO was found indispensable by most operators as was the crystal filter. Two operators were employed at all times—one to keep the log and the other to do the operating. A total of 166 stations were contacted on 3.5 mc. during the contest.

A great shout went up at 0443 hrs. on the Sunday morning, waking up those few who were asleep. For some hours the boys on duty had been searching for some suitable ham to whom they could clear the ARRL message which counts for 25 points if received correctly. After a CQ a reply was received from WIEH/1, no less a person than Warner of ARRL himself. When an R was received for the message a sigh of relief was heard to emanate from the VE3JJ traffic handler.

The ten meter rig proved cantankerous at first but after an all night session VE3AYE got his baby going and on Sunday it worked out fairly well. Phone or CW was used as the conditions prompted and at times difficulty was experienced in getting a contact. This was judged to be the fault of the antenna which it is said was shielded by the windmill. (The writer doesn't agree—sticking it up there was his idea). Next year some of the more ambitious members suggested that the windmill be dismantled and a rotary beam be installed in its place. A total of 41 contacts were made on ten.

The six meter rig provided five contacts and a lot of labour. Hats off to the boys who had the patience to operate it from time to time! A WO was heard on six however which proved of interest to the gang. The best DX contact on this band was made with the friendly competitors at VE3KM.

All power used was generated by the 5KW generator. This was mounted on a

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GET ON THE AIR THE B AND W WAY . . .

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10 mtr.	10 JEL. 22 mmf.	10 JEL. 22 mmf.	10 JCL. 16 mmf. 20 JCL. 20 JVL.	10 BVL. 14 mmf.
20 mtr.	20 JEL. 34 mmf.	20 JEL. 34 mmf.	16 mmf. 21 mmf. 40 JCL. 40 JVL.	20 BVL. 25 mmf.
40 mtr.	40 JEL. 47 mmf.	40 JEL. 47 mmf.	33 mmf. 31 mmf. 80 JCL. 80 JVL.	40 BVL. 29 mmf.
80 mtr.	80 JEL. 60 mmf.	80 JEL. 60 mmf.	53 mmf. 46 mmf.	80 BVL. 46 mmf.

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10 JEL., \$2.07; 20 JEL., \$2.07; 40 JEL., \$2.07; 80 JEL., \$2.07; 10 JCL., \$2.07; 20 JCL., \$2.07; 40 JCL., \$2.07; 80 JCL., \$2.07; 10 BVL., \$2.90; 20 BVL., \$3.00; 40 BVL., \$3.42; 80 BVL., \$3.90.

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Overload Relay L-250—250 ma	\$ 8.60
Overload Relay L-500—500 ma	8.60
Overload Relay X-100—Adjustable 150 to 650 ma	11.50

WRITE FOR HAM SHEET AND SAMPLE Q.S.L. CARDS

CANADIAN ELECTRICAL SUPPLY CO. LTD.
TORONTO - 387 Yonge St. MONTREAL - 285 Craig St. West

truck approximately one hundred yards from the nearest operating tent. Power lines consisting of number eight wire were run to the various positions where good grounds were provided. The excellent regulation and lack of interference were characteristics of this system which may well compare with a Hydro setup. Not the slightest difficulty was experienced and the gasoline motor ran more economically than was anticipated.

A total of 212 contacts were made on the three bands. After dulling all available pencils, wearing out several slide rules and using up all the scratch paper it was computed that 305 points were obtained. With a multiplier of 3 for less than thirty watts and further 3 for a portable source of power the final score was arrived at as being 2745.

It was considered that Field Day 1946 was the best yet in spite of the lack of two of the major bands. The concentration of all the Field Day stations in the one good band lent a spirit of competition which had been lacking in past years. All the gang at VE3JJ expressed satisfaction with this year's contest and look forward to the 1947 "dog-fight."

HAM-ADS

FOR SALE—Ve3AL's portable phone and CW transmitter 80 watt plate and screen modulated RK-20. All power supplies, tubes and microphone. 25 or 60 cycles, ready to go. Rebuilding. 424 Rosemary Road, Toronto — Phone MO. 0464.

WANTED — two Hammarlund MC-355 condensers, suitable for ganging. Hansen, 3BEX, 87 Beachview Cresc., Toronto, phone OX 3975.

SELL pair of 813's for \$17.00 — or swap. Ve3BGY. Phone KENwood 9338.

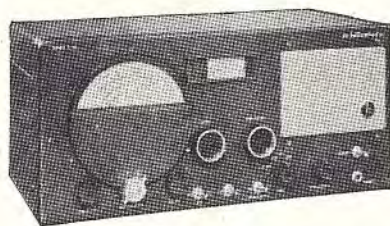
NEW—will sell 810's \$8.00 each—872's \$3.00 each—813 with socket \$13.00. J. L. McKay, Ve1AP, 25 Belmont St., Summerside, P.E.I.

COMPLETE HAM RIG—two tube plug-in exciter, 6L6 tritet 807 amp., SW-3 Rcvr, Freq-Meter. 589 Euclid Ave., Ve3BDM, Toronto; phone ME. 3337.

All correspondence to C.A.R.O.A. should in future be addressed to 46 St. George St., Toronto 5.

HALLICRAFTERS

S-40



S-40

NOW ready for delivery in limited quantities. Place your order for 25 or 60 cycle models.

25 CYCLE—\$147.50

60 CYCLE—\$132.00

FISHER RADIO COMPANY

738 Colborne

London, Ontario



THE NEW S-38's 4 Bands—540 kc. to 32 Mc.

The Model S-38 meets the demand for a truly competent communications receiver in the low price field. Styled in the post-war Hallicrafters pattern and incorporating many of the features found in more expensive models, the S-38 offers performance and appearance far above anything heretofore available in its class. Four tuning bands, CW pitch control adjustable from the front panel, automatic noise limiter, self-contained PM dynamic speaker and "Airodized" steel grille, all mark the S-38 as the new leader among inexpensive communications receivers.

FEATURES

1. Overall frequency range—540 kilocycles to 32 megacycles in 4 bands.
2. Separate electrical band spread dial.
3. Beat frequency oscillator, pitch adjustable from front panel.
4. AM/CW switch. Also turns on automatic volume control in AM position.
5. Standby/receive switch.
6. Automatic noise limiter.
7. Maximum audio output—1.6 watts.
8. Internal PM dynamic speaker mounted in top.
9. Controls arranged for maximum ease of operation.
10. 105-125 volt AC/DC operation. Resistor line cord for 210-250 volt operation available.
11. Speaker/phones switch.

CONTROLS: SPEAKER/PHONES, AM/CW, NOISE LIMITER, TUNING, CW PITCH, BAND SELECTOR, VOLUME, BAND SPREAD, RECEIVE/STANDBY.

EXTERNAL CONNECTIONS: Antenna terminals for doublet or single wire antenna. Ground terminal. Tip jacks for headphones.

PHYSICAL CHARACTERISTICS: Housed in a sturdy steel cabinet. Speaker grille in top is of airodized steel. Chassis cadmium plated.

SIX TUBES: 1—12SA7 converter; 1—12SK7 IF amplifier; 1—12SQ7 second detector, AVC, first audio amplifier; 1—12SQ7 beat frequency oscillator, automatic noise limiter; 1—35L6GT second audio amplifier; 1—35Z5GT rectifier.

OPERATING DATA: The Model S-38 is designed to operate on 105-125 volts AC or DC. A special external resistance line cord can be supplied for operation on 210 to 250 volts AC or DC. Power consumption on 117 volts is 29 watts.



hallicrafters RADIO

THE HALLICTRAFTERS CO., MANUFACTURERS OF RADIO AND ELECTRONIC EQUIPMENT, CHICAGO 16, U. S. A.