XTAL

NOVEMBE
1946
Vol. 7 No.

for the

radio amateur

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232 Benson Ave.,
Toronto 10, Ont.

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THE CANADIAN AMATEUR RADIO OPERATORS' ASSOCIATION
TORONTO, ONTARIO

XTAL

[C R Y S T A L]

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HILITES

shake hands with some old friends at bottom of page 9!

Authorized as second class mail, Post Office Department, Ottawa.

EDITORIAL

. . . leave us not be lids . . .

WE DON'T like to keep complaining about unpleasant subjects, but we have it on reliable authority that off-frequency operation is becoming more commonplace. Reports keep coming in to us from all sections of the country telling of such practices, and there seems little doubt that few of the offenses are accidental. To date, the 20-meter band has been the scene of most of the crimes, and the explanation is not hard to find. Certainly the set-up on this portion of the spectrum is such as to tempt even the most righteous. In the first place, it has always been regarded as our prime DX band, despite the ever-increasing challenge of ten. At the present moment, only half the band is in our hands, and unfortunately it is the middle half, leaving a theoretically empty space 100 kc. wide at each end. In practice, however, the two ends are anything but empty, being cluttered up with every known variety of the species DX, both phone and CW. Under the circumstances, it is not surprising that the hams of North America should fail to see how 14,000-14,100 and 14,300-14,400 could be of any use to the military services of any country in view of the existing QRM, and it is not uplifting to note that a goodly number of the foreign signals are of the GI variety, presumably operating with the permission of the U.S. Government. Further contributing to the general chaos is the domestic QRM in the portion of the band currently open to us, which frequently results in situations where VE6XXX finds himself frustrated by his inability to work a certain PU9 who is himself coming in so clearly, exasperatingly free of any interference. After this condition has prevailed for some time (the boiling point varies with individuals), Old Man Temptation sorta nudges the VFO dial and before you know it, you're working said PU9 with no trouble at all. It's so simple and effective, and other fellows have been heard doing it, so why not? Well, we feel it our duty to tell you why not. Firstly, it's illegal. It's little satisfaction to look at a DX QSL after your license has been removed from the wall. Secondly, the D. of T. is getting wise to the fact that all is not well at times, and the number of offenders spotted is going up. Thirdly, every time you do it you get marked down in somebody else's log as a stinker. Fourthly, defying our regulations is not the best way to further amateur radio in official circles and get us more privileges, and that applies whether the regulations concerned appear just or unjust. And that last reason is why the CAROA is so het up about the subject—we're working for the good of a large number of amateurs, and we don't intend to see our efforts nullified by a morally unconscious minority. That's why we appealed to hams with reasonably accurate frequency-measuring equipment (such as the calibrator out of a No. 19 set) to act as Official Observers. We still feel that this is a problem that can be dealt with by the hams themselves, rather than wait until the D. of T. cleans our house for us. We'd personally like to have a file of "caught-in-the-act calls" here at Headquarters for possible future reference, so if you hear any obvious infractions taking place, let us have the details. It's not just "carrying tales" to do so; on the contrary, it's in your own interests.

—o—

WE have often wondered if some hams get as much fun out of their hobby as they could. For instance, we know of some who have occupied one frequency for so long that it must be worn hollow. Granted, this is their privilege, and in many cases it is the result of geographical, physical or financial limitations, but in others it may possibly be mental inertia. A transmitter which is capable of operating phone and CW on any frequency in our major bands is

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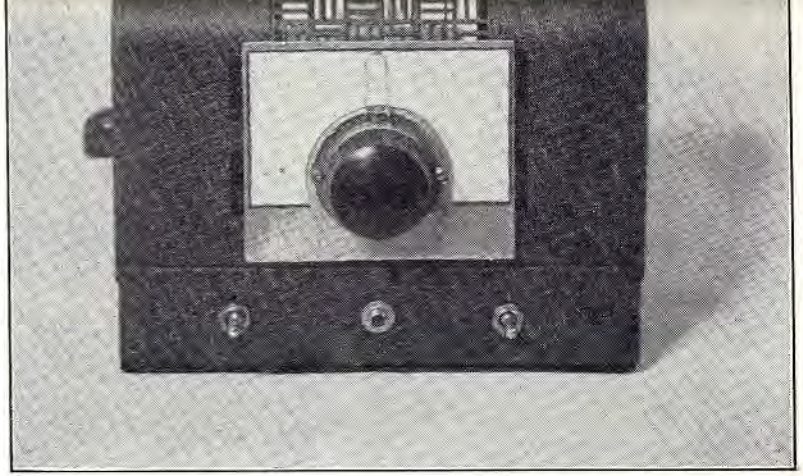


A useful 6 x 10 x 12 inches.

Crystal Substitute

A Variation on the VFO-ECO Theme With Components, Price, and Labour Minimized

By Stan Moir VE3AQB*

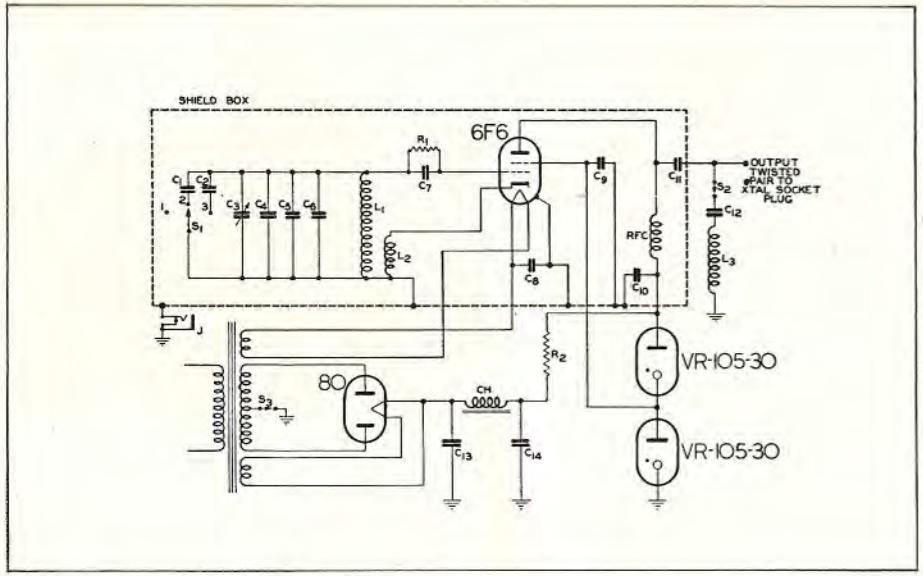
VE3AQB's success on all bands is due in no small part to the unit described in this article. It is simply a substitute for the crystal and is used in conjunction with the regular exciter of any transmitter.

In perhaps a hundred percent of the oscillator stages now in use by VEs, a crystal is used. This gadget, at the author's QTH, is merely plugged into the crystal socket and used at the operating position where QSY is easily accomplished with a twist of the wrist.

The writer claims no originality of design. From files of QST, Radio, and the Handbook the composite baby was born. It is unorthodox in that the doubler coil is untuned just as the circuit in the grid of the erstwhile crystal oscillator. It covers one band, 3.5 to 4 mc. in three sweeps of the dial and the method of keying and the floating chassis were taken from Henry Rice's article in QST of January, 1941. I wanted to simplify the bugaboo of band hopping, so doubling in the exciter was planned. Thus for use on 80 the output of the unit described herein is on 160. The doubler coil, however, is switched in for all other bands.

Built on a Hammond 1442 chassis which measures 6 x 10 x 12, the power transformer, rectifier, and regular tubes are mounted along the rear, along with the doubler coil. The paper electrolytic and bleeder resistor are mounted below deck. From left to right on the lower front are the ON/OFF switch, Key Jack, and Output Change Switch. Everything else is mounted in a small aluminum box which will be noted in the illustrations, with the 6F6 oscillator tube horizontally attached thereto. This small aluminum shield box is resting on sponge rubber (taken from old vibrators) and is grounded through the keying jack. The cover is a Hammond 1452 with canework-like ventilation cut away to fit over the calibration dial which, as may be seen in the photos, is mounted on the shield box with brass standoffs. Protruding from the left of the shield box is a long shaft controlling the bandspread switch. Ample clearance

*92 Elizabeth St., Chatham, Ont.



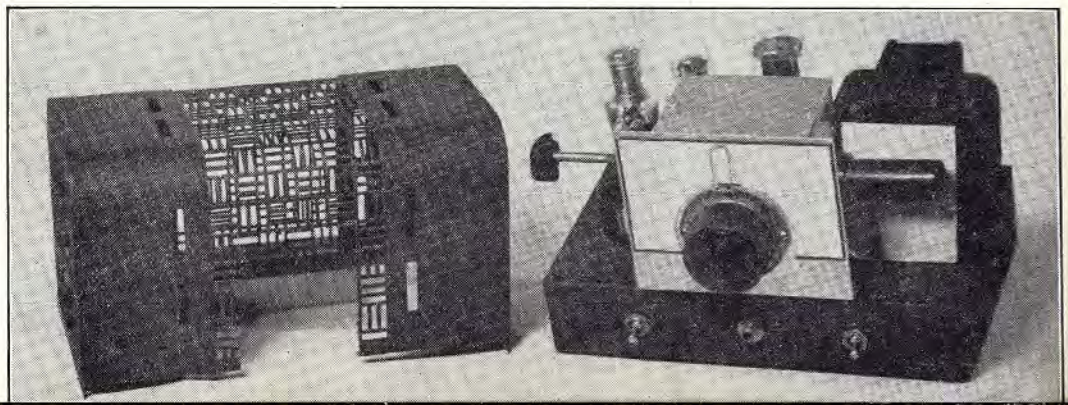
Schematic for Crystal Substitute.

C1—100 mmfd Mica
C2—200 mmfd Mica
C3—100 mmfd Variable
C4—500 mmfd Mica
C5—250 mmfd Mica
C6—120 mmfd (Neg Temp Coef)
C7—100 mmfd Mica
C8—C9—C10—.01 mfd. paper
C11—100 mmfd Mica
C12—.001 mmfd Mica
C13—C14—8 mmfd, 450 volt electrolytic
R1—100.000 ohm ½Watt
R2—2500 ohm 10 Watt
RFC—2.5 mhy RF Choke
CH.—50 Hy 30 ma. Choke (Hammond 156)
T—Power Transformer
240 volt 40 ma.—sec.
5 v and 6.3 v windings (Hammond 270)
J—Closed circuit keying jack
S1—3 position single pole switch
S2, S3—S.P.S.T. toggle switch
L1—26 turns 22 DCC wire on ¾ inch dia. former spaced 1 inch
L2—3 turns DCC wire wound over the first 3 turns of L1
L3—30 turns 24 enamel wire on 1⅜ inch form close wound on octal tube base

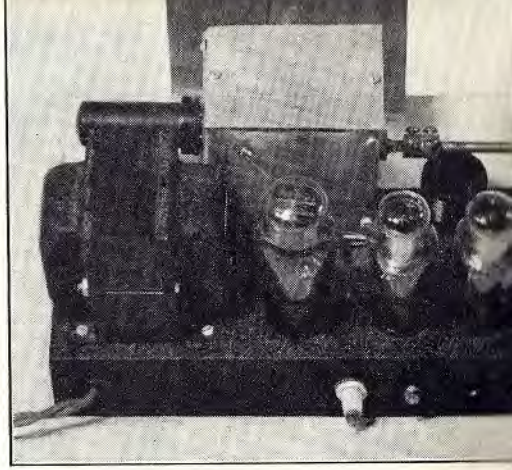
through the side for the shaft should be allowed for free movement.

Very little drive was required, and with always an eye to simplicity we omitted some of the refinements. It should, however, be mentioned that a single-pole, three-position switch with good wiping contacts be utilized. The output plug, which in our case was a little tube base plug, should be marked for proper positioning at the crystal socket of the exciter. Twisted pair will serve as the link. There is plenty of bandspread on Ten and Twenty Meters

Gadget with ventilated cover removed.



Rear view showing placement of parts as described in text.



even though one inductance coil is used. When used on 40, 20, or 10 it has 300 mmfd. more capacity across the grid tank which makes for better stability. Keying at high speed offered no difficulty and was accomplished without chirp. Phone signals were reported steady and in most cases with less drift than crystal control. T9 with CW was always the report.

This unit is in use at 3AQB controlling the 6F6 oscillator on 80, and this in turn drives a 6V6 doubler or quadrupler which drives a 6F6 doubler. The final consists of a pair of 813s.

A word about frequency coverage should be of prime interest. Mica condensers are not always the value in capacity marked on them. It may be necessary to try several inasmuch as C1 is slightly under 100 mmfd. to give band overlap. C2 is made up of two 100 mmfd. condensers in parallel and must be just under 200 mmfd. With S1 in position 1, the gadget tunes from about 4010 Kc. to 3790 Kc. In the position 2, the tuning covers 3660 to 3490 Kc. These frequencies are approximate. The last position covers the 40 and 20 meter bands and a good portion of 10.

The outfit seems to be stable after a 5 minute warm-up and remains thus for 10 minutes. Slight drift may be noted, very slowly for 15 minutes, after which time it settles down and becomes steady. The first drift is from tube warm-up, the second from rectifier tube heat. Elimination of the second drift could be accomplished with insulation such as asbestos placed between the shield box and rectifier tube.

Careful design and wiring will pay dividends. And in closing let us stress the fact that calibration should be done with a frequency standard, only after a long warm-up period.

We're Off!

Received CAROA
Hq. Nov. 1st. 1946

Excerpt from official notice follows:

". . . 7,000-7,300 confined to telegraph and 14,000-14,400 telegraph with restricted telephone privileges 14,150-14,300 kc stop decision to extend present telephone band by 50 kc only will be reviewed before granting next year's licenses stop similar release being made in United States with telephone privileges restricted to 14,200-14,300 kc . . ."

Portable And Convertible

A low power inexspensive portable transmitter and receiver for the wide open spaces

By EV. BROWN, VE3AHV*

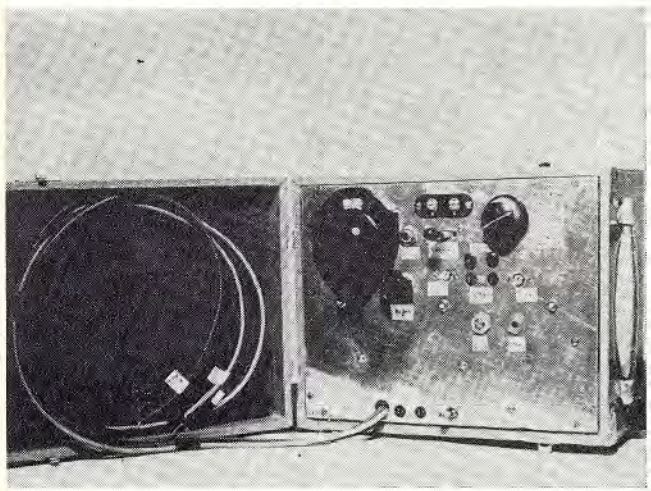
IN EARLY August the writer decided to build a transmitter and receiver capable of working back to the home town from his forthcoming holiday location. The distance involved would be approximately one hundred and forty miles from a point fourteen miles north of Huntsville, Ont., to Toronto. As only two weeks were to elapse before leaving for the cottage some speedy design and construction work was necessary.

A carrying case was found large enough to accommodate a rig ten by seven by four inches. An eighty meter phone and CW transmitter and receiver, operating from batteries, were required to fit into this space. Meter switching, Class B modulation, antenna change-over and multi-stage crystal control together with simple phone-CW and transmit-receive switching were desired.

*—79 Boustead Ave., Toronto, Ont.

In order to reduce the size of components and to simplify the installation the use of twin triodes was investigated. It was found that one such tube would serve well as the R.F. portion of the transmitter, a second as the class B modulator, and a third as a receiver. A single triode was necessary as a speech amplifier. An examination of all battery tubes in the manual disclosed that the required types capable of taking the most power were the 1J6 and 30.

The transmitter and receiver circuits were conventional in every respect and no originality is claimed on their behalf.



Picture does not do justice to this efficiently and compactly constructed portable.

The receiver consisted of a 1J6 as a regenerative detector and audio stage. The output was designed to work into crystal earphones and was found unsuitable for the average magnetic phones. If the latter are to be used a slight modification can be made to eliminate the audio plate choke and condenser and to replace them with the magnetic phones in the B positive lead. Exceedingly smooth regeneration was found on test and some noise was eliminated from the tuning condenser by grounding the rotor through a flexible lead instead of relying on the slip ring contact.

The transmitter R.F. section was similar to one which appeared in QST some years ago. One triode of the 1J6 is used as a crystal oscillator stage and the second triode as a neutralized amplifier. Neutralization was accomplished by observing any tendency toward instability in a communications receiver and tuning the padder until this disappeared. This adjustment was not found to be critical and little tendency for the final to oscillate occurred in any position of the neutralizing condenser.

The antenna links on the receiver and final amplifier coils were wound to load into a half wave doublet fed with sixty feet of Amphenol 75 ohm feeder. The specifications given should be satisfactory in loading most doublets but improvement may be obtained in individual cases by "cut and try" methods.

The speech amplifier and modulator circuit was of straight forward design with the input arranged for one of the new Shure single button carbon microphones recently released by War Assets.

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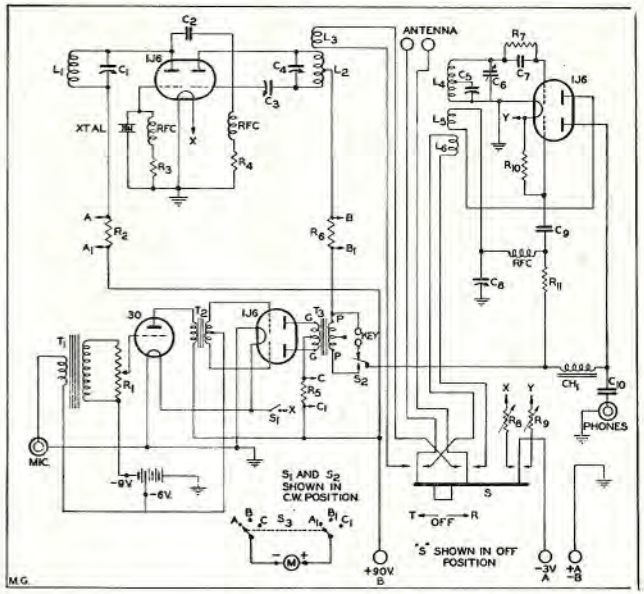

LIST OF PARTS

R1—250 K midget volume control.
R2-R5-R6—30 ohm ½ watt.
R3—10 K ½ watt.
R4—1500 ohm ½ watt.
R7—2 Meg. ohm ½ watt.
R8-R9—10 ohm adjustable 20 watt.
R10—250 K ½ watt.
R11—50 K ½ watt.
T1—Mic. transformer Hammond type 131.
T2—Input transformer Hammond type 135.
T3—Modulation transformer Hammond type 435.
CH1—Audio Choke Hammond type 151.
C1-C4-C5—140 mmfd Hammarlund variable.
C2—.0001 mfd mica.
C3-C6—3-30 mmfd trimmer.
C7—.00025 mfd mica.
C8—100 mmfd. Hammarlund variable.
C9—.001 mfd. mica.
C10—.01 mfd paper.
RFC—2.5 mh RF choke.
S1-S2—Double pole double throw toggle.
S—Federal anti-capacity switch.
S3—Yaxley meter switch.
L1—26 turns no. 26 enamelled wire close wound on ½" dowel.
L2—36 turns no. 26 enamelled center-tapped. Close wound on ¾" dowel.
L3—8 turns wound in center of L2 which is split at tap.
L4—75 turns no. 26 enamelled close wound on ¾" dowel. Tapped 20th turn from ground end.
L5—25 turns no. 26 enamelled close wound on ¾" dowel.
L6—13 turns no. 26 enamelled close wound on ¾" dowel.
Note—L2 and L3 wound on same form with windings spaced ⅛".
L, L5 and L6 wound on same form with windings spaced ⅛".

WHOA!

DON'T TURN THAT PAGE!

Adams is back again with another screamer. Reading Time: 10 mins.

War Assets Special!

By ERIC ADAMS, VE3ALG

ALFRED is one of those guys who believes anything. He came bouncing into the shack the other day to announce that War Assets was selling surplus HRO's for $10.00 each.

"But you've got to buy a case of 813's with each HRO," Alfred said, blinking through thick glasses. "It's all part of a government plan."

"In which case I'd have nothing to do with it," I told him. "Have you ever heard of a government plan that worked out for anybody but the government?"

"They also have surplus signal generators," said Alfred seriously.

"What do you have to buy to get one?" I asked him.

"I'm not sure whether it's a D.F. loop from corvette equipment or a keg of 1-megohm resistors."

"The last part sounds like the government," I told him. "They probably have a building in Ottawa filled with thousands and thousands of kegs of 1-megohm resistors. And with this housing shortage, too!"

For some moments there was silence and I imagine Alfred was thinking of various ways of using 1-megohm resistors. He must have worked out something pretty good because the next thing I knew he was fumbling through my phone book. "I'm going to call them up," Alfred said, "and find out what this is all about."

This will be the showdown, I thought. It will reveal once and for all if War Assets has got any ham stuff and what the score is. I decided to listen with interest.

I won't try to recall the next fifteen minutes. Alfred kept phoning and phoning and I finally gathered he was trying to reach a Mr. Glunk. It was like calling DX, I thought. The chances are slim but you must have to keep at it. Finally he got the right department and someone told him Mr. Glunk was out for lunch which I couldn't quite fathom because it was four-thirty. But during the next ten phone calls Glunk must have come in because the next thing I knew Alfred was talking to him.

"Hello," said Alfred pleasantly. "How soon could you deliver an HRO?"

Glunk apparently told him he had the wrong number and the two of them had quite an argument. Alfred, who is somewhat excitable, kept shouting, "This is War Assets, isn't it?" and Glunk, as I learned later, kept asking for Alfred's Exporters and Importers license number and if he had ever been registered as an enemy alien.

During the rumpus I decided to slip downstairs and listen on the other phone. I knew Alfred would be too excited to remember half of what he'd heard and so I figured a bit of monitoring was in order. When I started listening Alfred was talking.

"Why can't you send me one of those 16,000 HRO's then," he said. His voice sounded kind of hopeless.

Glunk's voice was cheerful and vibrant. "They have to be sold as a unit," he said. "Would you care to buy all of them?"

"That's too many," Alfred said defensively. Mentally I put it down as the understatement of the year.

"Well, buy half then," Glunk said. "You can do that, you know, if you'll take a 100 year option on the other half."

I heard Alfred sigh. "Let's forget the receivers, Mr. Glunk. What have you got that I can buy without taking a truckload?

"Condensers!" said Glunk with great emphasis. "Only this morning we received a special Release Order from the Capacitor Controller at Ottawa."

"All right," said Alfred. "I'll take half a dozen 4 mfd 2000 volt jobs."

"Sorry," said Glunk promptly. "They happen to be rated as a Class 1 Exception. You would have to write to Ottawa and enclose twelve copies of Form 2B."

"Make it 2 mfd," said Alfred heavily. "Anything from 1000 to 1500 volts will do."

"Unfortunately they're covered by a special Restraining Order," Glunk said. "A condenser census will be taken in 1965 to determine their Legitimate Market Value."

"What the heck have you got," said Alfred.

"Do you want any 400-terminal strips?" Glunk asked.

"No," said Alfred.

"What about an apparatus for scrambling speech."

"I can do that now," said Alfred, "with just an ordinary transmitter."

"Could you use a clock that rings a bell and closes a circuit every two minutes?"

"I could use something that closed a circuit on about half a ton of dynamite under your building," said Alfred with some heat.

"Dynamite is rationed," said Glunk. You could tell he'd been through all this before.

There was quite a pause and then Glunk's voice came again. "Do you want a complete transmitter," he said. "They're quarter-kilowatt jobs. Boxed and brand new. You can buy any quantity at $25 each."

"That's the first sensible thing you've said," Alfred told him. His tone was somewhat suspicious.

"We aim to please," said Mr. Glunk mildly.

"What's the nature of these transmitters?" Alfred asked.

"I haven't got that data here," Mr. Glunk said, "but I'm sure you'll find them OK. We sold some quite a while ago and we haven't had a single complaint."

"Do they work on the ham bands?" asked Alfred.

"Why, yes, indeed," Glunk told him. "Otherwise I wouldn't have suggested them to you."

"I doubt that," Alfred said, "but I think you can send me one."

There was the sound of much scribbling. "I have to make out everything in quintuplicate," Mr. Glunk explained pleasantly.

"That's all right," said Alfred, "but don't send me five transmitters."

Alfred's new rig came the other day. He'd told the whole ham neighborhood about it and we were all pretty interested. In fact we even stopped kidding him and were getting ready to admit that he'd scored a bit of a scoop. But as he pried the last board off a big box and pulled off a lot of oiled paper it was a different story. There was the neatest spark rig you've even seen. Complete with rotary gap, all kinds of brass, sliders and tapped coils. It was plainly a relic of the first war, although maybe nobody at War Assets realized it. Maybe nobody at War Assets knew about the First War.

Alfred is a mild guy but what he said can't be repeated here.

"What did you have to buy to get it?" I asked him.

He glared slightly and then said, "Nothing."

"Oh, I thought maybe you had to take a free HRO or something like that," I told him. But Alfred was making such a racket nailing the boards back on that I don't think he heard me.

The 41-Metre Band

THE use for broadcasting of frequencies in the 7 megacycles-per-second (41-metre) band has been questioned in letters to the BBC by amateur radio experimenters in North and South America. They imply that, as this band was allotted exclusively to amateurs, broadcasters had no right to use frequencies within it.

The complainants appear to have overlooked the revised allocations of frequencies made at Cairo in 1939. Under the Madrid regulations of 1932, the whole band from 7,000 kc/s to 7,300 kc/s was reserved exclusively for amateur use, but under the Cairo Conference regulations, which became effective on September 1, 1939, the band from 7,200-7,300 kc/s was shared between amateurs and broadcasting.

While, therefore, the BBC is justified in using these frequencies for its broad-

QSY to page 30

C A R O A
NATIONAL REPORT

VE1

DCM—R. J. Hesler, VE1KS, Sackville, N.B.—The L.A.R.C. members and some friends had the pleasure of meeting Mr. and Mrs. E. P. Tilton W1HDQ at the home of FL and AYL. New calls in the St. John area are: QL, RQ, RR, AO, VB and VD. IL is active on 80 CW. IZ and FC have fone operation on 3824 Kc/s with 807 running 50 watts. RS is back on the air waves. GX is rebuilding his rig. GP has hibernated on 20 fone and Athens Greece is right in the path of his new beam. LI is active on 80 CW over the week-ends. IE chats nightly with 2XA who was formerly known as 1BF. FC while on the way home with a large box under his arm, stopped and stood looking for a place for his antennae when his landlady asked if he were catching pigeons at six cents per (Note, there is a war on pigeons in St. John). KK is on ten all of the time, as his XYL who has received her call (VE1MY—Mammy Yokum!) is not permitted phone operation on other bands. ID is working dx on 75 at 4.30 a.m. every morning and MA is doing the same. MA has a new ten meter beam under construction and is now running 200 watts on 75 with 812's. FG has 813's going strong on 75 and 20. IM is busy picking apples when not hunting with KU or EA. Several deer were bagged by BC and ID on the opening day of the hunting season. DY and LG spent a few days at the LG hunting camp and hunting the elusive deer. BW has been too busy lately for much operation but expects to be on soon with 300 watts. CT is a new phone station at Clementsport and sounds fb. GH is still rebuilding and is very busy lately trying to produce some cover pix for XTAL. ES has a new Millen exciter. IS has left Sackville and has headed for VE3 land. QF puts one of the most consistant phone sigs around the Maritimes on 75 but is too lazy to put his fb rig on 20 as he claims there are too many tuned circuits. HV and his XYL spent a week-end at KS in October. Where is MZ these past few months? LH has a new RME-45 and DB-20. LG lost a modulation transformer on his new Meissner xmtr and is having difficulties obtaining a new one. JW is putting a nice signal around on 75. HV worked his first Aussie on 20 during the first part of October. TP in Truro has 250 watts on 75 fone.

73 fer nw gang and please keep up the good work on sending in reports.

VE2

DCM—C. W. Skarstedt, VE2DR, Montreal, Que.—Your reporter apologizes most humbly for prolonged silence, but you know: business, writer's cramp AND silence from all you chaps; almost! 2AO with a perpetual smile who slides around the countryside aplenty has supplied some useful ham chatter. Watch out XTAL!! 2II, editor of local club's "SKYWIRE" is turning out a swell sheet. AFB op too who carries more skeds than all the rest of the lads put together. A quick QRX on the 80 fone band (Canuck sect.) reminds one of a Peace Conference session! Surely gang, the other guy can't be that bad. Foreign mails suggest that 2LQ and 2DF (Mont Joli and Quebec City) are the dx champs. It's whispered 2SA will soon put up a new folded diaper. 2BE and 2BG cheat the 20 fone QRM by working tandem and doing right well too, VK's, etc. Judging from the last club meeting the CW men will get about .01% of each band if the fonies (is that the correct plural?) get their way. Now when the last of the corn is harvested how about letting us have some over the air, 2GH and 2FR. They are the O.T. Lachute brothers. 2QA, 2DD and the little lad, 2HE are still burning holes in the 80 fone band. The local French "net" isn't doing too badly either. 2BY and 2HV prove that QRP fone work is still possible. 2HF got himself a swell Army rcvr and is now tinkering with rotating beams; 2DR, next door neighbour, almost, is soon moving to the Lake Shore, reason obvious. The Hull gang is a real treat to the QSL Manager; take a bow 2SD, 2GP, 2RA and nearby 2GA. Local AFARS CW net finally got underway with 2PZ, 2FG, 2XX, 2MU, 2AX, 2SM and 2DR being active members. But listen fellows, many, many more ops required to put this over the top. Drop us a line and we'll let you have the details. 2VL, 20 fone and CW, snatched VS7ES. (The QSL Mgr. has already been offered 10 bucks for the card!) 2IL claims 40 dx is good. What brand are you drinking, OM? 2GB at Joliette makes a pair of 812's really hum. 2UU hails from the wilds of Lake St. John District. So do 2DV and 2OE. How's the Ouananiche, fellows? 2UV took portable to mountains and ended up digging a well. Well, well. 2DY plus 2NR, 2BB, 2FG and 2XN (nice fist newcomer) put Lachine on the map. 2UR helping 2XX doing same at Dorval. 2KF and 2PQ at Victoriaville joined the CAROA. 2JO and 2DO push out plenty of RF on 20 CW. Good ol' 10 has a constant local following lead by 2JJ. The dx harvest at times is quite good. 2XA at St. Therese knows how to use a bug. Now, gang, if you want the other chaps to know what you are doing, how about dropping me a line sometime. Reports will be more consistent if you do—I promise! And one more thing, I need a few good ops to help me out with the Canuck tfc net. A few words on a piece of paper will reach me at 3821 Girouard Ave., Montreal 28.

VE3

DCM—R. C. Hunt, VE3WX, London, Ont.—ATR looking for traffic 3538-3734-3602. QB on 10-20-40-80 fone and cw Dx-ZS4H, HB9AW and couple VKs. Says lot of QSLs on file for gang. FP spoke to Frontier Club on FM. BZ too busy with chickens (feathered) to attend club. OI has new rotary. CP has his rig on air with hay wire antenna. In charge of Cadet signallers. Wonder who teaches them code. WA sporting a new car and looking for an invisible antenna. AEP-XG and QL have new beams erected. BGF had visit from 4TG. CP is looking for members of a phone traffic net. Any phone men interested please QSO Tom. BLE reports doings of Leamington boys. Says TM rebuilding again. TT reports via radio. ASR has army type 19 set. BHU reports via radio. AGT has trouble with harmonics. BFP at Western U on P.G. course. Ex VE4ABC. BJT having code troubles. BGW has a new lot of QSL cards. HI getting his throat retreaded in preparation for Winter DX. BEV can you climb that 65-footer Hobbs. QT an oldtimer who will be with us again soon. QK his six watts sounds like 600 down here. BDX WAC on 20 and 10 this summer. BKM, AOR, DC, BHX, XZ, AND, BFF, ARM, and KM are on six meters from Hamilton. AOO and AJP competing with WX on low end of 80. GB still waiting for his Signal Squirter. DU on seven mc also 14 and 28 mc. NI Jim back on air. Peterboro Club starting code practise sessions and instructions for beginners. The Eastern Canada phone gang had a field day QSOing a VO that strayed into the phone band. WX finally has an antenna perking on 80 fellows so will be looking for reports via radio on 3506-3523-3529 and sundry other frequencies. If its only a card detailing activities it will be welcome. Have some C.T. appointments to make and will welcome applications for T.R.S., etc.

UD has already wrkd VK's with his fb 50 watter and is still looking for more, (the hog) on 20, when he has time. YZ was welcomed back on when he poked his nose out of his hole on 20 with an 813, imagine tt, but he claims no one can hear him, with that signal—WOW (now I'll tell one). AML was on ten fone but must of fallen into an open manhole, anyway he ain't on now! BCD, BCN, BDY, ZZ, JA, LC, BLM and across the banks of the beautiful Ottawa River we have 2TT, GP, SD, GA, RA, XE are all active on ten fone, and their neighbour's set working roundtables, when they aren't out with a net trying to catch that elusive ten meter DX. LC has a beautiful double rack all-band rig using PP813's (no bugs) and is really getting out on ten with his four element (pardon) rotary beam. BCD is "contemplating" rebuilding! What are you keeping those 35T's for Alf.? BCN has one of those AR88s, and swears by and at it—so's LC. JA up in Braeside about 45 miles, is working and being hrd regularly in Ottawa by the boys on TEN FONE! What do you think of that you two and six meter addicts? BCO is wrking DX by the bushel with his "V" beams abt 300 feet on a leg, whew, and his brother KE is giving him stiff competition without the beams. BDX is swatting 600W around on 20 with his bug.

We have a new ham in Belleville, Doug. Vanderwater, VE3BLY, running 50 watts on 40 mtr CW. XQ has a new job in Ottawa. He just completed putting up two 70 ft. masts, and now has to leave them behind. Local hams are all wondering how they would look in their respective back yards, HI. AJS and AAJ have been bitten by the six meter bug, and are planning a visit to AZV at Oshawa, to be sure of getting started on the right foot. RW tried to grind some xtals for 20 m, but out of three tries only got one to work. AOP plans to get going with a T55 on 75 mtrs, but a trip to the hospital has slowed him up temporarily. AAR has moved his QTH to Stirling, Ont., and has a swell spot for a skywire. ADJ is rebuilding for all bands. EG has rejoined the R.C.A.F. and is taking a course at Clinton, Ont. BJE, PH, FI, ALU, have six mtrs Transceivers which work fb for local Rag chews and PH, BJE and BGI took our rigs to one of the local mines here and BJE and ALU went underground 2,900 ft. to see if the six mtrs rigs would work from there to the top but we found out they would not work—that is we got no signal from surface and the rigs on the surface got no signal from us underground. The rigs work OK underground from joint to joint. To enable the members of "A" Flight of the West Toronto Squadron to become better acquainted personally it was decided to hold a dinner and general rag-chew meeting on the night of Monday, October 7. Arrangements were made by Art Ferguson, 3HP, that we should eat at the Stoodleigh Restaurant on King St. (plug!) and then adjourn to the home of Keith Russell, 3AL, for the balance of the evening. After a delicious chicken dinner which was gobbled down by the hungry mob we made our way to our rendezvous at 3AL's and sat down to a good old bull session. The members present were: AL, BC, HP, GN, ADR, AEM, AVA, AZA, BCC and the West Toronto Auxiliary Squadron Controller, AHV. Unfortunately AYE and our original Flight Leader, AAG were not able to attend but were toasted in absentia. Pro's and Con's of the organization were discussed and considerable enthusiasm was shown for the coming season's activities. It was reported by the Chief Controller, AL, that membership certificates were now available and would be issued to members without delay. The Transcontinental Trunk Line has been changed to operate on 7250 kc. instead of 3625 kc. as it has been decided that the higher frequency will be better. This trunk will open on October 20. During the evening we all were put "on the air" over AL when a short but enjoyable contact was had with "Steve" Stevens, 3BFX, in Ottawa. The matter of a phone net was discussed and it was decided that such a net would be put into operation as soon as there were sufficient applications. The number of members in the CW net is growing all the time and we may soon have to start a second flight. More out-of-town stations would make these net meetings much more interesting and it is hoped that hams will take sufficient interest in this activity to come in with us. The session wound up around midnight and the boys headed for home to hit the hay or work some late dx. Thanks is expressed to HP and AL for their fine co-operation in making our first gathering such a success. CUL. What, no TFC reports?

VE6

DCM—W. C. Savage, VE6EO, Lethbridge, Alta.—SW is now putting a good sig. down to Chancellor, why? EL is going to move into new qth with two 50 ft. antenna poles. Camrose Amateur Opr. Club is putting on a dinner in honor of Pop Langbell who got his ham ticket. He is to be presented with a bug by BW. NF now has his antenna working, Hi. TY should soon be on the air. TK is back in Calgary and is on ten mtrs. AW has sold his rig and is through with ham radio. Sez him. His XYL has other ideas. FK just about burns up his modulation transformer when his excitation failed. KK is radio service man for C.P.A. IX is putting out a good fone sig. with batteries and gets three geese on his early morning shoot. TM is working on 20 mtrs with a broken beam, Hi. KI going big guns on 80 CW (pr. 813). DA is active on 80 CW. JJ is active on 20 phone. NA is postman. He should know where to deliver the boys' QSL cards. Hi. VS is building a new F.B. xmtr. LJ is installing a commercial job in Medicine Hat. OD is very busy with a vfo and also fixing up his house. OG is busy putting up new antenna masts for 5KW job. (Commercial Hi). Don't be alarmed boys. MN is still pumping out R.F. on 20 mtrs. and working some nice DX. XX has a 75 fone rig going now. HZ is busy with stamp collecting in between QSOs. LQ has new job now as architect and building Supt. for Edmonton public school. LA is heard on ten mtr. fone going big guns. EV is busy putting up a ten mtr. rotary, the wrong thing rotated, a piece of angle iron he was drilling swung around and hit him above the eye. AA has a new rotary beam but is having trouble feeding it. IC is busy building up and E.C.O. driver unit.

VE7

DCM—D. E. McLennan, VE7JY, Vancouver, B.C.—ADL is going strong at the airport here, working plenty of stuff on 75 meter fone. Keeps a regular sked with the boys at the coast when he's not on shift for the D.O.T. ADH is on 75 meter fone, and has hopes for a high power rig shortly, having collected a pair of 813's. However, please don't mention R.M.E. receivers, he's liable to blow his top. We've seen two up here, and both are lemons, including ADH's. FG, an oldtimer around here works all bands. We hear Doc calling plenty of DX on twenty, then hear him on 75 meter fone. AEV is plenty active on 80 meter CW. LI is not active these days, but probably will be in the near future. ex-5CP has visions of ham days again in between repairing "juke boxes." Has just purchased a Hallicrafters SX-28-A and a Panadaptor. Also has his eye on a factory-built rig. Says he's through with building his own. DV is on 75 fone and 80 CW, now and again. Has an 813 in the final.

VE8

DCM—Jack Spall, VE8AS, Whitehorse, Y.T.—From Whitehorse gang. AY has new HQ 129X coming up and hopes to be able to work all the DX that calls him. Has added SM, PA, ON, D, GM to his ever-growing list of DX. AN returned to town for a few days before GG on holidays.

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HEADQUARTERS HAPPENINGS

WE HAVE AN EMBLEM. The task of choosing a design for the Association emblem has at last been discharged to our satisfaction, and we hope to yours. Alongside we are presenting a preview of the winning entry.

It is the brain child of F. C. Symonds, VE3WT, who, like several dozen other loyal hams across the country, devoted a great deal of time and effort to the problem, and we were very happy indeed to present him with an 813 as a token of our appreciation. The Executive felt that his design came closest to meeting the obvious specifications, namely, originality, simplicity, "eye appeal", and a certain amount of symbolism. CAROA is prominently displayed on the radio symbol for a crystal, illustrating the manner in which XTAL acts as the Association's medium. The central design is enclosed in an eight-sided figure, representing the CAROA's affiliation with the eight Canadian call districts. Another feature which we had to keep in mind was the adaptability of our ultimate selection for conversion into lapel buttons, rings, etc. We feel that VE3WT's design will lend itself admirably to this purpose, and in fact we have already made arrangements to have a quantity of lapel pins manufactured. They will sell at the reasonable price of seventy-five cents each, and will be sterling silver with the crystal embossed in red. Orders will now be accepted, but delivery cannot be made until around the end of December. . . . Our sincere thanks go to the large number of hams who took the trouble to submit entries. Most of them were commendable to say the least, but in the final analysis certain flaws became apparent. For example, several designs filled every requirement but unfortunately buttons made from them would have to sell at a price running into several dollars, and this appeared to us to be ample reason for disqualification. . . . We hope you will like our new emblem. Look for it often in XTAL, on stationery, and wherever hams congregate.

VE3CAR AGAIN ACTIVE. By the time this issue of XTAL reaches you, we have every expectation that our Headquarters station will be on the air again. Credit for this goes to VE3HC of Guelph (see inside front cover) from whence has come, on indefinite loan, a very handsome transmitter of approximately 100 watts rating. Designed primarily for 75 and 20 phone, it uses a 41 crystal oscillator, 41 doubler (used on 20 only) and an 804 in the final. 6L6's in Class AB do the modulating. VE3QK will see to it that VE3CAR is kept on the air, so look for the station on 80, 40 and 20 CW as well as 75 and 20 phone. . . . We shall try to arrange operating schedules in time for publication in the December issue. . . . The Association, needless to say, is more than a little grateful to Fred, Len and Ken Hammond for their assistance in putting the voice of Canadian amateur radio back on the air.

CODE CLASSES. We have been taken to task for our failure to implement our 1945 promise to inaugurate code classes for beginners. We must admit that due to the pressure of more urgent affairs we have not been able to undertake this program. However, code classes are a vital factor in assisting hams-to-be in getting their licenses, and we would respectfully suggest to those local radio clubs who don't hold classes already that they get a series under way this fall. We would also like to have information from club secretaries as to dates and times for publication in XTAL. Those interested in having code practice should contact their

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DEAR OM

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

BLITZKRIEGED ON4GN

Niagara Falls, Ont.
1991 Carlton Ave.

I am enclosing a snap of ON4GN's former Qra, in Tournai. This is what the Germans did to him when they went through Belgium in 1940. On the back of the snap is written, in French: Qra of ON4GN, destroyed in 1940 by the boches.

As you can see, they made a mess of his house. All his equipment was destroyed and, in fact, almost all his wordly possessions. Fortunately, he and his family escaped into the south of France, where they remained until the end of the war. I received a letter from ON4GN a month or so ago, and he is itching to get back on the air, but is prevented from doing so on account of the scarcity of ham gear and the high prices of the little that can be obtained. He would like to hear from any VE ham who has used equipment to sell. His present QRA is: Bustave Leclercq, II Chaussée deLannoy, Froyennes, Hainaut, Belgique. You will have to write in French, boys, although his daughter understands a little English. I have also heard from ON4ZY; he didn't fare too bad during the war, but says he is through forever with ham radio. Hmmmmmm!

Harold Jolliff, VE3IG

Phone For Ex-Servicemen

4553 W. 12 Ave., Vancouver, B.C.
Editor XTAL:

Who are these Official Quarters that think the ex-serviceman should be given the restricted bands? You tell them to make the regulations read one year's compulsory CW and one year of ten meter phone before Class A privileges are granted. The restricted bands should remain restricted and not open to the plea that you are an ex-serviceman. . . . Do what you like with this letter but please

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CLUB DIRECTORY

CAROA urges Secretaries of Amateur Radio Clubs not listed below to notify the Editor so that details may be included in a future issue of Xtal.

A.F.H.Q. A.R.C., Ottawa, Ont., W. J. Yeo, 3BFL, Room 3145, Lisgar Bldg.

Les Amateurs Canadiens Francais de la T.S.F., Montreal; Georges Forest, 2EU, 6325 St. Denis St.

Annapolis Valley A.R.C., Berwick, N.S., A. S. Watters, 1FG, Union St.

B.C.A.R.A., Vancouver; Fred Taylor, 7HA, 221-11th St., New Westminster.

Cdn. Lakehead Wireless Experimenters, Ft. William; Ray Greer, 720 South Norah St.

Central Radio Club, Toronto; L. J. Kerswell, 48 Vermont Ave.

Clinton A.R.C., Clinton, Ont., 3BER; T. A. Prest, 4MX, R.C.A.F. School.

Dawson Creek A.R.C., B.C., Stan Carnell, 7ALG, Box 1143.

East Kootenay A.R.C., Cranbrook, B.C., J. G. Graham, ex-5NB.

Frontier Radio Club, Windsor, Ont., G. D. Wood, 3AEP, 327 Ouelette St.

Halifax A.R.C., Ed. MacLaughlin, 1JH, 78 Harvard St.

Hamilton A.R.C., C. O. Mogk, 3AXV, 37 East 12th St.

Intercity A.R.A., London-St. Thomas, Geo. Sanders, 3QC, 671 Dundas St., London.

Key Klix Klub, see Toronto Amateur Radio Club.

Kirkland Lake A.R. League, Ted Barker, 3ALU, 7 Baron St.

Kitchener-Waterloo R.A.C., Kitchener, Ont. E. S. Stickney, 3QW, 183 King St., N., Waterloo.

Loyalist City A.R.C., Saint John, N.B.

Montreal A.R.C., S. J. Chapman, 2LV, 4711 Earnscliffe Ave.

Newfoundland A.R.A., St. John's, Derek Marshall, Box 660.

North Shore Radio Club, Whitby-Oshawa, Ted Brant, 3ADD, Box 427, Whitby.

Ottawa A.R.T.A., Ottawa, Ont.

Point Grey A.R.C., Vancouver, D. E. McLennan, 7JY, 780 Beatty St.

Progressive A.R.C., Fred Hammond, 3HC, Guelph, Ont.

R.C.N.A.R.C., 1HQ, Halifax, N.S., L. W. Holmes, 3HV, H.M.C. Signal School.

Royal City A.R.A., New Westminster, Fred Taylor, 7HA, 221-11th St.

St. Maurice Valley A.R.A., Trois Rivieres, Que., C. E. Robert, Ptre., 1729 Boulevard des Forges.

Sarnia A.R.O.C., G. E. Hare, ex-3MW, 291 Queen Street.

Scarboro A.R.C., K. H. Tripp, 160 Scarboro Cres., Scarboro Bluffs.

So. Alberta A.R.C., L. Merriman, 6VR, c/o CJOC, Lethbridge.

South Shore Wireless Ass'n., St. Lambert, P.Q., F. W. Grant, 2BI, 333 Mercille Ave., Montreal 23.

Thousand Is. A.R.A., Brockville, Ont., H. Fairbourn, 3WG, 176 Pearl South.

Toronto Amateur Radio Club, (formerly Key Klix Klub), Sid Prior, 11 Cedar Ave.

Totem A.R.C., Vancouver, B.C.

U of B.C.A.R.O.A., Vancouver, Ralph Gordon, 6150 Carnarvon St.

Vancouver A.R.C., Tom Grant, 4535 West 9th Ave.

Victoria S.W.C., David Scholes, 7DY, 1614 Pinewood Ave.

West End A.R.C., Vancouver, B.C

West Side Radio Club, Toronto. Ev. Brown, 3AHV, 79 Boustead Ave.

Winnipeg A.R.C., G. G. Williams, 4SO. 234 Sackville St.

Wireless Ass'n of Ont., Toronto; Art. Potts, 3MT, 33 Haddington Ave.

Yukon A.R.C., Whitehorse, Y.T., W. R. Williamson, 8AK, Box 137.

ARRL QSL BUREAU

For the convenience of American and Canadian amateurs, the League maintains a QSL-card distributing system which operates through volunteer "District QSL Managers" in each call area. To secure such foreign cards as may be received for you, send your district manager a standard No. 10 stamped self-addressed envelope. If you have reason to expect a considerable number of cards, put on an extra stamp so that it has a total of six cents postage. Your own name and address go in the customary place on the face, and your station call should be printed prominently in the upper left-hand corner. If you have held other calls in previous years, submit an envelope for each such call to the proper manager—there are many thousands of uncalled-for cards in the files. All incoming cards are routed by Hq. to the home district of the call shown in the address. Therefore, cards for portable operation in other districts should be obtained from the home-district manager.

W1 — Jules T. Steiger, W1BGY, 231 Meadow St., Willimansett, Mass.
W2 — Henry W. Yahnel, W2SN, Lake Ave., Helmetta, N.J.
W3 — Maurice W. Downs, W3WU, 1311 Sheridan St., N. W., Washington 11, D. C.
W4 — Edward J. Collins, W4MS, 1215 North 12th Ave., Pensacola, Fla.
W5 — L. W. May Jr., W5AJG, 9428 Hobart St., Dallas 18, Texas.
W6 — Horace R. Greer, W6TI, 414 Fairmont Ave., Oakland, Calif.
W7 — Frank E. Pratt, W7DXZ, 5023 S. Ferry St., Tacoma, Wash.
W8 — Fred W. Allen, W8AER, 1959 Riverside Dr., Dayton 5, Ohio.
W9 — F. Claude Moore, W9HLF, 1024 Henrietta St., Pekin, Ill.
W0 — Alva A. Smith, W9DMA, 238 East Main St., Caledonia, Minn.
VE1 — VE1FQ will resume service soon.
VE2 — C. W. Skarstedt, VE2DR, 3821 Girouard Ave., Montreal 28, P.Q.
VE3 — W. Bert Knowles, VE3QB, Lanark, Ont.
VE4 — C. J. Campbell, VE4CC, 276 Ash St., Winnipeg, Manitoba.
VE6 — W. R. Savage, VE6EO, 329 15th St. North, Lethbridge, Alta.
VE7 — H. R. Hough, VE7HR, 1785 Emerson St., Victoria, B.C.
VE8 — Yukon A. R. C., P.O. Box 268, Whitehorse, Y.T.
K4, KP4 — E. W. Mayer, KP4KD, P.O. Box 1061, San Juan, P. R.
K5, KZ5 — Signal Officer, KZ5AA, Quarry Heights, Canal Zone.
K7, KL7 — J. W. McKinley, KL7CK, Box 1533, Juneau, Alaska.

DEAR OM—from page 18

see that we have something to work for in the future, namely, restricted phone bands.

ex-Cpl. Ernie Savage, VE7FB.

403 Water St.,
Peterborough, Ontario

Editor XTAL:

I have just re-read the Editorial in September XTAL and am taking the liberty of writing you my opinion on the subjects under discusison.

It seems to me that the entire issue revolves around the proposal to open a section of the present 40 meter CW band to phone operation and that the special privileges to servicemen are merely a sideline as it were to this proposal. Being a CW man myself and one who works 40 CW over 50% of my total operating time, I object to the allocation of any of the 7000 to 7300 mc. band to phone stations regardless of the Class of license they hold. However it seems unlikely that any objections we CW men have to phone in this band, will mean anything. Therefore let's do all we can to keep stations other than Class A out of the phone section when it is finally allocated. Our present 40 CW band is terribly crowded when conditions are good as it is without the addition of QRM from improperly operated phone stations. It would seem to me that it would be to the advantage of the phone men themselves to allow only Class A operation to reduce QRM in what is going to be probably our worst QRM'ed phone band.

As for the special privileges to servicemen, let us strike any thought of this off the record. True, they did a great deal to make ham radio possible again but I believe they are quite willing to learn the code, study theory, and take the same chances of flunking the amateur examination as the rest of us did or will have to do. After all, part of being proud to be a "ham" is the fact that it was necessary to pass an examination to become one.

Ken King VE3AXQ

Vivian, Manitoba

Editor XTAL:

Just finished reading September issue of XTAL which caught up to me here and I felt I should back you up in re-

gard to service personnel getting phone privileges without taking code. Now I am on my way out of the Air Force and during my time in service was a wireless mechanic and feel I could take care of a phone rig, but at the same time I do not feel that getting an amateur license should be made any easier, I still have to get up my code before I can apply for a license and fully intend to get it in the not too far distant future. It is true that there are many fellows that would be good conscientious hams if they got their license that way but at same time there would be many that would take advantage of the privilege for their own use and not keep up to Amateur rules, whereas if one has to make an effort to get in as getting up the code etc. then one has more respect for the rules.

If these service personnel are to get phone privileges why not restrict them to Service Networks such as AFARS. They would necessarily have to join such a Network to get phone privileges.

About the suggestions for phone on 40 meters, I cannot say as I have no experience in operating but at same time I will be sorry to see one good CW band broken up. I would rather see 80 meter phones extended as CW on 80 could use 40 just as easy in my opinion.

Glad to see you are planning to issue logs and QSL cards, good idea. Also glad to see that XTAL will be coming more on time.

I believe Canadian Amateurs should have their own league to speak for them but I think it should be approached slowly as I do not believe Canadian Amateurs are united enough yet to get action on their decisions.

Thanks for a swell magazine.

73, Norman Simon

Official Observers

Chilliwack, B.C.

Editor XTAL:

The enclosed resolution (copy) has been sent to Vancouver Radio Clubs for action:

Resolved:

1. That each Amateur Radio Club appoint a Monitoring station in their area (one for each band) to check on off-frequency operation and/or regulations.

2. That the Monitoring stations send a postcard to the station involved stating all data, on first offense.

QSY to page 29

CODE—from page 16

nearest radio club to let it be known that the interest exists. . . . A directory of radio clubs will be found elsewhere in this issue. . . . Most Canadian hams are also in a position to take advantage of the advanced code practice broadcast by W1AW on a regular schedule as follows: every night Monday through Friday, at 10 p.m. EST. Speeds are 15, 20, 25, 30 and 35 wpm. (approximately ten minutes at each speed) and transmissions are radiated simultaneously on 3555, 14150 and 28060 kc.

REGULATIONS. In the course of our recent survey, we received numerous letters stressing the need for revision of our regulations, particularly with respect to Class A phone. This view that it should be made tougher rather than easier to get on phone, further evidenced by the decision not to open the new forty meter band (proposed) to unrestricted telephony, has resulted in the Association going on record in favour of a Class A examination similar to that conducted in the States. We understand that a review of amateur regulations is contemplated before our licenses come up for renewal next spring and some action may be taken at that time. . . . Stricter regulations are bound to result eventually in a higher standard of operation, and the nature of our hobby makes it inevitable that we progress in this direction. As the number of amateurs increases, our skill and technical knowledge must keep pace, serving as a firm foundation for the care, courtesy and common sense that was never more necessary than at the present time if we are to derive the maximum usefulness from our available frequencies. Think what 70,000 spark transmitters would sound like on 80 meters!

ERRATA

ON page 15, October XTAL, the diagram of Spence Soanes' Beam Indicator, the 2-Leaf type microswitches show in the "open" position, the drawing should read "normally closed."

EDWARDS Radio and Appliance ad on page 39, October, too, says 8 cases of equipment come with the 19 set—Should read "7 cases." Sorry!

PORTABLE—from page 11

The modulation transformer is a standard 1:1 audio intended to match PP plates to PP grids. The primary and secondary windings were reversed in the event that the manufacturer had wound the plate winding with larger wire, thereby reducing the voltage drop to the final amplifier. A double pole double throw switch (S1 and S2) was arranged to provide a simple phone-CW control. In the CW position the filament lead to the audio section is opened and the key is inserted to short the modulation transformer secondary and make and break the final high voltage. In the phone position the key is isolated, high voltage is applied through the modulation transformer to the final and filament voltage is supplied to the speech amplifier and modulator. As a push-to-talk switch on the microphone opens the microphone circuit when released, no provision had to be made to eliminate the mike current.

Two-volt tubes were used and it was necessary to provide some means of limiting the filament voltage from the three-volt source with the load varying in the three operating positions—phone-CW and receive. A compromise was effected in the transmitter where a resistor (R8) is adjusted with the rig on CW to give a filament voltage of 2.2 volts. On fone the voltage was found to drop to 1.8 volts and this variation was found to be quite satisfactory in practice. The receiver filament voltage was adjusted to give just 2.0 volts by adjusting R9.

Transmit-Receive switching is accomplished by the low capacity switch (S). This is arranged to change over the doublet antenna connections and the filament supplies.

All components were chosen where possible, for their small size. Coils were wound on ½" and ¾" wooden dowels with a single mounting screw fastening them to the panel. The variable condensers were of the midget Hammarlund variety designed to mount inside a standard 1½"-inch coil form. The transmitter condensers have slotted shafts while the rest are fitted with knobs. The audio gain control is a miniature item, about ⅝ of an inch across, with set-screw control. As no room could be found for a meter on the front panel it was decided that a small analyzer would serve this purpose and also be available in case of trouble. Meter connections were therefore provided on the front panel.

When completed the rig was given a functional test in the city. It was found that the receiver coils and the transmitter antenna link coil required pruning. This was done and good band spread coverage and satisfactory antenna loading resulted with the coil specifications given. When using a pair of sensitive phones the receiver volume was found to be more than adequate. The transmitter was carefully checked for any sign of frequency modulation, spurious radiation or any other undesirable effect and none were found. Tuning up was accomplished in the usual way by merely "dipping" the plate current. Owing to the low power and voltages used it was found that some insensitive crystals refused to oscillate. The use of reasonably active crystals is therefore a necessity.

On arriving at the holiday QTH a serious lack of trees was noted. It was found necessary to take to the tall timber, chop down a tree, drag it back to the scene of activity and erect it like a telephone pole. The antenna was erected about twenty feet in the air after a lot of hard work.

The first QSO was with Toronto two hours and forty-five minutes after arriving at the cottage. A 579x report was received and skeds were arranged. During the course of the following two weeks sunspot conditions made the band very poor. In spite of this, skeds were kept every night with reports ranging from 459x to 599x. QSOs with W8s and W2s were commonplace while reports of 589x were not uncommon. When conditions were good phone contacts with Toronto proved reliable except when QRM was heavy. The best DX was a VE1 in Halifax and a W9 in Iowa.

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O. O.—from page 26

3. If the station is heard again—a second notice is mailed to the station owner.

4. If the station still continues to break regulations the Radio Inspector will be notified by the Amateur Official Monitoring station.

CAROA can assist us to keep our bands in Amateur condition and cleaner operin Amateur condition and to promote cleaner operating habits on the part of all stations.

73 Wilf Moorhouse VE7US

EDITORIAL—from page 6

capable of providing entertainment at almost any hour of the day or night. If you're a DX man who lives on twenty, you may not be aware of the fact that you can work out on forty as well, and if you're the patient fisherman type, you might even enjoy lying in wait for a G or a PA on eighty CW. If the 75 meter phone band is dead, chances are that 20 isn't. If you're tired talking to W2's and you live in a big city, try ten after dark and converse with some of your comparative neighbours and swap antenna dope. We particularly pity those who have never tried a given band because their transmitter or receiver doesn't include that range. This may involve some work, and you might even have to erect a more efficient antenna, but on the other hand you don't need a kilowatt and the biggest beam in town to get a kick out of ham radio. If there is a band you have scorned up to now—try it for a week. You might like it!

—o—

41 METER—from page 13

casting services, it naturally does not wish to interfere with the activities of amateurs, and will always seek to avoid such interference by choosing frequencies in other broadcasting bands when these are suitable and available.

As solar activity is now increasing, the BBC expects to be able to maintain its services to the Americas during the next few years without recourse to the 41-metre band, thus reducing to a minimum interference with amateur activity.

—o—

National—from page 15

Lucky guy. AK returned to post at D.O.T. here and AJ left for the outside for needed rest. BB had hard luck getting out from river boat due to generator noise. BF, another newcomer to hamdom. AG sticks to 75 fone. F/Sgt. Cliff Staples, an ex-VE3, awaits his new VE8 call. Yours truly still qrt while building ham shack. From the Teslin gang this month comes word that AL on 75 fone and trying to get on 40 and 20. AZ is awaiting receiver. AP hopes to be on soon. AI just back from vacation will be on all bands running 125 watts. We hope that next month some of the boys over in N.W.T. will send in some info on their doings. BC is now in Bear Creek, Dawson, Y.T. CUL.

COVER SHOT

Eric Adams' speed graphic caught VE3AAG grappling with an R9 problem.

HAM-ADS

SELL—Carter Genemotor, hardly used. Input 6V. Output 250V at 50 ma. $12.00 or offers. Also Deluxe Model Mac Speed Key, in good condition, with case, for $8.00.—3BEF, A. W. Smith, Dungannon, Ont.

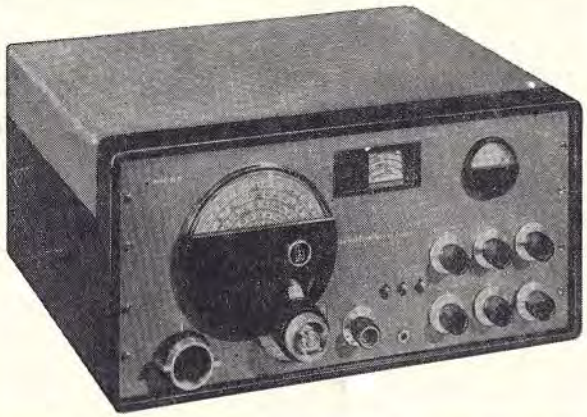
SELL—Pair GE 814's, new condition, $10.00; 1140R transformer, $3.00. Ship C.O.D.—H. A. Walker, Parkside, Sask.

SWAP—Brand new 813 or pair of 211's for a 500 volt 200 ma. plate transformer.—87 Annette St., Toronto, LY. 9148.

SELL—10 tube receiver, hardly used, covers from 80 to 10 meters, 1 stage of RF and 2 of IF. All new parts used throughout. $80.00.—107 Mackay Ave., Toronto, KE. 3368.

WANTED—200 ma. filter choke and receiver covering up to 14 mc band. Urgent. —Steve Chisholm, 5 Clydebourne Ave., Woodroffe, (Ottawa), Ont.

Help the Handicapped to Help Themselves. 21 fine Christmas cards, assorted, with or without scripture text, $1.00 postpaid. VE3AWI (handicapped) Box 474, Goderich, Ont.



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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.
   Band 1—540 to 1650 kc.
   Band 2—1.65 to 5 Mc.
   Band 3—5 to 14.5 Mc.
   Band 4—13.5 to 32 Mc.
   Adequate overlap is provided at the ends of all bands.
2. Main tuning dial accurately calibrated.
3. Separate electrical band spread dial.
4. Beat frequency oscillator, pitch adjustable from front panel.
5. AM/CW switch. Also turns on automatic volume control in AM position.
6. Standby/receive switch.
7. Automatic noise limiter.
8. Maximum audio output—1.6 watts.
9. Internal PM dynamic speaker mounted in top.
10. Controls arranged for maximum ease of operation.
11. 105-125 volt AC/DC operation. Resistor line cord for 210-250 volt operation available.
12. 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 HALLICRAFTERS CO., MANUFACTURERS OF RADIO AND ELECTRONIC EQUIPMENT, CHICAGO 16, U. S. A.