XTAL

for the

radio amateur

OCTOBER
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XTAL
[C R Y S T A L]

OCTOBER **1946**
VOL. VII **VOL. 7, NO. 8**

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THE CANADIAN AMATEUR RADIO OPERATORS' ASSOCIATION

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HILITES

- Cover shot is by Eric Adams, VE3ALG whose prowess with key, camera, and pen is not new to XTAL readers.
- Brock Morgan's 20 meter beam article on page 10 is a natural for the two-element school of thought.
- We always liked the idea of impressing people with gadgets in our shack. So, we asked our good neighbor Spence Soanes at 46 to give us a story on the most intriguing one we've seen for many a DX moon. When you get to page 14 you'll see what we mean!

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

EDITORIAL

. . . of frequencies and other things . . .

A LOT of our time was taken up during the past week by the little chore of tabulating the results of our recent survey regarding Canadian phone-cw allocations. Our labour yielded some very interesting results, but before going into detail, a little recapitulation might do no harm.

The frequencies question first reared its head when the ARRL Board of Directors passed several resolutions at its meeting last May. Of prime interest to Canadian amateurs were those which altered the pre-war phone assignments. The 3900-4000 band was expanded to 3850-4000; to replace the loss of 160 meters 7200-7300 was assigned to phone and opened to Class B (unrestricted) licensees; the twenty meter phone band was doubled in size (14200-14400) and moved to the high-frequency end from its old position in the centre; and the ten-meter phone section was narrowed to 28500-29700. Inasmuch as the 75 and 10 meter changes were put into effect immediately, we concluded that the FCC does not care how the bands are divided internally, and that their ratification of these ARRL recommendations was automatic. It seems safe to assume therefore that when 40 and 20 are returned to us in their entirety, probably before the end of this year, the 7200-7300 and 14200-14400 proposals will immediately take effect. In that case, the pre-war Canadian allocation on twenty of 14100-14300 will require immediate revision, unless we are to be banned from 100 kc. that is open to U.S. phone. In addition, half our extra privileges on 80 have been removed, and we have an entirely new forty meter band to consider. So the present semed like a good time to take stock and stir up a little thought on the matter.

The first item that required investigation was the way in which our operation divides itself between phone and cw. It was interesting to note that 59.6% of the voters operate some CW and some phone, while 28.6% stick to CW exclusively and 11.8% never leave the microphone. Taking all ballots into consideration, the amateurs of- Canada would appear to spend 56.3% of their time at the key and 43.7% at the mike. In other words, the balance of power is not as overwhelmingly in the favour of the CW man as it perhaps was ten years ago.

Before getting down to the individual frequencies preferred, we wanted to find out whether the boys thought that the forty meter phone band should be opened to unrestricted operation. The answer here was definitely no, 80.2% of the voters declaring that it should be regarded as Class A, with two years' previous experience a prerequisite; and 19.8% being in favour of no restrictions.

Looking first at 75 meters, we find opinion overwhelmingly in favour of extra phone privileges, only 16.6% registering their opposition by voting for 3850-4000. A slight majority was recorded in favour of 50 kc. as opposed to 100, with 46.7% of the total approving 3800-4000 and 36.7% preferring 3750-4000. A Canadian phone band extending from 3775 to 4000 kc. might represent a reaonable compromise.

On forty, the feeling appears to be that the loss of 100 kc. (or one-third of the band) is severe enough as far as the CW operators are concerned without giving up any more merely to help VE phones avoid the W QRM. 41.7% voted for 7200-7300, 27.3% for 7150-7300, and 11.4% for 7100-7300. There was also a very strong sentiment in favour of no

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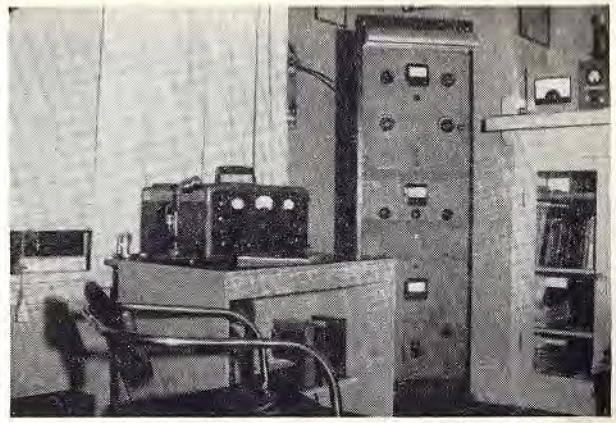
•VE7US



PEAK LIMITING SPEECH AMPLIFIER

Automatic Volume Compression For Amateur or P.A. Use

By Wilf. Moorhouse, VE7US*

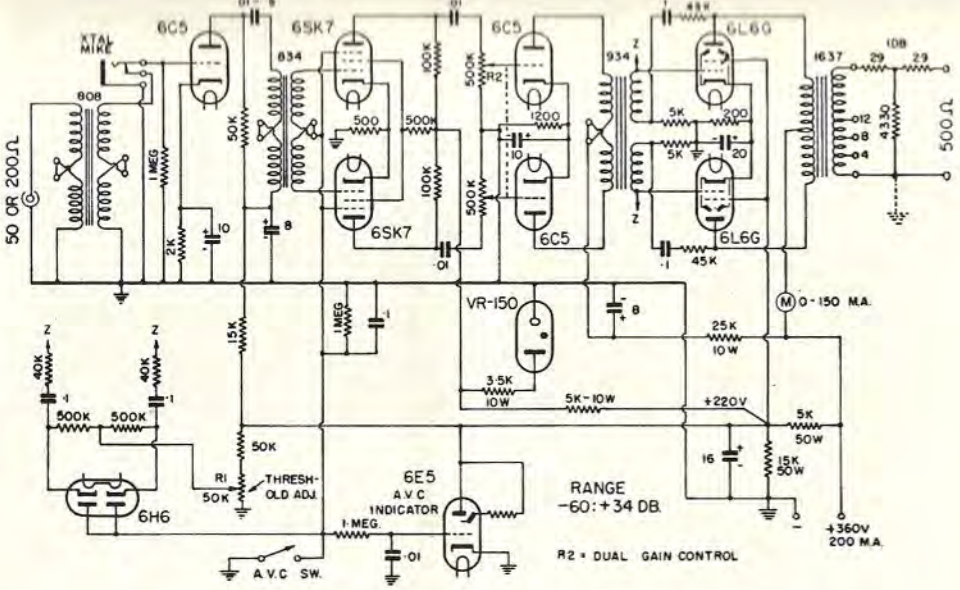
ANY evening on any band (except forty, and perhaps even there soon) the subject of phone quality is good for at least an hour and thirty-seven minutes of intensive but good-natured argument. On the one hand, the exponents of "communications quality" contend that high fidelity is not only undesirable but constitutes a source of unnecessary QRM; while the wide-range boys maintain that their equipment results in a better-sounding and better-performing transmitter, thereby raising the prestige of their station (and that of amateur radio in general) among other hams and BCL's alike. Both sides undoubtedly have some justification for their statements. There is no question that excessive bass response lessens intelligibility under adverse reception conditions, and that modulating a carrier with frequencies up to seven or eight thousand cycles does widen the bandwidth beyond the need for speech work and thus creates additional interference. On the other hand, an amplifier designed purely for voice, without regard to frequency response, may actually defeat its primary purpose if the response is not reasonably flat. Under such conditions (which are probably all too common), it is quite possible to be modulating 100% at 2500 cycles and only 75% at 1000 cycles. In consequence, the average percentage of modulation is lowered, and intelligibility drops along with it. In these circumstances, automatic gain control is no solution, since the variation in frequency is too rapid for practical time constants to keep pace.

*Electronic Services, Chilliwack, B.C.

The solution to this problem in the writer's case was the speech amplifier shown in the accompanying schematic. Transformer-coupled throughout, it was intentionally designed to have a response that is flat within ½db. from 40 to 12000 cycles, partly because it was slated for some PA use and partly to avoid unwanted peaks as described above. This is especially the same unit as appeared under the same heading is QST for May, 1944, but several modifications have been added since that time which improve its performance materially. Besides retaining such features as gain compression, inverse feedback, and push-pull output, the following changes have been found to add to its overall usefulness:

1. The a.f. voltage is now fed to the cathodes of the 6H6 a.g.c. rectifier. This provides better a.f. isolation and reduces contact potential effects.

2. A 6E5 "magic eye" tube has been



SCHEMATIC OF THE PEAK-LIMITING AMPLIFIER

Associated with each transformer is the Hammond catalogue number. Note that both feedback condensers from the 6L6G plates should be .1 mfd. Also voltage at screens of 6L6G's should be 270 not 220 as shown.

added so that the a.g.c. action can be visually adjusted for maximum effectiveness.

3. The power supply has been removed from the amplifier chassis, resulting in lower hum level. It also helps to make the unit more portable by decreasing the weight.

4. The first stage has been removed and the gain restored by connecting the limiters as pentodes. The a.g.c. voltage is applied to both control and suppressor grids.

It will be seen from the schematic that the maximum flexibility has been built into the amplifier; the input provides for 50 or 200 ohms as well as a high-impedance crystal microphone. The 6L6G's operating in Class AB1 are capable of delivering 20 watts (after deducting a few watts for transformer losses etc.) into the 500 ohm line, making the unit highly useful as a small PA amplifier. Used in conjunction with a Class B stage, it will modulate a transmitter operating at the legal maximum input, or can be employed in high-power PA applications. For amateur use, the frequency range can be limited to 150-3500 cycles by conventional methods at the modulator end of the 500 ohm line, thus assuring flat response over the speech frequencies, combined with extremely low distortion.

The peak-limiting circuit is one of the most important features of the unit. When used in conjunction with a ham transmitter, it is an invaluable aid in preventing over-modulation, and at the same time raises the average molulation percentage to a marked degree. When employed as the basis for a public address system, an amplifier with compression often reduces the number of speakers required for a given job by ensuring that each one is working up to its maximum capabiliay at all times. Adjustment of the a.g.c. circuit is quite simple, and is done as follows:

1. Turn the gain control fully off and apply a signal to the input jack. The 6E5 eye tube should not show any effect; if it does, the signal level is too high and must be attenuated by either a fixed or variable pad.—60 db. is the strongest signal that can be handled without overloading the limiter grids.

2. With the threshold control off (potentiometer arm at the end opposite ground), turn up the gain control until the desired output is obtained (in the case of a Class B modulator, until it modulates the transmitter 100%). The threshold control is then rotated until some decrease in output is noted, or until the eye closes half way. Under these conditions about 90% modulation can be expected. Now advance the gain until the eye closes right up on speech peaks, indicating roughly 5 db. of compression. The gain control can now be left alone with the knowledge that talking away from the mike will modulate well up, and yet it will be almost impossible to exceed 95% modulation with high levels of input. In fact, even more compression can be employed by turning the gain up still further until distortion occurs; this represents the limit of compression that can be used.

No constructional details need be given, since this can be left up to the discretion of the individual builder, but the author has found it convenient to use the Collins style of mounting, with the tubes horizontal, sockets away from the front panel, thus placing all wiring at the rear where it is accessible without removing the unit from the rack. An ordinary chassis can be used, supported from the front panel with heavy brackets. The usual bottom cover then becomes the rear cover.

At this point it might be well to repeat what was said earlier: build your speech amplifier to have a flat response and lots of gain, then limit the range at both extremes, add peak limiting, and you'll have a signal that is pleasing to listen to, both from the point of view of quality and bandwidth. At least, that's the way it's worked out at VE7US.

—□—

"QVE" VE7

NO envelopes for the following 7th District stations. Please forward self-addressed, stamped envelope imme-

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"Q V E"

(Attention All VE Operators)

FOR WESTERN CANADA HAMS ONLY

•When applying for membership in the CAROA, either new or renewal, we would greatly appreciate having both your old and your new calls, provided of course, that it has been changed as a result of the new call areas. The call letters are a vital part of our records, and your co-operation will help prevent the issuance of an expiry notice to one call while the same member is listed as paid up under another.

SHUT-INS

•An Honourary Membership in the Association (including subscription to XTAL) will be given free of charge to any Canadian shut-in who is interested in radio. It is not necessary that a license be held. If you qualify, drop a line to 46 St. George St., Toronto 5, Ontario.

N. B.

•We regret to announce that the MARCH, 1946, issue of XTAL is now unavailable, as our reserve stock is exhausted For this reason we are not able to fill more requests for copies of this issue.

DX QSLS

• All prewar cards not applied for by January 1st, 1947, will be disposed of at that time, by order of ARRL's Board of Directors. Look at July QST's page 31.

Submit your envelope, self-addressed and stamped, to your local QSL manager now!

VE3OI's "turkey roost" in action.

OPERATION "TURKEY ROOST"

A Twenty Meter Beam With Practically No Tears At All !

By Brock Morgan, VE3OI*

THE writer, like many other hams in this country, is staunchly of the opinion that the twenty-meter band offers more in the way of variety and entertainment than any of our other allocations. However, without any desire to launch an argument as to the relative merits of our various frequencies, let it merely be said that he got fed up trying to elbow his way through the post-war QRM with only 125 watts to the 80-meter half-wave antenna formerly used on that band, and finally became desparate enough to take action. The result of the next few weeks' labor saw the ten-meter beam torn down and replaced by a 2-element close-spaced 20-meter rotary, and the improvement on 14 mc. is so gratifying that the recipe used is worthy of consideration by everyone interested in that particular band. Without exaggeration, 98% of all reports are now R9 to R9 plus 60 db., and even though the beam may be electrically unorthodox and somewhat haywire, it's results that count.

*Belle River, Ontario

The first consideration in the construction of such a beam is the element material, which should of course be self-suporting. A search turned up some 1¼" aluminum tubing, of the type that was left over from the War Effort and which is being used by a number of amateurs. This particular size was frowned upon at first, as it was somewhat larger in diameter than ordinary, but it proved almost as easy to work with and has shown exceptional ability to resist high winds. This problem solved, the next question was how to rotate the unit. In order to obtain 360 degrees of rotation with the least expense and difficulty, it was decided to abandon any thought of locating the suporting mast at any distance, a step which would automatically entail the use of such items as a reversible motor, position indicators, wiring, switches etc. The method which finally won the nod provided for a small wooden tower mounted over the ridge of the gable or dormer in which the shack is located. In this way, the shaft of the rotary comes right down into the room and is turned manually, and in practice this system has proved entirely practical and only slightly less convenient than the motor-driven type. The shaft, incidentally, is a piece of ½" galvanized water pipe which serves as a hollow conductor for the transmission line.

The type of feed to be employed is something else that requires a decision before going too far with any plans. In our case, various methods were considered before settling on link coupling from the final tank to a small tuning unit mounted right at the centre of the driven element. This tuning unit is of waterproofed wood construction, and inside, on 2" stand-offs, is mounted a coil consisting of 16 turns of hard-drawn copper wire (with ⅛" spacing between turns) on a 2½" diameter form. The tuning condenser is made up of three aluminum plates (see sketch) mounted on the same stand-offs with metal bases to eliminate can be moved by means of a piece of bakelite rod. A pair of feed-through insulators are mounted on each side of the tuner box to serve on the one hand as connectors for the co-ax cable coming from the final tank, and on the other for the two twelve inch lengths of copper tubing which link the tuning unit to the antenna proper.

After the framework is built and the elements mounted on it by means of 3" stand-offs (with metal bases to eliminate cracking), the problem of adjusting the elements for length can be disposed of by the simple expedient of a "hairpin" of copper tubing (actually ¼" automobile oil line, 24 inches long) inserted at the middle of each element. In the final assembly this was only used in the parasitic element, the tuning of the excited dipole being done by means of the two 12" copper rods referred to above, which also serve to couple to the tuning box. In both cases, the tubing is adjusted by sliding it through small holes in the ends of the element sections; additional holes are drilled and tapped for set screws to lock the stubs in their final position. In the case of the driven element, a spit porcelain cleat attached to the wooden member provides additional support for the tuning rods (Fig 1).

The antenna can be fed adequately by means of 70-ohm Twinex or co-axial cable, although some heating was observed with the former and the co-ax is currently in use at VE3OI. While there is some mismatch due to the low impedance of the antenna, it is not of sufficient magnitude to affect the performance materially. Tuning is done with the aid of a 0-1 RF ammeter (thermocouple type) clipped across about five inches of the hairpin in the parasitic element. The coupling box is slid up and down first to obtain maximum reading and locked in place, then the hairpin stub in the

Fig. 3. Tower construction. Note the funnel to keep rain on the outside.

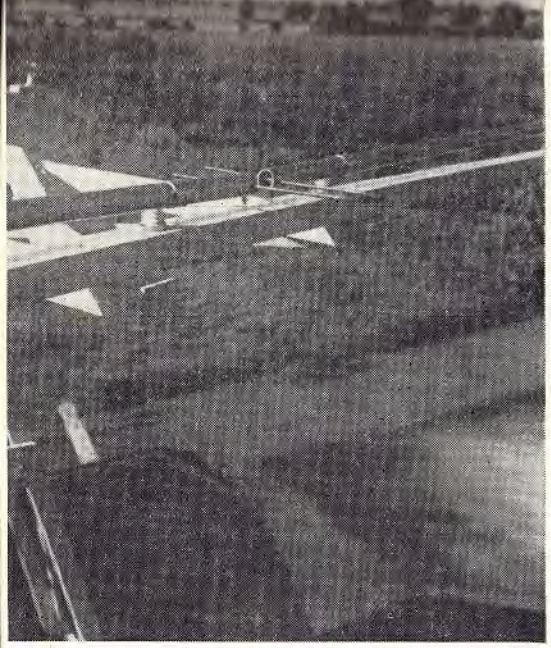


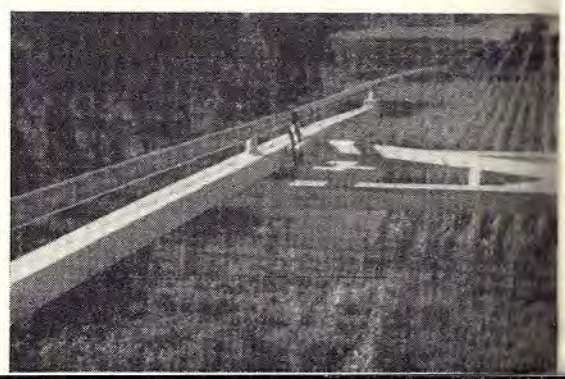
Fig. 2. The "hairpin" at the center of the parasitic element is pictured. This is a simple and effective method of adjusting length.

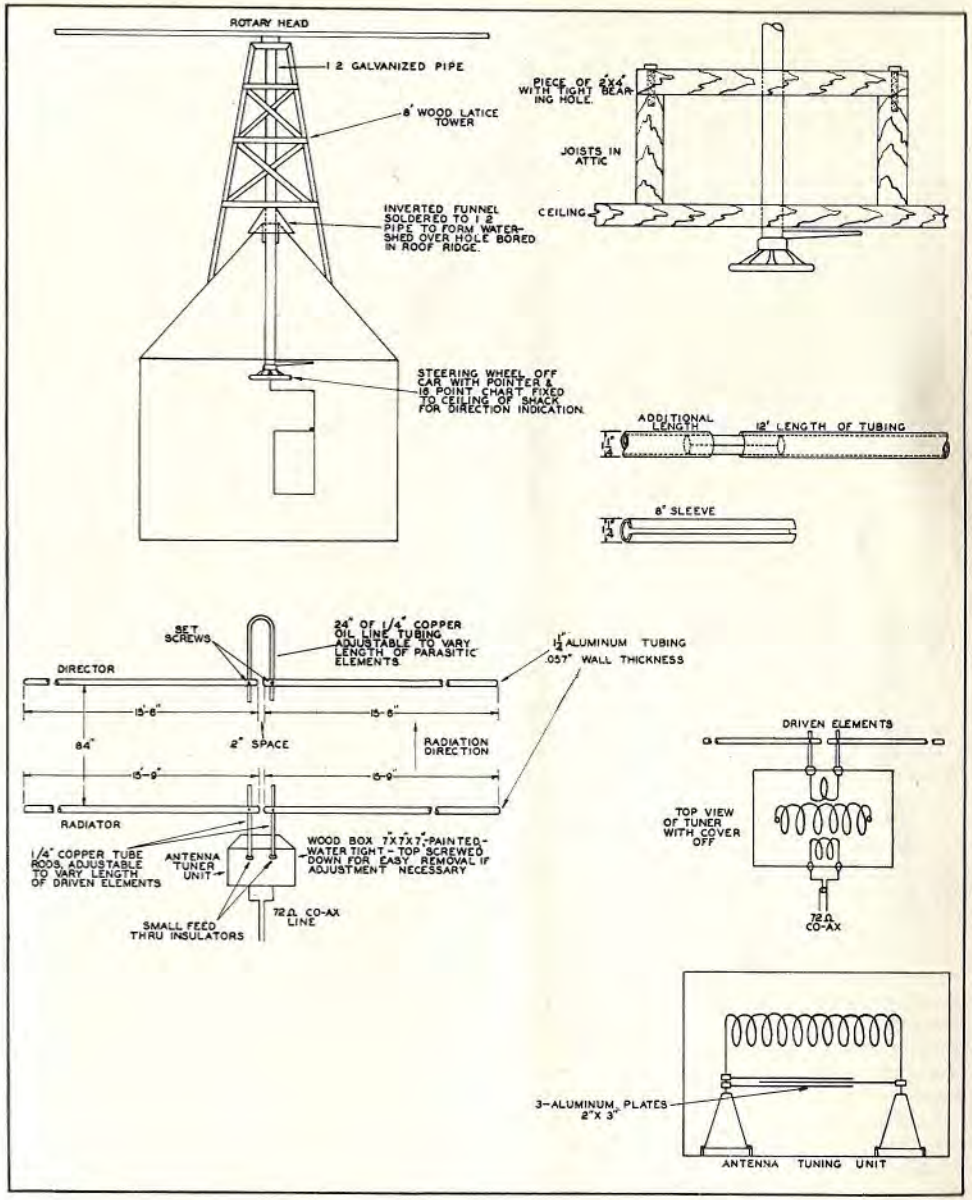
parasitic director is adjusted until the meter is again peaked.

An automobile steering wheel is used to turn the drive shaft down in the shack, and in what was the horn button are mounted two banana jacks. This enables the line from the transmitter to be plugged into the beam or into the 80-meter half-wave used on 3.5 and 7.0 mc. An antenna change-over relay is included in the transmitter, and this should be regarded as an essential in any station using a beam. Directional antennae are usually classified according to power gain when connected to a transmitter, but the advantages for receiving are no less important and perhaps even more startling, since not only is the desired signal built up but unwanted stations can be greatly attenuated in the majority of instances. The resulting reduction in QRM is obvious. This particular beam is unidirectional, broadside to the elements and in the direction shown by the arrow in the accompanying sketch. Gain is 5 to 6 db. over a half-wave at the same frequency.

For the benefit of those who consider the effort of building a beam too great, it should be stressed that the results, in the form of better reports, reduction of QRM, and the increased enjoyment you can get out of your equipment are very much worth while and out of all proportion to the labour (and expense) involved. A short trial should convince even the most skeptical that the beam is here to stay.

Fig. 1. A view of the driven element, showing tuning box, adjusting stub, and supporting cleat.





THE TURKEY ROOST

How to build it in one lesson. Top left is a composite view of the installation, with the details of how the drive shaft is brought through the ceiling at top right. At the right centre VE301 shows how to add lengths to your elements if the tubing is short. At the bottom left spacings and other relevant dimensions are given. A pictorial view of the tuning unit is shown at the bottom right, and immediately above it a schematic of this gadget.

A Deluxe Remote Beam Indicator

By R. Spencer Soanes, M.A. Tor. M.C.I.C.*

TO BE "on the beam" has a literal significance in hamdom. With the advance on higher frequencies comes the need, if not the necessity, for a directional antenna array for both transmitting and receiving. Except for certain fixed installations, almost exclusively commercial stations, the directional aerial implies the cooperation of two accessories —means of shifting the direction of the aerial at will, and a means of knowing at all times the direction in which the array is pointed.

Various methods of turning a directional antenna and for indicating with more or less precision its position, using ropes, flexible shafts, levers, and so on, have been described at some length in radio magazines in the past, but for the dyed-in-the-wool ham of leisure, there is no substitute for a motor drive. Because of the distance of the aerial from the transmitter and receiver in almost every instance, some remote control and remote indicator is almost a necessity.

World War II brought into prominence an instrument, which, although by no means new, remained in almost complete obscurity until it began to be used so widely for indicating remotely the position of gun mounts, aircraft undercarriages, and similar moveable components. This gadget, available in several modifications under names such as Autosyn, Magslip, Servo, is most commonly known as a Selsyn, or self-synchronous motor, although the types mentioned above do not all work on the self-synchronous principle. It is beyond the scope of this article to describe the principle of operation of these motors, but, briefly, if they are correctly connected electrically and energized by a suitable A.C. voltage (some types also operate on D.C.), any rotation of the armature of one is reproduced by an almost exactly equal rotation of all other armatures of Selsyns in the same circuit, with an accuracy of one-half degree or better.

From this, it will easily be seen that for the last word in remote indication of aerial position, you cannot beat a pair of Selsyns and an interconnecting cable. Most units available today require four or five conductor cable.

The transmitter Selsyn may be directly coupled to the aerial shaft, if the shaft projects below as well as above the drive unit. If it is not convenient, it may be gear—or chain-driven, although a slightly larger error will be introduced because of the backlash in gears and chains. Belt drive is definitely not recommended because of slippage.

The receiver Selsyn can be simple—a pointer on the armature shaft will suffice—or as elaborate as desired. For the sybarite, nothing will equal a map of the world illuminated in colour with a shadow cutting a swath across the face of Old Man Earth, indicating your field.

The indicator illustrated in Figure 1 permits the ham to loll in comfort in his shack with a full knowledge of the direction in which his aerial is most active, either for transmitting, receiving, or both. At a light touch of a finger, he may alter the direction of the beam to any desired position in a few seconds. The complete unit is available commercially, but may be constructed easily, well within the capability of the average ham. It comprises two main sections —an indicator and control unit for installation in the shack, and the antenna drive with relay control and Selsyn transmitter which is usually stationed on the roof. The remote aerial indicator is housed in a sloping-front hand-rubbed walnut cabinet 13″ x 13″ x 13″, the main panel of which displays an 11″ translucent map of the world reproduced photographically, and mounted on glass, with the locality of the transmitter at the centre of the disk. Most desirable, of course, is a map showing great circle distances, and covering the entire world; such a map, with Washington at the centre, is available from the ARRL in wall size, and may be reproduced by any photo-copying establishment. This reproduction can be used with only slight error over the major partion of Eastern Canada. Mercator's projection may be more convenient to obtain but is necessarily limited in territory covered, and in accuracy.

Along the bottom panel of the remote indicator are two normally open micro switches permitting clockwise and counterclockwise rotation of the beam, and a radio-type toggle switch which controls the lights, the Selsyns, and the control relays, which, therefore, despite its light size, is the master switch for the complete set up. Inside, we have two two 25-watt lamps which illuminate the map through two optical baffles of flashed opal glass. The receiver Selsyn is mounted on a bracket, so that its shaft is exactly perpendicular to the face of the map and bears a ⅛″ brass rod pointer extending beyond the rim of the map. For a uni-directional array, this pointer will unbalance the Selsyn receiver armature, and must be compensated for by an equal and opposite brass pointer placed below the second glass plate, so that it will cast no shadow. A door at the back of the instrument permits access within to change lamps.

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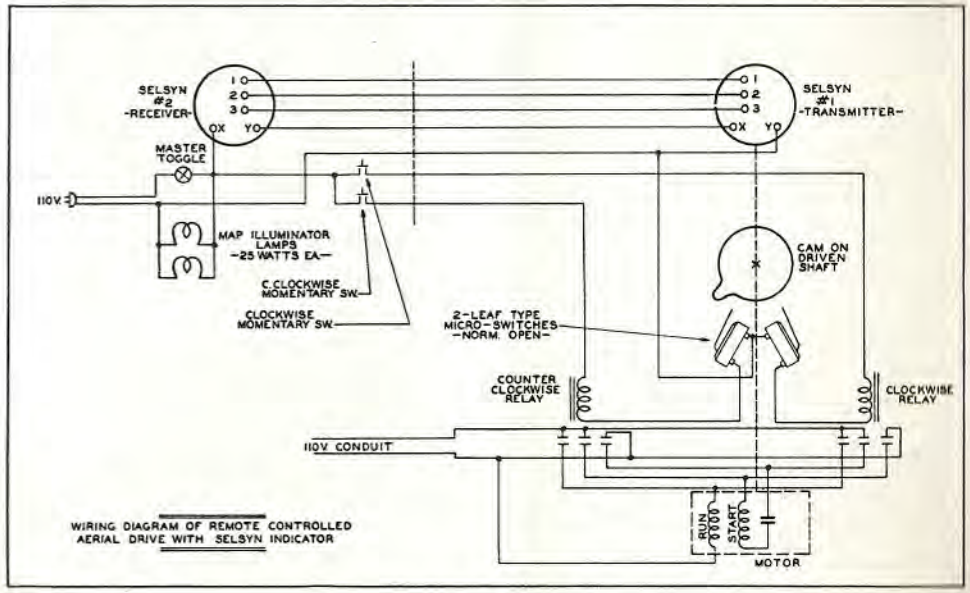

WIRING DIAGRAM OF REMOTE CONTROLLED AERIAL DRIVE WITH SELSYN INDICATOR

*Canadian Research Institute, Toronto, Ont.

C A R O A
NATIONAL REPORT

VE 1

DCM—R. J. Hesler, VE1KS, Sackville, N.B.—**MA** is the proud possessor of a beautiful new **RED** wig and is also expecting a new **HQ-129X** receiver soon. **BC** and **OW** now have their new **TEMCO XMTR** in operation on all bands. **LG** is awaiting anxiously his new **MEISSNER** XMTR and **ID** now has his in operation. **KE** now has an 813 bottle in his final and really puts out a FB signal around the district on 75. **CW** has for his use an **RCA AT-3 XMTR**—why not put it on 75 Wylie, fraid of the BCL's? **TN** is now running 90 watts input. **GH** is rebuilding to 200 watts fone with an 813 (there's dem bottles agin!) and by the time you read this, should have it perking. **KJ, CW** and **HV** all have new **SX-25** receivers. **KK** has a new VFO in operation now. **QF** has done a FB job of rack mounting his 300 watts—really commercial looking. **SY** now putting out fone signals on 75 with 200 watts. **HI** has ordered a new **MIMS SIGNAL SQUISHER** for operation on 10 and 20. **KS** is planning to add a DB-20 preselector and a Meissner Signal Shifter to his shack and to increase power to 150 watts as and when he can find a 1500 volt transformer. **LH** recently cut a recording in Halifax of a popular old song—it is really worth your while and time to go to Bridgetown and hear it. Sinatra and Crosby look out! **MA** and several other VE1's schedule **W1DBE** each morning on 75 at 7 a.m. Newcomers to 75 meter fone are: **OD, JY, OE** and **GO.**

Say fellows, hows about some reports on your activities. Pictures of your rigs, etc., are especially desired—let's show the rest of the gang what you and your rig look like. Remember the closing date is the 12th of each month and that a postal card is all that is necessary. If I have appeared to have slighted you CW boys, it is only because none of you have reported and that I don't have a chance to listen to all the CW signals and thus get your news and gossip that way (perhaps it is because I can't read the code!) It doesn't take long to jot down a couple of lines each month about yourself and other boys around you. The rest of your gang want to read all about you and your activities, hopes and plans—can't you spare just three minutes or so each month to write me—I know you can. **THANKS** and 73.

VE 2

DCM—Bill Skarstedt, VE2DR, Montreal, Que.—Thanks to **2AO** and **2PU** for several newsy items. **2FS** and **2EV** are both tied down due to illness. **2HL** and **2LZ** of Quebec were recent visitors to several local shacks. **2QA** finally succeeded in locating a modulation transformer to replace the one that burnt out during a visit of some ten or twelve "hams." New c.w. calls heard include: **2VE, 2VH, 2PQ, 2KR, 2UU, 2TC.** Fone stations include: **2JB, 2KF, 2NG, 2DV, 2IP.** And on 10 meters: **2GK, 2GT, 2RD, 2WF, 2BG, 2TY, 2UG** and **2UH.** (To those we didn't catch in the act—we'll get you next time.)

2AO makes more contacts by travelling around the province than he does on the air. **2LT** runs in a FB sig from Rock Island. **2OG** is working on 10 meters. From **2LV** we learned that **VE3ASX (ex-2OB)** of the Toronto Westside Radio Club was a recent visitor to Montreal. He is an 80 m.c.w. man and will be used to QSO VE2's at 3451 kcs. **2RZ** wants to tell the world that he has taken up residence on the 10 meter c.w. section. We ain't herd u yet OB. **2II** spent a few happy days recently with the Sherbrooke gang. **2UO** has a FB XYL, 3 FB Jr. "ops.", a FB xmtr and is a FB pianist; plays over **CHLT** and **CKTS** as extra dough for a bigger final. **2EA** is oiling up the valves and **2BX** has decided not to turn in his call for another while.

A happy little hamfest took place at **2BY's** summer home on Aug. 25th. According to **2PU,** George wanted to get the gang out there to show off his "atomic rig" (7 watts) with which he had over 600 QSOes, including a 15 minute confab with **VO1A** on "75". Those at the feast included **QA** es **XYL, 2VH** es **XYL, 2AI** es **XYL, 2DU** es **XYL, 2BO** es **XYL, 2JU** es **XYL, 2OD, 2GB, 2CN, 2AV, 2EK, 2UM** es **2CE.**

Another FB shack warming was held down at the new QTH of **2SA** on Sept. 3rd. Those present included **2AX, 2DU, 2BO** and **GEORGE WARREN.** The boys wondered how long it took Betty, **2SA-XYL,** to air out the shack after **2DU** (dirty underwear) **2BO** (speaks for itself) and **2PU** (Phew!) left. Hi!

Thanks to VE2JJ and MARC skywire for the foregoing report.

VE 3

DCM—R. C. Hunt, VE3WX, London, Ont.—**WA** hasn't lost the old dx ear. Manages to work WAC less Africa in one night. **WX** finally corralled a receiver. **CP** finally finished drilling holes and ready to go. Has FB RCA wavemeter for frequency check. **WT**—Chasing the wily trout in Northern Ontario. **HK**—Father Williams still going strong. **TM**—Also on vacation. Says hot wx no time for radio rebuilding. **AHL**—Has salvaged enough from the wreck of the tornado to build temporary living quarters. **AEP**—Re-considering his R.M.E. **OI**—Putting up a plumbers delight. **KM**—Hard luck in ORS party. **AJB**—Married on June 15. Probably another Radio Widow coming up. **MB**—Enjoying poor health. **WP**—Formerly HB, has returned to the air after a long lay off. Glad to have you back Heck. **AJE**—Spends his vacation in Toronto. **VT**—Getting rig ready. **PE**—Also returning to the air waves. **EF**—A record of 18 hours on ORS party. **KC**—Home on visit while waiting posting in RCN. **VE3ASC,** 379A Eglinton Ave. W., Toronto, would like to hear from hams in the Toronto area running tests, or working with F.M. **ATR** reports regularly—**ADR** reports for West Toronto squadron AFARS, group consists of AAG, Flight Leader, **BC, GN, HP, AEM, AVA, AYE, AZA, BCC.** Drills are each Monday at 1930 hrs.—3615 kc. Expects to have a get-together in Toronto early in October. **HI**—Works VKs, ZLs and Gs like locals, but more regularly, then ups and goes to hospital to have gravel removed from throat so will be on CW for a spell—**DU** is heard on 20 in search of DX. The D.C.M. has some bright, shiny, new certificates to pass out to District Relay Stations. Will those interested please write and report prior to the 15th of the month. By the way, when are we going to get rid of the BBC and various S.A. broadcasting stations, etc., from our 80, 40 meter bands. Take a listen from 7250 to about 7275 kc. for some good examples. TRAFFIC—**AAG** 42, **HP** 32, **BC** 23, **GN** 16, **AVA** 13, **ADR** 11, **AEM** 9, **ATR** 6, **AHX** 3, **BCC** 2, **AZA** 1.

VE 6

DCM—W. R. Savage, VE6EO, Lethbridge, Alta.—**6DR**—Now has a Radar set so he beat the stork to the hospital. **6NA**—finds a new trouble, coming in on the neighbour's telephone. **6DN** and **6SR** swap microphones for the purpose of checking quality. **6HW**—has a 80 mtr. CW rig going now. We haven't any reports of him working anyone yet, hi!—**6PP** doing fb job with portable power plant. On phone. **6HZ** is doing OK with stamp collection. **6JP** is worrying about his bias but even so puts in a nice sig. **6JJ** has a mishap while putting up a rotary beam, when he fell off a ladder and sprained both ankles. So the VE6 gang has formed a sunshine network in the evenings to keep up **JJ's** spirits. **6VN** has put on a lot of weight since being married; must be Evelyn's good cooking. **6EV**—is now on 80 mtrs. **CW,** he says he can't get antenna wire so is using ¼-inch rope. **6AF**—has now settled down and built a rig which is getting out FB. **6IK**—is busy on 80 mtr. CW now. **6EO**—and the gang—**1CA—2AI—2LT—3FP—4AC—7US—7FB** work a Trans-Canada qso on 75 mtr. fone. All stations were heard and worked. We sure wish **5GA** had not gone to bed and **8AO** had not been so busy working a portable KA1 in Washington, D.C., so we could have made it an all-VE District qso. Well, we can try again. **6SV**—is now on the air with his xmtr. in the kitchen and his receiver in the dining room, he runs his feeders through the hot air pipes and claims it puts out a hot signal, HI. **6LQ**—holds skeds with Vancouver to talk to his xyl who is on holidays. **6EL**—is planning a high power rig for this winter with 100ths. **6QE**—is pushing out a nice signal with 38 watts. **6LA**—is very busy getting in his crop. **6FK**—has been rebuilding his rig. **6IC**—is active on 40 mtr. CW but when yours truly sneaks around the shack no rig can be seen, only a bug. He must key a 40 watt bulb. **6WG**—sure hangs out a sig. on 40 mtr. CW.

6EB is without power for 20 hrs. Now power is on, all his qrn has gone—must be poor transformer fusing by power Co. Hi. **6PP—6EY—6AL** do some good emergency work when a small aircraft is forced down on the beach of Lake La Biche. 80-mile-an-hour gale blew down ant. pole at 6PP, but he went on the air with it hung on a fence. **6DW** is chasing bugs out of his rig. **6MN** is on 20 mtrs. working DX. **6HM** is busy on 40 mtr. CW. **6EV** sports a new SX28A now he should cut a rug, Hi. **6MJ—6LC—6MW—6HC** are putting a nice 75 mtr. fone sig. out, and handling messages. **6LC** is going to town on 40 mtr. CW. **6CY** has a moth glide into his neutralizing cond. and blows his 5Z3, puts him off the air. **6OD** is doing a lot of remodelling on his new receiver—such as R meter, tubes and speaker. **6DN** does some qrr work between **W7IWC** and the Cardston hospital. **6HZ** can't keep up on 20 mtrs. so she gets back on 75 for a good qso. and if we know Maud she really likes a good qso. **6DR** is back from his holidays and will now get back into the groove. **6SR** is elected as Secretary Treasurer for the International Glacier Waterton Hamfest for 1946/47 which will be held at Waterton Lakes Park, Alberta, in 1947. **6SZ** puts out a husky signal. **6CH** says he is not putting on weight. **6AF** makes a visit to Lethbridge to do some work. **6SV** builds a new receiver. **6AA** grinds a crystal to get out of the qrm, wonder what freg. that is? Hi. **6DB** will soon be moving into a new qth where the high timbers are. **6OG** and **6BC** must be very busy on the R.F.? rig as we never hear them on the air. **6KA** sold his receiver and is now scouting around for another one. He also takes on a wife. Good luck, Don. **6OF** is busy fixing up a room in his basement for his shack. **6IC** still pounding brass on 40 mtrs.

VE 7

DCM—D. E. McLennan, VE7JY, Vancouver, B.C.—Ex-**5IC** got married a couple of months ago. **V.S.W.C.** held a picnic at Cordova Bay Beach on August, resuming a prewar habit of many years for the first time since cessation of hostilities. About 30 members and friends attended, and **7AAZ** operated **7CB's**—portable rig there, having several enjoyable QSOs on 3.8 mc phone. Among those attending were **7CB** and his YF. The former has been in hospital for several months and is for the present a shut-in, operating from his bed by remote control. **7XD** provided power for the station and a hotplate (for the wieners and coffee). He operates a general supply store at the beach. Several new calls here, and several new ones coming up. Old-timer **7EP** seems to concentrate on building and rebuilding revrs. One of latter was for **7JL** who feels the bug biting again. **7AAZ** rebuilt **7TZ's** fone rig, and latter is now active on 75 and 10. **7AJG** is only 144 mc enthusiast in town, though **7EP** seems about to succumb. Suitable gear for this band difficult to obtain yet for any power. Gang all look enviously at surplus gear available in U.S., but duty and exchange make them think twice before taking the plunge. Best news for present is reduction of exchange. **7HR** has incorporated noise-suppressor a la HQ129X in his super, and **7EC,** who lives alongside 66,000 volt power lines will follow suit after a demonstration by **7HR.** Now that the war is over the power company is able to release a number of line transformers from .6 to 25 kw sizes, at dirt cheap price, and gang is snapping them up (one is going to a VE6) through **7CH,** who is distribution engineer for said power co. Wonder if any connection between that and the pole trans. right across the road from **V.S.W.C.** clubhouse?! **7XX** not heard so much either, though not for same reason. **7AAH** got bitten by golf bug, and he also laid off for while, though getting over it. **7DY** has bought himself an EC-1 until something better is available. **7OH** has an RME45, and is rebuilding his phone rig; doesn't expect to be back on for a couple of months. New call here is **7YH.** He is ex-**4BH,** and is on 75m. phone. Quite a number of the local gang went for 75m. phone since the restoration. Among them are **7AHL, 7ADB, 7AAZ, 7ABU, 7GO, 7AM** (latter two ex-Vancouver), **7CH, 7SW.** Learned recently that ex-**5LB** is now somewhere in VE3. And what became of **5ABV?** How about a line, Vin? **7DX** in Prince Rupert also on 75 fone, also **7PY** at Port Alberni, **7HE** at Alberni; hrd two more—one each in Port Alice and Prince George, but forget calls.

The foregoing through kind efforts of Dave Scholes VE7DY

7AEV reports from Prince George that:—**7ADH** is on the 75M with pp 809s and doing nicely . . . **7FG** on 80 with VFO is also fb, quote clicks and all unquote . . . **7AAU** has been heard from but not often . . .**7AEV** says, and I quote, "If the 807s work, I'll be on 80, maybe 40 and darn sure my harmonics will turn up on 20, 10, ad infinitum including all odd freqs" . . . **7MP** at Powell River reports he has thrown his Ham shack open to a gang of up and coming Hams, also gives code practice transmission two nites a week (7-9.30 PM). Nice going, Hal! . . . Speaking of **7MP,** Frank Carter just received the call **VE7PM,** sorta leaves Frank in the dark. HI! . . . We hear Johnny Reville, **7AV** on 80M CW again . . . Woodfibre Radio Club reports it has 7 new hams coming up, nice going, gang . . .**7ACF** is heard from Woodfibre on 20 and 80 CW with modulation coming up as quickly as possible . . . **XW** got tired of trying to work XU's from home so sailed this week on a ship bound for China. Good luck, Hedley . . . Listen to this—**7KT** (King Tut) portable mobile worked **W7BQX** also portable mobile in Port Angeles, Wash., and carried on a good solid QSO, unpredictable 10M of course. **7EL,** Bert (Quality) Porter has been really pulling in the DX with his newly erected 67 ft. tower . . . We had a visit from **VE8AK** last week. He left us a set of pictures of his rig which we will display on the above mentioned notice board . . . Bert Giles, old **5AEE,** has returned to town with a wife and a new call, **3BBV** . . . Ed Keen again with Pan-American as technician . . . **7AJN** had three, and is now trying with six, elements, that is . . . **7BQ** is working plenty of W6s on 6 meters . . . **7ADF** is back on the air with really fb rig (guess who's writing this).

A.F.A.R.S.

7ND reports that fairly good progress is being made on the forming of the network. It is now possible to pass messages to the East via **7AAJ** at Kelowna. More Xtals are available for the B.C. Mainland District. Write to **Ted Goode, 7ND, 770 East 41st Ave., Vancouver, B.C.**

CAN YOU MATCH THIS DX?

7VO, old-time rival of **7GI,** offers the following as a challenge: **PK6TC**—Dutch New Guinea, **PB1A**—Netherland Guiana, **VS4JH**—Br. N. Borneo, **W3JLJ/KH6**—Samoa Is., **CR9HG**—Macau, **W9HTW**—Saipan Is. Now let's hear from the rest of you DX hounds!

QSY to page 40

DEAR OM

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

Saboteurs!

1011-13th. Ave. West, Calgary, Alberta

Dear Om. Dept.

Received XTAL today. It's getting better every month. Keep up the good work.

Now comes my pet grievance. Can someone enlighten me? How do some hams work continually out of the band and get away with it? Many times I have heard VE's on 20 working out of the band. One prominent west coast station is heard here continually. He wins the contests and is working all the DX. He is also the one that is heard grumbling about the QRM. He is really having a tough time. He only has 500 watts and a three element beam. Good gosh if he finds it tough what does he think about the poor average VE with his 50 watts and the best antenna he can get up due to crowded conditions.

Have we any monitoring stations in this countryland, if so what are they doing? When I hear these out of band stations proudly telling of their DX accomplishments I wish I had the power to tell them a thing or three. I would cancel their tickets for six months and if they continue out of band operation I would put them off indefinitely.

So much for that. I feel better all ready. Wish you would please publish this letter and see how the other fellows feel. I imagine lots of them have been burned up as I have.

Best of luck to XTAL.

73 Ken James

● . . . . . **We might add that here at Headquarters we have monitored two of the most prominent stations in Western Canada operating on unauthorized frequencies. It is not necessary to mention calls, because the offenders are generally known, and they are certainly aware of their own guilt, as there can be no doubt that the offence is deliberate. These individuals probably take the view that the portions of the forty and twenty meter bands not yet released to W's and VE's are already crowded with amateur stations operating in many foreign countries, and therefore one more VE won't interfere with anybody. They may also feel that it is official stupidity and red tape that are withholding these frequencies. We won't argue with these points, and will even concede that there may be some truth in them. But the facts remain unaltered: these stations are defiling the name of Amateur Radio by ignoring our regulations; they are setting a very bad example to newcomers; their operating achievements are defiling the name of Amateur Radio hams voluntarily deny themselves.**

Neither the Department of Transport nor this Association will condone this undefendable practice. We hope that a warning will suffice even if the threat of suspension does not. If offences continue, we shall not hesitate to publish names and calls, so that the operators concerned will be recognized and their achievements discounted. In the meantime, we would appreciate hearing from all VE's who posses frequency measuring equipment of secondary standard calibre or better, with the object of adding to the ranks of the ARRL's Official Observer project, or of establishing its counterpart in Canada.

An Appeal From Holland

Box 126 Louisburg, N. S.

Editor XTAL

I am sending for your consideration a very nice letter which also bears an

QSY to page 24

HEADQUARTERS HAPPENINGS

POLL. Elsewhere in this issue we have outlined the results of our survey which solicited opinions on phone-CW allocations. Some of the unsolicited comments which came in are worth repeating. For instance, one VE3, voting to make the forty meter phone band Class A, added a P.S. to his card: "Let the newcomer go on 75 phone. It's no good anyway, hi!" Another requests us to "work on those Gov't. fellows for 160 m." and finds support in a colleague who manages to squeeze in a demand for 1750-2050 in twelve different places on his card. From the Maritimes comes a ballot marked in the usual fashion until ten meters is reached; there he gave up and contented himself with remarking "Give the band to the Indians!" The question of phone or no phone on forty brought forth the most heated sentiments, such as: "Why smear up what's left of 40 with ham fones when it's already covered 50% by s.w. broadcast stations," "If there is going to be fone, give 'em as little of the band as possible," "There's enough QRM on forty without fone," and "QRM on forty bad enough without fones further cluttering up our best CW band." Those individuals who felt that two years' prior experience is desirable before fone privileges are granted came up with some pointed comments, too. One in particular (an exclusively CW man) suggests a special phone ticket "with plenty on the ball to keep non-technical lids off." Another, also a 100% CW op., thinks a code test every year would be in order for phone men, while one of the latter fraternity expresses the opinion that CW is both outmoded and unnecessary (he'd better duck after that one!). Another suggestion which found its way into our office, and one which in our opinion has considerable merit, asks that FM phone be permitted in the new 11-meter band. Certainly FM will command the attention of quite a number of hams as time goes on, and we feel that this particular corner of the spectrum is the ideal place for experimentation in this medium.

EMBLEM. Despite the large number of designs submitted, we still haven't made a decision. Admittedly our standards are high in this department, simply because we know we'll be compelled to face our choice for a long time in the future, and we don't want any regrets. Something distinctive and different, yet simple and pleasing in design, is what we're after, and it isn't as easy it sounds.

CALL BOOK. Since last spring the Association has been accepting orders for the Call Book and forwarding them to Chicago, from where they are mailed direct. We have now decided to discontinue this service for several reasons: (a) it competes with many of our advertisers who are jobbers; (b) it does not actually constitute a convenience to our members inasmuch as orders can be as easily sent direct to Chicago if the Call Book is not available at your local wholesaler; (c) it adds to our bookkeeping at Headquarters, which we are trying to minimize; and (d) owing to the shortage of paper which limits the number of copies printed, we are not always able to advise just when delivery will be made. W9TRD has assured us, however, that he will do his best to see that Canadian jobbers are kept supplied. If you are not able to secure a copy locally, forward your remittance of $1.70 (in Canadian funds) to Radio Amateur Call Book, 608 South Dearborn St., Chicago, Illinois. If a year's subscription is desired (four issues) the price is $6.00. Of course, if you want your call to appear in the book, it is necessary for you to keep them informed of your corrrect QTH, and W9TRD will be glad of your co-operation in this regard.

QSY to page 38

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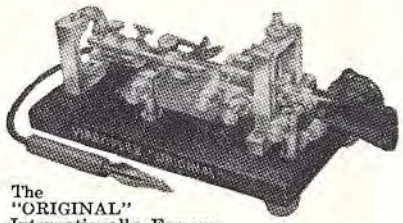

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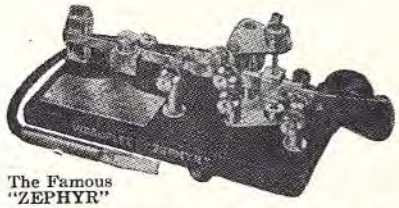

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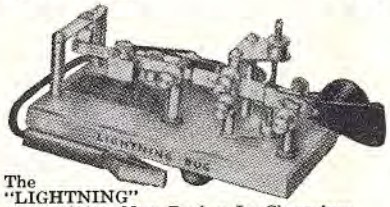

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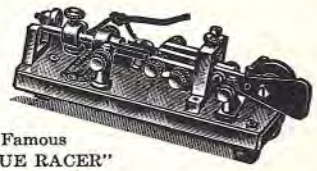

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— HEADQUARTERS —
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For 25 cycle operation use coil at ½ voltage—i.e. 12 volt coil will operate on 6 volts 25 cycle—also use a 1500 ohm 10 watt resistor in series with 115 volt 60 cycle coil for 25 cycle.

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Midget Variable Condensers, ceramic insulated 140 mmfd with standard shaft	1.00
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Johnson type 50 watt sockets, ceramic 805 - 838 - 203A's etc.	.95
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Amphenol 75 ohm twin transmitting line 1 KW even with mismatching. Per foot	.11
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Hints & Kinks	.70
Antenna Handbook	.70
ARRL Handbooks	1.60
How to Become an Amateur	.30
Jones Handbook	2.85
Logbooks, ARRL type	.55
XTAL, official CAROA mag., per year	1.00

ALPHA-ARACON RADIO COMPANY LTD.

29 ADELAIDE ST. WEST **ELgin 3186** **TORONTO I, ONTARIO**

DELUXE—from page 14

A female octal socket of the recessed "motor plug" type permits easy connection to the cable leading to the drive unit. Ventilating holes are provided in the back of the instrument, and an ordinary light-duty line cord handles the control power, and may be plugged into any convenient outlet.

In this article we will not discuss the type of aerial to use; additional information on this subject will be found elsewhere in this issue of Xtal. Furthermore, since the type of drive used will vary considerably with what is on hand, or in the proverbial junk box, very little will be said about the antenna drive unit. It comprises an induction motor which should be one-sixth h.p. or more, preferably of the capacitor start type, a gear reducer giving a terminal velocity of about one-half revolution per minute, preferably with driven or output shaft extending vertically upwards and downwards, and equipped with thrust bearing. The upper half of this shaft will bear the aerial proper, the lower half is to be coupled to drive the Selsyn. Two washing machine gear reducers driven in series may be used for the gear reduction. If the types available must have the driving shaft horizontal to retain lubrication, the drive to the vertical shaft may be accomplished through a pair of bevel gears which may if required effect a further speed reduction. Since this entire assembly will probably be mounted outdoors on a roof, it must be protected against weather, and, if operation is expected through winter months, the motor, particularly the starting capacitors, if they are of the electrolytic type, and grease-filled gear boxes must be considered.

Electrically, the drive unit embodies the motor, starting and reversing relays, a conduit supplying the main power to drive the motor, protective device(s) if any, the motor itself, and the transmitter Selsyn. If it is impossible to mount the Selsyn with the armature shaft pointing upwards, it will be necessary to reverse the leads going to terminals one and two on the transmitter Selsyn only in order that a clockwise rotation of the aerial viewed from above may be reproduced in the indicator unit in the proper direction.

The complete wiring diagram for a satisfactory aerial indicator and drive is given in Fig. 2. If the array is fed through transmission cable, it will of course be impossible to rotate the aerial shaft continuously in the same direction through more than 360°, and the schematic indicates a simple means of preventing complete rotation by two leaf-type microswitches. If the antenna is fed inductively, such a precaution will not need to be incorporated. The diagram as shown yields a unit safe against almost any type of abuse save simultaneous depression of both clockwise and counterclockwise switches on the indicator cabinet. By using single pole double throw microswitches in this position, complete protection may be obtained.

The cable connecting the antenna drive with the control and indicator unit carries 110 volts, although at a low current, and should be insulated accordingly. The conduit carrying the 110-volt power to the motor should be fused at some convenient place indoors.

Since at the moment, there are a tremendous variety of Selsyn indicators advertised in American magazines as available war surplus stock, ranging in price from one dollar to twelve dollars each, a word of caution must be interjected here. By far the majority of types so advertised are quite unsatisfactory for use as a remote beam direction indicator, particularly for 25 cycle operation. The smaller Selsyns are usually designed for 400 or 1000 cycle operation, many are of inadequate torque, several have unsatisfactory insulation, a few work on non-standard voltages. Others have freak shafts or unusual mountings, and make for awkward installation. For the present application, the most satisfactory Selsyns should have a torque not less than 35 inch ounces, and may be of either the general purpose or high

accuracy types. If the rotors are designed for 110 volts 60 cycle parallel operation, they will work satisfactorily from 110 volts 25 cycle, if the rotors are connected in series.

A little time, money and loving care spent on a really accurate and conveniently operated remote directional array and indicator will be repaid many times over in more distant contacts, and adds luxury to operation. Signal to noise ratio is becoming a prime factor in Amateur Radio communications today and beam reception is the "must" if DX is to be your forte.

DON'T FORGET TO SAY
YOU "SAW IT IN XTAL"

QVE—from page 9

diately. Please cooperate with your QSL Managers. WAC's are hard to get without cards confirming contact.

AA	ADH	AGM	AJF	BI	FV	IS	MX	QL	UD
AAA	ADI	AGP	AJG	BP	FW	JB	NF	QJ	UH
AAB	ADT	AGU	AJH	BV	FX	JJ	NP	QN	US
ABD	ADV	AGX	AJI	BW	GC	JS	NV	QX	VC
ABQ	ADX	AHO	AJO	CI	GE	JT	NW	RH	VP
ABV	AED	AHR	AJR	DD	GF	KE	OE	RP	VU
ABZ	AEG	AHU	AJX	DF	GS	KP	OJ	RS	WM
AC	AEN	AHZ	AKB	DP	GY	KQ	OT	SI	XA
ACI	AEU	AI	AKI	DU	HA	KX	OZ	ST	XF
ACJ	AFB	AIH	AKQ	DX	HJ	LF	PM	TD	XM
ACN	AFV	AIK	ALM	EF	HL	LG	PT	TH	XN
AD	AFX	AIV	AMH	EL	HS	MH	QB	TL	XR
ADE	AGH	AIW	AR	ER	HU	MO	QC	TM	YC
		AJ	BE	FU	IQ	MQ	QG	TY	ZF

Please indicate whether your envelope is to be returned immediately or held for 3 or 5 cards. Henry "Ron" Hough, 1785 Emerson St., Victoria, B.C., will welcome instructions from any of the above.

APPEAL—From page 18

earnest request from a fellow amateur across the sea in Holland. That country as we know still bears the ugly scars of World War II. The letter states the immediate needs of this amateur and if we VE's could be of any assistance, I am sure it would be further appreciated by PAoNA and his fellow countrymen.

I am a member of CAROA and find much interest in XTAL magazine.

Enclosed please find self-addressed stamped envelope for the return of the above mentioned letter.

W. I. McDonald, VEIKF

PAo NA'S LETTER

Amersfoorstschestraatweg, Holland

This letter is to confirm our pleasant QSO on this evening at 1945 hours Dutch time on 20 meters c.w. Your sigs received here 559 to 579. At this moment I cannot send you a QSL card because they are reprinted. As soon as I have received them from the printer I will send you one.

I was very glad to meet you on the air for you were the first VE station which I have worked after the war. Glad that I was the first PAo station you have worked.

I was very glad to work a VE station as the Canadians have liberated our country. That is a thing that we shall never forget, and therefore, it will be a great pleasure at all times to work a VE amateur station. The Dutch people are very thankful to the Canadian for all that they have done for us.

My rig came ready a fortnight ago and I have already worked with several W-stations. My input is 100 watt. Aireal Zeppelin full wavefeeders 15 meters long. My tone is not so good because I use an ECO. I have not a xtal and I cannot get it here in Holland on about 3540 Kcs. The oscillator works on 80 meters, then a buffer on 80m, a doubler on 40m, a doubler on 20m, and the final amplifier on 20 meters. **The transmitter which I had before the war was attached by the Germans during the occupation of Holland as took place with so many other things. So we have a shortage of clothing, specially underwear. If you or your friends should have some second-hand clothing which you can spare, I should be very obliged to you if you would**

QSO No. 4 of a Series

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

CEMENT? . . . .

1. Why do they make it that way?

2. What can I do with it?

WHY? Hams are an inquisitive bunch and are probably wondering by IRC Special Cement is used for coating Power Wire Wound Resistors.

We use it because its coarse finish dissipates heat and does not deteriorate under any reasonable over-load. Remember that, "to radiate heat best, a body must be dark in colour and rough in finish." A light colour or glazed finish will run a higher temperature for the same heat dissipation.

Most glazed coatings contain ingredients which are chemically active in the presence of humidity and require high firing temperatures to harden them. Both of these are harmful to a resistor.

It is an obvious fact that any coil, no matter whether it be an IF Coil or a 200 Watt Resistor, should be coated with a material which protects yet never attacks the wire chemically. IRC cement coating does this particularly well under severe conditions, because it is free from active salts which combine with the moisture in the air to corrode the resistance wire.

By immersing the whole unit in the liquid coating, and agitating it while immersed, the cement penetrates to the tiny spaces around the wire and terminals. It is then baked at fairly low temperatures for many hours. This cures and hardens the coating without subjecting it to the firing temperatures which are necessary in putting a glaze finish on most other coatings.

This low temperature processing has advantages.

1. It toughens the unit, bonding the tube, wire and coat together without making them brittle or setting up unusual strains.
2. It makes it practical to die-cast a terminal or lead wire in position right around the tube —a real he-man joint.
3. It leaves the terminals with their proper temper, not dead soft and easily broken.
4. It prevents those pin-holes one often sees in other coatings.

Why buy a resistor that's had most of the life baked out of it already? IRC resistors are built for many years of satisfactory service.

send me something. I know from friends that many Canadians help the people of Holland in this way. I have a wife and two daughters of 12 and 15 years old.

Dr. ob I hope to work you soon again.

73 H. Meiners PAoNA

Erroneous Impression— But Welcome

Dear OM,

I have heard that CAROA is considering breaking with ARRL. I think it is a horrible idea, but as I am not a member of CAROA (though intend to be shortly) perhaps my opinion is not called for. I do not feel that I could support a VE organization that is not an ARRL unit. VE oprs are too small a body for independent action, and our requirements and practically indentical with the W's.

73 W. E. McNEILL

Concurred

Lethbridge, Alta.,

Dear Sirs:

Your letter of July 31, 1946, was discussed at the last monthly meeting of the Southern Alberta Amateur Radio Club. It is the general concensus of opinion that a vital need exists for a Canadian Organization similar to that of the U.S.A. which can satisfactorily represent the Canadian Amateur here in Canada or abroad as required.

We also feel in full agreement with your letter that it would not be wise for the CAROA to break completely with the ARRL until such time as our own organization would be self-supporting both technically and financially. In view of the fact that the CAROA has done considerable ground work in forming a Canadian Organization similar to ARRL, it is suggested that CAROA should continue through the medium of XTAL to solicit the co-operation of Canadian Amateurs.

Yours truly,

H. J. WIDDAP

Rigid Exams.

. Jasper, Alta.

Dear OM:

As my interest is, and will only be, in C.W. I should discreetly bow out in the matter of expressing my opinion on the question as to whether phone men should have 2 years C. W. in order to qualify for that type of operation. However, as I will always have the interests

generally of the brotherhood at heart, and believing that anyone's opinion expressed on any matter will be accepted at its face value rather than in a discriminatory light, I would say as follows on the above question—

While it has a certain quality in that the prospective phone man is familiarized with carriers before he starts sticking something on these carriers the idea seems a little antiquated in this day and age. Something along the following lines would appear to be a more satisfactory method now, and perhaps more acceptable to all concerned:

1. Have an applicant for phone operation pass a Government examination. This examination should be along stiff rather than easy lines. In other words create or set the standard through the medium of examination instead of leaving it to pull itself up by its boots. (That method might have been the only solution back in the early days, but who today will say that we should still live by the laws of the stone age.) The certificate issued for passing should automatically carry C. W. privileges. Could be designated as Class "A" certificate, or any designation that will give it an easy distinctive reference.

2. Same idea in connection with C. W. alone. The certificate in this could be designated as Class "B", or some other preferred designation for easy distinctive reference purposes.

3. In the matter of frequencies—there would seem no justifiable reason why both types of operation should not be allowed on each band, each type to be segregated in each band of course, to prevent hard feelings flaring into actual civil war. It would naturally be preferable if the low end of each band was for the same type of operation in each case to permit the doubling feature for either to be available.

How's chances to join this Association? Don't get any dope on it in this isolated place but looks as if it is going to be O.K. and I'm in favor of one National organization for all.

H. E. Sullivan

Suggests Power Restrictions

2341 Mathers Ave.—Hollyburn, B.C.

Editor XTAL

". . . . . 'Tis said the road to Hell is paved with good intentions. I can claim

the right to several paving blocks, for I've intended answering your letter of several months past and never got around to it. The main excuse is getting this new QTH ready to move into and winding up my career? in the army.

However the worst is over now and I'll be a free man about the 18th of the month.

I'm working on a new rig at present PP809s about 150-200 watts so if that peanut whistle CAR ever gets on Ten this fall I'll give you a chance to work DX, Hi. Of course a beam will go with the new rig. It will probably be designed after one out of XTAL, so if it doesn't work look out.

The QTH here is about six miles from Vancouver and about five hundred feet above sea level. DX rolls in nicely and with the rig planned we shouldn't have too much trouble. LUs, VKs, ZLs, OAs, and most of the South Pacific has been coming in ever since I started to rebuild. On the 1st and 2nd WI, 2s, 3s, and 4s were heard so it looks like Ten is coming bacy into its own. As a matter of fact from fairly consistent listening I'd say that Ten has been good all year except for May, and we certainly haven't gone crazy trying to buck QRM such as twenty and eighty has produced.

You can see of course that I'm a confirmed Ten Meter fan. In this locality I'm not alone there are quite a number of chaps with good power and class A privileges who never venture above ten meters.

Am enclosing the card re phone/CW allocations but since I stick down here so much perhaps my ideas are not worth much. I have one which I think is worth while however. It is very noticeable that here and in the States the Hi power boys shun ten when the going is not so good and then when the band opens up they come rushing along with their "Golden Kilowatts" and park right on top of some poor little thirty watter who has been struggling along waiting for a good day and, he's had it!

They are usually using an ordinary skyhook and don't do so very well anyway, so as soon as the band slackens they go back to Twenty and Eighty with the remarks that they were on Ten for a short while but its not so hot, so here they are.

Two things have happened, neither of them good. One, the new comer to ham radio judges all class A operators by these few and wonders how some people get those privileges. The thousands of good operators suffer and the young op becomes very disillusioned about the high ideals of the craft. Two, the higher frequencies which we must use to hold are belittled by these so-called fully qualified Hams who didn't know Ten existed until November 1945. They would not consider going to Six or Two and seem to think that Ham Radio consists only of Jamming any frequency to work DX. I even heard one of them on the Air tell a story about showing a brother ham a few doors away what a Kilowatt CW could do to his receiver.

"I knocked him off the air all night and worked a bunch of choice stations," he said. I wish I had been his contact!

The answer is to limit the power input of all hams to a maximum of 150 to 200 Watts or less on the higher frequencies. It costs very little to incorporate the apparatus in any rig, mine is designed that way. The power input on the rig here can be cut to 50 Watts in less than five minutes. So there it is, for what it's worth. Try a Vote on it.

Your choice of VE7JY as DCM is a wise one. Mac is well known to all 7 district Hams and well liked by them. His business affiliations will not influence his decisions. Even his boss knows ham radio comes first with Mac.

Enough for now. When I'm properly settled here and on Civvy St. (incidentally I'm a Traffic Cop, so watch out) I'll be in your hair more often with a few scraps of news and many funny ideas.

73 B. W. JELLEY

Separate Exam For Fone

Edmonton, Alberta

Dear OM;

With reference to the card received by our members recently regarding VE fone allocations, we have the following observations to make.

With respect to the question regarding 40 meter fone privileges, we feel that the present system of endorsing licenses for fone after 2 years CW operation should be revised. We suggest that a separate examination to set up by the Department of Transport for those desiring to use radio-telephone. We believe that this would greatly improve the standard of fone operation in Canada. The setting of an arbitrary period

of any length does not necessarily qualify an operator for fone operation and in some cases works a hardship. For instance, commercial operators, broadcast technicians and certain members of the armed services will have more training and experience than an amateur is likely to have after 2 years on CW and yet under the present system all are required to serve the same probationary period.

With respect to the question re VE fone allocations, we feel that as the Canadian Amateur cannot compete on the same channel with the average American fone station due to the lower maximum power limit, higher cost of equipment, etc. As a further breakdown we would suggest:

80 meter band—at least 100 kc. wider than American band.

40 meter band—at least 50 kc. wider than American band.

20 meter band—at least 50 kc. wider than American band.

The time is fast approaching when we are going to have to make important decisions regarding licensing and frequency allocations before representations are made to our government. We are pleased to see the CAROA take up this matter at this time and hope that our suggestions may help in the formation of a policy.

73, S. F. MITCHELL

Wants Regulations

218-7th Ave., East, Calgary, Alta.

Editor, XTAL

". . . . . I won't say much about the VE ops as you are well aware of the fact that all VE's fully appreciate the organization and your fan mail proves that. I will say that Xtal is a wonderful little "mag" so I'll keep mi $'s flying your way every year.

Regarding W3GNU/VE5 being the first W on the air in Canada—No—No—We have many out here in Vancouver who are portable marines. I've worked three W6's/ marine myself and there have been many more.

Here is something I would like to see in Xtal. How about a page or so now and again devoted to rules and regulations? There are a lot of things I'd like to see in black and white and there are many

QSY to page 40

EDITORIAL—from page 6

phone at all, as might be expected, and 19.6% refused to endorse any of the choices given on our card. It can also be assumed that many of those who voted for 7200-7300 did so under protest, looking upon it as the least of several evils. To sum up, it can be taken for granted that the group which was opposed to any phone would vote for 7200-7300, and under these circumstances we have 61.3% opposed to extra privileges and 38.7% in favour of them.

On twenty the outcome is much closer, being 50.7% against extra privileges (in other words, in favour of 14200-14400) and 49.3% for them. Among those who feel the need of some extra kilocycles for phone the vote is almost equally close between 50 and 100 k.c., the figures being 26.4% and 22.9% of the total respectively. Not included in these compilations were half a dozen or so who marked their cards "14100-14300" or "14150-14250," which we considered as not applicable. On this band, it is likely that the Association will go on record as favouring 14150-14400 as a reasonable compromise. This would give VE phones only half as much exclusive territory as they had before the war, although it would be adding to the total space available to them.

Some slight revision of our ten meter assignments met with approval. On this band, which to date has been open to phone from one end to the other, there have been some complaints from the CW boys, who felt they were entitled to a portion of the band which would be free of phone interference. Here they obviously won support, for while the vote was 78.9% for extra privileges and 21.1% against, only 27.8% of the total approved 28000-29700. On the other hand, 28200-29900 was supported by 36.3% and 28100-29700 by 14.8%. 28300-29700 was suggested by a small minority. We believe that the allocation of 200 k.c. for CW at the low-frequency end would

probably be acceptable to most Canadian amateurs.

At the moment we haven't time to comment in detail on the results, but at first glance we can't find much fault with them. In general, we have either given up our phone privileges or reduced them by 50 per cent. On forty and twenty, we interpret this as a sign of our maturity, as a declaration that we are no longer unable to compete with the W's on their own ground. On seventy-five, it is true that a great many of us who use this band now would find it of little interest if our phone assignment coincided with that of the U.S., but even though some extra privileges are desired, you seem to be content with less than we used to have. On ten, the band is big enough that there is enough to go around for everybody! (Note that nearly half the band is comparatively unused.)

In conclusion, one thing that impressed us was that the CW boys seemed to be cognizant of phone problems, and vice versa. There was very little partisan voting. We must remark, however, that the number of cards returned was not as great as we had expected, and we are disappointed that so many hams seem to take their frequencies for granted. However, the books are not yet closed, and we shall probably have further comments to make later, although it is not expected that the figures given above will undergo any significant revision. They seem to represent Canadian opinion pretty well as they stand.

Other Things . . .

Turn back to page 19 and let us absorb Ken James' letter. What with frequency allocations in the balance and pressure exerted in all directions to keep the good name of the Radio Amateur before official circles, sabotage of our privileges will not be tolerated. Posting in XTAL of such offenders is not a threat. It is our duty henceforth.

HQ—from page 19

PRIZE-WINNER. Come last Labour Day, VE3QK (see page 5) commuted down to partake of Oshawa hospitality, the occasion being the hamfest of the North Shore Club. No one was more surprised than Jon himself when, at the end of an entertaining day, Fate decreed that his number be drawn out of the hat for the Grand Prize, same taking the form of twenty-five bucks' worth of Canadian Electrical's stock (free plug). It can be stated on good authority that this will hasten the return of 3QK to the air waves by a good three weeks. Look for an upswing in Canadian traffic.

MEET THE VICE-PRES.

It continually amazes those of us to whom simple arithmetic is obscure, just how much work is involved in keeping books and finances straight. As chief adviser to the Treasurer, Bob Macdonald, VE3APS, has burned much midnight oil helping the Association to stay on the right track in this department. Head of the Tax Accounting Bureau in Toronto's civic government, Bob has at his fingertips a wealth of experience which has proved invaluable on many an occasion. He is of course no stranger to those whose affiliation with the Association extends back ten years or so, for he has been active in amateur affairs in Canada for some time. As a former officer of the CAROA, he was instrumental in determining many of our policies and is responsible for our Constitution. In consequence, he was the logical candidate for the position of Vice-President left vacant by the resignation of VE3GT. Currently enjoying a September holiday in the Ontario north country where he is endeavouring to forget about debits and credits, his sound advice is badly missed. But we must admit he's earned a rest.

—o—

SPARE QST's

CAROA HQ Library needs copies of back issues of QST. Generosity of any VE Ops would be sincerely appreciated. Spare copies, that is, if you have them, drop us a line.

—o—

"QVE"

Means: "Attention all VE operators—Use it."

NATIONAL—from page 16

VE 8

DCM—Jack Spall, VE8AS, Whitehorse, Y.T.—This is our first report on DCM and quite likely most of the VE8 gang are unaware that the appointment has been made. Our district contains few hams for the size of it but with your co-operation we can make it a big one in our monthly reports. Please write any info you can so that it will reach me by the 10th of the month. I am interested in hearing all about your rigs, traffic, and DX. We hope to be able to contact you all very soon on the air. So let's go gang and keep those reports rolling in. If you are interested in an appointment as a traffic or phone station drop me a line. Don't forget, also, that we are the 8th District QSL Bureau and so far no envelopes have been received. Send them in pronto if you want those DX cards. **8AK** is outside on a much-needed vacation and while in Vancouver talked to the gang here through the courtesy of **VE7OT. 8AJ** is waiting for big power transformer to run an 809. **8AY** is still knocking off the ZLs and VKs on 40. **8AR** is back in Toronto by this reading signing his former **3AGB** again. He was a recent visitor to HQ. The north country surely agreed with him. He looks hale and hearty and ready to tackle civvie street with a vengeance. **8AW** is keeping the 20 meter CW boys happy. **8AE** hopes to be on by this writing. **8AO** is trying new skywires. **8AS** has new shack and is QRL building. **TRAFFIC 8AY-2.**

WANT REGS—from page 32

more out here that would also. So how about it?

Well that just about winds up the QSO for now.

By the way—VE3's roll in here quite often but don't seem to hear us. (on 10 meters)

I've heard every Canadian district except VE8's on ten and also Newfoundland.

I've had no success in getting anyone to join the VE ops because every VE I meet already belongs to it. . . . "

73 Jack Rothwell

HAM-ADS

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TRY ONE

FOR SALE — 60 cycle HAMMARLUND HQ120 with crystal and phasing control. Best offer over $200 or trade for binoculars or gun and cash—JACK BROWN, R.R. No. 1, TODMORDEN, ONT.

QSLs—1 colour $3.25 per 500, $3.90 per 1000, 2 colour $4.25 per 500, $4.90 per 1000, Samples, VE3AMP, 89 Maple St., Simcoe, Ont.

FOR SALE—Complete 250 watt xmtr CW & Fone, 813 final c/o "Wally", VE3IB, 43 Chiswick St., Weston, Ont.

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