
# MERCURY

## THE JOURNAL OF THE ROYAL SIGNALS AMATEUR RADIO SOCIETY

NUMBER 26 WINTER 1968/69

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CONTENTS

## EDITORIAL

Another year has passed by and we enter 1969. I hope you have all survived the Festive Season!!

It is a great pleasure to be able to congratulate one of our members, G2YS (472), who has recently been selected to the highest post British amateurs can attain, President of the RSGB. May your term of office during 1969 prove fruitful and satisfying. Good luck to you John from one of your affiliated Clubs and I hope you found the Class I Award to your liking.

Congratulations are also in order for DL5YT (418) who, following the report in the Summer "Mercury", has now received official commendation for his assistance - well done Ray.

On a more sombre note - a case of a Service amateur radio operator hit the headlines last November because of the security implications. Let this be a reminder to us of our responsibilities in this matter.

The offers of help in answer to my cry for assistance regarding a Society QSL Bureau were overwhelming. To all members who offered their services, thank you. Details of the Bureau Manager can be found on the last but one page. The Bureau operates for the cost of an S.A.E. and is for use between members only.

There was a good response to the Postal Ballot with a 258 return. your replies caused quite a bit of heartburn as opinions were spilt very evenly at first but gradually a pattern emerged. It is hoped not too many of you will be disappointed. The new rules for the Award Scheme are at the rear of this edition.

In addition to the ballot forms, many of you have written stressing the point that the Society should remain Royal Signals, at the same time agreeing with the last A.G.M. rule of opening our doors to all Army personnel. It appears that a thorny question has been resolved to the satisfaction of the vast majority of our members. So let us now forget this episode and move into 1969 as a Society of Amateur enthusiasts whose common aim is radio and friendship.

My thanks to John G3XBA, who has kindly produced the new QTH List and also a revamped call sign list. I hope it will enable you to keep abreast of amendments more easily in the future.

With the present uncertainty of tenure of the Society HQ and not wishing to lose out on an ideal location a small rally based on Blandford is being arranged for August 24th - the Sunday before the Autumn Bank Holiday weekend. This will not be a plush trade affair, and will be restricted to members of our own Society and A.R.M.S. which should produce a sensible number of genuinely interested amateurs. Full details will appear in the Spring edition, but please keep August 24th clear if at all possible.

A number of members have asked me what has happened to the next article by "Chronicler". Like most Service people, "Chronicler" has had a QSY with the inevitable upheavals. However he has settled down and his series of articles should be continuing in the Spring edition.

And in the tail, the sting!! Will Annual members please remember that subscriptions are due in January and that the fee has been increased to ten shillings - thank you.

Finally to you all, good luck and good health for 1969 from your President, G2EC, G3ONU, G3VYZ, G3VIS. and myself.

73 de
G3EKL

## COMMENDATION

(A follow up to page 5 of the Summer '68 "Mercury")
22242620 SERGEANT R. VASPER, R. SIGNALS

At 1845 hours on the evening of 13th May 1968 Sergeant R. VASPER, Royal Signals, a keen amateur radio enthusiast, happened to intercept an emergency medical call in Morse Code in German from YUGOSLAVIA for drug named COSMEGEN urgently required for an operation on a woman suffering from cancer in BULGARIA.

Sergeant VASPER first contacted an amateur in SWITZERLAND who, after speaking to a local doctor, confirmed that the drug existed but was not available in SWITZERLAND. He then contacted a British amateur operator, who was also a doctor, who again confirmed that, the drug existed but was not available in the United Kingdom.

He suggested that the USA was the only likely source.

At 2200 hours Sergeant VASPER contacted a doctor in LOUSIANA USA who quickly confirmed that the drug was manufactured in DETROIT and suggested that it might be available at the American Military Hospital in FRANKFURT.

On 14th May 1968 Sergeant VASPRR confirmed that the drug was available at FRANKFURT and that the Hospital Authorities were prepared to send a supply of it to the International Red Cross at GENEVA for onward despatch to BULGARIA.

At 2000 hours that evening he again spoke to the Swiss operator requesting him to inform the Bulgarian doctor through the Yugoslav operator. On 16th May Sergeant VASPER was able to confirm through the Yugoslav operator that the drug had been delivered to the Bulgarian doctor in the in the early hours of 15th May and that the operation had been performed with complete success.

During the four day period Sergeant VASPER had spent just over nineteen hours at his radio set.

There is little doubt that but for Sergeant VASPER'S perseverance and determination this drug would never have been obtained in time and that he was largely responsible for saving the life of an unknown Bulgarian woman.

The Commander in Chief directs that an entry be made on his Regimental Conduct sheet in accordance with Queens Regulations 1961 para 1633(a).

ooooo-----ooooo

## DONATIONS

The President gratefully acknowledges donations received from the following members between 1st October and 30th November '68:

£5 5 and 76 £1 89
£3 58, 68, 85, 107, 113, 127, 210, 282, 291, 300, 397 and anon.

**A CHEAP HIGH PERFORMANCE SSB RECEIVER**

**BY**

**G3JXL - 259**

**Part II**

In the last few paragraphs of Part 1 of this article it was stated that the project could be tackled in two ways:

a. Modifications to a good working HRO. or

b. A complete rebuild of a scrap receiver.

In this article we shall consider (a)

**Modifications to a Working HRO**

It is assumed that the receiver is in good working order. That is to say that the capacitors have been checked and changed if they are more like two megohm resistors than capacitors! If the capacitors (screen de-coupling, AVC de-coupling, bias de-coupling and stage HT de-coupling) are suspect then change them - it isn't a long or difficult job in the HRO, nor is it an expensive one. There are five cathode decouplers, all 0·1 Mf; four AVC decouplers, all 0·01 Mf; one screen decoupler of 0·1 Mf and three anode decouplers of 0·1 Mf. These are the usual capacitors which degrade RF and IF performance. C5(oscillator decoupler) and C21 (BFO decoupler) should be changed if they are the original cardboard tubular capacitors. However, with this warning in mind we will assume the receiver is functioning as normal. If it is, the following table is typical of HRO performance:

| | | |
|---|---|---|
| Ae. sensitivity for 10 dB S/N ratio | - | 2·5 microvolts |
| Selectivity - adjacent channel 6 dB down | - | 3·6 Khz B'width |
| Selectivity - adjacent channel 60 dB down | - | 28 Khz B'width |
| Image selectivity at 28 Mhz | - | 25 dB or better |
| Image selectivity at 3·8 Mhz | - | 80 dB or better. |

Now for the actual modifications which are the absolute minimum for turning the HRO into a reasonably good receiver for SSB. (It will be OK for CW of course and fairly good for A3 phone but quite useless as a shack broadcast receiver. It won't be any good at all to receive music as the bandwidth will be far too narrow) The modifications are listed and then will be dealt with in sequence;

a. Removal of the IF filter and change of the 1st IF amplifier.

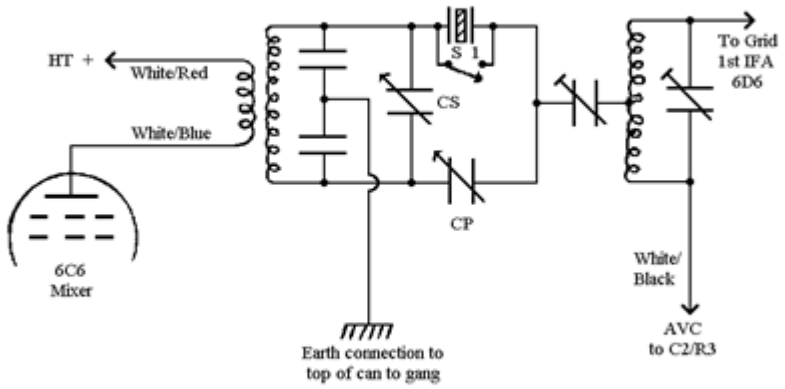
b. Modification of the AVC system and change of the LF amp.

c. Modification to the 'S' meter circuitry.

d. Fitting of a "press-to-talk" facility.

**1. Removal of the IF Filter**

Existing circuitry




CS is the "Selectivity" control on the front panel.
CP is the "Phasing" control on the front panel and also activates S1.
The entire circuit shown above except the valve is within the existing HRO "National" filter.

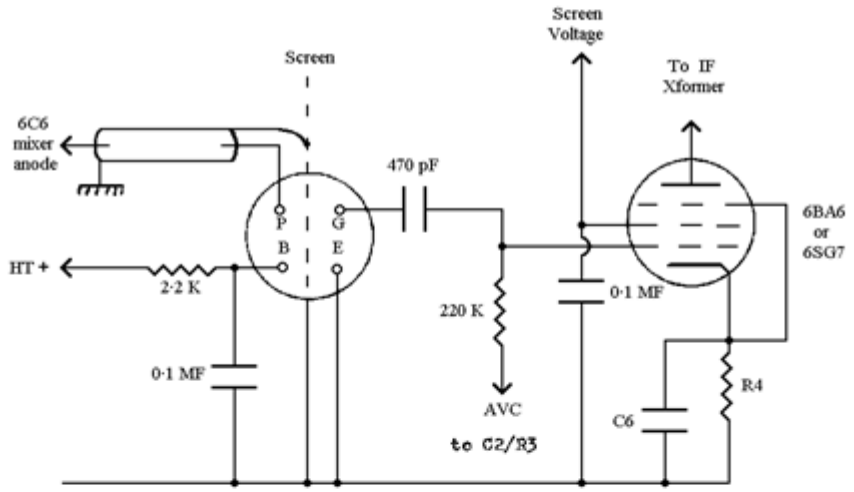
It is not difficult to remove this unit. First of all remove the "Selectivity" and "Phasing" knobs on the right-hand side of the front panel. Remove any coil unit which may still be in the coil compartment. Slacken off the right hand side of the front panel by means of the two large nuts, one at the side of the coil compartment and one at the bottom right hand corner.

Now remove the top lip of the front panel which forms the front edge of the top and on which the lid rests. It is held in position by two setscrews at each end. Fully close the tuning gang and remove the main tuning dial. This is held by either one or two grub screws, some models differ in this respect. (Don't interfere with the main tuning knob unless you can cope with mechanical tricks and have a lot of patience - just note the dial reading at top and make sure you don't change the gang position or alter the tuning knob back plate.) The right-hand side of the front panel should now be free from the chassis. If it is not, then the strip up the right-hand side of the back of the front, panel must be forced off. (Models appear to differ here also). To free this strip, undo the set screw at the right-hand side of the front panel and about one third from the bottom. It will be on a level with the large nut at the top right of the coil box. The panel must now be free and able to clear the two quarter-inch control spindles. Remove the base plate and locate the wires going into the crystal filter. There are three underneath, one to HT (white/red), one to the anode of the frequency changer (white/blue), and one to the AVC line (white/black).These colours have all been correct for the ten or so receivers on which the writer has carried out these modifications. The earth connection is at the top of the can above chassis and is made off to the tuning gang earth. Unsolder these four connections, undo the five nuts under the chassis, remove the grid cap from the first IF amplifier and remove the filter from the set. The first time the writer did this operation was in 1941 and by 1946/7 it had been repeated many hundreds of times and as far as my memory holds good, it wasn't a difficult operation. By 1947 the writer was able to change an HRO filter in fifteen minutes, including re-alignment of the IF's on the crystal frequency.

It is assumed that before commencing this modification the reader will have obtained a Kokusai IF Filter type MF 455-10K. These can be obtained from the KW people from stock for a little over nine pounds. (If you have a friend going to Japan then they can be obtained much more cheaply!)

The Kokusai filter is fitted in a convenient place adjacent to the first IF amplifier but before fitting the filter it is a good idea to remove the 6D6 IF amplifier which has a UX base and top cap grid and change the base to an octal and use a 6SG7 for the IF amplifier, or fit a blank to the large hole in the chassis and fit a B7G base and use a 6BA6 for the IF amplifier - the choice is left to the reader. If you have a large junk box with plenty of octal bottles then use a 6SG7 - if it has to be purchased then get a 6BA6 which is a current cheap valve and well suited to this project.

A template is supplied by the Kokusai people making fitting quite easy. A screen is also supplied - use this as it is essential to screen the primary of the filter from the secondary if the shape factor is not to be spoilt. One other precaution the writer found useful was to use a piece of coax cable as a screened lead from the anode of the mixer to the terminal of the filter. This isn't necessary in a new design but the mixer and the IF amplifier are a long way from each other in the HRO due to the original filter being so large. Fit the new filter as close as possible to the IF amplifier - this gives a long lead to the mixer, however a length of coax about three inches long will suffice. Earth the braiding of the coax at each end, to the filter screen at the filter end and to the valve holder at the mixer end.




470 pF coupling capacitor is silver mica (Radiospares).
2·2 Kohms and 220 Kohms ½ watt are additional resistors.
2 x 0·1 microFarad capacitors are disc ceramics and are additional to existing components.

Note that if a 6BA6 IF amplifier is used, then a screened type valve holder must be used. The 6SG7 is a screened type valve so there is no need to worry about a screen for it.

The overall gain of the receiver will be a little greater than it was previously. We have the insertion loss of the new filter all the time as there is no provision made to switch it out, but we have a little more conversion gain from the mixer as the dynamic resistance of the filter is higher than the transformer we have removed and more gain is obtained from the first IF stage as the mutual conductance is higher with the replacement 6BA6 or 6SG7.

Assume the Rd (dynamic resistance) of the primary of the IF transformer is 100 K ohms (this is not far out) then the stage gain is given by the formula:

$$M = gm \times RL$$

$$= 1{\cdot}5 \times 10^{-3} \times 100 \times 10^{3}$$

$$= 150$$

gm of the 6D6 is 1·5 mA/Volt.

As the gm of a 6BA6 is 4·5 the gain is now

$$= 4{\cdot}5 \times 10^{-3} \times 100 \times 10^{3}$$

$$= 450$$

In other words the gain goes up in the ratio of the dynamic resistance (three times). This is offset slightly by the Kokusai filter insertion loss. It must not be assumed that a high IF gain is a thing to be desired above other requirements, but this information is given in case the reader thinks that to have a filter in circuit all the time will lead to a loss of gain.

The first modification is now complete and at this stage the receiver can be re-assembled. The remainder of the modifications can be done with the front panel "in-situ". It is a good idea at this time to check receiver performance so that in the event of a mistake being made, it won't take too long locating. Check all wiring - take the usual precautions and if all is well, then the receiver may be switched on. Try the set out even though the alignment isn't completed and it should perform in the normal manner apart from the terrific improvement in selectivity. If all is well then alignment should be attempted. How this is done is a function of the equipment the reader has or can "lay his hands on".

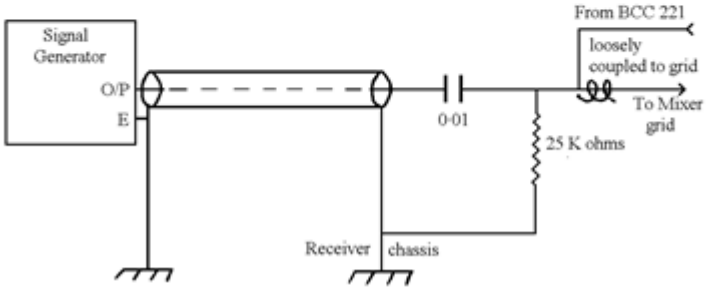
The first method assumes the reader has a signal generator and a BC 221 frequency meter. The second method is somewhat crude but will suffice if no test equipment is to hand.

**IF Alignment using Signal Generator, Frequency meter and Output Meter.**

a. Switch on receiver, signal generator and frequency meter and allow to warm up for fifteen minutes.

b. Remove the local oscillator valve.

c. Apply the signal generator to the grid of the mixer valve via a 0·01 microfarad capacitor using a grid return of 25 K ohms. (See diagram below).



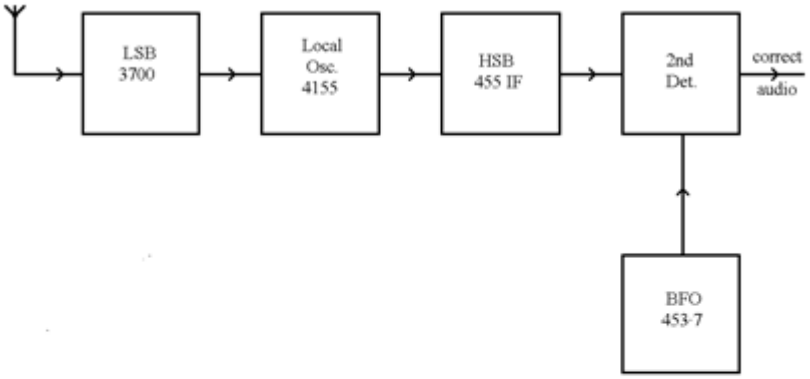
d. Switch receiver AVC to off, RF gain to maximum, audio gain about midway to maximum. With the 400 Hz modulation of the signal generator on, tune the generator through 455 Khz and tune to maximum audio in the loudspeaker. Adjust the signal generator output as necessary to produce a reasonable output at the loudspeaker. Switch off the modulation of the signal generator and, of course, the loudspeaker will now be silent.

e. Loosely couple the BC 221 frequency meter to the grid of the mixer valve by twisting a flexible lead to the lead connecting the signal generator to the grid so that the mixer will receive both the BC 221 and signal generator. Now refer to the data supplied with Kokusai filter and read off the centre frequency of the filter. This is given as 455 Khz ± so many Hertz. Set the BC 221 to this frequency (don't forget the correct frequency setting procedure for the BC 221) and tune the signal generator to zero beat in the receiver loudspeaker. We now have the signal generator on the correct filter frequency; ensure the dial is "locked" or take extreme care it isn't moved if no locking device is provided on the signal generator. Remove the BC 221 coupling for the time being, switch on the modulation of the signal generator using as small an input to the grid of the mixer as possible. The generator will be providing about an output of about 500 microvolts at this stage.

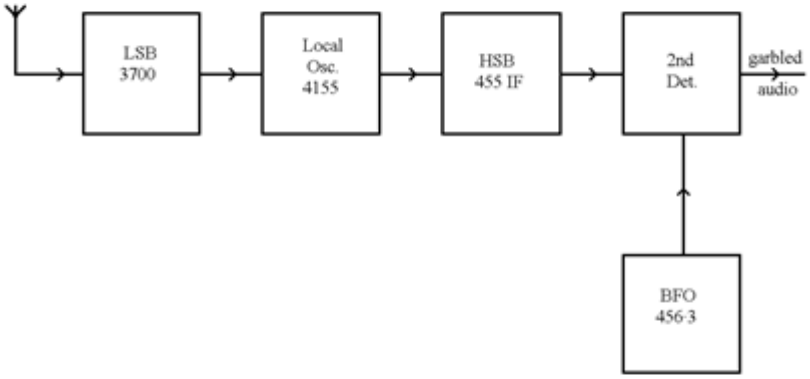
f. Connect up an output meter (this can be an AC voltmeter across the voice coil of the loudspeaker or a valve voltmeter across the diode load R 12 if a proper output meter is not available), and adjust the IF trimmers for maximum output in reverse order, starting with the last IF secondary and ending up with the first IF primary - that is in the order 14, 13, 12, 11 as shown in the HRO manual, page 27. The IF sensitivity figure if using a standard signal generator (TF 144 G etc.) and a standard output meter should be 500 mW output for less than 300 microvolts input. Any input from 150 to 350 microvolts is quite satisfactory. Too much IF gain can be the reason for a receiver being "noisy". If the gain is down, then adjustments can be made to R9, the second IF cathode resistor, which can be any value from 1 Kohm to 6 Kohm as it is "determined in production" to give the correct IF sensitivity. Reduce the value of the resistor to increase gain. Don't overdo it, if the gain is reasonable then don't try to "gild the lily" or you may end up with instability.

g. The output meter can now be removed and the BFO can be set up. Remove the signal generator, re-fit the valve grid cap, loosely couple the BC 221 to the grid but this time couple to the grid cap proper. Switch on the BFO, setting the BC 221 to the highest of the two 20 dB attenuation frequencies given in the filter data (about 456·3 Khz) and tune the BFO trimmer capacitors to zero beat in the loudspeaker (trimmers 15 and 16 on page 27 of the HRO manual). Set the BFO tuning capacitor to maximum capacity and tune the BC 221 for zero beat. Note the frequency the BC 221 is set to it is either at, or lower in frequency than, the lowest 20dB frequency shown on the filter data sheet. On all the HROs the writer has modified, the BFO tuner just took the BFO through the two frequencies, i.e. the BFO could be set for high sideband reception or low sideband reception. By carefully bending the end vanes of the BFO tuning capacitor it is easily possible to make the two 20 dB frequencies fall on the two extremes of the capacitor thus for USB or LSB it is a case of just switching on the BFO or switching on and tuning the capacitor fully one way or the other.

It will be useful at this point to remind the reader that as the HRO local oscillator is on the high side, then when listening to SSB the sideband will be "inverted", This is obvious from the following diagram if you remember that "adding does not invert" whilst subtracting does invert the sideband.




i.e. to receive 80 metre SSB, BFO will be set to 453·7 KHz
(depending on the filter)




The receiver would not resolve the 80 metre signal

If the reader has the equipment or access to it, the selectivity of the receiver can now be checked. It will be as the figures given by Kokusai. If the reader doesn't have the equipment to check the 6 dB and 60 dB selectivity points then it will only need a few minutes use of the receiver on 80 metres to reveal the new and quite amazing selectivity the HRO will have. The selectivity of the writer's receiver is:

20 dB points 456·31 Khz & 453·74 Khz

**Selectivity**

6 dB frequencies 456·085 Khz & 453·915 Khz
Bandwidth 2·17 Khz

60 dB frequencies 457·295 Khz & 453·035 Khz
Bandwidth 4·26 Khz

Shape factor $\frac{4{\cdot}26}{2{\cdot}17}$ 1·9

This, compared with a standard HRO, is amazing. The selectivity 60 dB down with the standard HRO is 28 Khz, even with the National crystal filter in circuit, the 60 dB points are the same, the 6 dB point only are closer. The shape factor being worse than 7.

**IF Alignment without Test Equipment.**

If no test equipment at all is to hand the IF must be aligned in as reasonable a manner as possible. The writer has used this method to see if it works and was surprised on re-checking with the method just described that little or no improvement resulted. This is because the controlling factor is the mechanical filter which has no adjustment at all.

After fitting the filter and any capacitors which may have needed changing, check the receiver and it should work when switched on with an aerial connected, as the IF transformers can't be that far out! (The original filter being 455 Khz plus or minus 2 Khz whilst the Kokusai is 455 Khz plus or minus a few hundred Hertz.) If all voltages are as they should be and the receiver is working, connect up as normal and insert the coil which will receive the 200 Khz BBC 2 Droitwich transmission (either the 100 to 200 Khz coil or the 160 to 430 Khz coil will do). Put the "S" meter into circuit and switch the AVC on. As Droitwich is tuned in the "S" meter will suddenly jump to a maximum and stay on this for about two kiloHertz and then just as suddenly drop to zero. If the "S" meter reading is greater than S7 reduce the aerial to the receiver, it may be necessary to use an aerial of only a few inches if the IF's are not far out. The receiver will exhibit all the symptoms of extreme selectivity i.e., the sound emitting from the speaker will be "woolly" and deep. Tune through Droitwich and note the dial readings as the "S" meter falls from maximum to a point 6 dB down (a little over one S point) on the LF side and the same on the HF side. Interpolate the middle of the pass band and tune the receiver to this dial number. Then, using the "S" meter as an indicator, tune the IF's for maximum "S" meter reading, in the same reverse order as the previous instruction. It may be necessary to reduce the aerial as the IF's come into alignment. When you are satisfied with the IF alignment, switch off the AVC, reduce RF Gain, set BFO to "on" and set the BFO tuning capacitor to mid capacity. Now adjust the BFO trimmers for zero beat. Extreme care must be taken to avoid moving the main tuning dial from the position it was in when the IF's were aligned.

Put in an eighty-metre coil, tune in an SSB signal and check that it can be resolved with the BFO tuner in the maximum capacity position. Now change the coil for the twenty-metre pack and tune in an SSB signal - this time with the BFO tuner in the minimum capacity position. If this can be done all is well. If not, then the alignment must be done again with a little more care and patience.

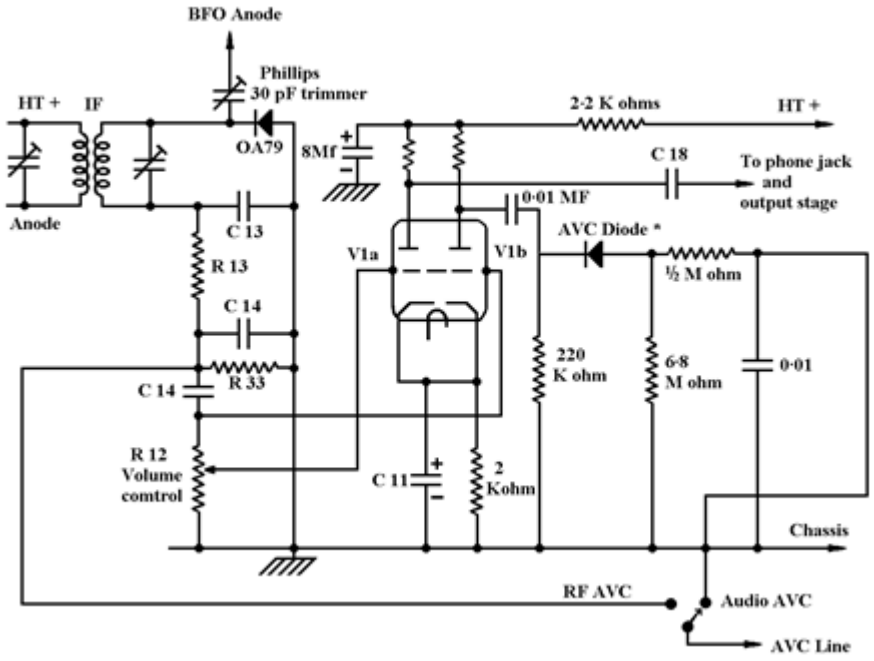
Part 1 of the receiver modification is now complete.

**2. Modification to the AVC circuit and change of the LF Amplifier**

Although this modification means that we shall once again upset the IF alignment (of the secondary of the last IF only) it is as well to complete Stage 1 before starting Stage 2 in case a fault is put on the receiver by accident and if too many mods are done at one go it is difficult to locate and correct the accidental fault. Also it is easier to assess the effect of a single change rather than two.

This modification gives us a choice of AVC.

Fast attack, fast release operated from the carrier for use on A3. (NB With this order of selectivity, A3 can only be received by positioning the IF response so that the carrier is received and one of the sidebands, either the upper or lower. It isn't possible to receive both USB and LSB. If the receiver is tuned into the centre of the transmission, there will be no high frequency content




* AVC Diode - see text.

V1 to replace 6B7 is either:-

12AX7 (B9G) or

6SL7 (Octal)

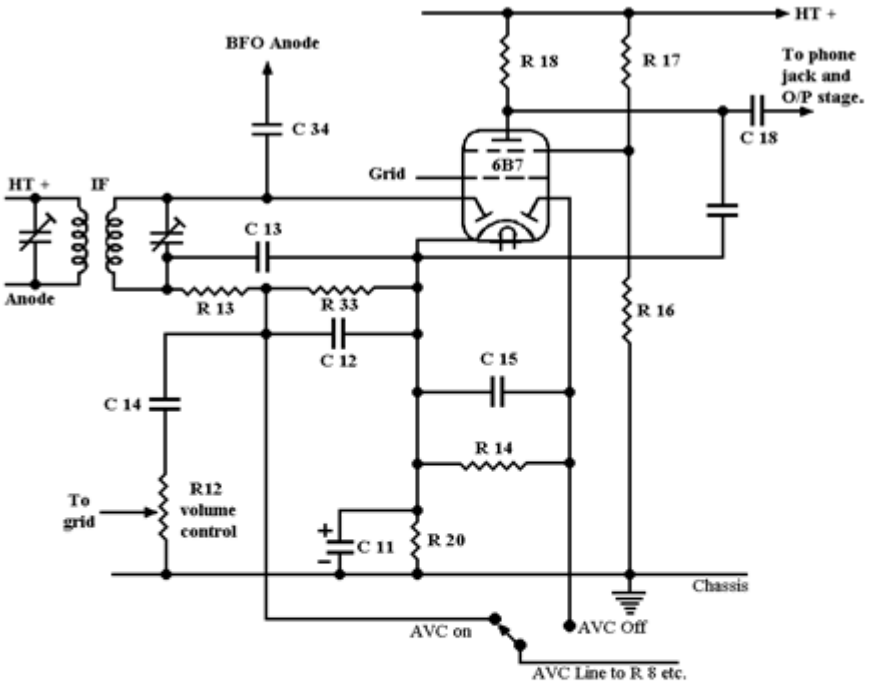
AVC Diode must be a silicon diode.

V1a is the audio amplifier.

V1b is the AVC amplifier. (No gain control)

## Converted Detector Circuit.

(Connect with Page 11)




Detector Circuit before modifications

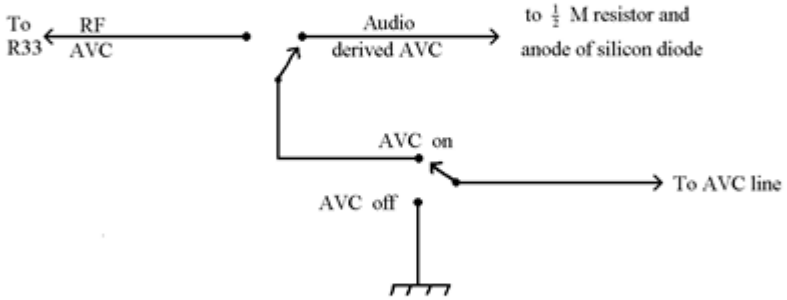
(Connect with Page 10)

in the audio at all. Users will soon get used to handling a selective receiver and taking whichever sideband is free of QRM).

b. Fast attack slow release audio-derived AVC. This is the best method as it can be used on SSB and CW. The RF gain can be kept at a maximum and audio set to the required level just as though A3 was being received. The HRO normally has the audio gain up and the RF gain down for CW or SSB signals. The writer always uses this method of AVC even though the receiver has both systems as it has been found much better to take A3 as though it was SSB. In fact in these days of "mixed" QSO's in which some stations are on A3 whilst some are SSB, this method of reception is a "must" if operating is to be enjoyable.

The modification at first sight seems a difficult one but in fact it is quite simple. Briefly a double triode is substituted for the double diode pentode and a germanium diode is used for the audio derived AVC with a fast attack, slow decay characteristic. (Note - a silicon diode MUST be used here as we depend on it's reverse resistance of about 50 Megohms for the slow decay. A germanium diode would shunt the discharge resistor and degrade the slow decay as it's reverse resistance is in the order of about 1 Megohm). As the reverse resistance of silicon diodes isn't usually given it pays to try several as reverse resistance can vary so much. The type of diode used here is the type that costs only a few pence - the ones which are sold cheaply by the firms which sell surplus computer boards and components are the ones used by the writer. Even BY 100 power diodes will work well in this circuit. If a new "non-surplus" type is used, the Mullard OA202 or BAY38 will be suitable. The writer bought a quantity (40) for ten shillings and none of these proved faulty in any way. Reverse resistance varied from 30 Megohms up to an immeasurable value.

To carry out the modification, unsolder all the leads to the 6B7/6B8 valve holder, remove the valve and holder, fit the appropriate holder and rewire as per the circuit shown. In the circuit all existing components used are shown as C11 or R33 etc. All new components are shown as a value, 2 Kohm or 0·01 Mf etc. No extra mounting tags are required as all components can be fixed to existing tags or else self supported. The existing AVC "On-Off" Switch is used as the "AVC (IF) or "AVC (Audio)," switch. A new switch is fitted into the hole where the "Selectivity" control used to be and this is wired up as in the diagram shown below.



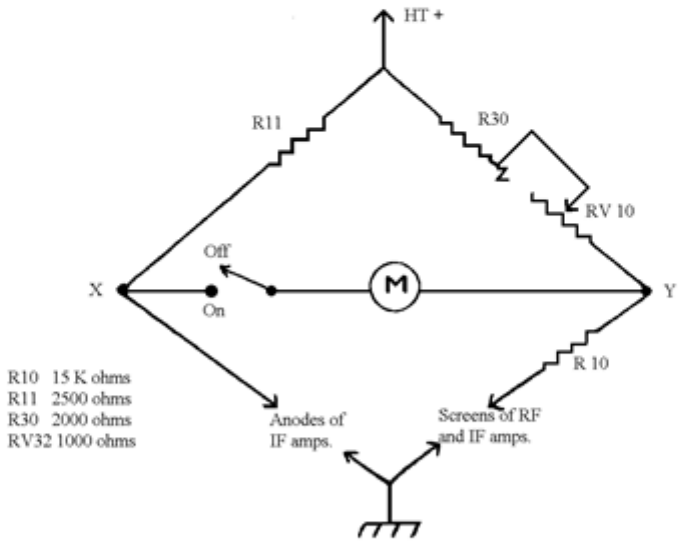

Included in this modification is the re-placing of the BFO "On- off" switch. Remove the toggle switch from the BFO pitch control capacitor (under chassis) and bring the leads up to the hole vacated by the phasing capacitor, where a separate switch is fitted. It is essential on an SSB receiver to be able to leave the BFO tuned to either USB or LSB and be able to switch off the BFO.

To adjust the 30 Philips trimmer, tune in a strong SSB signal on 80 metres and with the RF gain at maximum, AVC to "Audio", increase injection of the BFO until the SSB signal is readable. The best place to mount the capacitor is in place of the existing small fixed capacitor actually on the BFO valve spare pin.

Needless to say, the IF's will need a little re-aligning after this second mod. is completed - in particular the secondary of the last IF will need "peaking-up".

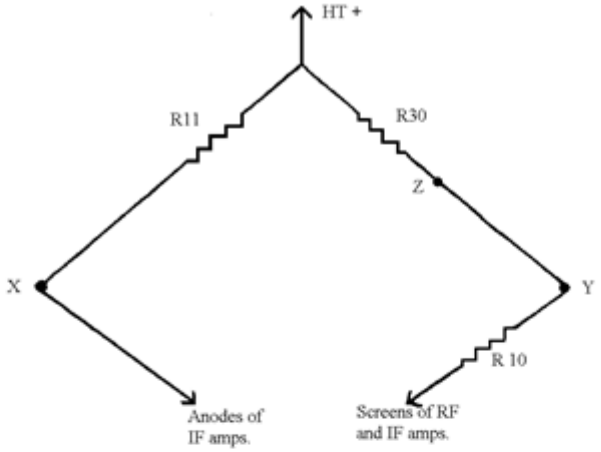
### 3. Modification to the "S" Meter

This modification is necessary due to the changed sensitivity of the IF stages and the different characteristics of the 6BA6 or 6SG7. In any case, the original circuit suffers in the same way as many "S" meter circuits, that is, if the RF gain is turned down, the meter moves to the right, i.e., indicates a bigger signal strength. Also, when pressing a "press-to-talk" switch, the "S" meter needle bangs over to full scale deflection. A simple modification changes this such that the "S" meter reads less as the RF gain is reduced and does not bang over on "send". Also the "S" meter sensitivity can be varied as the owner requires.

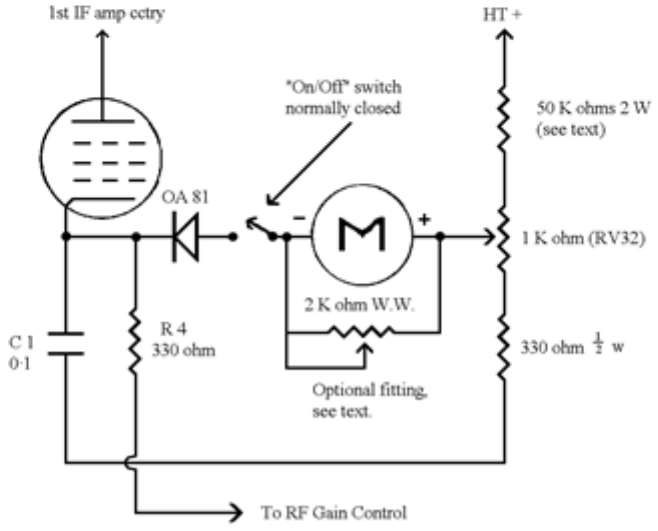



This is a bridge arrangement in which the screens are balanced against the IF valves anode current.

To carry out the modification, leave all components in position. The leads to the "S" meter are removed from the circuit at X and Y; point Z is connected to Y and the 1,000 ohm variable resistor is left unconnected as it is used in the new circuit. This leaves the circuit as below:




The new "S" meter circuit is as follows:




2 Kohm variable resistor (if used) is mounted on rear of meter and is self supporting on heavy wires to meter terminals.

The action of the circuit is as follows. The bridge is balanced in the normal way i.e., aerial and earth terminals are short circuited and RV 32 adjusted for zero current in the meter. (The 2 Kohm variable resistor across the meter is disconnected at this stage). This means that if, with no signal, the IF valve cathode voltage is plus 2 Volts then the slider of RV 32 will also be at plus 2 volts and a balanced condition exists. The aerial and earth short circuit is removed and the aerial connected. On receipt of a signal (AVC switched on) AVC bias will be applied to the valve and the cathode current reduced, reducing the cathode voltage. The bridge then becomes unbalanced and the diode will be forward biased allowing the meter to read. If on the other hand the RF gain control is turned down, a larger voltage will be developed on the cathode thus less current will flow through the meter, the meter then showing a reduced "S" reading. If the RF gain is reduced sufficiently, the cathode goes more positive than the slider of RV 32 and the diode is reverse biased, no current flows and so the meter doesn't go backwards! The two thousand ohm variable resistor across the meter just acts as a shunt and so the sensitivity of the meter can be reduced. The writer arranges the "S" meter to read S9 with 100 microvolts into the aerial terminal of the HRO, but this can be left to the reader to suit his own requirements.

It will be obvious that the "S" meter cannot be set up on both IF AVC and Audio AVC. It is suggested that it is correctly set up on audio derived AVC, with the BFO switched on. This choice is left to the reader. It must be pointed out that one small snag exists with audio derived AVC - it is only operative with "audio", of course. This means a heavy unmodulated carrier could cause overloading of the receiver if the BFO was not switched on. This is an unusual situation of course - for CW or SSB reception the BFO would always be on! However it is a small price to pay for the convenience of being able to operate with the RF gain full up and reduced audio gain on SSB and CW. The audio AVC is fine for CW and of course "S" meter reading can be given. Also, on SSB nets where one station is very strong and another very weak it is useful to be able to listen without reaching for the RF gain control all the time. Another snag with the "ordinary" receiver where the RF gain is turned down to receive SSB is that a weak station calling in may not be heard. The writer is able to copy distant stations, however weak, when tuned to a strong local station working a weak signal, without adjusting the RF gain at all.

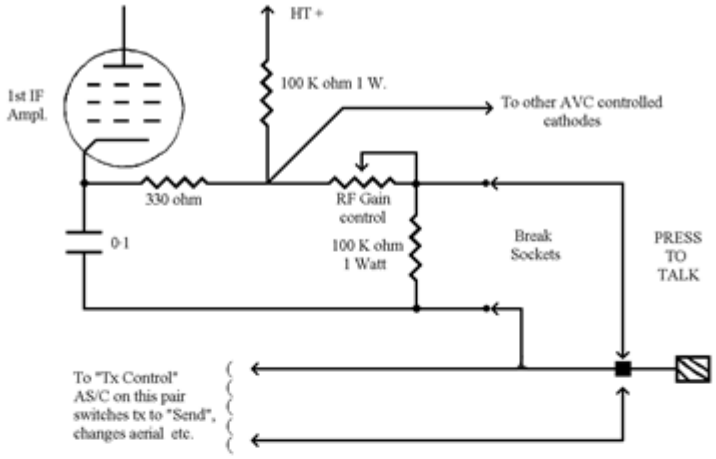
One point to note - if the "S" meter cannot be “zeroed” after the modification, then the value of the 50K ohm 2 watt resistor might need changing. If it is needed to reduce it’s value then add a 100 Kohm 1 watt in parallel. If it needs increasing, add a 5 Kohm 1 watt in series. In most cases the values shown will be OK.

## 4. Press to Talk

This is a simple but worthwhile addition to the circuit. The HT break sockets on the rear apron of the chassis are used. Remove the connections from the sockets and connect the wires together permanently, leaving the sockets free.

Bring the earthy end of the RF gain control from chassis to one of the sockets. Connect the other socket to chassis and put a 100 Kohm 1 watt resistor across the sockets. Then connect another 100 Kohm 1 watt resistor from the junction of the gain control and the 330 ohm cathode bias resistor of the first IF amplifier to HT +.

The circuit is as follows:




The modifications are now complete and you can rest assured they are easily done and well worthwhile. We have now completed our section A.

In the next issue of "Mercury" I hope to give full details of B. "The complete rebuild of a scrap HRO".

In conclusion, the writer would like to assure the reader that the modifications just described were carried out on a working HRO and from start to finish took four hours. This didn't include actual design time nor experimental work to assess results. Neither did this time include specification checking. Many different ideas were tried before actually settling on these modifications. However it did include re-alignment by the signal generator method.

(It may well be that the next article in this series will be split over the next two editions of "Mercury" - Editor).

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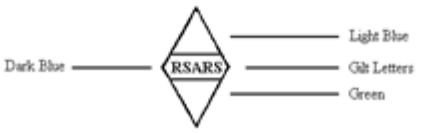
**RSARS LAPEL BADGE**




Each badge - 2/6 inclusive of postage
Your callsign can be added beneath the badge for an extra 5/- incl.

Orders to G3EKL at Blandford

## FROM YOUR HQ STATION

The Headquarter Station opened its doors to the South West District of the Scout movement for the annual International, "Jamboree-on-the Air" over the weekend 19th/20th October.

Some twenty Scouts came along and spent forty-eight hours at G4RS, sleeping "on site'". There were two complete amateur stations operating round the clock, G4RS and G3BHK/A, together with four short wave receivers for general listening and the Marconi D11 station taking suitable FSK signals. The latter proved very entertaining, contact was made with many Jamboree stations including one memorable thirty-minute QSO with Christchurch in New Zealand on 14 Mhz. Scouts in twenty-three different countries were contacted and various ideas and suggestions exchanged and discussed. All contacts were made by phone in order to allow for maximum participation although the Scouts were disappointed not to be allowed to speak themselves.

The party was greatly impressed by the equipment they saw and handled and thoroughly enjoyed themselves, Luckily they were excellent listeners and it is hoped that the hobby might get some recruits!

Another visitor during the quarter was G3BID (381) Edgar Wagner, who came /M as always. Not being too sure how to find the HQ Station Edgar asked to be "talked-in" and G3EKL obliged. Fine, except that Edgar went off the air about 15 miles away, near Dorchester, with a fault and eventually crept in "mute''. However he soon made up for his quietness once he was located and was greatly impressed by both G4RS and the Corps Museum.

We also had the pleasure of a flying visit from members of RSME (AFF 3) in the shape of Guy Yearsley G3WQH (20), Tom Leighton G3XFG (298) and Jim Barber G3TTJ (still not a member!) Jim managed to inveigle the Editor to a local hostelry for a long discussion over the pros and cons of an Army A.R.S., but neither party gave much ground.

Quite a considerable degree of havoc has been caused at Blandford because of the possible move of G3VYZ, Les Thompson. After quite a few flaps, courses being arranged and cancelled, doctor's advice being sought etc., Les has stayed put, managed to grab a little more towards his 1st Class Education, converted himself to some new fangled Corps technical standard and greatly assisted in the production of a second female harmonic. This latter is definitely not a "spurious" (despite the odd comment, from the Editor) and Les and XYL are delighted with everything.

Two welcome additions to the fold here are Jack Cooper, G3DPS (90) and Peter Smith, G3PNM (410), both with the School for a couple of years. Jack (one of the VS5RCS gang) has an irrepressible sense of humour and has agreed to organise the "get together" here on August 24th whilst Peter has decided that the Marconi engineers ought to have made provision for 45 baud operation of the D11 Station and what little spare space we had in the Marconi cabin has been taken up with "modified" Creed 7B's and Auto 6S's. (Anybody have a need for burnt-out motors!!?)

We have unfortunately lost G3VZP who has been on almost continuous exercise in DL land since the beginning of October and also Gerry Rhys (581) who has been posted to DL land on a permanent basis. With a bit of luck (sic!) Peter Dowdall (590) ought to be back in the fold by the time these notes are read and perhaps the HQ Station QSL system will run again without any hiccups.

## ON THE AWARDS FRONT BY GI2DZG
## (5)

In the last issue I stated that, that would be the last time I would write this feature. However, on reading the account of the AGM in the same issue, I was very surprised to learn that I had been elected an Honorary Life Member of the Society in appreciation of my services. I feel deeply honoured by this gesture and to those members responsible my sincere thanks. Added to this gesture, there arrived a few days later a kind letter of appreciation from the Society's President, Brigadier A.D. Brindley, MBE, FIEE. This I also value highly and the fact that the Society is to present me with a token of their esteem earns my warmest thanks. That I was in correspondence with both the HQ Secretary and the Field Secretary before and after the AGM and before "Mercury" appeared, with nary a whisper about the honour bestowed on yours truly shows excellent security in the Signals tradition! A word of sincere thanks to those of you who have written, either when submitting claims for Awards, or without, thanking me for my services. I have, no doubt that Ron Cox, my successor, will deal with claims received after 31st December when the present scheme ends, in an efficient manner. Indeed, already he has 'bombarded' me with claims which have been sent to him in error and greatly assisted the burden by verifying them, returning the cards where submitted to the claimants and forwarding to me a check list. Many thanks, Ron, for your help. I will, of course, deal with all claims for Awards received up to and including 31st December. Any claims submitted after that date should go to:

Mr. Ron Cox, G3VIS, Awards Manager, RSARS,
12 Linton Rise,
CATTERICK CAMP, Yorkshire

Members making claims should note that Ron moved to the above address recently.

Apologies to some members for the delay in dealing with their claims; a much overdue redecoration of the shack was the reason ... this work has now been completed but a "sort-out" is still under way. When everything is shipshape, yours truly hopes to air the KW2000A temptingly sitting on the floor of the shack!

## SCOREBOARD

## RSARS AWARDS LIST

| Class 1 | | | | Class II | | | |
|---|---|---|---|---|---|---|---|
| No. 37 | G3MKR | No. 45 | G3AYQ | No. 52 | P.S. Leybourne (516) | 61 | GM3PIP |
| 38 | G3JVD | 46 | G3VBE | 53 | G2CVY | 62 | G2WQ |
| 39 | G3WEQ | 47 | G3VYF | 54 | G3JVD | 63 | G3VBE |
| 40 | G3WUT | 48 | DL2BJ | 55 | G3WEQ | 64 | DL2BJ |
| 41 | G3XBR | 49 | G3WNI | 56 | G3VYF | 65 | G3WNI |
| 42 | G3VGN | 50 | G3BY | 57 | DL5YW, VS6AA | 66 | G3BY |
| 43 | GM3PIP | 51 | G2YS | 58 | G3XMA, G3XMZ/A | 67 | G3UUA |
| 44 | G5PM, ) | 52 | G3UUG | 59 | G3WUT | 68 | G2YS |
| | GM5PM/P ) | | | 60 | G3VGN | | |
| | GB3RMA ) | | | | | | |

Well that's the 'final final' from me,
Very 73, GUD HUNTING and have a Happy Christmas
de
W.E. CAUGHY.

(PS For the record, since this finale was written, another 1st Class Award claim has been received. Not unusual you may think but this one is for Fifty "all CW" contacts - the only such award yet claimed. It's from Dick Ramsey G3ARM. Details next issue -- Editor).

## "A COUPLE OF LETTERS IN FULL"

G3ONU
87 Harcourt Drive
Bushey, Herts.

1st Nov. 1968

To the Editor.

Dear Sir,

I read with interest the letter from Capt. Barber RE in the October Mercury and feel it necessary to clarify the position as I, an individual member of RSARS, see it.

G3TTJ will have noted from the same issue of Mercury in G3DSS's letter that attempts have been made in the past to form an Army Amateur Radio Society.

Whilst it is not clear why the attempts failed I believe the reason was, and still is, that Amateur Radio has a limited and rather specialised appeal to the Army as a whole, unlike for example, sailing, gliding, golf etc. where interest is not confined to any particular Regiment or Corps.

The majority of Army and ex-Army Amateurs are, or were, in Royal Signals and the remainder tend to be found within the more technical Regiments and Corps.

Because there was a great interest in the Corps, and because there was no support from the Army as a whole, the RSARS was formed and it receives the recognition and support from the Corps without which it could not function.

The fact that the Corps recognises the RSARS ensures that the HQ Station is housed and staffed and that where possible volunteers run the affairs of the Society. Despite G3TTJ's wishes RSARS has no authority to call itself an AARS nor do I consider that it should even if it were permitted.

I appreciate G3TTJ's sentiments about being a Sapper and for exactly the same sort of reasons I would wish the RSARS to continue even if an AARS were formed. There would be nothing strange about this situation as there are already a number of similar examples e.g. the RE Yacht Club and Army Sailing Association. G3TTJ will note in the October Mercury that RSARS welcomes all those in the Army who wish to be associated with the Society. If an AARS were to be formed then RSARS might lose a number of its Associated Members but would still continue as a thriving Society in it's own right.

Meanwhile a warm welcome to RSME Chatham and a hope that G3TTJ will join us, albeit as an interim measure, and without pressure to use the Jimmy QSL Card.

73

de G3ONU (Member 78)

32 Redwood Avenue,
Melton Mowbray,
Leics.

12th November, 1968

Dear OM,

Thank you for the latest "Mercury" - always a tonic and on a par with the more frequent publications.

Apropos the published letter of G3DSS and the apparent upsurge of woe within the ranks: let one member vouchsafe a comment or two.

Unfortunately I have been hors de combat over the last few weeks due to a house-move across town - immediately prior thereto I had reared my ugly head in the 80m nets with some trepidation (due to my confinement to A1 or A3) and, in a welter of A3J old boys, had found myself very much welcomed and very soon in a position to collect an Award. I have therefore heard no complaints.

Indeed, I am surprised to learn of charges levelled against the R.S.A.R.S. Nets conducted properly, participants the epitome of good operators by any standards and "content of programme" - ten out of ten. Surely a Gold!! With what are they charging us? Surely not that we, the cream of the British Army, are a closed shop? And surely not that entre-nous we work for (and help others obtain) an Award?

I am prouder of little more than to have had the pleasure and honour of serving in Royal Signals (for those interested, merely as 22035565 Signalman Radio Mech AIII at Catterick and Belsen - one who still "wears" his original Desert Rats on his shack wall and who regrets he was too young to wear them Prior to 1946/50. Let's keep it a closed shop! If the other fine Corps, Regiments etc. wish to form a noble Society then good luck to 'em - but Royal Signals for Royal Signals I say!!

Very sincerely

sgd. Richard Winters

G3NVK
Member No. 138

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## ANNUAL SUBSCRIPTIONS

Subscriptions are acknowledged from the following members between 1st October and 30th November.

130, 159, 162, 172, 244, 295, 299, 322, 393, 395, 468, 477, 505, 512, 578, 599.

## RADIATION RESISTANCE
## OR
## WHY IS IT WORTH FUSSING ABOUT FRACTIONS OF AN OHM?

**by G3BID - 381**

(This is an article primarily aimed at a mobileer - we have some in the Society. But the points raised are very much applicable to many of our serving members who, let's face it, are also mobileers - Ed).

"I saw a picture of your mobile rig, Edgar, and was horrified to see you use a spring".

That was how I was greeted in a QSO by a friend of mine.

"Oh, thats O.K.", I replied, feeling smug and secure, "Don't you know the spring is shorted out by a nice fat bit of copper braid?"

"Oh yes, but the corrosion which takes place is something wonderful and you never see it. The losses can be quite large".

My smugness was gone. I was shaken.

Next day I took my B.M.6 Megger to measure the D.C. resistance from the feed line to the antenna itself. 0·6 ohms. More than half an ohm. So my friend had something.

I dismantled the spring and measured the resistance across the spring with all the corrosion. Zero, or as near as I could tell it was zero, certainly less than the first half of a scale division, and the lowest scale division on the B.M. Megger is one-tenth of an ohm, so the spring with all its corrosion was definitely less than one-twentieth of the ohm.

That seemed O.K. So my friend was not right about the spring. But the resistance from the feed point to the ball (below the spring) was still over half an ohm - just 0·6 ohms in fact. Then the ball came to bits. Still no improvement. From the bottom half of the ball to the feed point (only about 6" away) was still 0·6 ohms. So the 6" of feed wire were removed. Still 0·6 ohms.

There was no escape. The whole antenna base had to be taken to bits and examined bit by bit using the Megger stage by stage. Naturally the suspected point was where the male coax plug fitted into the female socket on the base of the antenna base. This did appear corroded but not seriously. When the Megger was used from the long tube which forms the female socket contact to the bottom half of the ball, the 0·6 ohms appeared at once. Now this looked like one piece of metal. But it wasn't. The metal tube forming the female socket is steel and the ball is alloy. These were moulded together and it was at this point that corrosion had built up the contact resistance.

Now why all this fuss about these tiny fractions of an ohm? What does 0·6 ohm really matter? Isn't all this a lot of fuss about nothing?

The efficiency of a radiating system is expressed by:

$$\frac{R_r}{R_r + R_l} =$$

Where $R_r$ is the radiation resistance and
$R_l$ is the loss resistance

In the case of a half-wave dipole the radiation resistance is of the order of 70 ohms (somewhat dependent on the height).

In static stations where aerials of the physical dimensions of half a wave length (or at least a quarter of a wavelength) can be erected, the small fractions of an ohm are unimportant, as we can see from the efficiency of a dipole with a loss resistance of, say 3 ohms:

$$\frac{R_r}{R_r + R_l} \times 100 = \frac{70}{70+3} \times 100 = over\ 95\%$$

Reducing the loss resistance to 2 ohms will only raise the efficiency from 95·8% to 97·2%. But once the physical dimensions of the aerial fall below a quarter wavelength, the radiation resistance falls dramatically. The radiation resistance of a centre loaded 8 ft. whip on 80 meters is only 0·8 ohm, so that even the 0·6 ohm resistance I was fussing about would reduce the efficiency to....57%

$$\frac{R_r}{R_r + R_l} \times 100 = \frac{0{\cdot}8}{0{\cdot}8+0{\cdot}6} \times 100 = 57\%$$

If I had a base loaded 8' whip on 80 meters the radiation resistance would be 0·35 ohms.

so: $$\frac{R_r}{R_r + R_l} \times 100 = \frac{0{\cdot}35}{0{\cdot}35+0{\cdot}6} \times 100 = 36{\cdot}8\%$$

or nearly two-thirds of the power output from the transmitter would be lost in the 0·6 ohms.

If we look at Top Band, the figures are even more startling, since the radiation resistance of a centre loaded 8ft whip on 1800 Kc/s is 0·2 ohms and a base loaded 8ft whip on 1800 Kc/s is only 0·1 ohms.

So you can see why the fractions of an ohm really do matter in mobile operation though they are relatively unimportant in fixed locations. Since the car is an integral part of the radiating system, the fractions of an ohm matter not only on the aerial side but also on the car side.

And don't think that by going up on to Eighty or Forty you'll be able to get away with a dirty connection - far from it. Take a look at the table below which shows the radiation resistance of both base and centre loaded eight foot whips at various frequencies:

| | Base Loaded | Centre Loaded |
|---|---|---|
| F kc/s | Radiation resis in ohms | Radiation resis in ohms |
| 1800 | 0·1 | 0·2 |
| 3800 | 0·35 | 0·8 |
| 7200 | 1·35 | 3 |
| 14200 | 5·7 | 11 |
| 21250 | 14·8 | 27 |

So there you are. Take heed, watch any joint or connection for scrupulous cleanliness and keep that unwanted resistance as low as possible.

## THE G3VYF TRIBAND VERTICAL ANTENNA
## (327)

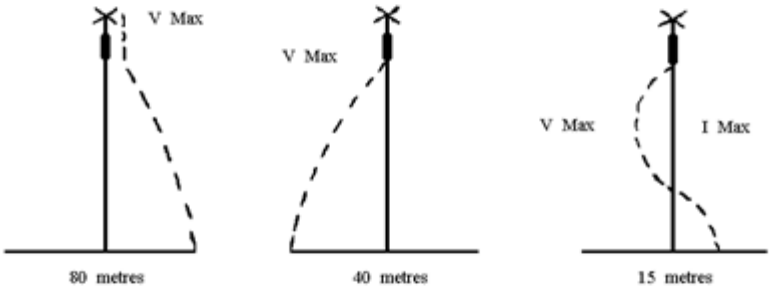
In recent years there has been a revival of interest in vertical antennae. These antennae present an effective means of radiating a low-angle, DX appealing signal on the amateur bands and are particularly useful to an operator who is restricted space-wise.

The antenna described here is constructed from the ubiquitous "golf-bag" or "D" section aerial readily available on the surplus market and which will be familiar to many members.

By careful construction and tuning, the antenna may be operated on 80, 40 and 15 metres, fed with a single 52 ohm co-axial feeder, and no mechanical bandswitching takes place as this is done electrically.

Overall dimensions are in the order of 38 to 40 ft high and two sets of four guys are required to stabilise the antenna under severe wind conditions.

The antenna functions as a top-loaded quarter wave on 80 metres, as a pure quarter wave on 40 as three quarter waves in phase on 15 metres.




Voltage and Current Distribution

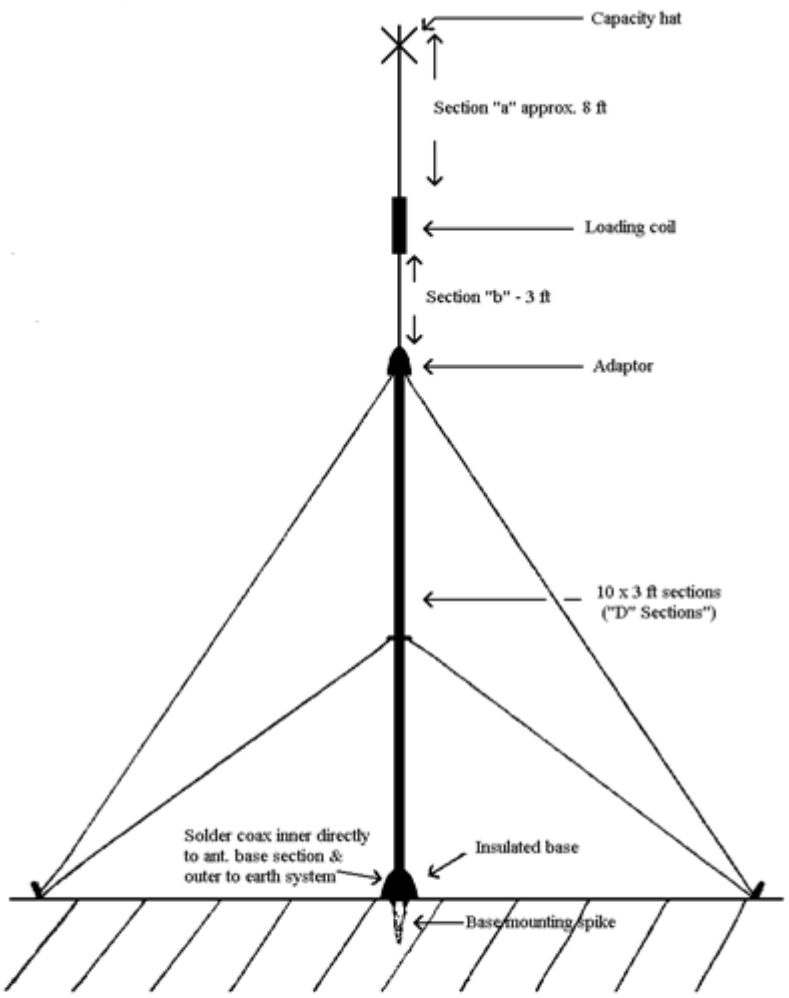
It can be seen from the diagram above that the loading coil/capacity hat arrangement is in circuit on 80 metres but effectively out of circuit on 40 and 15 metres.

The vertical operates as a 'trap' following the well-established W3DZZ or G8KW trap dipole principle, the main difference being that it is the self capacitance of the whip etc., which is used to tune the system. (A fixed C of 50-60 pf is used in the W3DZZ).

A quick look at an amateur radio handbook will show the various polar diagrams to be expected, however an omnidirectional pattern, governed largely by the effects of local screening, will result in practice.

On 80 and 40 metres, depending on earthing conditions, a radiation angle of around 30° can be expected whilst on 15 metres it will be somewhat higher, at least 45°.

The only real constructional aspect of the antenna lies in the fashioning of the loading coil. A "Q" of around 50 to 100 was decided upon and the coil was constructed as shown. This method need not be adhered to, a commercial mobile whip could easily be substituted, or a loading coil of differing dimensions used.




Notes

i) Original green guys replaced by polythene line.

ii) All "D" section joints to be treated with silicone grease and sealed with waterproof polythene tape.

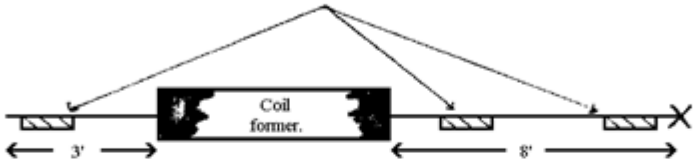
## G3VYF Tri - Band Vertical Antenna

## Details of Loading Coil & Capacity Hat.

Materials required: -

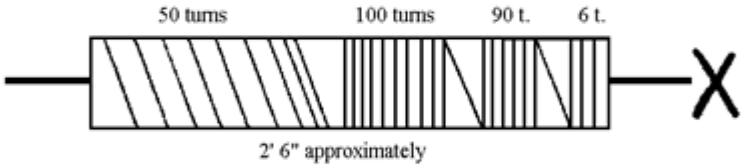
i) 1" diameter Tufnol tube or PVC rainspouting.
ii) Isopon glass fibre kit,
iii) 18 swg enamelled wire.
iv) Polythene adhesive tape.

Lay out on blocks to allow fibreglass to set,

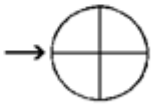



Insert whip sections into coil former and secure firmly with fibreglass

Coil Winding Details




i) Gradually decrease turns spacing at the centre end of the fifty turn section,
ii) Vary spacing of the six turn section for fine tuning.
iii) On the original coil 250 turns were used (approx. 72 ft of wire) of 18 swg enamelled wire. (20 or 22 swg can be used equally as well)
iv) Capacity hat constructed from 14 swg hard drawn copper, approx. 9" diameter and soldered to whip section,



v) Once coil is resonated, tape up with polythene adhesive tape,

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The main point to observe is that this loading section, when fitted with its whip sections and capacity hat, MUST be accurately resonated, preferably using a G.D.O.

It was found that by assembling the coil, whip and capacity hat together and putting them out in the clear in a vertical position and insulated from ground, that a g.d.o. could be connected between the whip base and ground and the resonant frequency set. As there was ample room on the type of coil former used, resonance at the desired frequency was achieved by varying the spacing of the turns, fine tuning being accomplished by varying the capacity hat.

It was found that by tuning the loading section "on the ground" as previously mentioned, it needed to be resonated 50-100 Kc/s BELOW the desired operating frequency. When the full antenna was erected it became self resonant on the desired frequency.

This is assumed to be because as the top loading constants are raised, they present less capacitance to ground, so effectively moving the tune point higher in frequency.

When raising the completed antenna a good method to employ is as follows:

Muster five friends, one to each 2 guys and one positioned by the base insulator, screw the "D" sections together and take up tension on the guys.

When all sections are in place the antenna is dropped into the well of the insulator and the guys made off and aligned. (Originally the writer and XYL raised the prototype unaided, cries of "never again"!! rent the air, along with choicer epithets, of course!)

The resonant frequency can then be checked on 80 metres and any adjustment required made to the coil or capacity hat ONLY.

Unless the services of the fire brigade (a la VS5RCS) are available this will mean raising and lowering the antenna to get it just right.

It is at this stage that ones nerves become slightly frayed when comments such as "Does it fly?" "Will it get Luxembourg?" etc. are passed by the neighbours. But this manipulating is absolutely vital, as the secret of any antenna system is patiently tuning it until it's truly resonant.

A short word too, on earth systems. On Canvey Island, where the antenna was originally tested, the earth is damp and a good earth connection was possible. Aluminium or copper rods, six to eight feet long and spread evenly around the base of the antenna, were interconnected with heavy copper braiding and formed the earth mat. Although radials were experimented with they proved to be of no apparent help. R.F. current was measured at the base of the antenna, and typical figures using the KW2000A as an RF source were:

80 metres 1·5 amps; 40 metres, 1·0 amp and 15 metres 0·6 amps

with the rig in the "TUNE" position. (The aerial was also tried on 160 metres the loading coil being replaced by one correspondingly larger and 0·3 amps were indicated).

Results over the test period proved encouraging and some details are mentioned, if only to prove that the thing does work!

(1) On 40 metres: VK5KO - 569, YV1BL, 5 & 9 W's 589, PY's 5 & 7 to 5 & 9 +15 dBs,
ZL2BCG 5 & 7/8

(2) On 80 metres: ZC4RB 5 & 7(Barefoot), VO1FG 5 & 8, lots of EU and G with good reports but not much time spent on this band.

(3) On 160 metres: ZB2AY 5 & 9, ZC4RB 5 & 9, W's 569 lots of EU and G with good reports.

(4) On 15 metres: ZL, AFRICA, South and North America usually two "S" units down on a 3 element YAGI.

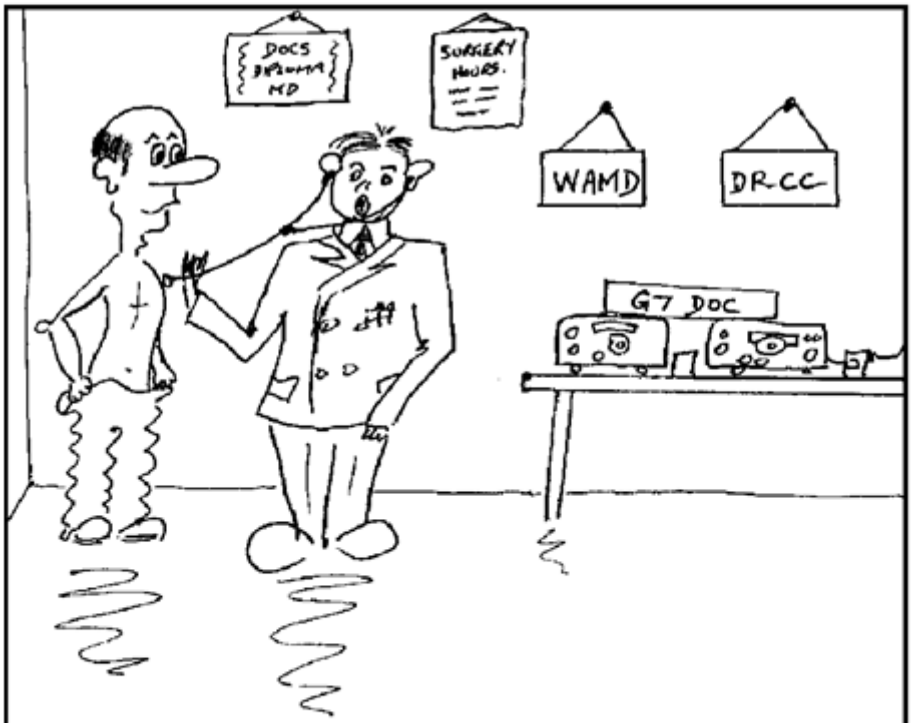
I hope this gives some encouragement to play about with verticals. Once the "feel" has been realised and the use of a g.d.o. and S.W.R. bridge mastered, they are extremely simple to adjust.

No mention has been made of tuning the antenna on 40 or 15 metres. It can be adjusted on these frequencies by varying the length of section "b" in the mast diagram, but in the writer's case this proved unnecessary.

By moving the capacity hat up and down the top whip section (a) a good degree of fine tuning on 80 metres is possible.

Finally, the importance of a really good earth mat cannot be overstressed, without it no vertical antenna can be expected to give first-class results.

(The editor offers an alternative to 'D' sections- empty beer cans (or "coke" tins if need be) These cans form the mast proper, each being carefully sweated to the next. with a larger diameter, the aerial resonates over a wider frequency bandwidth. Results should be similar and getting the empty cans is great fun!!




"It's up to you old man - Scalpel or soldering iron?"

## FROM THE EDITOR'S POSTBAG

**406** Tks for your letter and change of QTH. Hope you soon get your DL ticket and then good luck to you and DL5YS!! Perhaps special schedule times will be the answer to overcome mutual interference. We had a similar situation here at Blandford last year when G3KPQ and G3WXX used the same antenna mast - I believe they are still the best of friends!! STOP PRESS - call now received DL4ZZ

**G3SNN 209** Very good of you Tony to let me have your new QTH so promptly. For the benefit of the readers, Tony has just left ZC4 where he was ZC4CN. An excellent photo of him in action during the last NFD appeared on the front cover of the July '68 "BULL".

Glad you have managed to coerce Brian Thomas into action - we have served together and I appreciate only too well just how difficult it is to make Brian do something that he doesn't want to do!!

Look forward to hearing you on the LF bands with your G call and I feel sure that you'll be active on the last Sunday of each month, having experienced first hand the difficulty of raising our G based members,

**G3FDU 127** Glad you enjoyed the last "Mercury" John and thank you for your kind comments. I had already hawked the "inaugural"' picture around as many of the members present as I could lay my hands on but drew a blank with two question marks. Unfortunately photos are still causing me some little embarrassment and I'm far from happy about the reproduction, so it is virtually hopeless to determine the faces from the last edition.

OK about your being in W land by Christmas and I hope the transistorised transceiver perks to your entire satisfaction. Look forward to your call details John, although of the few members of ours in the States, great difficulty seems to exist in making contact with them from G land - whether it's due to the W kilowatts swamping the "legal input" I don't know, but I hope we manage to hear your signal.

**G3ARM 222** Delighted to hear from you OM and to receive your suggestion for the Fiftieth Anniversary of the Corps. Your offer to assist at the operation of G4RS will not be forgotten!!

**44** No call I'm afraid Bert but nevertheless delighted to hear from you and to see that you have been sent back to the heart of the Corps. I know very well just what sort of job you do and I hope that your good offices will continue to improve the technical standard within Royal Signals. Good luck at Catterick and I hope you will continue to visit G3CIO until the time that bug bites and you get down to getting a licence.

**578** Another gentleman without a call-very nice of you to write OM and I hope that your stay in DL land will be of interest to you. You don't mention just where you are going but the odds are that there will be an amateur station in the area - don't hesitate to make yourself known. Good luck.

**G4DR 490** Tks for your subs Pat and good wishes. So you're another of this black hand gang together with G3IV and G2FYT!! Perhaps the postbag snippet from G2FYT may interest you also.

**G2AYQ 178** Your letter rcvd Ted and much obliged. When I got down to contacting our printer for a reprint, the cost was certainly lower than I had suggested.

**GI8AYZ 58** Hope you got my short note Ian and followed my reasoning about the Award.
Ian makes a very generous offer to any member "If anyone is interested, apart from home QTH operation, I can go /P fairly readily into most of the GI counties. Always ready to oblige, thats me !! Applications for special counties (In triplicate on the back of fivers for preference) considered when the weather ameliorates!!" Ian continues that he is a hopeful GI8 plus 3 anxious to make a few Society contacts on Two - any one interested again, just drop him a line (no lolly needed for home QSO's!!)

**VS6AA 282** As usual, a steady stream of titbits from you Maurice but I daren't put them all in here, I'd get shot!! Good to hear that you found ZC4IM - just as well it was before he QSYed back to G to get spliced - now for a prolonged QRT!! So you are sounding out a trip to 9M6 or 9M8 (Where the devil are these places never seem to hear such calls on 80!! ) - keep me in the picture pse.
How dare you call my history a "clotted" one!! Far nearer the mark had you said a "filtered" one - wonder how much of yours I could put to print?
Glad to see you go a bundle on the Postbag. As you also appreciate Maurice, I look forward to any suitable material and would welcome your contributions, albeit with trepidation!!

**G3BDU 130** Tks for your letter OM and views. You'll see from a postbag comment elsewhere that I'm equally upset about the reproduction of the photographs in the "Mercury". But beggars can't be choosers and I've been working on the premise that something is better than nowt!! But I shan't use any more unless I can be assured of understandable copy!
I must make the point however that not all of our readers see a "Bull" or "SWM" or even a "Wire" so a poor reproduction is better than nothing. But I take your point entirely and no blasts!!

**5Z4LS 293** Well done Nick, that's what I call service!! Hope you settle down very happily there and manage to produce lots and lots of' RF!!
For the rest of our members Nick writes as follows: "The licence has just come through (November) and I'm not fully operational although I hope to be within a couple of weeks - not helped by the fact that there is no electricity at the school where I live - 20 miles up a murram road from Nyeri. However I hope to be very active soon and will be looking for Society members - I think I am the only RSARS 5Z4. (Not quite true, we have 5Z4IR Ray Jarvis, No. 118 in Nairobi - Ed)

**159** Very good of you to write Charles and glad you find the "Mercury" of interest. I noticed your name mentioned in the November "Radial" but soon realised that you were one and the same person!! Shall be delighted to see you as and when you can make it - afternoons for a preference or either of the Club evenings.

**G2HKU 295** Your linear sounds very potent and certainly very compact Ted. Doubtless you will already have been heard back on the net by the time this is in print. At any rate good luck with your 4 x TT22's and I hope that the old KW 201 rx cabinet you have used offers enough ventilation!!

**GM3VBL 59**Your suggestions about the Awards Scheme are interesting Chris. Must quote for the benefit of those who attended the AGM!! "The cost of awards to members (plaque) should be subsidised by the charges to non-members.

or

The Society and the applicant should pay for the plaque on a 50/50 basis.
All those at the AGM who already have a plaque should be sent a bill for £2.10.0.!!"

Ah well - one mans' meat is another mans' poison!!

OK about not being active since you QSYed to Edinburgh, although you are able to listen with your G2DAF Mk II rx. You mention saving steadily for an SB 101 - excellent value, although from the look of things you could easily save quite a few hard earned pounds and have a look at the HW 100 which uses the majority of the cct boards from the 101 and has most of it's electrical features. As you so rightly say, it is most disappointing to see your hard earned lolly being drained off into Harold's coffers - but, then you have had your share of it as a student!! you can't have it both ways!!

Good luck up there Chris, and if any of our members are thinking of putting on a GM expedition, then Chris would be pleased to offer any assistance he could ... and of course a wee dram (Harold permitting). This refers to the counties near to Edinburgh of which Chris assures me that there are plenty!!

**G3SDD 479**Can quite understand the troubles you have in finding time to get on the air whilst you have been studying for exams. By now these ought to be behind you and we should be able to hear more of you I hope. About QSLing - perhaps the RSARS QSL Bureau will be the answer, it should certainly be cheaper. OK on being more interested in CW.

**G2FRY 289**Nice to hear from you Alex and receive your good wishes and thanks. So you were with 17th Indian Div in PEGU. If you should read this, G3POY, Alex thinks that you were in the same area in 46/47 and wonders if you remember the racecourse that was built by the Jap POW's? Apparently Alex used to help with the Tote!!!

For the rest of the members, Alex runs a Vanguard to a 66' inverted L for 10 and 20 with a ground plane for 15. His rx is an HRO with an Electroniques front end. Seems to do OK as he reports a long QSO with VS6AA.

**G5FG 303** Well OM, as you may notice from my answer to Eric, G2FYT, I'm none the wiser as to what SCU 3 is or was!! Funnily enough Bill Windle has made nary a sound - but this may well be due to Bill being under the strict surveillance of his doctor. Thank-you very much indeed for your good wishes for 1969. (Will you let me out of my misery?)

**G3WET 584**You keep cropping up all over the place John - I'm never quite sure just where to expect to hear you call from next!! Tks for your corrections about the MP4 calls - Peter Dowdall has yet to comment, as it was his information that I put in "Mercury".

**G2QB 397** Your kind comments are very much appreciated OM. Yes, I am sure we have a winner with G3JXL. Evan, G5YN, still keeps sending me some excellent material but I have trouble sorting out his diagrams and so take the least line of resistance!! But I'll get round to his next batch of articles before long. Good luck to you and the St. Albans Club in 1969.

**G3EJF 004** Good to hear from you once again John and to learn that you are active on the key for a further spell. So the members can expect to hear you on 80 with a spot of controlled carrier AM at times also. Keep up the good work - by the way Jack Cooper (90) looked completely blank when I asked him if he remembered you from the get together in AER days - it must have been some evening!!

**G3BEC 113** Thank you Nobby for your letter and views. I have explained to you under separate cover just how things are here!! For general interest Nobby runs mostly /P with Codar AT5 using either a 36' loaded vertical or a 264' long wire. Times of operating are usually between 1700 and 1930 Z Monday to Friday depending upon weather as the antenna has to be erected and dismantled with each operating session!! (That's what is called keenness - Ed) Bands are 160 and 80 metres.

**G3IDG 24** Hello again Allan and, thank you for your long letter. Your suggestion for the Corps Golden Jubilee has been duly noted. OK too about G3VUC who collects all kinds of used stamps G, or otherwise, for RAIBC. A very worthy cause indeed. So if any of our members feel like helping the Bedfast Club please send any sort of used stamps, preferably with ¼" or more margin from the old envelope and send them, in any quantity, to G3VUC who is OK in the current call book.

If G3POY has read this far, Allan was in 45 Squad training as an OWL at 1 OTB in 1943/44.

Your letter took just one day to be delivered!!

**G8VG 340** Your FOC Sheet is always very welcome and also of course your letters Bill. Very sorry to hear that you have been over doing it and hope that by the time you read this you will be back to normal (and have shed some of the load!) As at the end of October - 196 worked, 179 confirmed, good effort and it just goes to show that QSL's do come back!

**G3ONU 76** Tks for your vote and screed Des. Six members have asked me if I have any spare old HRO's - the answer is "No" Perhaps I'd better drop the QM bit from my rank!!!

**G3TUM 121** Oh dear John - the last time you wrote to me I had made a mistake with your call - trust it is correct, this time!! I am rather surprised at your comment about G4RS not QSLing. Since Peter Dowdall left us for warmer climates, the QSL side of the HQ Station has been left to Les, G3VYZ, who has been rather pushed one way and another. However he is quite sure that he has cleared all contacts via the Bureau and indeed quite frequently direct by post. So just what has happened to your QSL for the contact with G4RS I just do not know.

I shall be writing to you 'ere long about a mobile rally.

**GW2OP 15** Luckily George, you and I manage to have the odd natter on 80 metres and so keep in touch more personally than through letters. Glad you think that the Awards Scheme has been the making of the Society, I'm sure that Walter, GI2DZG, would agree with you. But, you so rightly say, the figures of 25 and 50 are so ridiculously easy to get that they need to be revised. I hope the new Scheme shown in this "Mercury" will suit the bill.

**G2FYT 478** Hello Eric and tks for letting me out of my misery. At least I now realise that SCU 3 was a Unit of some kind or other!! If G3IV, Themie Orr has read this far, then Eric would be delighted to hear from you after all these years - nearly twenty-five years ago and time just creeps on (and old age too!!) So what about it G3IV, I'm still lost as to what SCU 3 was, but at least Eric wants to get in touch with you if you have the time.

Yes, the AGM certainly carried on, but then the subject was close to the hearts of a lot of the members (as I can confirm from the number of ballot forms I have received) and so really was a necessity!! Hope it hasn't put you off from attending again.

**GM3LWS 89** Nice to hear from you Ted and to hear your views. It is surprising the number of the members who have asked about a lapel badge in addition to or in lieu of a tie. You have raised the point of a tie that can be easily worn with most things, I'm sure that it will suit most occasions without upsetting ones dress sense.

**G3VGN 434** Hello Bill, good to hear from you and to get your views of things. It is very difficult to please everybody, least of all those who have already striven for the Award and not yet been able to get the requisite number of cards. But I hope the revised Scheme will not cause too much heartache with the members. I'm quite sure it won't with you!! I'm not often on the evening net these days Bill. Up to date I have been holding the fort on 3505 but members seem to be particularly shy of CW - can't see why for the life of me. Now the Scheme has changed and things have eased up a bit, I'11 probably join the net with my own call and enjoy your company.

**G3PQF 70** I didn't realise that you were at the Exhibition Dave - sorry for that else I would have wormed my way across to have an eyeball (apparently that qualified for a QSL card!!) but seriously though, Tony, G3VNX, certainly acquitted himself well at the AGM and made his point. He amazes me at his slickness on the CHC net control - rather him than me!!

**249** Tks very much for your change of QTH and news. Pleased to know that you often listen to the net and hope your new place still offers good reception facilities.

**9M2NF 85** Your letters from KL have been always very welcome Dennis, the more so because we know each other personally. Now you have QSYed back to G land I hope you manage to have a good rest before moving on to DL land. Your results in 9M2 are impressive bearing in mind the time you have been out there - 262 countries worked, 250confirmed. I only hope you don't lose interest with the hobby with a more humdrum DL call!!

Dennis settles in DL at the end of March and I hope to be able to offer his call sign in the next edition of the "Mercury"

**G3JVD 190** Your very long letter was carefully digested Wilf - thankyou for your trouble. You mention the 33 set - that should pin some of the lads ears back, it used to be an extremely potent tx in it's day so too was the dear old 12 set. The PA valve was always the problem to replace unless one was a CW man only, then the 807 did the trick. Bearing in mind that the rig used suppressor grid mod, it gave a very good performance. But I haven't heard of one being used on Ten before.

There has certainly been a spate of peculiar conditions on 80 during the autumn and it hasn't helped the nets at all. Things should start to sort themselves out very soon and you will be able to hit the ton very quickly.

**G3WNI 521** Thank you very much for your letter and views. There are always two sides to any story unfortunately and it is extremely difficult to please everybody. The growing pains you mention are not strictly true, more a sort out of the paper work upon which the Society is based and an adjustment of the rules to cater for what had already happened. By a coincidence, G3ONU has written on this very subject and his letter is elsewhere in this Edition. As for feeling an interloper on the Eighty metre nets, surely your background shouldn't make any difference to you Bill? You have worked closely with the Corps and in the skills that the Corps is proud to be associated with so why ever feel that you are an outsider? Please join in whenever you have the time to do so. Of course Maurice Caplan is an amazing talker - only hope very sincerely that you don't hold anything against him!!

**ZC4IM 435** At last you've broken your silence Iain - I thought you had gone permanently "bosch nuts"!! Very nice to receive your letter and to get all your news. By now you will have learned all about the trials and tribulations of an XYL - I hope your RF isn't permanently muted!!

Iain hopes to be active "during NAAFI breaks" on Ten and Fifteen, possibly Twenty, on 14030, 21045 and 28060, rock bound with a QRP all transistor CW rig just off the stocks. The antenna will be a ground plane at the top of a 130 ft tower. QSL's are good also, in fact Iain offers two types, "one for EU/DX which is just a two colour printed thing and the other a pretty picture post card of historic Cyprus showing one of the old ruins (shouldn't say that, she's really quite a nice girl!!) All that RSARS members have to do to get one is to queue up and work ZC4IM". (Ah well, perhaps the next letter may be an order for some Society cards - Ed)

**VE3CQH 67** You speak of "your new self-supporting Canadian mail service" - I only hope that it operates more efficiently than our new fangled two-tier system. It is still a gamble with what our Post Office call "1st Class mail" as to whether it will be delivered the next day or anything up to a week later. I speak from bitter experience with so many of the members writing in, most who, like myself, rely on the 2nd Class, 4d, touch. Just when you will get your copy of the "MERCURY" is entirely in the lap of the Gods

Tks for your views on the Awards scheme. Tks also for news on Doug Yerxa - guess he has drawn a blank with a call in Tanzania which is rather a shame.

Fine business about the increase of members with VE3RCS, and of your hopes of Vimy Barracks possibly becoming the communications training centre for all of Canada with your integration. That should certainly improve your membership stakes.

**9M2RH AFF 45** Very good of you to write Bob and give me the local griff. Cndx from your part of the world have dropped off during the last few months and 9M2 is almost becoming a rare one, particularly after the terrific signals of 9M2DQ and 9M2NF. Hope you can get weaving with your FT-DX400 and manage to make yourself heard.

You have certainly done well to raise 143 countries since February '68 - but just why fellow amateurs are so slow in QSLing remains an unsolved mystery. Hope you have managed to improve on your 5% return by now, else you'll never make DXCC!!

Too late for me to wish your four members good luck with the RAE, let's hope all has gone well and they can soon join you on the road to a licence.

**G3IV 272** Just as well I worked you Them last month else I would still have been wondering what the devil "SCU 3" was!!! And to think that G8NY knew all the time!

Should you read this bit Les, Them would very much like to get in touch with you, preferably on 80 but otherwise he is OK in the call book.

And what was SCU 3 - well that would be telling wouldn't it!!?

**G3RUS 122** Delighted to get your screed Les - and to think that you were almost QRT this time last year!! Your graphic description of your new rig and what you have let yourself in for can be repeated for the benefit of other CW friends who have yet to take the SSB plunge!

"Yes, I have now joined that frightful fraternity who live higher up the band, and have bought a Vespa Mk II and the KW 201 rx.

I'm getting acclimatised though must admit it sometimes sounds like a bunch of drunken Pakistanis arguing in a Chinese laundry adjacent to a farmyard of quacking ducks! But no doubt I'll get used to the gabble.

At the moment I'm scared stiff of the ..... thing. Every third line in the Manual warns "DO NOT EXCEED 15 SECONDS IN TUNING OR ELSE THE PA GOES UP". Four PA's later and I've got my time down to 16 seconds flat which means I don't get through more than two or three 6HF5's a day. At about 46/- a time this becomes rather boring - particularly after accruing a sackful of 807's and 6146's!!"

I could go on further Les but I had better not. Let's hope by the time you read this you have mastered the vagaries of your Vespa and settled down to a cheaper and less exacting method of communication. One thing is for certain, it won't be long before your voice will he as well known as your fist.

**DL5YX 547.** Although I haven't actually heard from you Robbie, I saw your ad. in the November "Bull". Are you going QRT forever, or do you envisage a new streamlined station? The latter I hope as there is a dearth of RF from your particular locality. Any hopes of a Club station in action?

**G3XTL 334** Very nice to receive your card via G3VYZ - I thought I had got mixed up with "Softly Softly"!! Hope you manage to get G3SIG weaving - a very pertinent call that and one that mustn't be lost. Your history is interesting, operating as MP9BS and also associated with MD7DC between 1949 and 1953. Good luck now that you have your own call and Les was very psed to know that the slow morse xmissions from the HQ station are useful.

**315** Very good of you to write OM and to give me your news of Gibraltar. Glad you have made contact with Jock Braithwaite, ZB2BC, and that you are active frequently with the RAF Club call ZB2A. Hope you were satisfied with the bumph I sent out, the two booklets are extremely useful from the RSGB. Good luck with your studies and perhaps by the next edition I shall be able to quote your own call!!

**123** You have been doing very well Colin. I heard your SB 101 the first time that Ron ran it at G3CIO - it sounded excellent. You must have felt very proud that evening when it was radiating! Sorry you have such trouble with the GPO in getting your call - it will have to go in as an amendment next time.

ooooo------ooooo

## RSARS QSL BUREAU

A QSL Bureau for use **between** RSARS members only is available.

Any member wishing to clear QSL cards to other member stations, please despatch cards in bulk to G3HSE.

Any member wishing to collect cards from the bureau should send SAE's of sufficient size and with sufficient postage thereon to G3HSE.

Please put on the reverse of the envelope your callsign, membership number and the minimum number of cards to be despatched (i.e. one or more).

A list of unclaimed cards will be published in each edition of "Mercury".

Address for the Bureau, and any enquiries (with SAE) is:

RSARS QSL Bureau
76, Brocklehurst Street
New Cross
London, S.E.14

Tel: 01-630-1594

**FEMININE INTUITION**
**OR**
**HOW HARD IS IT TO GET INTO A MANS' GAME?**
**BY KAY HITCHEN (261)**

I never really wanted to go to Eindhoven but my Mum and Dad were on holiday with us in Holland and wanted to see everything that they could. I looked at David, my husband, but didn't really expect any help because it was his suggestion to go in the first place. Sure enough, I was outvoted, three to one, so the next morning we were on our way to Eindhoven. We were looking for the Philips permanent electrical exhibition and the lads in David's troop had told him to look for a large flying saucer! I tried to give him every encouragement on the way there by saying things like, "They're pulling your leg", "I wonder if little green men live there" and "they'll never get it off the ground y'know" when suddenly I realised that David was following a series of signs. Funny little signs like a cross between the star of David and two elongated circles, with a blob in the middle. "What's that?" I asked. "It's similar to the orbit of electrons around the nucleus" was his reply. I agreed. I was not really in a position to disagree because, although I had learnt E and M while in the Womens Royal Army Corps, and when I was a teleprinting instructor at 24th Signal Regiment I was considered by my trainees to be a mine of information, (very encouraging for my morale!), little did they know that I was unable to wire a three pin plug - in fact, I can't do that even now! (What about It 'CIO- Ed)

We parked the car by one of the legs of the 'flying saucer' and paid our guilder (2/-) each to go in. We were in a huge round room with sort of balconies around it. The balconies seemed to go up and up forever, in fact it made me quite dizzy to look up that far! By the side of the door were five glass tubes with a series of red light bulbs in each that kept changing into different numbers. This showed the number of people at that time in the "Evoloun" as it was called. A large 'thing' in the middle which hung from the roof and nearly reached the ground floor was explained away as a model of a molecular structure. Quite a large-sized model really when you consider that the Evoloun is about 30 feet high at the centre!

There was a lift to the top floor where most people started from but we preferred to be awkward and walk from the bottom floor upwards. The 'basement' rather upset my Mother and me. It was full of Philip's products and we saw washing machines, dishwashers and many other things that were far cheaper than in England but even so, way beyond our pockets. We went to the next floor called 'Technology' and it was here that I heard electronic music for the first time. It sounded a bit 'spooky' and would definitely never make the top ten but it was fascinating to listen to although I would hate to dance to it.

Next was a model of 'matter' where you pushed a button to see the electrons whizzing around the atoms and the more buttons you pressed the more atoms lit up. "Very pretty" I thought. By using all my fingers pushing in different buttons I found I had a pattern vaguely reminiscent of Blackpool Illuminations. As soon as David saw what I was doing he dragged me away to the next floor before, as he put it, "you blow the whole place up!"

By this time Dad and David were in raptures over the whole thing whilst Mum and I were bored stiff. All we could get out of the menfolk was " Look at this Dave" or "Hey Dad, look". Mum and I decided to leave them to it and find a cafeteria for a cup of tea, but we couldn't find the staircase, so we wandered around wondering what on earth it was all about.

Then we came to Stand 37 and things really changed. There were postcards stuck everywhere, (well, not picture postcards but they had letters and figures on them and some of them had pictures as well) "QSL's" said a voice and I tried to nod intelligently. I looked in the direction of the voice and found a rather gorgeous young man smiling at me. I looked around - David was nowhere in sight!! So I returned the smile and said, "Isn't it all terribly boring?" He laughed. "Not if you understand it" he said. He was sitting in front of two grey boxes, each covered with knobs, - well they must have had about ten on each. At the side of him was what looked like a huge filing cabinet which contained the transmitter. There was a map of the world spread along the back wall, part of
which was lit up. Just above it was the name of every country in the world and some of these had a light behind them. I started to ask what the lights represented, when David appeared at my elbow. "Now don't waste time by asking questions, you said you don't understand it". "The fraulein is very interested" said the 'voice'. "Frau" said David haughtily. "What is it doing?" I asked. David explained that it was a thing called 'Ham Radio' and I was suddenly intrigued and wanted to know how, why, when and where. The 'voice' turned out to be Peter, a Dutchman employed by Philips to work the ham station in the Evoluon. He kept saying "'PE2EVO" and when I asked what this was I was told that it was a special call sign issued by the Dutch Government. PE stood for Permanent Exhibition and EVC were the first three letters of the Evoluon.

The map on the back wall showed the whole world and the part that was lit up indicated the parts of the world where it was daylight at that particular time. The list of names showed every country in the world with whom it would be possible to communicate. The lights behind some countries showed places that had been contacted that day.

Peter set to and gave us a demonstration. He sat down, twiddled a knob here and there, spoke into the mike - and hey presto! We were in contact with a ham in Cheltenham. "How marvellous," I thought "and so easy".

We paid several more visits to Peter and the Evoluon after that, but now I was more insistent to go. Each time I found something new to admire and rather astounded David by asking Peter questions about becoming a ham.

Soon, David was posted so we had to say goodbye to Holland and its wonderful people. We had lived here for eighteen months and yet I felt a native of Limburg.

It was quite a blow to come from Holland and its long, hot summers and short sharp winters and find we were posted to Catterick where, as you all probably know, winter drags on for about ten months of the year and you might miss summer if you spend too long in the bathroom!

We became members of the radio club and joined the Royal Signals Amateur Radio Society. My membership number is 261, much to the annoyance of the rest of the gang because most of them have a higher number. G3TBP said, "It's only because you're a bird!" I wonder? (Trust Derek!! Definitely not true - Ed)

It is a strange new world that I have entered and I am still trying to sort out my QSO's from my other Q codes. The first time we went to the shack at G3CIO I foolishly offered to make the coffee. I now have a permanent job which the boys were pleased to get rid of, but not too pleased when they found that I organised a 'coffee swindle' and charged 3d for each cup of coffee! Previously anyone that was unfortunate enough to be in the shack when the coffee supply ran out had to pay for another jar. Now everyone pays for their coffee - or goes without!

I must explain whilst we were in Germany and Holland I succeeded, with David' help, in building a small receiver and had the great satisfaction of knowing that it worked before David took it away to show the boys. When I saw David's boss approaching me, I though I was in trouble for shoddy work - on the contrary - he congratulated me on a good job and said how neat my soldering was!!

I now feel that the time has come for me to be more ambitious and having built four morse oscillators I have decided to go even further still. So I am studying diagrams for a transmitter, after all, I'11 need one when I pass my exam!..! David and I started our course for the R.A.E. in September so by this time next year I hope to be working the net - if I pass first go. The boys in the shack seem determined that I'11 pass and they're being very patient and have got used to explaining everything at least three times. I think they've got used to my being there now because if any stranger is in the shack they say, "Have you met Kay? That's the one in the mini skirt!" (I was told that I am now 'one of the boys' but that is a term I'd rather not use).

If you have read this far you are probably thinking that women like myself should be barred from the R.S.A.R.S. - please don't, They are not all as bad as me! I do not pretend to be an electrical genius or a left over from the B.B.C. but I do confess to being a twenty three year old woman who changes the colour of her hair nearly as often as I change my mind, with an insatiable curiosity about anything and everything and who is trying, really trying, to pass the R.A.E. Right now I am trying to attain the Society Award as an SWL (so far I only have 4 QSL's). So please gentlemen - be patient with me and all those like me striving hard to become YL's or XYL's!!

P.S. I ST1LL cannot wire a three pin plug.

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## ACTIVITY PERIODS

The last Sunday in each month is a particular time for you all to get out and about on the bands and work fellow members. Judging from the activity heard and reported on over the last few months, RF is still at a premium!!

Frequencies are: 3505, 7010, 14020, 21030 and 28040 for CW
and 3750, 7050, 14180, 21380 and 28680 for AM and SSB.
Have a go please - the dates are:

**26th January** **23rd February** **30th March**

The HQ Station, G4RS, will try to adhere to the following schedule on these dates, all times GMT.

| | | | |
|---|---|---|---|
| 0900 hrs 7010; | 0930 hrs 14020; | 1000 hrs 28040; | 1100 hrs 21030; |
| 1300 hrs 28680; | 1330 hrs 21380; | 1400 hrs 7050; | 1430 hrs 14180 or 21380 until 1600 hrs. |

In addition, G4RS will be running slow morse transmissions each Tuesday and Thursday evening at 2000Z on 1865 Kc/s. The morse speeds are 8, 12, 15 w.p.m. and are intended for members and SWL's who are trying to work up to the GPO morse test speed.

G4RS and/or G3CIO will be active on Tuesday and Thursday evenings on 3780 plus or minus 5 from 1730Z

## RSARS COUNCIL MEETING

A Society Council meeting was held on December 13th '68 in MOD(A) and comprised the following members:

| | | |
|---|---|---|
| President | Brigadier A.D. Brindley MBE | |
| HQ Secretary | Major D.A. Barry | G3ONU |
| Field Secretary | Capt. (QM) R.A. Webb | G3EKL |
| Awards Manager | Sgt R. Cox | G3VIS |
| Society Member | Capt. I. Scott | G3SYW |

The Council:

1. Counted and recorded the postal ballot votes.
2. Considered and produced the Rules for the Awards Scheme effective wef 1st. Jan 69. (See elsewhere in this edition).
3. Proposed a design for a Society tie. (Details in the Spring "Mercury").
4. Took note of the design of a lapel badge. (See elsewhere in this edition).
5. Took note of the further grant of £200 for the HQ Station from Corps Funds.
6. Considered a proposal for a RSARS GM Award.

   The Council decided that whilst there was no objection to any group of Society members sponsoring and running an Awards Scheme, such a scheme would not be sponsored by the Society in any way, nor should such an award scheme indicate that it was being sponsored by the Society.

7. Considered suggestions for the RSARS: contribution to the 1970 Corps Jubilee celebrations.

   The President suggested that the mounting of a DX-pedition to some "rare" country should be examined. The HQ Secretary was to take the necessary action but clearly the cost to the Society would have be kept to a minimum.

   It is imperative that the Society brings the Corps into the public eye during the Jubilee Year 1970.

   Fuller details and suggestions will be published in the Spring "Mercury".

8. Approved the appointment of G3HSE as Society QSL Manager.

The results of the postal ballot were:

| | |
|---|---|
| Number of ballots cast | 141 |
| Those in favour of keeping the Award within the Society | 79 |
| Those in favour of opening the Award to everybody | 82 |
| In favour of Scheme "A" | 30 |
| In favour of Scheme "B" | 30 |
| Willing to pay for a plaque | 78 |
| Not willing to pay for a plaque | 21 |
| Members interested in an Awards Scheme | 120 |
| Members NOT interested in an Awards Scheme | 12 |
| Members willing to buy a Society tie | 100 |
| AGM to be held on a Friday | 26 |
| AGM to be held on a Saturday | 86 |

Not all voters completed every question, hence the unbalance in replies against the overall number voting.

## RSARS OPERATING AWARDS

1. The following RSARS Operating Awards are available free of charge to ordinary and associate members and to clubs affiliated to the Society, with effect from 1 Jan 69.

| | | |
|---|---|---|
| Class 3 | - | Certificate |
| Class 2 | - | Certificate |
| Class 1 | - | Certificate |
| Special Award | - | Engraved Plaque |

2. Transmitting members located at "Home" (defined below) must submit confirmation of two way contact with other member stations, including G4RS, as follows:

| | | | |
|---|---|---|---|
| Class 3 | - | 25 | Confirmations |
| Class 2 | - | 50 | Confirmations |
| Class 1 | - | 100 | Confirmations |
| Special Award | - | 200 | Confirmations |

3. Listener members located at "Home" (defined below) must submit confirmation of having heard transmitting member stations as in para 2 above.

4. Transmitting members located "Overseas" (defined below) must submit confirmation of two way contact with other member stations, including G4RS, as follows:

| | | | |
|---|---|---|---|
| Class 3 | - | 12 | Confirmations |
| Class 2 | - | 25 | Confirmations |
| Class 1 | - | 50 | Confirmations |
| Special Award | - | 100 | Confirmations |

5. Listener members located "Overseas" (defined below) must submit confirmation of having heard transmitting member stations as in para 4 above.

6. "Home" member stations are defined as those located in the UK and continental Europe, excluding Gibraltar, Malta and Islands in the Mediterranean (Zone 14, excluding Gibraltar, the Azores and Islands in the Mediterranean and Zone 15 excluding Malta and Islands in the Mediterranean).

7. "Overseas" member stations are those located outside the "Home" area as defined in para 6 above.

8. "Home" members who move "Overseas" may NOT count any confirmation gained at "Home" towards the Awards at para 4 and 5 above.

9. "Overseas" members who move "Home" may count any confirmations gained "Overseas" towards the Awards in paras 2 and 3 above.

10. Contacts between member stations operating /A or /P will NOT count for any award purpose.

11. Member stations operating from other call areas on a temporary basis within the terms of any licence will count separately e.g. DL4ZZZ/LX, G7ZZZ/HB etc.

12. Members will ensure that operating practices are maintained to the highest standards. Unassisted two way contact must be made between the stations concerned,

Relaying of reports by a third station is not permitted for Award purposes. Terms of licences must be strictly observed, and members who are granted temporary licences for operation in other countries may be asked to submit proof of authorisation to the RSARS.

13. Members are required to exchange signal reports, membership numbers, names and QTH to qualify for confirmation of contact.

14. Claims for Awards will be made to the Awards Manager only, whose details are published below.

15. Claims for awards must include the following:

a. Written confirmations (e.g. QSL Cards)
b. A checklist of the Call Signs and Membership Numbers.
c. S.A.E. with adequate return postage.

16. The Awards Manager will retain the checklist, returning the confirmations and the Certificate awarded to the member, which will be forwarded under separate cover.

17. Subsequent claims need not include the previous confirmations.

18. The Awards Manager will submit the checked Claim lists from members claiming the Special Award to the Field Secretary who will order and dispatch as necessary. The Claim list will be returned to the Awards Manager.

19. Contacts for the RSARS Operating Awards are effective from 1st January 1969 ONLY.

20. Claims for Awards on the previous Scheme, which ceased as at 31st December 1968, may still be sent to the Society Awards Manager.

**AWARDS MANAGER:**

G3VIS
"Heather Lea"
12 Linton Rise
CATTERICK CAMP
Yorks.

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ADDITIONS / AMENDMENTS TO MEMBER LIST BETWEEN 1 SEPTEMBER 1968 AND 30 NOVEMBER 1968

INSERT OR AMEND:-

| No. | CALL SIGN | NAME | ADDRESS |
|---|---|---|---|
| 34 | G8ANQ | W. Burton | c/o 45 Bede Street, Roker, Sunderland, Co. Durham |
| 138 | G3NVK | R. Winters | 32 Redwood Avenue, Melton Mowbray, Leics. |
| 141 | VE3ZH | J.J. Jarvis | (Apt 1605) 60 Holly Street, Toronto 7, Ontario, Canada |
| 206 | G3KLX | D.V. Richey | 22 The Fridays, East Dean, Eastbourne, Sussex. |
| 210 | GM3VNN | T.L. Craze | Armd Forces Signal Regiment, c/o GPO Kuala Lumpur, Malaysia. |
| 221 | G3BJA | H.A. Bonnett | 47 Pattens Lane, Chatham, Kent. |
| 249 | | R.S. Worton | 3 Meadow Hill Drive, Hawkes Green, Cannock, Staffs. |
| 435 | ZC4IM | I. Morris | 9th Signal Regiment, British Forces Post Office, 53 |
| 452 | G3WHZ | D.E.V. Jarrett | "Twyford", Newton-le-Willows, Bedale, Yorks. |
| 516 | | P. Laybourne | 37 Barnwood Avenue, Gloucester,, GL4 7AE |
| INSERT NEW MEMBERS | | | |
| 240 | G3NDJ | C. Delhaye | 141A Church Road, Hove, BN3 2AC Sussex. |
| 315 | | M.S. Foster | Royal Signals Detachment, 1st Bn., R.H.F., R.A.F., Gibraltar. |
| 371 | G3AKF | B. Taylor | 16 Weatherbury Way, Dorchester, Dorset. |
| 379 | DL6AA | H. Fleer | 4791, Ostenland 496, West Germany. |
| 382 | G3DAQ | R. Braithwaite | 60 Oakfield Avenue, Birstall, Leics. |

## AVAILABLE FROM HQ

**MEMBERS' NOTEPAPER** This is a good quality white paper and costs 8/4d. per 100 sheets post free.

**MEMBERS' QSL CARDS** The basic card cost 37/6d. per 500 post free. We can overprint your callsign, Name and address in black, red, blue or green for a further 15/- per 500, making a total price of 52/6d. per 500, Unfortunately it is NOT economical to overprint in quantities of less than 500.

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## ORDER FORM

**(Block letters please)**

**NAME** ..... **CALLSIGN** .....

**ADDRESS**..... **MEMBERSHIP NUMBER** .....

.....

I enclose Cheque/Postal Order for ..... Please supply :-

..... sheets of Members Notepaper at 8/4d per 100

..... Basic QSL cards at 10/- per 100

..... Basic QSL cards at 37/6 per 500

..... QSL cards overprinted in .....(State colour) at 52/6 per 500

Cheques and Postal Orders to be crossed and made payable to ROYAL SIGNALS AMATEUR RADIO SOCIETY and post to:-

Captain (QM) R.A. WEBB, R. Signals
30th Signal Regiment,
Blandford Camp,
BLANDFORD FORUM, Dorset.

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## APPLICATION FOR MEMBERSHIP OF THE ROYAL SIGNALS AMATEUR RADIO SOCIETY

I wish to apply for membership of the Royal Signals Amateur Radio Society as under:-

| | | **SUM ENCLOSED** |
|---|---|---|
| **ANNUAL MEMBERSHIP** | (10/- per year) | _____ |
| **LIFE MEMBERSHIP** | (£5. 0. 0d) | _____ |
| **CLUB AFFILIATION** | (10/- per year) | _____ |

**SURNAME**..... **CHRISTIAN NAME**.....

**ADDRESS FOR CORRESPONDENCE** .....

.....

**CALL** ..... **SIGNATURE** .....

(Give brief details of your service on reverse of form)

**PLEASE RETURN TO** : Captain (QM) R.A. WEBB, R. Signals
30th Signal Regiment,
Blandford Camp,
BLANDFORD FORUM, Dorset