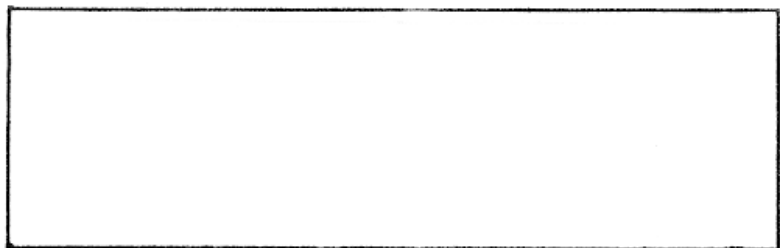
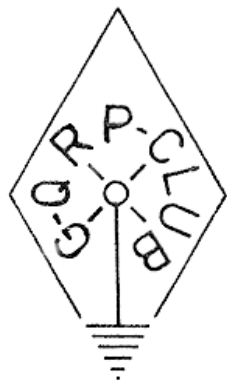


PRINTED RATE.



Rev. G.C. Dobbs, (G3RJV) 8 Redgates Court, Calverton, Nottingham. NG14 6LR.

Devoted to Low Power Radio Communication



SQARAT



NUMBER TEN.

SPRING. 1977.

Hw 7 Modifications.
DJ1ZB.

Cheap CW Filter.
G13XZM.

Coherent CW.
G3FMW.

CLUB AWARDS SCHEME.
QRP NEWS,
CLUB NEWS,
TRANSMITTER CIRCUITS,

WB8 OWM

SPRAT JOURNAL OF **G.QRP.C**

CHAIRMAN:

Dr. G.J. Bennett (G3DNF)
52 Whinmoor Crescent,
LEEDS. LS14 1EW.

TEST & CONTEST MANAGER:

Mr. A.D. Taylor (G8PG/GW8PG)
37 Pickerill Road, Greasby,
WIRRAL. Merseyside. L49 3ND.

Rev. George C. Dobbs (G3RJV). 8 Redgates Court, Calverton. NOTTINGHAM.
NG14 6LR. Tel: (060 744) 3920.

EDITORIAL NOTES:

In the Spring a young man turns to thoughts about the H.F. Bands, but the winter has been quite busy for the club.

The club now has affiliation with the RSGB, which, apart from being normal for a U.K. based club, gives us a direct voice to the RSGB about the things we believe in within amateur radio. Later in this issue you will read that the RSGB is asking club members for views and ideas about the society. I hope members will respond.

We have also seen the passing of G6FO, the Editor of the Short Wave Magazine, who has been a good friend to the club since we first began. Austin Forsyth was an active radio amateur whose great concern for the hobby was clear from the pages of the SWM. I have written to his son, on behalf of the club, expressing our appreciation for the work of G6FO.

I am sure we are all very pleased to see that the editorial responsibility for the Short Wave Magazine has been passed to Paul Essery, G3KFE. Paul is not only a member of the club, but his words and thoughts in his monthly Communication and DX News column show us that "he's our kind of man".

I hope you will have noticed a "new look" about SPRAT. After increasing struggles with the old duplication system, a slightly different method is now being used to produce the journal. I have not had the time to use all the possibilities for this new approach in this issue, but I hope you will notice an increase in quality. (May I add - at not much increase in cost!)

The scheme of subs renewals through Alan, G4DVW, seems to have worked quite well, although some members are still confused about the exact time for their individual renewal. I am trying an experiment in using a rubber stamp with SUBS NOW DUE PLEASE which will be put onto the copies of SPRAT for members whose subs are due before the next issue appears. It will also be added to copies to members who are overdue. It is probable that the odd few may be stamped after subs have been, although Alan and I will try to avoid this, so if this occurs may we say 'sorry' now. More about subs later in this issue.

Finally don't forget the Contests, Activity Days, and Sunday Skeds, and I hope to see as many members as possible on the air before the next issue.

73 fer nw.

George

G3RJV.

G-QRP-CLUB: MEMBERSHIP DETAILS AND GENERAL CORRESPONDENCE:

Write to G3RJV, a stamp is helpful especially when requesting club data sheets or information.

SUBSCRIPTIONS:

The present rate is £1.50 per year or equivalent local currency
RENEWALS to: Alan Lake, G4DVW, 7 Middleton Close, Nuthall, Nottingham.
CHEQUE HEADING: G.C.DOBBS:Re QRP CLUB

MEET THE MEMBER: "Skip" Westrich, WB8OWM. (SEE PHOTO)

Kip is aged 35 and works for the Bell Telephone System. He was stationed at an RAF base near Shefford, Beds, with the USAF in 1964 thru' 1967. Met XYL in the UK. Married 10 years with, now with David, 9, and Karen, 4. Attended many Shefford ARS meetings, but not licenced until 1970 - too busy chasing G land YL's ! But did learn morse at G3UTP.

Used to wonder if anyone, unless a passing mobile, who hear his 75watt HT40. Surprised to raise KP4DGW with his first CQ call! The old HT40 plus 15m dipole in the loft worked G, SM, SK, F, etc. Then one evening it happened! Testing a two transistor VFO, Skip heard WB8KLC calling CQ and QSOed with VFO minus aerial. Obtained a 1948 vintage HT18 - 5 watts to 6L6 - and had many happy QRP QSOs with 66ft end fed aerial.

Built present HW7 and use with Hustler 4-BTV antenna. Managed to work all states but KH6 and KL7 - now trying to get the 2 watts to complete WAS. Worked G3DBL recently. Looking forward to working fellow club members.

The round object above the arm in the photo is a 'wooden mike' made by WB8GXL - the locals like to kid about CW only operation and felt the shack needed a mike!

SOME QRP DX NEWS:

G to ZL TWO WAY QRP QSO's

For some time G3NEO and ZL1BLJ - both club members - have been trying to make a two way grp sked on 14MHz. Then on 19 Feb. 1977, at 0815 GMT they dodged the EU QRM by going to the top end of the 14MHz CW sector. Phil called Mike (ZL1BLJ) on QRO then he went over to QRP and a QSO was made. G3NEO (5watts) received 339, ZL1BLJ (5 watts) received 329 to 439. ZL1BLJ was asked to stand by for George, GM3OXX who received a 349 from ZL. Then VK4TT came up on SSB, he was called by all three and worked ZL1BLJ, GM3OXX, and then G3NEO, who was again on QRO. ZL1BLJ used an Argonaut 5 w TX to a Hustler vertical GM3OXX used his homebrew 2 watts to a dipole. WELL DONE TO ALL

GM3OXX does do some surprising things with his homebrew 2 watts and dipole. George has a high QTH, but the results speak of his skill and patience on 14MHz. His log for this year alone includes: ZS1, PY7, PY1, 6W8, TF3, VP2, ZL, VK, UI8, EA9, JX3, FY7, PY0, QX3. George uses a version of the DL6HA cw:ssb 144 and 14 MHz rig to a simple transistor PA. I have a few copies of this circuit which I can send on loan to members who would like to see the circuit.

ZL1BLJ the ZL side of the amazing QSOs above gives a list of QRP 14MHz work to excite us in the UK. The calls include: ZL, VK, JA (0 to 7) W's 1 to 7, OA4, PY1, KP4, DJ, VP2, KX6, K06, KH6, KX6, KS6, UA9, UA0, VE3, VE7, FK8, OH5, OH8, HM2. This is with an Argonaut to a Hustler vertical on a steel support on a 400 ft elevated concrete slab (house sun-deck) which acts as its own radial.

ILLEGAL DOINGS!

It has been pointed out to me that a few memoers have been heard signing/QRP. This is not legal within the terms of the UK licence. However calling CQ QRP is, naturally, OK.

QRP SPIES!

John, G2CAS, tells me he has a throttled back B2 spyset and hopes to work /P with in in the summer. Nick, G2NJ, is an old hand with the B2 and can be heard on 160m with his. G3RJV soon too!

Coherent CW is a system of sending Morse Code so that the frequency, pulse length, and pulse phase are known and used to demodulate the information. The system has an OVERALL S/N IMPROVEMENT OF ABOUT 20 dB OVER CONVENTIONAL CW. Not unnaturally an improvement of this nature is not obtained without a snag and this is that the system is a great deal more complex and hence mores costly than 'normal' CW.

The requirements for a CCW system are:-

- 1) Vey accurate setting of the sending and local oscillator frequencies of the order ± 1 to 2 Hz with no drift from the intinial frequency of the QSO.
- 2) A Digital Filter consisting of integrated circuits and discrete components to demodulate the signal. This has bandwidths of around 10 Hz (for 12 wpm working)
- 3) An electronic keyer whose timing 'clock' can be replaced by an accurate chain of pulses to control the precise timing and length of the morse elements.
- 4) An accurate frequency standard from which the required frequencies for 'phase locking'the send/receive oscillators discussed in 1) & 2) and controlling the keyer 3) can be obtained. The accuracy of the standard should be in the order of 1 part in 10^7 (1Hz in 10MHz) which requires a high quality crystal and some form of careful temperature compensation.

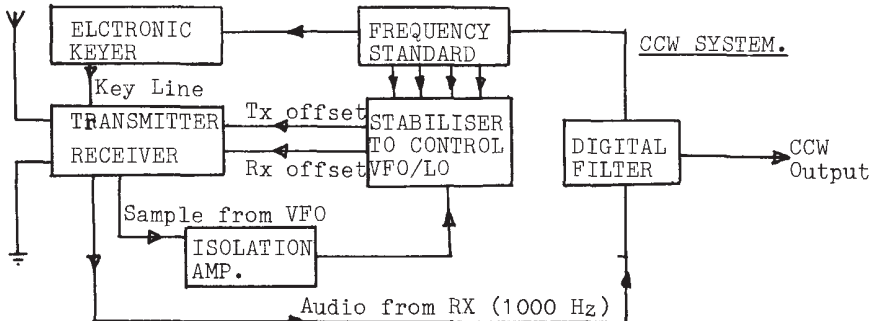
The transmitter and receiver need not be elaborate and many of the initial experiments in the USA seem to have been with small stations of the 'Ten Tec' module type. A gain of 20 dB effectively multiplies the transmitter power by 100 times but the receiver must not be prone to overloading/cross modulation or the full advantage of the system may not be realised.

A simplified block diagram of a CCW station is shown in Fig. 1.

From the foregoing remarks it can be seen that a considerable amount of constructional work is involved if CCW operation is anticipated. Although CCW can be received on any normal receiver without the increased S/N (it is after all, only 12 wpm morse being sent at precise time intervals of .1 sec as opposed to normal 'random' timing) the reverse is not possible and only CCW can be received via the Digital Filter.

At the moment a few USA amateurs are experimenting in this field and this group will expand I am sure. I dont know of any UK activity yet but have finished an oven controlled standard and am now working on the stabiliser, filter and keyer modifications to hopefully establish a station soon.

If anybody interested in the system could drop me a line I will be pleased to correspond on the subject and perhaps the G-QRP-Club can make a useful contribution in the development of CCW. I will keep George informed on my progress and new developments.



PART II. R.I.T. AND OSCILLATOR SHIFT COMPENSATION.

The difference between receive and transmit frequencies and the handicap that the receiver cannot be tuned independantly is likely to give more trouble in QSOs than the qrp power. Therefore, the RIT circuit of Fig 4. has been developed. It has also provision to compensate the difference between receive and transmit frequency of the HW7 VFO due to the couplings in the circuit board layout.

Frequency pulling is accomplished by a BB103 varactor diode which is coupled to the oscillator circuit via a 22pF capacitor. The diode and its RC coupling network have been arranged on a small PCB (board 2) which is glued to the right side of the oscillator coil pointing to the front panel. The 22pF capacitor must be soldered, self-supporting, to the wire bridge J on the HW7 board.

Board 3, which is mounted on the inner left side of the HW7 cabinet, contains all the components to generate the varactor voltage. The 50K RIT control is mounted on the front panel left of the crystal holder. The RIT/SPOT switch is mounted above the RIT control left of the PA tune knob.

For switching between receive and transmit, the antenna relay contacts are used within the RIT circuitry. To achieve this, the antenna output must be DC grounded by a RFC of 20 uH or higher. The rf cable to the receiver input is already DC open circuit because of the 100 pF capacitor at coil L1. When the antenna attenuator is to be installed later, a separate DC blocking capacitor of 4.7nF will be added. To open the transmitter lead for DC, the two 1K resistors R21 and R22 of the diode measuring circuit must be replaced by 22pF capacitors.

Referring to fig.4. when receiving with the switch in the RIT position, the varactor voltage is dependant on the the zenner voltage of 6.8 volts, the 22K resistor, the setting of the 50K potentiometer and the 10K resistor to ground via the relay contacts 1 and 2. The varactor voltage may be varied between 2V and 5V, giving ± 1.5 KHz frequency deviation on 40m and correspondingly more on the higher bands. Frequency deviation compared to the value of the RIT potentiometer is not symmetrical. Therefore, when switching to SPOT, a 12K resistor is switched in to get into the middle of the pulling range. (to achieve a more linear frequency deviation, a constant current source must be employed instead of the stablised voltage).

During transmit, the varactor voltage is detirmined by the 22K resistor, the setting of a 50K potentiometer switched in for the band used, and the other 10K reistor to ground via relay contacts 3 and 2. Switching of the 50K potentiometers is accomplished by using unused segments of the switching assembly (refer to page 12, Detail 1-8A, of the HW7 Assembly Manual).

Alignment procedure:

Coupling the varactor to the oscillator will detune the VFO dial. Therefore, both oscillator coils must be readjusted to the dial first, with the switch in the SPOT position.

To align the oscillator shift compensation circuit, plug the HW7 dummy load into the antenna jack and tune the VFO to the middle of the 40m band. Listen to the VFO signal on a separate receiver on the 40m band (use slight coupling) and tune to zero beat. Then press the key and tune the HW7 PA . The tone in the separate receiver will change and must be readjusted to zero beat by the associated 50K potentiometer. After releasing the Key. the receiver tone will shift again but will return to zero beat after the antenna relay has switch

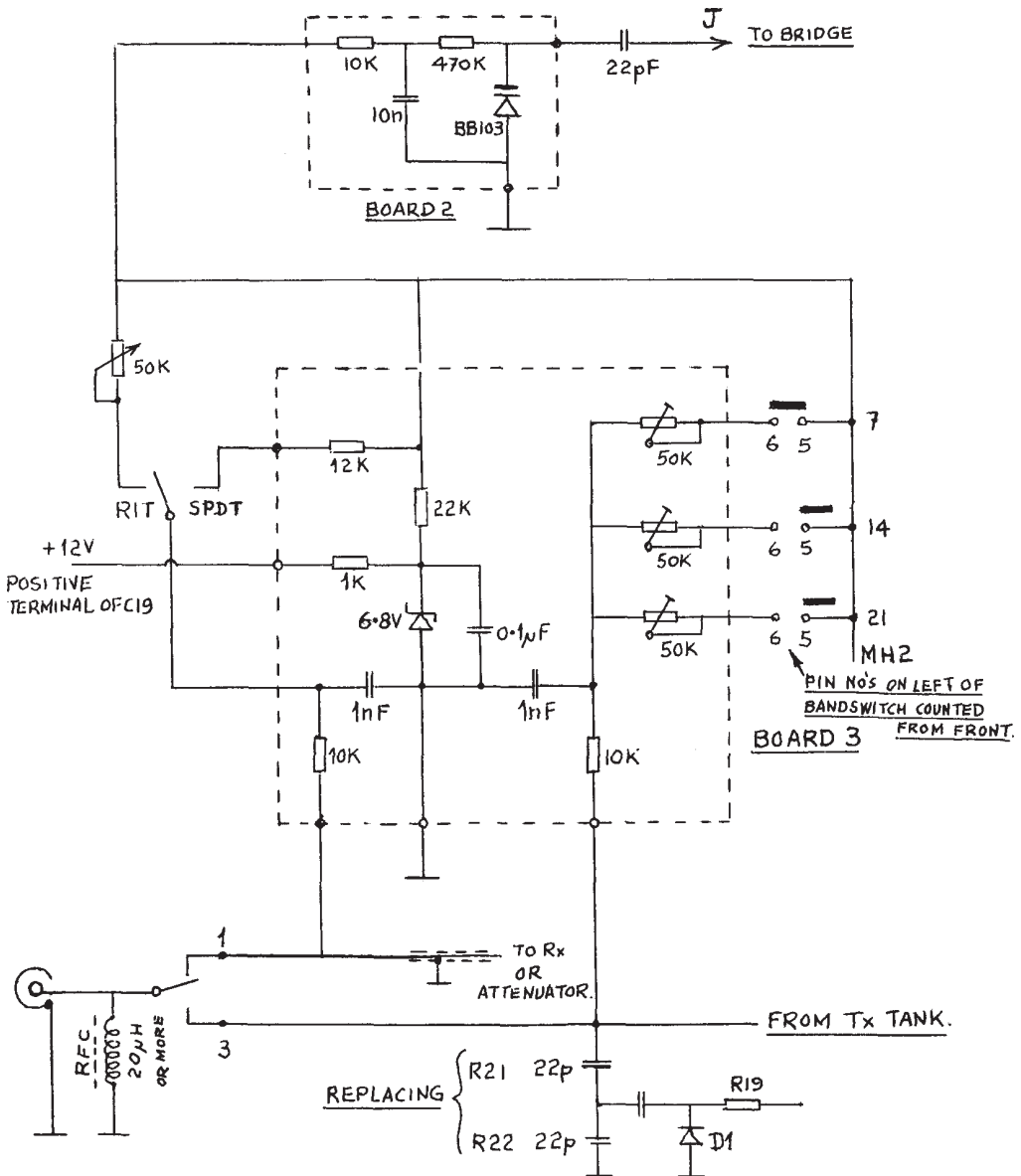


FIG 4. RIT AND OSCILLATOR SHIFT COMPENSATION
CIRCUIT (DURING TRANSMIT) FOR HW-7

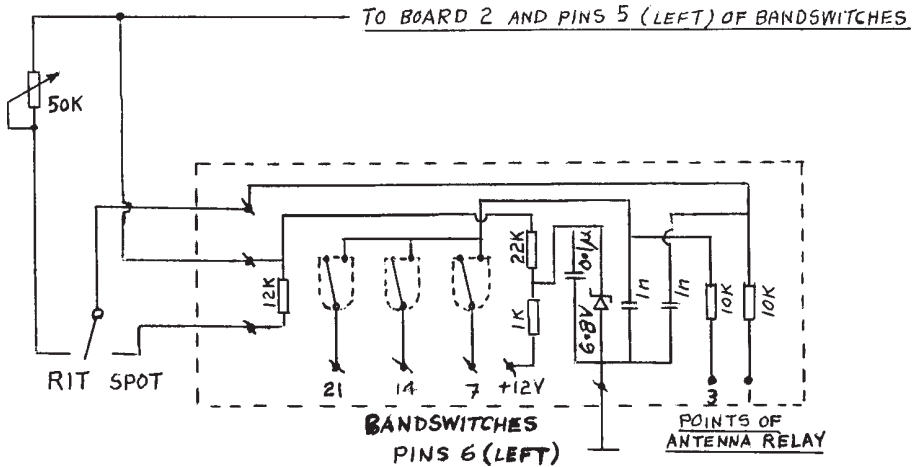


FIG 8
BOARD 3 COMPONENT SIDE AND
ASSOCIATED CIRCUITRY.

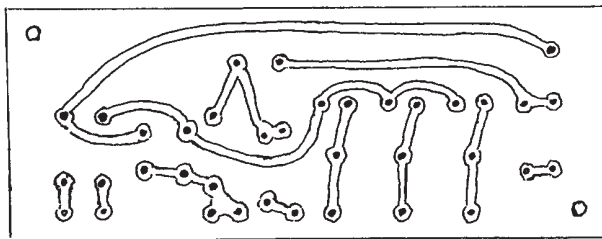


FIG 6
BOARD 3 COPPER SIDE
RIT CONTROL CIRCUIT
(SEE ALSO COLOR KEY FILM)

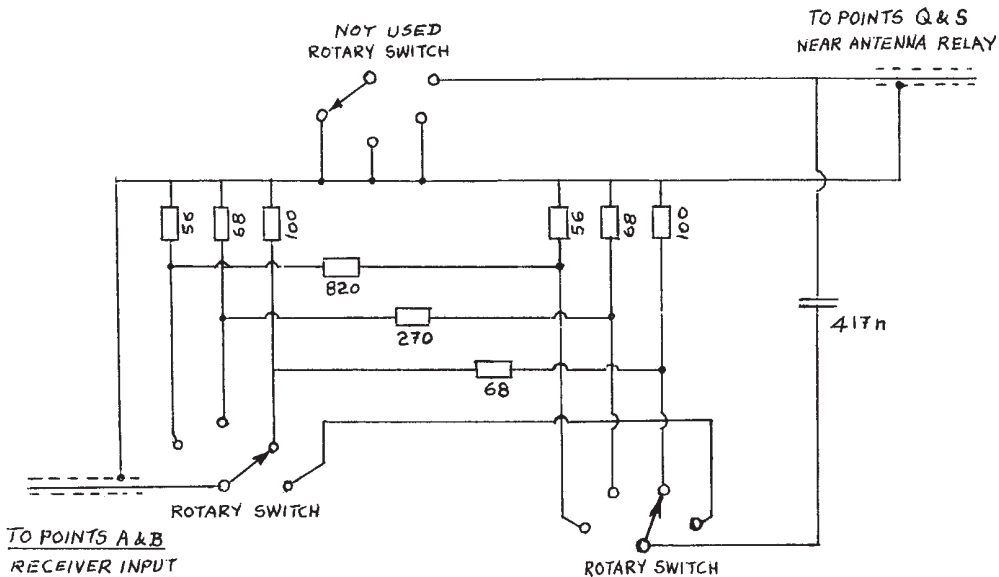


FIG 9

RECEIVER ANTENNA ATTENUATOR 0...30dB
FOR HW 7 (AND OTHER RECEIVERS)

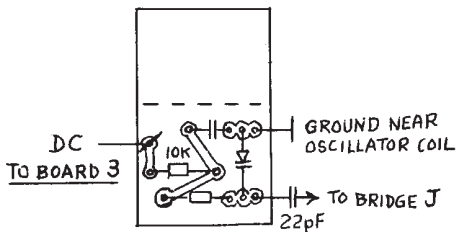


FIG 7

BOARD 2

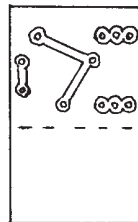


FIG 5

BOARD 2

VARACTOR CIRCUIT
COPPER SIDE

SEE ALSO COLOR KEY FILM

-ed over to receive position. The 20 and 15m band potentiometers have then to be aligned in the same manner.

Keep in mind that the internal oscillator shift of the HW7 depends on the settings of the multiplier (Q4) and driver (Q5) tank circuits. Therefore, after readjusting these stages for any reason, the oscillator shift compensation must be checked too.

Operation:

With these modifications, tuning the HW7 will be simple but accurate. When tuning to a calling CW station, switch to SPOT and tune the VFO dial to zero beat, then switch to RIT and adjust the RIT control for a convenient note. When pressing the key, you will be exacting on the frequency of the calling station. If QRM should come up, you can change the beat note or beat side by the RIT control without affecting your transmitter frequency.

If you want to tune a SSB station, switch to SPOT, tune the VFO dial to the used sideband, then switch to RIT and adjust the RIT control for clear speech.

Figs 5 and 6 show the PCBs of the varactor and RIT control circuitry, and Figs 7 and 8 the positioning of the components on them.

PART III. RECEIVER ANTENNA ATTENUATOR.

Especially when operating portable, qrp rigs are often used with very high antennas which are not available to the average ham living in a city. Such antennas are excellent on transmit, of course, but their receiving energy is so high that it will overload even the doubly balanced mixer recommended earlier.

Therefore, an attenuator in the receiver input lead must be used. The author prefers T or Pi attenuators to simple potentiometer controls, because the match will remain constant on both sides independantly of the attenuation, and the resonance of the antennas and associated antenna tuners will not change.

Fig.9. shows a 0-10-20-30 dB step attenuator for $Z= 50$ ohms and its wiring arrangement around a 4x3 contact switch. The third portion is not used for switching, but as supports for the cable shield and the 4.7nF capacitor which is necessary for CD blocking of the HW7 RIT circuitry.

The switch can be mounted on the rear panel of the HW7 cabinet over the antenna jack. The rf cable to the receiver input is removed from points Q and S and soldered to the attenuator output. For connecting Q and S to the attenuator input a short new cable must be installed. The conjunction of the two cable shield on the switch should not be grounded.

Such an attenuator is also used by the author at the antenna input of his O-T-2 FET regenerative receiver (see SPRAT Autumn 1975)

(A few prints of the DJ1ZB O-T-2 receiver are available for S.A.E.
- to G3RJV)

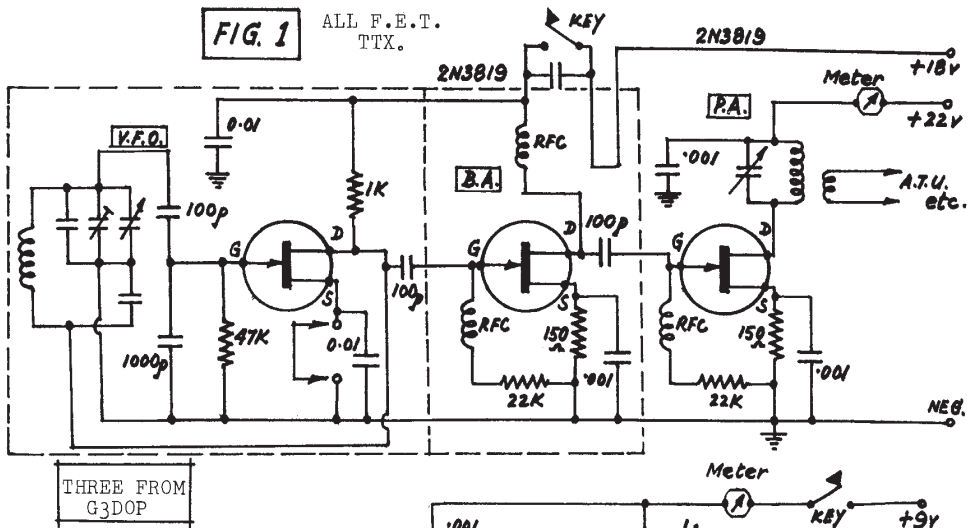
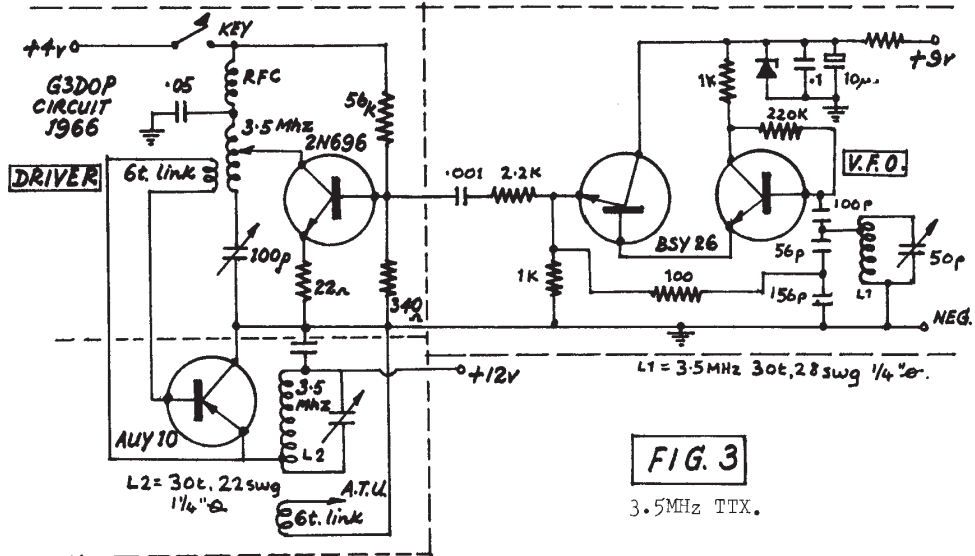
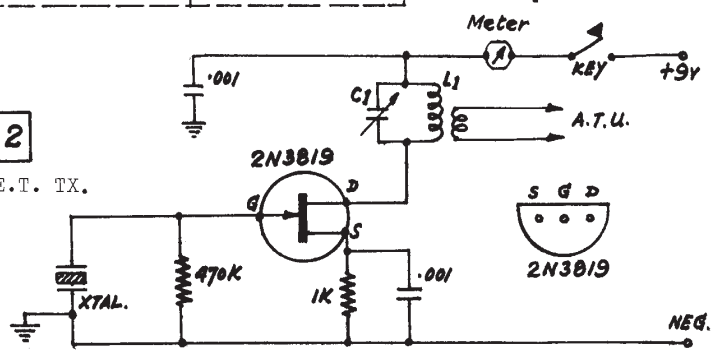


FIG. 2
ONE F.E.T. TX.



AWARDS SCHEME



Rev. G.C.Dobbs, 8 Redgates Court, Calverton. NOTTINGHAM.

TEST AND CONTEST MANAGER: Mr. A.D. Taylor, G8PG/GW8PG,
37 Pickerill Road, Greasby,
WIRRAL. Merseyside. L49 3ND.

THE G2NJ TROPHY:

This is awarded on a 3 year cycle beginning in 1975. In the first year it is awarded to the member who, in the opinion of the Committee, has achieved the most outstanding non-contest QRP operating performance of the year. In the second year it is awarded to the member who, in the opinion of the Committee, has made the most meritorious technical contribution to the club journal S.P.R.A.T. In the third year it will be awarded to the amateur, member or non-member, who, in the opinion of the committee, has made the most outstanding contribution to the furthering of international QRP amateur radio. In any year that the committee feel that a sufficiently high standard has not been achieved they may recommend that the trophy is not awarded.

PARTRIDGE SHIELD:

Annual award for research in restricted space aerials for QRP operation. Further details supplied on special sheet.

WORKED G-QRP-C AWARD:

The basic award will be made to the operator of any amateur radio station who, after 1st Jan. 1975, works 20 members of the G-QRP-C who are using an input of 5 watts or less. Contacts can be made on any amateur band using any authorised transmission mode. Endorsements will be issued for proof of contact with each further group of 20 G-QRP-C members under the same power limitations. The general award rules apply.

HEARD G-QRP-C AWARD:

Rules as for the worked G-QRP-C Award, but applicants must submit written confirmation of the reception of 20 club member stations when the said stations were using an input not exceeding 5 watts. The general award rules apply.

QRP COUNTRIES AWARD:

For members only. The basic award requires written proof of contact with 25 different countries (ARRL DXCC List) when using an input not exceeding 5 watts. A written and signed declaration to this effect must accompany each application. Contacts on, or after, 1st Jan. 1970, count for the award. Any amateur band or authorised mode of transmission may be used. The station of the claimant must be located in the same country for all contacts, but for this purpose the United Kingdom shall be deemed one country. Endorsements will be issued for each additional 25 countries for which proof of contact is submitted. The general award rules apply.

G-QRP-C AWARDS SCHEME - Cont:

TWO-WAY QRP AWARD:

Members only. This will be awarded to any member providing proof of two-way contact with 10 countries when both he and the other operator are using a power input not exceeding 5 watts. Endorsements will be issued for each additional 10 countries. Starting date 1st Jan. 1970. General award rules apply, except that if a list is submitted instead of QSL's, it must certify that an input of 5 watts or less was shown on each QSL examined.

QRP LISTENER AWARD:

This will be awarded to listeners who submit written proof of the reception of amateur stations from 15 countries, each of whom was using an input not exceeding 5 watts. Endorsements will be issued for each additional 15 countries. The general award rules apply.

GENERAL AWARD RULES:

- 1) Award claims should be submitted to the Contest And Test Manager. If QSL's are submitted either 25p in sterling or 4 IRCs shall accompany them to cover return postage.
- 2) If QSL cards are not submitted, the applicant shall submit a list detailing calls, dates, times, frequencies, modes (and if required, power inputs) of contacts or reception on which the claim is based. This should be signed by two licenced amateurs in the form, "We the undersigned certify that we have examined the QSL cards for the contacts (or reception) listed above and have found the details to be correct."
- 3) For the QRP COUNTRIES AWARD the applicant shall include a declaration in the form, " I,operator of amateur radio station....., certify that during the contacts on which this claim is based, my power input did not exceed 5 watts D.C. (or PEP). Signed. Date.
- 4) The committee reserve the right to reject any application for an award, and their decision shall be final.

MERIT CERTIFICATES : DL AGCW QRP CONTEST:

As a mark of their respect for the great work that has gone into the organisation of this contest, the committee agrees that the CLUB award a certificate of merit to the winner, 2nd and 3rd in all future contests.

A copy of the awards made by the American QRP ARCI (100 watts = QRP!) can be obtained from G3RJV for a S.A.E.

THE PARTRIDGE SHIELD.

A trophy to be presented by George Partridge, G3VFA, for experimental work with restricted space aerial for QRP operation.

RULES:

1. DURATION: 0001 GMT, 1st July 1977 until 2359 GMT, 30th June 1978.
2. POWER: Power used must not exceed 5w. DC input or 5w PEP.
3. MODES: CW and/or SSB.
4. BANDS/CONTACTS: All bands 1.8 to 28 MHz. A minimum of 3 bands shall be shown in the logs. The band plan must be observed. Contest QSOs count.
5. AERIALS:
 - a) PROHIBITION: Rotary beam aerials may not be used. (Fixed beam aerials, and those with switchable directivity may be used)
 - b) OUTDOOR AERIALS: All outdoor aerials must be erected in an area not exceeding 60x20ft. The height of any part of the aerial must not exceed 25ft. Not more than 3 supports may be used, including buildings. As many aerials as desired may be used in the 60x20ft area, and they may be changed during the project. Non-radiating mast stays may be placed outside the 60x20ft space.
 - c) INDOOR AERIALS: Any part of the building in which the station is located may be used to accommodate aerials provided that no part of the aerial exceeds 35ft in height.
 - d) EARTH SYSTEMS: Outdoor radial systems or earth rods must be located within the 60x20ft area used for the aerials. Any part of the building lower than 35ft may be used for indoor radials. In addition connections to water and central heating pipes are permitted.
 - e) GENERAL: Entrants may use aerials located partly indoor and outdoors provided rules 5a to d are observed.
6. LOCATION: Operation must normally be from one location and the same 60x20ft area. If an entrant genuinely changes his address during the project period, the entry may cover both locations.
7. ENTRY: Each entry shall consist of two parts, namely:
 - a) A sketch of the area used for aerial erection indicating the approx. direction of North, Dimensions, Buildings, Masts etc. A description of all aerials used during the project, each being given a reference number. The description should highlight novel points and include sketches. A description of the earth systems used.
 - b) A log indicating date, time, station, RST in/out, band, power and reference number of aerial used and any other pertinent remarks. The log should show all the different countries worked on each band and all other contacts which the entrant considers to be outstanding. It must also include a statement of the total number of contacts made during the project.
8. DECLARATION: Each entry must include a signed statement indicating that the entrant has abided by the rules and spirit of the project and observed the provisions of the licence.
9. CLOSING DATE: All entries must be in the hands of the Contest and Test Manager by 31st August, 1978.
10. JUDGING: Entries will be judged by a panel nominated by the G-QRP-C. The decision of this panel shall be final. The panel will examine entries and award marks of merit for:
 - a) The log submitted, taking into account power, distance, consistent performance etc.
 - b) The skill and ingenuity shown in devising and erecting aerial systems (and earth systems, where applicable) particularly where the entrant has devised new or novel approaches.The final placings will thus reflect both operating ability and technical ingenuity.

The Partridge Shield reflects the spirit of QRP - So let us see our best

SSB QRP CALLING FREQUENCIES:

Bruno Settinger, OE1SBA, suggests that those members of the club able to work HF bands SSB, should attempt a club calling time, as follows:

- Every Monday ; 14222KHz at 1900 GMT
- 21222KHz at 1915 GMT
- 28222KHz at 1930 GMT

Bruno says the 222 will be easy to remember as many members use 2 watts. He will begin by calling every Monday during May and June on the 222's

G/DJ PROPAGATION:

Ha-Jo Brandt, DJ1ZB, sends some information based upon his monitoring of Portishead Radio (West of Bristol). Reception always appears best on 8.5MHz, worse on 12.8 and 4.3 MHz and very weak on 17.1 MHz (RX in Munich). This seems to suggest the 7MHz band as the most likely band for reliable communication between Southern England and Southern Germany. But results with G3DNF (Leeds) and Ha-Jo showed that qrp signals are often too weak to be heard over the distance between Germany and Northern England on 7MHz. On 14MHz the skip zone is often too large to make this a suitable band for reliable communication. Ha-Jo suggests that in arranging EU skeds, members should always offer the alternatives of the 7 and 14MHz bands, perhaps to try both, say within a quarter hour interval.

W9PNE:

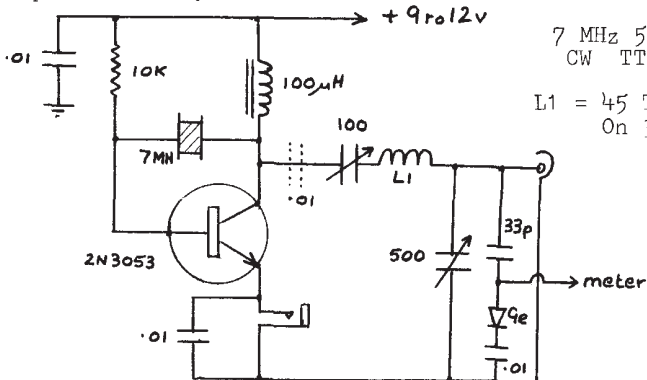
We are pleased to welcome Brice Anderson, W9PNE, to the club. Members who read QRP reports coming out of the States, or read the 'Milliwatt' will probably know of the QRP exploits of W9PNE. These will be described in detail in the next issue - but enough to say that Brice has WAC with 5watts, 500mW, 280mW and 200mW, WAS with 280 mW etc, etc.

QRP IN THE NEWS:

(a) The Ulster sports paper IRELANDS SATURDAY NIGHT runs an Amateur Radio column written by Joe Beattie, GI3NQH. In the issue for 5/3/77 the headline was 'Flea Power' and told the exploits of Ron Wilson, GI4CIE, with a 1 Watt TTX on 80m.

(b) Nice to hear from OA8V's article 'Jungle DX With Only 5 Watts' in CQ for April 1977, about the DX of Chris Page, G4BUE, (member 231) who worked OA8V and was later converted to QRP.

+++++
Another simple TX to try:



7 MHz 5 WATTS
CW TTX.

L1 = 45 Turns 26 swg.
On 3/8 " form

AWARD & DX NEWS

A complete new reprint of the club AWARDS SCHEME appears in this issue. THE G2NJ TROPHY.

The magnificent cup and keepsake for this award is, at present held by G3NEO. Nominations are now invited for the coming year. You may recall that the award is made on a three year rotation - as thus: Last Year: Best non-contest log for a year. (over 3 years in future) This Year: Best contributor to SPRAT since its inception, by postal vote from members.

Next Year: Person making the biggest contribution to international aspects of QRP during the previous 3 years, by postal vote of members.

So, as soon as possible, and certainly before JULY 31st, will members send a note of whom, in their opinion, has made the best overall contribution to SPRAT since its inception - to G8PG.

THE PARTRIDGE SHIELD.

A new award is being presented to the club by George Partridge, G3CED/G3VFA, for outstanding research into QRP problems. Details of the award appear elsewhere in this issue. As this is a genuinely experimental programme, rather than a contest, the parameters under which the experiments must be carried out are given in detail. This award refutes the idea that sophisticated equipment, expense, or an aerial farm are required to work with QRP. It is a subject dear to the heart of George Partridge, so let us show him how much we appreciate his gesture.

AWARD SUCCESSES.

To bring the story up to date, here is a list of Certificates issued so far, call signs being in the order in which certificates were issued.

QRP COUNTRIES AWARD - BASIC: G8PG, DL7DO/P, G3DNF, G4AYS, DJ1ZB, G3IQF
G4CLR, WB8PJR, GM3RFR, GM3OXX, DK5RY,
OE1SBA, G3RJV, G3KPT, G4CQK.

50 COUNTRIES ENORSEMENT: G8PG, DL1ZB, G3KPT.

WORKED G-QRP-CLUB-BASIC: G3DNF, G8PG, G4AYS.

STOP PRESS NEWS:

50 Countries endorsement No. 4 to GM3OXX, who included such DX as ZL, VK, JA, PZ, ZS, 9A etc. All this with 2w on 14MHz only, with a simple dipole, and he is waiting to receive his 2w. WAC certificate. George will be trying 80m for a change during the RSGB Contest, a rare chance for members to work him.

EUROPEAN QRP ACTIVITY WEEKEND.

APRIL 30th and May 1st. Times as bands permit.

USE THE INTERNATIONAL QRP FREQUENCIES. CALL : CQ QRP.

No contest, just fun! Try to work as many other countries as possible. Dont forget to try 14 & 21 MHz as well as 3.5 and 7 MHz.

Reports may be submitted to G8PG for collation.

CLUB ACTIVITY WEEKEND.

MAY 14th and 15th. 3540 & 7040 (\pm 5 KHz).

No contest, just fun - for the Worked members award. CALL : CQ QRP. The last club weekend was enjoyed by all who took part. A good chance to work fellow members. Remember to give other frequencies the odd listen for the sake of crystal controlled members. Results may again be submitted for collation - we like to know and report upon the results.

TRY THE INTERNATIONAL QRP FREQUENCIES.

In general calling CQ QRP may not yeald much, but but the odd call on 3540, 7040 (7030), 14035, 21040 can sometimes bring a surprise. (G3RJV found HB9HT, running 3 watts, on 21040 the other day.)

NEW CLUB CERTIFICATE.

Its not an easy one, but the new TWO WAY QRP AWARD is in the Scheme.

QRP NEWS QRP NEWS QRP NEWS QRP NEWS QRP NEWS QRP NEWS QRP NEWS

SKEDS: PA0JJR, who runs a Heath HW8, is looking for regular skeds with U.K. stations. He asks interested members to write to him at: P.v.d.Does, PA0JJR, TEXELHOF NR 145, HAARLEM. HOLLAND.

QSL CARDS: Derwent Press of 66 Langstone Drive, Exmouth, Exeter, Devon, do a wide range of QSL cards. They have a large range of symbol blocks which includes the club symbol - their RSGB symbol is the same size.

WATTMETERS: George, G3CED, has a few 0-10 watt, R.F. Wattmeters for private sale, at £8.00, delivered.

RADIO AMATEUR PREFIX-COUNTRY-ZONE LIST Published by Geoff Watts of 62 Belmore Rd. Norwich at 35p represents a good buy for the DX fan and contest operator. (5 IRCs for overseas)

RSGB: Lord Wallace has written to all affiliated club asking for ideas on improving the service of the RSGB. He wishes to hear from members and non-members on the subject of improving the society. He asks for clubs to forward members ideas. - So here is a chance to put your views to the RSGB. I will forward all the mail I receive on the subject. (G3RJV)

3.5MHZ CW SECTOR: Following the comments in the MOTA section of the Rad. Com. I have written to both G3FKM and the Editor of Rad. Com. clearly stating that, as a club, we oppose the idea of allowing phone on the CW sector of 80m - or any other CW band sector. I have also drawn attention to the AM phone stations who frequently block up a large portion around 3575.

SUNDAY AFTERNOONS ON 80m: Although I have had little time on Sundays in recent weeks, I do hear from members that the club get-to-gether On 3540 (\pm a bit) has been growing in numbers. The time is from 2pm clock-time, so 1300 gmt, during British Summer Time. In early March, GI3ZM counted about 15 QRP stations in a 5KHz portion one Sunday afternoon.

TECHNICAL TIP 1: G3IQF has added two small mods to his new HW8. A 25pF across the 80,40,20 RX section tuning trimmers to help resonance with the trimmers, and 25uF across the keying relay to increase the max. delay to over $\frac{1}{2}$ sec.

TECHNICAL TIP 2: GI3XZM has been crystal grinding, but found trouble in obtaining carborundum grit. However he bought a "Stonecraft" kit from a local model shop for 66p, and used the FINE grit mixed with "Brasso". By using the Brasso as the final grind, he can set crystal to within about 100 Hz. This has been his first attempt at crystal shifting.

MEMBERS ADS:

G4FKH is looking for an ULTRASONIC BATH, either to buy, or just the circuit.

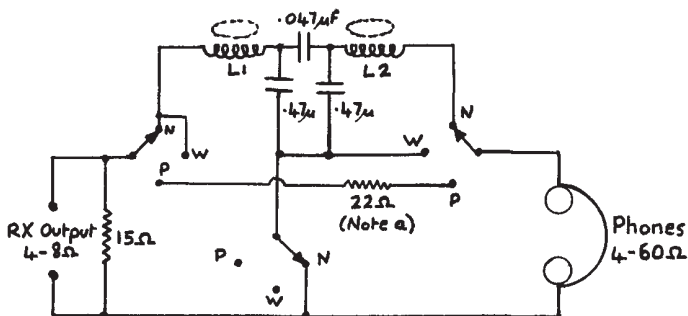
G4EZF (No.232) WANTED Top Band 10X crystals 1800 to 1845 to exchange one for one for 80m crystals on QRP frequencies - exchange ONLY.

G3FCK requires CW/SSB TX or RX/TX, 160 to 10 m, abt 150 w input - also xtals, 1800 3800, 7100 - full details. price etc. required.

GI2DZG requires EDDYSTONE 4 pin plug-in short wave coils, also four pin plain or threaded formers - state price including postage. Walter has also for offer a number of FREE va ves, please send postage - CL4, I85BTA FC13C, IP2620, ID6, CY1C, PY31, U291, PEN4DD, PM24M, VP4B, TH21C, FC2, KL35, TP22, VS2. All new and boxed.

G3RJV requires an HL23 valve, so that he can lend his old Globe King regen RX to a young SWL.

RSGB AND CW OPERATION: Since I wrote the remarks above about the 3.5MHz sector and the Rad. Com. Comments, I have received a very quick and lengthy reply from Dr. John Allaway, G3FKM. He expresses concern that some CW operators believe that the RSGB does not fully represent the CW HF and LF band user - so COMMENTS WELCOME on this subject.



Many beginners and some more experienced operators learn or use CW with receivers more suited to SSB or even AM, usually not because they have super selective ears, but because a receiver with CW selectivity where it should be (at the front) is expensive. An outboard audio filter may not be the best solution but for some it is the only one. Excellent active audio filters are available but some of these, too, are expensive.

The passive filter suggested is simple, cheap and crude, but effective. It enabled me for a time to use for CW a standby receiver with a bandpass more suited to AM and helped dig out all but the weakest signals on a crowded band. It produces no improvement of course on a receiver with a good CW IF filter.

Most inexpensive receivers have plenty of audio gain and a phone jack which mutes the internal speaker delivering a possible watt of audio to your headphones. When the AF gain is turned back for headphone reception audio hum and noise can be offensive therefore a filter with an insertion loss of even 20 db between receiver and phones will not be a handicap but will reduce hum and noise in relation to the signal, quite apart from the reduction in bandwidth.

The circuit provides three switched bandwidths :

- 1) PHONE - a simple attenuator is in circuit to match output level with the filter and reduces apparent audio noise.
- 2) CW WIDE - a single tuned circuit gives a distinct peak at about 800 Hz but wide skirts enable stations off frequency to be heard,
- 3) CW NARROW - Two tuned circuits, top capacity coupled enable quite close signals to be resolved. Skirts are close enough to lose drifting signals between overs or miss calls not properly netted.

This unit was built from available parts and has not been optimised. Mismatches occur which account for some of the insertion loss. By changing capacitors and perhaps reducing the pitch from 800 Hz to 500 Hz or less (same inductors) losses might be reduced and performance improved. Layout is unimportant and the original components were tied to a cutting of veroboard and housed in a tobacco tin. Cost abt £2.

I would like to see in SPRAT any improvements or alterations to this simple unit which I feel could fill a gap, especially for beginners.

- NOTES: (a) This resistor may need alteration to suit receiver - there should be no volume change between 'wide' and 'phone'.
 (b) 15 ohm load for receiver to 'see' a reasonable load, not always requ.
 (c) L1 and L2 are 88mH inductors obtainable from SPACEMARK LTD (S.W.M.)

Des, GI3XZM is looking for QRP skeds with G stations - please send suitable times etc, with phone number, if possible to GI3MXM - QTH as in membership list.

Please address Material of SWL Interest to : Hal Collard,
95 Hart Rd. Thundersley. Benfleet. Essex.

This is the opening of a new section aimed at the SWL within the club. It is hoped as time goes by it will become a regular feature of interest, with news, some technical articles and general SWL patter.

REPORTS: I realise that many words of wisdom have been in print about the amateur radio spirit, but this also applies to the SWL, who by careful listening can help the licenced amateur when sending reports.

By accurate observation on the bands and attention to detail, useful reports can be sent, especially to VHF stations and QRP HF band stations. I feel that it is better to listen to a station for a period of say 20 minutes noting any QRM and from what area, any QSB, any other stations calling - with call signs if possible, general band conditions, and any other peculiarities such as unusual propagation conditions. In my log I usually add other relevant info such as name of opr. power of stations, WX in that area, in fact as much useful information as possible.

To close this short section, a couple of hints:
Did you know that when winding coils, one way of getting a rigid winding is to lower the temperature of the former (in a fridge) and increase the temperature of the wire (warm oven). When wound, as they reach room temperature the winding tightens on the former.

Also a neon across a fuse holder will glow to give a visual indication when a high voltage fuse blows.

73 & fb DX. HAL.

G-QRP-C DX CALLBOOK SERVICE.

The club has purchased a copy of the World DX Listings. This will be available for use by members requiring a specific DX QTH. It will work as follows:

- 1) The QTH of overseas calls required for DX QSL purposes can be supplied or the QTH of calls required for urgent completion of an award. NO ROUTINE CALLS - PLEASE USE USUAL CHANNELS.
- 2) Send a Stamped Addressed POSTCARD to G3RJV. Print the call sign for which the QTH is required on the card with enough space for the address to be added.
- 3) When seeking a direct QSL, it is usual to send a couple of IRCs with the request and your own card.

CLUB DATA SHEETS.

The sheets mentioned in earlier SPRATs are still available for a large SAE to G3RJV. New sheets are in the process of preparation.

MATERIAL FOR SPRAT.

Material of a newsy or technical nature is always welcome for SPRAT. The text may be in the form of notes. If the text is to be submitted in a final form, please be as brief as possible as space is at a premium in each issue. The new form of reproduction now used in SPRAT enable photographs and line drawings to be reproduced, so articles may be illustrated with photos or final drawings may be offered. The club is able to redraw sketches submitted with articles.

CONTESTS:

Members are reminded of the RSGB LOW POWER CONTEST, 17th April, details in the last issue and the DL AGCW SUMMER QRP CONTEST. QRP SUMMER CONTEST - DL AGCW. 2nd and 3rd July 1977. 1500 GMT to 1500 GMT. Select up to 5 bands from 1.8 to 28 MHz. Contest rules as for winter contest - see last issue of SPRAT. It is usual for the club to make a good showing in both of these two events.

SUBS RENEWAL CHECK LIST Numbers with subs due occur as follows:-
After Winter issue : 0-90 & 178-200, Spring: 91-120 & 201-222

NEW MEMBERSHIP DETAILS:

254	3B8BJ	Jean Lagesse 23 Flat Lucas, Curepipe, Mauritius.	General QRP Construction
255	G4EFJ	Arthur Johnson 20 Lodge Cl. West Green, Crawley. Sussex. RH11 7ER	HW 8
256	G4DMH	Malcolm Horton. 73 Ingleborough Dr. Sprotborough. Doncaster. DN5 7AB.	Codar AT5, 888A.
257	G4ERO	Colin Leonard. 18 Pavan Gdns. Ensbury Pk. Bournemouth. Dorset.	HW7,
258	G8KLO	John Harvey 22 Elm Grove, Bromsgrove B61 0EH. Worcs	TR2200 (1 w)
259	G4EVO	Frank Goodall 1 Rhodes Gdns. Broadstairs, Kent. CT10 1BP.	Argonaut + Joystick VFA
260	G4DNP	Robin Travis 36 Wentworth Hill, Wembley. Middlesex.	HW7 + Joystick VFA
261		2 Glen thorpe Rd. Morden. Surrey. SM4 4JW. JOHN GIBB.	Just passed RAE.
262	G4DOP	Alfred Kenneth Glew 1a Camberley Ave. Raynes Pk. London. SW20.	Home brew QRP
263	W9PNE	Brice Anderson. Wabash County. Very Low Power DX. Lancaster. Illinois. 62855. USA.	
264	G4EHU	George Trenchard. 34 Monmouth St. Bridgwater, Somerset. TA6 5EJ.	200mW TTX (80m) Direct Con RX.
265		Gedric White. 40 Buckingham Rd. Shoreham- by-Sea. Sussex. BN4 5UD.	FR50B, Direct Con. RX.
266	G3VRM	R.E. Morgan. 9 Dunster Ave. Morden. Surrey. SM4 4LE.	General QRP
267	GI3VYV	13 Abbeydale Cres. Ballysillan, Belfast. BT14 7HH.	General QRP.
268	G3TXQ	Steve Hunt. 21 Green Street, Milton Malsor. Northampton. NN7 3AT.	HW8. RA1. G3ZVC TTX.
269	ZL4HX	Robin Paulson St. Peters School, Kapapo St. Gore. New Zealand.	QRP SSB / P
270	G4AYN	John Aspinall 48 York Ave. Corringham. Stanford-Le-Hope, Essex. SS17 7NP.	QRP CW on 160m

- 271 G3ADB Arthur Trevena Homebrew Double S/H RX,
Mira Flores.10 Trevaunance RD. 2watt TTX 14/21 MHz
St. Agnes. Cornwall.
- 272 Maurice Bulmer RAE passed.
Searchlight Workshop,
Newhaven. Sussex.
- 273 EI1DA Hal Graepel. Home construction and QRP
Kinsale. Co.Cork.
Rep. of Ireland.
- 274 G4FMH Bill Beacham Codar AT5,TR2200, RNARS.
36 Braemar Cres. Filton Pk.
Bristol. BS7 0TD.

NOTE: Will new members please check their membership number, as these may differ from the previous notified number.

CHANGE OF QTH.

- 090 G3DPS 'Beirnfels' Old Odiham Rd. Alton, Hants.
- 129 G3RYP The New House, Main St. Dacre Banks. Harrogate. N. Yorks.
- 189 G3OKY 35 Castledine Rd. Penge. London. SE20 8PL.
- 179 G4CZX Fairfield, High St. Tarring. West Worthing. Sussex.
- 059 G4DEP 23 Pool Court,Pickering. N. Yorks. YO18 8DR.

NEW CALLSIGN:

245 G4FSP new call for George Rolton

CORRECTIONS TO LIST:

- 053 G4BZB (not G4BXB)
- 219 G4FLQ is Brett RIDER
- 217 G4DRB name BILL Pickering.
- 247 G4BJZ (not G4BJE)

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- 4.7 to 20 P.F. at 10p each
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2 to 8 P.F. at 10p each

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2 AMP R.F. CHOKES Wire Endod 6 for 50p.
20 AC 12B TRANSISTORS Assorted Values for 60p.
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1000uf 75 Kv.w. VISCONEL CAPACITORS at 35p each.
60 ASSORTED WIRE WOUND RESISTORS 1 To 10 Watt at 37p.
RADIO I.C. 2N 414 with circuit @ £1.
SILICON PHOTO-SWITCHES with data @ 50p each.
CRYSTALS 5 MHz 10X Type @ 30p, 7MHz, 8 MHz 10XAJ @ 60p each.
BY204 1250 PIV 1 Amp SILICON DIODES @ 12 for £1.
FT's like 2N 3019 at 6 for 75p.
MINIATURE 8uf 200v.w. ELECTROLYTICS at 10 for 57p.
EMI HUGHES or TRANSITRON GERMANIUM GOLD BONDED DIODES 50 for 40p.
TEXAS R.F. TRANSISTORS 2G106 PNP 60 MHz at 20 for 57p.
180 ASSORTED MULLARD C280 Polyester Capacitors @ 37p.
BRANDED PLASTIC TRANSISTORS T092 BC 108 or BC 212 Types at 10 for 60p.
R.F. TRANSISTORS BF 194 or BF 332 Both at 12 for 30p.
FT 242 CRYSTALS 8040, 8100 KHz at 75p each, 7620, 7720, 7864, 7 8164, 7, 8233-3, 8300, 8366-7, 8483-3, 8583-3, 8650, 8716-7 Ohm. All at 40p each.
TEXAS BF 177 100 Volt NPN TRANSISTORS 10p each 6 for 50p.
VHF TUBULAR TRIMMERS 3pf @ 5p, 5pf @ 5p, 12pf @ 5p.
180 ASSORTED IXAJ CRYSTALS Between 5100 To 7900 MHz for £1-18.
PLASTIC TRIACS 50 PIV 6 Amp @ 15p, 400 PIV 6 Amp @ 60p.
PLASTIC S.C.R's 50 PIV 6 Amp @ 15p, 400 PIV 6 Amp @ 60p.
TEXAS 900 Volt NPN 2 Amp TRANSISTORS 80p each, 3 for £1-18.
TEXAS TIP 117 PNP DARLINGTON POWER TRANSISTOR @ 25p each.
DUAL GATE MOS FET's like 40673 at 30p each or 4 for £1-18.
TSA 1205 14 PIN DIL LIMITING I.F. AMPLIFIER PIN DETECTOR Untested with data 6 for 60p.
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