SPRAT

THE JOURNAL OF THE G-QRP CLUB

DEVOTED·TO·LOW·POWER·COMMUNICATION

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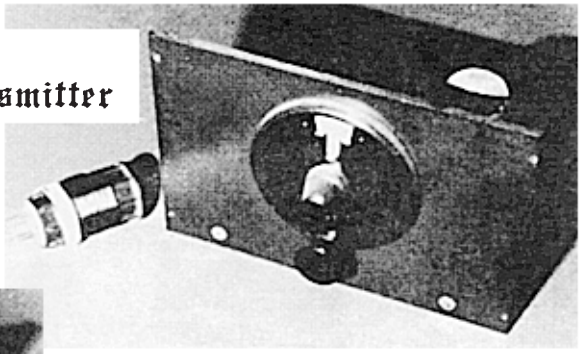
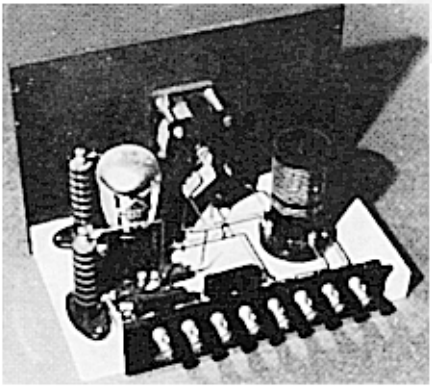
Vintage valve Transmitter

G QRP CLUB TREASURER WINS THE VINTAGE VALVE TRANSMITTER PRIZE:

Seen here is the transmitter, using authentic 1920's parts, that won the Gotta Bottle rig competition for Alan, G4DVW.

See Page 11.





DC & RF Voltmeter
Multiband VFO
Delta 580 on QRP
3 Band Vee Beam
30M with the HW8
10·1MHz Converter
RSGB Convention

Members News ~ Awards ~ VHF ~ SSB ~ Club Items

Rev. George Dobbs
G3RJV
17. Aspen Drive,
Chelmsley Wood,
Birmingham.
B37 7QX. 021-770 5918

Dear Members,

Once again the club enjoyed considerable success at the RSGB National Convention at the National Exhibition Centre, Birmingham. The club stand was visited by over 250 members and was always busy with enquiries from non-members. The club also organised the "Home Construction Forum" as part of the HF Convention. Over 300 people attended this forum, more than for any other single event at the convention.

The G3RJV QTH became sleeping space for more members than ever before. Amongst these were Leo, KC5EV, (and the lovely Sharon) Ha-Jo, DJ1ZB (plus Barbara), Herbie, DL7MAM, G4BUE, G3VTT, G3ROO, G4DQP, G3PDL (and son Derek), G4GIK and naturally GM3OXX. A whole assortment of other visitors came through the house during the days around the convention all with the usual dedicated lack of seriousness that G QRP Club social meetings seem to demand. Rumour has it that a Chief Inspector of police was seem climbing out of the shack window in the middle of the night in his underclothes...quite true! but I'm not sure about the rest of the story which says he got away with a caution when he showed his warrant card and said he was a radio amateur.

In this issue we announce the winner of the Vintage Valve Transmitter Competition, with thanks to Dave, G4EZF, for the idea and the prize. Alan, G4DVW, won the splendid antique galvanometer. I already have one entry for the Suit Case Rig competition (see the last issue) and expect many more.

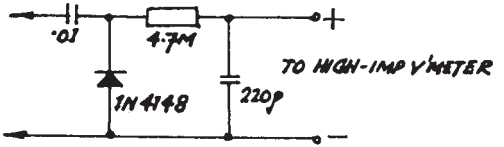
Summer is the traditional time for antenna repairs and experimentation. Why not send us your favourite ideas for SPRAT, or for that matter, details of the rig you have been building this winter, or the useful little shack project. We do not require skill as a technical author, just send sketches and clear notes and we will do the rest.

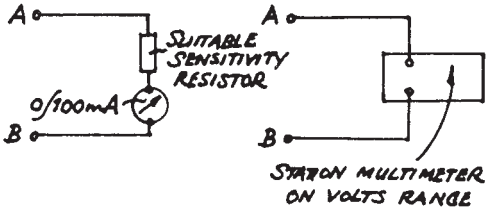
Many thanks to all who helped at the Convention. I am not sure what will happen next year. My time at Chelmsley Wood is almost over and I am in the process of looking for a new parish. I am not sure where that might be, but it probably wont be just along the road from the National Convention Site.

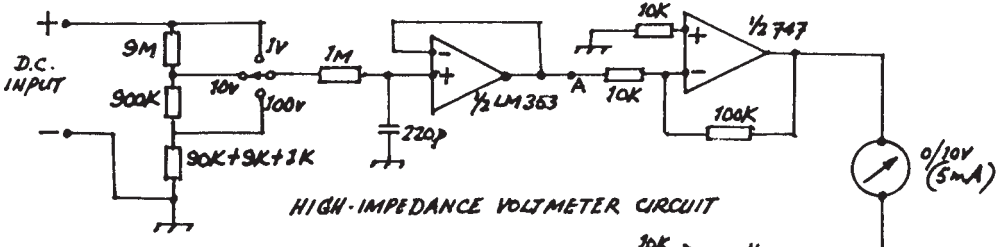
Enjoy the summer, 73 fer nw G3RJV

Subscriptions

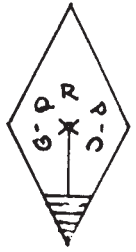
Renewal (Rates now £3.50 or $9 US) to Alan Lake, G4DVW, 7 Middleton Cl. Nuthall, Nottingham. NG16 1BX. PLEASE QUOTE MEMBERSHIP NUMBER. Cheques to 'G QRP CLUB'. European members may use Giro Cheques. A reminder will automatically be stamped in sequence onto copies of SPRAT, if you have already paid ignore this notice.



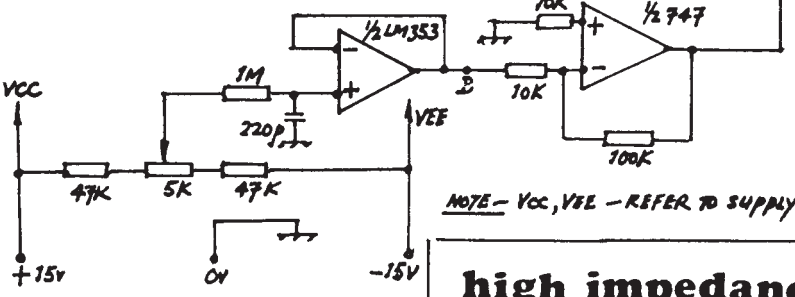




HIGH-IMPEDANCE VOLTMETER CIRCUIT



BRIAN BOOTH — G3SYC
(G-QRP-C 478)



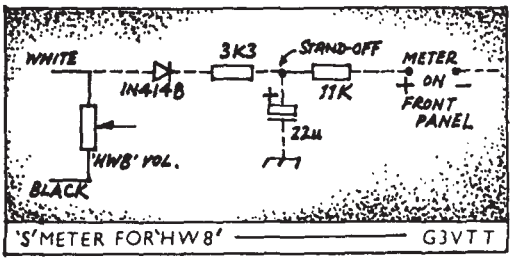
BOTH STABILISED

NOTE — Vcc, VEE — REFER TO SUPPLY CONNS ON LM353, 747 OP. AMPS

high impedance d.c. voltmeter & r.f. probe

High Impedance DC Voltmeter and RF Probe
Brian Booth G3SYC

1. All resistors easily available from Ambit (0.5%).
2. 10 megohm input.
3. Ranges 0-1v, 0-10v, 0-100v chosen to suit meter scale available at this QTH, but can change to suit oneself.
4. The circuit is totally conventional and employs a N Fet/Bipolar op. amp. to drive a bipolar op. amp. which operates a relatively insensitive 200ohm/volt 0-10 voltmeter (which I did not want to alter!).
5. Appears to be drift compensated, a few minutes of the XYL's hairdryer on full heat did not alter zero significantly!
6. If you have a sensitive microameter available, ignore cut-off points A and B and substitute (x shunt) see diagram. Alternatively can use the 'station' AVO across A and B if you don't want to play with any meters!
7. Don't know how I've managed without it.
8. Can use lower than plus 15, 0, minus 15 volts power supply if more sensitive meter used, but recommend stabilised supply, (haven't used batteries, expensive and they always let you down when you need the meter most!).
9. Tagboard construction.
10. If you require any further gen, let me know.



HW8
S Meter

AN 'S' METER FOR THE HW8 (From Benelux Newsletter June 1983, No. 26)

Owners of the HW8 can, by using the circuit shown, obtain an indication of signal strength. Needed are two resistors, 3K3 and 11k, a 1N4148 diode and a 22uFD capacitor.

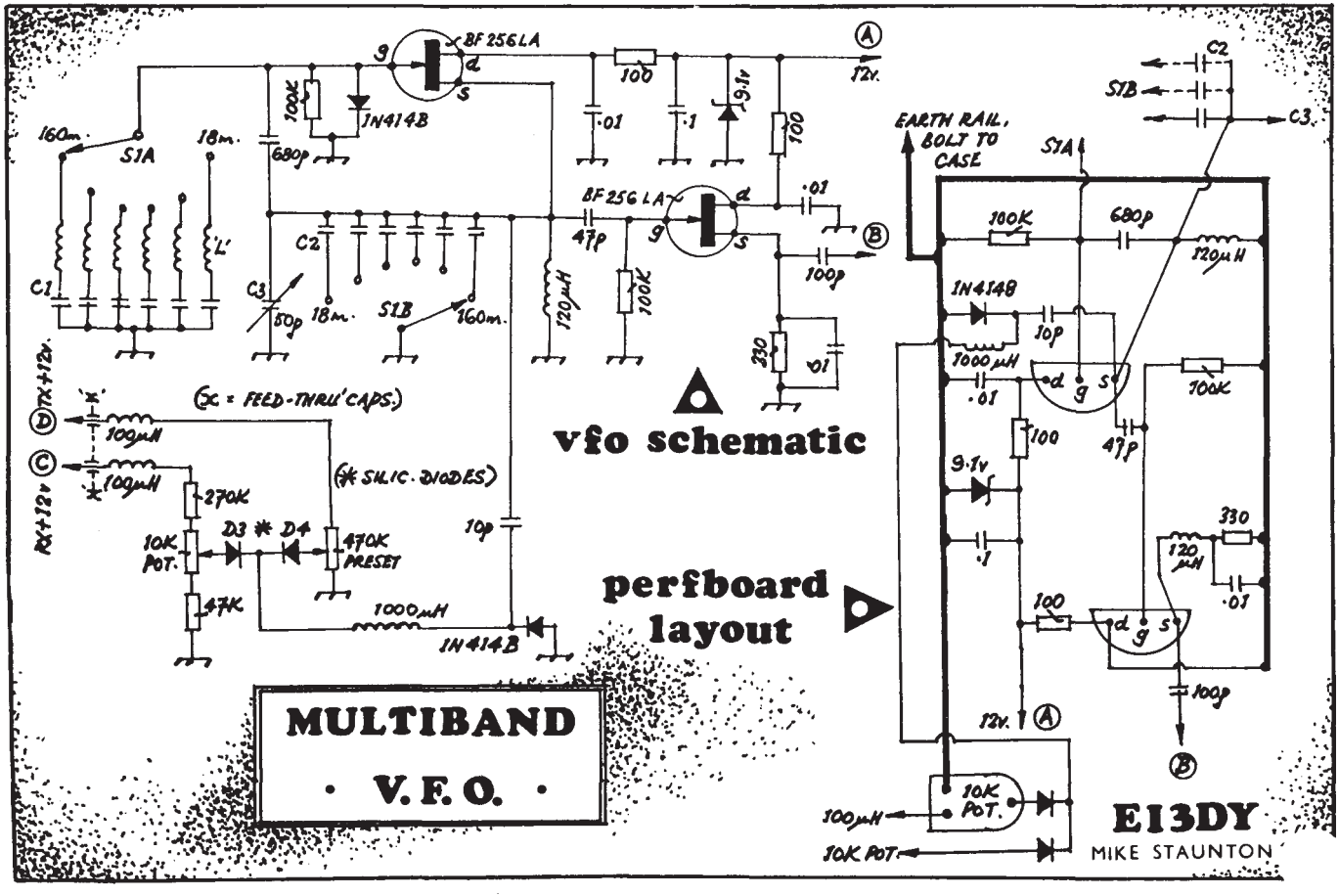
In the area of the meter a small stand-off insulator is mounted for supporting the components as shown. A connection is made from the AF gain control white lead using the 3K3 resistor and the 1N4148 diode to the stand-off insulator. From the stand-off to chassis earth, a 22uFD is connected, and also from the standoff a connection is made to the meter positive by the 11k resistor. When on receive, a reading is shown on the meter.

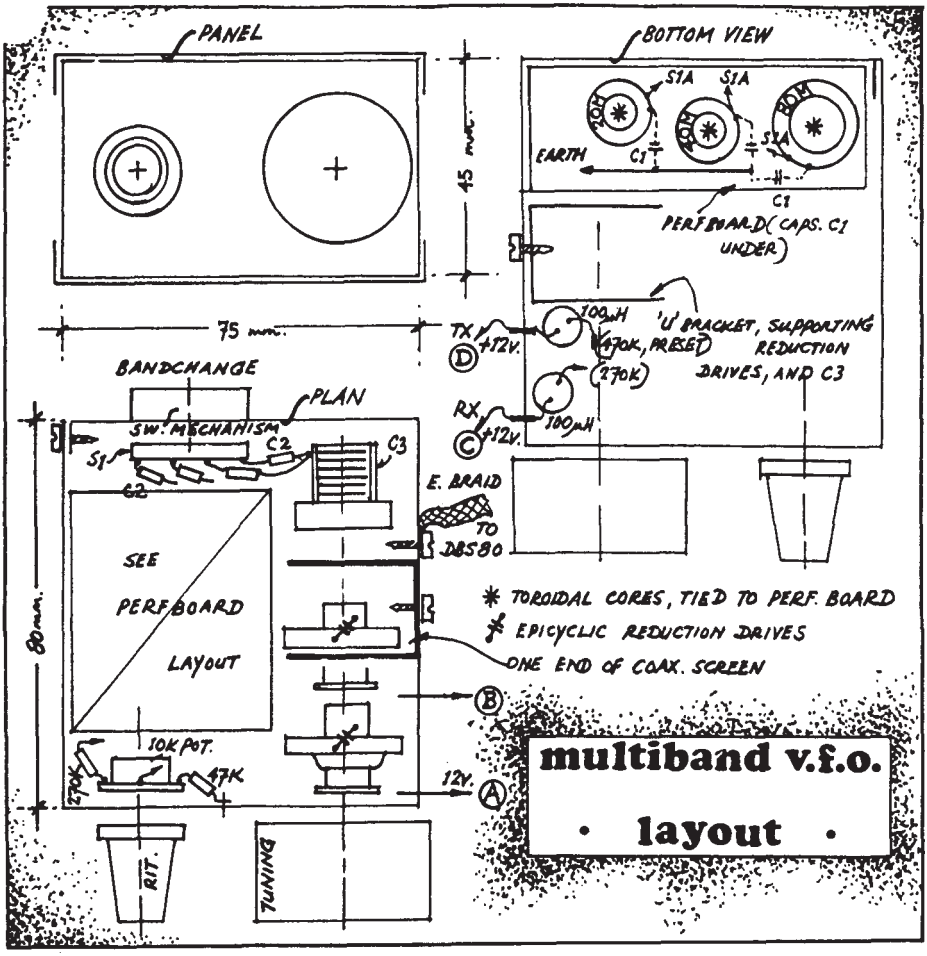
From G3VTT - Although this circuit has not been tried here in The U.K., at least to my knowledge, it should give an arbitary indication of signal level by rectifying the audio derived from the top end of the volume control.

This would appear to be a very useful addition to an HW8, our thanks to all the gang in The Netherlands.

FOR SALE: Ten Tec Argosy in mint condx. Only 3 mnths old. Analogue version, including 225 Power Supply and 224 Audio CW Filter. £370 inc Securicor delivery from Northern Ireland to the UK. Finbar O'Connor, EIØCF. Malin Head Radio Station, Malin Head. Co.Donegal. Ireland.

NEWS Wanted:G4RAW reminds us that Eric Dowdeswell, G4AR is always pleased to receive QRP news for his 'On the Air' column in Practical Wireless.


MULTIBAND
· V.F.O. ·
vfo schematic
perfboard layout
E13DY
MIKE STAUNTON
BF256LA
1N414B
160m.
18m.
S1A
S1B
C1
C2
C3
50p
680p
100K
100
.01
.1
9.1v
12v.
47p
120µH
1000µH
10p
330
470K PRESET
10K POT.
47K
270K
100µH
D3 * D4
(* SILIC. DIODES)
(x = FEED-THRU CAPS.)
TX+12v
RX+12v
EARTH RAIL, BOLT TO CASE



A MULTI-BAND VFO (Suitable for The DSB 80) By Mike, EI3DY

This is a VFO which can be used for more than one band. The schematic owes something to DeMaw and Shriner, QST January 1980, pages 22. Band switching is by means of S1. Tuning is with C3. The VFO automatically offsets on receive for CW operation. This works by placing a capacitor (10pF) and diode, D1, across the tuned circuit. These for a variable capacitance circuit, such that a small voltage change across the diode changes slightly the capacitance across the tuned circuit. This voltage is controlled by the 10k potentiometer. When setting up the circuit the 470k preset is adjusted so that the VFO does not change frequency between receive and transmit when the RIT control is at the DSD position. A robust RF proof box is required. The sides of the writer's box was bent from a piece of aluminium, and all the components were mounted on this. Top and bottom are removeable lids. Two epicyclic drives in series give a professional tuning rate, and stability is excellent. A digital readout is preferable. The PCIM 177 suggested by G3WPO requires a pre-scaler for frequencies above 4MHz, so see Ham Radio Today, October 1983, page 18 for the basis of the circuit to overcome this.

Multiband VFO EI3DY

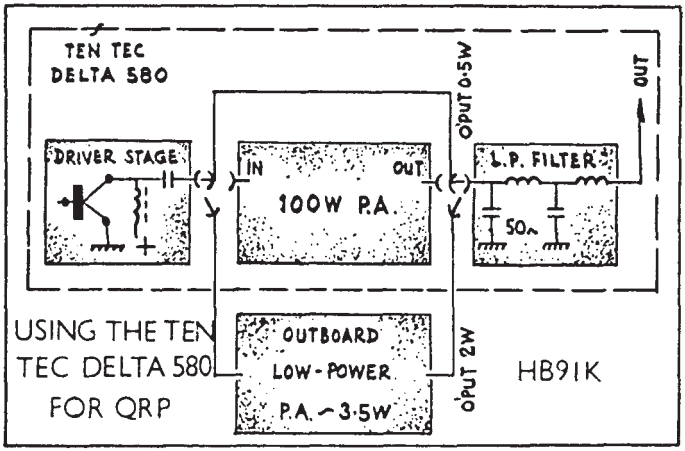
Most of the circuit is on two perforated boards, (calculated component values are given for six bands in the table, but the writer has verified operation with 20, 40 and 80 metres only to date). Just one good earth connection was made between the VFO box and the DSB 80 board. A braid from a TV antenna co-ax was used. All capacitors associated with the tuning portion of the VFO should be polystyrene. The DSB 80 board requires to be modified as follows :- remove TR1, R5 and D2. Change R6 to 27 ohms and substitute an RF choke for R8. Connect a 100k resistor between the gate of TR2 and earth. "A" connects to R6/C8 junction, "B" to the gate of TR2, "C" to R23/R28 junction and "D" to R11/C12 junction.

Parts S1 2 pole 6 way break before make miniature wafer and switch mechanism and BF256LA -Radionics, Dublin. RF chokes, feed through capacitors, Amidon toroid cores and epicyclic drives- Ambit, Essex.

That is the VFO. Modification of the PA stage for all band operation is another subject. DSB 80 experimeters do not forget to share your ideas and circuits.

Band	L	C1	C2
160	126uH: 150 turns No. 34 on T68-2	330	56
80	30uH: 79 turns No. 28 on T68-2	220	56
40	7.4uH: 39 turns No. 26 on T50-2	150	150
30	3.6uH: 30 turns No. 24 on T50-6	120	180
20	1.3uH: 18 turns No. 22 on T50-6	300	180
18	1.1uH: 17 turns No. 22 on T50-6	120	220

(From the IRTS Magazine)



I have bought a new wonderful rig for short wave: The Ten Tec Delta 580 with really outstanding calm and sensitive receiver, but it delivers 100 watts output. I tried to use it for QRP CW and flash....I found a very simple solution :-

Measuring the driver output impedance, and also the low pass filter impedance input I found both were 50 ohms. All you have to do is to cut the mini coax cable on both in and out of the 100 watts PA, insert some connectors, and feed the low pass filter directly from the driver, and out comes clean, crisp undistorted CW power of about 500mW. This on all bands from 160 to 10 metres.

WANTED: Details of circuit for Eddystone S Meter type 669 (for RX type 888) or would buy S meter if available. Ian Wilks, GW3FSW, Ty Celyn, Axton, Holywell. Tel: 0745 570538.

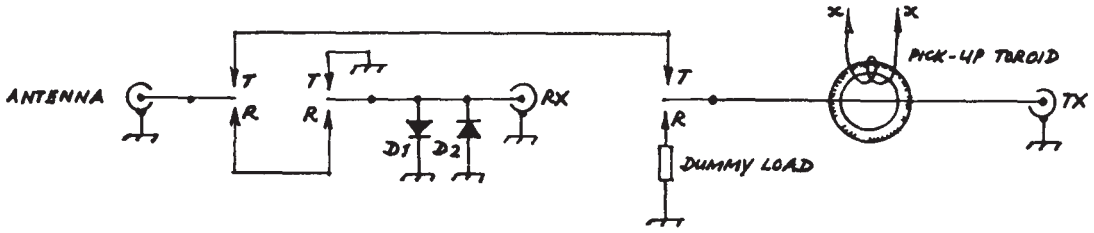
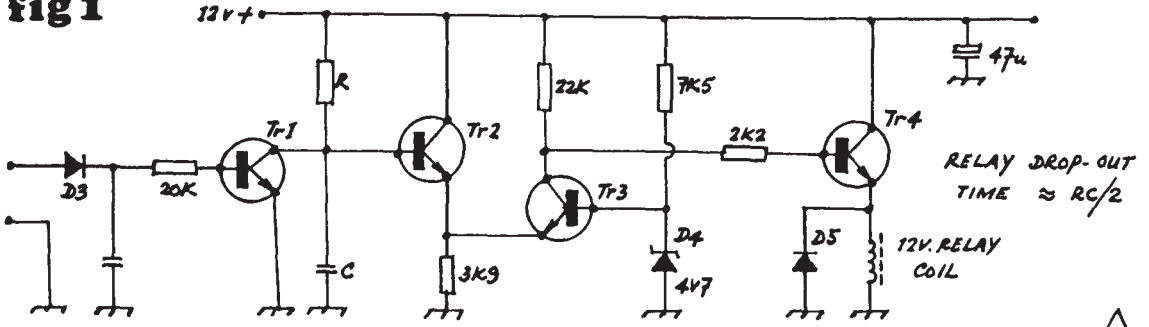


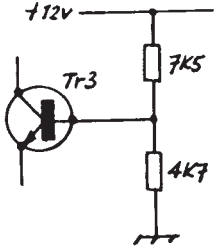
fig 1



R.F.-ACTUATED CHANGEOVER SWITCH

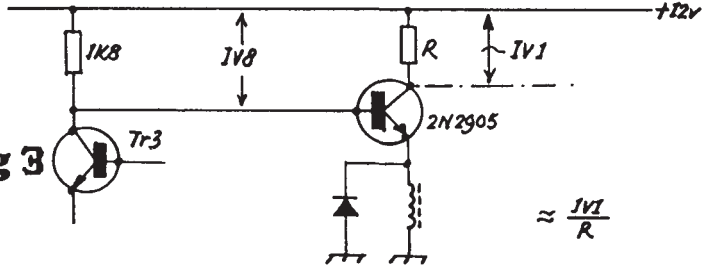
IAN BRAITHWAITE
- G4COL -

fig 2



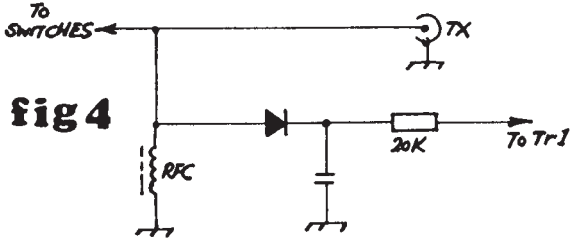
ALTERNATIVE BIAS FOR Tr3
(MORE SUPPLY-DEPENDANT)

fig 3



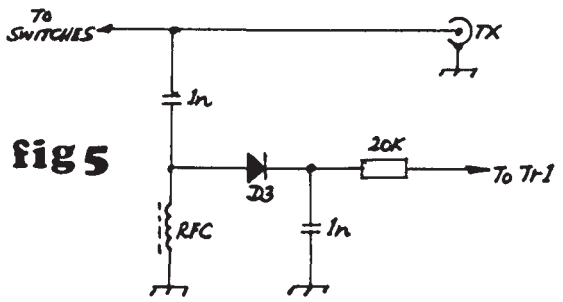
ALTERNATIVE OUTPUT FOR LOWER VOLTAGE RELAY COIL
(CHOOSE 'R', SUCH THAT 'I' IS LARGE ENOUGH TO ENERGIZE RELAY)

fig 4



VOLTAGE PICK-UP

fig 5



VOLTAGE PICK-UP WHEN DC. PRESENT ON XMISSION LINE

RF Actuated Changeover G4COL

When I obtained my copy of The G-QRP-CLUB Circuit Handbook recently, I was surprised and delighted to find a modifed version of a circuit for an antenna change over switch, which I had published in 'Circuit Ideas' in Wireless World, (June 1977). G3IVF had modified this circuit to stop it "zapping" transistors (apologies to G3IVF) and it is given on page 26 of the handbook. I would like to take the opportunity to publish a new improved version, which has been in use on my 10 metre set-up for several years now (with no "zapped" transistors!).

The benefits of an RF actuated antenna switch is really felt where the station contains separate transmitters and receivers, since the unit can be placed in the feeder to the antenna, and be used to switch between a variety of transmitters and receivers, being a self-contained item. This should be of interest to many QRPers since this branch of the hobby of amateur radio seems to contain well above average constructional activity, and reading Sprat, the impression I get is that some members must virtually have hundreds of transmitters and receivers around the place!

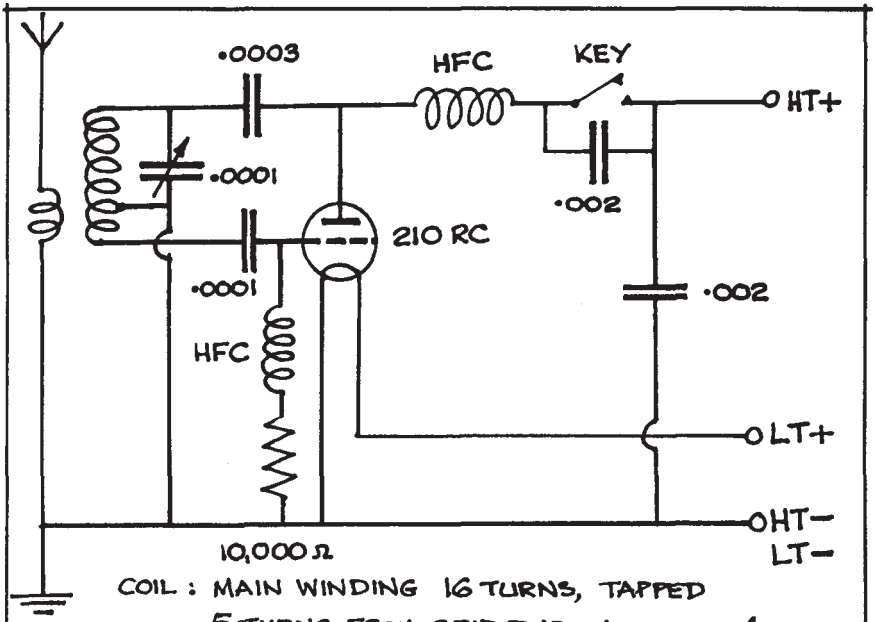
The main circuit is shown in Fig. 1. The secondary of the pick up coil is just a few turns (G3IVF suggested 8), on a common or grot RF toroid, with a wire from the TX socket to the relay, passed through the centre as the single turn primary. Do not use coaxial cable unless one end of the cable has its braid left disconnected, since the equal and opposite currents in the inner and braid will give no external flux to operate the toroidal transformer. The RF signal is half-wave rectified by D3, giving a small base current into TR1. TR1 then turns on, providing a relatively rapid discharge of capacitor C. When the base of TR2 falls below 4.7 volts, TR3 turns on, and most of its collector current (about 1mA) flows through TR4 base, turning it on and actuating the relay, causing the switches to be put into the transmit position. With the key up, C charges relatively slowly through R, and every time the morse key is pressed, C is again discharged, holding the relay in the transmit position. At the end of the 'over', C charges until the voltage on TR2 base reaches 4.7 volts, turning TR2 on, TR3 off, and allowing the relay to drop out to the Receive state. The drop-out time is given to a close approximation by half the time constant CR, so that if R is 1 megohm, and C is 2.2 microfarads, the drop-out time will be 1.1 seconds. Times of this order will be found quite convenient. Having chosen the RC values, the values of most of the other components are not critical. Figure 2 shows a resistive bias for TR3 rather than the zener diode. The advantage of the zener is of course, that the unit becomes independent of the supply rail to a large extent, but resistive bias will certainly work for those without a suitable zener in the junk box. The transistors can be just about any ordinary silicon types, but it is as well to make TR4 a larger dissipation type such as a 2N2905, especially in the circuit of Figure 3, which is for a relay with a coil voltage of less than 12 volts. In this case, choose the emitter resistor so that the relay coil has enough current to operate plus a small margin. Figure 4 shows a simple voltage pick-off circuit, which can be used instead of the toroid. The RF choke provides DC continuity for the diode, and should have enough reactance not to load the line. If DC continuity exists already, it can be omitted, but if there is a DC voltage present on the line for any reason, the choke should be used with a blocking capacitor inserted between it and the line (see Figure 5). The diodes are again not critical, but silicon should be used for the receiver protection (D1 and D2). Germanium or Schottky diodes make sensitive detectors (e.g. OA81). D5 protects TR4 from high voltages when the current to the coil is interrupted, and should be silicon (e.g. 1N4148).

G4LEG CLEARING SHACK prior to leaving the UK - SAE gets you a free list of nice looking home built equipment for disposal, including the 'LEG Makeit Box' some free cases (if you pay postage) and a couple of good commercial items. Peter Brent, 15 Cromhall Cl. Fareham. Hampshire. PO14 3BJ.

FOR SALE: QQV02-6 QRP double tetrode valves at £1 plus postage.
Wanted: Circuit diagram of prescaler to extend the range to 30MHz for Timestep DFM, expenses refunded.
Les Smith, 48 Pitt Ave. Witham. Essex. 0376 514912 .

Vintage valve Transmitter

Dave Logan, G4EZF, issued the challenge to 'getta bottle' and find the oldest valve we could, build a transmitter, and submit an 80m log of stations worked. This is the circuit that won! Alan Lake, G4DVW, used all authentic 1920's bits to build it. He receives Dave's antique galvanometer as his prize. A surprising number of vintage rigs took to the air and we will print more photos in future.



COIL : MAIN WINDING 16 TURNS, TAPPED 5 TURNS FROM GRID END. AE. COIL 4 TURNS

PARTS LIST

1	VARIABLE CONDENSER, .0001 mFd, BULGIN,	5/6d
2	FIXED CONDENSERS, .002 mFd, TCC TYPE 33,	2/4d
1	FIXED —"— .0001 mFd, TCC TYPE 34,	1/6d
1	FIXED —"— .0003 mFd, —"—	
2	HF CHOKES, "POLAR" SHORT WAVE TYPE	4/-
1	FIXED RESISTANCE, 10,000 Ω OHMITE,	2/3d
1	VALVE, COSSOR 210 RC	10/6d
2	4 PIN VALVE HOLDERS, LOTUS	1/3d
1	4 PIN PLUG IN COIL FORMER	2/-
1	PANEL, 9"x6", ¼" POLISHED EBONITE	
	BASEBOARD, TERMINALS, 18 SWG GLAZITE	

(PRICES CORRECT SEPT. 1929)

RSGB National Convention

At the Convention

Photo Key

1) The enrolment and sign-in booth at the G QRP Club Stand. In two days over 250 club members signed into the stand.

2) George, G3RJV, lectures at the Home Construction Forum. Organised by the club as part of the HF Convention, this forum drew over 300 people, more than any other single event at the convention.

3) George, GM3OXX, lectures on construction techniques at the forum.

4) The Panel for the "Any Questions" session at the Home Construction Forum. Left to right: Ian, G3ROO, Ha-Jo, DJ1ZB, Colin, G3VTT, George, GM3OXX and Geoff, G3GSR(Editor of Practical Wireless), being introduced by G3RJV. All of the panelists have contributed to SPRAT and the amateur radio press.

Sprat Photo Report

At the G3RJV QTH

Photo Key

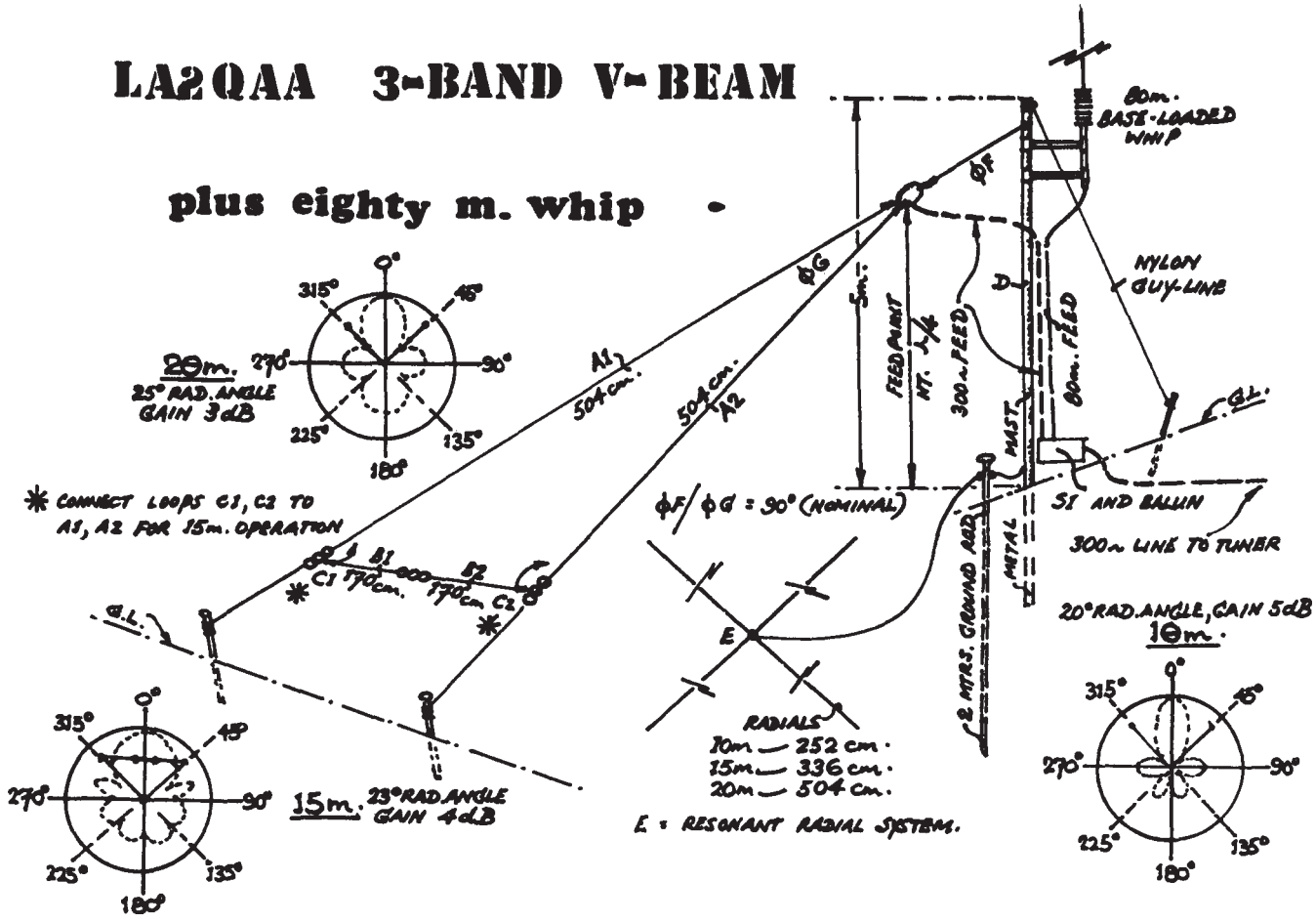
5) Chris, G4BUE, in a reflective mood. (That doesn't mean the top of your head Chris... Honest!)

6) Present at the G3RJV Barbecue/Haggis Boil (!?) Left to right: DJ1ZB, GM3OXX, G3VTT, G3RJV, G3KFE, KC5EV, G4GIK, SWL Derek, G3PDL. Front: G3ROO.

7) Colin, G3VTT, with expert help from Jo-Anna, teaches Ferdie, T1REF, the art of keying with the left foot!

8) Colin, G3VTT, (left) with Leo, KC5EV, relax after a busy day at the RJV QTH.

9) George, GM3OXX, the wellknown 1 watt DXer, Equipment designer and builder and haggis boiler.


LA2QAA 3-BAND V-BEAM
plus eighty m. whip
80m. BASE-LOADED WHIP
NYLON GUY-LINE
G.L.
MAST
METAL
2 MTRS. GROUND ROD
S1 AND BALUN
300Ω LINE TO TUNER
FEED POINT
5m.
Ht. λ/4
300Ω FEED
80m. FEED
D
ϕF
ϕG
A1
A2
504cm.
504cm.
ϕF/ϕG = 90° (NOMINAL)
* CONNECT LOOPS C1, C2 TO A1, A2 FOR 15m. OPERATION
B1
B2
C1
C2
170cm.
170cm.
E
RADIALS
10m — 252 cm.
15m — 336 cm.
20m — 504 cm.
E = RESONANT RADIAL SYSTEM.
20m. 25° RAD. ANGLE GAIN 3dB
15m. 23° RAD. ANGLE GAIN 4dB
10m. 20° RAD. ANGLE, GAIN 5dB
0°
45°
90°
135°
180°
225°
270°
315°

3 Band V Beam *John Hackett LA2QAA*

After having received a positive response ref: "Phased Verticals for Three Bands", (a limited space antenna design for the amateurs with a poor antenna QTH,) I decided to see what we could do for the few who did not understand the phase line system (particularly the 'electrical quarter wavelengths etc). The following antenna should be self explanatory. Again it is aimed at those fo you who have not go a 70 feet tower or about 10 acres of potential antenna park.

Basically what we need is a 17 feet metal mast (or a "metal" tree!). This is important since the mast is the system's reflector. I used two pieces of aluminium tubing, one slotted in the other and fastened with a split pin, the mast is grounded. The antenna radiator is a half wavelength on 20 metres, and one wavelength on 15 and 10 metres. For 15 metres, the lengths B1/B2 are coupled to lengths A1/A2 respectively (coupling system is builders choice). For coupling I used banana jacks and sockets, soldered to C1/C2 and A1/A2. The disadvantage being that you have to dash outside to change bands, the advantage being simply no traps (less loss!).

When one bands a dipole into the configuration shown, several thinhs happen: change of azimuth, change of impedance, reactance etc. in relation to the dipole. For this reason the antenna is fed with 300 ohm open wire line (you can use 300 ohm TV line at a pinch). Also, when changing bands, the same things occurs, change in feed point impedance, etc. Using 300 ohm line through a TT (pye) tuner will match the system to the usual 50 ohm output of the rig. Since the feed point is only quarter of a wavelength over the ground, the antenna behaves like a vertical quarter wave, with low vertical radiation (excellent for DX). Because of this we need a good radial system (extremely important!) to make the system really effective (the more the better!!).

If the SWR is high, by changing the angle between the wires and the mast, and experimenting, the lowest SWR will be found. A moderate SWR is NOT the disaster a lot of amateurs seem to believe. The radials and the mast should be bonded together to an eight feet ground rod. Another advantage of this system is the ease in which you can swing it to any compass point for maximum directivity. If you want a better front to back ratio, just pile in more reflecting wires on the mast behind the antenna. The phased verticals were DX only, whereas this system covers medium and short range contacts as well as real DX. Compared to splashing out a fortune for an aluminium clothesline, or a hassle with the local Council, reference a 50 feet tower, this system is well worth the effort and it is cheap!, though none the less effective for that. Let me know how it goes and good luck. By the way the ambitious members can put their mobile whips on the mast too, feed with the usual coax to a balun and switch.

MAJOR RADIO EVENT IN SWEDEN.

The city of HELSINGBORG will be 900 years old in May 1985 and NSRA (Northwest Scania Radio Amateurs) will be 40 years old at the same time. The Swedish Radio Amateurs Society (SSA) will hold its annual meeting in Helsingborg on April 28th 1985. Between 26th-28th April 1985 the Ham Festival "KOM - 85" takes place with a large "hamparty" at a beautiful resturant on the evening of April 27th. The Ham Festival is located in the harbour at the Sound-Oresund facing Denmark. (20 mins ferry to Helsingor - the city of Hamlet). Any G QRP Club members interested in attending this event can obtain further details from Leif Svensson,SM7KWE,Nyborgsvagen 23,S-252 21, Helsingborg. Sweden.

HELP! I am looking for any information on the Argonaut 405 especially RF/Front end (Assembly,Circuit,Re-alignment)Suffering lack of 40/80 drive and cant get one up without the other down! Full costs will be re-imbursed. Mike Hutchins, ZL1BLJ,92 Pah Rd.Howick.Auckland,New Zealand. (ZL1BLJ)

GOOD PRICE PAID for B2 suitcase transceiver. G3NYE, 49 Hawthorn Road, Gatley, Cheadle, Cheshire.

G3RJV is looking for a few valves: 12BA6,12AT6,35W4 and 12A6.
Can anyone help?

30m for the HW8

Howell Ching KH6IJS

When considering the addition of the new 30 metre band to my HW8, I knew one thing for sure. I did not want to give up either 40 or 20 metres to acquire performance on 10.1MHz. Since 80 metres is a rarely used band out here in Hawaii, I determined to sacrifice it, rather than any of the others.

With the help of Zack, KH6CP, I got to work on a conversion of the HW8 to 30 metres using available components plus a crystal and a handful of replacement capacitors. I've converted two HW8's this way. The first one took me the better part of a day, and the second was completed in less than three hours.

This conversion is straightforward, and I encountered no problems. I should caution, however, that the spacing of the windings on the toroids affects inductance, so keep the turns as uniform as possible. I used a grid-dip meter to check the rewound coils resonant frequencies and then dripped hot candle wax on them to hold the turns in place.

O.K. here are the simple steps :-

RECEIVER SECTION

1. Remove C1, C15 and C16 (trimmer) and snip off R50
2. Disconnect C301A from the circuit
3. Replace Y1 crystal with an 18.895MHz rock in a HC-6/U holder with 30pF loading and a 0.005% tolerance
4. Replace C116 with a 43-47pF capacitor (I used 47pF) and replace C64 with a 27-33pF capacitor (I used 33pF).

TRANSMITTER SECTION

1. Remove C.94
2. Replace C77 with a 150pF capacitor, C78 with a 150pF, C96 with 85pF, and C97 with 270-300pF capacitors (I used 270pF)
3. Remove, alter and replace the original coils
   - L22 - (9uH, 25 turns originally) unwind 10 turns and adjust the remaining 15 turns evenly around the core
   - L26 - (15.5uH, 31 turns orignally) unwind 19 turns, do not respace the remaining 12 turns
   - L27 - (27.5uH, 36 turns originally) unwind 23 turns and adjust the remaining 13 turns around the core evenly.

   In all cases, the changed coils should have an inductance of 3uH.

NOTE: When unwinding the toroids, do not trim excess lead length until the coil has been resoldered to the proper spot on the PCB board. The long leads make them easier to thread back into position. Use silver mica capacitors for all replacement work.

REALIGNMENT

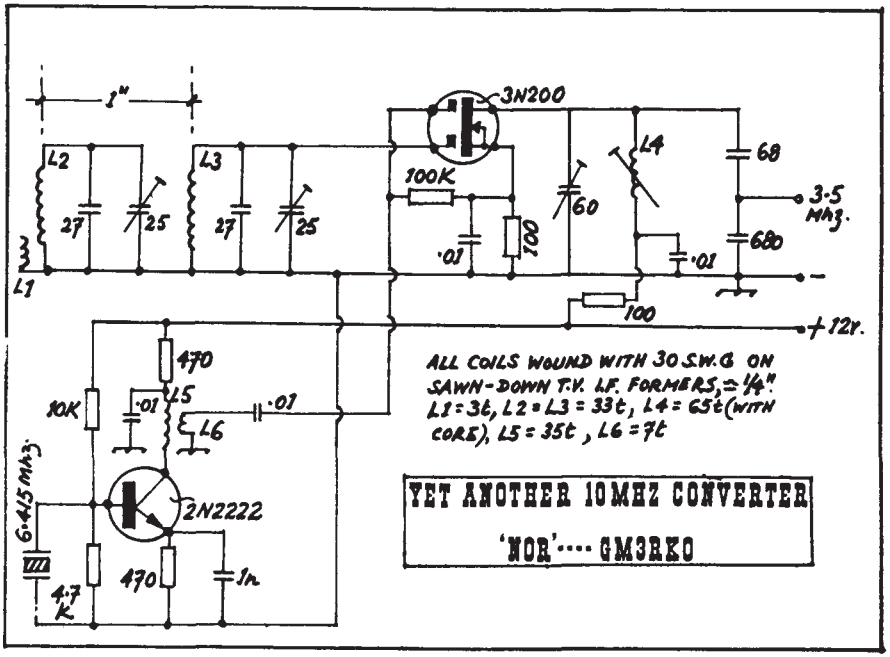
Adjust L17 until the new crystal oscillates properly. Check the alignment of L18 (40 metres) since there is some interaction between these coils.
In the mixer section, L13 will have a very broad peak. I got the best rejection of unwanted signals with the slug turned counterclockwise until it was nearly level with the top of the stack.
Initially, I found that the frequency generated by the HW8's VFO (8.645 to 8.985MHz could be heard quite loudly in the new 30 metre band. I used my grid-dip meter to generate a signal in that range, and then adjusted L13 for the best rejection of these frequencies.
While you have your HW8 on the bench, there is another modification worth trying. Replace the noise relay that comes with the rig with a SPDT. 12 volt mercury wetted relay. This makes for silent keying and a very fast break-in (near QSK) can be had by adjusting the t/r delay pot. to its minimum position.

Although my 30 metre conversion has not been checked on a scope or spectrum analyser, I did check the HF spectrum with a receiver, and found no harmonics or spurs. The signal appears clean.

Contacts with West Coast stations were fairly common, and I have worked as far away as Maryland, Illinois, Ohio, Michigan and Montana. 30 metres is a fine QRP band, and propogation for Hawaii is best between 1530 and 2030 hours Hawaii time. I have provided many stations with their first 30 metre contacts.

Most stations were amazed at my fine signal with low power. Others thought I was kidding, since they knew that the HW8 did not have 30 metres. Mine didn't when I first got it, but it does now.

From QRPARCI "QRP Quarterly"

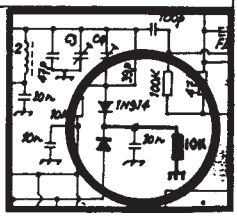


Yet another 10MHz converter, this time coming out on 3.5MHz. With 3.5 - 3.8MHz to tune, it allows a wide range of crystal frequencies. I used 6415 ('cos it was available). Definately a junk box job 'cos it cost nothing! (My ancestors are very pleased!).

The front end was pinched from Ken, GM4JMU's transverter (Sprat No. 35) (no shame!) Whether it is the loose coupled front end or just 10MHz, I don't know, but it is surprisingly lacking in noise (even GM4HBG says so, so there!!).

PREMIX-V.F.O. FOR 10-1/14MHZ · matt vokert · DF4SQ

ADDITION TO CIRCUIT IN SPRAT 38.....
Matt advises me for better operation of the circuit another 1N914 and a 10K resistor (as shown here) should be added to ensure that the 18MHz crystal is off when the switch is in the 10.1MHz position.



The Day of the Amateur

Yet Another Trip to Holland Colin Turner G3VTT

As some of you may know I regularly take holidays in Holland, and where possible have them coincide with the 'Dag van de Amateur'.

This is an exhibition and lecture meeting which has recently been held in Breda, southern Holland, on a yearly basis. The Benelux QRP Club have a meeting at the exhibition in a pre-booked room organised by VERON, The Dutch national radio societ

Usually I see out PAØ friends, including PAØ's JHS, WRA, the 'evergreen' PAØGG, and this year was particularly nice in that I was able to see our Belgian G-QRP-C members, including ON6WJ, ON7CH, ON5AG and ON4AUZ.

The Belgian group asked some interesting questions about using RF output power for our QRP awards measurements, and these have been passed onto George, RJV. I have also learnt that they are ardent Benny Hill fans!

Unfortunately this year PAØGG was unable to make a speech due to a prior lecture committment and the meeting room was just used for informal discussion. In recent years much homebrew equipment has been displayed, notably the 'Pheonix' junk box valve transmitter, and there does seem to be an interest in home construction such as we find here in The U.K.

I think we do need some sort of pre-arranged room for a G-QRP-C meeting place at any amateur radio exhibition that Club members attend, such as The Benelux Club has, although this may be difficult, bearing in mind our larger club membership. The Benelux Club has a much smaller membership than our own.

All in all, it was a very interesting trip. I was even able to cycle around for a few days and to battle against the terrible north wind! Hopefully in the future, a larger group of U.K. amateurs could attend The Day of the Amateur.

THAT FINISHING TOUCH.....

For some time I have been using the Water Slide Transfers of radio legends supplied by G4RPK to finish off front panels on home built equipment. They give a much neater effect than rub-down transfers and require no protective coating to make them scratch proof. G4RPK has now produced:
G QRP CLUB LOGOS in Water Slide Transfers.
20 club logos (in 2 sizes) on one sheet for £1.25 inc. postage. The club logo is in gold on black and the transfers apply easily to any smooth surface. They may be added to equipment panels quickly without damage to the surface.
Order from: John Kaine, G4RPK, 74 Camden Mews, London. NW1 9BX.
Make cheques payable to "John Kaine".
John also has sheets of front panel radio legends (typical wording for mateur radio equipment) in white lettering, also at £1.25 a sheet.

D.C.30 Transceiver Board Offer. 30m. for £30.

The D.C.30 Transceiver is a very popular circuit from the New Zealand magazine Break-In. It is a 10.1 - 10.15MHz transceiver, direct conversion, with an audio filter, running about 3 watts DC Input. The Coventry Amateur Radio Society is building it as a club project and have some kits for sale, as follows:

DC30 printed circuit board (double sided, tinned) plus information	£5.00
PCB, Notes and Components (complete electronics)	£30.00
The above kit plus box and knobs (everything except antenna!)	£36.00

Please add postage, 30p PCB, 50p Kit. Cheques "John Beech".
Orders: J.Beech,G8SEQ,14 Hollow Cres.Radford,Coventry.CV6 1NT.

OH DEAR ! ! !
Several errors crept into the drawing of the GRILO Transmitter in SPRAT 38. We advise readers inexperienced in valve circuits to avoid the circuit until we publish it in a revised form.

SPECIAL QRP MULTIPLIERS IN OHIO QSO PARTY: This year the The Ohio QSO Party (Sept.16th) is offering a x3 multiplier for QRP Operation. Rules will be in the major US magazines (CQ,QST,73) or can be had from Anthony Luscre, KA8NRC, 4380 N.Norman Dr. Stow. Ohio 44224.

CLUB ITEMS:

The club is now able to offer a considerable range of items to members. In some cases we have had to raise the price slightly. The current range is:

BADGES:

LAPEL BADGES (metal) 1" dia with club logo in silver on black 70p ($2.00)
CALLSIGN BADGES as above with callsign engraved on a base bar
Please order with callsign printed clearly (slight delay) £1.50 ($3.00)

KEYFOBS (Leather with metal insert of club logo) 75p ($2.00)

BADGE INSERTS (1" plastic disc of club logo with sticky back)
ideal for sticking onto equipment 20p each (2 for $1.00)

POSTAGE RATES: 20p up to 3 items. Dollar price includes postage (surface)
For dollar cheques add 50c. No IRCs please. ORDER THE ABOVE FROM G3RJV.

QRP FREQUENCY CRYSTALS:

The following frequencies are available in HC25U mountings:
International QRP Freqs: 3560, 7030, 14060,21060, 28060KHz (upto 21060 fundamental)
Other 20m CW Freqs: 14030, 14040, 14050 KHz.
All at £3.50 each including postage and VAT, from:
P.R.GOLLEDGE ELECTRONICS, MERRIOTT, SOMERSET.

PRINTED CIRCUIT BOARDS

The following are available, with circuitry and layout information:

THE S.C.D. TRANSMITTER BOARD. £1.00
A simple transmitter board for 80/40/20 by G3RJV from Short Wave Magazine.

THE S.T.X. TRANSMITTER. 0.75p
About the simplest possible HF transmitter by GM3OXX from SPRAT 35.

THE FOXX MINI-TRANSCEIVER. £0.85p
Ultimate 'fun rig' by GM3OXX from SPRAT 35 on a board 2" x 2".

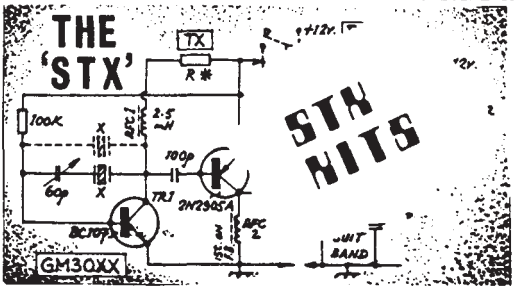
WARC CONVERTER. £2.15
Receive converter for 10/18/24MHz (to 14 or 29MHz) by DJ1ZB from SPRAT 35.

ORDER FROM: Mick Hodges, G4OPE, 51 Carnford Rd. Sheldon. Birmingham. B26 3AG.
Cheques to "G QRP CLUB". POSTAGE RATE: 20p per board.

SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER S

LIMITED NUMBER OF USEFUL TOPBAND CW FREQUENCY CRYSTALS FOR UK MEMBERS.....
1843KHz HC6U. Useful quiet CW channel in the UK. A few available from G3RJV.
£1.50 each (20p postage) Cheques to "G QRP Club".

SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER SPECIAL OFFER SPI



STX KITS

A few kits are left from our RSGB Convention Stand.....

All you need (ex crystal) to build the STX mini transmitter, plus printed circuit board and text.

FULL KIT £3.00 each

Postage (in padded bag) 60p

This must be the easiest way to get on the air QRP!

AVAILABLE FROM G3RJV....

Awards

Angus Taylor, G8PG, 37 Pickerill Road, Greasby, Wirral, Merseyside. L49 3ND.

PASS THE PORT LADS-I HAVE WON TWO TROPHIES!
Sincere congratulations to Ben, CT4CH/SMØYF/MM, on winning both the G4DQP and the Partridge Trophy. This is the first time any member has won both. The G4DQP trophy goes to Ben for his work as SMØYF/MM during the Winter Sports, when he showed just how effective QRP can be for /MM work. The second award goes for his work on short, helical, antennas which has recently been published in SPRAT. Sincere congratulations Ben!

NO NEED TO SEND CERTIFICATES BACK OR ENDORSEMENT NOW!
In future all endorsements to club awards will take the form of adhesive stickers, so members need not return their certificates when making endorsement claims. DO REMEMBER that appha-numberic list of cards submitted! lack of it means more work for the awards manager.

CONGRATULATIONS TO THE FOLLOWING:
QRP WAC. EA2SN
QRP COUNTRIES. 50:G4FAI, 25:WB2RZU, G4IKR.
WORKED G QRP CLUB. 140:G3DNF, 100:G4FAI, 80:G3IQF, G4MIJ, 60:G5CSU,
20: WB2RZU, G4KKI.
TWO WAY QRP COUNTRIES. 40:G4BUE.
CW NOVICE, CLASS A, ENDORSED "ALL 144MHz": G4OYP.
NICE TO MEET YOU AT THE NEC!
It was a great pleasure to meet so many customers of the Award scheme at the NEC stand. Hope to see you all again next year. 73 G8PG.

V.H.F.

John Beech, G8SEQ, 14 Hollow Crescent, Coventry. (598186)

Sorry! I missed the deadline for the last SPRAT; I have changed my job and suddenly got very busy. Things are settling down now so hope to get stuck into QRP Matters. TNX to those who wrote to me from G,DL,PA and ZL, I am always pleased to receive VHF news and SPRAT items. Congratulations to the people who qualified for the Novice CW Award, especially the one who did it all on 2 metres! NOTE: During the NEC Convention requests were again made for club VHF awards, these are now being considered, any views would be welcomed.

Yeovil QRP Convention.

The Yeovil Amateur Radio Club are holding a QRP CONVENTION at Preston School (Preston Centre) Monks Dale, Yeovil. on Sunday October 14th. The Convention begins at 0930, with talkin on S22 from 0900 by G8YEO/A. The entry fee of 50p includes a draw prize and coffee at the beginning and tea at the end. Coffee, tea and light refreshments are available during the lunch break and the venue is conveniently close to a local pub.

In addition to a display of equipment and a junk stall, there is a most impressive programme of lectures:
1000 Ionospheric Propagation and Low Power Signals
1100 Aerial Design for Low Power Operation
1200 - 1400 Lunch Break
1400 A very Low Power Transmitter
1500 Low Power Propagation on VHF
1600 Discussion on Low Power Topics
1700 Convention Ends.

Further details may be had from the secretary: Eric Godfrey, G3GC, Dorset Reach, 60 Chilton Grove, Yeovil, Somerset. BA21 4AW.
I hope as many club members as possible may be able to attend the convention.

S.S.B.

Ian Keyser, G3ROO, Rosemount, Church Whitfield, Dover. Kent.

Hi there all, sorry about no report in the last issue of SPRAT, but it was due a a problem which disabled my left arm, and its surprising difficult to do things with only one hand

With all the problems resolving themselves in WQF we should soon have a decision about the SSB calling channel on 21385 or 21285. Colin, G3VTT, has it in hand.

It was very pleasant to meet a lot of you at the NEC,but that has created another problem for me. I now have a couple of hundred faces,names and calls in my mind but can only match up a few. However I did manage to extract a promise from a few CWites that they would try SSB during the activity weekend 5/6 May, but on the Saturday it was not to come to pass, even a certain 'copper' in our midst did not keep his word!

I heard from Bob, G3IQF, that he tried some contacts during the activity weekend but only made it with Derek, G3MJW. He didn't say which band but I guess 80m. Bob has also been doinf some /M QRP SSB work and has just acquired a G Whip multi mobile for 40-10m which has got him into UA9 on QRP.

Due to work I could only get on for Saturday 5th, but had a good time for that. I managed 20 QSOs, 7 of which were QRP stations but not all club stations (not yet!) Club stations worked were PAØJHS,G3IQF,(80m) N8CQA,W3TS,(20m). Non members included G4FFU(80m) and OH2VI(20m). The best DX was two QSOs with 4X6, one on 15m and one on 10m.

No more news has come in from other members so that leads to the next subject. A Daily Net on 80m - I will try to be on 3590 ± QRM at 1800 GMT (1900A) from the day this SPRAT appears. I hope that this way we will get a good net going, remember CW stations - we can receive CW! Please call in whenever you can get to the rig at that time. I will call for FIVE MINUTES with frequent breaks for calls. 73, Ian.

Members News

Chris Page, G4BUE. "Alamosa, The Paddocks, Upper Beeding, Steyning, West Sussex.

The last week-end in April in Birmingham at The R.S.G.B.'s HF Convention, again emphasised that the social side of The Club is growing at the same rate as The Club itself. All the Officials of The Club were present during the week-end, and it was great to meet so many members who until then had only been call signs. All the fun that was had over the week-end will be remembered for a very long time to come, even the incident which caused your scribe to climb out of the window of G3RJV's shack at 3am in the morning, in his pygamas!!

On a more serious note it was really great to meet up with Leo, KC5EV, and the lovely Sharon, and also DL7MAM and DJ1ZB. When I returned home, there were letters from W1FMR and WØRSP, both saying they will be in England this Summer. By the time you read this, Jim will have returned to The U.S.A., but Ade Weiss will be here until the middle of August and would like to meet as many members as possible during his stay.

The photograph this time is of the shack of Dave Farris, K5NT, who was your scribe's host when I stayed in Austin, Texas last October. When the photograph was taken, I was using the little OXO to Dave's beam. Whilst on the subject of U.S.A., I draw your attention to the latest edition of "The Quarterly", which is the journal of QRP A.R.C.I., the QRP Club in The U.S.A. It is 50 pages and contains a great deal of interesting news and construction items for QRPers. W5QJM has been primarily responsible for this new look, and members interested in membership of A.R.C.I. are invited to contact Bill Harding, K4AHK, 10923 Carters Oak Way, Burke, Virginia, 22015, U.S.A. Subscription is 6 U.S. Dollars for members outside of The U.S.A.

VK7VV writes to tell us of the incorporation of the "CW Operators QRP Club" based in Australia. At present there are 40 members, and it is intended that a journal, "Lo-Key" will be published. Rai is handling DX membership enquiries. G5CSU is now back home and active as K7YHA from PA. I worked Rich on both 14 and 21MHz during the recent ARCI QSO Party, and he was putting a very good signal into England. W5QJM has told me that it is being rumoured in The U.S.A. that Ten-Tec are bringing out a CW only QRP rig (no doubt in competition to the new HW9 recently announced by Heathkit), called The Century 22. It will be similar to the Argosy, but with a double DC receiver, and with 5 watts output on all bands including the new ones.

30 metres has been attracting QRP QSOs from members. OK2BMA recently worked JA and W1 with his 3 watts, GM4JMU has worked VK3 and VE with 2 watts and W5QJM is building a VXO rig at 1.5 watts output for the band, and should be QRV soon. G8PG mentions seeing a copy of "Electronica Popular" published in Brazil, in which a firm is offering a 3.5MHz QRP transmitter kit. Perhaps one of our PY members can tell us more about it. AI2H has moved to a new QTH in New York and is active with a two element wire beam for 7MHz and a minibeam for 10 and 20 metres. With his Argosy he has worked into Europe and V3ØDX in Belize. W2JEK is building The FOXX. Dan was active in the recent RSGB 7MHz Contest, and worked 4 G stations with his HW8. Another member to mention the excellent 7MHz conditions is W1FMR. Jim invites any night owl members to try 7030 between 2400 and 0400 on Wednesdays during the SEN QRP Net. K2RS, a new members is active with a 515 and indoor dipole on the HF bands. Jack has worked 32 countries in as many days, including ZL, KH6 and Europeans. He is also building the FOXX, as did G4RVL, who found member G4MIJ for his first QSO with it.

W9PNE and K4KJP have been conducting skeds over a 564 mile path at various input levels. Brice has been given 539 at 10mW output by Terry, and given Terry 229 at 20mW output. Congratulations to Brian, N5BA who has just accomplished 5 Band DXCC,

now how about trying it again on QRP!!? GM4ELV, just for fun, started a new DXCC for 1984, and is up to 47, including TJ, HL and 9J2. DK5RY mentions that he is QRV on Sundays on 10.1MHz looking for members between 1100 and 1230 with the "Laim" TCVR built by DJ1ZB. G4EBO made 139 QSOs during The ARRL CW Contest with his HW7 on 15 and 20 members, in 33 States, and if you hear ED2SN during The WPX Contests, it will be member EA2SN with his special call sign.

The Club's first Activity Week-end at the end of March created quite a lot of activity but not very much DX. W9OA found 9 European members, and GM3OXX worked a ZS QRP station. I3MDU found the conditions good, but apologises for missing some members due to very high noise levels on his receiver at his QTH. OE5PGL enjoyed working many G members, and N5EM included a QSL card for G3ROO with his letter, bearing in mind Ian is our SSB representative, the QSL was for a CW QSO, good on you Ian!! Glen, K5HGB was using a specially erected vee beam to work into Europe and W9PNE also worked several Europeans. N5BA found 6 European members, G3DNF found W stations on 28MHz, but G8PG found conditions poor. SM7KWE made his first DX QSO to WB2IPX, OK2BMA had great success on 14MHz with his OXO, working KH6CP/3, but N8CQA heard no DX. New member UA9CDC was active, but did not work any members. Igor is active on 14060 daily between 1600 and 1700, and 1000 to 1100 week-ends looking for members with his two watts output. He says there are no QRP Clubs in The USSR, tut tut!

The BERU Contest enabled GM3OXX to work VP8 for a new one, and GM4HBG found 10 new ones. G8PG managed to work VK3 on 14MHz. Still on the Contest scene, The SSA Contest now has a QRP Section. This is the annual CW and SSB Scandinavian Contests held on 15/16 September and 22/23 September. The QRP Class is for maximum 10 watts output, otherwise rules as previous years. PAØGG says that he is operating a beacon on 14002MHz with 500mW output and welcomes reports on reception from members. Last year Frans received over 400 reports for his 14MHz beacon with power levels between 50mW and a watt, and will let us have more information when he has assessed them.

The A.R.C.I. Activity Week-end in April coincided with good conditions. Leif, SM7KWE found it really fun, and many U.S.A. and Canadian QRP stations were heard on 14 and 21MHz working other QRP stations in Europe, as late as 2400. During the week-end I worked 14 of our U.S.A. members, including several who were using mW power levels. Do not forget the late Summer Activity Week-end, and The A.R.C.I. Fall QSO Party in October.

7X2CR has recently joined The Club. Farid is QRV with 2 watts from a homebrew rig with which he has worked 30 countries. K5BOT is another member building an OXO, and is also working on a /M rig. GM4JJG says that his JU6 is working better than his HW8, especially on 7MHz. G4TJE is also active with an OXO and has worked around around Europe with it. Keith has also built The Super OXO, but is suffering from AM breakthrough. I suffered from the same trouble with my FOXX, and GM3OXX told me to use a good ATU ahead of it. Alan, G4CF has recently returned to the amateur bands after an absence of 30 years and says that it "has proved a shattering experience and I see The QRP Club as the only hope to maintain the true spirit of amateur radio" Well said Alan. During a 3 week period with his Argonaut and a 90ft wire at 20ft high G4MEW worked 45 countries. Charles is now trying out the VK2ABQ in the vertical.

Since January OK2BMA has been testing a small QRP transceiver from his local club station. The rig gives out 750mW and Pavel has worked 20 countries including EA8. N8CQA mentions The Michigan QRP Contest in January (which is held the same week-end as The AGCW-DL Winter QRP Contest), and although he made 79 QSOs, said he found the conditions terrible. G8DV was confined to a hospital bed in January, but was able to be fixed up with a TS120V and a low G5RV. His 25 countries no doubt assisted in his recovery, and thanks are due to the hospital staff for permitting it. In two years of operating only in the holiday periods with his zepp antenna, Rich has been using an Argosy. He is now building a 80 metres TCVR for /P work whilst on mountaineering trips. I feel sure Wes, W7ZOI would like to see the finished product.

Just room to remind you that QSL cards for members can be sent to my wife, Pam, who will sort them, and enclose them with Sprat. All she asks for is the members Club number to be written on the QSL, as the cards are sorted in membership number order. I anticipate attending The RSGB Rally at Longleat, and have suggested Ade Weiss may like to go, so if any members intend visiting the rally, I will look forward to meeting them there. Let me know how your summer goes, (by 20 August please).

Best 73 and QRPing

Chris Page

C. M. HOWES
COMMUNICATIONS

139 Highview,
Vigo, Meopham,
Kent, DA13 0UT.
Fairseat (0732) 823129

Home construction is simple, straightforward, and above all fun! - Well that is the story that you hear from many people. We also hear sorry tales of hard to get parts and designs that don't come up to expectation, too many stories of DIY disasters! C.M.HOWES COMMUNICATIONS was established to provide a range of ham radio kits that would enable even a beginner to enjoy the satisfaction of "home-brew" without the bad luck stories.
All the kits include a good quality fibre-glass PCB, that is drilled and tinned. The PCB has the parts location screen printed on it for easy assembly. All board mounted components are supplied, as is a very clear and full set of instructions. The instructions usually run to about five pages and include parts list, circuit diagram etc. The parts list details the marking information or colour code for every part. We really do intend that a first time builder will meet with success. If a kit does not work for some reason, we have a fixed price repair and calibration service.
If you have not yet tried one of our products, why not have a go at one. We find that many customers come back to buy other products once they have seen how well they work, and how easily they go together.

KITS FOR THE QRP ENTHUSIAST

DcRx DIRECT CONVERSION RECEIVER
This super little single band receiver will work on 20, 30 or 80 meters. Read G3RJV's review of this kit in the May Shortwave Magazine.
* 12V operation. * 1W output into 8ohms. * Stable FET VFO.
* Ready-wound coils for repeatable results. * Balanced FET mixer.

Kit £13-95, assembled PCB £18-90. Please state which band you require.
The only major items to add are a case and two tuning capacitors of about 50pF, we have suitable capacitors at £1-50 while stocks last.

XM1 CRYSTAL CONTROLLED FREQUENCY MARKER
A very useful piece of test gear, besides helping you meet licence frequency requirements. Marker outputs at 1MHz,100kHz,25kHz and 10kHz intervals. The markers, which can be heard from top band to 70cm, can be identified from off-air signals by a selectable pulsed ident facility. There is a built in voltage stabaliser, so the unit will work on any voltage from 8 to 24V DC. The XM1 makes a very handy signal source for the workshop as well as keeping you legal! You can read all about this kit in the June issue of "Amateur Radio".
Kit £15-60, assembled PCB £19-60

ST2 CW SIDE-TONE UNIT or PRACTICE OSCILLATOR
The ST2 provides a nice sounding sinewave note of about 800Hz, either from your key, or from the output of your TX by RF sensing. The unit will work with possitive or negative keying, up to 15 volts, and by direct connection to the antenna feed of an HF rig producing ½ to 25W output. You can also use a pick-up antenna with the ST2 and have no direct connection at all. This is a very versatile unit, and it will produce up to 1W of audio into 8ohms. Build one in box and you will have side-tone for any QRP rig you buy or make.
Kit £6-20, assembled PCB module £8-90

AP3 AUTOMATIC SPEECH PROCESSOR
This module was described by me in a constructional article in the Sept.83 issue of "Ham Radio Today". They really do help the low power station make a bigger impact on the band. The AP3 uses a Plessey VOGAD chip (not a cheap Jap consumer IC),this is the genuine thing. There is a balanced clipper and good filtering. The unit also switches itself off automaticaly after use!
* Clipping selectable in four steps of approx.6dB. * 9 or 12V operation.
* Suitable for high or low Z mics. * only one preset to adjust.

Kit £14-80, assembled PCB £19-80. PLEASE ADD 60p P&P to your order.
Send us an SAE for further info. on any item. 73 de Dave Howes G4KQH.