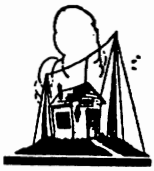

LO·KEY

NEWS BULLETIN

PUBLISHED QUARTERLY

CONTENTS

"WE DO MORE WITH LESS"!

33 LUCAS ST. RICHMOND, S.A. 5033 AUSTRALIA

Information centre

BULLETIN EDITOR Len O'Donnell VK5ZF
ASSIST. BULLETIN EDITOR Kevin Zietz VK5AKZ
ORGANISER Len O'Donnell VK5ZF
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PUBLIC RELATIONS Rai Taylor VK7VV
SCORE BOARD MANAGER Leith Cotton VK5LG

****

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VK2	Brian Halpin VK2BVH	VK6	VACANT
VK3	Neil Eminy VK3PGE	VK7	Rai Taylor VK7VV
VK4	Paul Newman VK4APN	VK8	VACANT
		DX	VACANT

****

MEMBERSHIP

The CW OPERATORS QRP CLUB is an International Club, open to Amateurs and Short Wave Listeners from any country. The Club was formed with the aim of promoting QRP CW operating on ALL frequencies allocated to the Amateur Service.

ANNUAL MEMBERSHIP FEE

VK....$8, ZL....Lo-Key by Surface mail....$A9, ZL....Lo-Key by Air mail....$A10, DX....Lo-Key by Surface mail....$A9, DX....Lo-Key by Air mail.... $A12.
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****

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3560, 7030, 14060, 21060, 28060.

CLUB QRP CW ACTIVITY
0930Z Tuesdays 3530(approx)

****

NEWS BULLETIN

The Club news bulletin LO-KEY is issued quarterly in March, June, Sept, and Dec.

****

CORRESPONDENCE

Please address all letters to the Organiser, CW OPERATORS QRP CLUB, 33 Lucas Street, Richmond, S.A. Australia. 5033

****

STATE NEWS BY THE STATE CO-ORDINATORS

VK3 VICTORIA by Neil VK3 PGE State Co-ordinator. I would like to hear by letter, telephone, or on air CW or SSB from all the VK3 members, whether or not there is anyone interested in getting together for the VK VERUS THE WORLD CONTEST. I have never operated in a contest before, and would be particularly interested in hearing from one of the group, who could help us to get it together. I am going to start a VK3 Club SSB net on Thursday nights, (this seems to be the quietest night) at 1000Z on 3.572 mhz. The reason for the 80 meter band is the ability to contact everyone. 80 meters may not be everybody's cup of tea, but it can work. It must be strange for most of you to be members of a club, that you never contact. Any one wishing to contact me on air, can find me on 3.526 to 3.540 mhz CW most evenings. Or on 3.572 SSB between 0900Z and 0930Z with a group of friends, who would certainly welcome you into the group, or just to contact me.

****

VK5 SOUTH AUSTRALIA by Len VK5ZF. (no State Co-ordinator) The VK5 group will be going to RIVERTON, about 80 KM north of Adelaide for the John Moyle Field Day, in Feb '85. We will be operating a Club station, using the call sign of VK5ZF/P, and operating with the CW mode of course. If there are any of the VK5 gang wishing to join in on this chance of a first get together for our members, please get in touch with me as soon as possible. Our group would appreciate as many contacts as possible during this Contest, and that includes our DX members. Please keep a look out for us, as we will be operating near the Club frequencies on all bands. There was no response at all to my invitation (in Lo-Key) to contact me, with regard to a VK5 net, or to organise a VK5 club station, so I take this as an indication that you do not wish me to proceed with these activities on your behalf.

****

VK2.... VK4.... VK7 I have not received any reports from the State Co-ordinators in these areas, so I have nothing to print. There are no State Co-ordinators in VK1....VK5.... and VK6. Members who have no State Co-ordinators, please feel free to submit any news from your State that you might have, direct to the Editor. Those members with State Co-ordinators, please keep your Co-ordinator informed of any news items that you would like to see published in our news bulletin.

****

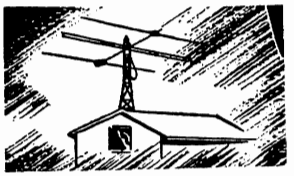
IF YOU DID PARTICIPATE IN THE VK

VERSUS THE WORLD CONTEST ON 17 TH

AND 18 TH NOV. PLEASE REMEMBER

TO SEND YOUR LOGS INTO COL VK2VVA. BY 26/2/85

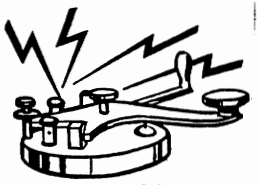
DX MEMBER'S PAGE



FRED BONAVITA W5LJK....Describing his activities Fred says....I bought the Ten Tec Argo about four years ago, and have been running 5 watts or less since then. My main HF rig is a Heath HW-8, with modifications, but I am also building other units for 30 meters etc. My antennas are a three element tri-bander at 40 feet, a skeleton cone fed with 450 ohm line at 40 feet, a Buttermut vertical 40-10 meters mounted on the chimney about 20 feet off the ground, and with radials fanned out beneath it. A 4 element beam for 6 meters at 50 feet, and a 2 meter GP above that. I especially enjoy working VK/ZL QRP stations, and have had some of my best QSOs from that corner of the globe. I have been licensed almost 30 years, although I was not consistently active. I write the QRP column for Worldradio, a monthly amateur radio news paper published from California, and I am Editor of The Quarterly, the newsletter of QRP ARCI. I am an officer and director of that Club, and a member also of G QRP Club. I am always willing to help fellow QRPers obtain parts and information for building projects. End of quote..... I would like to thank Fred on behalf of all our members for the terriffic amount of publicity he is giving the CW OPERATORS QRP CLUB, up there in the States. Most of our USA members have been recruited because of Freds efforts. Let me just give you an illustration..... again from Freds letter....Be assured that the information sheets on the Nov. contest, have been mailed to all of the major ham radio publications in the US, as per my promise. QST has acknowledged receiving the set of rules, and said everything appeared in order for publication, probably in the October issue. It will also run in The Quarterly for October. Keep me in mind for any other contests, events, etc., for which I can help with publicity..... End of quote.... Need I say more. Fred was our first DX member, and his membership no. is 31. Our Club is indeed fortunate to have friends like Fred.

****

BOB SPIDELL W6ZKQ Mem. No. 67....Bob is one of our new members, but I will let him tell you his story.....From Bob's letter.....My QRP operation is 90% CW and10% SSB, and frequencies used are 80 thru 10. Equipment here is a Ten-Tec Argonaut, 6 element triband beam at 51 feet, and a Skelton Cone antenna for 80/40 meters. I also have home-brew rigs 100 mw on 80, 420 mw on 40, 2 watts on 80/40 meters, and a 1.5 watt rig on 160. Receiver used with the Home-brew rigs is a NC-300 National. I am a member of the QRP ARCI and the G QRP Clubs, and try to stay fairly active in club activities, as I do shift work, which enables me to get on the air at different times of the day. My work is with the F.A.A. in a Flight Service Station. The main job is pilot weather brief-ing for general aviation. We do other work such as assisting lost pilots, taking weather observations, and co-ordinating with the military on flight plans. You have the equivalent job in Australia known as a FCO Flight Service Officer, who also works in a Flight Service Station, providing essentially the same services that we do. We all have to maintain a 24 hour watch coverage. I have been QRP for over 15 years now, and have been licensed since 1954, and hold an Extra Class Licence. I monitor WX frequencies normally 0500-0630Z, both 14 and 21mhz. My location is in Southern California at the beginning of the Mojave Desert, fairly close to the Edwards Air Force base, where the Space Shuttle lands.



The Communications Department

CLUB BUSINESS

IRC COUPONS This item mainly concerns our DX members. When paying your Membership Dues in the future, please do NOT use IRC coupons. When I presented them to my local post office recently, the poor lady in charge of the P.O. nearly had a heart attack. Some of these coupons dated back to 1974, and some were never post marked on issue. She claims that many of them were issued when postage rates were lower etc. To save any further embarassment to her and myself, please pay your membership dues by International M.O. or cheque. Thank you gentlemen.

****

NEW MEMBERS INFORMATION BOOKLET I have begun work on a small information booklet, to be given to all new members on joining our Club. This will contain general details about the Club, Awards and Contests, Membership lists etc. This should prevent a lot of repeat information being put in LO-Key each issue.

****

VK VERSUS THE WORLD CONTEST This will be the last opportunity I will have, of reminding you about this contest coming up in Nov. Now I know that many of you are not interested in contests, and that is fine. This paragraph is directed to those members that are interested and will participate. Gus G8PG and Fred W5QJM have done a great job for us with publicity in their respective areas, and I have sent information to both the Amateur Radio and Amateur Radio Action magazines, here in VKland. From this it is not hard to realise that a good number of DX and VK amateurs have been made aware of this contest. Please fire up for as long as you are able, during the contest times, and give it your best shot. It is our own contest, so let us show the rest of the world how VK does it. MARK UP NOW NOV. 17 and 18th. ON YOUR CALENDAR.

****

LOGO The Logo on the cover of Lo-Key is now the official Logo of the CW OPERATORS QRP CLUB. It received many more votes than any other. Perhaps the most interesting comment came from Rob VK5YD member no. 24. I quote "I do not like any of them, they are all lousy". Good on you Rob. By the way the same gentleman is responsible for the very apt title of our news bulletin Lo-Key.

****

NEWS BULLETIN LO-KEY You will of course noticed a change of format of our news bulletin Lo-Key with this issue. My Assistant Editor Kevin VK5AKZ and myself have had a good deal of pleasure in producing it, and we both hope you will like it. Naturally we would like to have some feedback from you, and if this style proves popular, we hope to produce future issues along these lines. While I am talking about Lo-Key, the Dec issue will probably have less pages in it, but do not get unduly alarmed. It will be only because we have run out of funds for this year, and that should right its self next year.

****

3.5mhz RAG CHEW Neil VK3PGE has advised me that some of our members are having an informal get together each Tuesday evening around about 3572khz at 1000Z using QRO CSE. A hearty welcome is given to anyone who would like to join in.

****

17 AND 18 TH NOV. VK VERSUS THE WORLD CONTEST PLEASE KEEP THIS WEEKEND FREE GOODLUCK

NEW MEMBERS

a hearty welcome to

65 VK3OX Mark Campbell, 20 Bostock St., Warrnambool, 3280 Vic.
66 VK5PH Eric Steele, 13 Third St., Minlaton 5575, S,A.
67 W6SKQ Bob Spidell, 45020 N. Camolin Ave., Lancaster California 93534, U.S.A.
68 WB2OUQ David Werner, 68 Gordon Ave., Lancaster New YORK 14086, U.S.A.
69 VK7ZO Graham Ranft, 3 Newlands Ave., Lenah Valley 7008, Tas.
70 WA1JVY Mark Pereira,

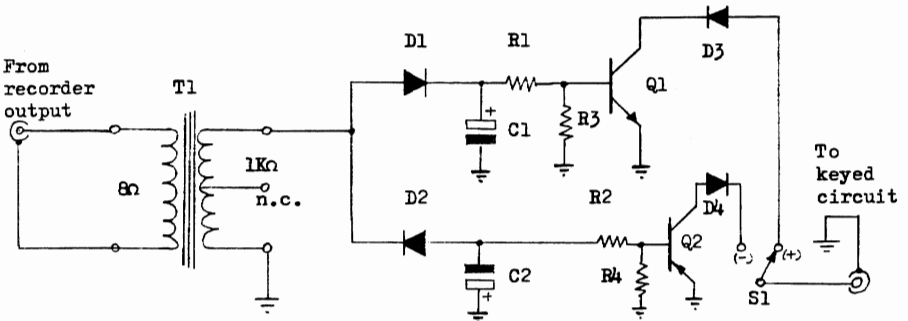
71 NW6F Bob Jacobs, P.O.Box 2122, Capistrano Beach, California 92624, U.S.A.
72 YU3XL Krizanic Konrad, Bezenskova 1, 63000 Celje, Yugoslavia.
73 VK2AW Basil Dale, 20/112 Shirley Road, Wollstonecraft 2065, N.S.W.

****

AUDIO ACTIVATED AUTO-KEYER

John Isaac VK3PL

Here is a handy little device to help the intrepid QRPer. To save all that tiring effort required to call "CQ CQ CQ de VK3PL/QRP" etc., the operator uses this device to key the transmitter, with listening periods between calls, until a reply is received.

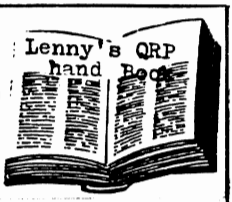


T1 : Output transformer from small Japanese radio; 1000 ohms to to 8 ohms (or Dick Smith M-0216). D1, D2 : 1N914/1N4148 etc.
D3, D4 : 1N4002/1N4004 etc. C1, C2 : .47uF tant. or electro.
R1, R2 : 4.7K R3, R4 : 1K S1 : SPDT
Q1 : NPN- BC548, 237, 238, 2N2222 etc.
Q2 : PNP- BC558, 557, 307 etc.

Record at fairly high level. Adjust volume control on recorder for satisfactory keying capability; will key up to +20V/100mA max. (BC238), up to -20V/100mA max.(BC558B). Will handle some transceivers e.g. FT101E and most QRP rigs (all '3XU rigs). Cassette recorder should have output capability of about 500mW at 8 ohms.

Submitted by Drew VK3XU Member no. 49

A PAGE FROM LENNY'S QRP HANDBOOK



PROJECT NO. 5

Here is an interesting little circuit that could find use in the QRPers shack, as a standby receiver or a signal monitor. As described in the circuit, the tuning components are chosen for 3.5mhz. The project could be made a lot more versatile by replacing the 75pf tuning condenser with a 430pf band set capacitor, and a 15pf band spread condenser wired in parallel. Plug in coils could be wound on old valve bases to cover the HF bands. If you would like to use it as a CW signal monitor, I suggest that a small rod extension aerial could be used. Any of the usual breadboard or box type of housing could be used for this little receiver. Add on an audio type IC chip and you can have loud speaker results. This circuit lends itself to modifications.

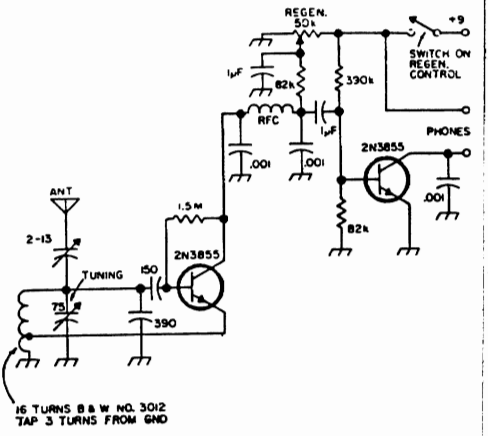


Fig. 5-54. Simple Novice receiver for 80 meters.

PROJECT NO. 6

This little transmitter circuit has universal appeal, by virtue of its simplicity. If the coil was made a plug in type the rig could be used on any band, from 1.8 to 14mhz by changing the coil and the Xtal. All sorts of possibillities present themselves, in how you could go about constructing it. As the circuit says, it could be the worlds smallest, or it could be made a reasonable size, with a view of seeing how far you could send its QRPp sigs. The point being that with larger inductors, a higher efficiency can be obtained. Like the previous-circuit, this circuit lends itself to all sorts of modifications and variations. There would be quite a number of transistors that would work in this rig. Also the range of voltages could be explored to give various outputs.
These two circuits could be combined to give the QRPp operator a very small and light weight station to go portable with.

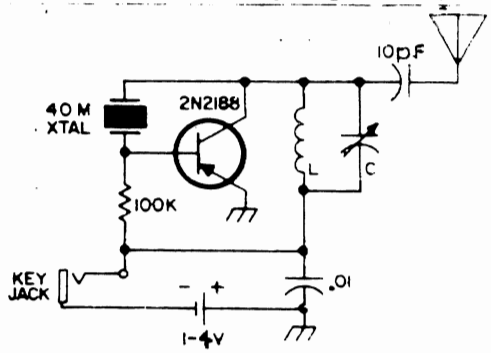
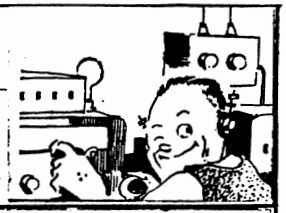


Fig. 56-46. Microminiature CW transmitter may be world's smallest! L and C are selected for resonance at crystal frequency.

GIVE IT A TRY

PRACTICAL QRPING



"CLUB" SPECIAL

21 MHZ QRP TRANSMITTER featuring

KITSET OPTIONAL VFO 1 WATT OUTPUT OPTIONAL 5WATT LINEAR

PART 2

On receiving your kit from the suppliers, check through the parts supplied against the Parts List, and make sure that the kit is correct, as well as complete. Now the assembly of the parts on to the PCB can be commenced. I started by inserting the 14 connection pins in the board, and found that I had to gently tap the pins into the holes to make them fit. These can now be soldered. Next insert all the resistors into their designated holes and solder, using heat dispensing clips or long nosed pliers. Make sure you have a suitable soldering iron before you start the job. In my case I obtained a miniature 12V iron from Dick Smiths, and found this to be excellent for PCB work. While I was at "Dickies" I procured a couple of small circuit boards, and had some practice at soldering PCBs, and now I have no trouble to make quick, clean, and strong joints.The secret is not to hold the iron on the board for long. Now insert all the capacitors and solder. Follow this with the Xtal socket and coils, and solder these in place. I found no problems with mounting and soldering the components, all holes are clearly marked. Perhaps a box to house this little rig is the logical next step. I have no doubt that some of the usual part suppliers have boxes suitable to house this project, but not wishing to pay the fancy prices of such items, I decided to make my own. Here are the details.

FIG. 1

Fig 1 shows the dimensions of the top and the two sides I made my box from a scrap piece of 18 guage alluminium, and found no problems in bending it into shape. The secret of good metal work, is to set out the job squarely and accurately.

PRACTICAL QRPING

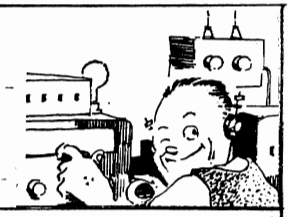


FIG 2 Gives the dimensions of the front, back and bottom. The ½" edge should be folded first, followed by the front and back. I have not given any details of any holes because it would depend on what parts each constructor uses. When I had finished the box (holes and all) I sprayed the top and sides section with flat black enamel, and the bottom, front and back was sprayed grey full gloss enamel. Some appropriate labels made from Letraset, and you will find you have quite a handsome looking house for the little rig. The Mizuho name attached to the plastic bag can be used to give the rig a professional appearance.

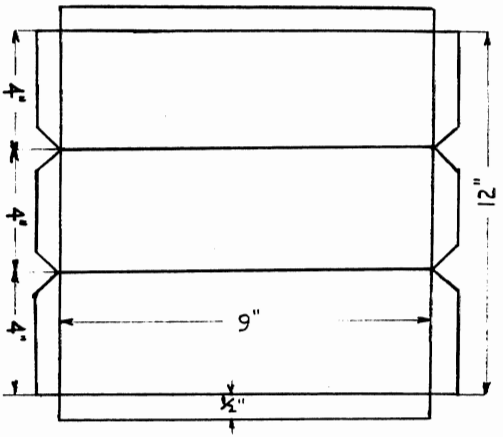


FIG. 2

In fig. 3 details are shown of how to meter the rig, and the connections to the other pins. It would appear that to include three meters in the circuit, would be over doing things a little so I settled for a 250 ma meter to read the PA input current. When tuning the rig the oscillator and buffer currents can be read on your multimeter, and the circuits adjusted for maximum output. There were no problems attached to lining up the transmitter. The directions given in Part 1 are simple and straight forward, and easy to follow. Power output realised was a little over 1 watt. If you run into any problem with the note, when keying the little rig, you may like to try keying the voltage lead to the Buffer stage. In my own case the note sounded good with the normal emitter keying. If you intend to use the Mizuho VFO with this rig, the connections have been included. The VFO comes completely assembled and housed in a sturdy box. Operating voltage is from 12-13.8 volts. Current consumption is 25 ma. Output freq range is 21-21.4mhz Freq stability of the VFO is less than 3 khz in the first 30 mins after switching on. Less than 200hz after 30 mins over any 30 minute period.

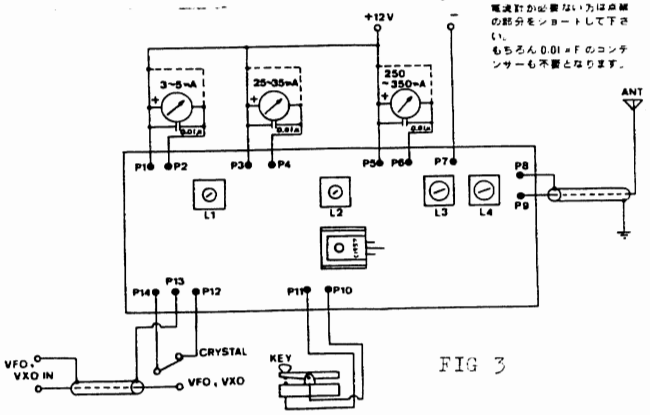
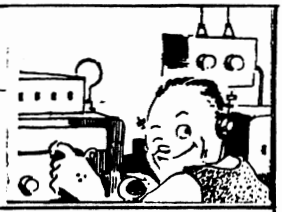


FIG 3

PRACTICAL QRPING



QP-7. QP-21
Parts List

Marked ( ) are QP-7, others are commonness

Part Name	Q'ty	Printed mark for parts mounting	Notes
Pin terminal	14	P1 ~ P14	See fig.3
Coil SL-111(113)	2	L1, 2	With shilding case
〃 SL-96 (.95)	2	L3, 4	8mm ϕ bobin rounded
〃 SL-15	1	CH1	5mm ϕ core rounded
Tr. 2SC945	1	Q1	
〃 2SC735	1	Q2	
〃 2SC1957	1	Q3	See fig.6
Crystal Socket	1	CRYSTAL 1	For HC-25U
Crystal 21(7) MHz	1	〃	Plug in to the socket
Resistor 22KΩ	1	R1	RD.RD.OR.GLD or SLV.
〃 4.7KΩ	2	R2, 5	YEL, PUR, RD 〃
〃 1KΩ	2	R3, 4	BN, BK, RD 〃
〃 10KΩ	1	R6	BN, BK, OR 〃
〃 100Ω	2	R7, 8	BN, BK, BN 〃
〃 22Ω	1	R9	RD, RD, BK 〃
〃 470Ω	1	R10	YEL, PUR, BN 〃
Capacitor 0.001μF	1	C1	Indication 102
〃 0.001(0.047)μF	1	C12	〃 102(473)
〃 0.01μF	5	C2, 4, 8, 10, 11	〃 103
〃 15PF	1	C3	〃 15
〃 56(150)PF	1	C5	〃 56(150)
〃 33(68)PF	1	C6	〃 33(68)
〃 10μF 16V	1	C7 electrolytic	〃 10μF
〃 40(150)PF	1	C9	〃 40(150)
〃 47PF	1	C13	〃 47
〃 180(220)PF	1	C14	〃 180(220)
〃 150(180)PF	1	C15	〃 150(180)
PC board	1		
Resistor 50 or 51Ω	1		For adjustment
One turn LED	1		〃
Collar	2		For fix PC board
Screw	2		〃
Nut	2		〃
Spring washer	2		〃
Solder	1		
Instruction manual	1		

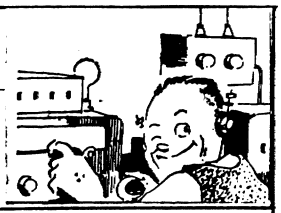
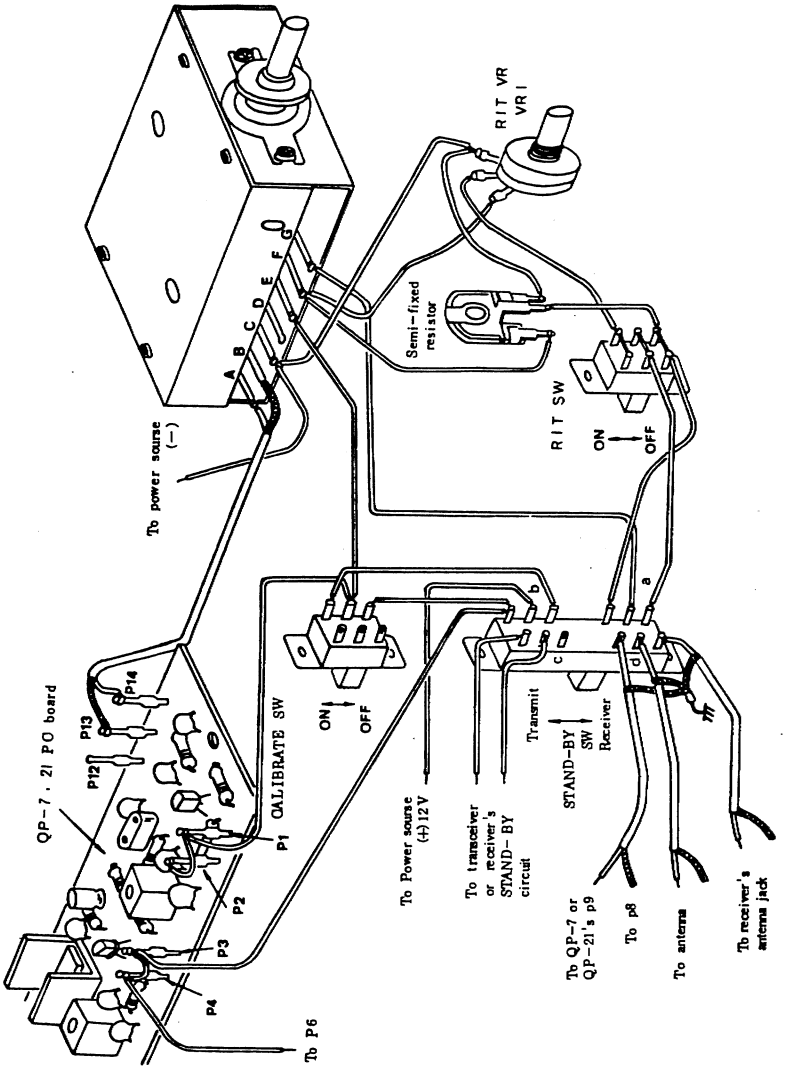
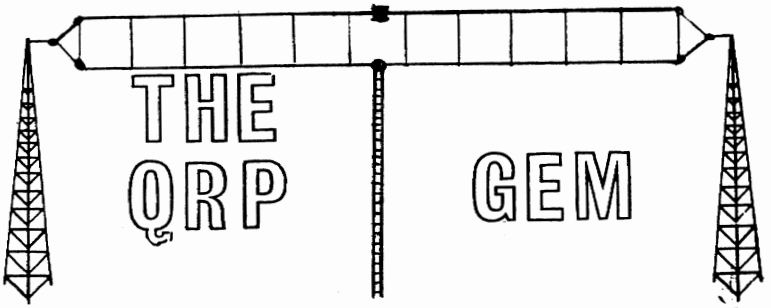


Fig. 4 . Connection to QP-7 or QP-21



ANTENNA FARMING



The QRP GEM antenna, if constructed as shown in this article, will operate on all bands from 80 through 10 meters, including the new 30 meter band. Having decided that I was going to start an Antenna Segment in this issue of Lo-Key, I started to look around for something a little different for the opening article. Eventually I got around to thumbing through my well worn copy of Lenny's QRP Handbook, and there on page 319 in the antenna section, I found details of this super sky wire. As I researched the information presented in this article, the more convinced I became, that for a little extra care and effort, we QRPers could have an antenna worthy to handle our 5 watts or less of RF. Now to get down to the constructional details.

Since the antenna is for 80 meters, the total length is a little over 90 ft. Separators must be used to keep the antenna aligned. Eight wooden dowel rods 3 ft. long and $\frac{1}{4}$ inch in diameter will fill the bill. For the end separators, we will need two dowels 3 ft. in length but $\frac{1}{2}$ inch in diam. Five small porcelain insulators will be needed, one for the centre and two for each end. Plastic separators would be preferable but wooden dowel rods that have been soaked in oil will weather reasonably well. The two sides of the dipole must be separated by 2 ft. 10 inches. This makes it easy using the 3 ft. rods. Measure back one inch from each end and drill your holes. These holes should be drilled before the rods are soaked in oil.

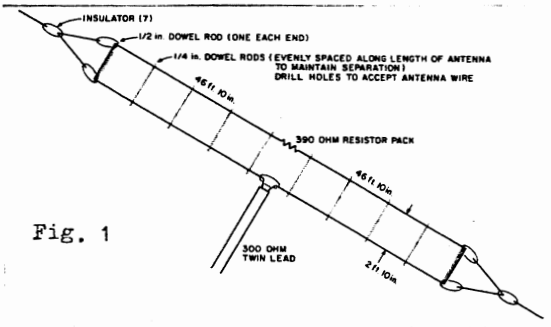


Fig. 1

The assembly of the wire part of the antenna should be apparent from the drawing . The wire should be cut to the correct length each side of centre, and the separators should be threaded on the wire. When this has been completed, the centre insulator and terminating resistor can be installed. The braid coming through the end caps should be soldered to the antenna wire connected to the eyebolts. This will make a good

electrical connection from the resistor pack to the antenna, while the eyebolt will take the weight of the antenna off the internal resistors. The 300 ohm lead in wire should now be soldered to the centre insulator feed point.

The terminating-resistor assembly.

With 300 ohm feed line the terminating resistor is a rather critical 390 ohms. To arrive at this value ten 3900 ohm resistors are connected in parallel as shown in Fig 4. If you use 2 watt resistors you will end up with a 20 watt power rating for the resistor pack. The photo of the pack gives you practically all the info you need to duplicate the terminating resistor pack. The ends are two circles of circuit board. Weatherproofing is acheived by using a 3½"length of 1¼" PVC tubing. For the ends use two 1¼" PVC caps. In each end drill holes for the two screw eyes and the connecting braids. The first hole is for the screweye and the second hole is for the braid to come through. Thread the braid half way through the second hole. Insert the eye bolt through the centre hole. Now put the large washer inside the pipe cap bringing the braid out around the inside. Slip on the lock nut and tighten down the assembly. A little silicone rubber cement will waterproof the hole where the eye bolt and braid come through the end cap. Repeat the procedure for the other end and allow both ends to dry. The next step is to trim the braid on the inside of the end caps, to the shortest length that can be readily soldered to the copper foil of the resistor pack. Solder the braid of the other end cap to the other end of the resistor pack. Cement both ends of the PVC pipe liberally and shove the assembly together. Allow it to dry while you work on the remainder of the antenna. The QRP Gem antenna is best fed with an antenna tuner, that will match 300 ohms balanced input to 52 ohms. Any of the usual balanced input configurations would be OK.

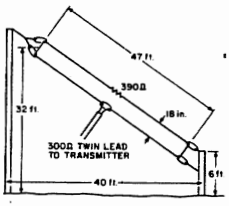


Fig. 2. 40-meter version of the

Basic Design Data

1. The length of each leg from the center is equal to 50,000 divided by the lowest desired operating frequency (in kHz) and then multiplied by 3.28. The answer is in feet.
2. The spacing between radiating wires is equal to 3000 divided by the lowest desired operating frequency (in kHz) and then multiplied by 3.28. The answer is in feet.
3. The sloping angle for a nondirectional pattern should be of the order of 30 degrees.
4. The terminating resistor should be noninductive and have a rating equal to 35% of the transmitter input power.

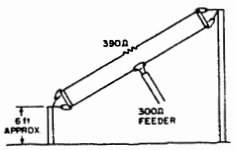
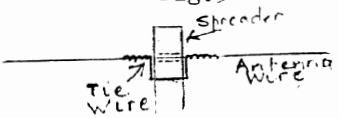


Fig. 3. Erect the antenna so that the angle of tilt is from 20 to 40 degrees for omnidirectional operation.

Fig 2 Shows a scaled down version for 7 mhz. While Fig.3 shows the method of using the antenna for omnidirectional operation. As I have talked myself into building a QRP Gem. I will be trying mine in the horizontal plane instead of sloping down. Recently when Rob VK5VD and myself were touring around the far north of South Australia, I noticed many of this type of antennas in use on the outlying homesteads. In all cases they were in the horizontal plane.

Fig 5 shows how to use a tie wire to keep those spreaders in place. Basic design data has been included for those who might like to experiment further.

Fig.5



QRP AMATEUR RADIO CLUB INTERNATIONAL
FALL QSO CONTEST

DATES: 1200 U.T.C. Saturday, Oct. 13, 1984 to 2400 U.T.C. Sunday, Oct. 14, 1984. participants may operate a maximum of 24 hours.

MODE: Only one mode of operation - CW - or SSB mat be used, the operator must select which mode he desires to use and stick with it!
NOTE: Stations desiring to compete for the Triple Crowns of QRP must work SSB in this contest! (except for Novice/Technicians)

EXCHANGES: Members give RS(T), state/province/country and QRP ARCI membership number. Non-members give RS(T), state/province/country and power output.

Stations may be worked once per band for QSO points (for example, a station may be worked on both 40 metres and 15 metres and receive QSO credit for each contact).

Each member contact counts 5 points, regardless of location.
Non-member contacts counts 2 points if in the same continent.
Non-member contacts counts 4 points if in a different continent.

MULTIPLIERS:
4 to 5 watts output c.w. or 8 to 10 watts output pep x 2
3 to 4 watts output c.w. or 6 to 8 watts output pep x 4
2 to 3 watts output c.w. or 4 to 6 watts output pep x 6
1 to 2 watts output c.w. or 2 to 4 watts output pep x 8
less than 1 watt output c.w. or 2 watts output pep x10
more than 5 watts output c.w. or 10 wattts output pep will be counted as check logs only.
The highest power used for any contact, any band, will determine multiplier.

BONUS MULTIPLIERS:
Natural Power (Solar, wind, etc. - with or with out storage) x2
(with storage, storage cells must be charged by the natural power source for 8 of the 48 hours preceeding the contest.)

Battery power x 1.5
No other source of power may be used at any time during the contest to qualify for these multipliers.

SCORING: QSO points (total all bands) times total number of states/provinces/countries (a s/p/c may be worked on more than one band) times power multiplier times bonus multiplier (if any) equals claimed score. Send a large s.a.s.e. or IRCs to contest chairman for scoring summary sheet in advance of contest.

SUGGESTED FREQUENCIES: For c.w. 1810, 3560, 7040, 14060, 21060, 28060, and 50360 kHz; For ssb 1810, 3985, 7285, 14285, 21385, 28885, and 50385 kHz; For novice and technicians 3710, 7110, 21110, and 28110. No 30 metre (10.1 MHz) contacts will be counted.

CALLING METHOD: CQ CQ QRP DE (call sign) or CQ QRP CONTEST FROM etc.

AWARDS: Certificates to highest-scoring station in each state/province/country with two or more entries. All ssb entries are automatically considered for Triple Crowns of QRP Award. Separate scoring each mode.
In addition Adrian Weiss, W0RSP, is sponsoring a special MILLIWATT certificate to be awarded to the highest scoring station in the less than 1 watt category, provided that there are two or more entries in that category.

LOGS: Suggest use of separate log sheets for each band for ease of scoring. Send full log data plus separate worksheet showing details and time(s) off the air. No log copies will be returned. All entrants desiring results and scores please include a large s.a.s.e. with one ounce of U.S. postage or IRCs. It is a condition of entry that the decision of the QRP ARCI contest chairman is final in case of dispute.

DEADLINE: Logs must be received by Nov. 12, 1984, Logs received after that date or, missing information will be used as check logs.

SEND ALL MATERIAL TO (note new address)
QRP ARCI CONTEST CHAIRMAN
Gene Smith, KA5NLY
8201 Chatham Drive
Little Rock, AR 72207.

VK VERSUS 1984 THE WORLD

VK2AKE/QRP KX6GO/QRP

Sponsord by the CW OPERATORS QRP CLUB, this contest is directed to all CW enthusiasts WORLD WIDE who elect to tackle that extra challenge. Contestants may work DX or OWN COUNTRY for scoring. QRO stations are invited to participate, but must submit contest logs with QRP STATIONS ONLY, to qualify for the QRO section of the contest. QRP Stations must sign QRP for identification.

DATES SATURDAY NOV 17 and SUNDAY NOV 18 1984

DURATION Total of 48 hours (0000Z Nov. to 2400Z Nov.)

MODE CW only. CONTEST CALL CQ QRP. BANDS 160M to 10M. (Not WARC)

SECTIONS STATION CATEGORIES

QRP : Single Operator : Multiband or Singleband.
QRP : Multi Operator : Multiband or Singleband.
QRO : Single Operator : Multiband or Singleband.

PERIOD CATEGORIES

Full Period : 48 Hours.
Half Period : ANY 24 consecutive Hours, within the 48 hours allowed for the contest.

EXCHANGE ALL STATIONS SIX DIGITS comprising RST followed by serial number, commencing with 001 up to 999, then commencing again

SCORING QRP STATIONS i.e. indicated output power into antenna NOT EXCEEDING FIVE WATTS, each contact shall score points based on the following table....

Up to 1 watt..... 6 Points
Over 1 watt - 2watts..... 5 POints
Over 2 watts - 3 watts..... 4 Points
Over 3 watts - 4 watts..... 3 Points
Over 4 watts - 5 watts..... 2 Points

QRO STATIONS Using more than 5watts output to antenna. 1POINT PER CONTACT (QRO/QRP only allowed)

MULTIPLIERS Every contact in a different ITU Zone counts as a multiplier on each band.

BONUS SCORE Field stations using Battery/Solar/Wind/Hand Generated power (Motor Generators excluded): Multiply the grand total score by 1.5. (Station to be erected Not Before the day prior to Contest date.)

CONDITIONS Stations may be contacted once only on each band, in each 24 Hour period. Separate log sheets required for each band. Each logged QSO to show Date/Time (GMT)...STATION WORKED... EXCHANGE (Sent/Received)... MULTIPLIER...POWER OUTPUT... POINTS CLAIMED. GRAND TOTAL SCORE = Total points from all bands x Total multipliers from all bands (x Bonus Score) All entries must have a Front Summary Sheet showing... Calculation of grand total score: Name and address: Call Sign: Signature and Declaration... "I certify that all entries in my contest log sheets are true and honest". Entrants are requested to include a brief description of station equipment, and any comments/suggestions. Field stations are requested to include a brief description of operations/location/ conditions etc.

CERTIFICATES To the QRP Single Operator and Multi Operator in each Country with the highest grand total score in each section. To the QRO Operator in each country with the highest grand total score in each section.
To the highest scoring CW OPERATORS QRP CLUB member in each section.Entries to be addressed to, Contest Manager, P.O. Box 109, Mt. Druitt, N.S.W. 2770, Australia.

CLOSING DATE Contest Manager must have entries by 26/2/85

1984 - 5

CLUB SCOREBOARD

NOVICE SECTION

STN		3-5					21		28				TOT
VK3PGE		378					14						392

FULL CALL SECTION

STN	1-8	3-5	7	10	14	18	21	24	28	52	144	430	TOT
VK7VV		16	21		283		11						331
ZL1ATW		136	12		3		21		54				226
VK3PEX		9					6						15
VK5LG		2			1								3
VK5ZF					14		30						44

It was great to see the extra entries in the Club Scoreboard. I thank you gentlemen. As you will have noticed the rules for the Score-board Contest for '84-'85 have been inserted in this issue of Lo-Key, for the benefit of all the members, who joined after the first issue of the bulletin. In the Novice Section Neil VK3PGE is doing extremely well and looks like he will bolt in. Remember that there is also a certificate awarded for Second and Third places in each Section, so there is time for entries from other Novices. It is only about halway with this progress score sheet, as the Contest does not finish till the 31/3/85. I notice the fine entry from Matt ZL1ATW in the Full call section. Keep up the good work OM, as it looks as though you could give Rai VK7VV a good run for his money. With regard to John, Leith and Len, I reckon they will each need a push bike to catch Rai and Matt. I must go and find out how much they charge for a good bike these days. So as the Score board stands at the HALF WAY MARK.....

NOVICE SECTION ..... VK3PGE..392... points

FULL CALL SECTION.....VK7VV...331... points

ZL1ATW..226... points

VK5ZF...44.... points

VK3PEX..15.... points

VK5 LG..3..... points

CLUB SCOREBOARD

FOR 1984-85

RULES

1. Contest will be held on a yearly basis from the 1st April to 31st March, each 12 month period.
2. There shall be two sections of the Contest
   a. Novice ticket
   b. Full ticket
3. The Contest is open to all members of the CW Ops QRP Club.
4. All bands open to Amateur operation in both sections may be used.
5. The mode used will be CW, and our QRP 5 watts output power limit will apply to all contacts for this contest.
6. Station worked does not need to be operating QRP, but must be using the CW mode.
7. Scoring
   a. Inside own call area ..... 1 point
   b. Outside own call area, but still in own country.. 2 points
   c. Outside own country ..... 3 points
   d. QRPp (1watt or less) count double points.
   N.B. 24 hours must elapse before contacting a station you have previously contacted.
   Entrants in the contest are asked to send their progress log, each 3 months to the Scoreboard Manager Leith VK5IG QTHR. Quarterly progress scores will then be shown in "LO-KEY" in June, Sept., Dec. Logs in each section will show, Date, Time, Freq., RST Sent, RST received, Points Claimed, for each contact. Total points for the period of the log must also be shown.
8. In the March issue of "LO-KEY" (1985), the winners will be declared for the 1984-5 year.
9. Certificates will be given for 1st, 2nd, and 3rd place in each section.
10. All entrants are expected to operate under the terms of their licenses, and the honor system.

****

JOHN MOYLE NATIONAL FIELD DAY

This is an annual contest held by the WIA early in Feb. The object of the contest is for stations to operate portable, with gear connected to other than the normal household 240 Volt AC mains. The CW OPERATORS QRP CLUB supports the concept of this contest, and encourages our members to participate. Full details of dates, rules etc. will be given in the Dec. issue of Lo-Key

BITS 'N PIECES

I have the very great pleasure to inform our Club members, that Neil VK3CGE was successful at the last AOCP exams. Congradulations OM, and I am sure the whole Club joins me in saying well done. (Formerly VK3PGE)

****

Paul VK4APN has very kindly sent me a little Home Brew QRP rig to have a look at. It is an interesting circuit, with quite a few possibilities, and will be described in Lo-Key at the first opportunity. Actually the design comes from Rev. George Dobbs G3RJV, and is up to that gentlemans usual high standard. Thank you Paul for your thoughtfullness.

****

During the quarter I received information from Drew VK3XU member no. 43, that his QRP EQUIPMENT HANDBOOK is selling very well. At the time of writing his letter, Drew has about twenty odd copies left, so if you have not sent for your copy yet there is still time. Write to Drew Diamond 43 Boyana Cres., Croydon, Victoria. 3136, and enclose $A7.44 which includes postage.

****

One of our new members Eric VK5PH (no. 66), is also one of our senior members. Eric is seeking our help, as he would like to know if there is any member of the club, who could build him a little CW QRP rig. As he is in his 70's, Eric feels that he can no longer effectively construct projects, but would love to be able to operate QRP. Of course he is quite happy to pay the expenses arising from the buiding of such a rig. Anybody wishing to help Eric please write to him direct, his address is on the Welcome to new members page.

****

I would like to take this opportunity to apologise for not writing to quite a few members, for not answering their letters, or taking a long time to answer. At present I am not able to catch up, and as far as I can truthfully predict, will probably never catch up. For the benefit of our newer members I would like to explain that I am not the Secretary/Treasurer, but I am just trying to fill in, and do the job as a little time becomes available. Please continue to bear with me.

****

Recently I received a very welcome letter from Rod VK6KRG member no. 28, offering some assistance. Rod tells me that he is prepared to take on the role of Technical Problem Consultant, and try and help any of our members with constructional troubles etc. If you have any problems with your gear, I suggest that you get in touch with Rod , by dropping him a line, with all details of your problem enclosed. Please do not forget to make sure that you enclose a S.A.E. for your reply from Rod. To give you an idea of Rods know-how, the 5 w RF amp in this issue is his work. Your help is very much appreciated

O.M.

PRACTICAL QRPING

21mhz QRP "MAXI" 5watt RF Power Amp

BY

ROD VK6KRG (member no28)

This amplifier is designed to be driven with the 21 mhz 1 watt QRP Mizuho "Club Special", that is described in this issue of Lo-Key. Output power is 5 watts.
The input impedance is very close to 50 ohms, and the input signal is amplified by a high powered FET known as a VMOS power FET. The one chosen is readilly available from Tandy Electronics, and is the type IRF511 catalogue no. 2702072. Diode D1 and resistor R1 put a small forward bias on to the gate of Q1. This is necessary as the 1 watt of input is only just enough drive to get around 4 watts of output with no bias. This may surprise some, as at low frequencies the input impedance is very high indeed. However at 21 mhz the input impedance is approximately 15 ohms in series with a low capacitive reactance. This is why the input network L1, C1, C2 is needed. Diodes D2 and D3 are to prevent overdrive from destroying the FET. The output is taken from the drain, and is transformed from the drain impedance of 19 ohms up to 50 ohms with L2 and part of C3 and C9. Then follows a standard low pass filter (part of C8 C9), L3, C10, C11, and C12. Q2 is the keying transistor, and Q3 in conjunction with R4, R3, R2 and C16 provide key filtering to give the correct keying envelope shape. Keying the final stage is a good idea (also the driver), as a class C amplifier can cause key clicks, even when a good keying envelope is fed to it. The driver stage keying is not actually needed, but if used the envelope shape is not important.

FIG. 1

I have only built one of these units, and it is feasible that some transistors used as Q1 may require input network adjustment. Next issue I will show how this is done, but as it requires a sound knowledge of amplifiers, it may be difficult for some to do. If you send me your transistor, I will return it along with a matching coil L1, and a note with the value of C1, C2 you should use. It may also be necessary to put another diode in series with D1 in some cases, as the transistors have a gate turn on voltage of from +2 to +4 volts. I will include this information in my reply also. SETTING UP....Switch on the amplifier term 50 ohm. Put a known signal at least 1 watt into the amplifier via a SWR meter. It will probably work OK at this frequency with such low input power. Adjust for full scale forward power, or as near as you can get. Switch to reflected power. Hopefully it will be about 1.2:1 or less.However if getting 5 watts or more, it can go higher.

PRACTICAL QRPING

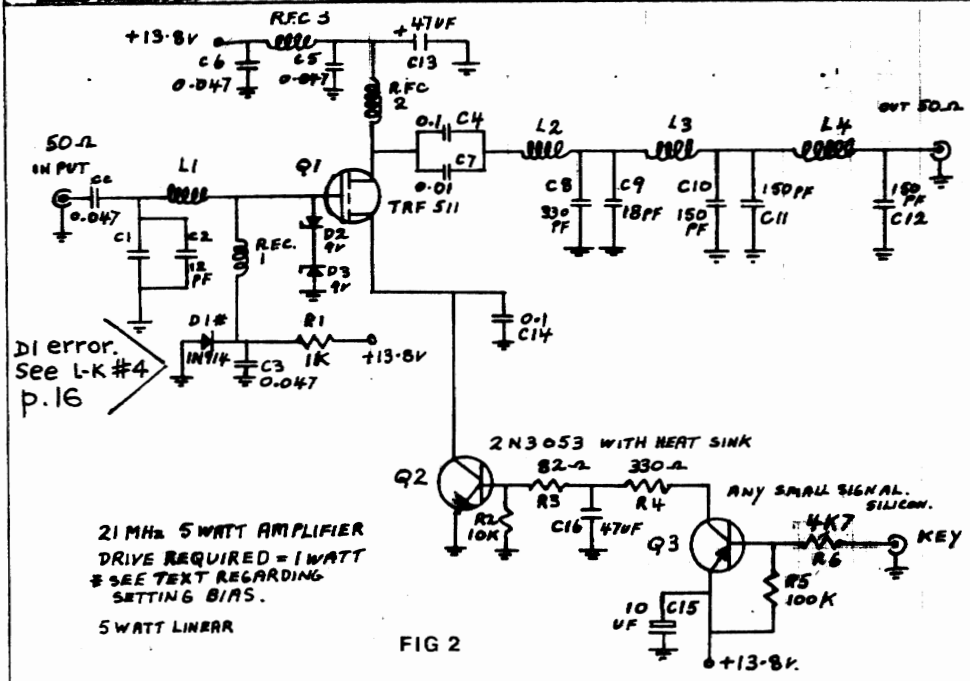


FIG 2

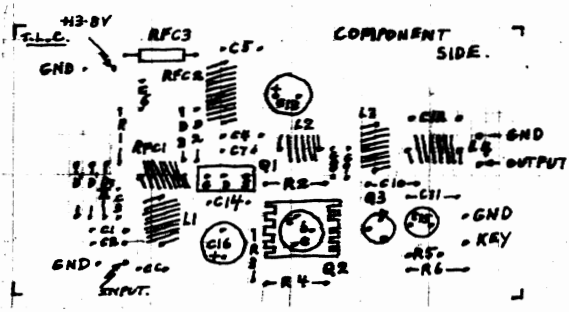


FIG 3

PRACTICAL QRPING

PARTS LIST

CONDENSERS	C1.....220 Pf.....	Ceramic
	C2..... 12 Pf.....	Ceramic
	C3..... .047 uf.....	Ceramic
	C4..... .1uf.....	Ceramic
	C5..... .047uf.....	Ceramic
	C6..... .o47uf.....	Ceramic
	C7..... .01 uf.....	Ceramic
	C8..... 330 pf.....	Ceramic
	C9..... 18 pf.....	Ceramic
	C10..... 150 pf.....	Ceramic
	C11..... 150 pf.....	Ceramic
	C12..... 150 pf.....	Ceramic
	C13..... 47uf.....	Electrolytic 15V.
	C14..... .1 uf.....	Ceramic
	C15..... 10 uf.....	Electrolytic 15V.
	C16..... 10 uf.....	Electrolytic 15V.
RESISTORS	R1..... 1 K ohm.....	½ Watt
	R2..... 10 K ohms....	½ Watt
	R3.....82 ohms.....	½ Watt
	R4.....330 ohms.....	½ Watt
	R5.....100 K ohms...	½ Watt
	R6.....4.7 K ohms...	½ Watt
SEMICONDUCTORS	Q1..... IRF511 Power Fet	
	Q2..... 2N3053	
	Q3..... Any Silicon PNP Small Signal	
	D1..... 1N914 Diode	
	D2.....BZY88C9V1 Zener	
	D3.....BZY88C8V1 Zener	
COILS	L1... 9 Turns 6mm diam. 7mm long (.3 uhy)	
	L2... 6 Turns 6mm diam. 4mm long	
	L3...10 Turns 6mm diam. 8mm long	
	L4...10 Turns 6mm diam. 8mm long	
	RFC1....9 Turns 6mm diam 6mm long	
	RFC2....13 Turns 6mm diam. 10mm long	
	RFC3....20 Turns on ½ Watt 1Kohm resistor	

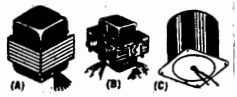
PRACTICAL QRPING

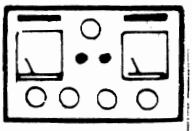
A HANDY VK CAPITOL CITY DISTANCE CHART TO CALCULATE THOSE QRP QSOs

DISTANCES IN KILOMETRES

	PERTH	MELB.	ADEL.	SYD.	CAN.	BRIS.	DAR.	HOB.
PERTH		2723	2131	3292	3090	3607	2642	3015
MELB.	2723		655	714	466	1374	3146	597
ADEL.	2131	655		1163	960	1442	2614	1162
SYD.	3292	714	1163		247	732	3147	1058
CAN.	3090	466	960	247		944	3132	859
BRIS.	3607	1374	1442	732	944		2847	1789
DAR.	2642	3146	2614	3147	3132	2847		3697
HOB.	3015	597	1162	1058	859	1789	3697	

marketplace





FOR SALE..... 1. American Auteck Notch Filter Type QF1.....$40
2. Unimetric Stingray CB SSB/AM 20CH converted to 28mhz.....$80
(Or swap for CB SSB/AM not converted)
3. Oskerblock SWR200 SWR/Power meter.....$50
John Elliott VK3PEX, 8 Queens St., Rosedale, Vic. 3847 (Mem.no. 12)

****

FOR SALE.....1. Chirnside 21mhz top loaded whip 7ft long As new.....$20
WANTED..... G.D.O. in working order, valve or solid state.
Neil Emeny VK3CGE, 1 Beaumont Crt., Montrose, Vic. 3765 (Mem. no. 19)

****

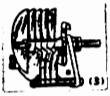
SWAP..... Crystal D Style freq. 7.030mhz, will swap for a crystal in the CW section of any amateur band 1.8 to 21mhz (fundamental type) or will sell for $10 including postage.
Jeff Wallace, P.O.Box 344, Clare, S.A. 5453 (Mem. no. 57)

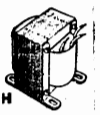
****

WANTED..... Book "Radio Handbook for Amateurs and Experimenters" by Frank C. Jones (1936 Edition) Price etc. to
Len O'Donnell, 33 Lucas St., Richmond, S.A. 5033 (Mem. no. 1)

****

MORE BITS AND PIECES





SPARE PARTS.....From Neil VK3OGE (19) I have found that Truscots in Melbourne are very good for spare parts for home brewing, particularly Amidon Ferrite Cores. As I pass the shop regularly, I would be happy to act on behalf of any member, who may be looking for parts. You can contact me by mail or on the air on 3.5mhz most nights of the week.

****

SCOREBOARD..... From Leith VK5LG (18) Could all members sending in Scoreboard entries, please send in a separate sheet for each band.

****

160 METERS TOP BAND..... Have you been reading the great articles in ARA magazine, I have and I am fascinated by the possibility of DX with QRP on this frequency. It has crossed my mind that perhaps some more of our members may like to see what they can do also. If we could get sufficient members interested, we may be able to establish at least one station in each State, and perhaps a station or two in New Zealand and perhaps the USA. We can assist each other with info and expertise on 160. Are you interested, drop me a line, and in the meantime I will write to VK9NS, tell him about our group, and try to set up some skeds with him.

****

TECHNICAL ARTICLES .....Thank you to all the members who have sent me technical articles for inclusion in Lo-Key. Please keep them coming, I can use many more, with the enlarged technical section in Lo-Key. Let me assure you that as space permits, I will publish all articles submitted. To give members some idea of what is in store for them, here are a few of the articles planned for future issues.

1. Chelmsford Transistor rig.....from Matt ZL1ATW
2. Modified 2 watt tx.....from Drew VK3XU
3. 5 amp 13.8 volt variable reg. P/S.from Len VK5ZF
4. Direct coupled receiver.....from Rod VK6KRG
5. Etching Xtals.....from Leith VK5LG
6. Antennas, ATUs and Feedlines
7. The SCD, a QRP Transceiver from Paul VK4APN
8. Etching PCBs
9. Valve Tx and Valve Rcvr.....from Len VK5ZF
10. 160 meters Top band gear
11. Article on QRPing

Plus many others.

****

HOME BREWING..... To help any of our members who are interested in rolling their own gear, I will be publishing a list of bits and pieces suitable for home brewing projects, that will be available from me at no cost, apart from postage. Any donations of parts will be added to the Club Junk Box. I also feel that a list of suppliers of new parts, published in Lo-Key would also help the home brewers. Any members who have any information on suppliers and their addresses are asked to send in details to the Editor, so that the information can be compiled and published.

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