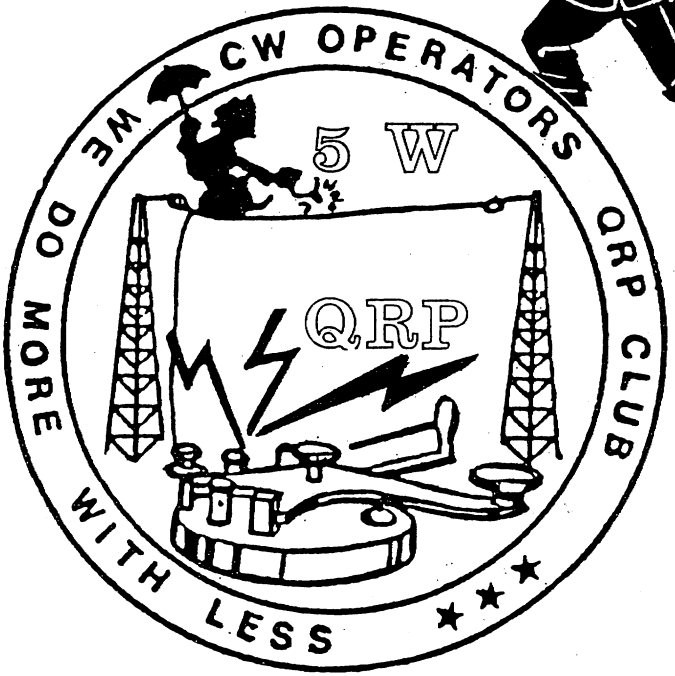
LO-KEY

NEWS BULLETIN



PUBLISHED QUATERLY

"WE DO MORE WITH LESS"

RAI TAYLOR 25 TWELFTH AVE WEST MOONAH TASMANIA 7009

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O,SEAS DX JAY STURDIVANT KV7X (78)

INFORMATION NET
FRI SAT EVENINGS
3.620

LO-KEY PUBLISHED MARCH-JUNE-SEPTEMBER-DECEMBER

ANNUAL MEMBERSHIP FEES INCLUDING LO-KEY

VK-$A8. ZL SURFACE MAIL $A9.-AIRMAIL $A10. DX AIRMAIL $A12.
IRC'S NOT ACCEPTABLE.
MONEY ORDERS/CHEQUES PAYABLE TO THE CW.OPS QRP CLUB

THE OCEANIA CW ✯ QRP ✯ CONTEST 1986

DATES.....Sat. Nov. 15 and Sun. Nov. 16 1986.
Duration.....Total of 48 hours (0000Z Nov. 15 to 2400Z Nov. 16)
MODE...CW only...CALL...CQ QRP...Bands...1.8mhz. to 28mhz.(not WARC)
SECTIONS.....QRP.Single Op./Single Band....Multi Band/Single Op.
QRP.Multi Op./Single Band....Multi Band/Multi Op.
QRO.Single Op./Single Band....Single Op./Multi Band.
SWL. Multi Band.....Single Band.
PERIOD.....Full Period 48 hours.
Half Period Any 24 consecutive hours within the 48 hour period.
EXCHANGE.....RST plus serial no. starting from 001 up to 999.
QRP POWER OUTPUT..... 5 Watts(max.) QRO POWER OUTPUT..... Over 5 Watts.
SCORING.....QRP stations....Up to 1 watt....6points
Between 1 and 2 watts....5points
Between 2 and 3 watts....4points
Between 3 and 4 watts....3points
Between 4 and 5 watts....2points.
QRO stations....Over 5 watts.....1point QRO to QRP only
SWL stations....Each QRO station logged in test.... 1point
Each QRP station logged in test.... 3points
VALID LOG.....Must contain a min. of 10 entries to qualify for entry to test
Multipliers.....Every contact in a different ITU Zone counts as a multiplier on each band, Multiply contact score by 2 if QRP X QRP
BONUS SCORE.....Field stations multiply your grand total score by 2
Conditions.....Contestants may work each other once per band in each 24hr period
All entrants please use separate log sheet for each band
Each logged QSO to show Date, Time GMT, Station worked, RST exchange, multiplier, Power output, points claimed, Grand total.
The grand total score is derived from the total points from all bands X total multipliers from all bands X bonus score.
ENTRIES.....All entries must have summary sheet showing calculation of grand total score, Name and QTH, Callsign and Signature. Include usual contest declaration.
CERTIFICATES....QRP Single Operator Single band Highest score on each band.24/48hr
QRP Single Operator Multi band Highest score....24/48hr
QRP Multi Op. Single band Highest Score....24/48hr
QRP Multi Op. Multi band Highest Score.....24/48hr
QRO Single Op Single band Highest Score....24/48hr
QRO Single Op. Multi band Highest score....24/48hr
SWL Single band... Multiband Highest score.24/48hr
CLOSING DATE....Entries to be addressed to: Contest Manager, Len O'Donnell, 33 Lucas Street, Richmond, S.A. 5033, Australia. no later than 29th Dec.1986.

CONTEST SPONSERED BY...CW OPERATORS QRP CLUB...
CONTEST MANAGER LEN O'DONNELL 33 LUCAS ST RICHMOND
SOUTH AUSTRALIA 5033

THE PRESIDENT'S PAGE

From ... Len O'Donnell VK5ZF/QRP (1) President.

May I take this opportunity of thanking Don VK5AIL/QRP (75), the retiring President, who stepped into the position to become the Club's first President. Well done and thank you Don for your efforts, over the past 12 months.

It is my intention, by introducing this page in each issue of Lo-Key, to give Members details of what our Committee is doing, concerning matters of Club business. Since there has not been time for the Committee to meet on air, before the Lo-Key publication closing date, I will outline a few urgent matters, that I will be bringing before the Committee as soon as possible.

(1) Quality of Membership

I am very concerned that the Club has lost some 32 Members, out of a total of 95. It is time for the Committee to look into the possibility of overcoming this problem. There will always be a small number of Members, that drift through, as you can not please every body, but I do hope the Club has something to offer most of our Members, most of the time.

(2) Membership Numbers

For the Club to operate on a financially sound basis, we will need to increase our membership to around the 200 mark, over the next 2 or 3 years. This can be done with some much needed publicity. So far the Club has not really got around to a serious look at a good Public Relations drive. PR is also one of the other positions in the Club, that I have taken on, and I will be asking the Committee for 100% support on this one.

(3) Annual Elections

It is evident that Annual elections for a Club Committee to run our affairs, generate very little interest amongst the Members, so I will be asking the Committee to agree to the deletion of all future elections. I will propose that all Committee positions can be held for an indefinite period, depending on the Committeeman's wishes. Only when he desides to retire, will that particular position be declared vacant, and nominations called only for that particular position.

(4) Informal On Air Rag Chews

They have started. On Sunday 1st. June, Jeff VK5BJF/QRP gave me a ring on the phone, and suggested we have a chat on air. We arranged to come up on 3655 khz, plus or minus QRM on Monday evening at 1130 GMT, and had a great yarn for about an hour. From this we both decided to make it a monthly rag chew, and the next one will be on Monday 7th. July. If you would like to join us, time and frequency as stated.

There are many other matters I could mention, such as the WQP, Membership Certificates, Ways to modify existing gear for WARC band operation, VHF and UHF operation, the CW mode, etc. but there is not room here. These and other matters effecting the quality of membership will be looked at, over the next few months by the Committee. It is time for our Club to stand up and push the QRP and CW barrow, so that the Amateur Service can see what the CW Operators Club stands for. The next 2 years will probably be the most important in the Club's history.

May I suggest that all Members can help the Club, by talking about the Club during QSOs, and by joining up new members if possible. New Information Sheets on the Club have been prepared, and can be obtained from me by writing, phoning, or giving me a call on air.

RAMBLINGS FROM VK5AIL DON #75

Some people love a challenge-they enjoy doing things the hard way. In amateur radio this could involve trying for a DX QSO with a new country or building that FB bit of homebrew gear(and making it work) or helping run our CW OPS QRP CLUB.
Two people in particular have met the challenge of running our club: Len VK5ZF NoI by his pioneering work in starting it , and Rai VK7VV No3 by his herculean effort as secretary and editor of LO-KEY.
All of us owe thanks to these two-and of course to the other people now involved.
Talking about challenges, I guess Merv VK3ADX's No85 letter in LO-KEY No9 was a challenge to me.
In the homebrewing department, I would have to be getting far more value-for-money out of the Tassie Devil kit than anything. It sure is a bigger challenge than building my Heathkit HW9. I finished soldering weeks ago,but have yet to get my QRP SWR meter needle to even quiver on the forward reading. However, the signal is reaching the station receiver a metre away and at last the RX circuit responds to strong signals such as the Adelaide local broadcast of the Wireless Institute of Australia. I look forward to QSOing with other Tassie-Devils-some day(at least if anyone else is on I60metres.
The CLUB SCOREBOARD competition seems to be hotting up-I suspect the Tassie Devil was a ploy to keep the high scorers like Jay KV7X No78 Graeme VK3BGH No82 and Mark WAIJVY No70 occupied off-air so that all the VK7's could come to the fore.
I am now in my second year on air and am very keen to contact more members-maybe even on DX overseas,sunspots permitting. Very nice to contact Rod"Technical Problems" VK6KRG No28 the other night-I could sure use him in my QTH. It seems that in CW QRP, like many other-things: "ITS NOT THE AMOUNT OF DOG IN THE FIGHT THAT COUNTS, ITS THE AMOUNT OF FIGHT IN THE DOG".

73 Don VK5AIL No75.

HOW TRUE!!

Features

- Superior function which can fully cover 5 bands with the use of 2 HI-Q traps of our special production.
- Using only high standard materials, it has passed the strength test and has excellent durability.
- Small and light with slim and simple design, and excellent resistance against the wind pressure.
- Our high performance D4305 produced by our experienced engineers at our high level manufacturing facilities is highly appraised by the maniacs all over the world.

PART OF INSTRUCTION SHEET

EDITORS DESK

CLUB PROJECTS.

Now and again along comes a Beut. idea or circuit that would lend it self to an interesting Club project 'The Tassie devil' was a good example. In future issues we will attempt to introduce suitable constructional projects that can be offered in either a complete kit or just a printed circuit board,of course the success or failure of this will depend on your interest or lack of interest. Rod Green has suggested that his Maxi Amp featured in this issue could be a likely Club project. So lets see if enough homebrew inclined members agree,in the first instance drop me a line, or better still check into Len's information net Friday or Saturday evenings on 3.620 QRO-SSB meet a few other members and express your opinions. We would be very pleased to hear from anyone who feels that their pet project or idea could be of interest to other fellow QRP's. Use this criterior as a guide. I. Related to QRP. 2. Original concept or further development of a basic idea. 3. Technically proven. 4. Not over complex. 5. Easily available components.
an old Chinaman I have forgotten his callsign but think his name was Kungfutsze or something like that, once said" I HEAR AND I FORGET I SEE AND I REMEMBER, BUT I DO AND I UNDERSTAND"
How appropiate to our pleasureable past time of Homebrewing.

CLUB SCOREBOARD

As you may have noticed the CLUB SCOREBOARD has not been included in this issue,it would appear that members have not found enough interest to support it,likewise the response from my appeal for your suggest - ions in the last issue was a further indication of something but I am not sure what,but I would like to thank the members who did find the time to express your views and comments,well done both of you.
I am only joking of course,but I was delighted when Len VK5ZF No I, our illustrious founder decided he had had enough rest from the Club management and told me he was ready to get stuck into again, so Len, now wearing the hat of the AWARDS/CONTEST MANAGER and armed with feedback from members and a few good ideas of his own will be bringing out a brand new set of rules and formula for the CLUB SCOREBOARD. The committee is looking at this aspect of activity very carefully and by the next issue of LO-KEY will be ready to describe the new SCOREBOARD in detail.

CONTESTS.

Had a bash at the QRP ARCI SPRING CONTEST April I9/20 I only had a few hours to spare, on the Saturday I did not hear a single QRP stn but did manage to work during a I hour opening on 20m WA6MSJ, N7DBA, KH6OF, N7GXI, KI6DA and YU2GX. Sunday conditions a little better I heard a lot of QRP stns and between 0440Z and 0550Z again on 20m worked the following QRP stns. ZL1BXW, AH6EK, KH6JOI, WB7SNH, WB7AIU and our old friend Zack KH6CP, I was reluctant to thro the big switch just when things began to get interesting, but I had no option. Must try to organise more time for the next contest, that reminds me to remind you all that not to far away is the new OCEANIA QRP CONTEST see page 3 and mark it down as a must on your calendar.

AWARD—AND CONTEST NEWS

From - Awards/Contest Manager Len O'Donnell VK5ZF/QRP (1) .

Members will see from the result of the Election, that I am now the Award/Contest Manager. John Elliott VK3CVF resigned from the position, and I would like to thank John, on behalf of the Club, for his efforts over the past twelve months. Thank you John.

As your new manager, I have quite a number of ideas that I hope to introduce to the members, through this section of Club activities, over the next year or two. In fact, if I can twist our Editor's arm hard enough, I hope to "pinch" at least two pages of each issue of Lo-Key from him, to keep you all well informed, on the world scene of Awards and Contests. I am also hoping to hear from any Member, who has any ideas of how to improve the quality of this section. My aim is to increase the members interest and enjoyment, in the art of QRPing.

****

On page 3 of this issue of Lo-Key, you will find details of our new annual CW QRP Contest. It is now called the Oceania CW QRP Contest. There are two changes to the rules. Firstly the contest now includes a section for Short Wave Listeners, which is a step in the right direction. Secondly a valid log must contain at least a minimum of 10 contacts, which is fair enough. The contest of course is on the 15th. and 16th. of November 1986, and details will again appear in the September issue of Lo-Key. Also in the Sept. issue of Lo-Key, I hope to have Rai (our Editor) slip a Contest Score Sheet into each copy. I am working on these sheets right now. Information on the contest will be sent to all Divisions of the WIA for broadcast on the Sunday morning sessions, Amateur Radio and Amateur Radio Action magazines, as well as the ZL Breakin magazine will be notified, and asked to run details in their respective Contest sections. SWL magazines will also be notified, as well as Qrp groups in 11 different countries. Join me in launching this year's Oceania CW QRP Contest, with a 100% Club effort.

****

Still on the subject of Contests, there are a number of good CW Contests each year, run by the leading Amateur Radio Societies throughout the world. It would not be hard to run a Club contest, using an organised regular CW Contest. There would be nothing to stop members entering such a contest, and submitting a log to the organisers, and one to our club. In other words we could run a contest inside a contest for our members. Photo copying is common these days, so there is no problem making out two logs. Personally I have entered many of these contests, using 5 watts QRP and have made around 200 contacts on many occasions. I find them a useful source of QSLs, for several Awards that I am chasing. The idea has merit, and I believe could provide us with some extra contest participation. What do you think ?.

****

Coming now to Awards, elsewhere in this issue of Lo-Key you will find full details of the Clubs first Award. It is called the WCK/HCK Award (Worked Club Members / Heard Club Members). It has been designed to help create an interest in QRP, amongst the Amateur fraternity. So join in, have fun, and help promote your Club on the air.

As from the Sept. issue of our journal, I will be describing and detailing a number of Awards, suitable for QRPers to have a go at, so start sorting out your QSLs.

The WCM/HCM AWARD (Worked Club Members / Heard Club Members) is offered by the CW Operators QRP Club, to all Amateurs and Short Wave Listeners, who fulfil the following requirements.

To qualify for the Award, Australian Amateurs and Short Wave Listeners must Work/Hear 10 QRP Stations that are members of the CW Operators QRP Club, gaining 10 points (1 point for each station worked). Overseas Amateurs and Short Wave Listeners must Work/Hear 5 QRP Stations that are members of the CW Operators QRP Club, gaining 5 points (1 point for each station worked/heard). Working/Hearing the Club Station (VK5WAT/QRP call sign has been applied for), counts 3 points. Additional Stickers can be obtained by Working/Hearing 30 (30 points) and 50 (50 points) QRP Stations, that are Members of the CW Operators QRP Club.
All frequencies allocated to the Amateur Service may be used. The mode used must be two-way CW. (Phone to CW is not valid).
All Club stations Worked/Heard must be different call signs, (i.e. VK2ABC/QRP can only be Worked/heard on one band.)
The station being Worked/Heard must be using the QRP suffix, and using not more than 5 watts output to the antenna.
Club Members wishing to qualify for the award, must work other Club Members.
All contacts for this Award must be made after 1-8-86.
Send a certified copy of the logged contacts, with a fee of $A2 for Australian Amateurs and Short Wave Listeners. For Overseas Amateurs and Short Wave Listeners a fee of $A3 is required.
Applications for the Award to be made to.....

Awards/Contests Manager,
CW Operators QRP Club,
Len O'Donnell VK5ZF/QRP,
33 Lucas Street,
Richmond,
S.A. 5033,
Australia.

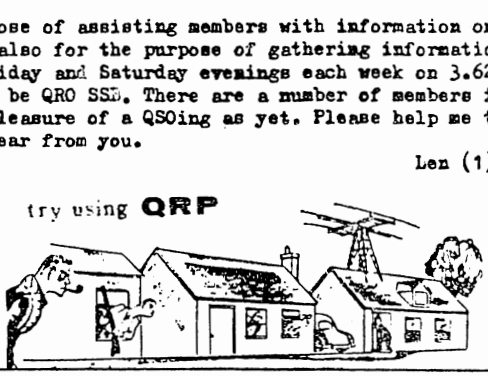
****

INFORMATION NET FRI SAT EVENINGS 3.620

ON AIR INFORMATION

For the purpose of assisting members with information on Club matters, activities etc. and also for the purpose of gathering information from members I will be on air on Friday and Saturday evenings each week on 3.620 mhz plus or minus QRM. Mode will be QRO SSB. There are a number of members in the Club, that I have never had the pleasure of a QSOing as yet. Please help me to rectify this, as I would love to hear from you.

Len (1) VK5ZF/QRP



A short note from VK5 State by Jeff., VK5BJF

Well after a holiday from being very involved in the Club affairs, Len VK5ZF, is going to get stuck into it again. Good on you, Len!

Conditions on the 30 metre band have been quite variable but seem to be settling down to very good just lately with reliable QRP contacts possible to U.S.A., Canada and Japan. Even two way QRP. I have managed to stir up a few ZS6's on 18mhz., recently with the help of my memory keyer which does the "cq"'s for me while I fiddle with other projects! On the front cover of "Amateur Radio" for May is an inset photo of the VK5GZ/VK5XW programmable memory keyer. The project is described in that issue. If any member tried to contact Lindsay, VK5GZ about it and couldn't do so, then they might like to try Ron, VK5XW instead.

I would like to draw members attention to the 80 metre Tx. project which Drew Diamond, VK3XU had published in April "A.R.". Note that this project can be purchased in kit form if desired. Thanks, Drew!

To all our members, both DX and local, happy QRP'ing

Jeff.

INFORMATION NET
FRI.SAT. EVENINGS
3.620

SEMI-BREAKIN T/R SWITCH

From Graham Ranft VK7ZO (69)

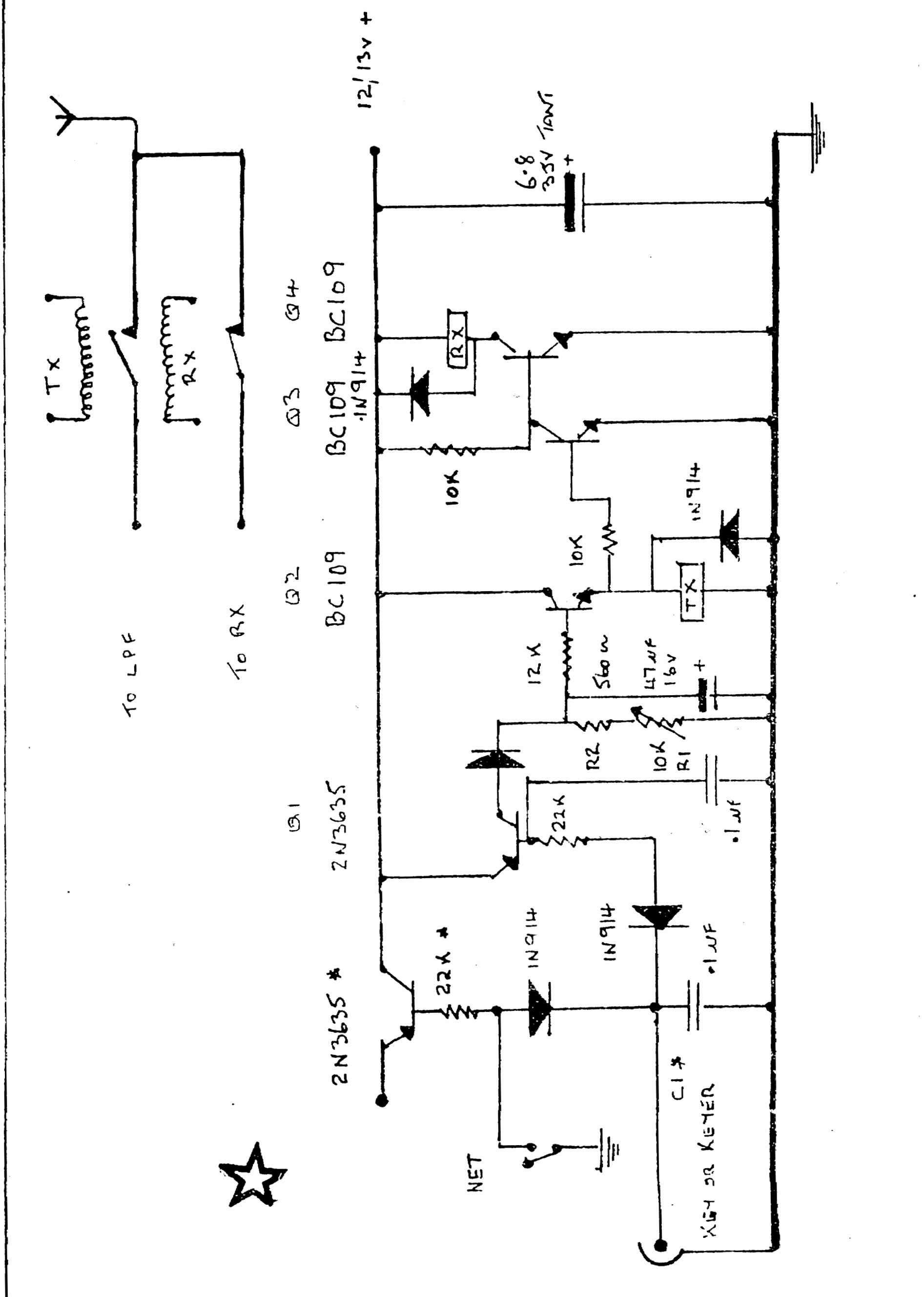
Having built the VK3XU FET 4 I wanted a quiet semi-breakin T/R switch giving reasonable attenuation of the signal to the RX. The circuit here is a combination of SSD and VK3XU (tu Drew). I have used the Archer reed relay No. 275-233 as I wanted to keep a nice DPDT relay for switching something more than 4 watts-using a steam-roller to iron a hankie; I have not included the two IN914 in the emitter leads ofQ2 the relays seem to drop out cleanly and they both appear to operate together. The semi-breakin is a pleasure to use-no fiddly switching or "winding back" of the RF gain- the relay(RX) seems to give adequate attenuation of the TX o/p. The keying transistor will switch with either a hand key or o/p of my accukeyer which puts out +5V no dash or dot . (i.e. goes to ground during dot/dash). A further refinement could be to either connect another reed relay across RX and use it to either short out the RX I/P or activate a mute or gain reduction cct in the RX. The reed relays appear to need very little current to operate- I haven' measured it. I would imagine that resistance values are very flexible the transistors are either on or off. For another idea for electronic T/R I refer to QST Feb 1986 page 24- a 4 watt 24 MHZ Qsk TX.

NOTES

* in TX
CI install if not in TX
RI 5to10K
R2 560ohm to IK
QI 2N3635
Q2 to Q4 NPN BCI09 Type
All diodes IN914.

EDITORS NOTE.
Grahame is QRV most evenings using his all homebrew station. as he is XTAL locked on TX listen on 3512- 3515 or 3533, So now you know.

INFORMATION NET
FRI.SAT.EVENINGS
3.620



12/13V +
6.8 35V TANT
Q4 BC109
Q3 BC109
1N914
RX
10K
Q2 BC109
10K
1N914
TX
TO LPF
TO RX
12K
560Ω
47μF 16V
R2
10K R1
Q1 2N3635
22K
.1μF
1N914
2N3635 *
22K *
1N914
.1μF
C1 *
KEY OR KEYER
NET

QRP MAXI AMP

1.- High input impedence pre-amp, input sensitivity 2vp-p up to I4v p-p max.input, will accept sine or square wave input.
2.- Output power control zero to 5watts when input is a sign wave.
3.- Good efficiency at all power levels.
4.- All keying circuits, including envelope shaping
5.- Final output filter included.

BASIC DESCRIPTION.

The circuit is very similar to the one shown last quarter,but everything is on one board. IC.I. a&b convert the input signal to CMOS levels 0-I4v. R2 is the power control and varies the on to off ratio of IC.I.a,and thus determines the on to off time ratio of the final. For maximum output,adjust for a current of 500ma for the whole final board. If you go higher,very little extra power will be gained,but the final may overheat. Start R2 of at 1/2 rotation.If you go towards earth,power will reduce,if you go towards +I3.5v,power will increase, but caution; watch the current,I would not take it beyond 650ma if I were you,500ma should give a good 4to5watts output,any more current and you are wasting power and possibly $3.00 also for a new final. Another caution dont put less than 2vp-p in,unless its no input, the low input can cause damage to the final as well as it can tend to cause long on to off times on the final and adjusting R2 becomes very critical and you may well do in the final,6vp-p is probably an optimmum input sine wave,up to I4vp-p can be used.Square waves can also be used,but will render power control ineffective. To continue,C3 ensures that in the absence of an input signal Ov will appear on the input of IC.2, this will in turn ensure that Ov appears at the gate of QI and thus turn it off. Q2andQ3 and associated components are for correct envelope shaping,a point to remember here too is that full input should be applied to the circuit untill the envelope has completely stopped on key up, this ensures a nice envelope shape. If carrier input got cut off as the key went up,a clicky signal would result. (I got trapped when I keyed a pre-driver stage in a previous circuit). QI is the final, a power FET VN88AF available in Australia from R.S. COMPONENTS. IC.I.d to f are parralled buffers to ensure that the full 0-I3.5v swing gets to the FET gate,and overcomcomes its high input capacitance. The output filter is wound on small toriods as per ARRL handbook.

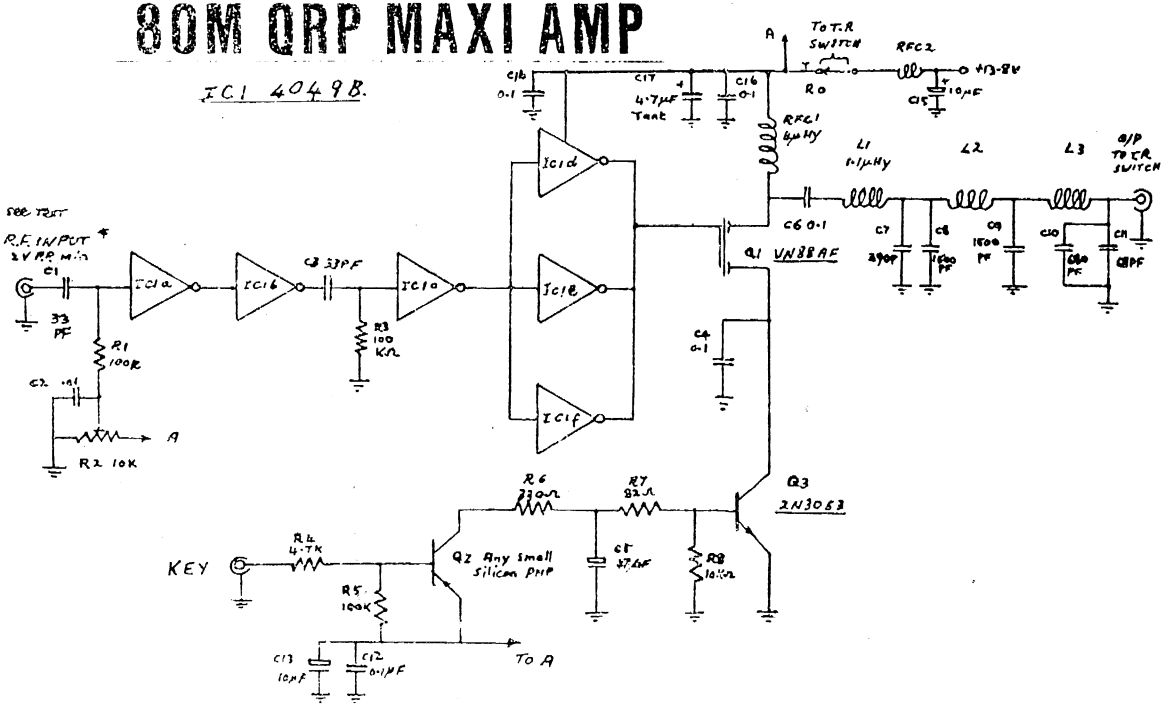
CONSTRUCTION

For good stability the unit is built on double sided PC board,the top surface is the ground plane,it is good practice whenever a component is soldered to the bottem earth plane,also solder it on top, on all points that are not earth,a small drill can countersink copper from around the hole.

ROD GREEN VK6KRG #28

80M QRP MAXI AMP

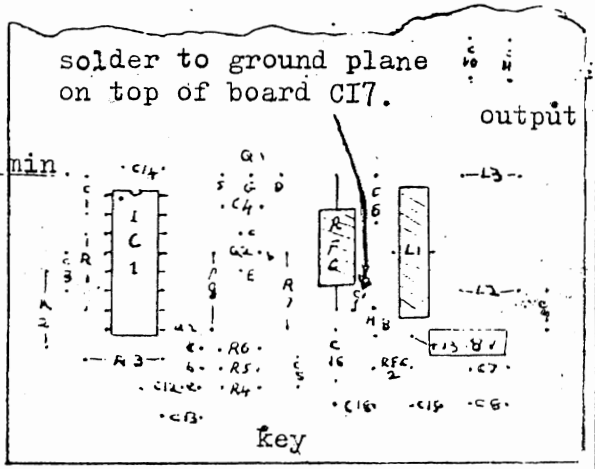
IC1 4049B.

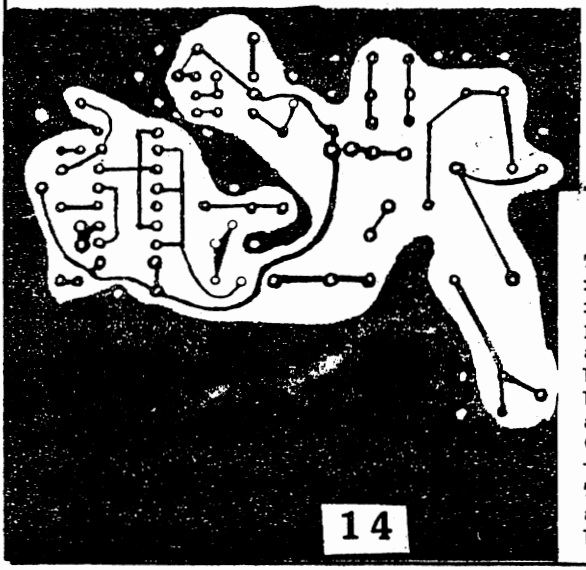


PARTS LIST.

RI,R3,R5	IOOK
R2	IOK PRESET POT
R4	4.7K
R6	330ohm
R7	82ohm
R8	IOK
CI,C3	33PF NPO CERAMIC
C2	0.OIuf ceramic
C4,C6,CI2,CI4,CI6	0.Iuf ceramic
C5,CI5	IOuf I5v electrolytic
CI7	4.7uf tantatlum
C7	390PF polystyrene
C8,C9	I500PF polystyrene
CIO	680PF polystyrene
CII	68PF polystyrene

QI	VN88AF	RS COMPONENTS	295I35
Q2	BC478	''	293612
Q3	2N3053	''	293561
IC.I.	4049B	''	306667
Heatsink-Q3		''	401548
Heatsink-QI		''	''
PC Board double sided 3"X3" (75X75)mm			
rfcI 4.7uhy	RS COMPONENT		228I35





The large area of vacant copper is to bolt on a piece of alumin ium heat sink sheet. I used a piece of 20x20mm aluminium right angle,bolted to the top of the board QI is then bent over and bolted to it with a mica washer and associated standard hardware QI is in a TO2o2 case and the tab must be insulated from earth The vertical part of the right angle heatsink can be used to bolt the unit to the case.

TAS DEVIL UPDATE

A continuing story by Ian VK7IJ

I guess I now understand the meaning of the statement " We reserve the right to improve the design". Wishing to finalise the design I decided to add a few improvements and in so doing unearthed an unexpected barrel of worms, having recoverd from my red face I will share the knowledge. Two features were destined for improvement: To run IC2 from I2V to overcome the low voltage problem associated with the muting of IC3 and and to change VRI and VR2 to provide better setting capability for the RIT ciruit, the modifications procceded thusly-

The lead supplying 5volts to IC2 was disconnected from ICI and reconnec ted to the I2volts supply.

The wipers of VRI and VR2 were connected to the track ends of VR3 (the PC tracks need to be cut). The 5volts was applied to the track of both VRI and VR2 and the other track end of VR2 was taken to earth.

This arrangement allows a variable preset voltage to be applied to each end of VR3 thus allowing a far greater accuracy in the setting of the range of the RIT, So enter the red face:-.

The mods to IC2 which, I shoud add, included strapping pins I2 and I3 to pin I4, worked perfectly, however the RIT did not work. On pushing PEI 5volts was present across DI instead of the 2volts as at the junction of R29R2I. The discovery-Q7 and Q8 are wired as emitter followers hence the voltage at the emitter equals the voltage on the base(less 0.6V). The base voltages had risen because of the I2volt supply to IC2 hence the emitters rose to some nominal value determined by the value of RI8,RI9 and the base currents of Q7 and Q8.

There is a happy end to the story- Q7 and Q8 were replaced with PNP 2N3905 devices, RI8 was connected to the base of Q8 and RI9 connected to the base of Q7. This modification has improved out-of-sight the frequency stability, the reason for this is that the bias on DI was being determined by the base-emitter characteristics of Q7 and not by the voltage across R20 as was the intention of the design. These characteristics are very temperature dependant hence the drift.

The mod to VRI,VR2,VR3 was very worth while as it is now possible to set the range,negative limit and positive limit of the RIT independently and still allow a null at the mid mechanical position of VR3.

The mod to the unused gate of IC2 is recommended as,apart from conforming to recommended convention for CMOS devices it prevents any possible random switching due to the gate not knowing if its input is low or high. As far as IC3 goes the desired result was acheived, the gain increased by about 20db with the supply of I2V instead of 5V. It is necessary however to replace R22 with a short circuit to allow proper adjustment of the switching action via VR5. A modified circuit is provided and I must leave the implementation of the changes up to you. They are well worth while,as has been verified by the comments received during QSO's after completing them on my own rig.

I do appoligise for the"blunder" but ask you to bear with me on this the self-teaching aspects of our hobby, I guess thats the difference between the amateur and the professional.HI.

"TAS DEVIL RIG"

Q5 over heating	No heatsink fitted	Fit heatsink (this is essential)
Output appears to be frequency doubled	L3/base Q5 incorrectly terminated	Remove R14 and replace with a link . Connect a resistor with value of 47 to 100Ω between link and earth (i.e. across L3) This mod. is recommended!
VFO not oscillating (no other faults)	Q1 high g_m thus reducing supply voltage via R2	Reduce R2 to 100Ω
Mute circuit ineffective due to low voltage on IC3-1	Q6 = emitter follower, output = 5-0.6=4.4v	Replace Q6 with PNP type transistor, emitter to 12v. Disconnect R15 from IC2 and reconnect to wiper of VR5. (this leaves IC2 o/p floating).
Side tone generator not working	Q12 faulty	Check.

NOTE: SOME MAY TRY TO ACHIEVE GREATER OUTPUT POWER - HOWEVER THIS IS NOT PRACTICAL WITHOUT A MAJOR REDESIGN Viz. with a 12v supply and 50Ω filter

output = $\frac{V^2}{2z}$ = $\frac{144}{100}$ = 1.44 Watts so save those output transistors!

I wish to express my appreciation to all who have helped compile this list and for all the encouraging reports about the design received so far.

Jan Smith
VK7IJ

6-5-86

VK5ZF

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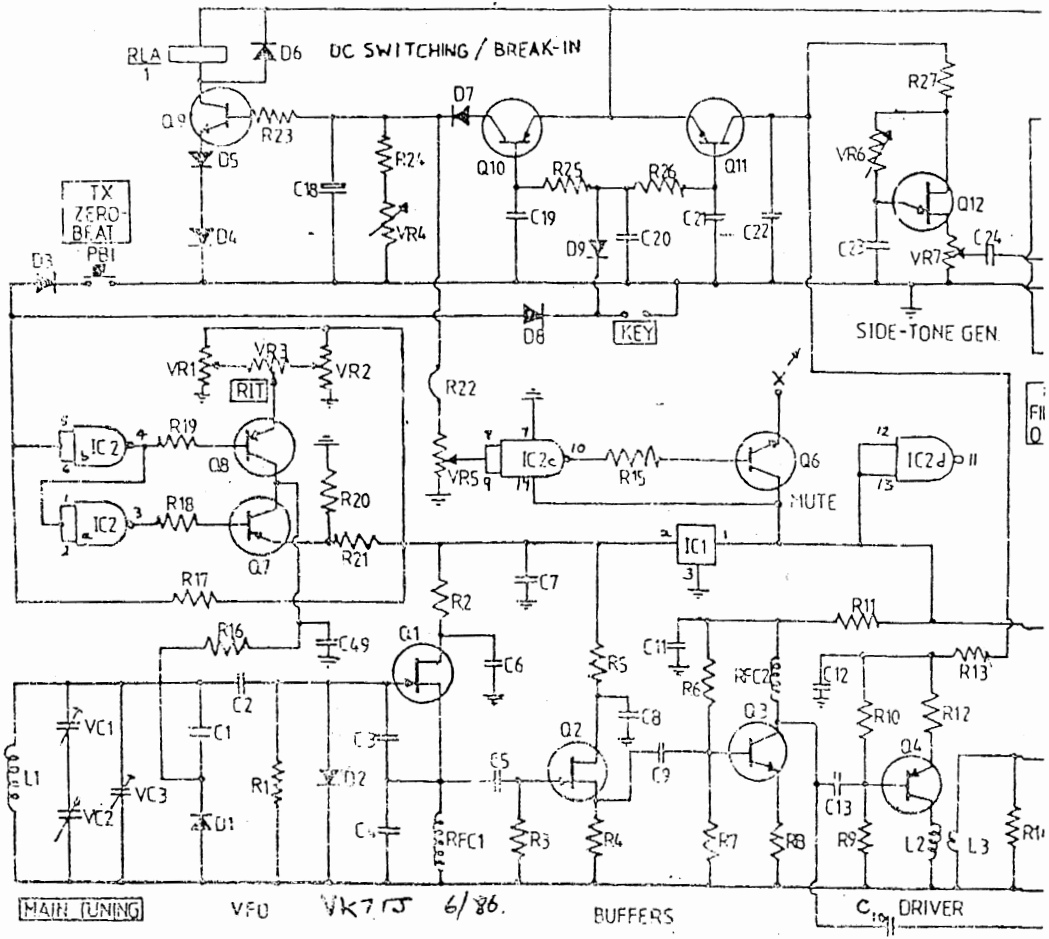
3.620 EVENINGS

MODIFIED CIRCUIT



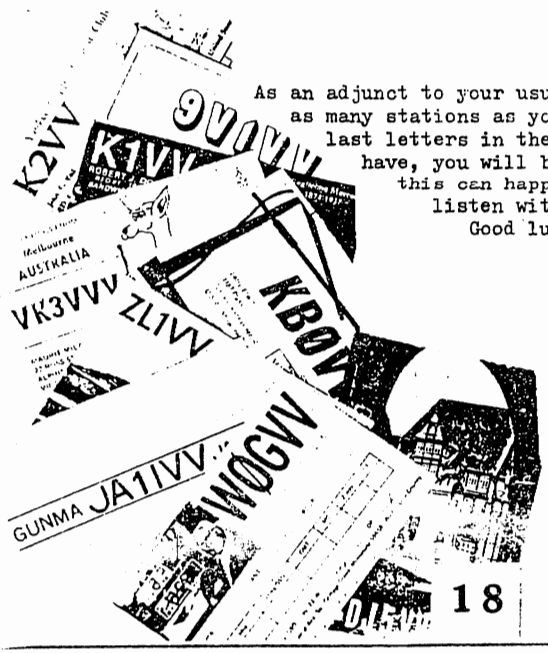
RIT

GLITCH LOCATOR ROD VK6KRG #28

The bane of logic designers is the occurance of glitches, these can be very hard to locate, even with the best oscilloscope. For instance in my own case of building a divider, a 50 nanosecond wide pulse would occur every 20 milliseconds. There is a way of detecting these glitches Their effect can be to make a divider chip appear to divide by the - wrong ratio, whereas it may only be doing what it is supposed to do, including dividing the invisible glitch, in fact this ability of fast can be used to sniff out these glitches. A drawing of a glitch situation encountered by myself and the circuit used to locate it is shown figures I to 5.

The glitch detector of fig. 5 can also be used to check narrow reset pulses that ame sometimes used in synchronoes counters used in phased-locked loops, see fig. 6. For those who have access to delayed time base CRO's who feel that these would see a 50 nanosecond glitch or reset pulse once in 20 milliseconds, forget it. I fell right into that trap. The CRO's are just not good enough. I used Tektronics 545 and 7000 series, its like looking for a needle in a haystack. This circuit has worked every time. A word of caution, always use the same logic family as you are testing when using fig 6. If you use CMOS to check TTL a glitch wont be seen as it is to slow. Write to me if you have trouble understanding this, and you feel the need to detect glitches in your circuit.

PREFIX FUN



As an adjunct to your usual operating, try to work as many stations as you can that have the same last letters in their call signs that you have, you will be surprised how many times this can happen, particulary if you do listen with this exercise in mind. Good luck I have 29 up to date.

VK7VV Nr 3.

GLITCH FINDER

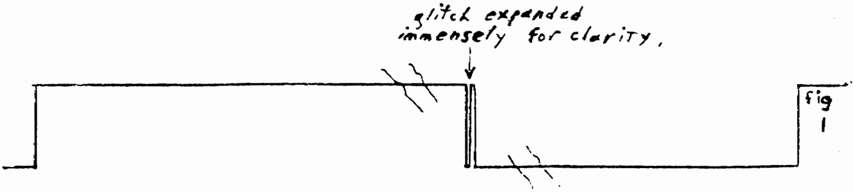


fig 1

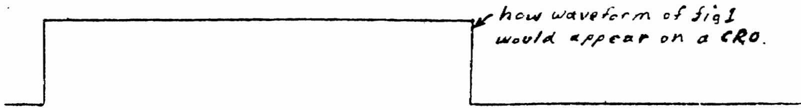


fig 2

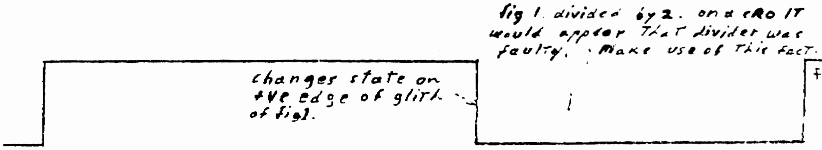


fig 3

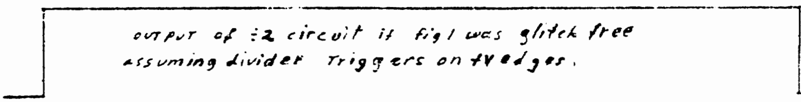
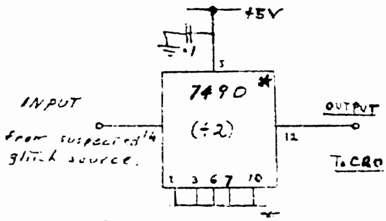


fig 4



Glitch finder fig 5

NOTES
* Use 7490 for TTL
* use 74LS90 for TTLS
* Use 74C90 for CMOS.

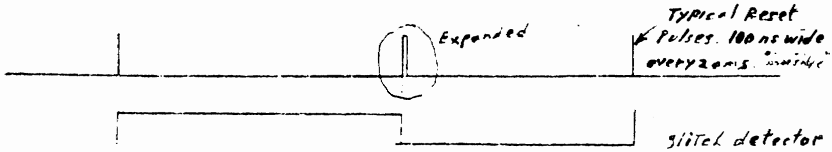


fig 6 Look at Reset pulses. also

DX REPORT

JAY KV7X #78

Must confess a mild surprise when I saw the results of the score board, seeing that I had won'. My last day on air before getting married and moving to my new QTH was in early February I had made a full blown effort in operating in the Scoreboard knowing I would'nt be active most of this year due to my new family committments, at this point I have 40 radials buried with 40 more or so to go before putting up my vertical, there by missing the QRPCI CW TEST in april and the WPX CW TEST, both good ones for compiling a large Scoreboard result. This past year I participated as a QRP'r more than ever before. Most QRP contests offer very little in the way of winning when based solely on how much power if you are using a single element non gain antenna such as a vertical or a dipole, however entering a QRP contest with a goal of 2 way QRP contacts at the I watt level will put tour scoreboard total up there in great fashion. Other World contests that had QRP sections I tried to win at the five watt level with an over view of working out of my zone to get as many points for my Scoreboard. Weekly QSO's with other North American QRP's piled on the points, also chasing DX for zones complimented my other quest DXCC QRP(vertical) antenna quite nicely. My closing thoughts on the Scoreboard are that if one takes a little time to read the rules and formulate an operating plan then points in the Scoreboard will make day to day QSO's and other contests a more splended pastime.

73 JAY.

Editor:

Well thank you Jay for that report, and the secret of how you manage to do it all, I have included a report of one of Jay's triumphs from the journal of the ARCI, Well done Jay.

KV7X Takes Novice Sprint in Close Battle

Jay Sturdivant, KV7X (Washington), racked up 15,075 points to squeak by Fred Turpin, K6MDJ (California), who scored 14,960 points as the two battled it out in the 1985 Novice Sprint. Well ahead of the rest of us, the two exchanged the lead 15 times during the four hours of the sprint.

Although Fred finished ahead in QSOs and spc's, Jay won top spot because his 950 milliwatt station earned a higher power multiplier.

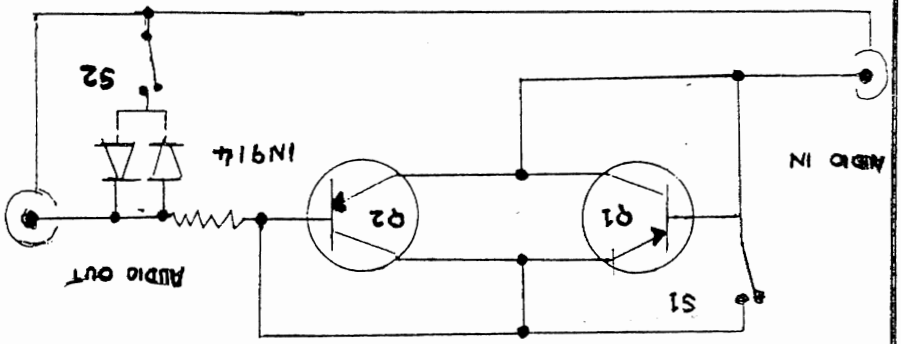
1985 Novice Sprint Results

Bonus: A=Antenna, P=Power, D=Double Whammy, X=None; ( )=Standings; #=High score in state, prov., or country.

Call	Score	Name	Rig	Bonus
		--ARKANSAS--		
KA5NLY	480	Gene	Argo 515	D
		--ARIZONA--		
(4)WB7APW	9,300	Jack	Century 22	D
		--CALIFORNIA--		
(2) K6MDJ #	14,960	Fred	Argosy	D
W6SIY	648	Keith	TT Delta	A
WF6D	126	Bill	IC-735	A
		--HAWAII--		
KH6CP	756	Zack	Argo 515	X
		--IDAHO--		
NJ7M/7	6,080	Chuck	?	D
		--MICHIGAN--		
K8DD	4,000	Henry	HW8/Omni	D
		--UTAH--		
KK7C	310	Jim	FT-707	X
		--WASHINGTON--		
(1) KV7X #	15,075	Jay	IC-730	D
(3) NM7M	9,990	Bob	Corsair	D

THRESHOLD GATE

These days with the exiting developments in electronic technology we tend to forget some of the simpler technology of yesteryear this simple threshold circuit is a good example. I have used this devise for many years, with success, particulary in my location Plagued with heavy electrical interference. By connecting the germanium transistors as diodes we use the barrier potential of the devices so that they act as an amplitude gate, consequently input signals below 200 milliwatts or so will just not be heard. This simple circuit does work suprisingly well, the resultant audio slightly effected by the harmonics generated by the device sounds good, and is less fatiguing than the pure sign wave norm ally produced by the receiver. SI defeats the threshold gate, and S2 disables the noise limitter. I have no idea when this circuit was introduced or who the originator was, I do know that I was first introduced to it in the early fifties, one of these was stuck on the end of an RI155/TI155 combination part of the station gear of GM3HRZ, R.A.F. Kinloss amatuer radio club.
How's that for a good memory ?.



CLUB CERTIFICATES

The club management apoligises to previous winners of the Club Scoreboard and VK.VERSUS THE WORLD CONTEST winners, it would appear that some of the contestants did not get their well earned certificates due to an internalhick up in the normally well oiled sleek ultraeffecient organisation you have come to admire, HI. However you can rest assured that both the current winners and the back log is now being processed and will be sent out in the very near future.

COMING CONTESTS

JULY	5/7 YV DX PHONE.	AUGUST	3/4 YO DX
JULY	I2/I3 IARU RADIOSPORTS	AUGUST	9/II WAE DC CW
JULY	I2/I3 HK DX	AUGUST	I6/I7 SEANET DX SSB
JULY	I9/20 SEANET DX CW	AUGUST	23/24 ALL ASIAN DX CW
JULY	I9/20 AG CW QRP		
JULY	26/27 COUNTY HUNTERS CW		

SEPTEMBER	7/8 LZ CW	OCTOBER	II/I2 VK/ZL/OC CW
SEPTEMBER	I3/I4 WAE DC SSB	OCTOBER	II/I2 ARCI QRP CW
SEPTEMBER	20/2I SAC CW	OCTOBER	I9/20 RSGB 2I MHZ CW

NOVEMBER	I/2 HA QRP CW
NOVEMBER	I5/I6 OCEANIA QRP CW
NOVEMBER	29/I CQ WW DX CW

WQF UPDATE

Ted Leca Nr II reports that as our WQF delegate he has at last found out who is the present secretary of the WQF, Ted has written to them and hopefully will be able to furnish a WQF report in the next issue. WE are gratefull to the G.QRP CLUB management for this information, and for the clarification in useing articles from SPRAT in our own LO-KEY, that is, we mention its source together with the symbol (C).

INVITATION

The Editor will be pleased to hear from members with any information that will be of of interest to other members, let's hear about that bit of QRP DX that you have worked lately, I know that there is not a great deal about, but that makes it all the more interesting, and the contact time and freq. is valuable information to. Why not join me if possible on I4.060 around 0630Z I'm there most days and almost always on the weekends. QRP/QRP contacts can still be enjoyed, but you must have a positive attitude, a bit of ESP is helpfull to. June I3th at 0542Z K9EIJ 4-5-9 both ways and 2I June at 0500Z BOB W6SKQ member no. 67 5-5-9 both ways, also at 0600Z KA7CZG 5-5-9, all QRP both ways, O BOY I still get as excited as a dog with two tails when I hear that QRP station come back. Come on: give it a go ' Come wag your tail with me ".

BITS AND PIECES

LOOK

From... President Len O'Donnell (1)VK5ZF

CLUB QRP RECORDS

As the Awards/Contests Manager for the Club, I am anxious to establish a list of the greatest distances worked by any Club Member, using QRP (5 watts max.) and the CW mode, on any allocated frequency in the Amateur Service. The purpose behind compiling this information is to regularly update it in Lo-Key, as a point of inter -est and discussion amongst Members, and secondly to use it, as PR material when advertising the Club's activities etc. To qualify for inclusion on the list, please send details of your greatest distances worked, on each and every band that you can. Only contacts made since you become a member of the Club are required. Details should include Date, Time, Frequency, Power Output used, RST both ways, Station contacted, and Mileage claimed. As the record is improved the list will be altored accordingly. Please send all details to the Awards/Contests Manager Len O'Donnell (1) VK5ZF/QRP.

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3.690

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A THANK YOU

I believe our Members would like to join me in taking this opportunity of saying thank you to, Rai (3) VK7VV our Secretary and Editor.
Kevin (43) VK5AKZ our Treasurer.
Ted (11) VK4BML our WQF Delegate.
Rod (28) VK6KRG our Technical Problem Advisor.

These Members have laboured quietly and very effectively, over the past 12 months, on behalf of the Members and the Club. All have seen fit to continue on in their positions. Thank you all very much indeed, your efforts are appreciated by the Members.

****

A RANDOM THOUGHT or WILL IT WORK

Turning over in my mind, ways and means of improving the quality of membership, I came up with the following thoughts. Would it be possible to implement a scheme whereby I could circulate copies of the QRP DX Club magazines that the Club receives. These magazines contain a good deal of general information on the DX QRP scene as well as considerable technical information such as Circuits, Ideas and Tips. To which could be added a number of loose QRP articles and Circuits that the Club comes by. This material could then be shared by the members, who could photocopy what circuits and articles etc that they may desire to do. We could end up with a very interesting and informative circulating book, doing the rounds of the members, in between issues of Lo-Key.

Now the question is how to make it work. Here is my solution to the problem. Members wishing to participate would have to inform me, and their names would be placed on a list. A copy of this list would be sent to all participating members. Each member on the list would be responsible to send on the book to the next member on the list. The only cost to the participating member, would be the postage to the next person on the list. Length of time to keep the book by each member would be, for a period of 1 week (maximum).

Each circuit the book travelled could be limited to 10 members, thus taking about 3 months to complete the trip.
There could be as many copies of the same material doing the rounds, as was deemed necessary to cover the number of participating members.
Do you think this scheme would work, and would you be interested in participating. Contact me on the air, or write me. If I get enough starters, I will put the idea into pratice.

Have You Signed Up
Any New Members
Lately?