DECEMBER 1990

ISSUE No. 28

LO-KEY

THE JOURNAL OF

THE CW OPERATORS QRP CLUB

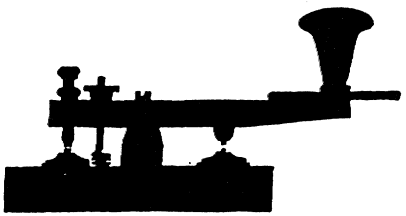
Promoting the Use of Low Power CW Mode Communication and Homebrewing in the Amateur Radio Service

==========

CONTENTS

==========

Seasons Greetings



==========

<<< HOLIDAY SCRAMBLE - SEE PAGE 18 >>>
<<< THU 10 JANUARY ON 20M >>>

==========

POSITIONS

EXECUTIVE COMMITTEE

ORGANISER
Max Brunger VK5OS #2
3 Durham Ave. LOCKLEYS SA 5032
Membership enquiries; suggestions; general concerning club business.

TREASURER
AND MEMBERSHIP SECRETARY
Kevin Zietz VK5AKZ #43
41 Tobruk Ave. ST MARYS SA 5042
Membership applications; subscriptions; other payments (except for kit-sets); requests for past issues of *Lo-Key*; other financial correspondence; changes of details such as address and call-sign.

EDITOR OF *LO-KEY*
AND KIT-SET ACTIVITY CO-ORDINATOR
Don Callow VK5AIL #75
5 Joyce St. GLENGOWRIE SA 5044
Contributions and ideas for *Lo-Key*; technical requests; kit-set & component orders & payments.

GENERAL INFORMATION

QRP CALLING FREQUENCIES
1815kHz 3530kHz 7030kHz 10106kHz
14060kHz 21060kHz 28060kHz

CLUB MEMBERSHIP SUBSCRIPTION
Due each January Australia $A10
New Zealand $A12 DX $A14

***LO-KEY* - THE CLUB JOURNAL**
Published quarterly - March June September December.
ARTICLES ALWAYS WELCOME
The Editor reserves the right to edit all material including letters sent for publication and to refuse acceptance of material without specifying a reason.

OTHER KEY POSITIONS

CW NET CONTROLLER
Ted Daniels VK2CWH/QRP #89
"CQ CW OPS/QRP de VK2CWH/QRP k"
QRP power is used - 5W maximum to ur antenna. Ted adjusts speed to suit the slowest operator in the Net.
ALL WELCOME, PARTICULARLY THE INEXPERIENCED AND NOVICES.
WEDNESDAY NIGHTS FROM 0945 UTC (Daylight Saving - 0830 UTC)
AT 3529KHZ or lower if QRM.

INFORMATION NET CONTROLLER
Max Brunger VK5OS #2. Call **"VK5OS"**
QRO SSB is used. Discussion is mainly social and technical.
CW stations: Call "BK de *call-sign*" to have your presence acknowledged.
MEMBERS AND VISITORS WARMLY WELCOMED. FRIDAY NIGHTS FROM 1030 UTC (Daylight saving - 0930 UTC) FIND US NEAR 3620KHZ.

CLUB STATION VK5BCW
Based at the RICHMOND SA QTH of Len O'Donnell VK5ZF #1.

AWARDS AND CONTESTS MANAGER
AND PUBLIC RELATIONS OFFICER
Ian Godsil VK3DID #112
9/492 Barkers Rd. EAST HAWTHORN Vic. 3123
Scramble logs; ideas about Club promotion & liaison with other Clubs.

PROJECTS OFFICER
Rod Green VK6KRG #28
4 Rothsay St. FORRESTFIELD WA 6058
Radio projects for **Lo-Key** & kit-sets.

THE BOOKSHOP
AND BOOMERANG CIRCUIT BOOK
Norm Lee VK5GI #139
25 Ralston St. NORTH ADELAIDE SA 5006
Magazine & book reviews; circulation of circuits and useful information.

Seasons Greetings to All Members ...

From Your Executive Committee

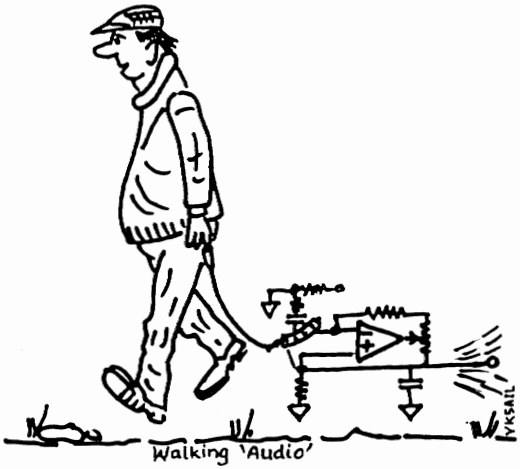
******* Max VK5OS #2 ***** Kevin VK5AKZ #43 ***** Don VK5AIL #75 *******

ORGANISER'S OFFERINGS

By Max VK5OS #2

And so we come to the end of yet another vexing year, some would say. Perhaps it is the gentle side of my nature (?) which makes me retreat from the doom and gloom merchants who assail us from all sides, to while away the moments seeking new horizons in CW QRP. Reg. (VK3BPG #7) of course will not believe this and, gentle reader, he is nearly right.

Most of my time in the shack is spent playing at building test gear, ATU's, and whatever gadgetry captures my imagination. Some work, some fail, all give me pleasure, and that is what homebrewing is all about, in my view.



I do have black-box capacity, as you can check most Friday nights on SSB if you so desire, and 2 metres FM is in the locker, but the ancillary bits are the prime interest.

Do you have a pet filter which is the filter to end all filters; share it with us, no need to type up the details of construction and tuning - hand-written will do, as *Ye Ed.* will do a 'you beaut' job of setting it up like a bought one. One point, though, if there are "hard to find" special components, include a tip on how you over-came the problem -- so many of us would like to build a circuit, but find the heart of it is a special bit obtainable only at one importer ! If you know that, please include the knowledge.

Of course, in most cases, the real fun is scrounging through the collection gathering dust because it's too good to throw away; *prove it and use it.*

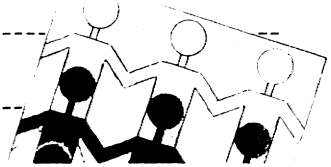
That's all the revving-up for now; enjoy the festive season, well but wisely, and I hope to hear you ALL in 1991, in one Scramble or another.

73, from Max VK5OS #2

p.s. During the Daylight Saving period this year I have been starting the Friday Info. Net at the same local time i.e. at 0930 UTC in lieu of 1030 UTC.

CLUBTIVITIES

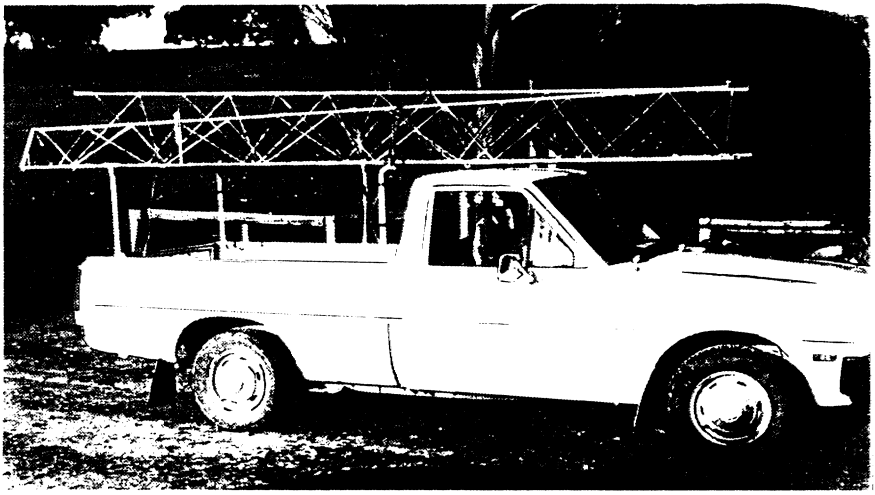
By Don VK5AIL #75



**** WELCOME TO NEW MEMBERS ! ****

We have 8 new Members to add to the list in this issue. *Welcome aboard* and please 'help the cause' by letting others know about the CW OPERATORS QRP CLUB - *they* may be able to benefit from joining, too.

#	CALLSIGN	NAME	QTH	
211	VK6BER	Martin Reece	Thornlie	Western Australia
212	VK3UG	Rodney Champness	Benalla	Victoria
213	VK6BFE	Graham Chambers	Scarborough	Western Australia
214	VK3WRB	Richard Wallach	Doncaster East	Victoria
215	VK3VAG	Jim Reid	Ballarat	Victoria
216	VK2FKU	Warren Rogan	Drummoyne	New South Wales
217	VK2FKE	Bill Scovell	Daleys Point	New South Wales
218	VK4AAD	Ian Campbell	Forest Glade	Queensland



***** UTE MOBILE ? *****

Has **Jeff VK5BJF #57** installed a telescopic full wave antenna for 80 metres on the back of his utility ? ***No***, he was just delivering a homebrew tower to another amateur. Jeff builds them in two (or three) 4.5m sections for easy transport and handling. We will see if a certain member at Smithfield S.A. will do a 'road test' of his new tower !

***** BEAUT <u>AND</u> MOBILE *****

Early in October **Lorenz #177** wrote to say that in the last six months his wife had a son and they sold their business and moved to a new location. Yes, babies *are* beaut. (Also, there's nothing like a move to stir up the junk box, is there ?)

Congratulations to Liani and Lorenz on a *FB* piece of homebrewing.

(Continued opposite)

HAMFEST 90 REPORT

By Peter VK6BWI #66

The NCRG Hamfest has become WA's premier Amateur Radio event. Amateurs from miles around make the annual pilgrimage to Carine TAFE College to meet old friends, buy and sell equipment and to view club displays.

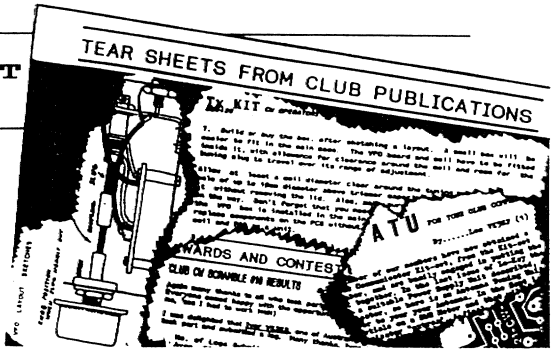
This is an ideal opportunity to promote the CW Ops Club and its activities.

We had eight small school desks to mount our display which included the following:-

Club Communicator 80m Tx
Forrestfield 15m Tx
DC86 **VK3XU** Rx
Flexi-Sudden set up for 20m
Keyer and paddle
Test equipment
QRP QSL cards.

VK6XC Ben's keyer and paddle attracted much interest, thus proving the value of an interactive display with buttons to push rather than a dry static show of equipment.

The *Communicator* was fired up along with **VK3XU Drew's** 80m Rx. We also had the *Forrestfield* opened up for exhibition. Its PA attracted much interest, so **Rod VK6KRG** is certainly on a winner.



Most of the literature sent over by Don VK5AIL was eagerly accepted; we only gave out brochures to those genuinely interested. Past copies of *Lo-Key* were also shown.

In conclusion, I thank the following for their efforts in promoting the Club:- **Rod VK6KRG #28, Ben VK6XC #147, Peter VK6KHZ #80 and Don VK5AIL #75.**

73 *Peter* **VK6BWI #66**

::

MANY THANKS TO THE VK6 TEAM FOR A FB EFFORT and to Peter for sending in the report.

This is the second time we have been successfully represented 'face to face' at this annual event run by the Northern Corridor Radio Group. This initiative is good for recruiting new members and boosting our profile by bringing the Club to the attention of other Amateurs.

Clubtivities (continued from opposite)

***** MOBILE TO NZ *****

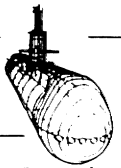
Gilbert ZL1ATN ex VK3FGL has moved to that dipole-shaped QTH on the other (East) side of the Tasman Sea. Good luck Gilbert !

***** Q. - WHAT'S IN A NAME ? *****

A. - PLENTY, as **Reg VK3BPG #7** found out when **Max VK5OS #2** chided him for writing "hope Rhonda is well", or similar, in a recent letter. Max is still trying to convince his XYL *Roma* that Reg just 'got it wrong' !

KEVIN'S KOMMENTS

By Kevin VK5AKZ #43, Treasurer and membership secretary



CORRESPONDENCE - I apologise for being even slower than usual with replies to correspondence. Things have been more hectic than usual at my QTH and they recently got worse - as well as 'hitting the pocket'. I'm now further behind and finding it hard to keep up let alone *katch* (oops - catch !) up. So a big effort is due !

RECORDS - Another big task which is about to start is the re-arrangement of Club computer files, which involves a new system with a back-up so we can retrieve data and operate from another machine if necessary. Lack of this facility has been a concern for several years.

NEW MEMBERS - After a bit of a hold up the system of sending new members a Club brochure plus membership list and *Lo-Key* index, along with the receipt for fees, is now in operation.

MEMBERSHIP SUBS - Last but not least, subs are due again. All the details are printed on your account. If the amount you are due to pay is not the standard annual figure it probably means you have paid in advance or joined part way through the year. The subs figure is only a small amount, so it's better to pay it early rather than leave it and maybe overlook paying - and perhaps have a hitch in getting *Lo-Key* sometime next year.

DON'T KEEP IT A SECRET - If you are changing address please notify me (or Max VK5OS or Don VK5AIL) as soon as possible, preferably before you move to the new QTH. If you do not do this we will only have your old, incorrect address. This means your *Lo-Key* will go to the wrong place, so: VK members, if yours doesn't arrive within four weeks of the usual delivery date please let us know, with your correct address.

Best 73 and Seasons greetings,

Kevin VK5AKZ

CW NET NEWS

By Ted VK2CWH #89

*** 0830 UTC START FOR CW NET*
*** UNTIL END OF DAYLIGHT SAVING*

Very little to report on the Net this time. Maybe I'm to blame for the drop off in starters since daylight saving started, because I have been calling *an hour earlier* at 0830 UTC - it quite slipped my mind when in the September issue - sorry about that ! I will keep to this amended starting time for the duration of Daylight Saving time.

QRN has been bad through November to date and only have had a couple of VK2's check in. We should do better now.

73 Ted VK2CWH

FROM THE EDITOR'S DESK

By Don VK5AIL #75
5 Joyce St., Glengowrie, SA 5044 (Telephone [08] 295 8112 - home)

**** Flexi-Sudden Correction ****

Sack the typist ! The Band Table on page 8 of *Lo-Key* #25 March 1990 should be changed to show 0.25mm wire instead of 0.125mm. This applies to 18MHz and higher frequencies, which have only a few turns on the toroids L1 and L2. Thicker wire is more rigid and therefore less likely to allow variations in band-pass filter performance. Tnx **Len VK5ZF #1** for querying the figure printed.

**** AWARD FOR BEST TECHNICAL ARTICLE ****

Well, due to lack of time and space this has been deferred until next issue, but everything is under control and we will part with the prizes. The results will be announced in March 1991 *Lo-Key*.

p.s. *Message to all members*: It is now quite safe to send in those articles you thought were not 'of competition standard'. (Hi !)

**** THANKS TO CONTRIBUTORS ****

This journal is the sum of INPUT from a number of people and EFFORT of those who produce it. The input from contributors is crucial to the success of *Lo-Key*, so ***thanks*** to all those who have sent in items either as articles or as comments in letters (that maybe you didn't think would re-appear in print !) I have extracts from these letters saved up for next issue.

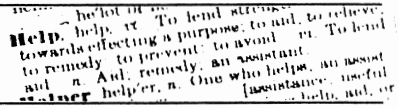
**** NEXT ISSUE ***

Next issue will contain the updated index of *Lo-Key* and many pages that were prepared for this issue but could not be fitted in, because we are sticking with the 28 page limit to keep postage costs down.

73, Don VK5AIL #75

U CAN HELP !

Edited by Don VK5AIL #75



*** **Leith VK5LG #154** rang in mid November to say that this column *really does work*. In *Lo-Key* #27 Leith sought a design for a simple paddle and/or help to obtain a Galbraith key. **Bob VK2DRL #194** was able to help with both, by providing a design which Leith has successfully built (and modified to improve its detailed construction); also by kindly assisting to obtain the Galbraith paddle. In a future issue we will print some notes Leith has provided on his mods.

*** In this column in September (page 26) I mentioned that **Basil VK2AW #180** had written about the latest receiver he is experimenting with. Basil suggested that we obtain some Amidon toroids for members (which we now have) and also sent some notes about his experiences with receivers. These will appear next issue in a column called **Receiver Notes**. This issue we have some information promised earlier by **Peter VK2EPD #144**.

(Continued on page 17)

HAVING FUN WITH CODE

A report on the Castle Hill JOTA activity from Bob VK2DRL (124)

I spent most of the Saturday of the JOTA (Jamboree Of The Air) weekend helping in the Morse code demonstration organised by Ian VK2ZIO as part of the Castle Hill Amateur Radio Club JOTA activities. I have set down a few notes on the demonstration in the hope that other club members who have been involved in similar activities, or in teaching the code, might comment and recount their own methods and experiences.

The JOTA activities were attended by Gumnuts, Brownies, Guides, Rangers, Cubs, Scouts and Venturers. For convenience, and perhaps at some risk to myself, these young people are collectively referred to as "Scouts".

The simple equipment necessary to the activity consisted of a key, an audio oscillator and a radio amateur to demonstrate the code.

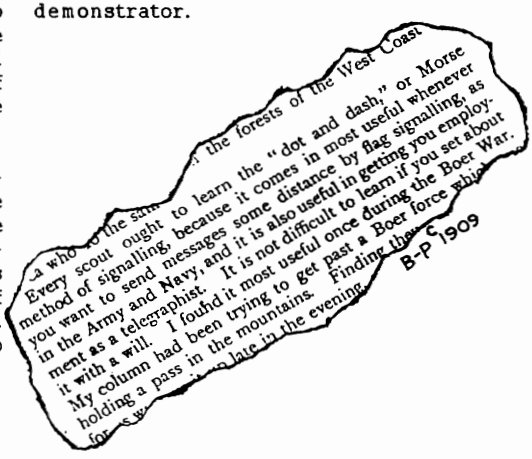
Young people do not respond well to situations in which they are passive, so it was important to have the Scouts participate actively in the demonstration. The aim was not to teach the code, but to introduce the code in a way that the Scouts would finish the activity with a sense of achievement and a positive attitude to the code.

The demonstration was on a one-to-one basis, the Scout seated beside the demonstrator. The procedure was to greet the youngster and assure him or her that the code is really very simple. It consists of only two parts, "di" and "dah". Some Scouts already knew the two elements as a "short" and a "long".

After having been shown how to sound "di" and "dah", the Scout would try out the exercise of sending a series of alternating "di's" and "dah's". This exercise was excellent for helping the youngster to adjust the lengths of the "di" and "dah".

Next, the Scout would be told that he or she would be taught the letters "e, i, s, h" and "t, m, o". First, "e" as "di" then "i" as "di" "dit". Most Scouts could then correctly guess "s" and "h" and would have little difficulty in sending and distinguishing these letters.

"T, m, o" would then be tackled in the same manner. Finally, the Scout's christian name would be written down and the extra letters, rarely more than two, needed to render the name into code introduced. If more than two extra letters were needed, it was best to work with the Scout's initials rather than the name. The Scout could then spell out his or her name (or initials) in code and could usually recognise most of the letters of his or her name when sent slowly by the demonstrator.



The time taken was about 4 to 5 minutes per Scout: restricting the time ensured that the concentration of even the youngest Gumnut did not falter and allowed for a through-put of around 12 Scouts per hour.

The young people really enjoyed this method of Morse code introduction and delighted in sending and recognising simple words. The Scout leaders also were anxious to try-out the code. Morse code is one of the skills which may contribute to a Scout "Communications" Badge and some of the leaders have the task of teaching Morse to their Scouts. These leaders were interested in the "letter group" method of learning the code, i.e. "eish", "tmo", "auv", "ndb", "awj", etc. Some lively discussions developed on the use of the code in Amateur Radio communication.

Mention must be made of the popular construction activity organised and run by Ian VK2ZIO. This activity consisted of a kit of parts for a simple Morse key which could be assembled immediately by the Scouts. The key was made from a strip of aluminium screwed to a prepared wooden base. Closing the circuit could be done by pressing the free end of the aluminium strip to contact a screw fixed in the base. Using the "AA" cell and LED supplied in the kit, the Scouts constructed simple light senders as part of the activity.

This report was inspired by the enthusiasm of the Venturers, Scouts, Cubs, Rangers, Guides, Brownies and Gumnuts who participated in the activity. Perhaps there are other club members who have run similar demonstrations and who could comment on their experiences ?

. o 0 o .

(Editor's Note: Bob submitted this article on diskette, which is very convenient for me. If *you* have a fairly lengthy article and can produce an IBM compatible ASCII file or other reasonably commonplace word processor format why don't you try it ? (I could return the diskette with the current *Lo-Key* index on it.)

CASTLE HILL AMATEUR RADIO CLUB - JOTA 1990
HOW TO ASSEMBLE YOUR LED FLASHER

1. Take the wooden baseboard. Cut out the paper diagram.

2. Glue the paper onto the wood.

3. Ask the assistants to drill the 3 holes required.

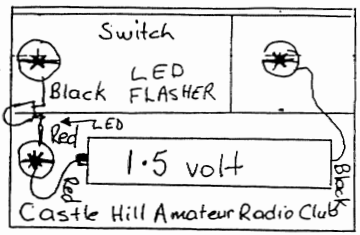
4. Mount the two screws, complete with washers, at the left hand end.

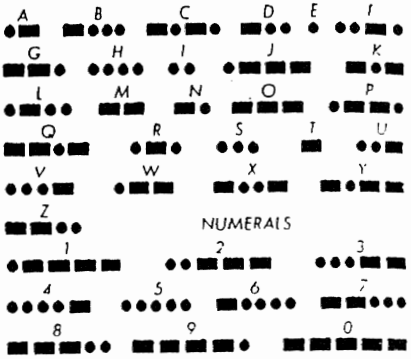
5. Ask for your aluminium "switch". Screw this down using a screw and washer, at the right hand end.

6. Mount the battery and led light. Make sure the colours are the same as those on your paper plan.

7. Test your flasher. Ask for help if you have trouble.

8. The flasher works best at night or in a dark room. The most light comes directly off the end of the LED.





CIRCUITS AND SHORTCUITS

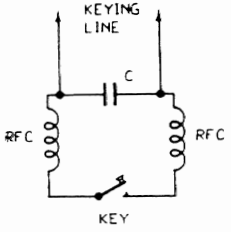
Edited by Don VK5AIL

*** **Wes VK2MIR #162** writes: "Here is a circuit I use on my key which may be of interest to other members. It comes from the ARRL Amateurs Handbook - Defense Edition 1942."

Here is the circuit and the original explanation - From more recent writings, there seems to be at least as many different opinions about the causes of key clicks as there are circuits for preventing them. You may have some comment on this circuit - or tell us what <u>you</u> use.

"KEY CLICK REDUCTION - RF filters

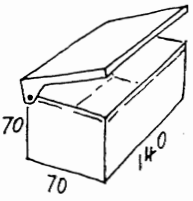
EASYFILE\CLICK.PCB



A spark at the key contacts, even though minute, will cause a damped oscillation to be set up in the keying circuit which may modulate the transmitter output or may simply be radiated by the wiring to the key.. Interference from this source is usually confined to the immediate vicinity of the transmitter, and is similar in nature and effects to the click which is frequently heard in a receiver when an electric light is turned on or off. It can be minimized by isolating the key from the wiring by means of a low-pass filter, which usually consists of an RF choke in each key lead, placed as close as possible to the key, bypassed on the keying-line side by a condenser, as shown. Suitable values must be determined by experiment. Choke values may range from 2.5 to 80mH, and condenser capacities from 0.001 to 0.1uF.

This type of filter is required in nearly every keying installation, in addition to lag circuits . . . ."

*** **Lorenz #177** tells of his experiences building the *Flexi-Sudden* receiver: ". . . I was quite stunned about its performance. I built it in an old Ferrero box, the one with the hinged top, fitted with a LED it looks great and the practical "*FLAP-TOP*" makes changing the frequency modules very easy. Holes can be melted in with a drill *(yuk)*). Connected to a 21m dipole it gave excellent reception . . . . I could hear even VK7 stations."



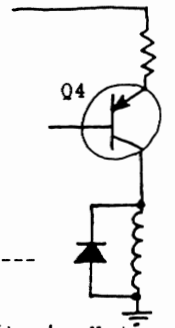
Editor's Note: Buy some Ferrero Rocher truffles, which come in a clear, somewhat brittle, plastic box. It's a change from those Keen's mustard and curry tins you've been collecting for VFOs, though a little more expensive. Certainly tastier than **VK7FN Neil's** corned beef for his *Sudden* Rx case. Your XYL/OM can have at least half of the contents, which should score a rare Domestic Relations Improvement Point (DRIP) for the amateur radio hobby.
Any better ideas for QRP cases ?

*** **Low value capacitances** *** can be measured by putting (or switching in) another capacitance across the terminals of your capacitance meter. Some of the digital meters do not give a satisfactory reading below 10 or 20pF. So if you have a 5pF capacitor and wish to know its actual value, just put a higher value across the terminals, take the reading, then add the unknown and take another reading. Of course the figure you want is the difference between the two readings.

JUST WHEN YOU THOUGHT IT WAS SAFE TO SCREW DOWN THE LID ON THE EA KEYER ... **Stan VK2KSD #165** has come up with some more ideas:

"I have completed the EA keyer, but am now waiting to get a suitable paddle. (EA78 article *Lo-Key* #22 page 8; circuit on pages 14 & 15.) Mine has circuit mods as follows:

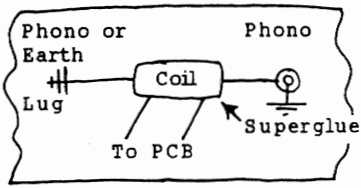
Change R10 from 470R to 22R.
Change Q4 from 2N5401 to BC558 or BC557 (higher V_c).



Editor's Note - This mod allows keying of Tx such as *Club Communicator*, which only requires the key to connect the line to ground.

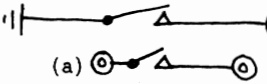
REAR METAL PANEL -

Keep RF out of box !
Will key xtnal system.

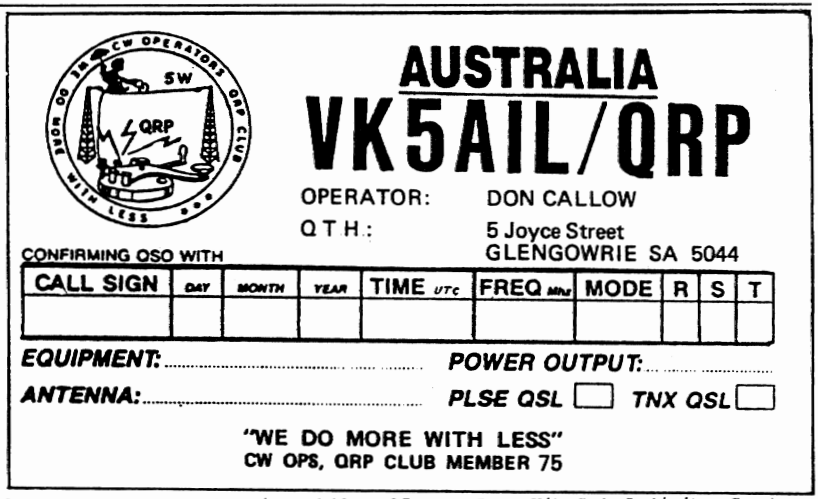


Also - changed L/S volume control to 100R to suit a 15 Ohm L/S.

DSE mini reed S1948
(or better 25mm R/Switch !)



Alternative Suggestions - (a) Use a second phone socket for insulated keying line; twin screened audio plus 2 RCA plugs (see lower sketch). (b) Try touch pad in lieu of Galbraith."



Draft of **SAMPLE QSL CARD LAYOUT** Size: 140 x 85mm See *Kit-Set Activity Centre*

AWARDS AND CONTESTS

By Ian VK3DID #112 9/492 Barkers Rd., East Hawthorn Victoria 3123

The other day I fired up my QRP rig for the first time in several weeks. 80 metres was rotten (and I mean rotten) with QRN; but I called and managed several conatacts at reasonable strengths. I never cease to be amazed at how little power is needed in order to make successful contacts.

Do my fellow Club members agree with this? The Scrambles would prove it so, I believe, so I must record my disappointment at receiving only four logs for Scramble 13. This was a split-round Scramble to try and make things more interesting. Yet, only the faithful few seemed to be around.

We really would like to hear all of you taking part and sending your logs along. This is Commitment -- the determination to use our ability at CW and to enable the Club to succeed. The Scrambles and weekly Nets are excellent times for showing your support.

I believe that Scrambles should be on various bands, that there should be a strong QRP presence in other contests (RD, CQWW, etc) and that QRP simply means winding down your power to 3 - 5 watts -- not getting on air only if you have an home-brew rig for that band.

The Committee welcomes all ideas for the successful running of our Club and if you have ideas please write to Max or me at our respective addresses. Anyone with packet facilities may also leave messages for me on the VK3FRS BBS.

RESULTS OF SCRAMBLE 13

1	VK2DQR/QRP	Ron	96 points
2	VK4LA/QRP	Glyn	48 points
3	VK3DID/QRP	Ian	34 points
4	VK2AW/QRP	Basil	16 points

Congratulations to everyone, especially newcomer Glyn in Biloela, CQ. Please don't let it rest there. Make a new year resolution to join in in 1991 and meet other Club members.

See opposite for details of ***SCRAMBLE #14*** → → →

Christmas and New Year greetings to all and good QRP CWing.

****

*** SCRAMBLE #14 - Let's Try 20m ***

****

The Holiday (if you're lucky) Scramble for the March Quarter is:

SCRAM-BLE NBR	DAY	DATE	BAND	SUGGESTED FREQUENCY RANGE	TIMES
#14	Thu	10 January 1991	20m	14060 +/- 10	1000 - 1200 UTC

Don't forget that in most VK areas daylight saving time will still apply.

Rules are much the same as previously - and everyone's aim is to get one more point than Ron VK2DQR ! Of course the real aim is to take part and enjoy yourself even if you are not a serious contender. Homebrew or similar equipment is preferred, but is not mandatory. Try a Scramble especially if you are not keen on contests - you will be pleasantly surprised.

RULES

OBJECT: To score maximum points in Scramble #14 by working as many CW stations as possible during the Scramble, on the band nominated.

DURATION/TIME: 2 Hours from 1000 UTC.

MODE: CW only. Club members to use QRP - 5W maximum output to antenna.

CALL: No control station to check into, JUST COME UP, START CALLING AND ENJOY YOURSELF. The call to use is CQ QRP TEST and Members should use the /QRP suffix. There is no need to exchange serial numbers.

SCORING: QRO VK 1 point QRO DX 5 pts
QRP VK 5 points QRP DX 15 pts

ENTRIES: Send log extracts to me *without delay* please. Just show time of contact (UTC), callsign of station worked and /QRP if it was a QRP station, name of operator (if you know it), signal reports given and received, and points claimed. Some info. about your rig or other comments would be of interest.

RESULTS: Results including names of certificate winners will appear in the March 1991 issue of *Lo-Key*.

****

*** COMING CONTESTS FOR CW'ERS ***

A search of recent issues of the WIA's *Amateur Radio* magazine did not turn up any contests with CW sections. This doesn't mean they do not exist, just that the Editor couldn't find 'em !

CW OPERATORS QRP CLUB - MEMBERSHIP LIST - 3 DECEMBER 1990

NBR	CALL	NAME	SURNAME	ADDRESS
60		Trevor	THOMAS	D.A.O.H.S South Coast Highway DENMARK WA 6333
174		Philip	McHUGH	P.O. Box 816 COOMA NSW 2630
187		Doug	RAPER	201 Macarthur St BALLAARAT VIC 3350
200		Qwintin	FOSTER	77 Church St BEAUMARIS VIC 3193
206		Alex	BERKUTA	117 Koona St ALBION PARK NSW 2527
177	SWL	Lorenz	ECKARD	15 Angus Cres KUREELPA QLD 4560
179	SWL	Wayne H.	HAYS	RSD 361 ULVERSTONE TAS 7315
163	VK1BL	Ted	GARNETT	GPO Box 1164 CANBERRA ACT 2601
121	VK2AGC/ VK5AGS	Garry	COTTLE	22 Johnston Road BASS HILL NSW 2197
5	VK2AKE	Jim	EDWARDS	P.O. Box 385 BOWRAL NSW 2576
210	VK2AOH	Nick	EICHHORN	20 Autumn St ORANGE NSW 2800
152	VK2ATJ	Thomas	KING	P.O. Box 140 KENSINGTON NSW 2033
180	VK2AW	Basil	DALE	27 Grandview Pde GOROKAN NSW 2263
32	VK2BBX	Bill	BALOGH	23 Bathurst Street LIVERPOOL NSW 2170
22	VK2BVH	Brian	HALPIN	5 Carramar Cres MIRANDA NSW 2228
161	VK2BWW	Bill	WATTS	P.O. Box 263 NAMBUCCA HEADS NSW 2448
16	VK2CBI	Ken	ELKINGTON	44 Boland Ave SPRINGWOOD NSW 2777
171	VK2CDO	Ype	TIMMER	BOX 18 BOWRAVILLE NSW 2449
11	VK2COH	Cec O.	HEALEY	121 Jamison Road PENRITH NSW 2750
102	VK2CSA	Warren	MARRIOTT	9 Darkwater Street GLADSTONE NSW 2440
36	VK2CVR	Vincent	ROBERTS	60 Edgar St FREDERICKTON NSW 2440
89	VK2CWH	Ted	DANIELS	Wombat Hole Bylong Rd RYLSTONE NSW 2849
159	VK2DCD	Maurie	CAMPS	Box 72 COLEAMBALLY NSW 2707
95	VK2DMV	Paul	IRELAND	81 Azalea Ave COFFS HARBOUR NSW 2450
192	VK2DN	John	HARPER	U72/7 Bandon Rd VINEYARD NSW 2765
127	VK2DQR	Ron	BANNERMAN	1 Thomas Hennessy Cr WEST KEMPSEY NSW 2440
124	VK2DRL	Bob	JOHNSON	19 Britannia Road CASTLE HILL NSW 2154
144	VK2EPD	Peter	CANNON	"BINALONG" FORBES NSW 2871
126	VK2ERA	Rob	ABEL	6 Laurel Street KOOTINGAL NSW 2352
173	VK2ETW	Trevor	WILKIN	BORONIA COONABARABRAN NSW 2357
35	VK2EXD	Col	McDOUGALL	"WOODLANDS" COOLAMON NSW 2701
133	VK2FEI	Greville	KNIGHT	28 Coppin St KALLANGUR QLD 4503
182	VK2FIZ	Alan V.	JAMES	424 Prune St LAVINGTON NSW 2641
73	VK2FJF	Phil	THOMPSON	LOT 23 Rifle Range Rd MS-5 DUBBO NSW 2830
217	VK2FKE	Bill	SCOVELL	DAILEYS POINT NSW
216	VK2FKU	Warren	ROGAN	34 Plunket St DRUMMOYNE NSW 2047
128	VK2FNF	Jim	MCNEILL	15 Pacific Street ANGOURIE VIA YAMBA NSW 2464
81	VK2FNJ	Jose	SIQUEIRA	63 Tanbark Circuit WERRINGTON DOWNS NSW 2750
166	VK2GJW	Jim	WATSON	Smiths Creek Road STOKERS SIDING NSW 2484
207	VK2JG	Noel	HILL	38 Kangaroo St LAWSON NSW 2783
156	VK2KB	Allen	FAIRHALL	7 Parkway Ave NEWCASTLE NSW 2300
186	VK2KNK	Alan	PEARCE	1/8A Gillies St WOLLSTONECRAFT NSW 2065
165	VK2KSD	Stan	DOGGER	Tunnel Road STOKERS SIDING NSW 2484
148	VK2LW	Les	GABORIT	347 MacQuarie Rd SPRINGWOOD NSW 2777
162	VK2MIR	Wes	TYLER	PO Box 43 WEST GOSFORD NSW 2250
202	VK2NBC	Doug	CHAFFEY	89 McClelland St CHESTERHILL NSW 2162
205	VK2PA	Peter	ALEXANDER	"NANDARI" Rollands Plains VIA TELEGRAPH POINT NSW 2441

CW OPERATORS QRP CLUB - MEMBERSHIP LIST - 3 DECEMBER 1990

NBR	CALL	NAME	SURNAME	ADDRESS
41	VK2QB	Leo	PINKEVITCH	20 Cathrine Street KOTARA SOUTH NSW 2289
30	VK2VBO	Brian	O'BRIEN	14 Belgrave Street NEUTRAL BAY NSW 2089
140	VK2VJD	John	DUNN	P.O. Box 69 SPRINGWOOD NSW 2777
142	VK2WAS	Bill	SHORT	129 Simkin Cres KOORINGAL WAGGA WAGGA NSW 2650
131	VK2YA	Rex	BLACK	562 Kooringal Road WAGGA WAGGA NSW 2650
116	VK2ZDW	David	WHEELER	50 Bridge Rd GLEBE NSW 2037
85	VK3ADX	Merv	QUINN	104 Lane Street BALLARAT VIC 3350
169	VK3AHU	Harvey	UTBER	P.O. Box 40 VIOLET TOWN VIC 3669
189	VK3AIQ	James	GLENN	32 Edith St HORSHAM VIC 3400
125	VK3ANP	David	WARING	Banksdale Road HANSONVILLE VIC 3675
150	VK3APH	Tony	GOLDSWORTHY	1522 Main Rd RESEARCH VIC 3095
175	VK3ASD	Don	SMITH	25 Devon St BOX HILL SOUTH VIC 3128
204	VK3AVH	Harold	TRIBE	20 Morotai St SORRENTO VIC 3943
20	VK3AYV	Howard	ANDERS	P.O. Box 197 MT WAVERLEY VIC 4020
111	VK3BBI	Bob	LUKES	22 Dorothy Street EAST BURWOOD VIC 3151
178	VK3BDH	David	DUNN	EAST BRIGHTON VIC 3187
82	VK3BGH	Graeme	HARRIS	9 Loma Street RINGWOOD EAST VIC 3135
97	VK3BMC	John	CARWARDINE	36 Barcelona Street BOX HILL VIC 3128
53	VK3BNC	Bob	TERRILL	7 Locksley St. WENDOUREE VIC 3355
7	VK3BPG	Reg	BEDFORD	45 Milne Street CRIB POINT VIC 3919
13	VK3BXA	Eric	IRVINE	P.O. THOONA VIC 3726
55	VK3BXG	Graeme	BROWN	RMB 8375 Pryor Rd DROUIN VIC 3818
114	VK3BYA	Derek	MC NIEL	17 Manning Rd MALVERN EAST VIC 3145
157	VK3BYW	Frederick	PIESSE	61 Munro St EAST KEW VIC 3102
33	VK3BZB	Jack	ELLIOTT	1 Colin Street ROSEBUD WEST VIC 3940
76	VK3CBO	Rod	ADAMS	C/O POST OFFICE KIEWA VIC 3691
19	VK3CGE	Neil	EMENY	1 Beaumont Crt MONTROSE VIC 3765
4	VK3CQ	Gilbert	GRIFFITH	7 Church Street BRIGHT VIC 3741
134	VK3CQK	Ralph	ROBERTSON	P.O. BOX 23 KYABRAM VIC 3620
199	VK3CTM	Tony	MORRIS	22 Boyd St BLACKBURN VIC 3130
123	VK3CUC	Ken	SHIELDS	47 Sullivan Street INGLEWOOD VIC 3517
12	VK3CVF	John A.	ELLIOTT	8 Queen Street ROSEDALE VIC 3847
39	VK3DGE	Garry	NEWTON	12 Bayliss Place VERMONT VIC 3133
168	VK3DGR	Graham	RUNCIMAN	P.O. Box 76 COLAC VIC 3250
112	VK3DID	Ian	GODSIL	9/492 Barkers Rd EAST HAWTHORN VIC 3123
110	VK3DJI	Joe	LESLIE	79 Mitchell Street BENTLEIGH VIC 3204
183	VK3DVB	Dave	ARCHER	41 Greville St HUNTINGDALE VIC 3166
47	VK3DXH	Lindsay	LaPOUPLE	2 Elgin St PASCOE VALE SOUTH VIC 3044
164	VK3ED	Geoff	BUTTERWORTH	Lot 4 Coburns Lane TOOLERN VALE VIC 3337
194	VK3EOP	Peter	GROVE	P.O. Box 255 CHADSTONE CENTRE VIC 3148
122	VK3HG	Trevor	STARRITT	"JENALAN" RMB 2340 TATURA VIC 3616
108	VK3JQ	Liz	RANDALL	P.O. BOX 378 RINGWOOD VIC 3134
6	VK3JY	Steve	PHILLIPS	37 Mangarra Rd CANTERBURY VIC 3126
151	VK3KID	Clive	MORGAN	57 Morris St TOOTGAROOK VIC 3941
93	VK3KRL	Simon	ANDERSON	12 Range Rd BURWOOD EAST VIC 3151
155	VK3PBM	Dave	TOMPKIN	P.O. Box 78 LARA VIC 3212
62	VK3PUC	Mark	JEFFREY	311 PEEL St Nth BALLARAT VIC 3350
176	VK3PUI	Ian L.	BOYD	P.O. Box 337 BALLARAT VIC 3350
212	VK3UG	Rodney	CHAMPNESS	17 Helms Crt BENALLA VIC 3672
215	VK3VAG	Jim	REID	301 Clarendon St BALLARAT VIC 3350
59	VK3VBR	Barry	RIDGEWAY	BOX 116 BEECHWORTH VIC 3747
24	VK3WQ	Marlene	BROWN	YARRAMBAT VIC 3091
214	VK3WRB	Richard	WALLACH	8 Whalley Crt DONCASTER EAST VIC 3109
49	VK3XU	Drew	DIAMOND	Lot 2 Gatters Rd WONGA PARK VIC 3115

CW OPERATORS QRP CLUB - MEMBERSHIP LIST - 3 DECEMBER 1990

NBR	CALL	NAME	SURNAME	ADDRESS
143	VK3ZF	George	COVENTRY	Happy Hollow Drive PLENTY VIC 3090
218	VK4AAD	Ian	CAMPBELL	FOREST GLADE QLD 4306
94	VK4ATZ	Ted	WALTON	U42/56 Miller Street KIPPA RING QLD 4020
45	VK4BIL	Bill	RAHMANN	28 Fontayne Street ASPLEY QLD 4034
44	VK4BSD	Stan	DEAN	380 St. Vincents Rd NUDGEE QLD 4014
193	VK4CRS	Chris	ROY-SMITH	14 Carige Crt BILOELA QLD 4715
120	VK4DWA	Marcelo	FRANCO	2/15 Lamington Tce NAMBOUR QLD 4560
130	VK4EV	Ron	EVERINGHAM	30 Hunter Street EVERTON PARK QLD 4053
99	VK4GH	Murray J.	YOUNG	36 Raintree Bvde. Little Mountain CALOUNDRA QLD 4551
190	VK4GOR	Dick	KEESHAN	P.O. BOX 21 SHERWOOD QLD 4075
203	VK4LA	Glyn	GIBBINGS-JOHNS	47 Bell St BILOELA QLD 4715
104	VK4LKF	Kerry	FIELDING	22 Ellis Street LAWNTON QLD 4501
113	VK4MUQ	Stanley	MARTIN 92	Clarke Street GARBUTT TOWNSVILLE QLD 4814
27	VK4NFE	Bob	NEVILLE	124 Roscommon Road BOONDALL QLD 4034
15	VK4RE	Roy	HILDRED	P.O. Box 387 TOOWOOMBA QLD 4350
14	VK4SF	Jack	FORD	222 Warwick Rd CHURCHILL IPSWICH QLD 4305
21	VK4VJT	Donald	STIELER	89 Rosemary St CABOOLTURE QLD 4510
167	VK5ABY	Barrie	BRICE	21 River Way FULHAM GARDENS SA 5024
181	VK5AFO	Dale	CAVIES	14 Liebelt Rd MT BARKER SA 5251
58	VK5AGP	Graham	PHILLIS	413 The Terrace PORT PIRIE SA 5540
75	VK5AIL	Don	CALLOW	5 Joyce Street GLENGOWRIE SA 5044
184	VK5AIM	Steve	MAHONY	19 Kentish Rd ELIZABETH DOWNS SA 5113
43	VK5AKZ	Kevin	ZIETZ	41 Tobruk Ave ST MARYS SA 5042
172	VK5AQ	Brenton	ZERBE	5 Chelmsford Gve SMITHFIELD SA 5114
8	VK5BA	Malcolm	HASKARD	Bassnet Rd ONE TREE HILL SA 5114
185	VK5BJE	John	DAWES	2 Angove Rd SOMERTON PARK SA 5044
57	VK5BJF	Jeff	WALLACE	Box 344 CLARE SA 5453
209	VK5BLS	Barry	SAMUEL	INGLE FARM SA 5098
170	VK5BVM	Mick	SCHMIDT	37 Arthur St PENOLA SA 5277
118	VK5FZ	Jack	BURKE	25 La Perouse Ave FLINDERS PARK SA 5025
139	VK5GI	Norm	LEE	25 Ralston Street NORTH ADELAIDE 5006
154	VK5LG	Leith	COTTON	64 Weroona Ave PARKHOLME SA 5043
196	VK5NLY	Graham	LOCK	27 Tumut Dr MT GAMBIER SA 5290
2	VK5OS	Max	BRUNGER	3 Durham Ave LOCKLEYS SA 5032
145	VK5PAS	Brian	COOPER	128 Queen Street PETERBOROUGH SA 5422
1	VK5ZF	Len	O'DONNELL	33 Lucas Street RICHMOND SA 5033
54	VK6ATM	Terry	MAITLAND	P.O. Box 88 WYALKATCHEM WA 6485
211	VK6BER	Martin	REECE	8 Koel Way THORNLIE WA 6108
213	VK6BFE	Graham	CHAMBERS	7/17 Stanley St SCARBOROUGH WA 6019
66	VK6BWI	Peter	PARKER	14 Marquis St BENTLEY WA 6102
25	VK6KC	Keith	WILLIAMS	6 Shelton St WAIKIKI WA 6169
80	VK6KHZ	Peter	SCALES	P.O. Box 1268 MIDLAND WA 6056
28	VK6KRG	Rod	GREEN	4 Rothsay Street FORRESTFIELD WA 6058
191	VK6LT	Bill	TOUSSAINT	9 Desford Close SHELLEY WA 6155
103	VK6MX	Warren	MEAD	347 Serpentine Rd ALBANY WA 6330
61	VK6SA	REV	SUTER	BOX 261 MANDURAH WA 6210
147	VK6XC	Ben	KOH	13 Sovereign Plce FORRESTFIELD WA 6058
195	VK7AAZ	Andy	FRENCH	11 Harrisson St SMITHTON TAS 7330
65	VK7AJ	L.	WILLIAMS	19 Gloucester St LAUNCESTON TAS 7250
26	VK7FN	Neil	FITZPATRICK	P.O. Box 246 PENGUIN TAS 7316
40	VK7JK	John	ROGERS	1 Darville Crt BLACKMANS BAY TAS 7152
38	VK7KBA	Arthur	BLACKWELL	"FAIRVIEW" Elderslie Rd BRIGHTON TAS 7030
37	VK7NRE	Bob	EDWARDS	205 Davey Street HOBART TAS 7000
48	VK7NXA	Stuart	BEAN	9 Sussex Street GLENORCHY TAS 7010

CW OPERATORS QRP CLUB - MEMBERSHIP LIST - 3 DECEMBER 1990

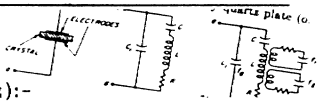
NBR	CALL	NAME	SURNAME	ADDRESS
3	VK7VV	Rai	TAYLOR	Lot 2 Daniels Rd MAGRA 7140
69	VK7ZD	Graham	RANFT	DAL SEGNO Millvale Rd DROMEDARY TAS 7030
91	VK8CW	Ian	SMITH	P.O. Box 4756 DARWIN 0801
96	G3RJV	Rev.George	DOBBS	498 Manchester Road ROCHDALE LANGS OL11 3HE ENGLAND
50	G8PG/ GW8PG	Gus	TAYLOR	37 Pickerville Road GREASBY MERSEYSIDE L49 3ND ENGLAND
201	K5VOL	Red	REYNOLDS	835 Surryse Rd LAKE ZURICH IL 60047 U.S.A.
197	K9PNG	James	JONES	615 N. Benton St PALATINE I.L. 60067 U.S.A.
78	KV7X	Jay	STURDIVANT	P.O. BOX 3027 BELLINGHAM WASHINGTON 98227 USA
107	KZ1L	Andrew	MORRISON	2 Joan Street PEPPERELL MA 01463 USA
71	NW6F/ XE2IM	Bob	JACOBS	APDO 73 MULEGE BAJA CFA. SUR MEXICO
52	P29IL	Ian	LESLIE	P.O. Box 175 GOROKA EASTERN HIGHLANDS PROVINCE PAPUA NEW GUINEA
132	PA3ELD	Jan	VISSER	Wethow Der In't Veldstraat 28 1107BJ AMSTERDAM HOLLAND
9	W3TS	Mike	MICHAEL	P.O. Box 593 CHURCH LANE HALIFAX PA 17032- 0593 USA
31	W5QJM	Fred	BONAVITA	P.O. Box 2764 SAN ANTONIO TEXAS 78299- 2764 USA
67	W6SKQ	Bob	SPIDELL	45020 N. Camolin Ave LANCASTER CALIFORNIA 93534 USA
18	WA2YMW	Bill	BREARE	P.O. Box 867 HICKSVILLE N.Y. 11802 USA
106	WB0NQM	Richard	LUCAS	412 Cattleman Ct. LAWRENCE KANSAS 66044 USA
101	WB8ZWW	Wayne	WATSON	706 Torrence SPRINGFIELD OHIO 45503 USA
17	WF6U	Hollis	BUTTON	1025 Parr Ave CAMPBELL C.A. 95008 USA
198	WF9J	Richard	TIDBERG	3751 N. Hoisington Rd WINNEBAGO IL 61088 U.S.A.
188	ZL1ATN	Gilbert	LONG	3/16 Commodore Drive LYNFIELD AUCKLAND NEW ZEALAND
34	ZL1ATW	Matt	MEENAGH	223 TE Tomo St TE AWAMUTU NEW ZEALAND
208	ZL1AWZ	T.	LEITCH	38 David St MOLRINSVILLE NEW ZEALAND
29	ZL1BYY	George	CARTWRIGHT	6 Haycock Ave MT ROSKILL AUCKLAND NEW ZEALAND

U Can Help ! (Continued from page 7)

*** C.C. + EA78 = ? If you have used the *EA78* keyer (*Lo-Key* #22 p.8, #23 p.26 & #24 p.27) with the *Club Communicator* CW Tx please let me know as one or two members, including **Bill VK4MUQ #113**, have queried this. There seems no reason why it would not work well. See page 11.

The *Club Communicator* circuit (*Lo-Key* #14 p.21) only requires the key to complete a circuit to ground, on Key Down, which is quite simple. Maybe try a relay on the EA78 output. Please let us know of your experiences (or ideas) and if there are any suggested circuit alterations etc.

EQRPMENT BUY-AND-SELL



Crystals for sale on the following frequencies (in kHz):-
1 805 3 510 3 530 7 027 7 032 14 045 14 055.8 21 130
Price $12 each plus postage. Contact Jeff VK5BJF #57 QTHR Ph.(088) 42 2085

The Forrestfield 21MHz Tx - Part 7 - Relay Board

By Rod VK6KRG #28 and Don VK5AIL #75

INTRODUCTION

This part covers the Relay Board (RLA) and the Transmit/Receive (T/R) switch. Also, see Basic Circuit Description in Part 1 of the series, which also included a block diagram with the basic connections.

As usual, reference to +12V means the nominal supply voltage, which should be in the range 12 to 14V DC - ideal voltage is +13.8V.

DESCRIPTION

See Fig. 24 - RLA Circuit Diagram and Fig. 25 - T/R Switch Wiring.

The Relay Board is designed only to swap the antenna connection between the receiver and the transmitter, depending on the T-R switch position.

This board can be used in other rigs and the design is easily changed for other voltages. It has been used in another transmitter with additional components to provide an automatic antenna switcher. The 12V (nominal) control voltage can be provided automatically to give break-in (QSK) operation. Where this would upset the shaping or would be difficult to arrange, as in this RLA board, then a manual T/R switch is required.

There is not much more that can be said about this board except that when +12V DC is applied to the INPUT FROM T/R SWITCH,RL1 operates connecting the transmitter's PA to the antenna. RL2 is released. When 0 Volts is applied to the input RL1 releases and RL2 operates, causing the antenna to connect to the station receiver, via an external coax cable.

The 4049 CMOS IC has a number of inverters connected so that the outputs which go to the two reed relays are opposite i.e. one is high when the other is low. This is easily seen by reference to the circuit diagram, remembering that the output of an inverter is high when the input is low and vice versa.

The T/R Switch has another function in addition to controlling the RLA. It controls the +12V to the 1 Watt Driver (DVR) stage such that during receive periods the +12V is disconnected from it. This prevents accidental transmitter keying during receive periods.

There is also a need to shift the output frequency of the VCO during receive periods to avoid you hearing it yourself when its signal blocks out weak stations. To do this we simply shift the VFO frequency around 10 or 20kHz off frequency using a relay-switched capacitor. The actual shift may vary considerably, according to values of component used.

See section 8 of Testing and Adjustment of the VFO (in Part 1).

If the VCO were to be switched off, the PLL would take about 3/4 second to lock after you switch back to transmit. Doing it as described earlier reduces the time to only about 1/4 second.

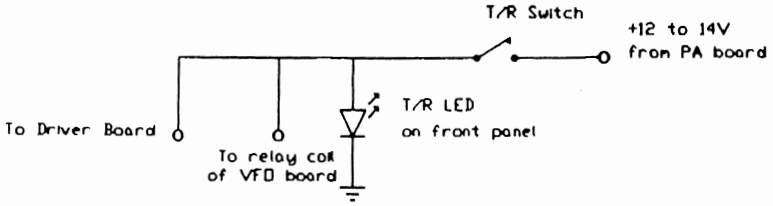


FIG. 25 - T/R SWITCH WIRING

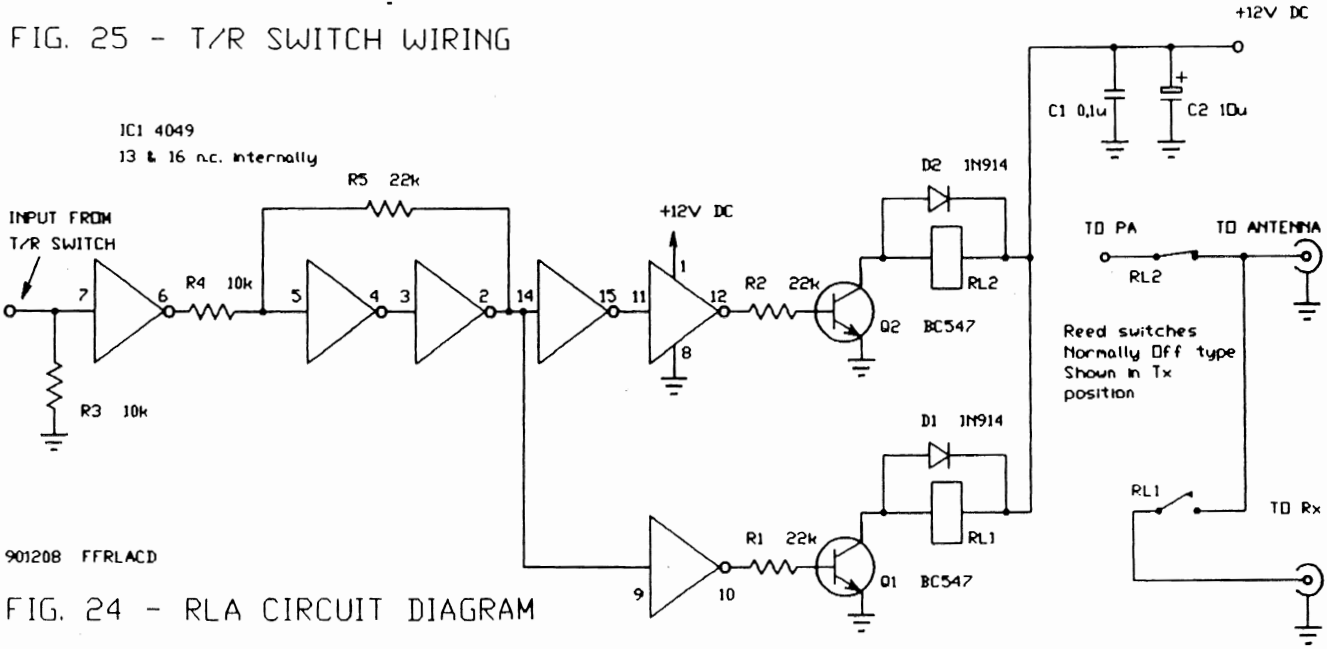


FIG. 24 - RLA CIRCUIT DIAGRAM

CONSTRUCTION HINTS

See Fig. 27 - RLA Parts Layout and Fig. 26 - RLA PCB Etching Pattern.

The usual precautions, given in previous parts of this series, apply for this double-sided PCB. Countersinking prevents non-earthed leads from fouling the ground plane. Take particular care with countersinking where leads enter at an angle. Make sure no countersinks are missing. Single-sided board could be used.

When the board is ready, protect it with a spray of circuit board lacquer of the 'solder through'.

Mount the larger components first e.g. relays. Use insulated wire for the link.

Be careful of static electricity when handling the 4049, even if the buffered variety (4049B) is used. Install it last - with the power off.

As mentioned on the Parts Layout drawing, the cathodes of diodes D1 and D2 are at the end away from the transistors. Don't get this wrong.

TESTING

1. Follow the same routine as for the previous boards i.e. test the RLA for resistance between the power rail and ground. The same can be done for the terminal INPUT FROM T/R SWITCH. There must be no short circuits.

2. Connect a suitable power supply to the terminal +12V DC and measure the resistance across the two reed switches. There should be open circuit between the points TO ANTENNA and TO PA i.e. RL1 should be open. RL2 should be closed, connecting TO ANTENNA with terminal which feeds the station receiver's antenna jack.

Current draw should be around 10 to 15mA, mainly depending on the coil resistance and the power supply voltage.

3. Now repeat, but with 12V also connected to INPUT FROM T/R SWITCH. RL1 should close and RL2 open, thus connecting the antenna to the PA, for transmitting.

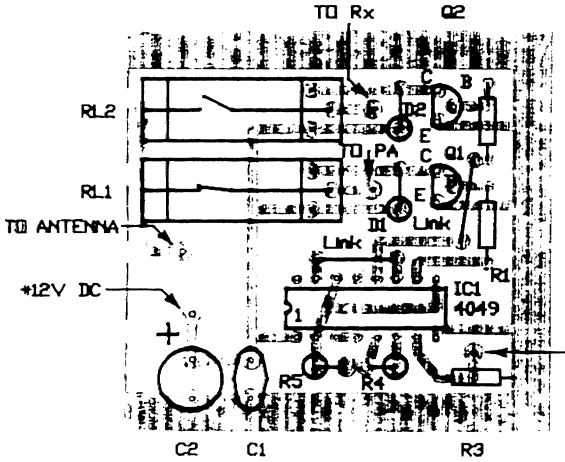


FIG. 27 - RLA PARTS LAYOUT

Shown in Tx mode

R2 901208 FFRLA

Diodes D1 & D2 mounted vertical with cathode against PCB

IC1 13 & 16 n.c. internally

INPUT FROM T/R SWITCH

RLA PARTS LIST

Resistors (1/4W)

R3 R4	10k	(brn-blk-org)
R1 R2 & R5	22k	(red-red-org)

Capacitors

C1	0.1uF	ceramic
C2	10uF	electrolytic 16V RB

Semiconductors

Q1 Q2	BC547 (npn)
D1 D2	1N914 or 1N4148 diode
IC1	4049 CMOS hex inverter buffer

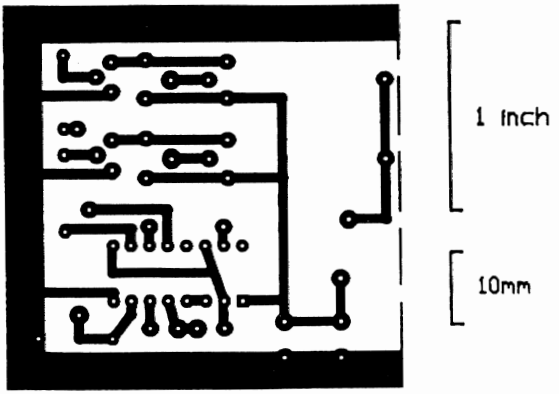


FIG. 26 – RLA PCB ETCHING PATTERN

Miscellaneous

1nbr	RLA PCB double-sided
RL1 RL2	Reed relay SPST 12V Tandy #275-233 or similar
2nbr	Stand-off set
1nbr	IC socket 16 pin

Now you can start thinking about cases, layouts and final wiring.
Until the next issue • ▬ ●●●

Kit-Set Activity (See page 26)

EXPLANATION OF TABLE ON PAGE 26

The prices listed below are per pack and apply to members within Australia. The 'Nbr in pck' column tells you how many units are in each pack. Prices may change at any time without notice. **PLEASE ADD $3.00 TO THE TOTAL VALUE OF YOUR ORDER, TO COVER POSTAGE AND PACKAGING ETC.** If outside Australia the actual P/P costs will be added.
The items are for the personal use of Club Members ONLY and you are responsible for all outcomes of their use.

'K' in number indicates a kit-set, usually short-form.
'N' means it is a new item on the list.
'D' means that a simple data sheet will be provided with each order.
'H' means that a set of insulated mounting hardware is included.

EARLY BIRD NET

By Don VK5AIL #75

Many thanks to **Brian VK5PAS #145** and **Rex VK2YA #131** who both provided information about the Early Bird Net, in response to the query in September *Lo-Key U Can Help !* column. I was thus able to contact **Colin VK3DEG** (QTH Bendigo) who had been instrumental in starting the net. Colin has assisted by reviewing the original draft of this article and sending additional information.

The Early Bird Net is recognised as one of the best-run nets for comprehensive 10 wpm CW practice. It provides CW receiving and *sending* practice for participants. Listeners are given 6 passages of Morse at 10 wpm, followed by a shorter period to test you out at around 15 - 20 wpm.

Colin believes that sending is equally as important as receiving and advises that in this respect supplementary 1-to-1 tuition can be arranged wherever it is needed and accepted. Referring to the poor standard of Morse heard at times on air, Colin says that "the Net exists to help wherever it is needed to help improve this situation".

Colin will provide free taping facilities for Morse practice tapes, on receipt of a blank tape (C60) and return postage.

The Net also offers two awards for personal achievement:

(1) A S.W.L. Award where the S.W.L. 'collects' 2 x 5 character groups which are sent during each morning net. 40 of these groups are logged, with date, and submitted to Colin with $1.50 in 10 cent stamps, after collecting them (the groups not the stamps !) over 6 months.

(2) There is also an 'Operators Award' - a 10 wpm receiving and sending test conducted over the air on a 1-to-1 basis by Colin VK3DEG, at any time (by mutual arrangement) - very similar to the D.O.T.C. tests.

The Net also gives ample opportunity for operators to send passages when they feel they are ready - no coercion ! Those who feel up to it are also given 'net control' opportunity and training.

The Early Bird Net operates six days a week, Monday to Saturday, on 3547kHz. Starting time is 7.00am Eastern Local Time. (6.30am Central Local Time). The main net runs for 45 minutes, with a concluding 15 minutes or so for the higher speed 'achievement challenge'.

The net provides valuable assistance for novices aiming to upgrade from 5 wpm to the Full Call 10 wpm speed.

In his note Rex VK2YA mentioned offshoots of the E.B.N. on 3539kHz at 6.15pm and 15 wpm at 7.00pm. I am not sure whether this is a regular arrangement, but it's worth a listen in the evening, too, for the ***Late*** Early Bird Net !

Net Controller these days is **John VK3EHZ** and the originators were **Colin VK3DEG and Eric VK3EDS**. There is now a fine team of excellent operators conducting the net and it is a pleasure to copy their high quality Morse (which contrasts with much one hears on the air). The net has now been running for about 6 years. All concerned are congratulated on making this contribution to maintaining skill levels in CW. Once you can operate at 10 to 15 wpm you can enjoy the unique experience of CW QSOs, even if you never become a *Master Key (!)* at two or three times this speed. We know the beneficiaries of this long-standing

Morse training session are most enthusiastic and one can appreciate the great improvements that are made.

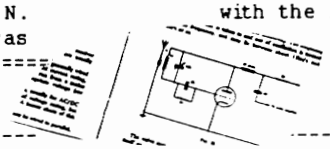
Additional information can be obtained from Colin VK3DEG, whose QTH is as per the Call Book, and he looks forward to hearing from interested members of our club. By the way, Colin mentioned he was a Royal Navy Communications Officer in WWII and an Instructing Officer in R.N. (Wireless Reserve) until 1958. He was licensed in 1956 as G3LLM.

Well, this all sounds like a pretty good way for the casual CW operator & QRP homebrewer to keep in practice. So, put the soldering iron away a bit (excuse the pun !) earlier, get up IMMEDIATELY the alarm sounds and:

TUNE UP AT SUN UP
with the *Early Bird Net*

Receiver Notes

Contributor: Peter VK2EPD #144



INTRODUCTION *- There has been a lot of interest in receivers recently and several members have provided some notes on their experiences with homebrewing and using Rx. Here is the first:*

A Simple Regen Receiver

By Peter VK2EPD #144

p.24

The diagram is a copy of the circuit of one of the regen receivers I have made. The original circuit was in ETI. (Ed. See ETI July 1989: Simple Shortwave Receiver. *Electronics Today International* is now incorporated in *Electronics Australia.*)

As you can see I've refined it a bit by way of bandswitching and bandspreading. Bandswitching is achieved by switching in an extra 50pF by forward biasing of the 1N914 diode. Bandspreading is done by varying the reverse bias across the other 1N914. The 10pF in series with the bandspread diode might be more effective if the value is increased - try 47pF.
Band 1 covers from 3.5MHz to 4.5MHz; Band 2 covers from 4.3MHz to 6.7MHz.

A circuit for matching the high impedance output to low impedance headphones is included. This circuit uses less than 10 mA so is quite economical in use of the 9V dry cell.

Different antennas require different settings for the reaction control. I also found that on windy days my long wire antenna moved around quite a bit causing the receiver to go in and out of tune.

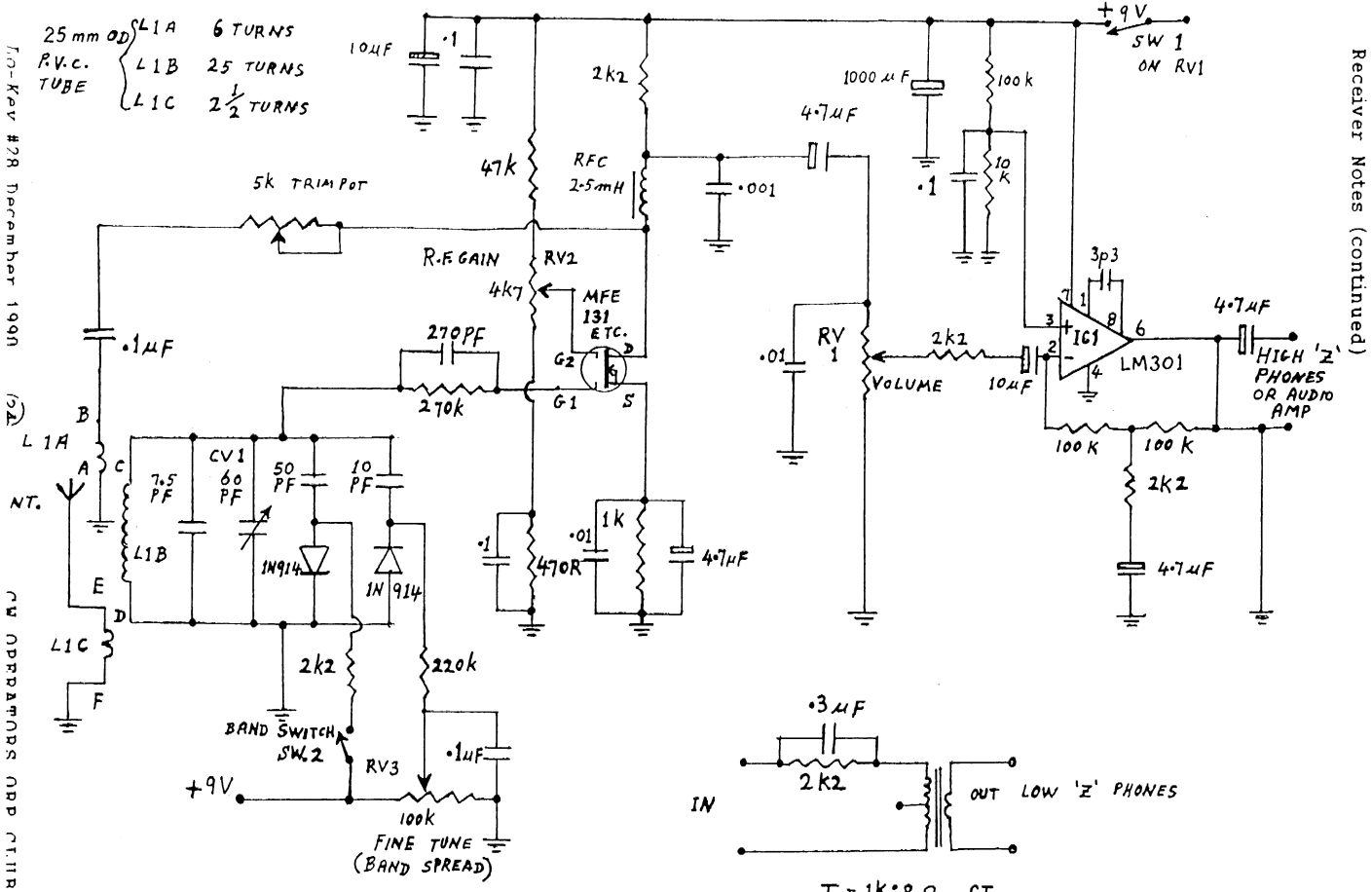
I originally made the circuit as in the *ETI* article and it worked quite well. My version covered from about 4MHz to 13MHz and I had to make up a reduction drive to enable me to resolve stations. I used an old pot shaft with a rubber grommet driving a large diameter plastic disc which was fixed to the shaft of the variable capacitor. This setup achieved a reduction of 15:1.

These receivers require a delicate touch on the tuning and reaction control, which requires some practice.

The 5k trimpot in the feedback circuit is a coarse control which is set for oscillation and then left. The 4k7 pot is then used for fine control.

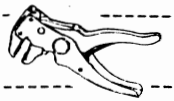
CV1 is a small solid dielectric tuning capacitor from an AM transistor radio - 60pF gang capacitor.

Anyone building one of these receivers will, with perseverance, get a great deal of satisfaction from them.


25 mm OD P.V.C. TUBE
L1A 6 TURNS
L1B 25 TURNS
L1C 2½ TURNS
10µF
.1
2k2
47k
RFC 2·5mH
.001
4·7µF
1000µF
100k
10 K
+9V
SW 1 ON RV1
5k TRIM POT
R.F. GAIN RV2
4k7
MFE 131 ETC.
270PF
270k
G2
G1
S
.1µF
B
A
C
L1A
L1B
7·5 PF
CV1 60 PF
50 PF
10 PF
1N914
1N914
NT.
E
D
L1C
F
2k2
220k
BAND SWITCH SW2
RV3
+9V
100k
FINE TUNE (BAND SPREAD)
.1µF
.01
1k
470R
4·7µF
RV 1
VOLUME
.01
2k2
10µF
IC1
LM301
3p3
4·7µF
HIGH 'Z' PHONES OR AUDIO AMP
100 K
100 K
2k2
4·7µF
.3µF
2k2
IN
OUT LOW 'Z' PHONES
T = 1K:8Ω C.T.
MATCHING UNIT FOR LOW 'Z' PHONES

KIT-SET ACTIVITY CENTRE

By Don VK5AIL #75



****** New Items ******

(Price List ID numbers are shown in brackets)

Club QSL Cards (C095) and Club Logo Stickers (C096) are again available after a two year break.

The QSL cards are high quality custom cards and the price is good. They have black print on glossy coloured card stock 250g/m² - you will get three colours in your batch. Collectors of QSL cards will much appreciate receiving your QRP Club card. Size is the standard 145 x 80mm. Best to write on them with a permanent (spirit) pen or good biro. Prices $137.00 for 500 and $177.00 for 1,000 plus our standard packaging and postage charge (only $3.00). You must advise your name and address, with the wording exactly as it is to appear on the card. See sample on page 11, although the layout and details will be improved. We would need to make special arrangements for members outside of Australia.

The Logo Stickers are a useful means of promoting our Club and indicating your membership. They are easily used in letterheads or on envelopes, parcels etc. A number of members have enquired about them in the last year or two. They are printed black on white sticky-backed material with pre-cut circles so you don't have to use scissors. There are twenty 38mm diam. logo stickers on each sheet, price 60 cents/sheet. We are ordering a batch for delivery early 1991.

Amidon iron powder toroids are specified in many QRP circuits but may not be available locally unless you live in the right spot. **Basil VK2AW #180** has induced (inducted ?) me to add them to the list. These are great for tuned circuits and for low value inductors. We have two of the size 50's (0.5" or 12.7mm diam.) which more than cover the HF bands. The reddish-brown T-50-2 (C043) is best below 30MHz and yellow T-50-6 (C044) is best above 30MHz, but is also fine for lower HF frequencies.

The Philips ferrites we stock are at their best in chokes and broadband transformers. In comparison with the T-50-2 a Philips violet 14mm (C014) toroid needs only about 1/3 the turns and the 9mm (C013) needs about 1/2 the turns.

SBL-1 double balanced mixers 0 to 500MHz are often specified for homebrew receivers, so we have obtained a small quantity in case you are unable to obtain them.

The **Relay board** (K017) for the *Forrestfield* is featured in this issue. As with the VFO, PA & DVR boards in previous issues, the RLA relay module can be used in other rigs. A very simple project to build.

****** 'Old' Items ******

To save space only a selection of items available from the Kit-Set Activity Centre appear in each issue of *Lo-Key*. If you have seen something you want that was listed in a previous issue then ask about the price, as it is probably still available.

****** One-Off Specials ******

Tnx to **Jeff VK5BJF #57** for donating 3 air dielectric variable capacitors for sale to members. They are salvage units, but are in very good condition. They are of two-gang construction, capacitance 240/100pF maximum (if you can believe my meter !) The price is $3.00 each plus $2.00 packaging & postage. The limit is one per member.

**** Supply of Kits & Components ****

See *Lo-Key* #27 for full details.

**** Ordering Kits and Components ****

Orders and payment should be sent to Don VK5AIL #75 - or to Treasurer Kevin VK5AKZ #43 if you are applying for membership or paying subs. at the same time. Addresses are shown on page 2.

Please make out the cheque to the CW OPERATORS QRP CLUB and cross it 'Not Negotiable'. For small money amounts up to $A 15.00 it is alright to send the equivalent value of Australian postage stamps. $1.00 stamps or any lesser values are fine.

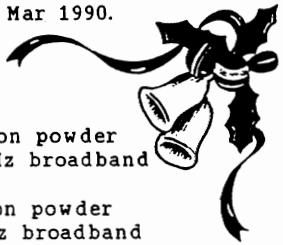
The receipt will be enclosed with your next issue of *Lo-Key*. If you don't receive a packet within a reasonable time please contact me on the Club Info. Net or write, as things may have gone astray.

CLUB SALES - PRICE LIST

15 December 1990

We give more for less. See September *Lo-Key* #27 for remainder.

Code No.	Nbr in a pack	*$A Price per pack*	Description *See page 21 for Explanation of Table*
K001	1	79.00	Club Communicator Full Kit-Set 3.5MHz CW QRP Tx. Complete with 52 page manual. See *Lo-Key* #14 Jun 1987.
K006	1	25.00	Sensitive SWR meter. Short-form kit. Plus 5W dummy load Manual included. See *Lo-Key* #19 Sep 1988 & *AR* Apl 1983.
K011	1	42.00	*Flexi*-Sudden multi-band receiver; 80m supplied. Based on design by George G3RJV #96. Short-form kit with manual. Extra modules available for other bands. See K014.
K014	2	18.00	Pair of extra BPF and VBFO modules for the *Flexi*-Sudden. You nominate band. See *Lo-Key* #25 Mar 1990.
K017	1 N	19.00	RLA relay board for Forrestfield. Instructions in *Lo-Key* #28 Dec 1990.
C043	1	1.50	Toroidal core Amidon T-50-2 (red) iron powder 2 - 10MHz tuned circuits 0.5 - 30MHz broadband
C044	1	1.50	Toroidal core Amidon T-50-6 (yel) iron powder 10 - 20MHz tuned circuits 2 - 50MHz broadband
C045	1	11.00	SBL-1 double balanced mixer 0 - 500MHz (no data)
C095	1000 N	177.00	Club QSL cards - You nominate exact wording of name and address. See *Lo-Key* #28 Dec 1990.
	500 N	137.00	
C096	1 N	0.60	Club logo stickers 38mm diam. One sheet of 20 stickers. Black print on white. See *Lo-Key* #28 Dec 1990.
C098	1	10.00	G-QRP Club Circuit Handbook. Copied with permission.
C099	1	1.80	Past issue of *Lo-Key*. You nominate month/year or issue number. #1 and #2 count as one.



There was no column from me in the last issue, due to the fact that I was bronzing me limbs in Queensland- mostly from the top of an upturned catamaran in Whitsunday Passage, treading water and wishing that I was somewhere else. However, for the locals here in Adelaide, it looks like the State Library have finally gotten their act together and have now started receiving copies of QST and Amateur Radio again. They ballsed up the subscription renewal for the second year in a row and are just now getting the current issues in stock. I am assured by the Serials Librarian that back copies will be available 'soon', but as the copies of QST are coming sea freight, I certainly wouldn't hold my breath. Sometimes I wonder.....

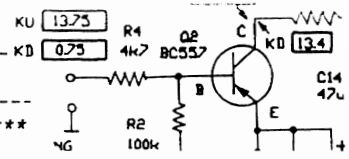
However, talking of QST, it seems that the ARRL have published a book of QRP articles gleaned over the last 15 years The cost is about $Aust24 and the local agent is Stewarts Electronics. I have conferred with Don Callow to see if we can get a quantity discount so watch this space. Stewarts also have the QRP Notebook, by Doug DeMaw which I have mentioned previously in this column. This is excellent for both the beginner and the Old Timer as a reference manual. Note also that the ARRL is bringing out another edition of the Holy Writ, The Solid State Design Handbook, so if you have lent your copy out and never got it back, or are of that age where this book is but a legend, then now is your chance. BUY A COPY. You won't regret it. (Yes, Stewarts again! And no, I haven't any shares in the company!!)

p.28

I have had a few letters from members requesting that they be put onto the Boomerang Circuit Book 3 when it is ready. Right now, its just a selection of articles, but we **are** working on it. Gawd knows where the last one is. If you have it, or know who has got it, *please* let Don or myself know!!

Just as a side-line, I have now Worked All VK with my Wes Haywood designed Mountaineer with the exception of VK9 and VK0. I had really good reports on 40 metres from both Queensland and Tasmania which isn't bad for 400 milliwatts CW. Solid State Design Handbook describes an amplifier which boosts the power level up to about 8 watts using a 2N1964, but I had to tame this beastie down a bit.out of the rig. I haven't tried it *in situ* but the indications are that it works! I've also Worked All VK on my restored Grainger rig (Crystal locked, again, about 8-10 watts LSB on 40 and 80 metres - 7070 and 3620) Incidentally, I'm still looking for TX and RX modules for the other two channels for this rig, so if anyone out there has a couple they are not using.....

Well, that's all from me for now. Hopefully by the next issue, the back copies of QST will have arrived and hopefully they will be chockful of QRP Goodies. Until then, may I wish you and your families a peaceful Christmas and a new year of hope and promise.
73s.Norm VK5GI.



BOOMERANG CIRCUIT BOOK

For the record, the original Travelling Circuit Book was #1. This is no longer available for circulation.

**** BCB #2 - 2ND FLIGHT ****

Basil	VK2AW	#180
Ted	VK2CWH	#89
Alan	VK2FIZ	#182
Wes	VK2MIR	#162
Reg	VK3BPG	#7
Steve	VK5AIM	#184

These are also on the BCB #3 list. If you are on this list, but *don't* wish to see BCB #2 or if you have *already* seen it, please tell me or one of the Executive Members.

**** BCB #3 ****

This is mentioned in **The Bookshop** column. We are still collecting circuits for BCB #3 and aim to send it out by the end of March 1991.

Do you wish to go onto the list for BCB #3 ? We will publish the list of starters for #3 in March 1991, along with the 'rules'.

You pay the postage (currently $2.40) to the next person; and we ask you to pass it on quickly.

Contact: *Norm VK5GI* 75 Ralston St. North Adelaide SA 5006

INTERESTED IN JOINING US ?

Photocopy or Cut along this line

CW OPERATORS QRP CLUB

Please post this application to:

Promoting the Use of Low Power CW Mode Communication and Homebrewing in the Amateur Radio Service

Kevin Zietz VK5AKZ
41 Tobruk Ave.
ST MARYS SA 5042
Australia

I would like to apply for Membership of the CW Operators QRP Club.

With this application I enclose $A10 for VK Amateurs or $A12 for ZL Amateurs or $A14 for DX Amateurs, which is the annual membership fee.

(please print)
FIRST NAME & CALL SIGN ....

INITIALS & SURNAME ....

ADDRESS .....

.....

.....

I agree to the required details being held on the Club's data base.
I DO AGREE to publishing of my street name and number.
(If not, write 'NOT' in the space provided.)

SIGNATURE . . . . . December 1990 901003
A receipt and your membership number will be sent with your next Lo-Key.