

Bulletin issued by the Northern
Branches of the Wireless Institute
of Australia, Tas. Division

October 1974
Vol.4 No 7

P.O. Box 1010
Launceston
Tas. 7250

Registered at GPO Hobart
for transmission by post
as a periodical. Category B.

Price 20¢

MEETINGS

- October 8th North West Branch, Lakins Hall, Ulverstone.
There will be a demonstration of colour T.V.
- October 11th Northern branch, A.E.B. rooms, High St.
Equipment Display Night. Here is a chance
to show off that piece of gear you've built.
- October 12th Council meeting, 2 p.m. at the QTH of VK7PD
77 Talbot Rd, Launceston.

YRCS

- October 12th & 26th
room 38, Kings Meadows High School.

CONTESTS

- October 5/6 VK/ZL contest phone
- October 12/13 VK/ZL contest CW
RSGB 21/28 Mhz phone contest
- October 19/20 RSGB 7Mhz CW contest
J.O.T.A.
- October 26/27 CQ WW DX phone contest
- November 2/3 RSGB 7Mhz phone contest
- November 10 Czechoslovakian CW & Phone contest
- November 23/24 CQ WW DX CW contest

2400 + 700
168,000

whash blue jeans

Northern notes by Req VK7KK.

Meeting attendances are on the up again, around 37 members last month. Perhaps, however, meetings are tending to be a little overloaded. Business transactions took rather longer than normal, this meant that by the time the lecture was completed and members had a go at the disposal gear, it was past 11 o'clock. Hope that this doesn't become the normal as it rather stifles the eyeballs.

One of the most significant reports presented was Ed 7HE's clubhouse committee report, Ed had obviously put much effort into pricing a suggested clubhouse. What could be built for \$7000 with our labour would seem to fulfil our requirements. Ed's committee's progress with further investigations will be awaited with interest.

An item carried forward for future discussion was a suggestion for a weekly levy to boost clubhouse funds, 20¢ a week was suggested. Any ideas or further thoughts please.

Brian Greenwoods talk on T.V. translator networks gave an insight into design problems from the other side of the fence. A point of major interest was his mention of the North West system to use channels 5A and 1 from Table Cape to serve the Burnie area. Whilst one can appreciate the reasons mentioned for choosing these particular channels it seems unfortunate that they are to be utilized in such an area.

Scout groups in Launceston have made requests for assistance for J.O.T.A. on October 19-20. It seems there won't be a co-ordinated request from scouts so anyone who can assist a group would be appreciated.

Two forward dates to put in your diary, Xmas Barbeque at the QTH of ED VK7HE to replace the December meeting, is on December 7th. A New Years Eve celebration is also planned for Evandale.

The meeting this month is to be the annual equipment display night. There wasn't a reminder at the last meeting but it is hoped that you've been working towards this and have a project to bring along. If not, there might be an interesting piece of commercial equipment to show off.

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The Northern Branch has obtained a quantity of AWA, MR6A low band FM units. These are for sale to W.I.A. members at \$8.00 each, with a limit of one per member for a start, if any are left over in say 2 months time, a second unit may be purchased.

These units are sold on the condition that they are not to be re-sold or put to illegal use.

Modifications for 52.525 should take no longer than 30 minutes, instructions will be supplied.

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Peter Feltham has passed the LAOCP exam, congratulations Peter.

Danny VK7ZDA is all prepared for the morse exam in November, very confident too, he already has an FT101B sitting on the shack bench waiting for the big day. Good Luck to you Danny.

North Western notes by Max VK7MX.

Our September meeting went off very well with a good attendance. A lively meeting took place followed by a meeting of the Hamfest committee. Full details will be found elsewhere in this issue. The boys are really working overtime on the project. Note that the date shown in QRM last month was incorrect. Following business some morse practice was dispensed by Harold VK7MZ, and to round the night off after supper Sid VK7SF showed some all moving, all colour, all talking pictures. A good night all round.

Proceedings were enlivened somewhat by Bob VK7ZJS who produced some goodies which were snapped up. Which reminds me Bob is now pushing a very strong signal from Somerset on 2 metres. Anyone passing through Somerset should call on Bob and view his all steel, all welded, twin diesel powered pleasure boat of very large dimensions. A very fine effort.

Coming to our next meeting we hope to have a demonstration of colour T.V. with servicing equipment explained. With colour T.V. round the corner we look forward to this lecture.

We have had a number of visitors through our area recently. Possibly the most famous was Col VK2ASF with his XYL Jean. Col was mobile on 40 metres and says he is coming back. We also saw John VK5DJ en route to Hobart with his family. Ian VK3YAY also departed from Devonport.

A most unusual series of contacts took place via the 2 metre repeater on 9th September with Hal ZL3WJ M/M. A number of VK7 stations were contacted as his ship moved out into the Tasman and he was last heard when 150 miles from Mt. Barrow. Several N.W. members were involved.

The 2 metre beacon is now complete and being tested. Some trouble is being experienced in matching the complicated antenna but we are working on it.

Everyone appears to be normal in our area so I can not find any personal titbits to throw in.

CUL VK7MX

-0-0-0-0-0-0-0-0-0-0-0-

ADHESIVE SEALANT. "SILASTIC 732RTV"

This is a one part silicone rubber compound which will cure at room temperature, yet has the special properties of;

- 1) Excellent dielectric characteristics.
- 2) Thermal and chemical stability.
- 3) Cures to a tough rubbery solid.
- 4) Retains flexibility from -65 to 260° C
- 5) Resists weathering, moisture and ozone
- 6) Electrical strength (puncture voltage) 550 volts per mil.
- 7) Dielectric constant 2.8

It can be obtained in four colours, black, white, aluminium and translucent. Tubes containing 150 grams are available from Repco, but only in one colour, black.

It can be used for all sealing and bonding applications in electronic equipment including the sealing of coax plugs and antenna connections.

Col VK7KW



LADIES PAGE

Hi there

I have been meaning to add my little bit for some time, but time passed. The remarks in last months Q.R.M. acted like a needle you know where, and the fact that I have, I think, something to rave about.

As was mentioned in Q.R.M., we are moving again. This will be my 22nd move in my life time and Normans 12th, I hope it will be our last. I said this when we moved to 69 Georgetown Rd., but you can see what has happened. I'll say this though, where we are going we don't stand much of a chance of being flooded, stranded maybe, but never flooded.

We haven't quite got to the stage of looking for a thing and realising we are pursuing a fruitless search because the damn thing is packed, and we are not yet at the stage of one plate, knife, fork per person.

The O.M. worked out where the shack will be before anything else. We have had the shack nearly everywhere, even like Phil and Joe, in the bedroom, but we slept with it. Thrilling, believe you me! It wasn't the melodious of lullabies, but when I could stay awake I joined in.

We have lots of plans for the house, but untill we are actually there, we are doing a mild stagnation bit.

I have been putting on quite a bit of weight this winter, but as the O.M. has said, after I have run (run, he must be joking) up the drive a few times the pounds will drop away.

When we have moved in we hope you will all drop in to see us. The view is fabulous winter and summer.

The address is: 11 Fort Street
North Riverside
Launceston.

Well 73s,

proudly 7NRs XYL Ann.

P.S.

Oh, when we had a mobile home
to go wherever there was to roam
This was very handy
not to mention fine and dandy,
providing we found the land.

When youth did pursue me,
my feet were quite itchy.
But now I pursue youth,
with the itch I get B.....

D.X. notes by Den VK7DK.

September is now over, and what a mixture of conditions we experienced. During the weekend of the 14/15, there was a severe burst of solar disturbance, and for two weeks following this, conditions were very poor, particularly above 14 Mhz. I had arranged to take two weeks leave as from that weekend to try and work a few rare ones, but Murphy's law decided otherwise. On the credit side though, 3.5 and 7 Mhz were not affected as badly and some reasonably strong signals were heard from the Pacific area. Before the solar activity 7 Mhz was really good, as is usual in the beginning of September (and March). The following were logged on phone: C21..XW8.. KX6.. XE.. JA.. TU2.. VR1.. EI8.. G.. ZK1.. EA8.. TI2.. W.. DJ.. 5W1.. KS6.. GI.. PAØ.. I3.. UI8.. UAØ.. and for the short time I listened on CW, 4X4.. LZ.. W.. were heard.

3.5 Mhz was also good. On phone: FOØ.. YJ8.. KP4.. KL7.. and W's. Most were above our band and could not be worked without split frequency. I also heard a very weak EA8CR. On CW, HA3.. UL7.. UT5.. OH.. OK.. UB5.. UP2.. . These are extremely hard to work, maily due to the terrific QRM the Europeans suffer.

An all YL DXpedition is all go for Chatham Isl. for one week, from October 26. They will be on 3.5, 7 and 14 Mhz. VE6JL/SU is active till the middle of November approximately. QSL via his home call or via the bureau. He is engaged on the task of clearing the Canal.

An Island much in the news lately has been heard. This one is a little odd, as he is WN3VEX/VQ9 on Diego Garcia and was operating on 14 Mhz. I should think this would count as Chagos Isl. as far as DXCC goes.

The latest predictions as to the sunspot minima, and this is an unofficial one, is June 1975. So cheer up, it seems that conditions can only get worse.

Now for the stations heard on 14 Mhz:

0200/0400.. KP4.. TG9.. OA4.. HR1.. YV.. ZL4NJ/A Cambell
 0400/0600.. 5X5.. W.. EP2.. XE.. VE.. UF6.. 5W1.. SV.. OE..
 LU8.. LZ.. HC.. I.. PJ9.. HR.. ZS6..(short path)
 0600/0800.. DK.. LZ.. SV.. YU.. YO.. G.. HC.. F.. UT5..
 SP.. ON.. SM.. KH6.. OE.. TG9.. EA.. DM.. ZB2..
 1000/1400.. UK2.. UK9.. SM.. UQ2.. VS6.. 9M2.. YB.. HS..
 4S7.. XU1DX, DJ.. BV2.. HL.. VS5.. DM8..
 VK9XW (Cocos), A9.. XW8.. VQ9.. OH.. G.. JA..
 9M8.. F..
 1400/1800.. SP.. G.. JA.. DL.. OH.. I.. SM.. UK9.. GW..
 1800/2400.. JA.. CX.. KG6.. DL.. OH.. I.. VP2S.. F.. SM..
 PY.. W.. C21.. YV..

21Mhz has shown a little activity from W land around 23/2400Z, and of course the JA's are still there but very much weaker than they used to be in years gone by.

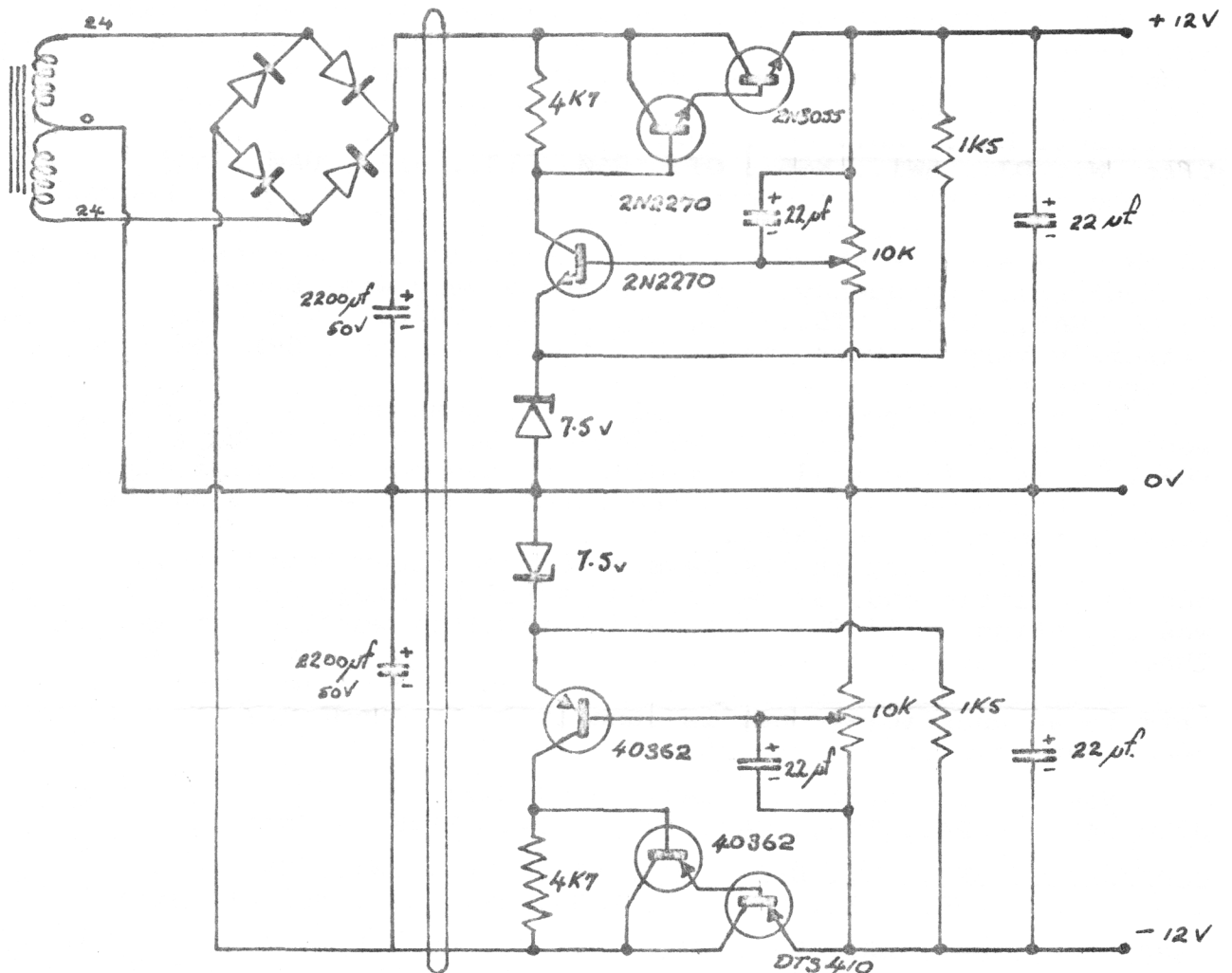
Well thats it. I would still appreciate any DX reports from other sources.

73 and DX.

WANTED WANTED WANTED WANTED WANTED WANTED WANTED

Wanted to buy an FT200 or FT101 in good condition, details and price to; Ross Broomhall, 27 Suncrest Place, Ravenswood.

CAMERA **- + 12V POWER SUPPLY**



- (1) DTS310 and 2N3055 mounted on a heatsink within camera
- (2) 24-0-24 volt transformer is mounted externally to the camera.
- (3) 0V should not be grounded except in camera power supply card.
- (4) Power supply card is similar in size to the horizontal and vertical deflection cards. No art work is available.

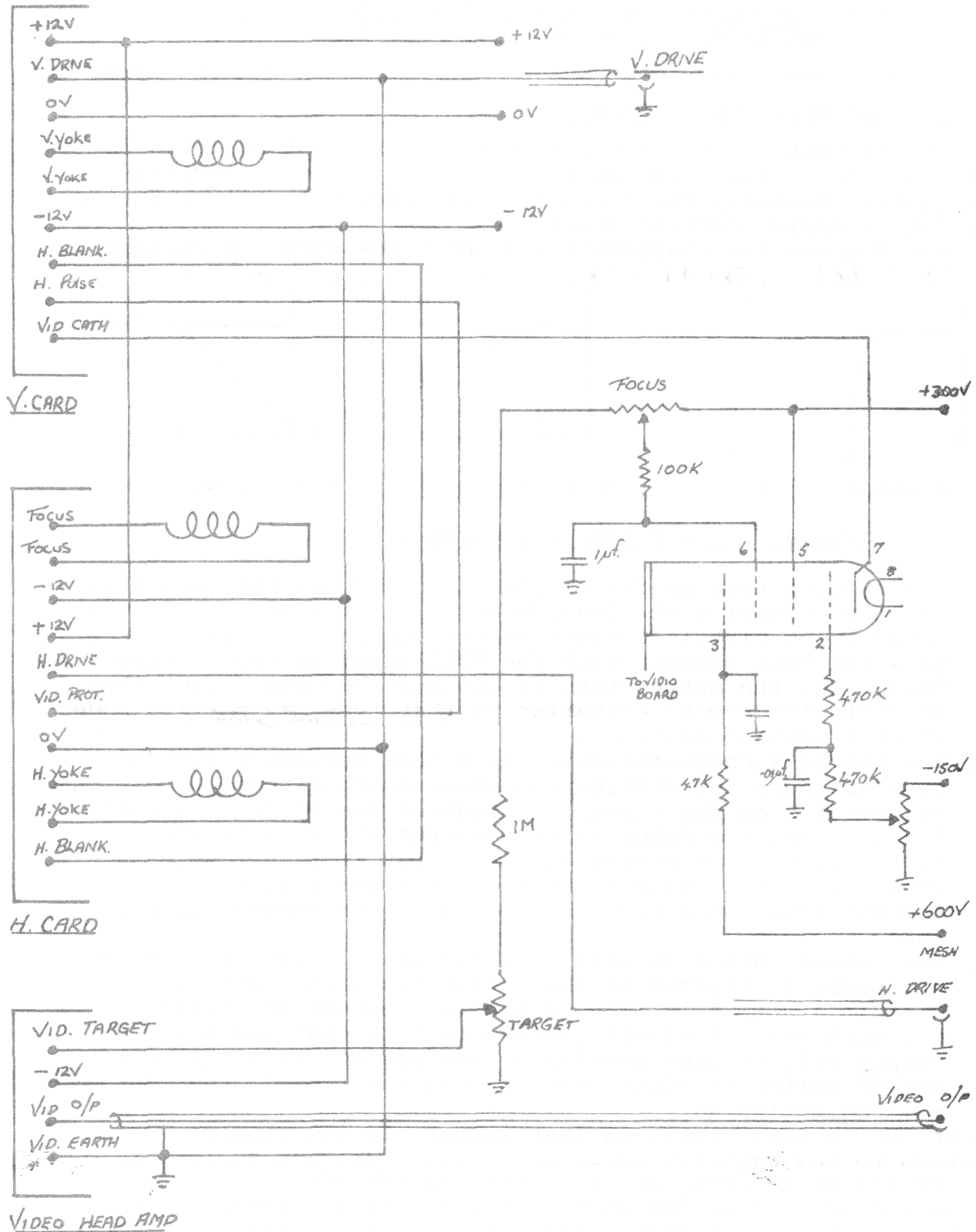
Parts Available. (check with Frank VK7ZFR)

7038 Vidicons (new)	\$20.00
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Vidicon Yokes (new) \$ 8.00

Yokes do not have a focus coil, this can be easely wound.

CAMERA INTERCONNECTIONS and VIDICON CIRCUIT



- (1) All components surrounding vidicon except focus, beam, and target controls are mounted on a small p/c card.
- (2) Circuit is suitable for either normal vidicons or separate mesh vidicons. If no 600V supply is available tie mesh supply back to +300V.

Reprinted from "THE RADIO BULLETIN" Jan.-Feb. 1972

TRANSISTOR REGULATED POWER SUPPLY DESIGN.

by John Reynolds, VK3ZMU..... Part Two

5. Overload Protection Circuitry.

The circuit diagram given on p.13 of the last bulletin is the complete voltage regulator, except for the d.c. rectifier and filter. However, the circuit as it stands is not protected against excessive current drain.

Fig 8 shows the characteristics of three types of current limiting that may be employed.

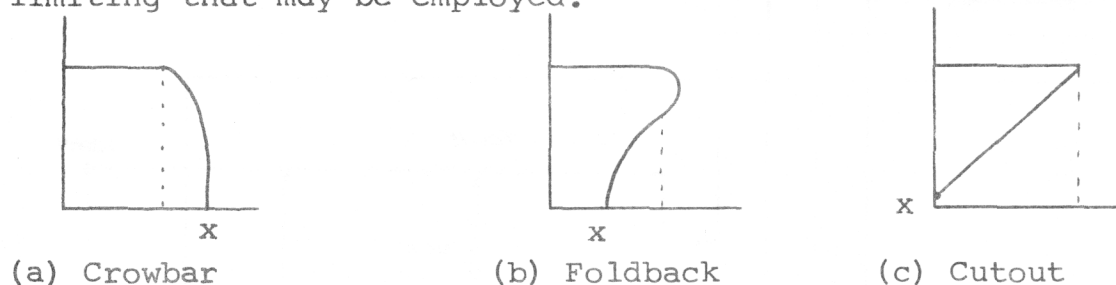


Fig.8. Current Limiting Curves.

- (a) The crowbar type is the simplest to arrange. The supply is reset by removing the load. However, a disadvantage is that under short circuit conditions the controlling transistors pass the FULL current with the FULL input voltage across them; i.e. the output transistors must be made larger than required for normal operation so that they may survive under short circuit conditions.
- (b) The foldback characteristics is a more desirable form of crowbar where the dissipation under short circuit conditions (at point X on the curve), is reduced due to less current being drawn. For fixed voltage output and at moderate currents, this is easily obtained; but it is not so easy with a variable voltage, high current power supply. The current limit condition is removed by the removal of the load.
- (c) The cutout method is easy to incorporate. With this system, the power dissipated in the output transistor with short circuited output is ZERO, since the current and voltage are both zero. A slight disadvantage is that the power supply will trigger exactly on the preset output current, and if switch-on surges etc. exceed this level, the overload will be activated.

Referring to Fig.7 (page 13 last issue), if the base of Q3 is shorted to the negative rail, the voltage driving current into Q3, Q2 and Q1 is zero, and thus they switch off.

If an SCR is used as the short circuit, its saturation (on) voltage is about 0.8 volts, and the current required to hold it in the "ON" state is about 20 mA (for a small SCR). Since the resistor in the collector circuit of Q6 will only pass 1 mA, the base of Q3 is not a suitable point to which to attach the SCR, since it would not stay switched on. But if the SCR is connected to the emitter of Q3, the available current is $B \times 1 \text{ mA}$, or greater than 25 mA.

By shoring the Q3 emitter to a point at a level of 0.77 volt, the maximum available voltage across the B-E junction of Q2 and Q6 is 0.77 volt. Since that voltage must exceed 1.2 volts to turn them on, they will be cut off, and the output voltage

and hence the current will be zero.

When the SCR is switched on, Q3 will have a collector current of (say) 30 mA, and its V_{ce} will be about 22 volts. This corresponds to a Q3 dissipation of about 7 watts. To reduce the dissipation of this transistor, a resistor could be inserted between the emitter of Q3 and the junction of the Q2 base and the SCR anode.

Unfortunately, however, such a resistor would degrade the regulation, and there are therefore practical limits to its size. The circuit of Fig. 9 shows the method used to solve the problem.

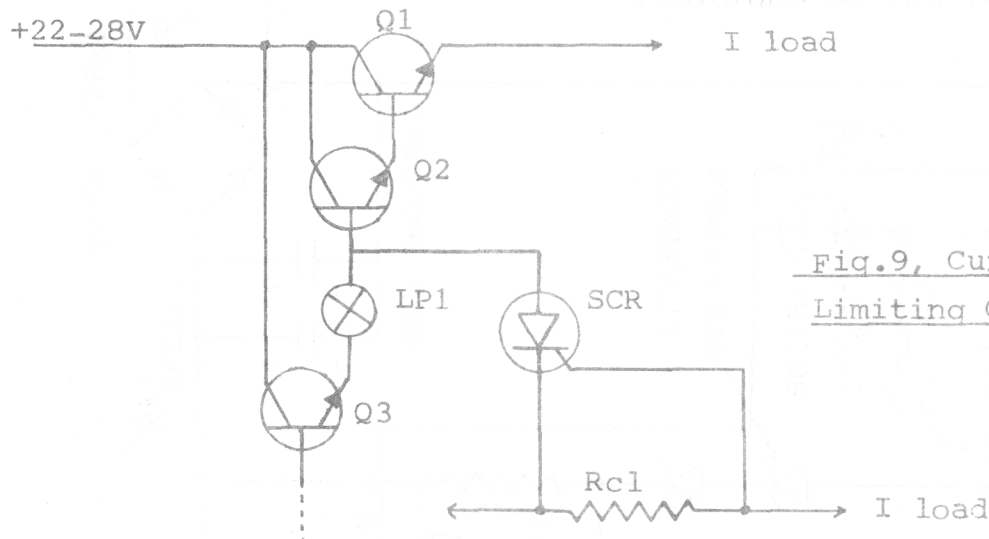


Fig.9, Current Limiting Circuit

By making LP1 a 24 volt lamp rated at about 50 or 80 mA, when current limiting occurs, the light goes on and can be used as an overload indicator for the front panel. The voltage remaining, a small amount between 0.6 and 4 volt will be dropped across the transistor, reducing its dissipation by more than 75%. To reset the SCR, the anode must be disconnected from the base of Q2. In order that the voltage does not rise straight away with the SCR disconnected, the base of Q2 is connected to the negative rail during the reset.

To fire the SCR, the gate voltage must exceed the cathode voltage by about 0.6 volt. The manufacturers state that there should be a resistance of 1-2K between gate and cathode to protect the gate. At 5 Amps load current, the voltage across the 0.33 ohm resistor in the negative line is about 1.6 volts. A voltage divider across this resistor will allow the current limiting point to be set with a potentiometer. The current limiting point is dependent on the pot. setting, and thus the trip point can be marked on the front panel. A good feature of this system is that the trip point is constant for all output voltages.

The complete circuit is shown in Fig. 10.

6. Transformer and Diodes.

For the raw DC supply, the transformer used dropped 4 volts from 28 volts when the full 5 amps were drawn.

The diodes used in the bridge rectifier are not critical. Types 1N1199A were used in the prototype; they require heatsinks. Filter capacitors totalling 10,000 μF would be good.

The on-off switch should disconnect both arms of the primary,

and the static shield on the transformer should be earthed.

7. Final Remarks.

Actual regulation is better than 0.3% at 6 volts, rising to better than 0.9% at 16 volts, for a load of from zero to 5 Amps. Measured voltages and currents are in close agreement with theory.

At first switch on, the current limiting may fire and will need to be reset. This is normal. Output ripple is less than 30 mV.

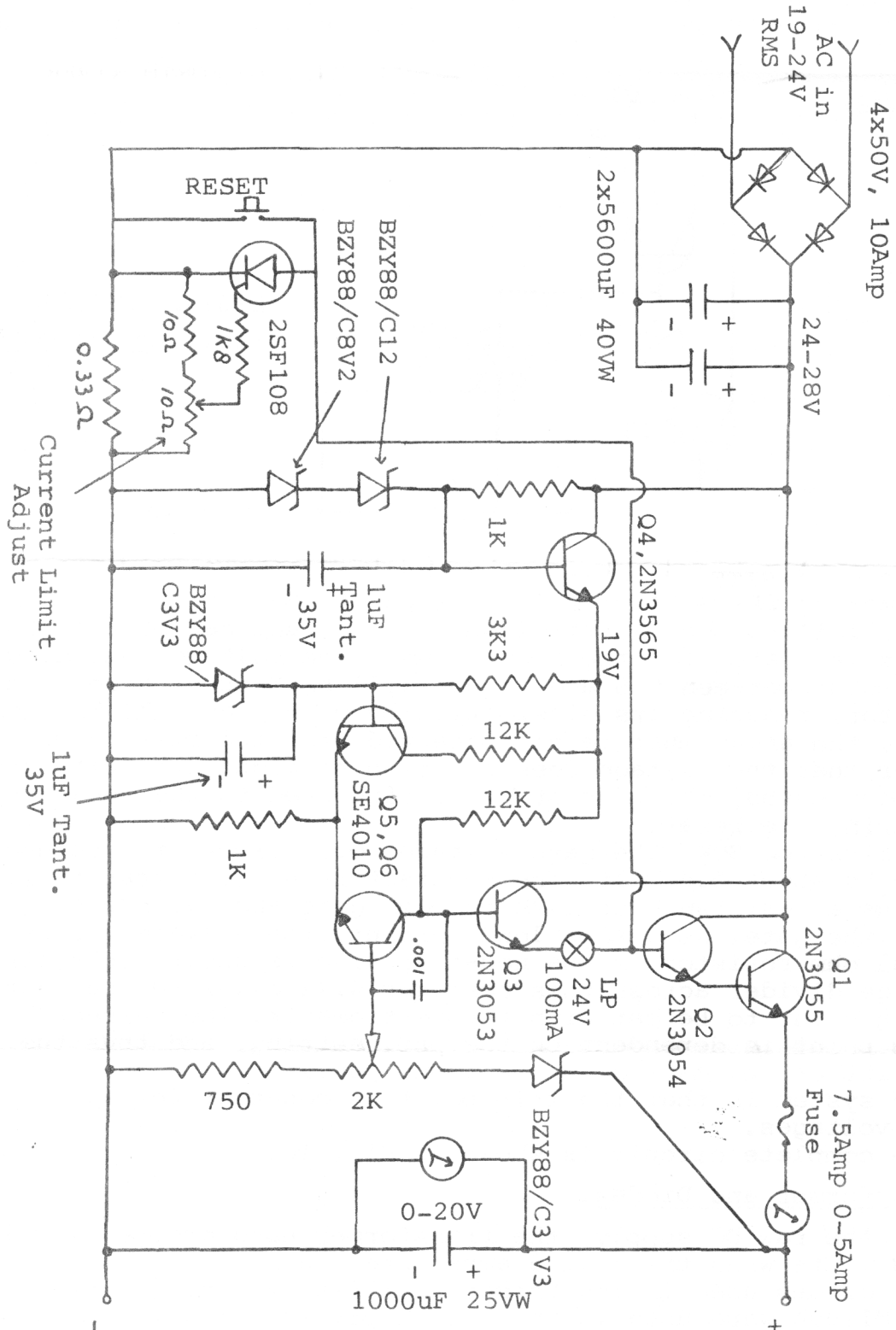
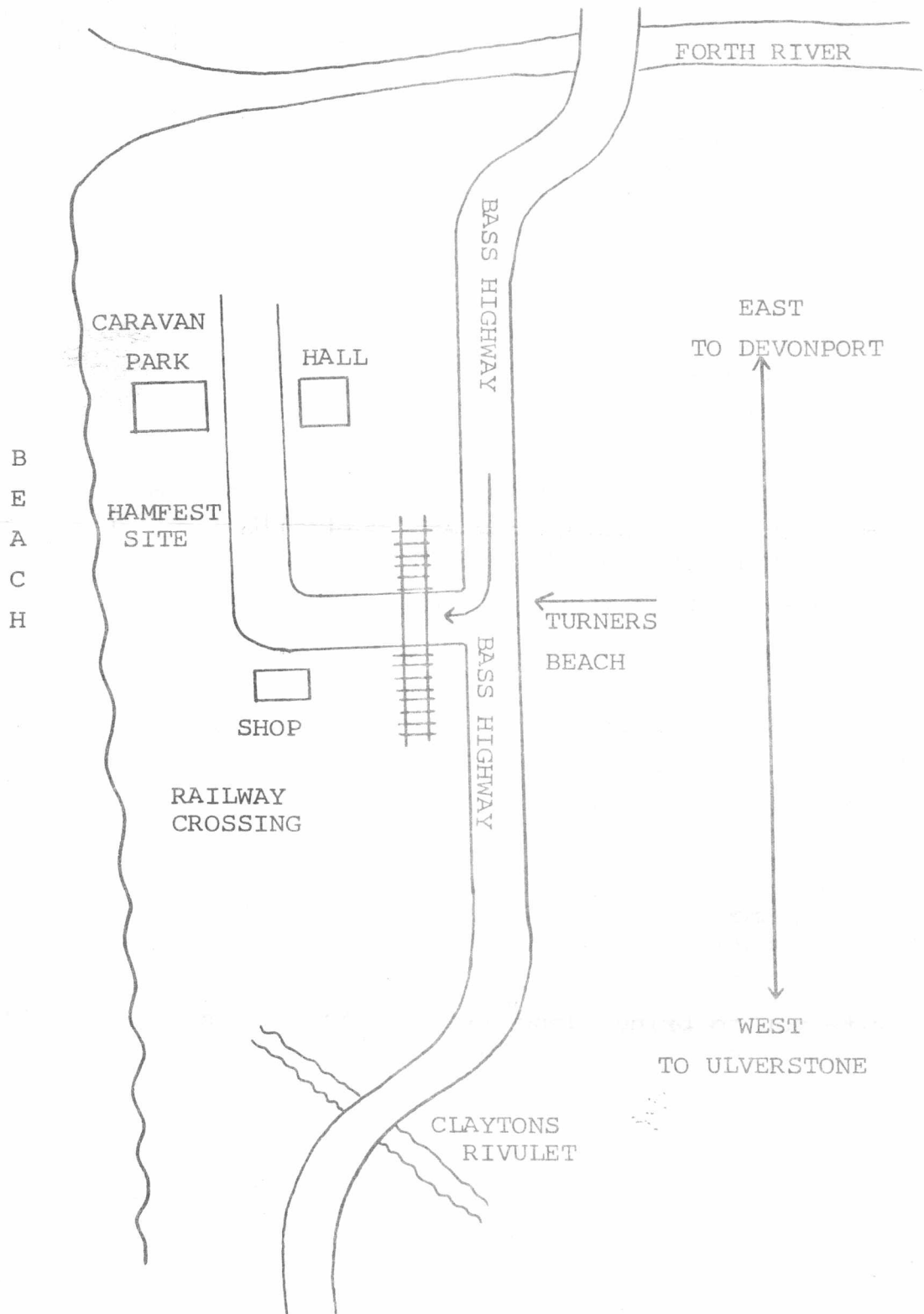


Fig.10. The Completed Power Supply Circuit.

HAMFEST LOCALITY MAP



HAMFEST PROGRAM (proposed)

W.I.A. HAMFEST 16th and 17th November 1974.

1. Hall will be open at approx. 9.00 A.M. Saturday.
Setting up of equipment etc.
2. 1.00 P.M. Reception of peoples, Registrations. Nametag issues.
3. 2.00 P.M. Guided tours departures. Tour & inspection of
MERSEY FORTH POWER SCHEME.

OR

Tour of LEVEN CANYON. (South of Ulverstone)
Tours require your own transport arrangements.

4. 6.30 P.M. Evening meal (Smorgasbord, supplied)
At conclusion of meal, the cabaret style social
will commence, refreshments etc. will be supplied.
A fashion parade is scheduled during the evening.
5. 9.00 A.M. Sunday. Open Hall.
6. 9.30 A.M. Weekly News Broadcast from VK7WI/P
7. 10.30 A.M. to 12.30 P.M. Fox Hunts (Various)
2m Ch. 40 (B)
6m 53,032 Mhz. A.M.
6m 52.525 Mhz. F.M.
40m (transistor portable required)

CHILDRENS ENTERTAINMENT, FILMS ETC.

8. 12.30 P.M. Lunch (supplied) Barbequed Hamburgers, Sausages
etc. Salads
9. 1.30 P.M. to 3.00 P.M. Various Fox Hunts etc.
Childrens entertainment.
2.00 P.M. Anticipated small excursion for the ladies
2.30 P.M. Auction of surplus equip. (bring your old gear
10. 3.00 P.M. to 4.00 P.M. CLOSING, PRIZE GIVING.

During the entire Hamfest there will be, Frequency checks,
R.T.T.Y. Display, A.T.V. Display, Commercial Equipment Display,
Antique Equipment Display, Best Home Built Equipment Section
(PRIZE). Operational equipment on 80m, 40m, 20m, 6m, 52.525.
2m Ch.40 & 48/60.

We invite you to bring along any item for use or display which
you consider may be of interest to others.

REGISTRATION FORM

W.I.A. HAMFEST 16th & 17th NOVEMBER 1974, TURNERS BEACH HALL

I wish to advise I/We will be attending the above function.

NAME..... PHONE No..... CALL SIGN.....
(if any)

ADDRESS.....

No ATTENDINGRATES

..... Doubles	Family group	\$10.00
..... Singles	Double	\$ 8.50
..... Students	Single	\$ 5.00
..... Children under 12yrs.	Student	\$ 3.00
..... Children over 12yrs	Sunday only	\$ 2.00 per person (children free)

Enclosed please find a cheque for

I Will/Will not require accommodation. (tick as required)

Ulverstone

Beachway Motel

\$12.00 Double, \$7.00 Single
Bed and Breakfast.

Stones Hotel

Children \$3.00 Extra
\$9.00 per adult.
Children under 12 ($\frac{1}{2}$ price)Devonport

Gateway Hotel/Motel

\$17.00 double or twin
\$13.00 single. \$2.50 extra
for Children

(Please enclose \$5.00 deposit on Hotel/Motel accommodation)

Caravan Parking Caravan park adjacent to Turners Beach Hall
Power and all facilities \$1.00 per day.WE WOULD APPRECIATE YOUR INTENTION OF ATTENDING BY 10th NOVEMBER
PLEASE.

FORWARD TO: Mr. I.Ellings

87 Bel-Air Crescent

East Devonport. 7310

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50 Brisbane Street, Launceston.

Telephone 2 2251

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