QSX PE

Merry Christmas

ZS2PE

FREQUENCIES:

Bulletin	3640 Khz
	7107 Khz
National Call	145,5 Mhz
P.E. Repeater	145,05/65
Grahamstown	145,20/80
Lady's Slipper	145,10/70

Port Elizabeth Branch of the South African Radio League

P.O.Box 462, Port Elizabeth. 6000.

Happy New Year

GENERAL MEETING OF THE PORT ELIZABETH BRANCH OF THE SOUTH AFRICAN RADIO LEAGUE HELD ON 17th NOVEMBER, 1978 AT THE Y.M.C.A. PORT ELIZABETH.

PRESENT: 27 members and visitors.

APOLOGIES: ZR2BT and ZS2BR.

The Chairman welcomed OM Andre ZS2BK back after his travels abroad and also welcomed Tony and Lynn Mills and Colin Tebbutt who had just passed the P.M.G. Exam.

MINUTES: The Minutes of the meeting held 20th October, 1978, having been circulated in QSX - PE, were taken as read, proposed by Cyril ZS2KX and seconded by Brian ZS2AB.

ARISING: Under Item 6, it was pointed out that the call sign should have read ZS2TY not ZS2AB.

FINANCE: -

CORRES:
(1) Letter from HQ re proposed repeater on Grootwinterhoekberge.
(2) Letter from Mr. M. Jephson.
(3) Circular from Marnet.
(4) 3 QSL cards for J.O.T.A.
(5) Several Branch Newsletters.

GENERAL:
(a) The Chairman congratulated Piet ZR2BP who had passed his C.W. test.
(b) Raffle tickets were available for the all-band radio.
(c) Dinner-dance tickets were also available.
(d) The Chairman apologised for the lateness of QSX-PE, but the prin ters had been rather busy. Members were asked to note that the envelopes were now addressed by Addressograph and were to advise the Chairman if there were any errors.
(e) A D.F. Hunt will be held on Sunday 19th November and Lionel ZS2DD said that his transmitter was available. Members would meet at the GrayDawn Bird Park for tea at 4p.m.
(f) The Chairman said that this was the last meeting for the year. Members were asked if they had any motions which they wished to put forward for the A.G.M. as these had to be at Headquarters before 31st December.
MOTION BY ZR2RS: That the voting strength of any Branch be calculated on licensed members only.
The Chairman explained that many Branches had inflated figures and that some of these would be cut down by as much as 25%. The motivation would be that members would then get their transmitting licences. It was his intention to submit this motion either at Branch level or privately. Listener members would still have a say in Branch affairs, the branch level would not be affected, only at the National A.G.M. Cyril ZS2KX raised the question as to whether smaller branches would then be outvoted.

At this stage the Chairman welcomed Mr. and Mrs. M. Jephson who were visiting Port Elizabeth on a trip from Ireland. Mr. Jephson had expressed his intention to become a member of the League.

(g) OM Brian ZS2TY then raised the question of another Club operating in the Port Elizabeth area. The Chairman stated that the Branch had not been officially informed, but knew only what had been heard on seen in the newspaper.

(h) OM Cyril ZS2KX then asked that a letter be sent to OM Leo Alexander ZS6BEN in appreciation for the outstanding Memorial Service he had conducted on the S.A.B.C. and which had been relayed on the Lady Slipper Repeater.

The Chairman and Committee of the Port Elizabeth branch of the S.A.R.L. wish all members and friends as well as their families a happy and blessed Christmas and a prosperous new year.

VHF QRM

It would appear that some bad practice has infiltrated our area on VHF. After spending 3 months overseas and listening with disgust to what goes on there as far as jamming, bad language etc. is concerned, on their repeaters, I put my mind at rest. At least we don't have that sort of thing back home.

Enough of that! I would like to suggest a method that will either bore or trap the culprit(s) we have locally. If you hear someone triggering the repeaters or running a carrier on simplex, ignore it. He obviously does not want to or cannot have a QSO. Commenting on this type of thing when heard only gives that individual more fuel and satisfaction to continue his bent practice. So lets ignore him.

If jamming of QSO's is experienced, that is just what we want in order to enable us to track down his signal. If he becomes wise to this and keeps his transmissions short, so much the better. His object is defeated and his QRM thus becomes negligible. Less jamming is automatically experienced.

So, in conclusion, if you hear the above on the air, don't be drawn into comment, but try to get a bearing and call for assistance by landline, (not on the air) in order to obtain a cross bearing.

Hopefully this wise guy will either dump his 2m equipment or acquire a call sign. May the spirits be with him.

de ZS2BK.

FOR SALE

Heathkit GR88 VHF receiver. Covers 152-174 Mhz. Brand new and in good working order. Price R40. Apply Dudley Forsyth. ZS2AW. 10 Cromwell st. Grahamstown.

Our sympathies to those members in Uitenhage and Despatch who were pounded by a freak storm last weekend. We hope all the antennas will be up again soon.

Congratulations to Piet ZR2BP who passed his CW and is now ZS2PH.

Minutes; continued.

There being no further business, the meeting finished at 20h33 and tea was taken. Thereafter slides were shown by Colin ZS2AO on his recent trip to the United States.

SGD.
R.W. Schonborn. ZS2RS
Chairman

SGD,
M.T. Colson, ZS2OB
Secretary.

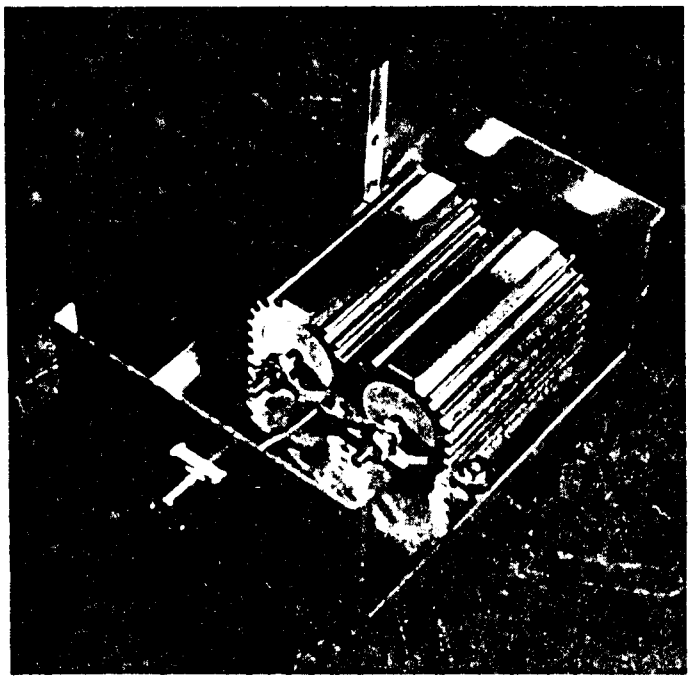
Joseph J. Carr K4IPV
5440 South 8th Road
Arlington VA 22204

Build A Decent Dummy

--no oil, no light bulbs, no hassle

A "dummy load" is an artificial antenna that does not radiate a signal and is used to tune up, test, or troubleshoot your station transmitter *without* going on the air and creating ill-mannered and illegal interference. Ideally, the dummy load looks to the transmitter like a perfect resonant antenna at all frequencies between dc and daylight. In a practical dummy load, this means that it should be resistive (i.e., *no* reactance) at all frequencies that the transmitter will cover. Furthermore, it should have a resistance equal to the optimum impedance the transmitter is designed to feed, or the impedance of the antenna system normally used with the transmitter.

The dummy load should have sufficient power-handling capability to allow it to absorb the full transmitter power for a couple of minutes at least. (Indefinitely would be nice, but it becomes very expensive at power levels over about 100 Watts.) This will allow you to become absorbed in what you are doing without having to worry about the condition of the dummy load.



Another requirement is that the load be shielded so that rf radiation is reduced. Even at milliwatt powers, unshielded rf sources can interfere with nearby receivers. If you doubt this, try tuning a grid- (or gate-) dip oscillator through the TV channel frequencies while watching the TV screen. Even at distances of several feet, "herringbone" patterns will appear. If a 50 mW source will do that, imagine what a 200-Watt transceiver will do!

Crude Dummy Loads

For low power rigs (i.e., up to about 200 Watts), many amateurs use an ordinary 50- to 250-Watt incandescent light bulb as a dummy load. A short piece of coaxial cable is fitted with an rf connector on one end and the other end is split to allow it to be fastened to a standard Edison-base lamp fixture. When the transmitter is out of resonance, very little power is delivered to the load, so the bulb will show a dim orange light. When the plate tuning capacitor is adjusted to resonance, the light will increase and become white in color, making an impressive display of output power (even though somewhat meaningless).

The light bulb dummy load is not good practice for a couple of reasons. For one thing, the resistance of the bulb is not constant, but changes as the bulb heats up. The impedance seen by the transmitter, then, varies markedly from low to high power. It is rarely actually within the 50- to 75-Ohm range deemed optimum for most amateur transmitters, but will have some other value.

Secondly, the light bulb will radiate. I have heard a local station 7 to 8 miles away producing an S8 CW signal at my location while loading an HW-101 into a light bulb dummy load.

Attempts are sometimes made to reduce radiation from the light bulb, with varying results. A few amateurs have painted the light

bulb's glass bulb down to the base with conductive copper paint, leaving only a small "peephole" to view lamp brilliance. This works very poorly. Other attempts, usually more successful, involve placing the lamp and socket assembly inside a metal box, but this still leaves the problem of the varying load.

Commercial Dummy Loads

Even a brief scan through the professional communications test equipment catalogues will reveal that professional dummy loads are very costly. Even military surplus loads bring a premium price from dealers and hamfest attendees alike. One friend of mine was extremely lucky to find a dc-to-VHF Bird 1000-Watt load in good condition at a hamfest. He was ecstatic to pay only $125! To him, it was worth it because he does a lot of amateur research (some of which is very professional), but to the average amateur that one-eighth kilobuck is better spent elsewhere.

One company offers a low-cost amateur dummy load that gives very good performance up to about 30 MHz. I bought one and have found it very useful. The problem is that it is perpetually a mess. It seems that the actual 50-Ohm element is rated at only about 100 Watts. This is extended tenfold by mounting it in a paint can and filling the can with oil (user provided). Everything goes fine for about two months, after which the XYL comes in and wants to know about that ring of oil on the floor. The oil seeps up around the can lid and finds its way outside of the can. Most owners of this product, I suspect, tend to place them in a plastic container and relegate them to the garage or a little-used corner of the basement. I want a dummy load that is *dry*, so that I can mount it behind my operating desk and switch it in, using a coaxial switch, whenever required.

A Home-Brew Alternative

Fig. 1(a) shows a 200-Watt dummy load that is suitable for most stations running an exciter or transceiver in the 200-Watt class. It will also work for those running power up to about 400-Watts input if the proper time-on (duty cycle) is observed.

The actual load is formed by paralleling two 100-Ohm, 100-Watt noninductive resistors (Dale NH-100). Other combinations will also work, as long as the power rating is sufficient and the parallel resistance of the circuit is either 50 or 75 Ohms (as desired). If you wanted to be ridiculous about it, for example, you *could* parallel 100 two-Watt resistors each of which has a value of 5k Ohms. Realistically, though, any combination of noninductive resistors with a total of 50 Ohms that requires not more than five or six actual resistors is sufficient. You will find that 50- and 75-Ohm noninductive power resistors are hard to find, so a combination is necessary.

I wanted two additional features in my dummy load: an oscilloscope output and a dc output that is proportional to the power. The resistor voltage divider shown as part of Fig. 1(a) was used to provide the dc level. Resistors R3 and R4 reduce the rf voltage across the load to a level that can be handled easily by the 1N60 rectifier. Capacitors C1 and C2 plus resistor R5 form a low-pass filter to remove any residual rf and leave just pure dc. The assembly was built into a small aluminum box outboard to the unit (Fig. 2). A second voltage divider exactly like R3/R4, but without the rectifier and filter, provided the oscilloscope output.

In a later version, the circuit of Fig. 1(b) was substituted for the voltage divider circuit used originally. This modification uses a pair of toroid current transformers such as are normally used in swr meter and rf power meter projects published in *73 Magazine* and the ARRL *Radio Amateur's Handbook*.

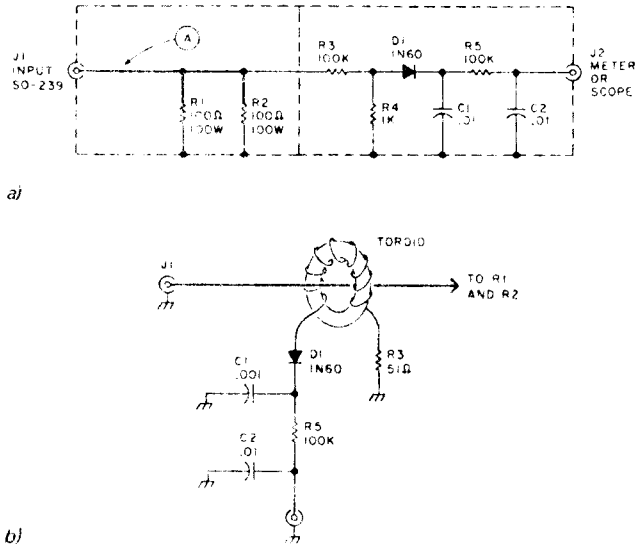


Fig. 1. (a) Circuit for dummy load. (b) Modification using a toroidal current transformer for the rf pick-off.

Almost any high-frequency toroid will work for this application. Wind approximately 40 turns of #28 magnet wire (enamel insulation) on the form. Terminate one end in a 50- or 75-Ohm carbon resistor, and connect the other end to the rectifier. The oscilloscope output is made in exactly the same manner, except that the rectifier-filter network (D1, C1, C2, and R5) is deleted.

A metal snap-together box was used for the housing, and this is considered the *minimum*. Be wary of metal boxes and utility cabinets with poorly fitting edges or no overlapping edges. Some use a butt joint with little cutouts along each edge to make them fit, and those are useless (and not very strong). If a die-cast aluminum box with a tight seal is available, then use it. The tighter the seal, the lower the radiation. ■

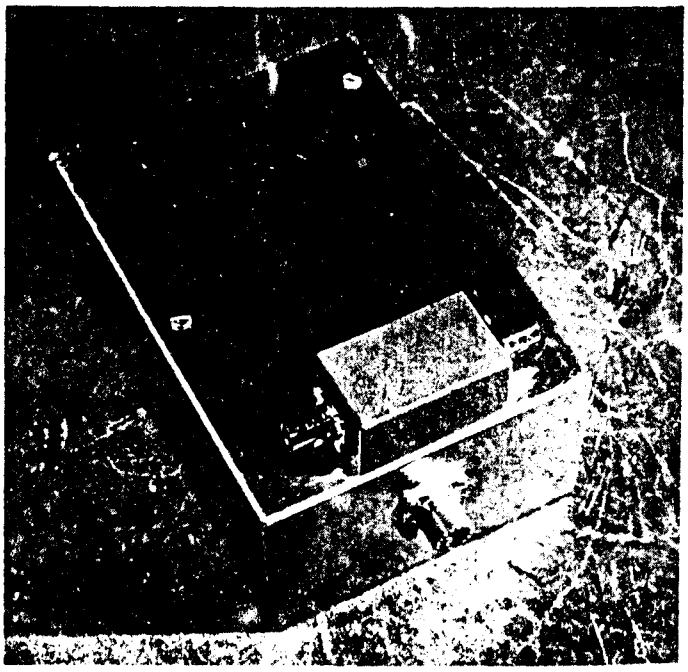


Fig. 2. External view shows the pick-off box mounted piggyback to the main assembly.

Squelchifying Cheap Receivers

—junk-box project

George Hovorka WA1PDY
John Hovorka, Jr.
674 Brush Hill Road
Milton MA 02186

The market is flooded with transistor radios that cover the police bands. They make excellent two meter monitors, except that they lack a squelch. Here is a simple squelch circuit especially designed for these receivers. This circuit uses junk transistor radio parts and can be installed in about half an hour.

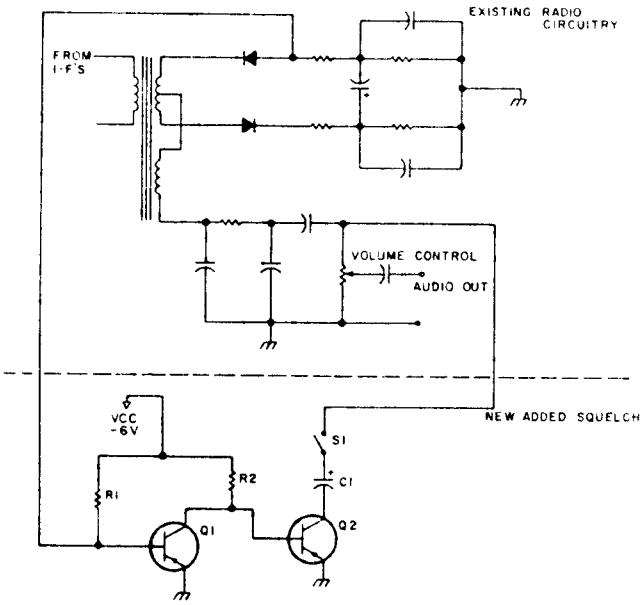


Fig. 1.

How It Works

This is a carrier-activated squelch. When a carrier is present, a negative voltage is developed with respect to ground by one of the diodes in the ratio detector. This turns transistor Q1 on, and thus brings the base of Q2 to near ground potential. Previously, Q2 had been biased on by the 10k resistor connected from its base to V_{CC}. This caused the audio appearing at the top of the volume control to flow through C1 and Q2 to ground. But now with Q2 off, the audio flows to the next stage. At the end of the transmission, when the carrier ends, Q1 turns off, causing the current to flow through R2 again. This will turn Q2 back on and will ground out the audio.

Construction

In my prototype, I used point-to-point wiring with the volume control as my base. The audio portion of these receivers is almost always positive ground. This requires PNP transistors to be used for Q1 and Q2. I used push-pull output transistors from a junk transistor radio for these. The remainder of the parts also came from the same junk radio. My receiver had a built-in ac power supply, so I removed the wiring from the battery ac switch, wired the radio permanently on ac, and used the switch for S1.

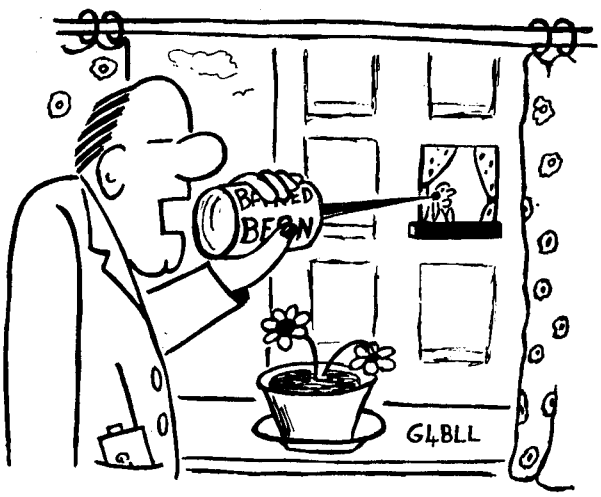
To find the control voltage for Q1, first locate the radio detector. It consists of two i-f transformers side by side with two germanium diodes close by. With the radio turned on and tuned to an FM station, put your VOM on the low voltage dc scale and connect the positive lead to ground. The case of the i-f transformer will do nicely for this. Now touch the negative probe to an exposed lead of either diode. One of these should give you a negative reading. That is your control voltage.

The value of resistor R1 is determined experimentally. First connect a one megohm potentiometer in place of it. Now turn the receiver on, and with no carrier present, adjust the potentiometer so that the squelch just opens. Now remove the potentiometer, measure its value, and substitute a fixed resistor of a slightly lower value for R1. Alternatively, a one megohm potentiometer with an attached switch could be used for R1 and S1. If your receiver has a built-in ac power supply, replacing one of the filter capacitors in the power supply with a 5000 uF or larger 15 volt electrolytic capacitor will greatly reduce power supply hum from the speaker.

I am certain you will find this squelch a valuable addition to your monitor receiver. ■

Parts List

Q1, Q2—2SD364 or equivalent PNP germanium transistors
R1—390k ½ W resistor
R2—10k ½ W resistor
C1—3 μF, 10 WV dc electrolytic capacitor
S1—SPST slide switch



Very effective, Fred . . . but I don't think you will get the CBers to accept it

REPRODUCED BELOW IS A LETTER FROM THE PRESIDENT OF THE S.A.R.L. WHICH IS SELF EXPLANATORY. COMMENTS FROM MEMBERS WILL BE APPRECIATED.

South African Radio League

HEADQUARTERS
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CAPE TOWN

Suid-Afrikaanse Radioliga

HOOFKANTOOR
POSBUS 3911 • TELEFOON 43-4443
KAAPSTAD

The Branch Committee
S.A.R.L.
P O Box 462
PORT ELIZABETH
6000

1978-11-23

Dear Sirs,

CITIZEN BAND

Arising out of the fact that a number of branch committees and some individuals have strong feelings concerning the activities and developments on C.B. it has been decided to issue a brief warning to all members of the S.A.R.L. to exercise extreme caution and not make any statements to the Press, S.A.B.C. or S.A.T.V. purporting to be the policy of the S.A.R.L.

The S.A.R.L. has essentially no jurisdiction over the rights or interests of any private individual; particularly in respect of C.B. activities.

If and when the P.M.G. takes any decision concerning the legalisation of C.B. and providing there is reason therefore the Council of the S.A.R.L. will examine such decision and, in consultation with the Branches if necessary, make a suitable submission to the P.M.G. concerning the standing of the Radio Amateur.

C.B. is considered by the S.A.R.L. to be an extension of the commercial services. In any event the S.A.R.L. will closely follow the policy lines taken by the R.S.G.B. in relation to C.B.

Trusting that we may receive your co-operation and looking forward to receiving your valued comment.

73

D E Brook ZS1AE
PRESIDENT