

Q S X P E

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.

11 APR 1979

PORT ELIZABETH BRANCH.

COMMITTEE MEMBERS:

	Home.	Phone.	Business.
Chairman ZS2RS Dick	324737		541461
Vice Chairman ZS2DD Lionel	321770		422041
Secretary ZS2OB Marge	302334		-
Treasurer ZS2CY Frank	511259		-
Members.			
ZS2AB Brian	303498		21173
ZS2BK Andre	306893		28501
ZS2SS Selwyn	304651		543634

The General meeting of the Branch is held on the third Friday of each month at 8p.m. at the Y.M.C.A., Havelock Street, Port Elizabeth.

The weekly Bulletin of news for members and interested listeners is transmitted on Sunday mornings after Headquarters bulletin and begins at approximately 8.45a.m. The frequency is approximately 7107 KHz and is followed by roll call.

The Bulletin roster for the next month is as follows:

22nd April	Andre ZS2BK
29th April	Selwyn ZS2SS
6th May	Dick ZS2RS
13th May	Lionel ZS2DD

If you have any items of interest and news for the Bulletin, please give the Bulletin reader a call and let him know. He will most certainly appreciate it.

MINUTES OF THE GENERAL MEETING OF THE PORT ELIZABETH BRANCH OF THE SOUTH AFRICAN RADIO LEAGUE HELD ON 16th MARCH, 1979, AT THE Y.M.C.A. PORT ELIZABETH.

PRESENT: 31 members and visitors.

APOLOGIES: ZS2BF.

The Chairman welcomed the members, the visitors, especially ZS5XE Mike Smuts, ZS2TC Tom Cockbain and members of the public who were attending the lecture. He then introduced Major General Tom Cockbain to the meeting. A most interesting talk, together with a slide show, was given on Radar, Electronics and Air Defence Systems.

The Chairman thanked OM Tom and explained to members that the order of the meeting was being reversed to enable the talk to be given first. Tea was then taken.

The meeting opened at 21h37.

MINUTES: The minutes of the meeting held 16th February 1979 were then read by the Secretary, proposed by Brian ZS2AB and seconded by Cyril ZS2KX.

ARISING: (a) The project planned for clearing the bush at the Grahamstown Repeater has been arranged for Saturday 24th March. Andre ZS2BK, Selwyn ZS2SS, Colin ZS2AO, offered their assistance and Mike ZS2MJ June ZS2JJ and Neil ZS2AI also planned to take part.
(b) The Chairman said that more R.S.G.B. Radio Communication magazines were available for members to take.

FINANCE: -

CORRES: (a) Letter from Headquarters re Repeaters.
(b) Letter from Transkei Radio League.
(c) Application for Port Elizabeth Award.
(d) Letter from Tak Vrystaat.

GENERAL: The Chairman stated that John St. Clair had returned with information regarding the solar panels, but these were not what were required as they were only 9v. More information was being obtained, but they seemed to be very expensive and a new windcharger was being tested at present and the project is still alive. Mike ZS5XE told the meeting of his experience with solar panels, which had not been satisfactory. Members were asked if anyone knew the whereabouts of a Handbook which had been lent to someone by ZS1J, OM Bill. The Chairman told the meeting that OM Andre's XYL had been in hospital recently for an operation, but she was now back home and making reasonable progress. He wished her a speedy recovery on behalf of the members. The delegate from the Port Elizabeth Branch to attend the Annual General Meeting in Durban was then appointed. OM Cyril ZS2KX proposed the Chairman ZS2RS, who was unanimously seconded. The alternative delegate ZS2OB Marge, was proposed by the Chairman, seconded by Andre ZS2BK.

The motions were then discussed and the delegate was instructed to vote as follows:

- Motions 1, 2, 3, and 4 Support.
5. Support
6. At the delegates discretion.
7. At the delegates discretion.

continued.

Motion 8 Oppose.

9. At the delegate's discretion.
10. At the delegate's discretion.
11. Support.
12. Support
13. Support
14. After discussion a vote was taken, 7 for, 2 against, therefore, support.
15. Oppose.
16. Support.
17. Support. With the proviso that it be kept up to date.
18. At the delegate's discretion.
19. At the delegate's discretion.
20. At the delegates discretion.
21. Agree that representative be sent, but at the expense of Headquarters and not the individual members.
22. Support.
23. Oppose. The better alternative is the free publicity which is available on T.V. and radio.
24. At the delegate's discretion.
25. At the delegate's discretion.

The Chairman informed members that some low-loss cable was available after the meeting; this had been brought by Brian ZS2AB.

The latest in soldering irons was shown at the meeting and after a quick raffle, this was won by ZS2HZ OM Louwtjie.

The Chairman thanked all the members for attending and especially ZS5XE OM Mike.

The meeting closed at 22h45.

sgd.

R.W. Schönborn ZS2RS
Chairman

sgd.

M.T. Colson ZS2OB
Secretary.

THE NEXT MEETING OF THE BRANCH WILL BE HELD AT 8P.M. ON FRIDAY 20th APRIL, 1979
AT THE Y.M.C.A. HAVELOCK STREET.

The Chairman will report back on the Annual General Meeting of the League held in Durban.

After tea, there will be a slide show by Andre ZS2BK on his recent overseas trip.

DID YOU KNOW?

That the highest recorded speed at which anyone has received morse code is 75,2 words per minute - over 17 symbols per second. This was achieved by Ted. R. McElroy of the United States in a tournament at Asheville, North Carolina on 2 July 1939.

AROUND AND ABOUT:

We would like to welcome the following new members to the Branch and wish them many happy years of association with the League:

Colin Ward ZR2AT, Colin Tebbutt ZS2CF and Bill Hodges

Slow Morse Classes. From 1st May, 1979, on Mondays, Tuesdays, Thursdays and Fridays, slow morse classes will be transmitted under the callsign ZE1JBY at 16.45Z on the 80 metre band on a frequency between 3710 - 3720 depending on QRM. The output of the transmitter is 25 watts and the classes will be on AM with modulated c.w. The first lesson (there will be 64 in all) will be 2 - 3 words per minutes and the last lesson will eventually reach 14 words per minute. Reports may be sent to ZE1AN, 6 Lancaster Avenue, Hillcrest, Bulawayo. If anyone would like tapes of the lessons, they may send cassettes to the above address.

Congratulations to Lionel ZS2DB and Doris on the Graduation from U.P.E. of their daughter Clare, who is now doing a Post Graduate course in Librarianship at Stellenbosch University.

Congratulations to Louwtjie ZS2HZ on winning the latest and up-to-datest soldering irons. No more dry joints, Louwtjie?

Our Chairman ZS2RS OM Dick and his family are taking advantage of the Annual General Meeting of the League in Durban over the Easter weekend. They will be leaving on 7th April and spending their holiday there. Also spending their holidays in Durban at the moment are ZS2BS OM Barry and his family. We hope the weather is kind to them all and that they all enjoy themselves.

We are very glad to hear that Andre ZS2BK's xyl is back home again after her recent operation and is making progress. We wish her a speedy recovery. Om Brian ZS2CF was heard mobiling around after his return from a stay in Grootte Schuur Hospital. We hope you are coming along fine Brian and will soon be 100% fit.

A recent visitor in town was Mike ZS5XE who was down from Margate visiting his daughter and took the opportunity to come to the meeting. Mike was a valuable asset as a Committee member in Bulawayo and was able to give us the benefit of his knowledge on a number of topics.

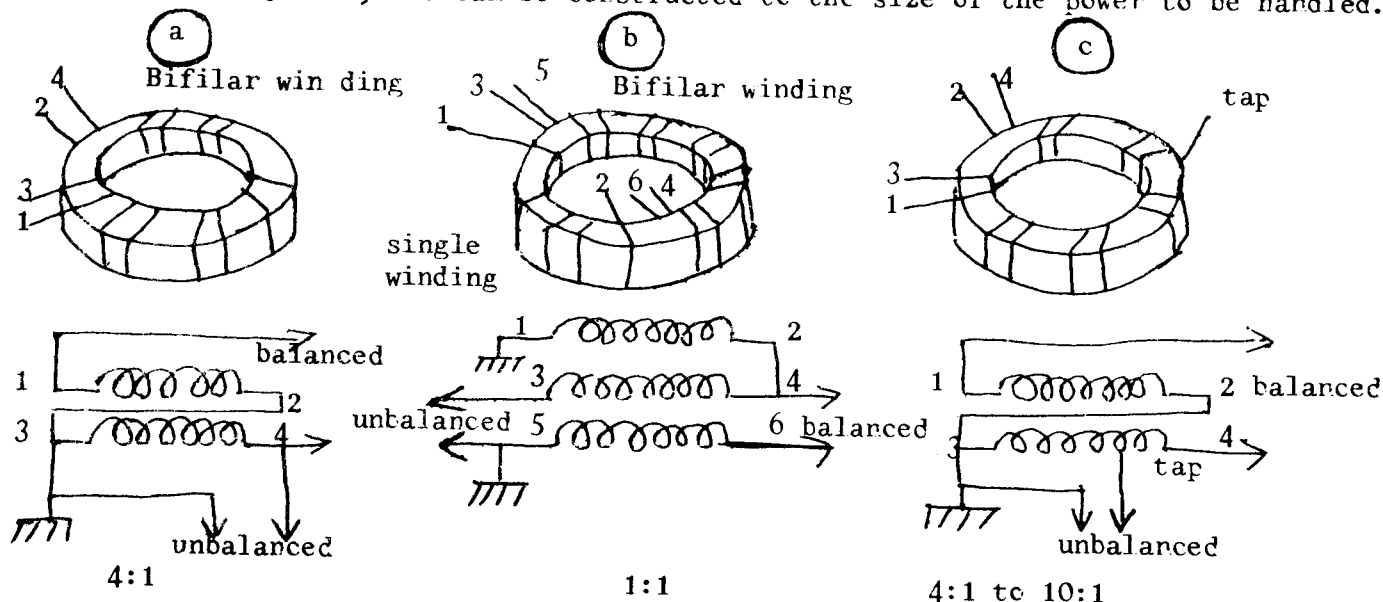
On Saturday 24th March, at the crack of dawn, a band of Port Elizabeth, Uitenhage, Grahamstown and Fort Beaufort hams, suitably disguised as lumberjacks and woodcutters, betook themselves to that part of Sherwood Forest locally known as the Grahamstown Repeater site. There, with a background accompaniment of 2 metre rigs, an unknown number of trees and saplings bit the dust, with not too many injuries to the hard workers. Those who joined the gang were Dick ZS2RS, Andre ZS2BK, Lionel ZS2DE, Colin ZS2AO, Brian ZS2AB, Selwyn ZS2SS, Bill ZS2WH, Dudley ZS2AW, Seymour ZS2RX, Chris ZS2CJ and xyl Molly and Marge ZS2OB. With much grunting and groaning, and axes and saws much in evidence, the work went on apace until Bill arrived with his super-sharp saw and then the trees didn't stand a chance. Even the xyls were seen doing their bit chopping and clearing. After a braai lunch, a new receiving antenna was erected and apparently this makes quite a difference all round. During a freak opening, OM Bill ZS1J spoke to ZS2OW and Lincoln ZS2BZ was heard coming through better than ever. Judging by the last rate of growth, it should be about another five years before the new lot of trees will need to be cleared. See you there!

TECHNICAL TOPICS.BALUNS.

The word Balun comes from the combination of BALanced and UNbalanced.

A few of the popular types will be briefly discussed here.

Bifilar wound toroidal baluns have bandwidths of 10:1, such as for the frequency range from 3 - 30 mhz, and can be constructed to the size of the power to be handled.



- A 4 : 1 balun only requires two windings bifilar wound, with the high impedance balanced.
- Baluns of 1 : 1 impedance ratio are trifilar (3 windings) wound. The third winding may be omitted above 10 mhz, which is a core-magnetizing winding effective only in extending its low frequency range.
- A basic 4 : 1 balun may be altered for impedance matching between 4 : 1 and 10 : 1. This is accomplished by tapping the unbalanced input down on one of the two windings. The formula for determining the impedance ratio, k equals the ratio of the number of tapped turns to the total number of turns in the tapped winding. Formula:-

$$R_2 = 4 \frac{R_1}{k^2}$$

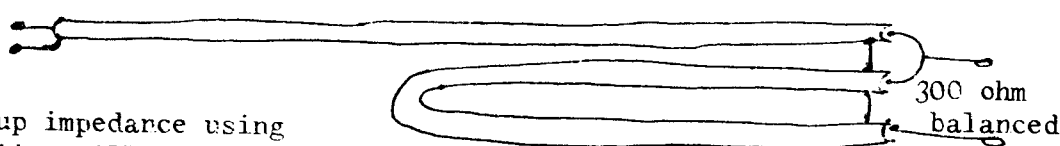
R_1 = unbalanced input.

R_2 = balanced output.

Bifilar windings are from 6 - 10 turns, depending on core permeability. A permeability of 125 is suitable.

Small cores can be used for receiving and low power. For high-power 63.5 mm OD Ferramic Q1 with 12,7 mm cross section wound with No. 14 Formex copper wire, 7 turns per winding is recommended.

75 ohm unbalanced



A 4:1 step-up impedance using 75 coaxial line will provide a match for a 300 ohm balanced impedance.

The loop is calculated as follows, being a half wave on the required frequency and considering the velocity factor of the line.

Length = 0,66 wavelength divided by 2.

$$L = \frac{0,66}{2}$$

Acknowledgments to ZS6K0.

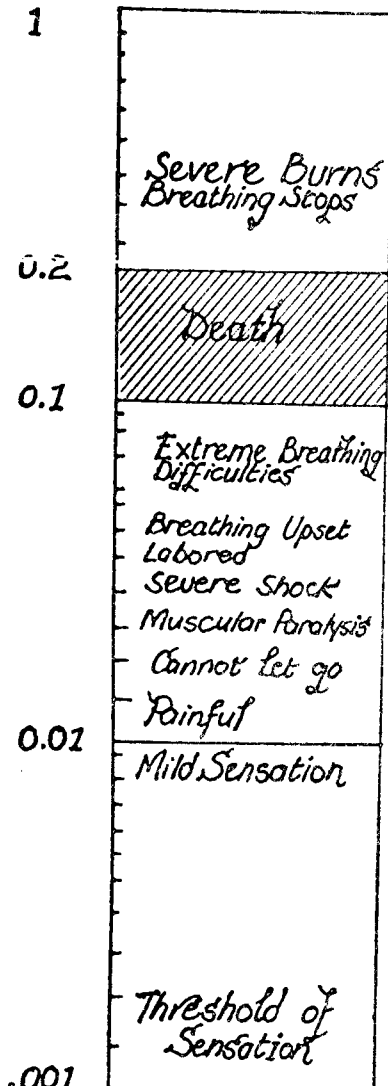
To be continued.

LOW VOLTAGE NOT LESS DANGEROUS

Strange as it may seem, most fatal electric shocks happen to people who should know better. Here are some electro-medical facts that should make you think twice before taking that last chance.

Offhand it would seem that a shock of 10 000 volts would be more deadly than 100 volts. But this is not so! Individuals have been electrocuted by appliances using ordinary house current of 110 volts and by electrical apparatus in industry using as little as 42 volts direct current.

The real measure of shock's intensity lies in the amount of current (amperes) forced through the body, and not the voltage. Any electrical device used on a house wiring circuit can, under certain conditions, transmit a fatal current.



Physiological Effects of Electric Currents

While any amount of current over 10 milliamps (0,01 amp) is capable of producing painful to severe shock, currents between 100 and 200mA (0,1 to 0,2 amp) are then lethal.

Currents above 200 milliamps (0,2) amp, while producing severe burns and unconsciousness, do not usually cause death if the victim is given immediate attention. Resuscitation, consisting of artificial respiration, will usually revive the victim.

From a practical viewpoint, after a person is knocked out by an electrical shock it is impossible to tell how much current passed through the vital organs of his body. Artificial respiration must be applied immediately if breathing has stopped.

EFFECTS

Chart 1 shows the physiological effect of various current densities. Note that voltage is not a consideration. Although it takes a voltage to make the current flow, the amount of shock-current will vary, depending on the body resistance between the points of contact.

As shown in the chart, shock is relatively more severe as the current rises. At values as low as 20 milliamps breathing becomes labored, finally ceasing completely even at values below 75 milliamps.

As the current approaches 100 milliamps, ventricular fibrillation of the heart occurs - an uncoordinated twitching of the walls of the heart's ventricles.

Above 200 milliamps, the muscular contractions are so severe that the heart is forcibly clamped during the shock. This clamping protects the heart from going into ventricular fibrillation, and the victim's chances for survival are good.

RESPOND

It is common knowledge that victims of high-voltage shock usually respond to artificial respiration more readily than the victims of low-voltage shock.

The reason may be the merciful clamping of the heart, owing to the high current densities associated with high voltages. However, lest these details be misinterpreted, the only reasonable conclusion that can be drawn is that 75 volts are just as lethal as 750 volts.

The actual resistance of the body varies depending upon, the points of contact and the skin condition (moist or dry). Between the ears, for example, the internal resistance (less than skin resistance) is only 100 ohms, while from hand to foot it is closer to 500 ohms. The skin resistance may vary from 1 000 ohms for wet skin to over 5 00 000 ohms for dry skin.

When working around electrical equipment, move slowly.

Make sure feet are firmly placed for good balance. Don't lunge after falling tools.

Kill all power, and ground all high-voltage points before touching wiring.

Make sure that power cannot be accidentally restored. Do not work on underground equipment.

FATIGUE

Don't examine live equipment when mentally or physically fatigued. Keep one hand in pocket while investigating live electrical equipment.

Above all, do not touch electrical equipment while standing on metal floors, damp concrete or other well grounded surfaces.

Do not handle electrical equipment while wearing damp clothing (particularly wet shoes) or while skin surfaces are damp.

Do not work alone! Remember, the more you know about electrical equipment, the more heedless you're apt to become. Don't take unnecessary risks.

VICTIMS

Cut voltage and/or remove victim from contact as quickly as possible - but without endangering your own safety. Use a length of dry wood, rope, blanket, etc. to pry or pull the victim loose.

Don't waste valuable time looking for the power switch. The resistance of the victim's contact decreases with time. The fatal 100 to 200-milli-ampere level may be reached if action is delayed.

If the victim is unconscious and has stopped breathing, start artificial respiration at once. Don't stop resuscitation until medical authority pronounces the victim beyond help. It may take as long as eight hours to revive the patient.

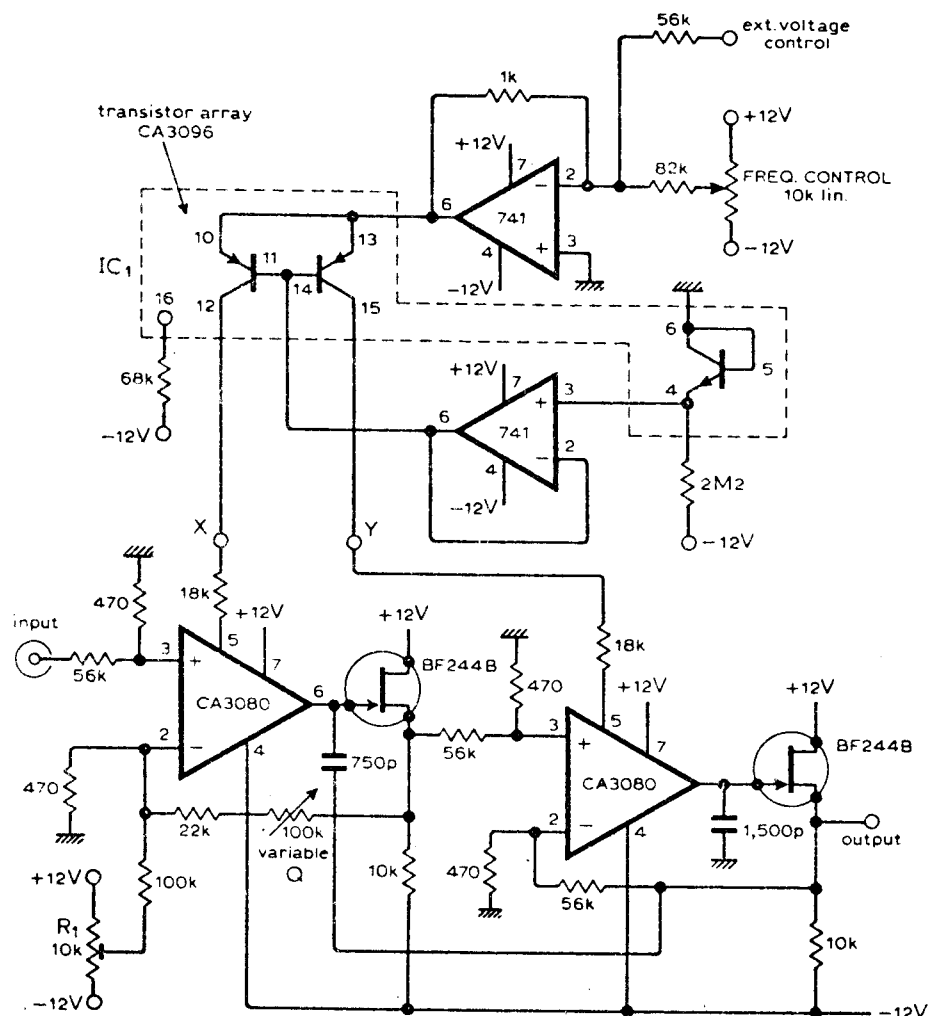
There may be no pulse and a condition similar to rigor mortis may be present; however these are the manifestations of shock and are not an indication the victim has succumbed.

(Printed through the courtesy of Fluid Controls Co., Inc., Cliffside, New Jersey, University of California Information Exchange Bulletin and Safer Oregon.)

Voltage/current controlled filter

The circuit shows a controllable filter, having a -12dB/octave roll off. Frequency range is 15Hz to 15kHz , this frequency being controlled by either a voltage or current. Voltage to current conversion is achieved with a logarithmic characteristic (IC_1); thus the filter frequency moves in octaves/volt rather than in Hz/volt . The CA3080 operational transconductance amplifiers are used to produce variable resistors. If just manual control of the cut off frequency is required, only the bottom half of the circuit is used by shorting points X-Y and connecting them to the wiper of a $10\text{k}\Omega$ log potentiometer between -12V and ground. If voltage control of the cut off frequency is required, the top half of the circuit is used. By using a transistor array, good matching and temperature stability is obtained. The separate transistor (pins 4, 5, 6) provides an offset bias voltage of the correct value and also a voltage to compensate for any temperature changes. The CA3080's may be selected for minimum d.c. offset change with respect to frequency control, or the offset may be nulled by R_1 .

T. Orr,
Putney,
London SW15



THE AMATEUR'S CODE.

-ONE-

THE AMATEUR IS GENTLEMANLY..... He never knowingly uses the air for his own amusement in such a way as to lessen the pleasure of others. He abides by the pledges given by the South African Radio League on his behalf to the public and the Government.

-TWO-

THE AMATEUR IS LOYAL.....He owes his amateur radio to the South African Radio League and he offers it his unswerving loyalty.

-THREE-

THE AMATEUR IS PROGRESSIVE....He keeps his station abreast of science. It is well built and efficient. His operating practice is clean and regular.

-FOUR-

THE AMATEUR IS FRIENDLY.....Slow and patient sending when requested, friendly advice and counsel to the beginner, kindly assistance, and co-operation for the broadcast listener; these are marks of the amateur spirit.

-FIVE-

THE AMATEUR IS BALANCED.....Radio is his hobby. He never allows it to interfere with any of the duties he owes to his home, his job, his school or his community.

-SIX-

THE AMATEUR IS PATRIOTIC.....His knowledge and his station are always ready for the service of his country and his community.

.....o000o.....