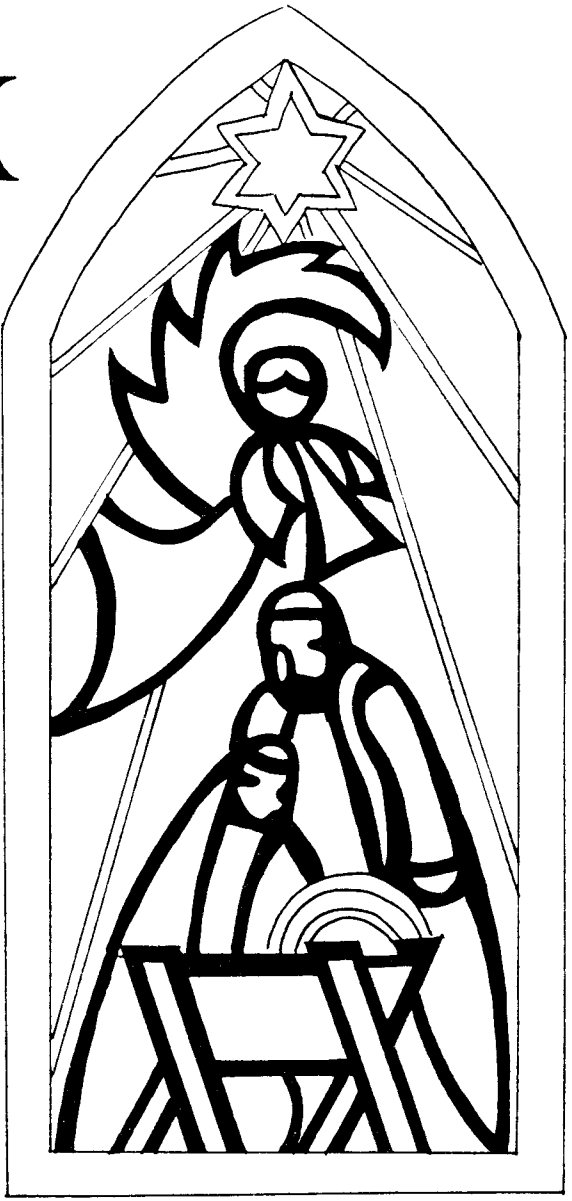
Q S X
P E

DECEMBER 1989



Port Elizabeth Branch of the

South African Radio League

PORT ELIZABETH BRANCH

COMMITTEE

CHAIRMAN	Marge Weller	ZS2OB	30-4597
VICE CHAIRMAN	Brian Weller	ZS2AB	30-3498
SECRETARY(Minuting)	Dick Schonborn	ZS2RS	55-2244
SECRETARY(Corres)	Colin Ashwell	ZS2AO	31-2471
TREASURER	Colin Robertson	ZS2CTR	30-0570
RALLIES/SOCIAL	Beavan Gwilt	ZS2RL	30-6968
SPECIAL EVENTS	Dick Schonborn	ZS2RS	55-2244
AWARDS	Bill Hodges	ZR2AAN	51-2580
HAMNET	Al Akers	ZS2U	30-2983
EDITOR - QSX-PE	Marge Weller	ZS2OB	30-4597
REPEATER WORKING GROUP - CHAIRMAN	Trevor Scarr	ZS2AE	32-1746
LIBRARIAN	Colin Ashwell	ZS2AO	31-2471
PACKET WORKING GROUP CO-ORDINATOR	Lionel Coombe-Davis	ZS2DD	32-1770

BULLETIN ROSTER

DATE	COMPILER	40m NET	2m NET
10 December	Colin ZS2AO	ZS2AO	ZS2U
17 December	Colin ZS2CTR	ZS2CTR	ZS2AB
24 December	Bill ZR2AAN	ZS2RL	ZR2AAN
31 December	Al ZS2U	ZS2U	ZS2AO

There will be a relay on 14,135MHz by ZS2DD

SUNDAY BULLETIN INFORMATION

Primary Frequencies for bulletins at approximately 08.40a.m. H.F.7098 kHz in 40 metre band. VHF 145,650 MHz - Town Repeater

BULLETIN UPDATE

7.30p.m. - 3695 kHz in 80 metre band - relay on 145,700 MHz, with automatic relay on 51,400 MHz - VHF news from ZS2FM.

BRANCH V.H.F. SERVICES PROVIDED

Town Repeater (P.E. Central)	145,050 / 145,650 MHz
Grahamstown Repeater	145,150 / 145,750 MHz
Ladys Slipper Repeater	145,100 / 145,700 MHz
6 meter link with above	51,400Mhz (simplex)
Cockscomb Repeater	145,000 / 145,600 MHz
Kareedown Repeater	145,075 / 145,675 MHz
University Repeater	145,175 / 145,775 MHz
6 meter beacon (ZS2SIX CW Id)	50,005 MHz
2 meter beacon (ZS2PE CW Id)	144,910 MHz

***** WE LIKE BEING YOUR BRANCH *****

NOTICE OF MEETING.

Members are reminded that there is no general meeting of the Branch in December and the next meeting will be held on the 3rd Friday in January, 1990.

CHRISTMAS AND NEW YEAR GREETINGS

The Chairman and Committee would like to take this opportunity to wish all members and their families a blessed and happy Christmas and a healthy and prosperous 1990.

WELCOME

To Buster Keeton ZS2OK who has joined the Branch as a Social Member. We hope you have a long, happy association with us.

FAREWELL

It is indeed with great sadness that we must say Goodbye to Jim van Loggerenberg ZS2LR who has been transferred to Div. 6. He and his family will be leaving soon and we wish them good luck, happiness in your new job, Jim and we are glad to hear you will not be forgetting your friends in Div. 2.

TOWN REPEATER

Thanks to those who installed the crystal filter into the Town Repeater lately. It certainly has made a big difference to filtering out the QRM and it is a pleasure to be able to use it again.

THANKS

To Wolf ZS2WG for his donation for parts and to him and Lionel ZS2DD for their work on the new PBBS rig.

ON THE NEWSFRONT FROM HEADQUARTERS.

For the information of members who do not always get to know the activities of the League:

Council have met with the Postmaster General to discuss:
(a) What constitutes Emergency Communications
(b) Novice Licence requirements
(c) Third Party traffic such as JOTA, Hou-Koers, Road Events, etc.

It is hoped to set up a 'free exchange of awards' agreement between Russia and ZS as it is difficult for Russian hams to obtain IRCs or dollars. Will be investigated.

Radio ZS will be price marked at R5 excl.

HQ will pay monthly rental of R500 for their premises at Johannesburg Branch Clubhouse.

Proposed to reduce student membership fees to that of Spouse fees to generate interest in amateur radio at a young age. The fees for National Servicemen will be suspended during their service period.

The Book of the Month is the latest ARRL Handbook. Please place your orders with HQ as soon as possible. The new box number is 807 Houghton, 2041.

Subs for 1990/91 will be as follows:

Ordinary member	R57.50	Entry	R15
Spouse	R20.00		-
Student	R20.00		-
Pensioner	R26.00		R15
Incapacitated	R26.00		R15

If anyone has a nomination for any of the following Trophies, please let Marge ZS2OB know. They are due at HQ by 31st January, 1989.
Bert Buckley 6 metres floating trophy - achievement.
Arthur Hemsley 2 metres trophy - achievement
Radio ZS VHF trophy - longest contact on VHF.

Motions for 1990 AGM will be discussed at the February meeting - please make sure YOU and YOU and YOU attend.
This will be attended by Reno ZS6OF - SARL President.

COAXIAL-CONNECTOR ALPHABET SOUP

N, C, TNC, BNC, SMA - have you ever been bewildered by the alphabet soup of letters used to identify your coaxial connectors? Well, there are some interesting stories behind those letters.

Until the 1930s, binding posts and parallel wires were used for feed lines. When the first RF coaxial cables were marketed, the UHF connectors (PL-259 and SO-239) were introduced for these new feed lines.

During WW II, the requirements for a better connector for radar use prompted two designs. The first was developed at Bell Labs by Paul Neill and identified as the type N connector. At the same time, another connector was devised by Carl Concelman. Named the type C connector, it was the first designed as a true 50-ohm connector. By reactive cancellation, the inductance in the connector is balanced out by the dielectric material used to fill the connector. Reactive cancellation allows the connector to have a low SWR well into the GHz region.

Later Neill and Concelman collaborated on the design of a miniature bayonet locking connector. This was dubbed the Bayonet Neill-Concelman or BNC connector. Some time after that, an improved threaded version for airborne use was developed and called the Threaded Neill-Concelman or TNC connector. (Ever notice how easily a male N connector fits on a female BNC or TNC connector?)

For precision microwave use, a series of subminiature connectors were produced - A, B and C. Of these three, the A, or subminiature A (SMA) is the most popular.

(Originally from QEX, May 1985 - later QST).
Thanks to Lionel ZS2DD.

THE CHRISTMAS GIFT

Seems like the long cold nights of December are just made for thought. It is a time for remembering, for putting one's life in the proper perspective.

The Old-Timer pushed the swivel chair back from the operating desk where he had been bringing his logbook up to date Slowly he arose and walked over to the fireplace, stopping only long enough to fill his pipe with tobacco from the humidor on the mantle. Then he settled himself in the big easy chair and thought of the many years of hamming he had enjoyed.

The memories were pleasant, like passing his first ham exam almost 50 years ago and, of course, the never-to-be-forgotten thrill of his first QSO. Let's see, the receiver was a second hand Sky Buddy, and the rig used a 47 xtal oscillator into a pair of push-pull 2A3s in the final. Everything in the transmitter but the crystal was salvaged from an old radio bought for 40 cents at an auction. He would have bid more, but 40 cents was all he had in his pocket. Oh well, he got the radio anyway.

Receivers like the HRO, SX17 and Super Pro were things he dreamed of, knowing he might as well wish for the moon. Factory-built transmitters were available, but no one in the many thousands of QSOs he had worked in those Depression years had used one. Being a ham in the '30s was not easy, and you soon learned what it was like to really want a good rig, knowing you could not possibly afford one.

As the smoke drifted up from his pipe, the Old Timers eyes roamed over his shack layout. There was the SX-28 he bought in the late '40s, or was it the early '50s? Still looking as good as new was his first transmitter built from a kit, an old Heath DX-60. Beside the DX-60 was his home-built VFO with the beautiful National dial. Finally his eyes came to rest on the brand-new state-of-the-art transceiver, purchased just last month. He had put off buying it for years until, finally, he could no longer resist. What a marvel - a full 200-W phone and CW transmitter with dual VFOs and an excellent solid-state receiver, all in a package slightly larger than his old Sky Buddy.

No doubt about it - ham radio was more advanced than he had ever dreamed. What would Hiram Maxim think if he could spend an hour in a present-day ham station?

Lost in all these thoughts, he had not noticed that the fire was getting low. He arose and put a log in the fire. Picking a long splinter from another log, he held it in the yellow flame until it was burning and then used it to re-light his pipe. Walking over to the window, he pulled the curtain back and gazed out into the cold snowy night, thinking how lucky he was to have this nice warm home, his beautiful ham shack, and fine children and grandchildren. Best of all, they would be home in just a few days for Christmas.

Martha, his XYL, had been telling him that his shack was getting too cluttered, what with the old SX-28, DX-60, VFO, antenna tuner and all the other equipment gathered over the years. He knew she was probably right; she usually was. Just like she was right about him giving up pipe smoking. Oh, he never really quit, but he always had a little pang of guilt every time he lit his pipe. Thinking back to his teens when he was first licensed, he thought of just the place for some of his surplus gear. What better time of year to donate a radio to the local children's home and offer to teach a Novice class. It just might spark the interest in a few young people to become fully-fledged hams.

By golly he would pack it up tonight, wrap it in Christmas paper and drop it off so it would be under their tree on Christmas Day. Then he would have enough room on the operating desk to put the new pictures of his grandchildren.

When you are 70 years old you just naturally move a little slow, and it took the OT almost until 10 p.m. to pack and wrap the radio. The big red bow alone took almost 30 minutes. Sitting at the operating desk, he had to admit that Martha had been right, again; the shack did look better. There was no use keeping equipment that was seldom used when someone else could get so much good from it.

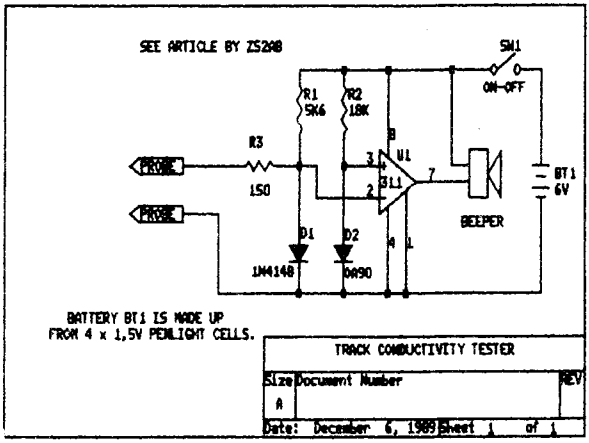
Well, the OT thought, guess I'll see what 40 meters sounds like before turning in for the night. Might hear someone I know.

Slowly, with a touch that was almost a caress, he turned the tuning knob of the SX-28. Sure enough, there was Al W0AWP, putting out a good strong signal as usual. His left hand hit the TR switch, and the little power transformer in the DX-60 purred like a contented kitten. The tubes glowed like fire flies and the equipment gave off a welcoming warmth.

With a hand grown rough and stiff with age, he ever so gently reached for the old Vibroplex. In near perfect 25 WPM CW, he sent the words he had sent so many times before: "73 and a Merry Xmas to U and Urs, Gn."

After pulling the big switch, the Old-Timer slowly walked into the bedroom. Martha, pretending sleep, heard him mutter as he pulled off his shoes, "Never did need two VFOs anyway....."

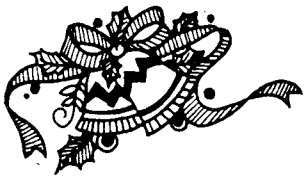
By Bruce Vaughan NR5Q - QST.



'n Geseënde Kersfees

en 'n

Voorspoedige Nuwe Jaar.



SIMPLE PC BOARD TRACK-TRACER

by Brian Weller ZS2AB

They say "Necessity is the mother of invention". Well, I think that it is also true to say that "Frustration is the mother of adaptation", and it is surprising just how simple the answer to a truly frustrating problem can be if only one twigs on to a method which could be applied. I have, for some time, had endless problems with track-tracing on pc boards on which the tracks are two gnats-whiskers wide, and one gnats-whisker apart, as are most of the more complex boards used in todays computers. Circuit diagrams for these boards are usually unobtainable, and it is frequently necessary to sit and draw out part of the diagram of a board in order to intelligently diagnose a problem. Following the tracks visually is very difficult as they disappear under ICs and through plated-through holes onto the other side of the board, and one usually loses track of the track (?) very quickly. Using an ohmmeter is one sure way to wear out ones neck muscles as your eyes oscillate between the board and the meter, usually the meter probe slips off the pad or pin anyway, causing another oscillation and probably worse !

Having had my share of these problems, I decided that there had to be a better way, and much mental head-scratching took place while trying to figure out a way of generating an audible warning of continuity so that a row of pins could be probed without having to watch a meter. Another consideration is that of not subjecting ICs etc on the pc board to excessive voltages or current flow through their internal gates during such testing sessions, and also to be able to differentiate between the low resistance of a track and the forward voltage drop across a semiconductor junction in order to eliminate false indications of continuity due to current flowing through a diode or gate within an IC. It was eventually decided that the best way to achieve this was to compare the voltage drop across a track with a reference which was lower than the voltage drop across a gate or diode, and, as all devices currently used on the pc boards of interest are silicon related, it was felt unlikely that a voltage drop of less than 0,6 volts would be encountered on most boards (except where low value resistors were found) except where the test prods were shorted by a track.

The result of this theory was the circuit shown. The test-unit utilises a 311 comparator which has a reference voltage of approximately 0,2 established at pin 3 by the forward voltage drop of a GERMANIUM diode (old-timers will remember them!!), while the other input on pin 2 is clamped at 0,6 volts by a silicon diode. This diode is not essential to the working of the tester, but it serves to limit the voltage used for testing to a level which will not damage any devices on the board. The 5k6 resistor limits the current through the test prods to about 1 mA when they are shorted, also ensuring that board devices cannot accidentally be subjected to damaging current-flow.

The output of the comparator is connected to a piezo beeper of the variety which has a built-in driver circuit and will beep when DC is applied to its terminals. When the test-prods are not shorted, the voltage at pin 2 is higher than at pin 3 of the 311 and its output is high therefore the beeper is silent. As soon as the voltage at pin 2 drops below the reference at pin 3, the 311 output switches to low, and the beeper beeps. The circuit is powered from a 6 volt battery, made up of four 1,5v penlight cells and the current consumption is very low. The only small problem encountered with the circuit was that low value resistors on a pc board (below about 300 ohms) would also cause the voltage to drop below the 0,2 threshold, giving a false indication. To reduce this problem, a series resistor was added between the prod and pin 2 (150 ohm) which has largely removed the problem except where resistance of about 100 ohms or less is present. Such low values are not often found on digital boards, and if any uncertainty exists, use a normal ohm meter to check. The circuit has been tried on a number of boards with all manner of ICs and transistors present, and the results are MAGIC. There is no need to bother about the polarity of the prods when testing as, at such low voltage and current, nothing on the board will be damaged irrespective of polarity applied.
This unit would find application also for testing suspect cables etc, and probably everyone to whom the circuit is of any interest will think of other applications.

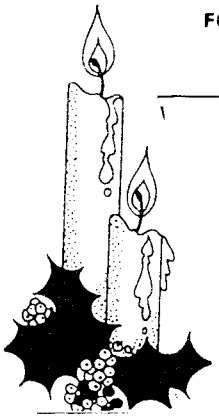
CIRCUIT DIAGRAM 4
PAGES THATAWAY -->

Do not make electricity your enemy.
Like a dog, electricity can be one of man's best friends. Treat it with contempt, however, and it becomes a venomous snake that will bite you when you least expect it. What makes electricity different from other potential hazards is its unpredictableness. Luckily, legislation has done much for the safe generation, distribution and usage of electricity, which has resulted in fewer people being killed or injured. Any contact with energised conductors could be fatal if the person involved happens to be touching the ground. Portable electrical equipment is often used in damp conditions or where metal is present. It is therefore very important to make sure that all such equipment is in good working condition.

Points to watch for:
(1) Check all electrical cords regularly for signs of damage.
(2) Repair the damaged cords by taping up the frayed parts with a good quality PVC tape (not Elastoplast or masking tape) as a temporary measure, and replace the cord as soon as possible.
(3) Teach everyone in the home to report any electrical defect to the head of the house.
(4) Sensitivity test on earth leakage units should be performed regularly.
(5) The older type or faulty multiplugs, or even the standard 15 amp plug or wall socket without shutters are very dangerous with small children in the house.
(6) After switching off, remove the plug by its grip, and not by pulling on the cord.
(7) Do not carry out repairs if you do not have any knowledge of such equipment.
(8) Switch off and unplug equipment before commencing any repairs.
(9) Make sure that your hands are dry. Stay away from metal pipes or electrically earthed equipment and make sure that the ground is dry or stand on an insulated surface or rubber mat.
(10) When buying any household appliances, make sure that it is manufactured in your local voltage.
(11) When using an extension cord, do not leave part of the lead coiled on the reel as this causes heat and power loss to appliances.

(12) Extension leads must not be left under carpets or across a passageway.
(13) Extension leads must be of a recommended voltage and current rating.
(14) During electrical power failures, regard everything as being alive and rather turn the appliances off at the switch until the power is restored and the appliance is under your supervision again.
(15) When the earth-leakage unit trips for no apparent reason, simply unplug all appliances, restore the power by resetting the earth-leakage unit and plug in the appliances one by one; the faulty one will then reveal itself.
(16) Do not touch anyone being shocked, switch off the power or use a broomstick or similar non-conducting item to remove the victim from the power source.
(17) Make sure you know where the electrical main switch is in case of emergency.
(18) Make sure your hot water taps are not leaking as this will cause cold water to continually enter your hot water cylinder, causing a higher electrical consumption.

From Stoffel Carr ZS2C



Woman to bank teller: "I'd like to open a joint account with someone who has plenty of money."

Late riser: "If the good Lord had wanted us to see the sunrise, He would have scheduled it in prime time."