

Q S X
P E

*Port Elizabeth Branch of the
South African Radio League*

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



National Call	145.5 Mhz
P.E. Repeater	145.05/65
Grahamstown	145.15/75
Lady's Slipper	145.10/70

ZS2PE

Bulletin: Sunday 08h40
HF: 40m - 7098 KHz
VHF: FM-145,700 MHz



fill 2 B4. 20 5 200
Call. 6000.

Port Elizabeth Branch

NOTICE OF MEETING.

THE MONTHLY MEETING OF THE BRANCH WILL TAKE PLACE AT THE Y.M.C.A., 100 BARK STREET ON FRIDAY 19th NOVEMBER AT 8p.m. THERE WILL BE A VIDEO SHOW PUT ON BY THE B.B.C. ON THE CONFEDERATE AIR FORCE WHICH WAS FORMED TO BATTLE ALL TYPES OF WORLD WAR II, AND THIS SHOULD PROVE OF PARTICULAR INTEREST TO THOSE INTERESTED IN AIRPLANES. ALL ARE WELCOME, AND AS THIS IS THE LAST MEETING FOR THE YEAR, WE WOULD LOVE TO SEE YOU ALL THERE.

COMMITTED MEMBERS.

Chairman: Dick ZS2RS (322111) Vice Chairman: Trevor ZS2AB (321344)
Secretary: Marge ZS2GB (303498) Treasurer: Brian ZS2AB (303498)
Projects: Lionel ZS2DD (321770) Special Events: Colin ZS2AB (321344)
Fred ZS2AB (321119 -0400)
Awards: Attie ZR2DY (533398) QX FE: ZS2OB and ZS2AB.

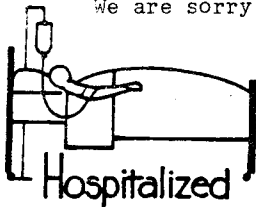
NEWS

CONGRATULATIONS: To Dick ZS2RS who obtained the highest points in the SARL phone contest in Division 2.

to Colin ZS2AO who won the ZS2AB Home Construction Trophy for his SSTV set up, and to Buck ZS2RM who won the ZS2OB DX Trophy with over 1500 contacts in the year and who was also the highest ZS scorer in the 1981 CQ Worldwide CW contest with 250475 points.

WELCOME: to the Branch to Rudi v.d. Elst ZS2EE of Port Alfred, and we hope your association with the Branch is a long and happy one.

Heard on 2 meters during the week was Brian ZS6ARB who had been doing some travelling around between Grahamstown and P.E. Nice to have you back for a short time, Brian.



We are sorry to hear that Gus ZS2MC will be visiting the White House for a short while for an operation and we hope that you will be completely well again soon and back on the air. Hopefully Vi ZS2BR is well over her cataract operation now and taking a completely new look at life.

ANNUAL CHRISTMAS GET-TOGETHER.

This year, the Christmas party will take the form of a Dinner-dance and is being held with the Algoa Branch. This takes place at the Hong Kong Chinese restaurant on Saturday 20th November and tickets are available at R18 per couple or R9 single. This will include wine, but if you wish to have any thing else to drink, please bring it along. Please contact Brian ZS2AB phone 303498 if you wish to come along, and let him know soon so that the bookings can be confirmed.

GARAGE SALE.

This raised over R100 for AGM 1984 funds, and many thanks to Brian ZS2AB and to all those who contributed and bought bits and pieces.

AGM 1984.

Within a very short time, a Committee and working group consisting of members of both PE and Algoa Branches will be set up, as there is an enormous amount of organisation and planning and fund raising to do for the AGM and if anyone is interested in joining the group or has some good ideas to pass on, please let any on the Committee members know as soon as possible.

Many hands makee tube glow!

MINUTES OF THE MONTHLY GENERAL MEETING OF THE PORT ELIZABETH BRANCH
OF THE SOUTH AFRICAN RADIO LEAGUE, HELD AT THE Y.M.C.A. ON 15 OCT. 1982.

- PRESENT: A total of 15 members and visitors. The Chairman extended a special welcome to John Watson ZS2MD and John St. Clair ZS2MR, both of whom we see all too seldom, and to Roger McLaughlin.
- APPOLOGIES: DANK and ZS2LO, ZS2OF.
- MINUTES: These had been published in QSK-PE, and were taken as read, proposed by Attie ZS2LV and seconded by Trevor ZS2TJ.
- ARISING: Nil.
- FINANCE: The Treasurer reported that the last of the subs. appeared to have been received, no more having arrived this week, and the membership total stands at 94, with the HQ share having been sent to Cape Town.
- CORRES: The Chairman read the letter from the Algoa Flying Club, thanking us for our help with the recent navigation exercise, and gave a short resume of the correspondence concerning the use of the 30 metre band.
- GENERAL: The Chairman pointed out the new "cute" format of QSK-PE, and said that the experiment was purely for financial reasons, as the number of printing plates required was half of the number used in the past, not to mention the saving of paper. He said that we would try the new size for three months, and, if it met with members approval, would be adopted as standard, otherwise we could revert to the old format if problems were encountered with legibility, and members comments were invited. Fred ZS2EJ said that the new size was a step "in the right direction". Viv ZS2VM laughingly commented that his arms were only just long enough for him to have been able to read the old format.
- The Chairman stated that the annual JOTA was taking place this weekend, and that Bill ZS2AO and Fred ZS2EC would be in charge of the arrangements. The station would be set up in a godhouse, for operation on Saturday only, all the local sports being present at the venue for the weekend. As it was a special event on the scouting calendar worldwide, it is hoped that a fair amount of worthwhile DX could be worked, and Dick has made his T1 beam available, however, this would need more than two or three people to erect, and members were asked to offer their services in erecting the antenna early on Saturday morning, and manning the station for the day. Mr Jeff ZS2W had donated a further three cartons of tinned fruit, to be sold in aid of JSM funds, the last such donation from Jeff had been sold at 20c per tin, and the same price applied to the present lot. The Chairman extended thanks to Jeff for his contribution.
- The Chairman said that he had received a phonecall from Bette ZS2LC asking what arrangements had been made concerning the year-end social get-together. Much discussion took place, and it was suggested by Viv that the possibility of combining with the Algoa Branch be investigated. It was decided that this would be followed up immediately.
- The Chairman said that Brian ZS2AB had two classes remaining of the present technical course, and wished all the exam. candidates the best of luck.

Their being no further business, the meeting was closed at 20h40. Mr. Noel Gray of the S.A.B.S. Showed two very interesting films about the Bureau's work, with tea being taken between the films.

sgd: R.M. Schonborn ZS2RS
CHAIRMAN.

sgd: B.A. Weller ZS2AB
act. SECRETARY.

Equalize Your Microphone and Be Heard!

By Bob Heil,* K9EID

QST-

July 1982

Hams place emphasis on high-power transmitters, large antenna systems and accessories that are aimed at making Amateur Radio signals louder. Few take note of articulation (clear and effective utterance). Good articulation gives the listener the ability to clearly understand each syllable.

Manufacturers say very little about audio-frequency response and distortion levels. The audio section (of a transmitter) should be fairly flat in response — meaning that there are no big peaks or nulls in the overall response pattern — and have less than 0.2% distortion.

Choose the Correct Microphone

Microphones are designed for specific purposes. In the sound-reinforcement and recording-studio industry, a microphone is purchased only after evaluations are made to ensure that a particular one will produce the desired results.

Amateur Radio operators do not usually select a microphone on this basis. Few hams bother to listen to the output of a microphone before purchasing it. Microphones look “sharp,” match the color of your transmitter or appeal to your spouse’s sense of decor! One fellow recently commented on 40 meters that he purchased a particular microphone because it had a long cable.

A Proper Test

Recording studios have racks of expen-

sive test instruments to help conduct a proper test. But what about you? You only need a good-quality tape recorder and one of your fellow amateur friends. Have him record directly from the speaker of his hf receiver into the line input of the tape recorder while you transmit a signal. Take the tape home and “digest” it. You will hear your station almost as others hear it. It is a simple method for finding out what your station sounds like.

To make the test properly, use three or four microphones that you think will do the job for you. Then select several that you don’t think you will like. Using a 2-meter direct-frequency link for coordination, have your friend tape directly from his receiver, making sure to avoid input-overload conditions. If your signal is strong, have him disconnect his receiving antenna, or listen with his dummy load connected.

During the test, try each microphone with your transmitter. Be very careful to document each move, by mentioning each microphone by model, and note the level setting on the tape recording. You then have an accurate reference when listening to the playback.

After the test transmissions, you will want to listen to the results under conditions similar to those of others who will hear your signal. Don’t listen to the tape while using a high-quality speaker system. Play the results back through the speaker of your Amateur Radio receiver. When listening, be ready for some surprises! Remember those three microphones you didn’t think much of? Chances are, one of

them might be the best of the lot! You will be listening for good articulation in the midrange and sibilance (the high frequency presence of "s" and "t") sounds with low or no distortion. Once you find a microphone that suits you, it's time to start equalizing your system for optimum audio characteristics.

Passive Equalization

Most modern ssb transmitters contain filter networks that limit the response from 300 to 3000 Hz. If you use a microphone that has a wider frequency response, the transmitter may produce a wider signal than is necessary. The lower frequency audio (under 300 Hz) does nothing to help the receiving-station operator understand the information better. In fact, better articulation is achieved by passively rolling off the microphone response under 300 Hz. This can be accomplished easily by installing a disc-ceramic capacitor, such as a 0.01- μ F unit. The impedance of the microphone and the capacitor value will determine the roll-off frequency.

This capacitor should be installed in series with the "hot" microphone lead. Placing the capacitor across the hot lead to ground will roll off the high frequencies, should you desire to do this. In most cases you will not want to roll off the high-frequency response.

Your end goal is to achieve good articulation without killing any of the natural midrange and low-frequency responses. You will want to roll off the low end, keeping your signal as narrow as possible. Most modern receivers have filters that pass only 300 to 3000 Hz audio. Transmitting any frequencies outside of this range causes the transmitter and final amplifier to work harder to produce suitable signals. Anyway, the receiver should filter out the responses outside the passband.

Active Equalization

To get the full advantages of proper audio equalization, active filter circuits should be used instead of passive ones. Active elements are capable of giving you ± 15 to 30 dB ("cut" and "boost") at precise frequencies. These can be selected

easily or made completely variable by using parametric filters with variable pass-band slopes and adjustable filter Qs.

Using a dual 741 (LM1458), you can build a simple but effective active filter, providing the flexibility needed to equalize a microphone. You can add other functions, such as tape recorder, phone patch or inter-tie audio patches.

The circuit can be built with several bands of filtering, so you can control the spectrum from 300 to 3000 Hz. For

communication-quality speech, two active filters are sufficient. For maximum utility, give the filters from a high-quality microphone preamplifier that has been designed carefully so it will not overload the active filters, even at maximum gain.

Circuit Description

Two dual op amps are used in the circuit (Fig. 1). One half of the first IC is used as the microphone preamplifier. It has a transformer input to provide proper impedance matching, as well as protection from RFI. Using transformer-coupled input circuits (where high levels of rf are present) is a good practice. The ac audio signal passes through the windings, but rf will not pass; therefore, you have a good rf shield at the input. It would also be advisable to use ferrite beads on leads that enter the chassis, thus keeping stray rf from entering.

This preamplifier is coupled to the two active filters by means of C4. The filters are set at 500 and 2200 Hz. Filter slopes are fixed at 12 dB per octave, while the filter gain is set to the range of +12 dB to -12 dB. The Q of each filter is 1.7. Output of the Equalizer is variable from 0 to 0.9 volt. Be aware that it may overload your transmitter microphone preamplifier. The proper level will have to be set as a preventive measure.

The power supply can be a 9-volt battery or a well-filtered ac supply. If care is taken to avoid ground loops and magnetic fields affecting the high level microphone preamplifier, you can build a supply inside the housing.

Construction

The circuit is assembled on a small pc board. Mount the board, with either the battery or power supply, in a small metal enclosure. Take care to shield every connection to the outside. Use ferrite beads or feedthrough capacitors for each lead that enters the chassis. Subjecting any audio circuit to high levels of rf may cause problems.

An LED connects to the "clip" light circuit of the preamplifier. This circuit has a control, R1, to adjust the light threshold. Overloading the preamplifier will turn on the overload indicator. The light is best set to come on at 6 dB, before hard clipping is observed on an oscilloscope. If you don't have a scope, you may be able to set it by listening to the output of the preamplifier through a small audio amplifier and adjusting it so the light comes on just before distortion occurs.

Adjustment of the two filters is accomplished best by listening to another receiver, or by having a friend record your testing (as discussed earlier). Once the equalizer is set, it shouldn't have to be changed. Many of these units are tucked away behind the rig so that the controls aren't bumped and changed by mistake.

Don't Forget the Microphone

You can play a few "tricks" to enhance the response of some microphones. Again, you will have to rely on the tape recorder test to determine optimum performance, but it will be worth the effort.

One microphone that can be improved is the Kenwood MC-50. If you have one, make a transmission and have it tape recorded by a fellow operator. Then, wrap electrical or masking tape around the microphone to cover the long slots in the sides near the cartridge. About three turns will usually cover them sufficiently.


Record the signal again. The difference is remarkable! All low-end rumble should be gone. The midrange will be enhanced. You have equalized the microphone by dampening the back of the cartridge, and not allowing the element to travel as far in

the basket by closing the air chamber. The cardboard tube inside a toilet-tissue roll fits perfectly over the end of the MC-50, providing a permanent, simple, but effective, modification. Many other microphones can be dampened in similar ways.

Be Aware of Excess Room Resonance

One of the worst things done to Amateur Radio audio today is placing the microphone in a hard-surfaced room with lots of echo. Some operators crank the gain of the preamplifier up so that they can lie back 3 to 4 feet away, controlling the PTT with their toes! I think this "murders" a good signal. Most communication microphones are designed to be close-talked, using low microphone gain, and thus produce better presence and articulation. The room echo becomes practically nonexistent, while the speech audio comes out on top.

Even in recording studios, where acoustics are nearly perfect, microphones are "worked" very close. Many microphones exhibit a proximity effect: The closer you talk into the microphone, the more low and mid frequencies it produces, in relationship to the high-frequency response. When you back off from the microphone, the result is a "thin" sound, as the body of the voice characteristics is lost.

Little things make stations sound big. Proper use of microphones, correct placement, small amounts of equalization and suitable gain settings are some of the most important "little" things. Are you aware of what you sound like, and do you want to make it better? Our bands are becoming more populated. Perhaps crowded bands can be tolerated, all things being equalized. 

P.C. boards for this unit can be bought from ZS2AB at R3 ea. Phone 30-3498.

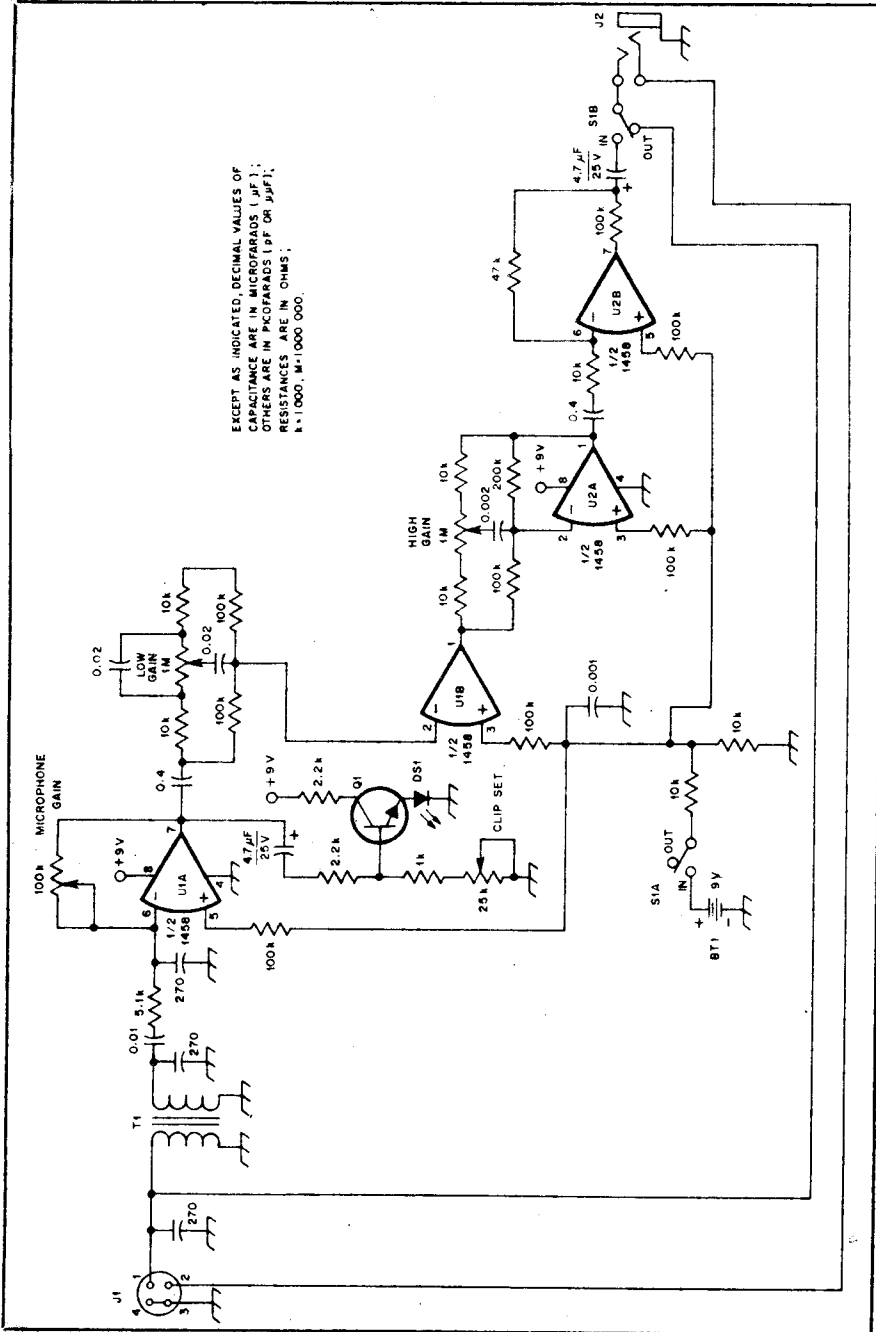


Fig. 1 — Schematic diagram of the Equalizer. All resistors are 1/4-watt carbon-composition or film types. Part numbers in parentheses are Radio Shack.

DS1 — LED, size and color not critical.

Q1 — Silicon, npn small-signal bipolar transistor, 500 mW, 2N2222 or equiv. (276-2009).

S1 — Dpdt toggle or slide switch (275-666, 275-403, etc.).

T1 — 2 K to 10 K audio-interstage transformer.

RS273-1378 or equiv.

U1, U2 — Dual operational amplifier IC, type 1458 or equiv. (276-038).

DX

DX notes contributed by Lionel ZS2DD from bulletins received from MIAW.

Rotuma Fiji: 3D2XN and 3D2XR have been active especially on 10 mtrs, and 15 mtrs from Rotuma Is. Although Rotuma is part of Fiji, the operators hope to qualify as a new DXCC country. Work them first, the decision will be made at a later date.

MALAWI: 7Q7LW is still active almost daily. Les frequents 28500 to 28510 from 1900 Z.

Cyprus/asia: Four operators are signing DLØHBC/ØP from Cyprus. This operation is from the Asiatic part of Zone 20. CW only is being used on 160 thru 10 mtrs. QSL via DFØLH.

Comoros: D68AM is active after a long absence. Alain likes 21 and 28 SSB.

French Antarctica: All the 'B8 countries in the southern Indian Ocean will be manned by new crews starting in mid November. Each crew will include at least one licensed radio operator. Call signs will probably be ØBØNH/ØI ØB8ZF and ØB8ZX. Look for activity around the end of November.

San Fernandez: F-6W00, ØWØZ continues his operation from San Fernandez into its second week. Joe is operating SSB only, 30 thru 10 mtrs. QSL to his home call of the USA.

South Shetland Is: Ø3AN has been showing up on W7PHQ 15 mtr net at 1930z on 21345.

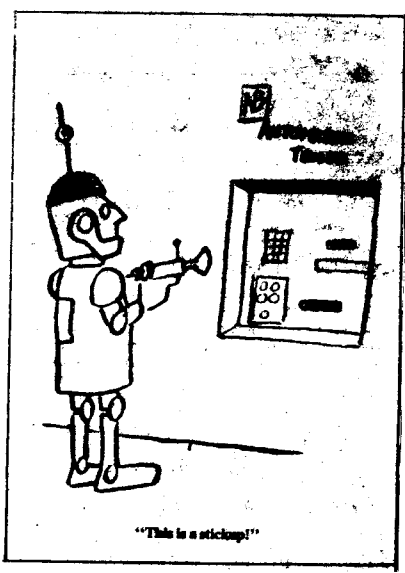
Anatolian Union: Ø3AB currently active on about 28520 kHz.

Tanton Is./ Central Kiribati: Eric SMØAGD very active on 10 and 15 mtrs. Mode and CW. Calls are SMØAGD/K1 and T31AE respectively. On odd numbered days K1 is used and on even numbered days T31 is used. Active on 10 mtrs around 2130 Z and goes on 15 mtrs at 0000z. Also can be found on 7085 kHz at 0800z. QSL via SMØKXS.

Franz Josef Land: UK1FF active lately on 14203 kHz at 1330z. QSL via UK3SAB.

Madagascar: YL1AGD shows up around 0500z on 14220 kHz.

LAUGH A LITTLE.



WISE WORDS - MUM'S THE WORD.

by W8WKY.



As a hint to safeguard one's home and those of fellow hams as well, we urge our readers not to broadcast over any ham frequency of an upcoming holiday or a weekend trip planned for such and such a time.

It is sad but true that with the aid of sophisticated scanners (plus the fact that a lot of non-hams nowadays have ham transceivers for illegal use and can therefore listen to us on any HF and VHF frequencies), thieves can monitor just about any frequency to learn who is going to be away from home and for how long. All they need is this information and the call-signs; the rest is easy. Getting the QTH of any ham is

certainly no big job, as we all so well know. After one innocently tells on-the-air friends the details of that much look-for holiday or trip, one has literally offered an invitation for a break-in.

We hams, as a general rule, are quite a loquacious lot and sometimes we say things to our friends on the air that we would not announce publicly otherwise. We must learn to protect ourselves from the eager beavers who are just waiting to hear who is going to be away from home and for how long. Can anything be simpler than that for robbers?

As Gene W8BMFZ said: "Don't tell the world what shopping centre you're going to --- tell them where you've been!"

One must be careful even on the low band frequencies. We may be talking to a ham in another state and passing out info that won't mean a thing to him, but a malefactor (he could easily be one across town or even in the neighbourhood) hearing us, can take full advantage of the info and later on we'll wonder how anyone knew of our absence ---after discovering that someone broke in!! It's best to tell concerned friends over the landline or even by mail that we will be gone for such and such a time - but don't tell it over the air! In other words, don't advise robbers that we're having OPEN HOUSE for them from this date to that one!

It happened to me last summer. While having a QSO on 40 meters I was stating that I was going to Wisconsin for a holiday and even gave the time of my absence when someone with a 60 over 9 signal broke in to ask where I lived! Stupidly I responded by giving him my QTH without first asking who was inquiring. After giving him the info, I then thought of asking who he was -- and upon requesting for same, he never came back to me! I thought of this all the time I was away....

Finally a word to the friends: let's not pump the fellow ham for such info. Don't force him though questions to tell over the air when he's going away, and don't refer to any other ham's absence in any way. In this matter, no advertising is the best policy - mum's the word.

(Acknowledgements to Silvercreek Amateur Radio Association Newsletter by kind courtesy of K8EMI Ed).

BULLETIN ROSTER.

5th December	Marge ZS20B
12th December	Brian ZS2AB
19th December	Lionel ZS2DD
26th December	Colin ZS2AO



PORT ELIZABETH BRANCH ANNUAL GENERAL
MEETING - SEPT., 1982.



Dick ZS2RS
Chairman
P.E. Branch

Wolfie ZS2WG
Chairman
Algoa Branch

Brian ZS2AB
Treasurer
P.E. Branch



It seems as though selecting the right piece is a serious business. Among those shown are Allan ZS2AJ, Lionel ZS2DD, Fred ZS2EQ, Trevor ZS2TJ, Viv ZS2VM and some of the others of the 54 who attended the meeting and braai.



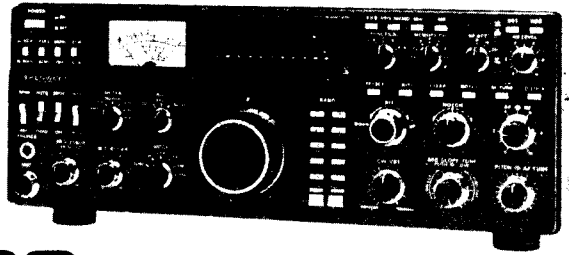
Brian ZS2AB
Treasurer

Marge ZS2OB
Secretary

Attie ZR2DY
Awards Manager

getting down to the main business of the afternoon!

 **KENWOOD**



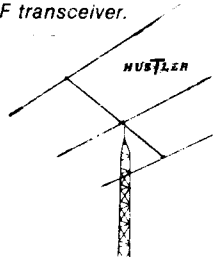
TR 2500

The TR-2500 is a compact 2 meter FM handheld transceiver featuring an LCD readout, 10 channel memory, lithium battery memory back-up, memory scan, programmable automatic band-scan and Hi/Lo power switch.

Kenwood's TS-930S HF transceiver.

 **KENWOOD**

hy-gain



DAIWA POWER METERS



CN540

50MHz · 150MHz

CN520

1.8MHz · 60MHz

SUMMIT DISTRIBUTORS

305 Main Street Tel. 29124
Port Elizabeth