AWA Newsletter

Issue 30 **June 2008**

Antique Wireless Association of Southern Africa

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AWA QSO Party :

What an absolute pleasure to hear so many rigs out there calling "CQ Contest" on AM. It gave me Goosebumps to listen to them all and even though 40m did not have that much room to manoeuvre, there was till enough place for all to play.

Conditions on the Saturday were not perfect, but were certainly a lot better than they had been for a while, while on the Sunday, 40m died very fast, was never really up to speed, but still produced a lot of results.

Division 2 stations really had the weekend all their own way with contacts from all around the country coming in with good results.

A total of 67 stations were recorded on AM, which must be an all time record for SA, while on SSB a total of 101 stations were recorded. For a first time contest/QSO party, I think this was pretty darn good.

I am not convinced though, that there are not more valve rigs out there in working condition. There were a few stations who called in using fully synthesized rigs, but who cares. The interest was there and that was the main purpose of the activity. Congratulations to Jan ZS4JAN who took the AM points using a Yaesu FT200 and to Andre ZS2ACP who took the SSB points using a Yaesu FTDX 400. Next year hopefully we will have a few more participants and the idea is to run it twice during the year, May and October.

Gonset GSB 100

To those who did not fire up their well restored show case models, maybe next time. To those who did , well done. We of the committee salute you. Thanks for making our QSO Party a success.

Andy ZS6ADY

QSO Party Results

Name	Score AM	Name	Score SSB
Jan ZS4JAN	130	Andre ZS2ACP	224
Andre ZS2ACP	124	Mitch ZS2DK	210
Rad ZS6RAD	72	Rad ZS6RAD	210
Mitch ZS2DK	66	Chris ZS2BST	168
Don ZS5DR	39	Don ZS5DR	159
Pine ZS1XE	38	Jan ZS4JAN	148
Denis ZR6DNS	30	Denis ZR6DNS	74
Marius ZS4MP	24	Theunis ZS2EC	67
Theunis ZS2EC	10	Marius ZS4MP	17
Total Competing	67	Total Competing	101

AWA Committee:

* President—Rad ZS6RAD
* Treasurer—Willie ZS5WI
* Technical—Don ZS5DR
* Net Controller—Willem ZS6ALL
* Newsletter/PRO—Andy ZS6ADY

CW Net:

Well the CW call sign ahs been active again this last month, but it seems that interest has waned a bit on this side. It was only the old stalwarts like Barrie ZS6AJY, and Pierre ZS6BQS who kept me company during the month. We had a very brief encounter with ZS1WX But other than that, the band was quiet.

A suggestion from Pierre to use 80m was advertised on the SARL Forum using 3579, the QRP calling frequency, at 18:30 in the evenings. So for those who are available at that time and want to play a bit of CW, come up and have a QSO. 80m has certainly proved itself to be a super band for most times, and does not take a lot of work to put up a bit of wire to use.

We keep saying that hopefully as the bands improve, we will see a lot more activity, so guys dust off your keys, be they electronic, paddles, straight or what ever and come up and join us on frequency. No one is in a rush there, so we tend to dawdle along at about 12 wpm, sometimes a bit faster, sometimes slower, depending on who is there. Hey, we've even worked 5 wpm, so don't worry about your speed.

De ZS0AWA/CW—SK

Hi-Mound BK 100

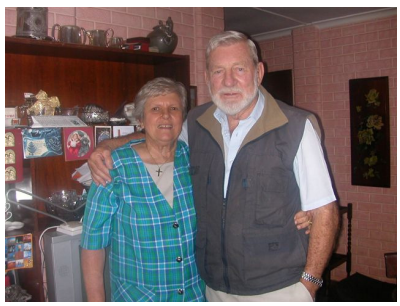
SSB activity:

One of our long time users of SSB and founding member of the AWA has also departed for greener pastures to the "Land of the Long White Cloud".

Rod, ZS5RK, AND Rose ZS5RR, left in mid May to go and set down roots in New Zealand.

Rod has been a great punter of the 80m band and for as long as I have known him has always preferred working 80m. From my early days of working a mobile SSB station, Rod would always be telling us to get to 80m because it was better than 40m. His favourite quote was " it may not be the best, but it is always dependable".

So Rod, to you and Rose, have a great life over there. I know we will hear lots of more of you either on SSB or on CQ100. Thanks for all the input and the good things that you left behind for us (AWA being one of them). I'm sure that you will be missed by many. Top up on alkaloids every now and then and think of us.



Rod and Rose

AM:

I have never heard so many AM stations on frequency at one time in all my days as a Radio Amateur in South Africa.

Of course, I think a lot of guys found out it was not that easy to operate AM without a bit of practice. The setup of the rig is always of great importance and not just plug and play as it is with SSB synthesised rigs.

Who would of imagined that AM would have attracted so much interest on the bands, but there were a good 67 stations logged on the log sheets submitted, which is outstanding.

Conditions on the Saturday were really great for AM and that was a big plus.

We can only hope that this will stir the interest in the old boat anchors and get more of them on the air.

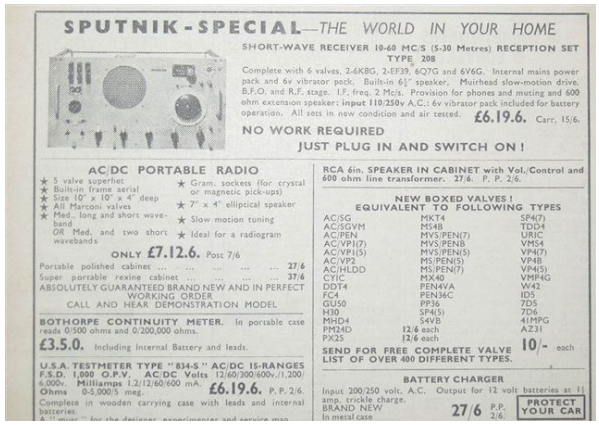
Well done to all who took part.

Yaesu FT200

Hopefully, soon, an article on setting up and using an AM station to get maximum results.

9J2RD/m in Zambia (ZS6TF)

Old timers will recognise this receiver. It is a Government surplus R208 "Sputnik Special" priced at just under 7 pounds in 1958. It covered 10 - 60 MHz and was ideal for listening to the Russian "Sputnik" which had been launched the previous year. It was a double conversion superhet and the first local oscillator could wipe out the UK Band 1 425 line TV (45 to 66.75 Mhz) for a radius of about 100 metres if you tuned in to certain frequencies. The junior operator may be harder to Identify but it is in fact Brian Otter now 9J2BO whom I met in Lusaka on 19th May during our 6 week tour of North and eastern Zambia and who kindly gave me the picture. Has anyone still got one?



Pye – The company Who Won the Second World War ?

John ZS5JF

Although many British companies were involved in the electronic industry before and during the war of all of them the Pye group of companies of Cambridge stand out as the leaders. Not only did they design and supply in vast quantities to the allied armed forces they also led with the design of radar and other military radios.

Pye Telecommunications sadly no longer exists but it had a humble beginning being founded in the early 1900s by a father and son team and first became known as W G Pye Scientific Instruments. They designed and manufactured a great variety of test equipment and subsequently moved into what today we know as "electronics". Later the company was bought by the Stanley family and they expanded the empire to include medium wave radios, communication radios both HF and VHF and later television. Pye spawned many subsidiary companies over the years, notably Cathodeon Crystals and Magnetic Devices, whose components were used in many Pye group products.

The first television transmitter was established at Alexander Palace in London in 1936 and began broadcasting black and white 405 line television. Since Pye had been a pioneer in this field it was natural that they took an early lead in television sales. Aided by Philips in Eindhoven, Holland, Pye devoloped the early television receivers which had a TRF receiver with the sound carrier on 41.5MHz and the vision channel on 45MHz. This receiver used the newly developed RF pentode the EF50. Prior to the EF50 the performance of the available valves was limited to about 30MHz due to the design. The EF50 quickly became the valve of choice for 45MHz television reception and many millions were subsequently made during the second world war by Philips, Mullard and other companies both in Britain and overseas to cope with the demand. A conservative estimate was 10 million EF50s were made between 1939 to 1945.

The ubiquitous EF50 in the familiar red painted finish.

Mullard in Britain manufactured the EF50 in enormous quantities, but not before it had to overcome some technical challenges. The EF50 had a new style base that Philips had developed, this reduced the lead lengths internally and raised the operating frequency to over 100MHz. Early attempts to make this new base at the Mullard factories had been met with problems. Because the outbreak of war was imminent, Mullard imported 1 million glass/metal bases from Philips because Holland was about to be invaded by the german army. Later in the war the EF50 was made by just about every allied valve manufacturer and they went under different part numbers as well as the CV types for the military.

Before war broke out in 1939 Pye had been involved with the design of both the Chain Home RDF (later known as RADAR) for the defense of Britain in the Battle of Britain but also airborne radar fitted to bombers and fighters. Early radar systems needed a good IF strip to process the signals and Pye simply took an existing TRF television receiver on 45MHz using EF50s and built a new design around it. Such was the quality of the design that many thousands were being churned out prior to the war and the demand for EF50 valves increased dramatically. These IF strips were also made in the USA and Canada to help cope with the demand.

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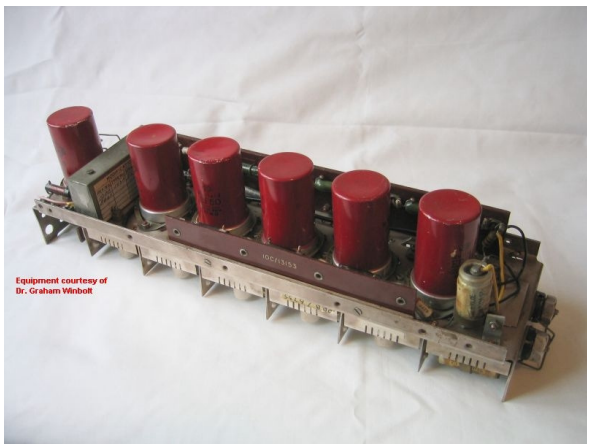

Pye Telecommunications EF50 IF strip used in allied airborne radar receivers

Turning points in the war

Following the British Expeditionary Forces (BEF) landing in France in the early part of the war a sobering lesson was learnt about the ill equipped troops with inferior communication equipment. German troops had modern VHF and HF radios and this was a distinct advantage in repelling the allied troops. This led to the evacuation at Dunkirk where much of the allied equipment was abandoned at the beaches. On arrival back in Britain much effort was placed on designing and manufacturing new radio communication equipment. The leader in this was Pye who quickly developed many radio sets to cater for the new requirements. In readiness for the next offensive Pye was also asked to develop a vehicular transceiver for armored fighting vehicles (AFV) that had not only HF but also VHF capabilities and an intercom system for the vehicle occupants.

Pye also developed the first VHF "Walkie-Talky" for foot patrol troops so they could communicate directly with the AFV support vehicles using the new WS-19 on the "B" transmitter/receiver band of about 230MHz. This VHF handheld radio was designated "Handset, Radiotelephone". The advantage of this was considerable. Previously if the commander of an AFV or the troops needed to pass a message to the other party he had to contact Brigade HQ and ask for his message to be forwarded on, since they operated on different frequencies. This took time and slowed down operations, which could be to the disadvantage of both the AFV and the foot troops. With direct "one on one" communications decisions could be made almost immediately.

18 set

Prior to the outbreak of war Pye had been invited to quote for the manufacture of a low power HF man pack radio developed by army designers. This was considered by Pye to be over costly to manufacture in its current form but within 6 weeks Pye offered an alternative, based on the army design, which was accepted by the army after trials in France. This set was the WS-18 and 76,000 were made by Pye and others during the war.

The 18 set covered 6 to 9MHz and had an output of 0.25W AM and consisted of separate transmitter and receiver units with a 2V dry battery pack for the heaters and 68V high tension supply.

WS-18 man pack radio

The 19 Set

Of all the radio communications sets used during world war 2 the WS-19 is probably the most famous, but also a slightly quirky design. As it turned out the set that Pye developed didn't altogether meet the stringent specification laid down, but it was considered sufficiently compliant for the contract to be awarded. As time was running out this was a wise move by the military heads. The WS-19 was continually developed throughout the war and gradually

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improved. It is testimony to the Pye designers that it was still in use up until the early 1960s, although production had ceased some years earlier. It was however re-manufactured and re-worked by a variety of Army depots and other contractors during the late 1950s and early 1960s to remove the "B" set and to re-wire in PVC cables.

The most sought after version by collectors today is the MK3, which was mainly manufactured in Canada and the USA and had dual language markings on the front panel, English and Cyrillic for the Russian allies.

In total 115,000 WS-19 of various types were supplied during the war of which about 55,000 were made by Pye companies and the rest by various manufacturers in Britain and overseas.

Wireless Set 19 – HF and VHF operation plus crew intercom.

The HF portion covered either 2.5 to 6.5 MHz for the MK1 and 2 to 8MHz for the MK2 and MK3. The VHF portion covered 229 to 241 MHz for all versions. Power output varied quite a lot between batches and versions but was generally about 3 to 5W on high power CW and about 1.5 to 2.5W on AM.
The original technical specification for the WS-19 required the equipment to operate on a vehicle battery supply between 7.5V and 32V DC. The 7.5V was due to it being fitted in 6V battery vehicles, something that was dropped soon after it went into production and the bulk of the sets made used either 12V or 24V battery supply. The move to 12V battery vehicles was to reduce the current drawn. Later fighting vehicles changed to 24V and two versions of the 19 set power supply were made. Both types used a rotary DC-DC converter, with the motor primarily being made by Hoover.

Proximity fuzes

A little known fact is that a Pye company, Cathodeon, developed the first proximity fuzes for artillery shells. The technical details of these were later sent to the USA under the Tizard Committee trading in the "Lend-Lease" agreement as the Pye factories were overloaded with other work. At the same time the US engineers were given the details of the cavity magnetron developed by Randall and Boot at Birmingham University which boosted microwave radar development later in the war.

The prox fuzes used sub miniature valves with wire ends and these were developed by Mullard, a subsidiary of Philips in Holland. The design of the prox fuze was very difficult, it required the electronics to function after being fired from a gun and it experienced severe shock loads. However, the prox fuze had very great advantages over the original barometric pressure or time delayed fuzes being used up to the time and significantly increased the killing power of allied anti aircraft guns. Even if the shell exploded 50m from an enemy aircraft it still inflicted substantial damage and rendered the aircraft out of the equation.

Other Pye developed military radios

As the war progressed the team of designers continued to churn out newer and more advanced designs, largely based on earlier models. Below is a picture of a derivative of the 19 set. I wonder if any of the readers can identify this model? Answer in next month AWA newsletter.

Can you identify this Pye military radio ? It is not WS-19 but uses many of the parts.

Our appreciation to the Pye Telecom Historical Collection for granting permission to use some of the picture in this article.

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Mission Statement

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yesterdays radio transmitters and receivers. To encourage all like minded amateurs to do the same thus ensuring the maintenance and preservation of our amateur heritage.

Membership of this group is free and by association.

Notices:

Visit to ZS6MUS

SATURDAY 5 JULY 2008 STARTING AT 10HOO.

What better way to spend a Saturday with your family than to join members of the Southern African Antique Wireless Association in paying a visit to the SAAF Museum and its Amateur Radio Station ZS6MUS.

The Friends of the SAAF Museum have jumped at the opportunity to host just such an event and have agreed to the following programme :

- 10H00 Meet and Greet at the Friends of the SAAF Club House for coffee, tea, or cold drinks at "donation prices"
- 10H30 Visit ZS6MUS, the "Wireless Room"/Amateur Radio Station that OM Dave Gemmell ZS6AAW, has been operating for so many years and see all the WW11 and other Antique Radios that have been donated to the station
- 11H00 Join a guided tour of the museum's display hall, numerous hangers and static aircraft display on the airfields apron
- 13H00 Partake of a low cost lunch consisting of Borewors Rolls and Refreshments.

For those of us who are not in a hurry to leave, you are welcome to stay on for the rest of the afternoon. The museum only closes at 16H00.

Like the idea, well then here is the catch – we need to know who is coming and the registration of the vehicle you will be arriving in just to gear up for the catering and to let the gate guards know to allow you in .

Contact Dave Gemmell ZS6AAW on 073-158-4582 or davegemmell@bmknet.co.za or Cliff Smyth ZS6BOX on 082-898-9772 or csmyth@altron.co.za.