



A Member
of the
SARL



**Antique
Wireless Association
of Southern Africa**

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AWA Committee:

- * President—Don ZS5DR
- * Technical Advisor—Rad ZS6RAD
- * Net Controller—Willem ZS6ALL
- * Secretary/PRO—
Andy ZS6ADY

AWA Newsletter

#51

March 2010

Reflections:

It was just the other day when we were thinking about the holiday season and where things were going in terms of the bands and how we would survive another season of poor band conditions.

Now as we are almost into the second quarter of the year, it's almost time to start thinking about the next holiday season and where we will be with band conditions as the next year starts to come in to focus. Believe me, it will not be too long before we are staring down the barrel of another year.

Whatever it is that is in store for us, I think we will certainly be able to look back on this last period and think of how there has been a slow but steady improvement tak-

ing place.

In my time as a radio ham, I have never been aware of the DX activity available on 40m as we have been experiencing these last few months. Maybe it has always been there, but there has been such an influx of new stations on 40m and this new found DX band has certainly attracted a lot of attention.

As I watch the figures of SARL membership grow and read about all the new hams getting their licences, I am thankful that there were those that had the audacity, the patience and the endurance to challenge the "old" rules of Amateur Radio that stated you could not use HF unless you had completed your CW instruction. This opened up HF to many old hams who

had simply survived on VHF and ZR call signs. Today of course HF is open to all who dare to use it, and use it they do. Even with some of the restrictions still imposed on power output and frequencies, there are many who are making a success of the bands using basic equipment.

This is the joy of being a Radio Amateur enthusiast. We can make the best of what we have and still get good results from it.

The same goes for valve equipment. It's not the biggest or the best in terms of radio equipment available today, but it certainly does the job and gives a lot of pleasure to those who utilise them.

Best 73

De Andy ZS6ADY

Wikipedia—The Resistor

Wirewound resistors are commonly made by winding a metal wire, usually nichrome around a ceramic, plastic, or fiberglass core. The ends of the wire are soldered or welded to two caps or rings, attached to the ends of the core. The assembly is protected with a layer of paint, molded plastic, or an enamel coating baked at high temperature. Wire leads in low power wirewound resistors are usually between 0.6 and 0.8 mm in diameter and tinned for ease of soldering. For higher power wirewound resistors, either a ceramic outer case or an aluminum outer case on top of an insulating layer is used. The aluminum-cased types are designed to be attached to a heat sink to dissipate the heat; the rated power is dependent on being used with a suitable heat sink, e.g., a 50 W power rated resistor will overheat at a fraction of the power dissipation if not used with a heat sink. Large wirewound resistors may be rated for 1,000 watts or more.

Because wirewound resistors are coils they have more undesirable inductance than other types of resistor, although winding the wire in sections with alternately reversed direction can minimize inductance. Other techniques employ bifilar winding, or a flat thin former (to reduce cross-section area of the coil). For most demanding circuits resistors with Ayrton-Perry winding are used.

CW Net:

This past month has had a few pleasant surprises on the CW net with a few stations not having been heard for a while, making an appearance. It was good to hear Francois, ZS6BUU, on frequency with us with a promise to get some good CW practice in.

It always seems as though things are starting to stagnate, until someone comes along and makes it all worthwhile again.

I have been cheating recently, using an Icom 706 MkIIIG to do my CW as it has a built in keyer, which works fantastically. An advert on the SARL swap column for an electronic keyer to use with my KWM 2A did not produce any fruits, so now I'm looking at building a small keyer to use there. Any comments or assistance would be greatly appreciated for this electroni-

cally disadvantaged person. The Icom needs to go in to my mobile, where it belongs.

I was sure that Dave ZS6AAW sent me an article on something like this, but he blew it if I can find it.

How much does one need to do to get active on CW ? I've heard some hams say that they would be using their computer to send and receive CW so they could become active on the bands again. Is this really using CW or are we allowing the computer to do it all for us. How much does one have to use your skills to type in on a keyboard and read what comes up on a screen ? Just doesn't seem fair to me. I mean I had to really sweat it out to learn to send and receive CW again and still make mistakes a plenty.



How much pleasure can one get out of listening to a computer generate CW for you and then decode what comes to you from another station.

But then, maybe I'm just biased. What say you ?

De ZS0AWA/CW-

SSB activity:

Forty Meters has certainly started to come alive these days and the last few SSB nets have been quite encouraging. We have even been able to hear Les ZS6NV from just the other side of Pretoria, which is really great.

I wonder if this is going to mean the demise of the 80m relay ? We will keep running the relay as long as there are participants on it, so don't give up on us yet. Thanks to Richard, Kevin and Cliff who have been avid supporters of the 80m relay. William has also been around whenever he is back in the country and has preferred the 80m relay because of skip conditions to Harrismith.

It is good however, to hear the bands coming

to life again and all the stations coming out of the woodwork after being in hibernation during the poor conditions. Of course Willem seems to need his alkaloids a lot earlier these days because he has to work so much harder to keep the bigger net running.

Besides the AWA nets, there seems to be a lot more life on the bands again as conditions start to change. All one has to do is read the SARL forum to see all what is happening. Even reports of 10m coming to life.

I have never been that good at DX contacts on 40m, but I do believe there has been a lot of activity there after dark too, with many DX stations being worked on wire antenna's

and low power.

So if you have been in hibernation over this low period, it's time to brush the cobwebs off, chase the ants out of your rig and get operating again. Here's to a good few sunspots to keep us going.



Johnson Viking Ranger I

AM:

There has been some good activity on the AM net as well these days, with a good few stations either just calling in or listening to the antics of a few on a Saturday morning or Wednesday evening.

Don't forget that if you send us a report, either by calling in on the AM net, or on SSB after the AM net, or giving us a report on the later SSB net on 40m, or emailing or sms your report to us, we will put your call sign in the hat for the draw at the end of the year for a Yaesu FR50B receiver. We already have the receiver and Barry ZS2H is going to give it a full refurb for us. So not only will it look good, but it will work good too. Just like a

Farmer Brown chicken.

If you can transmit on AM, even if it is "plastic" AM, come along and join us on a Saturday morning from around 05:30 (gets later in to Winter) or at 19:00 on a Wednesday evening, QRN permitting.

Munro ZS5IN, was sharing with us the other evening how he has been involved in AM transmissions doing MF since the 1950's and that he still has a passion for it. Now that's what I call stickability.

It really would be nice if some of you old time AM operators would put pen to paper and let us have some of your experiences of

the days when that is all there was. But then I may just be passing hot air here.

Keep those valves glowing and join us for a chat on 3615 AM.



Yaesu FR50B Rx

THE PRESIDENTS FIRST QUARTER REPORT



Firstly thank you to the outgoing President Rad ZS6RAD for all his efforts over the last 2 years. He has taken the SA AWA a step forward and we are now a Club of the SARL and have a structured constitution. Rad has taken the position of Technical advisor for this year. Andy ZS6ADY has retained his position as PRO/Secretary and Newsletter Editor, as well as AM and CW net controller. Willem ZS6ALL remains the SSB net controller.

The first quarter of this year has really gone by fast and it seems that every year time goes by quicker. Unfortunately, due to business commitments, I have not spent much time at home this year but when I am home I have tried to participate in all the activities we have had.

I am glad to see the SSB net is still popular on a Saturday morning. I must thank Willem for running the net and Andy for the relays. It certainly makes things a lot easier having two bands to choose from with the propagation conditions the way they are at the moment.

I have really missed out on the AM nets while being away and as Andy said in last months news letter, we are really lucky to be able to play musical Frequencies for TEST Purposes.

It would be great to hear more of you on the AM net. Even if you only report in to say you are listening. At the end of each AM session we are having a SSB call in for those of you who don't have your AM transmitters up and running yet.

Please don't forget, if you call in during or after the AM nets, you stand a chance to win a restored Receiver (AS IS) for your efforts. If you are just a listener then please send Andy an email or sms to let him know you were listening. Signal reports would be most welcome.

Thank you Andy for also running the CW nets so diligently on a Saturday afternoon. Your efforts are much appreciated.

At the beginning of the year I bought a new QTH and will be moving in the next few months. My priority is to get a few antennas up in the new QTH and to have my station up and running ASAP, but I fear my XYL has different plans for my time!!

The biggest problem is trying to find place for all my valuable **Junk** and to decide **What** junk, is really valuable Hi Hi Hi...

We are moving into the colder seasons now and with a bit of luck the storm activity will die down. So guys get those old receivers out, dusted off and filaments warmed up. Pull that old boat anchor Transmitter out from under the bench and let's hear you guys up on frequency. The old valve equipment makes great heaters in the cold shack in the winter months. Remember we all started off with unused old equipment at some time or another and we will be only too pleased to help you overcome some of the start-up problems we all have experienced.

As the SA AWA is now registered as a Club of the SARL, we have been taking part in the Club Contests being held and it would be great to have you guys up on the various modes you enjoy. Support the AWA in the contests and let's give the other clubs a run for their money! Andy has and will be publishing all the dates in the Newsletter so take note and let's see if we can climb up the ladder from 4th place in the SSB round.

PSK and RTTY is next at the end of March and CW follows in May.

Our own CW Activity day was held recently and well done to Pierre ZS6BB for taking first spot and to all those who took part. Keep it up.

Don't forget guys, if you don't call CQ on the bands, you are not going to talk to anybody.

Its like a fly fisherman casting and never getting his line wet. If the hook is not in the water you will never catch that elusive trout. Turn the old rigs on and call CQ. You may be surprised.

I was fixing a Collins KWM2A Transceiver early one evening, which I have given to my son Cuan, and decided to call CQ on 40m only to make contact with a VK station. You should have seen the delight on my little boys face knowing HIS Rig could speak to Australia. Can you remember the first time you had a contact with or heard a DX contact on air and all this with a valve rig? With a bit of luck we might hear him on the air as soon as he passes his ZU licence.

Andy has managed to secure the 10th of April at the (TAC) Transvaal Aviation Club for our annual get together and it will be great if you guys can make it. Sadly I may be in Nigeria at that time, but It is always a success. So highlight that day on your calendars. There is always lots of Valuable Junk available for grabs.

Well lets hope the next few months bring us lots of happy operating using our antique equipment.

Best 73's

Don Radford
ZS5DR
President SA AWA

The TR9D “Battle of Britain Fighter” radio

by Richard Dismore ZS6TF

The TR9 entered service in RAF biplane aircraft squadrons in the early thirties, and continued on as the TR9D in single-seater WW2 fighter aircraft such as the early versions of the Spitfire and Hurricane, and as the TR9F in bomber aircraft such as the early versions of the Lancaster. The latter used the intercom amplifier to modulate the transmitter enabling patching through to different crew stations.

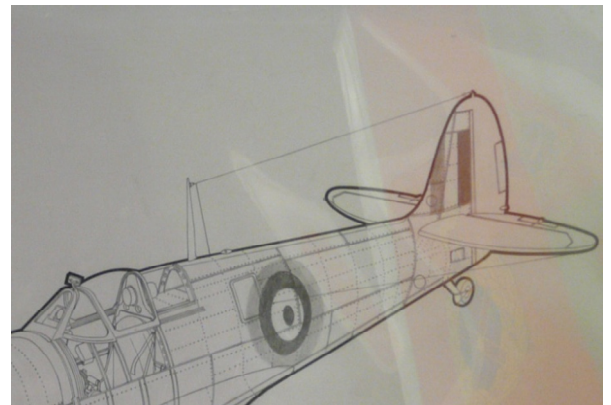
The original TR9 was a lightweight transceiver, made up of a separate transmitter and TRF receiver, mounted in a wooden case covered with canvas, operating in the 4.3 to 6.0 MHz range. The equipment was pre-tuned to a single channel on the ground. The pilot's controls were a large lever for transmit/ receive, a lever for fine tuning, and a volume control, all mounted on the side of the cockpit.

Power was supplied by an external 2 volt accumulator for the valve filaments, and three dry batteries mounted inside the case 120 volt HT, 10.5 volt transmitter grid bias, and 4.5 volt receiver grid bias.

Over time the TR9 was replaced by the TR9B and TR9C, with ongoing minor circuit changes, but introduction of a lightweight metal case designed for anti-vibration mountings and quick changeover of units giving ease of maintenance and improved reliability.



The first significant improvement before the outbreak of WW2, was the TR9D, with a tuning range of 4.3 to 6.6 MHz, and a 2 channel crystal controlled transmitter, 1 RT channel and 1 for automatic DF transmission, the receiver audio stage also acting as modulator for transmitter. The receiver was still a TRF however as it could not be adapted for crystal control and it retained the same power supply batteries.



Spitfire HF aerial

By the time hostilities commenced, the hopelessly obsolete TR9D was already installed in most frontline fighter aircraft. It had an air-to-air range of around 5 miles and air to ground 30 miles.

This was due to an inefficient, electrically short antenna mounted close to the metallic fuselage of the fighter, maximum output of 300 milliwatts RF, no AVC on the receiver and a reputation for being noisy, poor performance in the presence of static, and difficult to tune.

Trials of TR.1133 VHF sets conducted at RAF Duxford in October 1939 demonstrated an air-to-ground range of up to 140 miles was obtained at 10,000 feet, and an air-to-air range of over 100 miles, resulting in orders for quantity production. It had 5 watts and a resonant antenna.

The design made for an easy changeover, as early Spitfires and Hurricanes were built with wiring to accommodate either VHF or HF sets and mechanically compatible mountings. A replacement HF set, the TR1196 was also introduced at the same time.

VHF sets were already in squadron service in France during 1940, so why did Air Chief Marshal Hugh Dowding issue a command in June 1940 withdrawing the vastly superior VHF sets from service and ordering all squadrons to convert back to HF? The pressing answer was that many fighter aircraft were lost in air battles during the Dunkirk evacuation during May and Fighter Command was perilously short of VHF sets and spares. VHF installation was delayed, pending an anticipated invasion of Britain, because a changeover in the middle of such a major battle would have courted disaster.

The decision was rooted in the experience gained in trials and testing of the RAF command structure in the two or three years pre-war in large-scale Fighter Command exercises using aircraft from Bomber Command as the enemy. This organization was one of the success stories of Fighter Command in the Battle of Britain, the effectiveness of which was completely underestimated by the enemy together with their total under estimation of Britain's fighter strength and production capacity.

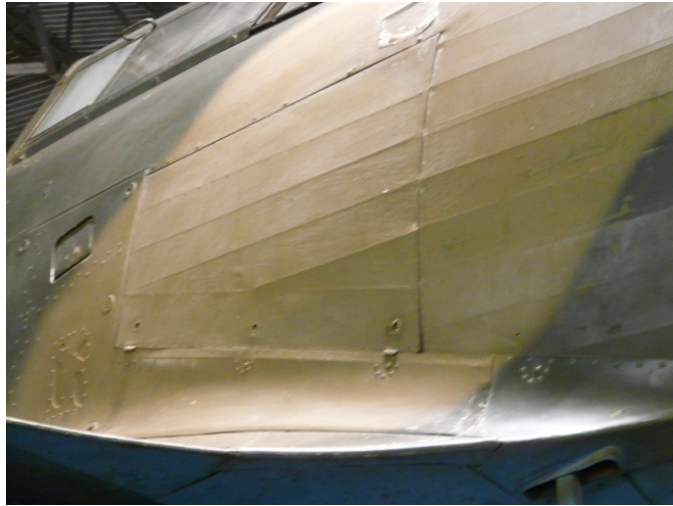
The TR9's deficiencies were well understood and extension of the range of fighter control was achieved through a system of radio relays for the HF system, known as 'R/T Tenders' deployed some 30-40 miles from the sector airfield linked by high-quality telephone landline to the control room, permitting two-way communication between the air and ground. They were usually located close to the sector's Direction Finding stations 30 miles apart in line to the coast, used to triangulate fighter plane position from accurately timed short automatic transmissions on the TR9D's second channel.



TR9D Valve line-up



Dry batteries



Radio access hatch in the Hurricane

VHF sets only began to be re-introduced only towards the end of the Battle of Britain and therefore the TR9D bore the major burden of airborne communications during the conflict.



The planes that used TR9's

Dudley Z22JE

During last month, we had a visit from Dudley Z22JE. Dudley spent the best part of the day with Richard, visiting the East Rand Branch flea market and then had lunch at John ZS6ABJ, where we managed to catch up with him for a good eye-ball QSO.



Dudley and Duppie ZS6BDD sharing a few words of wisdom with each other.



Lunch under the lapa at John ZS6ABJ. From left, Cliff ZS6BOX; John; Richard ZS6TF; Dudley and Andy ZS6ADY. Picture by Rad ZS6RAD(Insert)



Here's a handy insert for those who are interested in the HF band.

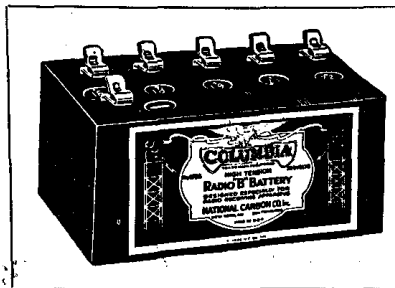
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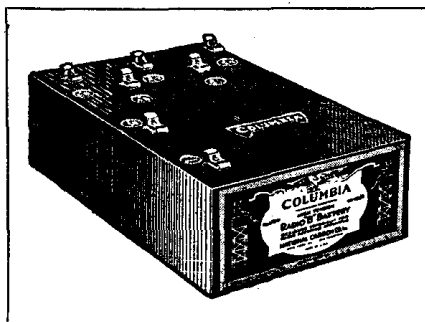
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**Antique Wireless Association
of Southern Africa**

Mission Statement

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yester-days 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:**AWA Open Day:**

Once again we will be having our annual Open Day at Rand Airport at the TAC.

Date: Saturday 10 April from 09:30.

We hope to have the usual display of Antique rigs and of course Flea Market. Should you want to put something on display, bring it along and place it on one of the display tables inside the TAC. Anyone requiring a table at the flea market, please confirm with Andy either by email or phone.

Swap/For Sale Items:

Jim Jack, ZS6YW, has the following goodies for sale :

His phone number is 011 7827595 Actually he has a lot more to dispose of but says this is a start.

- Meters. All shapes and sizes.
- Transformers. New. 5x230/2x12v 50w.
1x230v/16v 100w.
2x230/117 20w.
1x230/110 100w.
- Used laminations kept for rewinding transformers. Copper wire.
- Capacitors receiver variable. Single and ganged. Also HV for amps.
- Unused. Tubes. 35T. RCA829B Ampres 5894. Philips QQE03/20. 3 x 6146A
- Co-ax Cable 98U Army Navy type. Silvered Copper/ Double Braid. 50 Ohms 0.42 ins. Approx 55 Meters.
- Variac 0/280v Max 2.5 A
- Grid Dip meters B&W and Heathkit. VTVM Heathkit with HV probe.
- Home brew UV PCB Printer. PCB sheets. "Elector" timer and 500w oven.
- Homebrew manual coil winder.
- Large HV porcelain insulators lead thru and standoff (Ex Tesla coil)
- Box of PCB and remains of QRP transceiver. Many useful parts.
- Universal AVOMETER Model 8 MK 111. With Instruction Book/case.
- Complete FT102 with Instruction Book and FT102 Technical Supplement. Very usefull for spares.

12 metre free-standing steel lattice tower, top 8 meters hinged and counterweighted for easy antenna access at ground level, including CDE rotator and TH3J antenna. Located in Fairmount Johannesburg and available to AWA member for a suitable donation to the association and who must arrange dismantling and transport. Contact Andy ZS6ADY on 0824484368