

Inside this issue:

HF Happenings	2-3
AWA at the SARL AGM	4-5
The 12BY7 Valve	6-7
Valve QSO Party	8
Raffle	9
Notices	10

AWA Committee:

- * President and Western Cape—John ZS1WJ
- * VicePresident—Renato ZS6REN
- * Technical Advisor—Rad ZS6RAD
- * Secretary/PRO—Andy ZS6ADY
- * KZN—Don ZS5DR
- * Historian—Oliver ZS6OG
- * Member—Jacques ZS6JPS

Newsletter

The Antique Wireless Association of Southern Africa

142

May 2018

Reflections:

For those of you who have never been along to one of the AWA displays, you really missed a good one at the AGM held in Pretoria.

We were invited by PARC to put up a display for the AWA, as were many others, and I really believe this was the best display we have ever put on and we have done a few.

I think we all realised how important it is to showcase the AWA and what it is we stand for.

I don't know how many people have joined us as a result of these displays, but I do know that there have been many who look at them and reminisce about the days when they operated some of the radios on display, and how they used AM before SSB came into being.

And then there are those that have never seen valve technology and stand in

awe at what is there and can't believe that we actually used, sometimes still use these big boatanchors for the same purpose they use their tiny transistorised plug and play toys that are far more diverse than anything we could ever have hoped for in the boat-anchor, but yet not superior in any way.

There may not be voice synthesisers and waterfalls, but it takes a lot to beat the audio quality of a valve rig.

Of course, I am biased, but that doesn't mean to say I am not right. I will probably end up taking some flack for these comments, but then, I am allowed. Maybe I should put in a statement that says these comments are purely the opinion of the author and in no way represent the views of the AWA or its representatives. I know it gets a lot of people out of trouble

when it comes to liability.

However, I know of many people who would agree with me.

I was amazed at how many people were attracted to the glass top straight key that Jacques had brought along, connected to a buzzer. So many people came passed and immediately pressed on the key to reminisce of their CW days, and when it buzzed, of course, they had to send their call sign just to see if they could still do it.

Then they would be pounced on by one ardent CW'er who try, very often in vain, to convince them about the beauty oif CW and how they should try getting back on to their keys again.

It was a great day, enjoyed by many, but loved by those who put up the display.

Best 73

DE Andy ZS6ADY

WIKIPEDIA

Amateur radio: Many people start their involvement in amateur radio by finding a local club. Clubs often provide information about licensing, local operating practices, and technical advice.

Newcomers also often study independently by purchasing books or other materials, sometimes with the help of a mentor, teacher, or friend. Established amateurs who help newcomers are often referred to as "Elmers", as coined by Rodney Newkirk, W9BRD, within the ham community. In addition, many countries have national amateur radio societies which encourage newcomers and work with government communications regulation authorities for the benefit of all radio amateurs.

The oldest of these societies is the Wireless Institute of Australia, formed in 1910; other notable societies are the Radio Society of Great Britain, the American Radio Relay League, Radio Amateurs of Canada, Bangladesh NGOs Network for Radio and Communication, the New Zealand Association of Radio Transmitters and South African Radio League.

HF Happenings

SDR workshop at the NARC on 5 May

The SDR Workshop at the National Amateur Radio Centre on 5 May will address antenna issues for the SARL RF Noise Monitoring Project. This is a joint SARL/AMSATSA project with special rates for members of both organisations. The Workshop on Saturday 5 May will start at 09:00 and there will be a report back on the SARL RF Noise Monitoring Project. Other subjects to be covered include how to automate the uploading of the data to the server, an introduction to GNU Radio by Anton Janovsky, ZR6AIC, and a discussion on the best antenna to use for the noise monitoring project with Vincent Harrison, ZS6BTY.

The cost will be R50 for SARL and AMSAT SA members and R100 for non-members. Registration details are on www.am-satsa.org.za. There will be no cash facilities at the workshop to handle cash. Please use EFT.

At the SARL National Convention held on 13 to 15 April, the SARL distributed a pamphlet on the RF Noise monitoring project. The pamphlet is now available for download from the SARL home page at www.sarl.org.za.

DXCC News

ARRL Field Services and Radiosport Manager Norm Fusaro, W3IZ, reports that the current 4B4B DXpedition to Revillagigedo has been approved for DXCC credit.

Latest edition of 'The 5 MHz Newsletter' now available for download

The latest edition (No 20 – Spring 2018) of The 5 MHz Newsletter is now available for free pdf download from the 'External Links' section of the Wikipedia 60 m Band page at https://en.wikipedia.org/wiki/60-meter_band or the RSGB 5 MHz page at <http://rsgb.org/main/operating/band-plans/hf/5mhz/>. This edition features news from 7 countries, SK tributes to UK 5 MHz stalwarts G3LEQ and G8DQZ, The Luxembourg 5 MHz beacon, LXØHF and a 60 m low-pass filter.

Cheers, Paul Gaskell, G4MWO Editor, The 5 MHz Newsletter

African DX

Contacts with stations on the African continent count towards the SARL's All Africa Award (www.sarl.org.za/pub-lic/awards/awards.asp)

Niger, 5U. Torbjon, SM7RME, is expected to be active as 5U7R from Niamey. The length of his stay is not known. Activity will be during his spare time on various HF bands. QSL via SM7EHU.

Rwanda, 9X. Alan, 9X0TA is active until 31 December. He has been active on the HF bands using FT8. QSL via N4GNR.

Botswana, A2. David, VE7VR will be active as A25VR between 24 May and 3 June. Activity on 40, 30 and 20 metres. QSL via home call.

Malawi, 7Q. Arnold, WB6OJB will be active as 7Q7JK between 20 and 25 July. Activity from 40 to 10 metres using SSB. QSL via home call, direct.

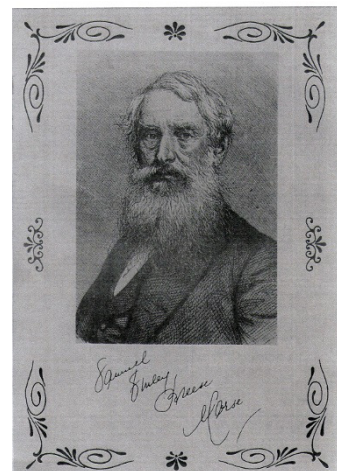
Rwanda, 9X. The Italian DXpedition Team is planning to be active from Rwanda late September and early October. More to follow.

7Q7EI QSLs. David, EI9FBB, informs that the 7Q7EI team has completed the QSL design from their recent 7Q7EI DXpedition to Malawi. These are being printed right now and they hope to begin mailing early next month. There are two separate style QSL cards for their operation. The Sponsors and OQRS directs will all receive a special double folding QSL card while any Bureau requests will receive a single QSL card. Both these designs will look great in any collection. To see how to request your QSL card, go to <http://7q7ei.com/qsl-info>. Remember, those who sent \$20 and above will receive their QSL card sent directly to them... just send them your QSO details. v9Q5MRC, 9Q5MRC/P, G3MRC/9Q5 AND G3MRC/9U5. QSL Manager Phil Whitchurch, G3SWH and AD5YS, reports: "I am pleased to announce that I have transferred all of the old paper logs of the above call signs to an electronic format and uploaded them to ClubLog and LoTW. There is also a log search on my own web site. Paper QSLs can be ordered via the URL below. As with any such manual transfer, transcription errors are possible. If you have a QSO that does not appear in the online log, please contact me and I will do a double check (and amend if necessary).

Calendar:

May

- 1 - Worker's Day
- 3 - World Press Freedom Day
- 5 - SDR Workshop at the NARC
- 5 and 6 - AWA Valve QSO Party
- 8 - Time of Remembrance and Reconciliation for Those Who Lost Their Lives during the Second World War
- 10 - Ascension Day
- 12 - World Migratory Bird Day
- 13 - Mother's Day
- 15 - International Day of Families
- 16 - Start of Ramadan
- 19 - May RAE (10:00 to 13:00 CAT) and AMSATSA Space Symposium
- 20 - ZS3 Sprint
- 21 - Closing date for AWA Valve QSO Party logs
- 24 - Closing date for June Radio ZS
- 25 - Cape Town ARC meeting
- 25 and 26 - CQ WPX CW contest; Pretoria ARC rally communications at the Secunda SCC
- 27 - Closing date ZS3 Sprint logs



When Joe became a silent key in early May 2017 his RSGB membership lapsed. Consequently, please note that, following a decision by the RSGB QSL bureau not to process outgoing cards for non-members, paper QSLs for this station are ONLY available DIRECT with adequate return postage or via the OQRS facility on my site www.g3swh.org.uk.

African Islands

IOTA frequencies

CW: 28 040 24 920 21 040 18 098 14 040 10 114 7 030 3 530 kHz

SSB: 28 560 28 460 24 950 21 260 18 128 14 260 7 055 3 760 kHz

Mozambique, C9. Vasily, R7AL, Vasily, RA1ZZ, Al, RZ3K and Vlad, RK8A will be active as C96RRC from Mozambique Island, IOTA AF-088, from 29 April to 3 May www.rsgbiota.org/info/search.php?q=af088. From 5 to 9 May they will be active from Inhaca Island AF-066 www.rsgbiota.org/info/search.php?q=af066. Activity will be on 40 to 10 metres using CW, SSB and various digital modes. QSL via R7AL. Seychelles, S7. Michael, VK4EF is active as S79LD from Mahe Island and La Digue Island, both IOTA AF-024, until 31 May. Activity is in his spare time on 80, 40, 20 and possibly 10 metres using SSB, JT65, FT8 and QRS CW. QSL direct to home call.

Reunion Island FR, Alain, F1FJR will be active as FR/F1FJR between 5 and 15 May. Operation from 80 to 10 metres using FT8. QSL via home call, direct or bureau.

Rodrigues Island, 3B9. A team with FR4NP, FR4PF, FR4PM, FR5CB and FR5FC will be operating as 3B9RUN from 11 to 16 May. Operation from 80 to 10 metres using FT8 and SSB. <https://www.qrz.com/db/3B9RUN>

Madeira, CT3. Tibor, OM3RM will be operating from Porto Moniz as CR3DX during the CQ WW WPX CW contest. Before and after the contest he will sign from 80 to 10 metres as CT9ABN from 19 to 29 May. QSL via OM2VL.

Sao Tome, S9. David, EB7DX will be operating in 'holiday-style' between 1 and 9 June as S9ZZ. Activity from 40 to 6 metres using mostly SSB, RTTY, FT8 and some CW. QSL via home call.

FOC 80TH Anniversary Challenge

Celebrating the 80th anniversary of the First Class CW Operators' Club (FOC), a month-long event will be held from 1 to 31 May featuring a large number of special 'FOC' suffix callsigns, many of them containing the number 80, from around the world.

Australia - VI6FOC80

Canada - VE2FOCW, VE3FOCW, VE5FOC and VE6FOC

Cyprus - 5B80FOC

Czech Republic - OL80FOC

Denmark - OZ80FOC

France - TM80FOC

Germany - DF80FOC, DJ80FOC, DK80FOC, DM80FOC and DP80FOC

Gibraltar - ZB2FOC

Greece - SX80FOC

Hungary - HA80FOC

India - VU8FOC

Italy - II7FOC and IR0FOC (Sardinia)

Netherlands - PA80FOC, PA80JLS, PF80FOC and PH80FOC

New Zealand - ZL1FOC

Poland - SP80FOC

Romania - YR80FOC

Russia R80FOC and RA/SD80FOC

Slovenia - S580FOC

South Africa - ZS9FOC

Sweden - SC80FOC, SF80FOC and SM80FOC

United Kingdom GB80FOC, GC4FOC, GH4FOC, GN4FOC, GP4FOC, GS4FOC, GT4FOC, GX4FOC and M0RSE

USA - K2FOC, K5FOC, K6FOC, K7FOC, KM4FOC, KT5FOC,

N4FOC, N5FOC, W1FOC, W2FOC, W5FOC, W9FOC,

WA5FOC and WF1OC

QSL for G4FOC and its regional variants (GM4FOC, etc), GB80FOC and M0RSE via G3SWH's OQRS. For all other special stations, please observe their own QSL policies by checking qrz.com or asking the operator over the air. The FOC 80th Anniversary Challenge will be run as a leader board on Club Log (see <https://clublog.org/foc.php>), and your ranking in the leader board will determine the award level you achieve. Detailed information can be found at www.g4foc.org/foc80.

LOTW

Operators from outside the US who are requesting an initial call sign certificate to establish a new Log-book of The World (LoTW) user account now may email the required documentation to LoTW-help@arrl.org. They must provide a copy of their Amateur Radio license or authorization, plus a copy of one other government-issued document showing the applicant's name and address (sensitive information may be blacked out). When the ARRL receives the documentation, applicants will receive a reply message containing their LoTW account password, with their callsign certificate attached. The ARRL does not retain any submitted documents, electronic or hard copy; these are destroyed after they have been reviewed.

AWA at the SARL AGM

On Saturday 14th April, We loaded up our cars and made the trek to the SARL AGM which was hosted by the Pretoria Amateur Radio Club at the Farm Inn in Sliver Lakes Pretoria.

A few of the Committee had got together and made arrangements to heave a whole lot of equipment over to Pretoria after being invited by the PARC to put up a display stand for the AWA.

The stand was a fairly large area and kindly paid for by Louis De Wet ZS6SK. We were later informed by Louis that PARC had absorbed the cost of our stand for which we would like to thank them.

Oliver ZS6OG was first on site fully loaded up with some items from the SAIEE museum and a whole lot of rigs from his own collection. Renato ZS6REN, brought along some fine examples of scopes from the valve era, almost giving himself a hernia in the process to load and offload these fine pieces of restored equipment.

Jacques, ZS6JPS, Rad ZS6RAD, Cliff ZS6BOX and Andy ZS6ADY, also brought along some fine examples of radios employed by the AWA for display.

Under the watchful eye of Oliver, the stand was set up and what a fine display it turned out to be.

The For Sale Table filled up fairly rapidly and a good number of items found their way to new owners.

One of the attractions turned out to be a working Glass Top straight key with a buzzer connected, which Jacques had brought along. A good number of people came along to show their skill in CW, ably assisted by Adi ZS6CNC.

The day turned out to be a great success and after the AGM was over and all had been seen, it was time to pack up and haul it all back home again.

Our thanks to Louis De Wet, the PARC and to all who supported us on this wonderful day.





The Main Display Table



Some important discussion around CW



The 12BY7 valve

John ZS5JF

Introduction

The majority of the hybrid HF transmitters and transceivers use the 12BY7 as the driver valve for either a pair of 6JS6C or 6146 power amplifier valves. Very often when a transmitter is getting tired the output drops off and many assume the PA valves are going south. In many cases it isn't the PA valves which are tired but the driver 12BY7. Finding new valves is getting more difficult as time passes and the cost seems to be getting out of hand to keep our boat anchors going. So here is the low down on the 12BY7 and some suggested substitute valves that are often less expensive, because nobody knows they will do the same job!

The 12BY7

The 12BY7 was widely used in America colour television sets when they used valves/tubes. With the modern sets being solid-state the manufacture of valves has diminished to a great extent. The 12BY7 is described as a 'Video Amplifier' in the valve data sheets and in the American television sets they worked only up to about 6MHz. When they are used in a typical ssb transmitter then we expect them to work up to 30MHz without a loss of gain. However, the official maximum frequency is 40MHz and they seem to work happily up to that.

However, there are several other valves which are 'plug & play' for the 12BY7. The 12BY7A is a later version with a slightly lower heater current, otherwise it is identical.

Substitute Valves

The most obvious substitutes are the 12BQ7 and the 12BV7, both of which were also popular as video amplifiers in colour television sets. Again they come in the A suffix version as the 12BY7A with a lower heater current.

Another substitute is the 12GN7 and the 12HG7, also available as the -A version, these were designed for mobile radio applications and are 'plug & play' with the 12BY7 version. These two valves have more gain and operate up to higher frequencies than the 12BY7, which was limited to about 40 MHz. The GN and HG happily work up to 75 MHz at full rating.

Finally, there is the obscure pair of the 7054 and 8077 valves. The difference in these is the heaters. The 12BY7 and the others, although they appear to be 12V heaters, are in fact the same as the 12AT7 series with a tapped heater so it can be operated on 12V or 6V by changing the pin connections. However, the 7054 and 8077 are true 12V only heaters but have an identical pin out to the others. Only the heater tap at pin 6 is missing. If the transmitter uses 12V for the 12BY7 heaters then they will plug straight in and work. I have been using 12GN7 and 8077 / 7054 in my Kenwood TS830S for a few months and they work fine, no adjustment being needed to the RF driver coils. I use the TS-830S as a test bed for these valves.

There is however a subtle difference between the 7054 and the 8077 valves. The 7054 is the same height as the 12BY7 but the 8077 is only 75% of the height. This was a change to suit the newer compact mobile radio designs where the extra height was a problem. Having said that it isn't an issue for us, if the 12BY7 fits then the 8077 just takes up less space! The versions I have are marked 8077 / 7504 and use the shorter envelope.

The various types are shown below in Figure 1 and Figure 2.

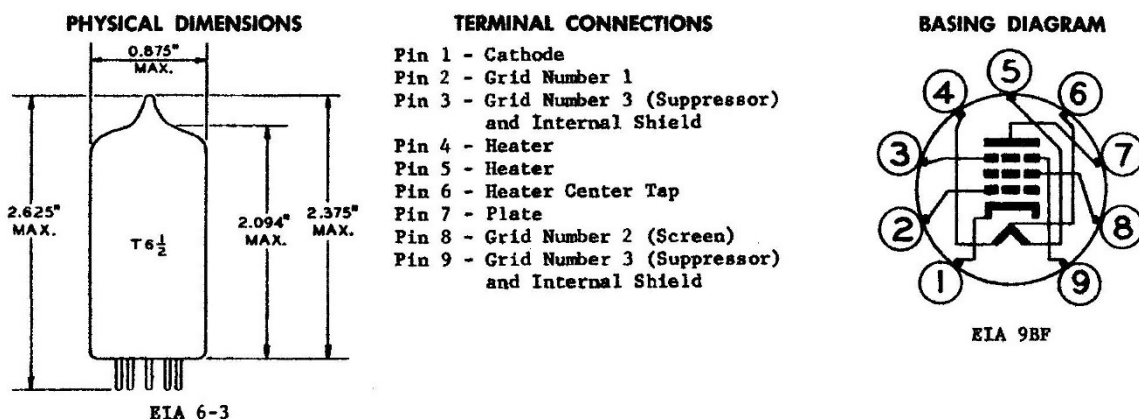
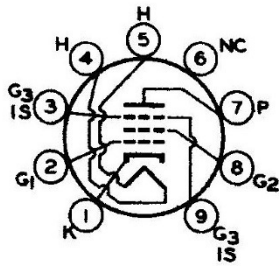


Figure 1 12BY7 and other variants with 12V & 6V heaters

BASING DIAGRAM
Bottom View

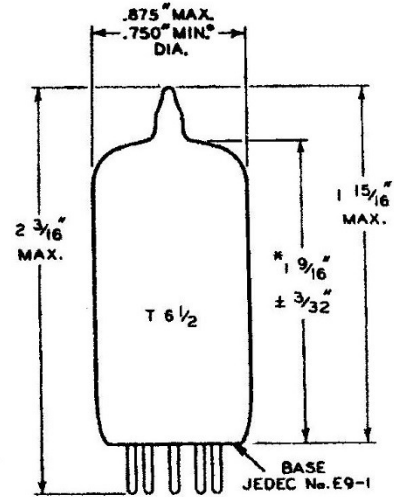


96K

- PIN 1 - CATHODE
- PIN 2 - GRID No.1
- PIN 3 - GRID No.3,
INTERNAL SHIELD
- PIN 4 - HEATER
- PIN 5 - HEATER

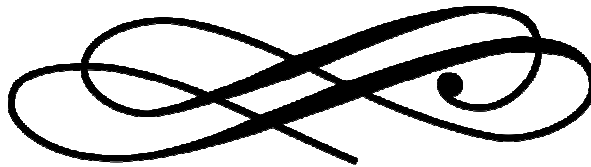
- PIN 6 - NO
CONNECTION
- PIN 7 - PLATE
- PIN 8 - GRID No.2
- PIN 9 - GRID No.3,
INTERNAL SHIELD

DIMENSIONAL OUTLINE



- APPLIES IN ZONE STARTING 0.375" FROM BASE SEAT.
- * MEASURED FROM BASE SEAT TO BULB-TOP LINE AS DETERMINED BY RING GAUGE OF 7/16" I.D.

Figure 2 8077 & 7054 types with 12V heaters only



FT-2005

FT-2005

Antique Wireless Association Valve QSO Party

1. Aim

The aim of the AWA Valve QSO party is to create activity on the 40 and 80 metre bands. It is a phone only contest using AM and SSB. Preferably, valve radios or radios with valves in them may be used.

2. Date and Time

2.1 AM QSO Party

13:00 to 17:00 UTC Saturday 5 May

2.2 SSB QSO Party

13:00 to 17:00 UTC Sunday 6 May

3. Frequencies

3.1 40 metres: 7 063 to 7 100 kHz and 7 130 to 7 200 kHz

3.2 80 metres: 3 603 to 3 650 kHz

4. Power

The output power may not exceed 100 w, unless the rig itself has a higher output power (FTDX400, etc.)

5. Exchange

Call sign, RS report, a consecutive serial numbers starting at 001 and the type of radio used, e.g. HT37 TX.

6. Scoring

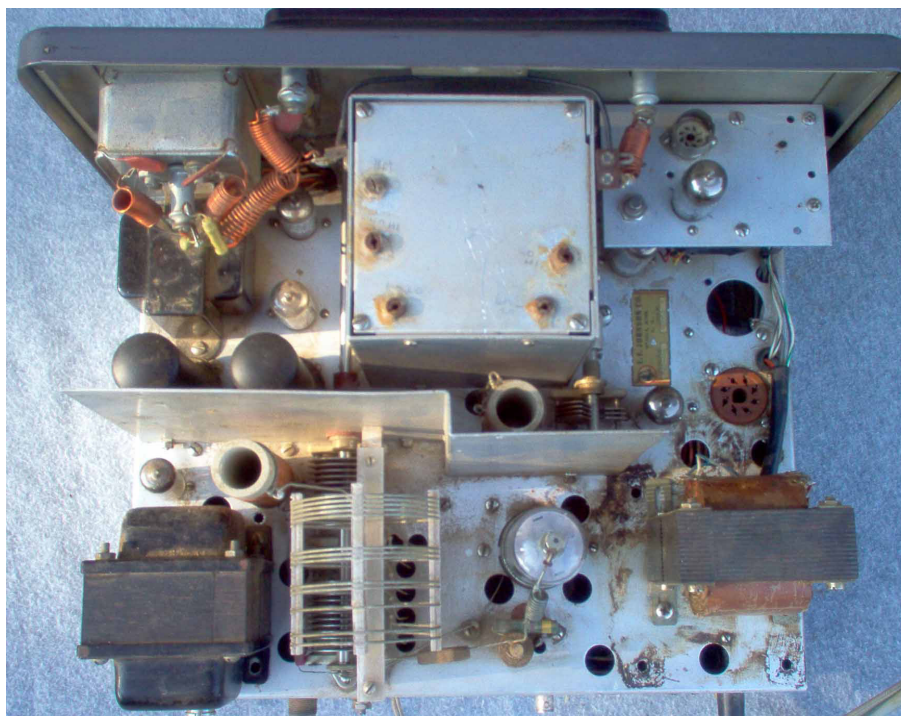
All valve radio: 3 points per contact Hybrid radio: 2 points per contact Solid State Radio: 1 point per contact
Multiplier: Your Radio— All valve radio: 3 points: Hybrid radio: 2 points: Solid State Radio: 1 point

7. Log Sheets

The log sheets must be submitted by Monday 21 May 2018 and Monday 22 October 2018 to andyzs6ady@vodamail.co.za. Certificates will be awarded to the first three places in each category – AM and SSB

Download an easy to use Log Sheet from the AWA Website using the following link:

<http://www.awasa.org.za/index.php/downloads/file/137-awa-valve-qso-party-log-and-summary-sheet>



Valve Amplifiers Explained

We have a copy of Valve Amplifiers Explained, by John Fielding ZS5JF up for grabs.

This book will be raffled at R20 per entry and is to be drawn at the 2018 AGM.

To enter, you can deposit R20 into the following account and send us proof of payment and your name will be put into the draw. Please use your call sign as reference when making the deposit.

Account Name: A G Cairns
Standard Bank
Benoni
Acc No: 225334119

The following is the preface from the book:

This new book by John Fielding ZS5JF, is for everyone who uses - or is considering using - an HF or VHF linear amplifier. While some amateurs may be of the opinion that valves are an obsolete technology and semiconductors are a better way, John Fielding very definitely thinks otherwise! After reading this book you will be under no illusions that, in his opinion, valves are far superior to semiconductor devices for most linear amplifier applications. As he says, "When you need real power and very good linearity, a valve is very hard to beat."

Essential reading for anyone building a valve linear amplifier, the author guides the reader through the choice of valves for various purposes. Valve Amplifiers Explained starts with a chapter on basic valve theory and explains how to inter-

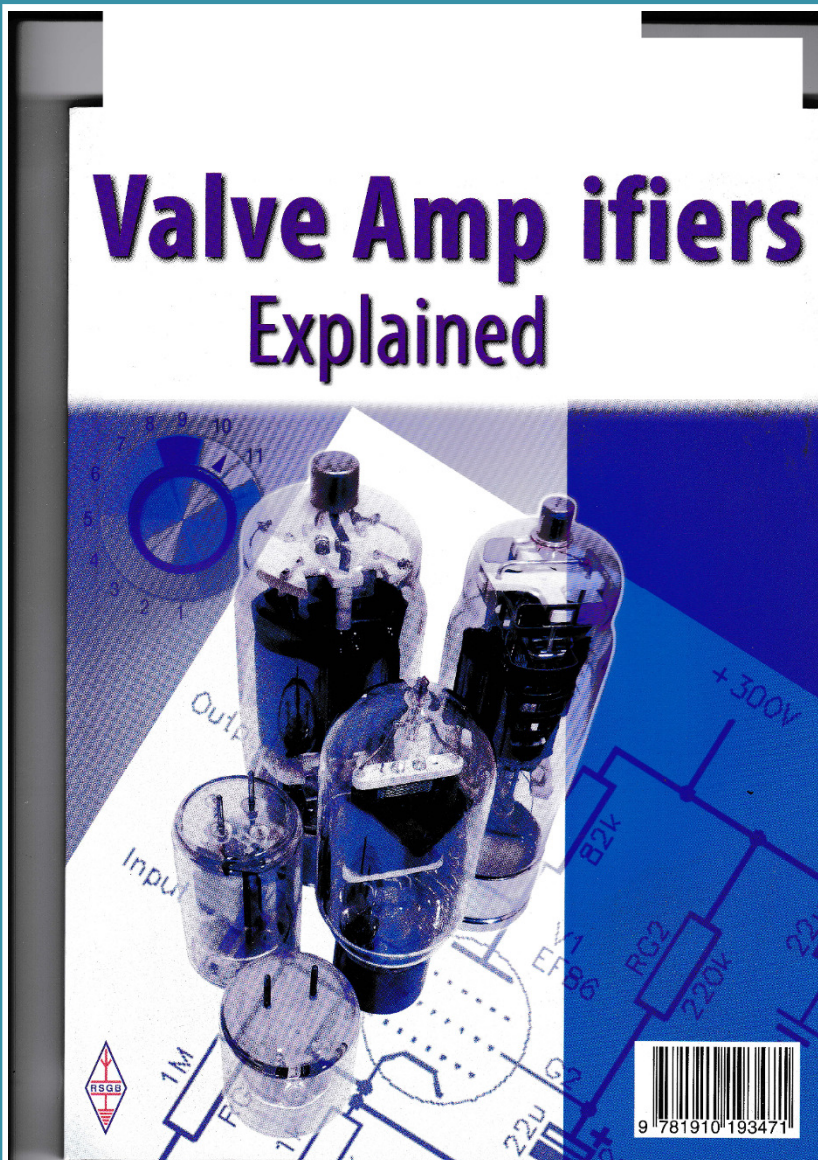
pret valve characteristic curves. The various classes of operation of amplifiers - Class A, Class B, Class AB1, Class AB2 and Class C - are all covered in detail. The relative merits of grounded cathode and grounded grid amplifiers are discussed and a chapter is devoted to the causes of distortion in valve amplifiers - and how to avoid such distortion. The author explains that linearity is primarily a function of the power dissipation of the device and the supply voltage and he devotes a whole chapter to good power supply design. The various protection circuits that an amplifier should have are also covered. While the

book is equally relevant to HF and VHF enthusiasts, a chapter is devoted specifically to the design of VHF RF power amplifiers. Another chapter even discusses liquid cooling of valve amplifiers.

There is advice too for those who, instead of building an amplifier, are considering purchasing a commercially-made linear. Those who use commercial linear amplifiers and want to understand more about how they work will not be disappointed.

As John says, "There is a certain aura about valve equipment. The glowing filaments and the gentle buzz of a high voltage power supply are a sort of magic few have had the pleasure of knowing." After reading Valve Amplifiers Explained you will want to join that elite few!

(You can also give your donation to any of the Committee at any gatherings where you may meet up with them and they can pass on the money to the account. Be sure to give your name and call sign.)



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Visit our Website:
www.awasa.org.za

**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 yesterday's radio's and associated equipment. 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. Join by logging in to our website.

Notices:**Net Times and Frequencies** (SAST):

Saturday 06:00 (04:00 UTC) —AM Net—3620
Saturday 07:00 (05:00 UTC) —Western Cape SSB Net— 3630
Saturday 08:30 (06:30 UTC)— National SSB Net— 7140; (Echolink, connect to Sandton repeater ZS6STN-R)
Relay on 3620 for those having difficulty with local skip conditions.
Saturday 14:00 (12:00 UTC)— CW Net—7020; (3550 after 15 min if band conditions not good on 40)
Wednesday 19:00 (17:00 UTC) — AM Net—3620, band conditions permitting.

For Disposal:

Numerous National HRO receiver `bits` Tell me what you are looking for
Numerous Hallicrafters SX28 `bits` Tell me what you are looking for

Contact: James Fairlie ZS5ABW 033- 3867862 072-1799906 Maritzburg