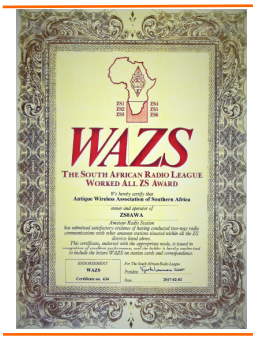
Newsletter

 # 134

Sept 2017

A Member of the SARL



Inside this issue:

AWA Committee:

* President—Jacques ZS6JPS
* Vice President and-Western Cape—John ZS1WJ
* Technical Advisor—Rad ZS6RAD
* Secretary/PRO—Andy ZS6ADY
* KZN—Don ZS5DR
* Historian—Richard F4WCD (ZS6TF)
* Member—Ted ZS6TED

Reflections:

Remember the days before we had the extra frequency above7099 ?

It seemed then that there was still more than enough room on the band for us all to play and have fun, especially when the bands were open and one could work anywhere on a wet shoe string.

Well now we have all this extra band space and no one wants to use it, Then when they do want to use it there are arguments about who was on what frequency first and should you be able to use a frequency for a specific group and and and,

In a discussion on the SSB net a short while ago, a point of having a common calling frequency was raised. The bands are so quiet these days and when you do switch on your rig, does it help to call on 7140, or should I try 7070. or maybe 7125 ? How do I know where there may be someone listening just in case I call looking for someone to chat to.

It's a valid point, and in the old days before the frequencies above 7100, 7070 used to be known as a watering hole. Many people would leave their rigs on that frequency, in case someone called, and then they would move off to another frequency to leave the watering hole open. Sometimes they just stayed there and everyone came along to drink and join in the conversation.

It seems that the watering hole dried up. Now its difficult to find any one because we never know where they may be.

For the CW guys, 7020 has been and still is the place to call on 40m. You want to look for a CW contact, try calling on 7020, in CW of course.

But what about the SSB guys.

After the conversation, we, those of us who were there, decided the watering hole should be opened again.

I know there are groups who meet at certain times on certain frequencies, but that's fine, you do that. Then maybe if you want to leave your rig on while you putter around the shack, tune to the watering hole and leave your rig on there. You may just be pleasantly surprised.

Please, this is not an I claim a frequency for any particular group so I can start another argument, but just a common calling frequency.

The proposal was for 7110.

Hope to see some of you there.

Best 73

DE Andy ZS6ADY

WIKIPEDIA

Amateur radio (also called **ham radio**) describes the use of radio frequency spectrum for purposes of non-commercial exchange of messages, wireless experimentation, self-training, private recreation, radiosport, contesting, and emergency communication. The term "amateur" is used to specify "a duly authorised person interested in radioelectric practice with a purely personal aim and without pecuniary interest;"[1] (either direct monetary or other similar reward) and to differentiate it from commercial broadcasting, public safety (such as police and fire), or professional two-way radio services (such as maritime, aviation, taxis, etc.).

The amateur radio service (*amateur service* and *amateur-satellite service*) is established by the International Telecommunication Union (ITU) through the International Telecommunication Regulations. National governments regulate technical and operational characteristics of transmissions and issue individual stations licenses with an identifying call sign. Prospective amateur operators are tested for their understanding of key concepts in electronics and the host government's radio regulations. Radio amateurs use a variety of voice, text, image, and data communications modes and have access to frequency allocations throughout the RF spectrum to enable communication across a city, region, country, continent, the world, or even into space.

HF HAPPENINGS

Pirate Alert

Shiver Me Timbers - Bernie McClenny, W3UR and editor of The Daily DX newsletter says that for more than a year an amateur radio operator from Southern Europe has been pirating calls on CW. It started off with VU2TS, but only on CW. Then he was switching between VU2TS and 4U1ITU, when the club was using 4U1WRC, again CW only. Then he began using 5H3PM, CW only and now the pirate has switched over to 5H3MG again - CW only. Bernie says he has confirmed with Tanzania Communications Regulatory Authority (TCRA) that both 5H3 calls are not currently registered calls. The signals are clearly coming from Southern Europe. It should be noted that QSL cards for 4U1ITU can only legitimately be confirmed by the club.

New DXCC Honour Roll and Top of Honour Roll Plaques

On 18 August, the ARRL Radiosport department has unveiled two newly designed plaques for the cov-eted DXCC Honour Roll and Top of Honour Roll awards. See the new plaques and read about the details on the ARRL Web page at www.arrl.org/news/arrl-radiosport-department-debuts-new-honor-roll-top-of-honor-roll-plaques

Word to the Wise

Capture Effect - the phenomenon of when receiving multiple frequency modulated (FM) signals that are close to or on the same frequency, only the strongest signal will be demodulated. The weaker signals are effectively suppressed.

Operating Tip

"Expect to be loud" entering each pile-up. Loudness is more than watts through your coax - it's an attitude. If you expect to be successful, it can be a self-fulfilling prophecy.

JT and FT digital modes

Carl, K9LA, discusses the impact of our pathetic solar conditions, and how digital modes may be able to provide some propagation opportunities in his recent paper "What mode of operation enables JT and FT digital modes?" http://k9la.us/Aug17_Bonus_-_What_Mode_of_Propagation_Enables_JT65-JT9-FT8.pdf

Hearing Problems

Researchers are working on techniques to enhance speech intelligibility in situations like noisy factories and crowded rooms to eventually be built into hearing aid devices http://spectrum.ieee.org/consumer-electron-ics/audiovideo/deep-learning-reinvents-the-hearing-aid. According to the article, their work focuses on using machine learning techniques like neural networks to "train" a signal processing chain to filter on characteristics of human speech, yielding performance gains that can improve tested intelligibility to better than human nor-mal. Factory and crowd noise situations were used in their research and some of the models are published on the investigator's website http://web.cse.ohio-state.edu/~wang.77/pnl/software.html.

31 Aug to 3 Sept - Gariep Kunstefees, Kimberley

September

2 - West Rand Flea Market
3 - National Day of Prayer for the Deaf
2 and 3 - IARU Region 1 and RSGB SSB Field Day
4 - Settlers Day
6 - National Secretary's Day
9 and 10 – SARL National Field Day
16 – October RAE Registration closes
16 and 17 - All Africa All Mode Contest; SARL VHF/UHF Contest
16 to 23 IARU Region 1 General Conference, Germany
21/21 Rosh Hashana
22 – Spring Equinox;
22 to 24 – 4 Peaks Challenge
23 and 24 – CQ RTTY Contest
23 Sept to 1 Oct Magoebaskloof and Hae-nertsburg Spring festival
24 – Heritage Day
25 – Public Holiday; closing date for Octo-ber Radio ZS articles
29 – All schools close
30 Sept to 2 Oct Hermanus Whale Festival

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

South Africa, ZS – Robben Island DXpedition. Paul, ZS1V, says, “Unofficial stats for ZS9V at Robben Island this weekend: 822 contacts with 609 callsigns and 62 DXCC entities... and here I was expecting we were going to be down on last year’s stats because of the poorer propagation. We even had to close shop in the middle of a pile-up on 15 m in order to catch our ferry in time. I worked 100 stations in the last hour of operations - a new one-hour record for me.”
A bit later, he said, “I just took a closer look at the log. I made 145 contacts in my last shift, which was 96 minutes long. Man I hope I got all the callsigns right.”

Madeira Islands, CR3/CT9. Manfred, DF5EM, Franz, DF6QV, Juergen, DG7JB, Jan, DJ8NK, Heye, DJ9RR, Dieter, DK4QT, Thomas, DL6TK, and Kalle, DM3BJ will be active as CT9/home call from Santana, Madeira Island (AF-014) between 17 and 27 September.

Activity will be on 160 to 10 metres using CW, SSB and RTTY. They plan to be an entry in the CQ WW DX RTTY Contest (23 and 24 September) signing CR3W. QSL CR3W via DL5AXX, OQRS (see QRZ.com) or LoTW. QSL all others via their home callsigns.

Seychelles, S7. Kasimir, DL2SBY, will once again be active as S79KB from Mahe Island in the Seychelles between 20 October and 1 November. Activity will be on 40 - 10 metres including 17/12 metres and possibly 30 metres using CW, SSB and RTTY. His equipment will be a TS480SAT with a 400 watts amp, antennas are a Triple Leg (20, 17, 15, 12 and 10 m), vertical (80 to 10 m) and an Inverted Vee (30 and 40 m). QSL via DL2SBY, direct or the OQRS (Bureau/direct) via ClubLog ONLY. Do not send your QSL via the Bureau! QSL-Requests for Bureau are only by Clublog until the end of November 2017 possible. He will not be a member of the DARC anymore. Log will be uploaded to LoTW later.

AM MODULATION

John ZS5JF

Introduction

A common method to produce AM transmissions is to use a type of high level modulator using push-pull valves driving a modulation transformer. The high voltage supply is fed through the secondary of the transformer that then varies the anode and screen grid of the RF Class C power amplifier output stage. The power output of the modulator stage needs to be 50% of the dc power input to the RF power amplifier. For a dc input of 100W then it requires 50W of audio power. To attain this level of power with minimum distortion is not a simple task. However, by applying a little modern knowledge it is achievable.

Types of audio amplifiers

The possible choices when high power is required is limited to variants of the Class A and Class B types. In the Class A types the true Class A has a poor efficiency and is not suitable when high power is needed. (They are however perfectly suitable for the low power microphone amplifier portions, where high gain is required). However, a possible method is a mixture of Class A and Class B, of which there is two possible choices. These are Class AB_1 and Class AB_2. Class AB_1 is more linear than Class AB_2 but requires quite a high quiescent current and it is limited in ultimate power output. To attain good distortion performance with maximum power output then the optimum method is full Class B. In this mode the quiescent current is essentially zero with no drive and the anode current peaks at high amplitude when fully driven. The single ended Class B mode has the highest efficiency but the poorest distortion figure. If the Class B output stage is arranged to be a push-pull stage then the distortion products generated in each half are almost totally cancelled by the opposite half, so yielding an acceptable level of distortion overall.

Class B operation normally requires quite a high level of drive signal and this means the driver stage has to develop a fairly high power with a conventional driver stage. There is however another possibility, which uses a type of zero bias operation. In a conventional Class B amplifier two valves are used in push-pull and the screen grids are fed from the main high voltage supply via suitable dropper resistors. This wastes power as heat. Also the control grid needs to be biased to a fairly high negative voltage to bring the quiescent current close to zero when no drive signal is applied. This means either a high negative supply voltage has to be available or it is derived by cathode biasing. This entails high power dissipation in the cathode resistor, which is also wasteful in power. The cathode resistor limits the peak anode current it is possible to achieve for low supply voltages.

Zero bias method

Class B zero bias devices are normally only available in certain triodes, which are especially made for this application. A typical zero bias triode is the 811, which was originally designed for high power audio applications. Triodes, however, have low gain compared to tetrodes, but tetrodes need a positive screen grid supply to operate correctly. There is a simple way around this problem, which is a forgotten technique today. This is the drive derived screen grid supply. The basis of this is shown below for one half of the push-pull amplifier.

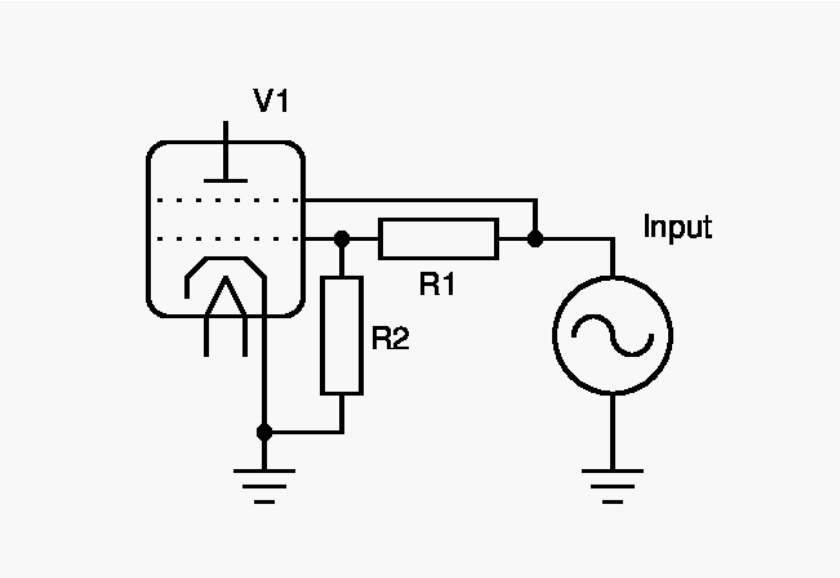
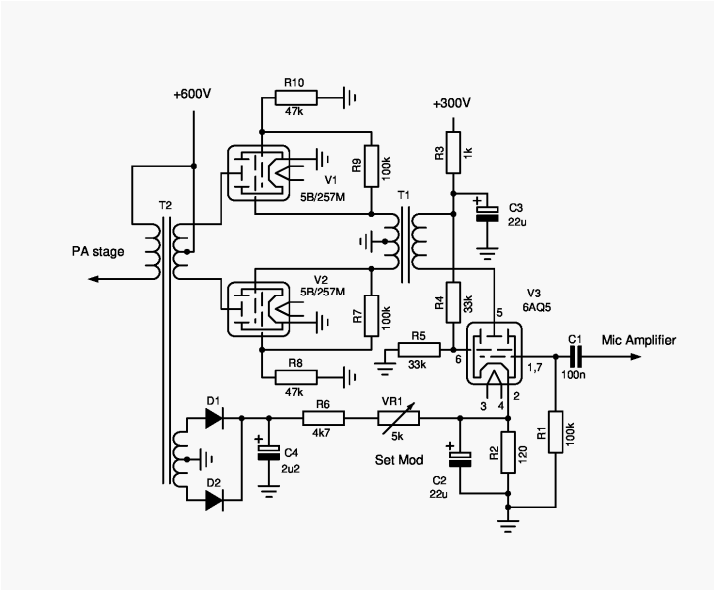


Figure 1 Class B zero bias method

The screen grid is fed directly from an ac high level signal source. On positive half cycles of the input the screen grid is driven positive and the anode current will rise from zero to some maximum. In addition the same signal is also applied to the control grid and it will also rise to a lower maximum positive value as it is fed via a potential divider network of R1 & R2. The cathode is tied directly to ground. On the negative half cycle both the screen grid and the control grid are driven negative and the anode current falls to zero, so there is no wasted power occurring. The opposite side of the push-pull stage is meanwhile rising to full power output. Each half of the amplifier supplies half the power output, which is combined in the common transformer primary to give the total output power.



This arrangement, which is commonly called "*Super Class B*", means that when no input signal is applied the anode current is close to zero, it will be a few mA at most. The RF output stage anode voltage is applied via a transformer winding fed from a high voltage supply. Figure 2 below shows a typical push-pull audio amplifier stage suitable for a Class C RF power amplifier of 100W to 150W dc input.

The two beam-tetrode power output valves shown are miniature 807 modern equivalents, the STC 5B/257M. These are 8-pin Loctal based valves. The 257M uses a 12.6V heater supply, the anode is on the normal bottom base pins. The RF version is the 5B/254M and 258M, which has an anode top cap arrangement with 6.3V heaters. The 5B/258M is the same as the 254M but has a 19V heater supply (3 x 6.3V in series). These valves were used in the C11 and C13 hf transmitters. The non-top cap versions are the 255M, 256M and 257M, these have different heater voltages but are otherwise identical.

Figure 2 A typical 75W audio amplifier for a modulator stage

The driver valve is the 6AQ5. Many other valves are suitable for V12-V2 and V3, for example 6L6 for the output and EL84 as the driver stage. An option to include the microphone amplifier using a triode could use the ECL82/6BM8, which has a beam tetrode and a triode in one B9A envelope. The transformers impedance and turns ratio will be determined by the valves selected. It is necessary to provide sufficient peak voltage swing to the output push-pull stage, about 100V peak would suit most valves. The various component values shown suit the valves selected and some variation for other valves will be needed.

Modulation Limiting Circuitry

The C11 and C13 had a very clever way of preventing over-modulation. This uses a tertiary low voltage winding on the modulation transformer and a full wave diode rectifier to feedback a bias voltage to earlier stages to form a type of ALC. The diagram in Figure 2 shows a modern way of using semiconductor diodes, 1N4148 diodes would work well, rather than the valve rectifiers used. The low voltage secondary winding is centre tapped and develops about 9V rms across the total winding. When the output voltage swing across the modulation transformer increases the positive dc bias generated by the full wave rectifier is smoothed and fed to the cathode resistor of the driver stage. This biases off the driver and provides a means of preventing over-modulation. Pre-set resistor VR1 sets the maximum power output level.

Miniature 807 valves. The 258 is the anode top cap version

The Class B audio amplifier is not a hi-fi amplifier, distortion levels to be expected at maximum output will be of the order of a few percent, but where brute power is needed, as in communications quality AM transmissions, it serves a useful purpose. The basis of this technique was used in the G2DAF hf linear amplifier where smaller valves can be run to far greater peak output power than conventional methods. As there is no wasteful quiescent anode current to worry about the overall anode dissipation is less and hence the full anode current swing can be utilised without over-stressing the valves.

The peak screen grid voltage is about half of the normal type of operation as the control grid is always positive with respect to the cathode on the operating cycle; hence it runs an appreciable amount of grid current, as do all Class B amplifiers. In tetrode and pentode type valves the screen grid has a 3/2 gain ratio compared to the control grid. This means that it causes more anode current change for the same voltage swing as the control grid. If the control grid were fixed at the cathode potential and just the screen grid varied then considerable variation in the anode current occurs. Normally in a conventional Class B stage the control grid is held at some negative biasing point so that with a fixed screen grid voltage the idle current is fairly low. (Varying the control grid voltage up and down about the bias voltage with the input signal performs the variation in anode current). It only rises to about zero volts (or a little more positive) at the peak of the input signal. By ganging the two grids together and always swinging them positive then it requires a much lower voltage swing to achieve a high anode current variation. This equates into a lower drive power requirement for the same power output.

The ratio of control grid to screen grid voltage will need to be found experimentally, for the 5B/257M it was ascertained by extrapolating the constant current curve for the device at 600V anode voltage and suitable resistor values selected from standard E12 values. A ratio of about 3:1 should suit most similar rated valves. The driver stage needs to supply about 4W maximum provided the inter-stage transformer is correctly proportioned. The C11 inter-stage transformers are ideal as they have a considerable step-up ratio between the primary and secondary. The output transformer for the C11/C13 uses a push-pull pair of 807 type of valve to fully modulate two 807 types in parallel running 100W dc input and about 240W pep output.

A simple preamplifier stage

For those who wish to use the AM transmitter to transmit not only speech signals but also musical frequencies (MF) then switching between the two is often a problem. The preamplifier shown in Figure 3 does all this with individual level setting pots for each mode. Switching is by a small toggle switch.

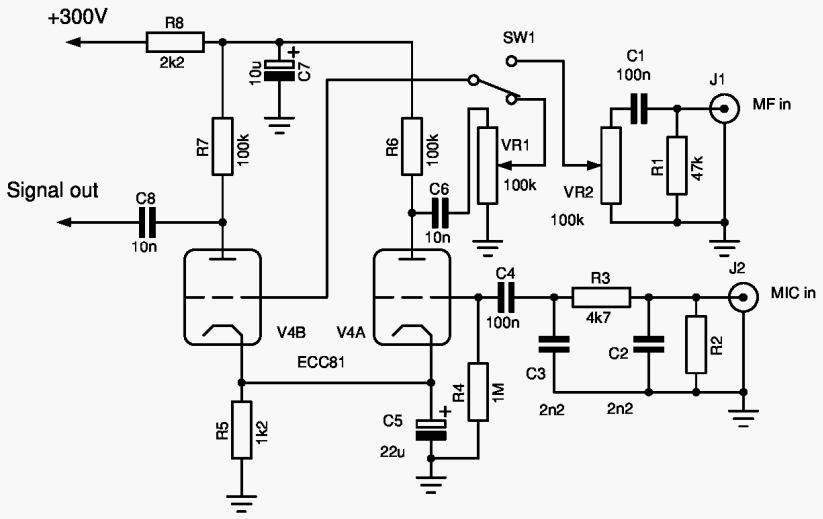


Figure 3 A simple audio preamplifier to suit the Class B output stage

The microphone and MF input have sockets to connect to the input signal sources. The two resistors R1 & R2 need to be suitable for the input sources. For MF if the input is a gramophone deck then R1 needs to be 47k, if the input is from a CD player or other low Z source then it needs to be selected to suit the source type. Similarly R2 for the mic input needs to be selected appropriately.

VR1 sets the level for the mic input and VR2 for the MF input. The mic input also has a RF filter to prevent RF feedback, which consists of C2, C3 and R3. The MF input bypasses the first amplifier stage as the level at this input is assumed to be already quite a high level.

The two-triode amplifiers have a common cathode resistor and capacitor, this saves components and each half of the ECC81 cathode current is more equal with this arrangement. The dc supply is shown as being +300V but if a lower voltage is available then it can also be utilised as long as it is free from ac ripple.

The Racal RA1218 HF Communications Receiver

by Viv Stuart-Williams

I have always been something of a Racal fan (currently owning at least 6 different Racal sets). I love the Wadley Loop technology and also own a Barlow Wadley XCR-30 and an early Yaesu FRG-7. However, I wanted one of Racal's first solid-state sets that immediately post-dated the much loved valve units of the 1950s/ 60s. My unit (imported some years ago from the UK) was built by Racal in Bracknell, Berkshire, England between 1968 and 1969 – Serial Number 1286.

The unit is designed for standard 19" rack mounting. I know nothing about the unit's history although I bought it from Army Radio Sales in the UK. The condition was fair but paint flexure and cracking on the front panel ends suggested that they had been bent at some stage. Also, the rear end of one side panel had clearly been straightened. The set was sold as average condition and working.

Electrically the circuit of the RA1218 is very similar to the well-known circuit found in the RA17, RA17L and slightly modified in the RA117. It incorporates the Wadley Loop system, but electrically it is very different being solid state vs valved. Having said that, the RA 1218 has the same tuning style (some would say lack of style) as do the earlier valve sets.

The unit is 3 rack units high (vs 6 units for the RA17, etc,) so it has a much lower profile. Although solid state it does still have an HT supply as part of the PSU as 200v is needed for the nixie tube digital frequency readout The older valve units had a film-strip ribbon (approximately 6 foot long covering 1 MHz).

Sister units to the RA1218 are the RA1217 that has a tachometer type mechanical frequency readout (and is hence only 2 rack units high), and the RA1219 that looks like an RA 1218 still with a nixie display but it has an associated unit (a Racalator) that has a 1Hz accurate synthesiser externally controlling VFO2 (kilohertz). This provides a very accurate frequency control. My version of the RA1218 has a temperature controlled crystal oscillator (TCXO) and is supposed to be better than 10Hz accurate after a short warmup. This is questionable!

The photo above is a front view of the Racal RA 1218. My version appears to be a 1218A. It would appear there were at least 17 variants of the Racal RA1218. See https://www.recelectronics.co.uk/ra1218.htm for more details.

The "A" variant is identified by having bandwidths of 200 c/s; 3 and 8 kHz. It also has a low power audio output only suitable for headphones. The standard readout is 6 figures but there is a push button above the large r/h KHz tuning knob (marked 10Hz at top of red arrow) – that turns on the 7th digit of the readout when pushed. Originally I had considered leaving this turned on BUT it flickers to the point of operator distraction. The 10 c/s stability is not that good!
Operation is virtually the same as for the RA17/ RA17L/ RA117. These Racal units tune in a somewhat unusual manner and the operator cannot just set a frequency and listen. I tend to set the approximate frequency with the MHz and kHz dials; then select the correct RF range (small knob above left of the MHz dial); and adjust the RF tune knob (pre-selector middle left hand knob) for maximum radio noise. To get the best signal the operator must use the correct AGC or manual control; the correct attenuation; and the AF and RF gains have to be correctly adjusted as well. The same is applicable for SSB and CW operation. These are sets that have to be operator set up. When properly used these sets perform extremely well.

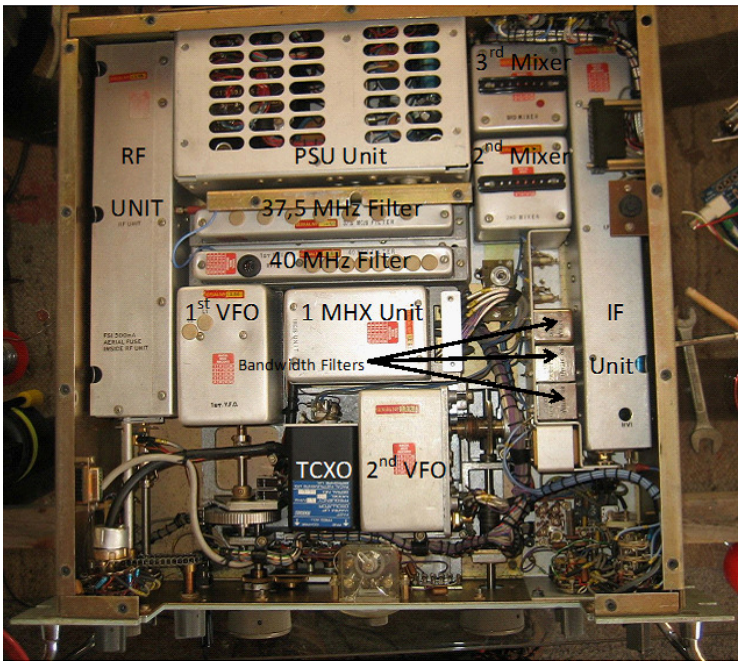
The main difference between the RA-1218 and the earlier valve sets comes with sideband operation. Whereas the older RA 17s, etc, had only a BFO, the RA1218 has selectable upper and lower sideband filters. However, using the SSB is somewhat different in that it creates a digital readout shift of 1,5 kHz up or down when being used. Thus the earlier photograph with frequency display of 7118,5 kHz is actually set on LSB 7120 kHz (maritime net). This shift needs to be mentally subtracted or added for LSB and USB respectively. For AM (DSB) the displayed frequency is correct.

The bandwidth options are also different to the earlier Racals with three settings only of 8kc/s, 3kc/s, and 200c/s

fitted as standard (the valved units had many more), and there are 3 levels of A.G.C, Short, Medium and Long vs two on the valved sets. The AGC is poor.

Summary specifications are :-

Frequency Range	1 – 30 MHz, down to 200 KHz in WB (wideband) with some attenuation
Modes of Operation	SSB (USB/ LSB), DSB, MCW, CW
Frequency Display	6 Digit nixie display with a 7th available on push-button
Resetting	± 50Hz using main tuning control; ±10 Hz using fine tuning control
Frequency Stability	After 2 hours warmup; ± 50 Hz over an eight hour period at constant ambient temperature and humidity.
Sensitivity	CW/ SSB 1 µv (emf) for 15 dB signal to noise. MCW/ DSB 30% modulated at 400 Hz 3 µv (emf) for 15 dB signal to noise. DSB equivalent to AM.



The RA 1218 has a modular design as shown in the Photo below. This tends to make servicing somewhat awkward when no spare modules are available. One regular criticism of these sets is frequency drift that continues for a long period after switch on. I found the set to be fairly stable virtually from turn-on but not at the 10 c/s level, only at the .1 kHz level. Maybe the TCXOs are variable in performance?

Having removed the plug-in counter and display unit (that covers the radio when the top cover is first opened) the modular nature of the unit can be seen. These are labelled in the second Photo. Visible in the photograph are the main shaft going into the RF Unit (pre-selector); the chain drive band change switch (shaft runs inside the pre-selector tube); the drive shaft and switching for the 1st VFO; and the shaft for the 2nd VFO.

The initial impression on opening the set, as with all Racal units, is how well they are build. No thin tin, no accountant controlling the build and everything professional. This creates quite a heavy radio 23kgs (50lb) that draws about 70 watts in power – heavy for a transistor receiver. But it is well built – spark gap on the antenna, antenna fuse, built in transmit relay on the antenna, very heavy signal overload diodes before the first RF stage, etc, etc. The rear panel also accommodates a number of input and output sockets for external vfo's, external receivers, LF adaptors, pan-adaptors, etc.

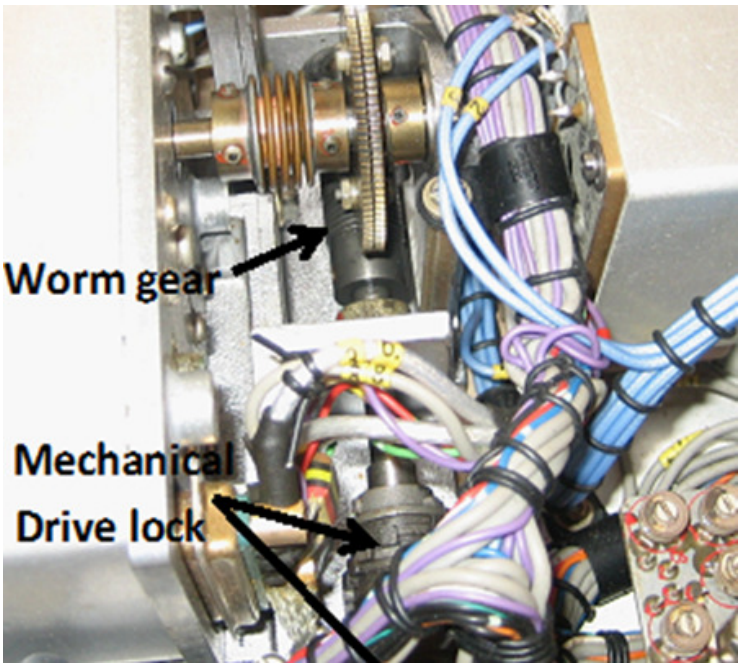


Photo 3 is a good example of the build quality. Apart from the fact that the drive has a metal worm and flat gear it is also a sprung double gear to prevent any backlash during rotation (to ensure smooth operation in both directions with no slack spot). Then, note that this oscillator doesn't rely on the internal variable capacitor stops to stop the end travel – a characteristic seen on many radios including Kenwoods and Icoms. This unit uses a mechanical drive lock that stops rotation of the shaft before the capacitor end stops are reached. It is this kind of build quality that differentiates the professional HF radios from those build for the amateur market.

Anyway, enough about what the radio has - does it work? On arrival I opened the unit and gave it a visual check. I had been assured that it was working on dispatch from the UK. In fact the previous owner told me that he listened to it every day! Everything seemed OK so I slowly wound up the voltage on a variac until the unit came to life. Then disaster – the display

failed. This was found to be a failed IC in the counter that was kindly replaced by a friend. This time the unit stayed working.

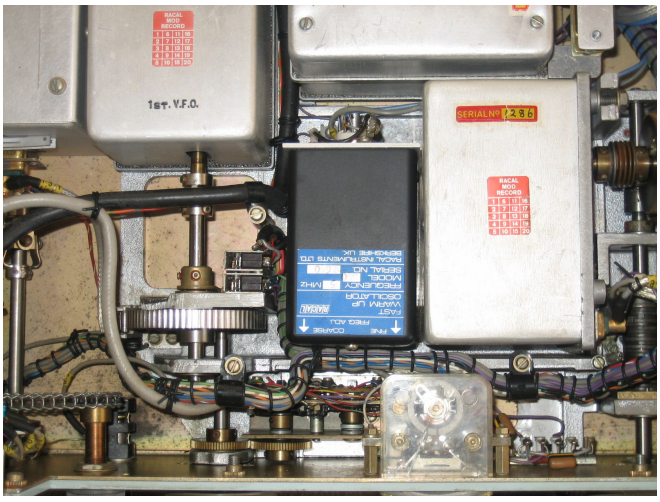
The first thing you note is that the RF performance is disappointing if you are used to the bomb proof cascode (cascading triode) arrangement of the front ends of the valved sets. The RA 1218 overloads regularly and the operator has to constantly control signal level. Sensitivity is very good but selectivity requires more use of the bandwidth filters than I was used to with other Racal units. It is also very important to use the pre-selector to the full. It needs careful tuning to make sure you have peaked on the wanted signal. And, with stronger signals much more use has to be made of the RF attenuator and the RF gain control than on the valved sets.

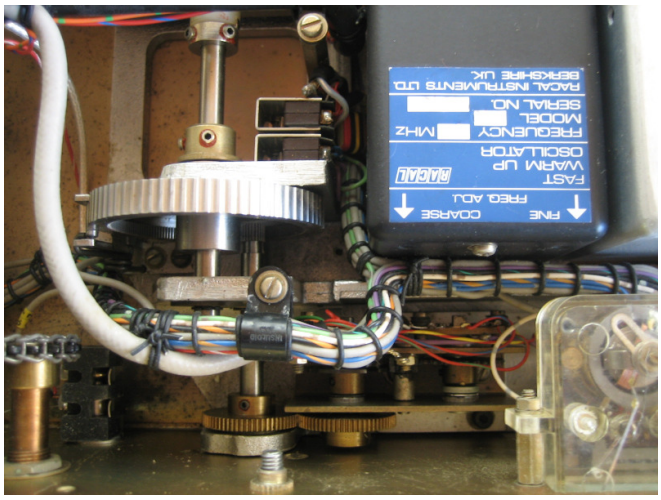
All this adds up to the impression of a poor AGC system. Initially I thought that the set had a fault on the AGC (every strong signal distorting). In fact I used my digital radio to track the signal quality. The AGC on the RF unit worked very well. The AGC in the RF section happily handled very strong signals. The first 1,6 MHz IF amp, the bandwidth filters and the second and third amps in the IF unit performed excellently giving me the best part of 1 volt of undistorted signal. This signal then feeds through another 1,6 MHz IF amp and a buffer amp to the AGC diode. It is in these two amps that the signal is over amplified and distorted BEFORE the AGC diode. Surprisingly these two stages are NOT controlled by the AGC which seems a little strange. The primary function of these two amps appears to be to amplify the 1,6MHz IF signal for a 1,6 MHz output socket on the rear of the set and for feeding to a down-dropping convertor to 100KHz (again on the set rear). I felt that these two amps needed to be looked at more carefully. However, having read the manual again it is apparent that you have to make good use of the pre-selector, the bandwidth filters, the attenuator, and the RF gain control to get a good audio quality. I am still going to go back and have another look at those two amps!

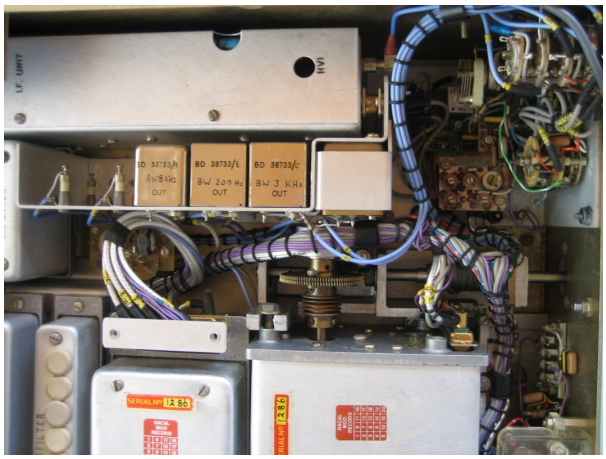
Overall, this is a very nicely built set, constructed to the usual Racal standard of excellence. It does help to be familiar with the way the Wadley loop operates because this is not a tune and listen set. I repeat what I said earlier that you have to dial in a frequency then set your band change switch and adjust your pre-selector to the correct position. In addition you may need to fiddle with the RF gain and AGC to get a good audio quality. This thing is a bit like tweaking an old TRF set. Also, things like the frequency shift in LSB and USB are a bit annoying but coped with.

I have no regrets in having bought the set and played with it. This is a valuable and interesting set for my collection and I thoroughly enjoy playing with it.

Other Photos.







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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 yesterdays 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: www.awasa.org.za

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 07:30 (05:00 UTC) —KZN SSB Net—3615
Saturday 08:30 (06:30 UTC)— National SSB Net— 7140; (Echolink, connect to Sandton repeater ZS6STN-R)
Experimental 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 from AWA:

FT101B—Working (with Manual)

Trio 9R-59DS Receiver

Phillips CB with SWR Meter

Our thanks to Mike Harper for the donation of the above rigs. Any interested parties can contact Jacques ZS6JPS ON 0617850972.
