



AWA Newsletter

Issue 32

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Antique Wireless Association of Southern Africa

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Something to Chase :

For those of you interested in chasing things like WAZS and WAA, there is a new local award coming together, if you haven't heard of it already, "Chasing Maidens".

Pierre ZS6BQS, and a few others put together the framework for a WAGS—ZA (Worked All Grid Squares ZS) and it has now been adopted by the Sandton club as the sponsors of the award. The idea is to work all 83 grid squares that cover the entire ZS boundary. So far I have seen allowances for VHF, HF, for CW or band specific awards and it looks very interesting indeed.

One will get credit for squares already worked and there are even rewards for those working from Grid Squares in re-

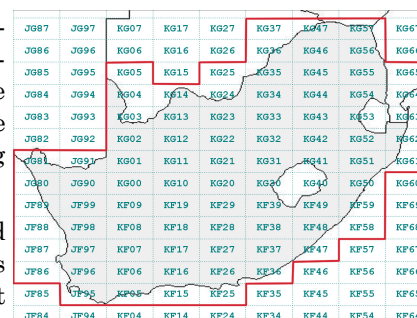
mote area's. A remote area being defined as one where there are no active hams are residing there.

No QSL cards needed to send in but logs will be sufficient proof to show what you have worked, as long as all the relevant data is shown on the application form.

One can start making application from the time you have achieved 25 squares, then in increments of 25 until all 83 have been worked.

It will be very interesting to see how many of the out of the way squares can be activated and this will be comparable to SOTA.

If you are going on holiday to a square that you do not



The ZS Grid Square Map

have and you know others don't have, try setting up a /P station and activate the square. After 5 contacts, you also get recognition for the square, so it works both ways.

For those with internet, all the details can be downloaded from : <http://www.zs6stn.org.za/zswags/>

Andy ZS6ADY

AWA Committee:

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

California Kilowatt



A 'California Kilowatt' was old hamspeak for a transmitter with a power input, uh, somewhat in excess of the legal kW. Aka a 'Texas Final,' though nowadays more typically a 'Death Ray.' Kluge (no, *not* 'Kludge,' though for all I know it was one) Electronics, in Los Angeles, took advantage of the name when they marketed this weird thing in the 1940s. The xmtr is in the desk, which also has a mount for a standard size boat anchor receiver. The RME is shown, but others could be bolted in. It all collapsed and folded under the top, which included the map at no extra cost. It was apparently a heroic attempt to fashion a boat anchor that the 'XYL' (ham's wife) would allow in her house. But, fear not, it still only ran the legal kW.

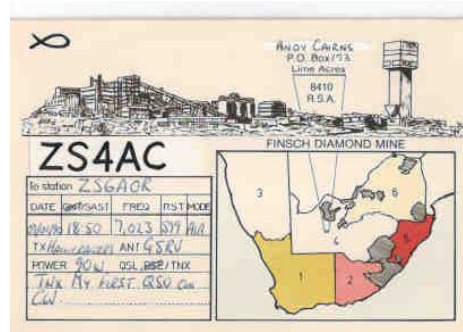
CW Net:

Before I go in to any intricacies of CW and the advantages of it, I need to make a correction from the last newsletter where I told my tale of my first CW contact. After sending out the newsletter, I had a reply from Pieter ZS3AOR, correcting me about my first CW contact. It just goes to show, I was in such a state then, I could not even remember who was my first contact. Well in fact, it was Om Pieter, who at that stage was ZS6AOR. He even scanned and sent me a copy of my QSL card, which clearly states "My first CW contact". So my apologies for getting that one all wrong.

I have of course saved the picture of that card for posterity and will always remind me now of my first contact.

I must admit, after taking up the mic and doing phone, I definitely lost interest in CW, much to my own disappointment. But these past few years working the AWA net, have been really rewarding and have certainly been great fun.

This last month, conditions have not been too bad, but not that great either. For some of the group who we used to chat on a regular basis and now the band doesn't allow that to happen, how would 80m be on a Sat-



My First CW Contact QSL

urday, if we started on 40 and then switched to 80 after a short time. Give us some feed back and we will try using the same calling freq for the QRP group ie, 3579. Look forward to hearing you on CW.

De ZS0AWA/CW—SK

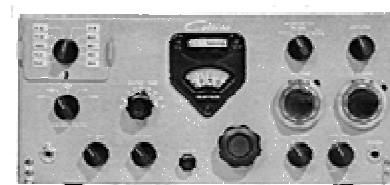
SSB activity:

Once again, conditions have not been great on HF, but we still average at least 18-20 calls on the SSB net. 80m seems to be a bit more popular than 40m, with good reason. Especially with the local stations and even div 5. For some reason it seems that propagation to div 2 on 40 is always good. Maybe they just need the good comms or they have pleased someone tremendously. Whatever it is, div 2 stations normally come in a good S9+. I can't comment on div 1, be-

cause we don't get any callers from there.

When we first started the AWA, there were comments about running a 20m relay to try and attract the div 1 stations. Perhaps we could get comment from some of the div 1 guys about how well 20m works to them from div 6 and the possibility of running a 20m relay might become a better option. I don't know if 20m would work in to div 5 at all, but my

understanding from many of the guys who were on the SARL HF contest was that 20 was not a good option. We would appreciate your comments.



Collins KWM—1

AM:

The AM net's have been plagued with the same conditions as the SSB net, with poor conditions and the 80m band opening up a bit later every Saturday morning. However, once the band does open conditions improve quite fast and some good signals can be heard right across the country. The Wednesday evening net on the other hand, is not as fortunate with the band more often going out after sunset and then coming back at

about 19:30. Sometimes with fairly good results but sometimes not.

I like the comment on the SARL news bulletins that say "these are only a prediction of band conditions and HF has the ability to surprise you. So switch on, tune up and call CQ, you never know what might happen".

The same applies to AM, we have been pleasantly surprised at times with excellent conditions. So switch

on, tune up and come and join in the fun with some good AM.



Collins 200-A
AM Trans-
mitter

Collins Radio Company

In many ways, Collins was the prototype of the modern electronics company. While it started in Art Collins' basement in late summer of 1932, and could not afford to hire even one employee until a year later, Collins evolved into a big-time government and military contractor. It's hard to find a service or agency that doesn't have some Collins stuff around somewhere. Collins was eventually acquired by defense giant Rockwell, and Art Collins, W0CXX, retired a wealthy man.

While Collins had started to sell gear to other hams, he also outfitted aircraft, expeditions, and the like. This history was exploited by the company's series of 'wing' logos, finally replaced by a dumb looking circle in the 1960s. When it came time to modernize Air Force communication by going to SSB, Collins was the logical choice. It didn't hurt that Curtis Le May and Art Collins were ham buddies.



Larger rigs, like the Collins broadcast and commercial transmitters, are perhaps the ultimate boat anchors. Like the ones made by RCA, Gates, Continental and the others, they are built to pump out photons on a 24/7 schedule, forever, with proper maintenance. They were, and are, incredibly expensive, often exceeding the cost of the buildings housing them, and they were, and are, ridiculously overdesigned for amateur use. They come in black, ominous racks, with meters all along the top, and windows where the operator can peer in and make sure the PA tubes are glowing the proper shade of red. An only slightly scaled down amateur example is the KW-1, perhaps the most formidable looking kilowatt ever made, which cost \$5000 in the 1950s, when a veteran could buy a *house* for \$15k.

A 1950 Collins military design, the R-390/URR, pretty much started boat anchor collecting when it turned up in quantity on the surplus market. This 32-tube, 80-pound supermachine was probably the most complex vacuum-tube short wave receiver ever made. Even in the "\$600-screwdriver" defense market, its price was an issue. In 1951, Collins designed a less expensive version, the R-390A, with "only" 26 tubes, but for the first time with mechanical filters in the IF. This one, as made by Collins and 15-25 other companies, sold 54,000+ units over a period of around 25 years. All went to government and military, except for one public 3rd-party sale in 1968. There is also a *very* rare R-391, with channel presets.

Classic BA #1:
Collins R-390/URR



All 3 versions had two small meters, one for RF carrier level (an "S" meter) and one for audio line output. The numbers on these meters glowed in the dark. Therefore, they are now considered a radiation hazard (this IS the government we're dealing with here), and they are often missing, or bearing ominous yellow nuke stickers which you are supposed to leave on. Needless to say, there is something of a black market in R-390 meters.

The first real boat anchor magazine, *Electric Radio*, originally started for the many people who'd become hooked on restoring and using these superboxes. When they first came on the market, they offered a level of performance on short wave broadcast reception that even the best new solid-state rigs could not exceed, and for usually only a couple hundred bucks.

As word spread about what great radios these were, the price gradually took off. Just as the buzz was getting started, someone consigned a very nice Collins R-390A, in excellent condition and with meters, not to mention a little tool kit and extra tubes, for \$200 cash-only no-return at Jun's Electronics in L.A.. After several months, I finally decided I had to have the thing. I cleared out a spot in my apartment, got the two hundred out of the bank, and arrived at the store to find the radio gone - sold that day. It's probably worth over \$1000 now. You learn to move fast in the boat anchor business!

Although it's an analog tube receiver, the R-390 has digital tuning, and it's completely mechanical! You don't service this subsystem with an alignment wand and a VTVM or scope. You service it with a wrench. It looks like the insides of a fine old grandfather clock. A bandswitching system of cams and lord-knows-what-else (the "Megacycle Change") turns a mechanical counter and selects the proper strip of huge cans behind all the gears and stuff. Then a "Kilocycle Change" knob dials a second mechanical counter while turning a huge canned PTO and simultaneously moving gangs of slugs in and out of the selected strip! Gee whiz, Mister Wizard!

Since it was intended for use with external audio amplifying equipment, the R-390 has two 600-ohm line driver outputs instead of an AF power amp. A rugged home stereo works fine for sound. You won't believe how good short wave broadcasting actually can sound on this level of equipment. You'll never listen to the BBC on your rice box again.

Like most old boat anchors, the R-390 has a BFO, but it lacks a product detector for SSB. An expensive, outboard adaptor is available, also surplus. The R-390/390A is still a good first boat anchor. Keep in mind that if you really want an original Collins box you should be prepared to lay out some serious bucks. These are used radios, of course, so their relative level of quality is quite variable depending on the age, maintenance, mods by previous owners, and who made the particular unit in the first place.



R-390A RF deck made in this case by Stewart-Warner. Megacycles are the two numbers at the left, kilocycles the rest. Note the complex gear train which effects a number of simultaneous mechanical adjustments in this heroic subassembly.

In the fifties, Collins got back into the civilian market with the 75A- series of receivers, and its matching 32V- amateur transmitters. Later, there was the 32W-1, a similar transmitter intended as an exciter. This one could be given a larger final and a power supply/ pedestal the size of a bar refrigerator, at which point it became a KWS-1, self-contained kilowatt on SSB and CW. The 75A-4/KWS-1 combo was a formidable looking station, at a formidable price, so hams started calling these "the gold dust twins." If you had to ask the price, you couldn't afford it.



COLLINS 75A-4 RECEIVER

Less speaker. Net.....\$ 595.00

The 75A-4 is a great radio. It was the new state of the art at the time, and some companies spent the rest of the vacuum tube era catching up. You could get an enormous speaker, the 312A-1, that wasn't that much smaller than the receiver. The whole thing made one of the most listenable radios ever made, way better than 99% of ultra-sped solid state boxes with their zillion dB dynamic ranges.

Any of these old Collins are great boat anchors. They're big, and they have some advanced circuits for their time.

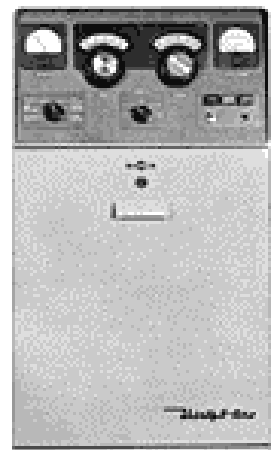
The receivers were the first to use narrow segments with a precise PTO for tuning, changing bands by switching in 300 or 500 kHz ranges. Collins also made the industry standard mechanical filters that just about everyone used in their 455 kHz second IFs.

Collins tube radios, with their large, black boxes, and covered with lights, dials and knobs, are among the most purposeful *looking* radios ever made. Most of the public still sees them on the sets of old movies and TV shows, along with the larger racks by Collins and Motorola. These have therefore pretty much formed the popular image of what really high-powered radios ought to look like, having won wars, gone to the moon, and maybe even shot down your occasional UFO.

The military wasn't ignored, with the high-priced 51J- and 51S- series of receivers, thousands of which were sold. The 51S- was transitional to Collins' later S-line, the sleek, miniaturized (by boat anchor standards) series of HF radios that redefined the medium in the 1960s. Another breakthrough product was the mid-50s KWM-1. This was a very forward-looking mobile/portable SSB transceiver covering 14-30 MHz. 20 years later, its general design approach with dual-use circuits and choice of power supply became standard in ham radios.

For amateurs, the S-line meant the 75S- series of receivers and 32S- transmitters. The transmitter made good use of the compact 6146, a hot-rod beam pentode roughly derived from the 6L6, that became an industry standard. The receiver continued the "gold dust" design that remained the state of the amateur art.

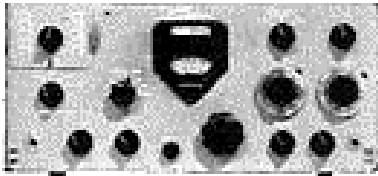
There was also a heavy-duty linear, the 30S-1, which stood on the floor and looked like a sleeker KWS-1. Finally, there was the popular 30L-1 linear, which used 4 811As in a horizontal position, in a box the same size as the other S-line components. It was one of the first real, desktop KWs. This made it possible to put your whole S-line on a desk that looked like a desk, as opposed to a door and three sawhorses. Along with similar gear from R. L. Drake, these radios got away from the 'battleship' look of the 50s, while not compromising performance.



HARVEY has it...
FOR IMMEDIATE DELIVERY

THE LATEST FROM *Collins*

Collins **KWM-1**



first SSB transceiver for **complete
Mobile or Fixed use**

The revolutionary KWM-1, the first mobile transceiver to offer SSB. And this 14-30 mc 175 watt package is equally adaptable to fixed use with simple removal from a convenient mounting tray under the dashboard.

Finally, Collins updated its KWM-1 transceiver into the KWM-2, with styling and general design approach much like the S-line. This radio became pretty much standard for certain military and MARS applications, and they ordered a lot of them. It had base-station performance in a truly portable (or mobile, with suitable power) package. You could even get a rather sturdy suitcase that would carry your KWM.

Any old-time ham has very personal feelings about the Collins S-line. It came with a huge number of very useful accessories, third-party mods and goodies. This was awfully nice gear, and everybody wanted it, but, once again, the price was always just a little beyond the means of the average hobbyist with a mortgage and/or family. A lot of dreaming, and drooling, went on. It is no wonder that the mystique lasts to this day, giving the S-line an almost obscene resale value. It's worth it. It's still a great radio, maintainable forever, and a viable choice for the real radio freak who doesn't mind scrounging parts and opening a box now and again.

Rockwell/Collins is still making very nice, usually cutting-edge, equipment, mostly for the military. A number of interesting communication services are still provided out of Cedar Rapids, with clients including Aeronautical Radio, Inc., the US Air Force, and the Drug Enforcement Agency. Art Collins died in 1987. His ham callsign is now being used by the Rockwell-Collins Employees Amateur Radio Club at the company's home in Cedar Rapids, Iowa.

(With thanks to the Ominous Valve Company for this article and the one on the Front Page "California Kilowatt")



This fine collection of Collins KWM2 & 2A, 75S Rx's, 32S Tx's, 51S1 Rx and 30L1 linears belongs to John ZS6ABJ.

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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:

Net Days and Times:

SSB Net Saturday morning
Time: 08:30
Freq: 7070

AM Net: Wednesday Evenings
Time: From 18:30 (depending on conditions)
Freq: 3615

AM Net: Saturday Morning
Time: From 06:00
Freq: 3615

CW Net: Saturday Afternoon
Time: 14:00/14:30
Freq: 7020/3579

We look forward to hearing you all on frequency.

Wanted:

Kenwood AT130 Antenna tuner or an MFJ mobile antenna tuner.

Contact: Andy ZS6ADY @ 0824484368 or by email andy.cairns@xsinet.co.za .