

An Overview of Worked All ZS

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The Worked All ZS award has become a popular pastime among South African amateurs. I personally have been dabbling with it for more than a third of a century, but it wasn't always as popular as it is now. This story is a personal perspective on this awards programme, with a few practical hints on how to tackle it.

What is WAZS?

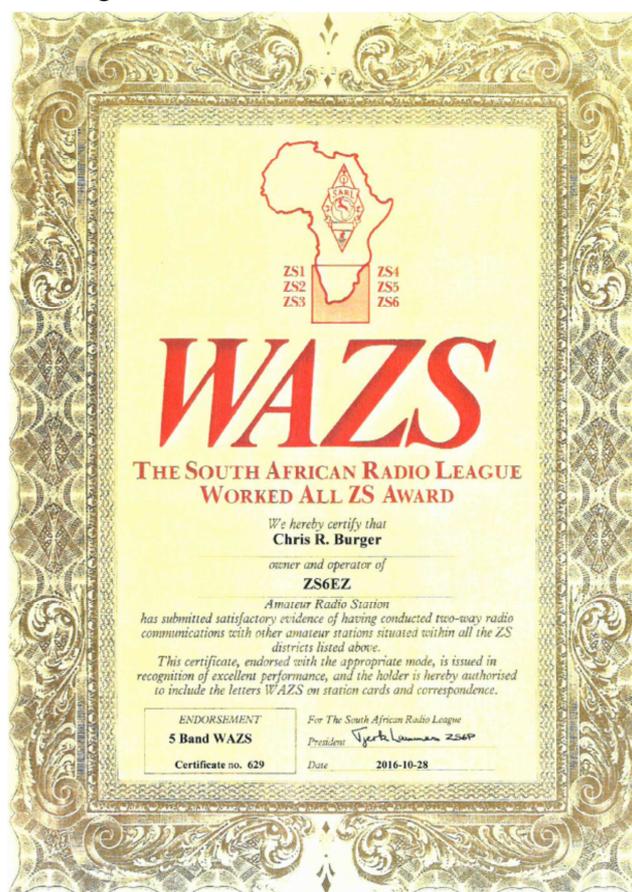
Worked All ZS is the SARL's most popular award. As the name implies, the certificate is issued for many contacts with South African stations. To be exact, one requires 100 callsigns, representing the distribution of amateurs in South Africa. For example, one requires only one ZS3 callsign, as only 1% of the country's stations are in ZS3. On the other hand, one needs 56 ZS6 callsigns.

SARL members can get the certificate free of charge. Non-members pay an application fee. The certificate is based on the original 1958 design, although it has been modified to show the current call areas.

If one knows where to look, one can read the whole story in the SARL Awards Directory. The Directory (which is available on the Web site zs6p.com), contains the rules, the original announcement in *RadioZS* of January 1958 and the complete list of winners.

The first winner was Gwen Smith ZS1NQ. Gwen needed just more than a year to gather the needed 100 cards and submit her application. The hundredth certificate was issued just under five years later. In the Sixties (in which I include 1959), 137 certificates were issued. In the Seventies there were 20, with another 20 in the Eighties. The Nineties could only produce nine certificates.

Part of the problem was the change in ZS call areas with the independence of Namibia. Suddenly, there were no ZS3 stations on the air. Later, ZS3 callsigns were issued to the sparsely-populated Northern Cape. With the small number of stations now available, it was still practically impossible to fill the required quota.



The New Rules

When Tjerk Lammers ZS6P took over the SARL Awards Manager portfolio in 1997, I borrowed the thick book in which Koos van der Merwe ZS1AW had recorded all SARL awards for almost half a century. I typed in the certificate information and posted it on my Web site. Later, when we decided to build a new electronic Awards Directory, we incorporated all my information into it. We noticed that the applications had dried up, and decided to do something about it.

In 1999, we completely revised the rules. We got rid of a few archaic rules and revised the distribution of callsign areas in accordance with reality. We also decided to refer to “callsigns” rather than “stations”. The idea was to eliminate complex situations. Previously, it was hard to decide what to count if someone’s callsign had changed, when several operators share a station or if two individuals used the same callsign in succession. These days, it doesn’t matter who the operator was—only the callsign counts.

Another change was the introduction of higher levels, beyond the initial 100 callsigns. In this way, WAZS-200, WAZS-300 etc. were born. There were also trophies for the first three winners of WAZS-500, presented by Pretoria Contest Club ZS6Z and sponsored by a flying school.

SA-QSL

Around this time, something else happened that would have a huge influence on WAZS. Richard Seddon ZS2CLI, then the League’s Webmaster, created an online QSL system named SA-QSL. I was sceptical, as the Logbook of the World was already available and I felt that SA-QSL did not feature enough security, but I nevertheless helped Richard to support standard log formats.

In retrospect, my sceptical attitude was misplaced. SA-QSL has become very popular, and it has thus far worked really well. It eventually transformed WAZS fundamentally.

Until about 2005, the biggest challenge of WAZS was to obtain confirmations. Although many amateurs sent QSLs through the bureau, the process was time-consuming and unpredictable. Direct postcards were expensive and not very successful. The only way that worked reasonably well was to send a QSL request, a stamped envelope and even a blank postcard with a begging letter¹. For the cost of two stamps, two envelopes, two postcards and a begging letter, one could count on about three-quarters of the answers.

SA-QSL tremendously simplified the process. Make a contact, upload it to SA-QSL and wait for the other amateur to confirm it. These days, more than three-quarters of local contacts are confirmed this way within a week or two—free of charge and with little effort! There are now more than 310 000 electronic QSLs on SA-QSL.

Further Developments

It took almost two years before the first WAZS-500 trophy was awarded at the end of 2002. Everyone expected OE6HPD to win the first trophy, as Harald had already worked more than 800 ZS stations by the year 2000. He was one of the first applicants for WAZS-400, but has to this day (2016) not applied for WAZS-500.

¹ Actually, there is another effective way: Collecting cards by hand. Obviously, though, this technique is even more expensive and time-consuming than the one mentioned!

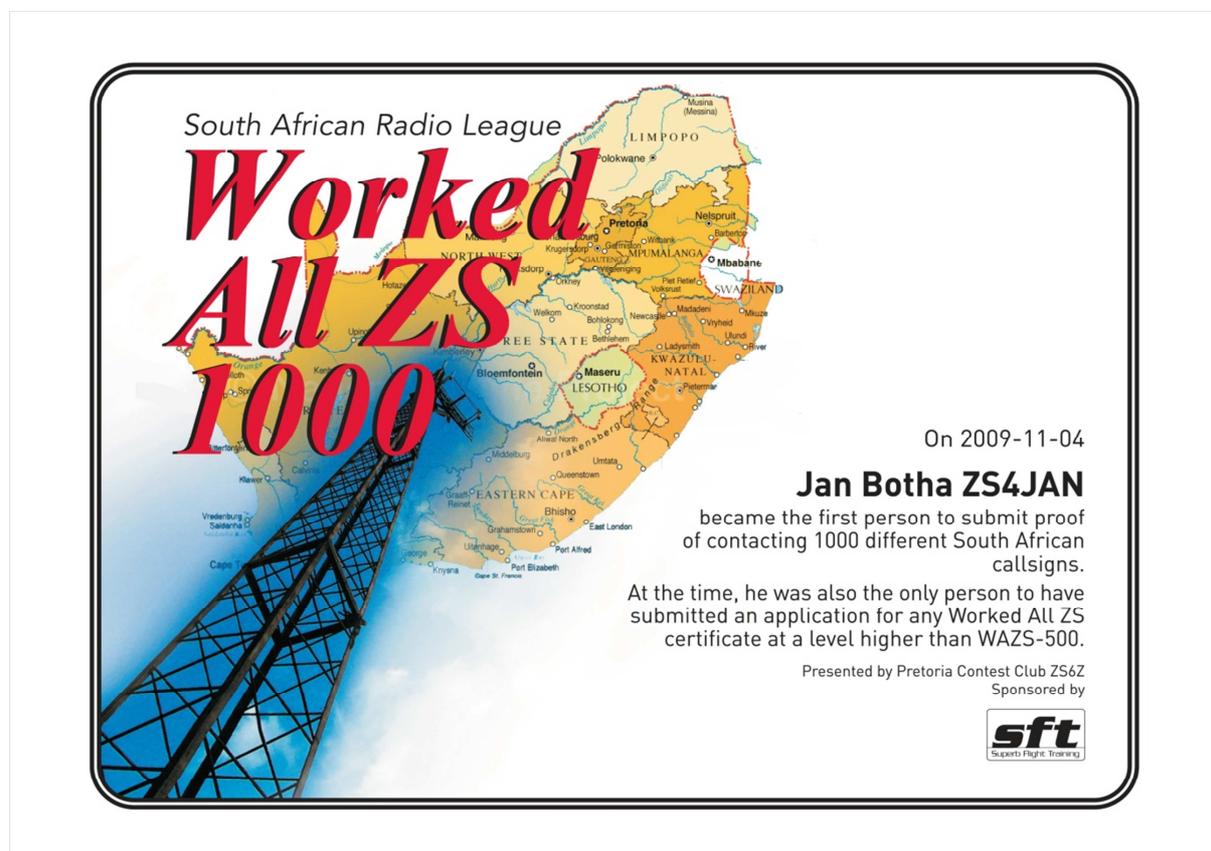
The second WAZS-500 was awarded almost five years after the first, and the third almost two years later, in 2009.

By 2006, SA-QSL was fully in use, and a deluge of applications started. In the decade between then and now, more than 430 WAZS certificates have been issued! There are now 28 WAZS-500 certificates, and the leader is now at WAZS-1600. The idea that one can work and confirm 1600 different ZS callsigns is hard to believe. We certainly did not expect it when we rewrote the rules!

Movers and Shakers

The undisputed WAZS champion is Jan Botha ZS4JAN. Jan now has over 1600 callsigns confirmed. Of these, more than 1500 are on Phone, and more than 1500 on 7 MHz. He also has 800 on 3,5 MHz and 100 on Code.

When the third WAZS-500 application was received in 2009, Jan had already reached 1000. The sponsor then, in addition to the promised three trophies for the first three winners, commissioned a special trophy for Jan's WAZS-1000. It consists of this design on a ceramic tile, mounted on a wooden plaque:



Jan uses a combination of SA-QSL and paper cards, with nagging techniques similar to those I have described.

No-one knows where the limit is. Can someone reach 2000? Jan took almost two years to climb from 1500 to 1600, so it seems like the progress is slowing down.

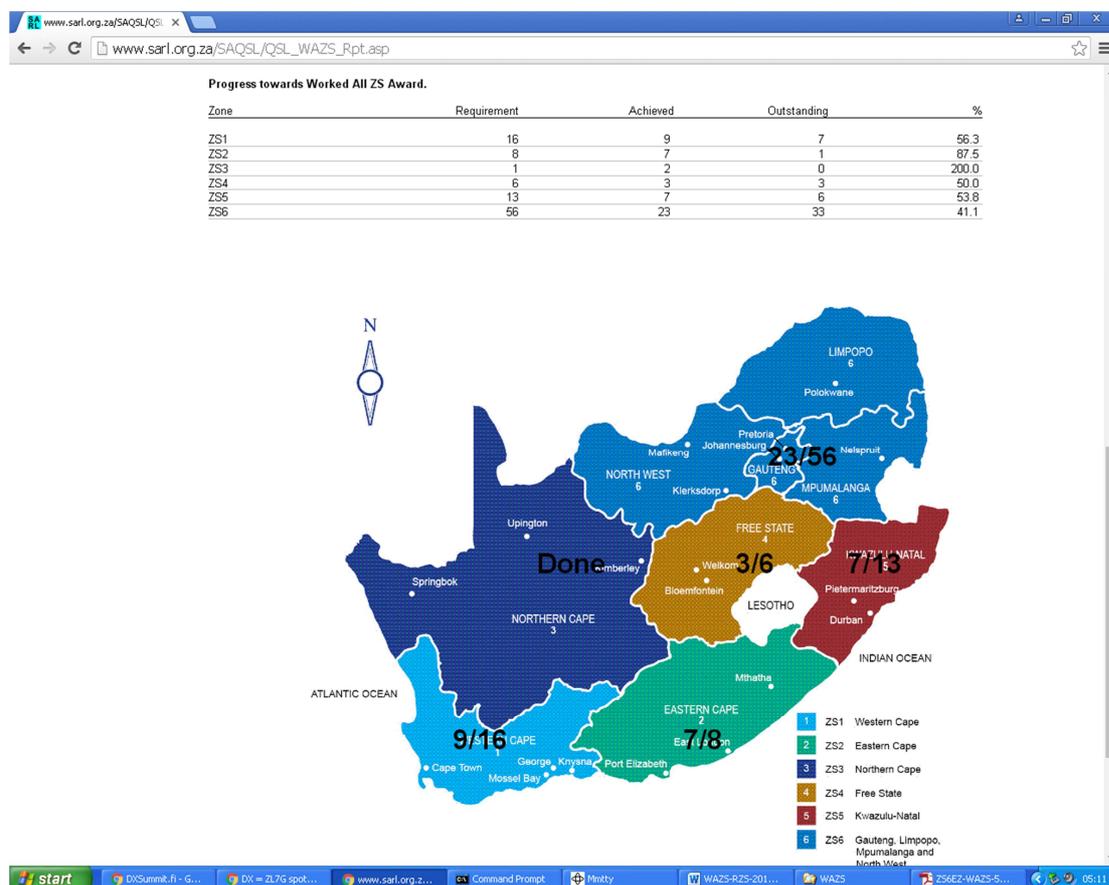
Pieter Jacobs ZS6XT recently applied for WAZS-1000. He is second at this level, after Jan. Pieter's contacts are also mostly on Phone, but he did not apply for a specific Phone certificate.

Some participants try to get WAZS on different bands or modes. Jan Botha is the leader on 7 and 3,5 MHz and on Phone, and his achievements have already been described. The first WAZS on 14 MHz was issued to Max Adler ZS1ACD in 1959. In 1993, Hal Lund ZS6WB amazed everyone by submitting the first successful application on 50 MHz. In 2012, Johan Groenewald ZS2CX was first on 1,8 MHz, followed by two others. The first Five Band WAZS was only issued in 2016. This award involves meeting the requirements on each of the five classic HF bands (3,5, 7, 14, 21 and 28 MHz). For DX stations, it would be very difficult to reach 100 ZS stations on the low bands (e.g. 3,5 MHz). For South Africans, the low bands would be relatively easy, but the high bands (e.g. 21 and 28 MHz) are really difficult because the first hop typically only hits the ground far outside our nation's borders. Most of the contacts are made on backscatter, with weak signals and much competition from strong DX signals. It is almost impossible to attract the attention of a station 1000 km distant when there are many loud DX stations calling!

How to chase WAZS

There are obviously two ways to pursue WAZS: the easy way and the serious way. The choice obviously depends on your personality.

If you are a leisurely, relaxed individual, you will chat to South Africans in a leisurely way, upload to SA-QSL at your leisure and occasionally take a leisurely look so monitor your progress. SA-QSL has automatic counters that show how many counters you still need. These counters (complete with a nice map of South Africa) are available under "WAZS Status". You can even see your progress on a single band or mode by making the relevant choices. The table below and the map show how many you still need for each call area. When you reach a new milestone, you fill in an application form and send it to the Awards Manager. Voila!



One can also see the scores of other participants on this page. For instance, enter ZS4JAN in the window and press "Get Callsign". Jan's list of more than 1400 callsigns appears. Pick a single band like 20 m from the menu, and see what Jan still needs on this band.

This is now where the serious way comes in. The difference between the 1400 on SA-QSL and the 1600 for which Jan has already been credited, consists of paper cards. Old contacts are mostly not verifiable on SA-QSL, because the operators have often changed callsigns, or have died. Even nowadays, there are people that are not SARL members, and others that do not feel like doing SA-QSL. Serious individuals like Jan, who want to confirm every contact, send envelopes and cards all over the country, complete with begging letters. It is a fact of life that one does not achieve the highest levels in anything without some effort!

One ingredient of a high WAZS score is good paperwork. I personally informally chase WAZS on every band and mode. When I hear a South African station, I must therefore know whether I already have that callsign confirmed on that mode and band. If not, I must try to contact the station and confirm the contact. I normally ask them on the air to confirm the contact. They normally say if they refuse to do SA-QSL or paper cards. One can also consult the Callbook on the SARL Website to see how many SA-QSL confirmations someone has sent and received. From these numbers, one can figure out whether someone will cooperate or not.

By far the hardest area to work is ZS5. Around 13% of callsigns in the ICASA database are ZS5s. One therefore needs 13 ZS5 callsigns for WAZS. This feat is easier said than done. Sources like reversebeacon.net and DX Summit make it clear that there is very little activity from ZS5, much less than one would expect from the number of licences and even less than in some less-populated areas like ZS2 and ZS3. In my case, propagation is also difficult, as the distance is much too short for the high frequencies. Signals are normally weak, with much competition from Europe and elsewhere. Fortunately, it is not impossible. Sharp operators at both ends and reasonable antennas make it possible to communicate almost every day.

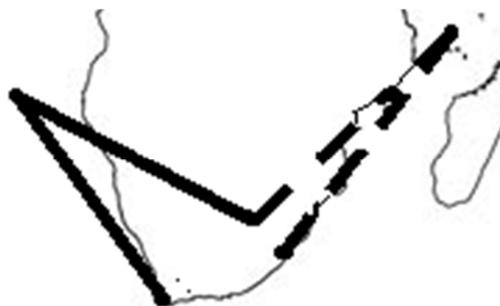
For the past several years, I needed only ZS5 stations to complete WAZS on 28 and 21 MHz. I often listened when someone was reported on the DX Summit, and also arranged schedules with a handful of operators. The regular DXers were easy to work, and we were normally successful on the first try. Recent examples of easy contacts included ZS5J, ZS5LEE, ZS5TU, ZS5XT and ZS5/NO9E. Others were harder; after repeated schedules, we could not make any contacts.

Which Antennas are required?

On the low bands, the answer is basically: The worse, the better. An antenna that works for DX normally has a low radiation angle, and the signal only hits the surface near the equator. These antennas do not work well for local contacts. The ideal antenna for local contacts shoots almost straight up, with the first hop hitting the ground just beyond the first hill. Low dipoles work well on 3,5 and 7 MHz.

On the higher bands, there is no way to get high angle signals to bounce back. The best strategy is for both stations to beam in the same direction and rely on backscatter. Between Pretoria and the Eastern Cape, both can look east or west; east in the morning and west in the afternoon. Between Pretoria and the Western Cape, the best chance is during the late afternoon, with both beaming northwest and the signals returning from the Atlantic Ocean. Between Pretoria and KZN, the best opportunity is in the morning, with both stations beaming northeast to the Indian Ocean. Another

option is to beam northwest in the afternoon, but then the two hops are obviously not the same length. In this case, it would help if the ZS5's antennas are higher than the ZS6's.



The picture shows optimal scatter paths between Cape Town and Pretoria (solid lines) and between Pretoria and Durban (dotted lines).

In the Nineties, I used a Yagi stack on 28 MHz. It was wonderful to be able to talk to anyone in South Africa on backscatter, even with simple antennas and low power at their end. It was not uncommon to chat to mobile stations on the coast. These days, I'm no longer that privileged. I now use a small two-element beam, about 15 m high, with about 300 W output. Nevertheless, it is more than enough. I recently worked a string of stations that were using only 100 W, many with wire antennas. Even though I can no longer conduct long conversations with mobile stations on the coast, I can pick up new stations for my WAZS.

Bernie van der Walt ZS4TX and I recently ran a test. Even though we are at the bottom of the solar cycle, and almost 500 km apart, we could easily talk to one another on 21 MHz. We started with beams, using between 20 and 100 W. We then switched to vertical antennas. We could still talk, as long as we weren't both on verticals. Even with both of us on verticals we could have spoken, with about 200 W on each end.

This experiment confirms my basic feeling: A basic station with a simple beam can easily cover the entire country, even on the high bands. This finding doesn't explain why I have had so much trouble hearing certain stations. I can think of stations I have tried to work dozens of times, but have never heard. I can only suspect that much RF disappears into bad feedlines and connections, and that much heat is involved...

Meeting the Challenge

At the end of this article is a link to a table in which all the milestones of the WAZS programme are listed. In this table, one can see what has been done, and what hasn't. Perhaps there is a challenge that you can tackle.

Do take the time to see how SA-QSL works. It is easy to use. Contacts can be typed in directly, or can be imported *en masse* in ADIF. I initially uploaded about 2000 contacts in bulk, but these days I enter them one by one as I make them.

I use a simple text file for my records. Others may prefer other formats, but this format works for me. Here is an extract:

```
ZR1ADI    .!.  . . . . . ?!..
ZR1AIK    .!.  . . . . . . . . .
ZR1TRD    .*  . . . . . * . . . .
ZS1A.     !!!  .!!!!  .!..
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The first three columns after the callsign represent modes: Code, Phone, Digital. The next five are the five classic bands: 28, 21, 14, 7 and 3,5 MHz. The next five are the "other" bands: 50, 25, 18, 10 and 1,8 MHz. I have been using this exact format for decades to chase DXCC countries, so it is easy to see at a glance what I need. A few examples follow:

- I have worked ZR1ADI on 50 MHz, but it looks like I can no longer expect a confirmation. I have him confirmed electronically on Phone and on 18 MHz (probably a single contact).
- I have ZR1AIK confirmed electronically on Phone, but on none of the bands in this list. I suspect I worked him on 5 MHz (which is not included in this table).
- I have a card from ZR1TRD on 50 MHz and Phone (presumably a single contact).
- I have electronic confirmation from ZS1A on all three modes and on five bands (28, 21, 14, 7 and 25 MHz).

Come up with a similar format for yourself, and keep good records. Mine are electronic, but up to a few hundred callsigns can easily be managed on paper.

The next step is the most enjoyable: Get on the air and chat with the people! Perhaps there are a few new friends to be met out there, but in any case it is a lot of fun to meet new amateurs and exchange ideas, learning new things about antennas and radio propagation in the process.

Web Resources

The **SARL Awards Directory**: <http://zs6p.com> and follow the link to the Awards Directory. Complete rules, a complete list of certificates, the original announcement in *RadioZS* and a more recent press release about the rule changes in 2000 are also there.

List of Milestones: <http://zs6ez.org.za/lists/WAZS-1st.pdf> . Use it to look for a new objective that you can attempt to reach first!

The **DX Summit**, where you can see who is active: <http://www.dxsummit.fi/>. It is easy to set up filters, e.g. to look only for ZS5 stations.