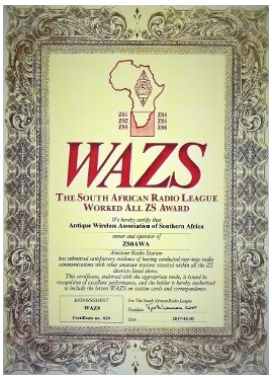
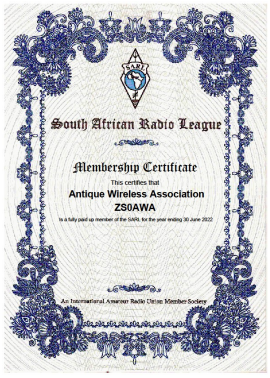
Antique Wireless Association of Southern Africa Newsletter

241 August 2026

Hickok Model OS10 AF RF Oscillator.

1936 Hickok OS-10 Tube Radio Oscillator / RF Generator AC Meter. This rare piece of equipment came with 4 tubes and was powered with 100 to 120v AC and was sold at the princely price of $49.00.





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AWA Committee:

* President—Chris ZS6GM
* Vice President—
* Technical Advisor—Rad ZS6RAD
* Secretary/PRO—Andy ZS6ADY
* KZN—Don ZS5DR
* WC—John ZS1WJ
* Historian— Louis ZS6SK
* Members—Renato ZS6REN Wally ZS6WLY

Reflections:

All of a sudden there is a push to rejuvenate or revive some CW in SA. A new CW group has been started by Raoul ZS1C in Cape Town and there seems to be quite a bit of interest in the group.

Ludwig has also posted an article in this Newsletter about CW and he tells me it will become a regular thing.

Of course, like with many things, SA is sadly lagging behind the rest of the amateur world when it comes to CW. We were one of those who pushed to have CW removed from the full license because many thought it was outdated and had no place in ham radio.

Yet in Europe, the UK and the US, CW is till extremely popular. Yes, given the fact that the percentage of hams outnumbers us drastically, there is still a vast amount of CW ops in these countries. Just listen on the DX bands when there is a CW contest on.

There is also a push to try and get some AM transmissions going again and there will be regular nets on a Saturday evening on 3.650 from 19h00 SAST followed by a CW net.

So if there are any who can still remember what AM is and how active it was a number of years ago, then you better get some practice in and learn how to set up your station on AM again.

Many years ago there were plenty of AM stations to be heard on a Saturday morning and a Wednesday evening, blasting out musical frequencies and in general just having a good time.

I did say this many times in previous Newsletters and will say it again. If you are going to use a solid state radio to Tx AM, please be extremely careful and only set up your radio as per the instructions in your manual, otherwise you stand a very good chance of frying the finals.

Make sure you understand the principles of AM before using the mode.

I'm not trying to put anyone off of trying AM, it is a wonderful and satisfying mode to work, but there are some things one needs to understand when using it.

So get yourselves all jacked up and ready to have some fun on AM and find out what nostalgia is all about. You won't regret it.

Of course for those who still have some old valve radio's that can only send AM and CW, well this is your opportunity to try them out if you have never used them on these two wonderful modes.

We have to remember that before Donald came along, this was all that the radio hams had to use to connect. (and I'm not talking about the Donald with the kuif).

There were many who made their DXCC using AM mode and only CW. Of course today we have so many modes we can't remember them all.

Amateur radio itself with all it's modern modes and radio's, can still be such an interesting hobby if you apply yourself to it.

There is so much one can get involved in, from homebrew to just using the modes allocated to us.

I have been a ham since 1984, but I still do not consider myself a seasoned operator. I started fairly late in life when I think of some who had already been in it for at least 20 years longer than I have and are younger than I am. And I am still learning.

All I can say is we have a few challenges ahead of us if we want to maintain our mission statement, especially the part about finding them, fixing them and using them. Those are more than just pretty words thought out by someone, they are the backbone of the AWA.

So looking forward to hearing many new voices on AM and who knows, maybe even a few fists on CW that have been resting for a while.

As the old saying goes, "See you down the coax".

Best 73

De Andy ZS6ADY

August 2026	**AWA CW Interest Group** Morse keys, CW telegraphy, transmitters, receivers, history, procedure, exercises, and anything else related to CW. Join the ZS0AWA CW net, Saturdays, 14H00 SAST, 7.025 net controller Andy ZS6ADY **Ludwig Combrinck ZS5CN**	Article no. 1

Introduction :

This series of articles will focus on anything linked to Morse code, CW telegraphy, receivers and transmitters that can be used for CW, the history of Morse and CW, CW procedures, even some exercises to help learn Morse code or improve sending and receiving speed and accuracy.

Morse key of the month

This month, we will have a look at the Marconi Marine 365FZ CW key (Fig.1). The key was manufactured by the Marconi International Marine Communication Co. Ltd. (M.I.M.C. Co. Ltd. Chelmsford). It dates from the late1960's and was preceded by Type No. 365 (no suffix) dating from the mid 1930's. Type 365 had roller bearings inserted on the inside of the fulcrum supports.

This was followed by the 365A of which there were two versions; roller bearings or sleeve bearings. The 365B was manufactured early in WW2, and similar to the 365A there were sleeve bearing and roller bearing versions. Suppression components for key-clicks, consisting of two coils, resistors and capacitors were added.

Both 365EZ and 365FZ were introduced in the late 1960's. Visually they are the same, and they were fitted with key-click suppression. These two keys also feature roller bearings (Fig. 2) and has no play in the fulcrum as the construction of the key is of the highest quality. They were fitted with a diecast cover manufactured by Eddystone (Figs. 3 and 4). By the late 1960's, Eddystone Radio had been taken over by the Marconi Company, which in itself was a subsidiary of the English Electric Company. The previous versions of the 365 key had handmade, expensive brass covers.

The key is smooth to operate, does not move around on the operator's work table and has large replaceable silver contacts. It is a professional instrument and a joy to operate. In order to qualify, maritime operators had to send 20 wpm with a straight key. I find that 20 wpm with the 365F is quite feasible. It is not as fast as some keys with longer arms, but with practice 20 wpm should be within reach of most operators.

Figure 1.

Marconi Type No. 365FZ Morse key. This key and its predecessors were favourites of merchant marine radio officers.

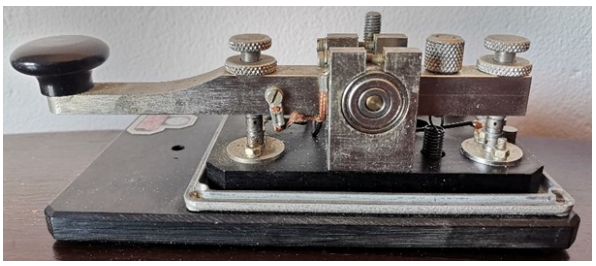

Fig2: The Roller bearings of the 365FZ allows for smooth motion of the key arm, it is very solid, there is no sideways movement or other instabilities

Fig 3: The Eddystone dust cover protects the components of the key, as well as the operator. No wiring is exposed. The cover is easily removed for key cleaning, adjustment or inspection. These covers have Eddystone 6908P print moulded into the reverse side of the cover top.

Fig4: Name tag of the type No 365FZ key. The diecast aluminium box is painted a metallic grey.

Unlike basic telegraph keys that only feature a single make-and-break circuit to key the transmitter, the Marconi 365 series was specifically designed and engineered for the high-power, full-duplex environment of a commercial ship's radio room. To facilitate this, a secondary set of auxiliary contacts that close on "key-down" can be used to mute the receiver or activate an external relay.

Code Practice of the Month

Practice this sequence of 5 letter groups.
Practice every day, but not longer than 20 minutes.
If you are still learning Morse, learn the code for the 1st group, send it via an oscillator. Learn to read and send it with a key, then move to the next group. Learn the sound. Read the characters and sound it in your head. Make sure you have the rhythm and spacing of the code correct (dit=1 unit, dah=3 units, between elements in a letter; 1 silent unit, between letters; 3 silent units, between words; 7 silent units.

QWERT ASDFG ZXCVB POIUY LKJHG MNBVC XZASW EDCRF VTGBY HNUJM IKOLP PLMKO IJNBH UYGVT FCREW QAZXS WEDCV FRTGB NHYJM KILOP ZAQWS XCDER FVBG TNHYJ MKIOL

Learn to recognise words. Practice these fifty most common words:

the of to and a in is it you that he was for on are with as I his they at be this have from or one had by word but not what all were we when your can said there use an each which she do how their if

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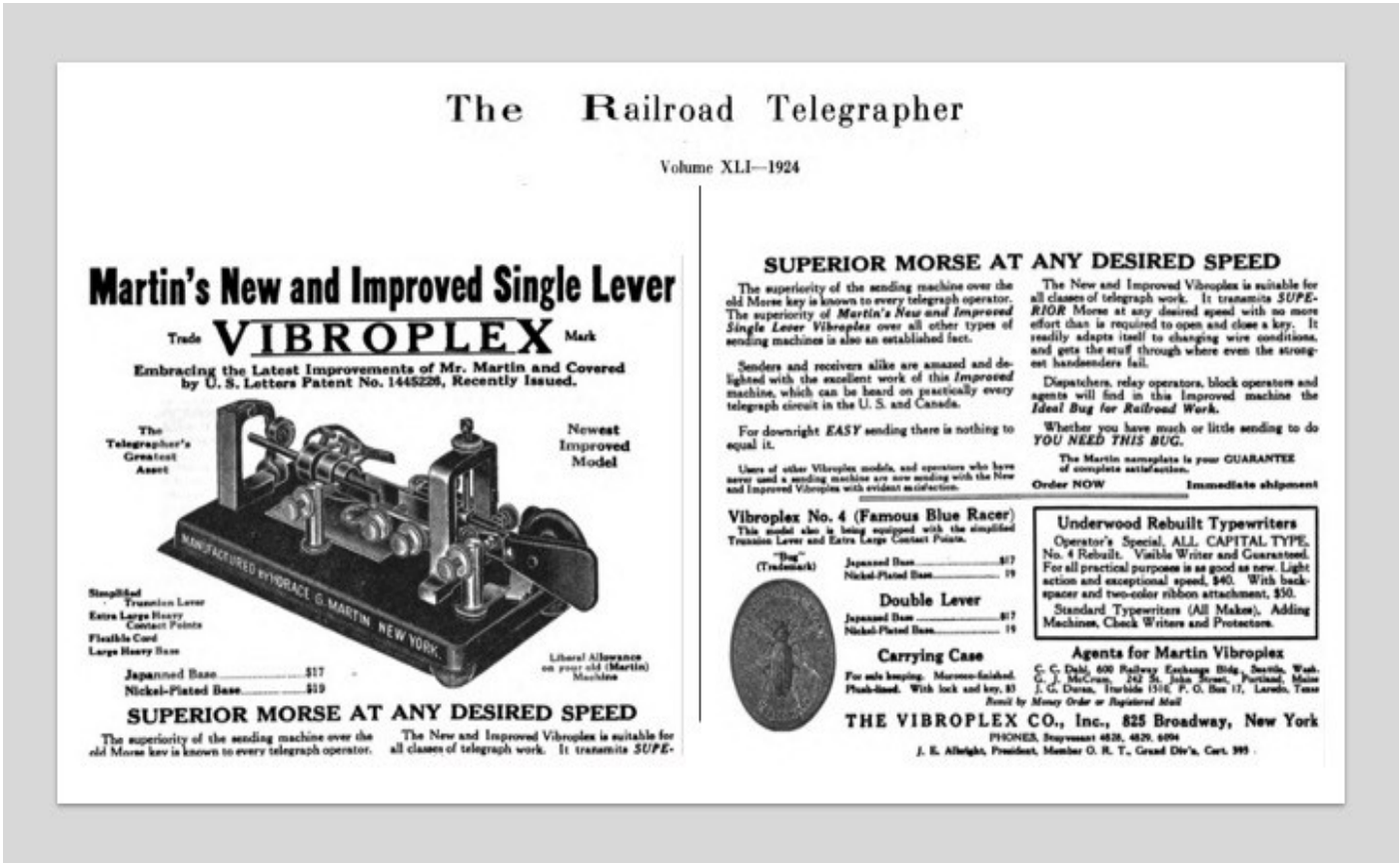

The Railroad Telegrapher

Volume XLI—1924

Martin's New and Improved Single Lever

Trade **VIBROPLEX** Mark

Embracing the Latest Improvements of Mr. Martin and Covered by U. S. Letters Patent No. 1445226, Recently Issued.

The Telegrapher's Greatest Asset

Newest Improved Model

MANUFACTURED BY HORACE G. MARTIN NEW YORK

Simplified Trunnion Lever
Extra Large Heavy Contact Points
Flexible Cord
Large Heavy Base

Japanned Base $17
Nickel-Plated Base $19

Liberal Allowance on your old (Martin) Machine

SUPERIOR MORSE AT ANY DESIRED SPEED

The superiority of the sending machine over the old Morse key is known to every telegraph operator. The superiority of *Martin's New and Improved Single Lever Vibroplex* over all other types of sending machines is also an established fact.

Senders and receivers alike are amazed and delighted with the excellent work of this *Improved* machine, which can be heard on practically every telegraph circuit in the U. S. and Canada.

For downright *EASY* sending there is nothing to equal it.

Users of other Vibroplex models, and operators who have never used a sending machine are now sending with the New and Improved Vibroplex with evident satisfaction.

The New and Improved Vibroplex is suitable for all classes of telegraph work. It transmits *SUPERIOR* Morse at any desired speed with no more effort than is required to open and close a key. It readily adapts itself to changing wire conditions, and gets the stuff through where even the strongest handsenders fail.

Dispatchers, relay operators, block operators and agents will find in this Improved machine the *Ideal Bug for Railroad Work.*

Whether you have much or little sending to do *YOU NEED THIS BUG.*

The Martin nameplate is your GUARANTEE of complete satisfaction.

Order NOW — Immediate shipment

Vibroplex No. 4 (Famous Blue Racer)

This model also is being equipped with the simplified Trunnion Lever and Extra Large Contact Points.

"Bug" (Trademark)

Japanned Base $17
Nickel-Plated Base 19

Double Lever

Japanned Base $17
Nickel-Plated Base 19

Carrying Case

For safe keeping. Maroon-finished. Plush-lined. With lock and key, $3

Underwood Rebuilt Typewriters

Operator's Special, ALL CAPITAL TYPE, No. 4 Rebuilt. Visible Writer and Guaranteed. For all practical purposes is as good as new. Light action and exceptional speed, $40. With backspacer and two-color ribbon attachment, $50.

Standard Typewriters (All Makes), Adding Machines, Check Writers and Protectors.

Agents for Martin Vibroplex

C. C. Dahl, 600 Railway Exchange Bldg., Seattle, Wash.
G. J. McCrean, 342 St. John Street, Portland, Maine
J. G. Duran, Iturbide 1516, P. O. Box 17, Laredo, Texas

Remit by Money Order or Registered Mail

THE VIBROPLEX CO., Inc., 825 Broadway, New York

PHONES, Stuyvesant 4820, 4829, 6004

J. E. Albright, President, Member O. R. T., Grand Div's. Cert. 395

Astatic Corporation: The Company That Defined Communications Audio

Few companies have exerted as much influence on the development of amateur-radio microphone technology as the Astatic Corporation. Although numerous manufacturers have produced broadcasting and professional audio applications, Astatic occupies a unique position in radio history because the company was founded by amateur radio operators specifically to solve a communications problem. The result was not merely a successful business, but the creation of what many historians consider the most iconic communications microphone ever manufactured: the Astatic D-104. [en.wikipedia.org], [bellscb.com]

For nearly seven decades, Astatic products could be found in amateur radio stations, military installations, commercial communications networks, police dispatch centres, taxicabs, public-address systems, recording studios and, later, Citizens Band (CB) radio stations. The company's products ranged from crystal microphones and phonograph cartridges to hydrophones, sonar equipment and professional audio systems. Throughout these developments, Astatic's reputation became inseparably linked with communications audio excellence. [en.wikipedia.org], [mcrn3885.com]

Origins of the Company

The origins of Astatic can be traced to the late 1920s and early 1930s, a period during which amateur radio was experiencing rapid technological development. At the time, most amateur operators relied upon carbon microphones for voice transmission. While functional, carbon microphones suffered from numerous limitations, including relatively high distortion, susceptibility to noise and inconsistent performance. These shortcomings motivated experimentation with alternative technologies. [bellscb.com], [en.wikipedia.org]

Two amateur radio operators from Youngstown, Ohio—Creed M. Chorpening, W8WR (later W8MJM), and F. H. Woodworth, W8AHW—began searching for a superior communications microphone. Their efforts led them to Charles E. Semple, an experimenter associated with Brush Laboratories who had been investigating the potential of Rochelle Salt crystal elements. Semple demonstrated the capabilities of crystal transducers and convinced Chorpening and Woodworth that they represented the future of communications audio. [bellscb.com], [en.wikipedia.org]

In 1933, the partners established the Astatic Microphone Laboratory. The company's objective was straightforward: develop and manufacture practical crystal microphones for amateur radio operators and other communications users. The venture proved remarkably successful and rapidly expanded beyond the amateur-radio market. [bellscb.com], [en.wikipedia.org]

The Development of Crystal Microphone Technology

To appreciate Astatic's significance, it is necessary to understand the technological context of the early 1930s.

Crystal microphones represented a major advancement over carbon microphones. Rochelle Salt crystals produced electrical signals directly from mechanical vibration through the piezoelectric effect. Compared with carbon microphones, crystal microphones offered higher output levels, lower distortion and improved reliability. This allowed simpler transmitter designs and improved speech quality. [bellscb.com], [momics.org]

Astatic became one of the earliest companies to commercialise this technology successfully. The firm's crystal elements became widely respected for their sensitivity and consistency, and Astatic quickly established itself as an industry leader in communications transducer design. [bellscb.com], [en.wikipedia.org]

The D-104: A Landmark in Communications Engineering

The company's most important achievement was undoubtedly the D-104 microphone.

Introduced in 1933, the D-104 would remain in production in various forms until 2001, giving it one of the longest production runs of any communications microphone in history. [momics.org], [qsl.net]

From an engineering perspective, the D-104 combined several characteristics that proved highly advantageous for radio communications:

- Extremely high output voltage.
- Excellent speech articulation.
- Reduced feedback tendencies.
- Compatibility with the high-impedance audio inputs of contemporary vacuum-tube transmitters.

Robust mechanical construction. [momics.org], [w5hro.com]

Astatic advertisements from the period claimed that the D-104 was used by more amateur operators than any other microphone. While such marketing statements are difficult to verify quantitatively, there is little doubt that the microphone became extraordinarily popular throughout the amateur-radio community. [momics.org]

The D-104's distinctive circular microphone head eventually earned it the nickname "the Lollipop", a term that remains universally recognised among radio amateurs today.

World War II and Industrial Expansion

Astatic's growth accelerated significantly during the Second World War.

In 1944, the company relocated its operations to Conneaut,

Ohio. During the war years, Astatic expanded beyond microphone manufacturing to produce military hydrophones, sonar devices and other specialised transducer systems. The company's expertise in crystal technology proved valuable in naval and defence applications. [en.wikipedia.org], [mcrn3885.com]

Following the war, Astatic emerged as a major communications-equipment manufacturer. The company's product line expanded to include:

- Microphones.
- Phonograph pickups.
- Recording heads.
- Crystal cartridges.
- Public-address equipment.

Commercial communications products. [en.wikipedia.org], [mcrn3885.com]

This diversification allowed the company to maintain relevance as communications technology evolved during the post-war decades.

Evolution of the D-104 Family

The D-104 itself underwent continuous refinement throughout its production life.
Early versions utilised simple stand designs and mechanical switching arrangements. As amateur-radio equipment evolved, Astatic adapted accordingly. During the transition from vacuum-tube equipment to transistorised transceivers, the company recognised that newer radios often required lower-impedance microphone inputs. [w5hro.com], [qsl.net]

To address this challenge, Astatic introduced amplified desk stands containing transistorised preamplifiers. Models such as the T-UG8 and later T-UG9 preserved the microphone's characteristic audio quality while ensuring compatibility with modern equipment. The amplifier's primary function was impedance matching and signal conditioning rather than simply increasing microphone output level. [w5hro.com], [qsl.net]

The Silver Eagle and Golden Eagle
Among collectors, perhaps no Astatic products are more admired than the Silver Eagle and Golden Eagle microphones.
These microphones represented the culmination of the D-104 platform's development and transformed a communications tool into an object of industrial design.
The Silver Eagle featured:

- Chrome-plated housing and stand.
- Engraved eagle emblem.
- Amplified electronics.

Enhanced switching arrangements. [momics.org], [Astatic D-...wstorm.com]

The Golden Eagle expanded upon this concept by incorporating decorative gold-plated finishes. Limited commemorative models produced during the United States Bicentennial celebrations of 1976 are particularly sought after today. [momics.org]
The enduring popularity of these microphones cannot be explained solely by their performance. Their visual impact is equally important. Few pieces of amateur-radio equipment are as instantly recognisable as a Silver Eagle microphone positioned beside a transceiver.

Beyond the D-104

Although the D-104 dominates discussions of Astatic history, it represents only part of the company's achievements.

The JT-30
Introduced during the late 1930s, the JT-30 "Bullet" microphone became one of the most influential microphones in blues music. Originally designed as a communications microphone, its compact form factor and distinctive tonal characteristics made it a favourite among harmonica players. The JT-30 became so influential that modern descendants remain available today. [en.wikipedia.org], [mcrn3885.com]

The 200S
The 200S achieved widespread adoption within commercial and industrial communications systems, demonstrating Astatic's ability to serve markets beyond amateur radio. [mcrn3885.com]

The Night Eagle
One of the most distinctive visual variations of the D-104 concept, the Night Eagle featured black and gold styling and remains considerably rarer than the Silver Eagle. Consequently, it commands considerable attention among microphone collectors. [randrauction.com]

Technical Characteristics of Astatic Microphones

Several engineering themes recur throughout Astatic's product history.

Emphasis on Communication Intelligibility
Unlike studio microphones designed to reproduce speech with maximum fidelity, many Astatic products were designed to maximise intelligibility. Their frequency response often emphasised the upper midrange region of the speech spectrum, where consonant sounds are concentrated. This improved communication effectiveness, particularly under poor propagation conditions. [w5hro.com], [eham.net]

High Output Sensitivity
Many Astatic microphones generated relatively high output levels compared with competing products, reducing the need for additional amplification in the transmitter chain. [momics.org], [w5hro.com]

Mechanical Durability
Although crystal elements could deteriorate with age and exposure to moisture, the physical construction of Astatic microphones proved remarkably robust. Numerous examples manufactured more than half a century ago remain operational today. [eham.net], [Astatic D-...wstorm.com]

The Company's Later Years

As communications and recording technology evolved, Astatic expanded into commercial audio and later established CAD (Conneaut Audio Devices), a division focused on professional microphones. The company eventually underwent several corporate reorganisations before portions of the Astatic brand became associated with CAD Audio and later DAS Companies. Despite these changes, the Astatic name continued to be applied to communications-related products, including microphones, antennas, coaxial cables and accessories. [en.wikipedia.org], [mcrn3885.com]

Photos:

Company Logo
Ref: https://west-techservices.com/p15.asp

Base of my 1985 T-UG8 D104

Legacy and Historical Significance

The historical significance of Astatic extends well beyond the manufacture of a few successful microphones.
The company helped establish crystal microphone technology as a practical communications solution. It produced one of the most recognisable industrial designs in amateur-radio history. It contributed to wartime military technology. It influenced commercial communications, public safety radio systems and even the development of blues harmonica music through the JT-30. [en.wikipedia.org], [mcrn3885.com]

Perhaps most importantly, Astatic demonstrated that communications microphones should be designed around the practical requirements of radio operators rather than abstract notions of audio fidelity. This emphasis on intelligibility remains a guiding principle in communications-audio design to this day. [w5hro.com], [eham.net]

My T-UG8 D104 from 1985

Conclusion

The Astatic Corporation occupies a unique place in the history of communications technology. Founded by amateur radio operators seeking a better microphone, it evolved into one of the most influential transducer manufacturers of the twentieth century. Through innovations in crystal microphone technology, the creation of the D-104, the development of celebrated models such as the Silver Eagle and Golden Eagle, and its contributions to both military and commercial communications, Astatic left an enduring legacy that continues to influence microphone design.
Nearly a century after its founding, the sight of an Astatic microphone—particularly a D-104 or Silver Eagle—still evokes the golden age of amateur radio. Few companies can claim such a lasting impact on both the technology and culture of radio communication
References and Interesting Links:
https://west-techservices.com/p15.asp
https://www.jt30.com/oldsite/story.html

My T-UG8 D104 Silver Eagle

Rear of my D104 Silver Eagle

Company Founders

F.H. Woodworth, President

C.M. Chorpening, Vice President

Ref: https://west-techservices.com/p15.asp

A group of Astatic officials and employees in the early days.

Ref: https://west-techservices.com/p15.asp

Humble home in which Astatic had its beginning.

Ref: https://west-techservices.com/p15.asp

CONTAT US:

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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 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.

Get your backdated issues at
http://www.awasa.org.za/index.php/newsletters

Notices:

Net Times and Frequencies (SAST):
Saturday 07:00 (05:00 UTC) —Western Cape SSB Net —7.140; Every afternoon during the week from 17:00
Saturday 08:30 (06:30 UTC)— National SSB Net— 7.125
Echolink—ZS0AWA-L;
ZS6STN Sandton repeater—145.700
Kempton Park Repeater—145.6625
Relay on 10.125 and 14.135 (Try all and see what suits you)

Saturday 14:00 (12:00 UTC)— CW Net—7.025

AWASA Telegram group:

Should you want to get on the AWA Telegram group where a lot of technical discussion takes place, send a message to Andy ZS6ADY asking to be placed on the group. This is a no-Nonsense group, only for AWA business. You must download the Telegram App first. …..+27824484368
