



A Member of the SARL



Visit our Website:  
[www.awasa.org.za](http://www.awasa.org.za)

**Inside this issue:**

HF Happenings	2-3
Broadcasting in the 20's and 30's	4-6
AWA outings	7
AWA CW open day	8
Notices	9

**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 ZS6TF
- \* Member—Ted ZS6TED

# Newsletter

# 127

Feb 2017

## Reflections:

Another year, another ring around the trunk. Just as it makes trees stronger and bigger, the same thing applies to the AWA.

We have had so many people join us over the past year and our membership now extends right around the globe. From New Zealand, all the way around to the US. We have members in over 10 different countries.

I don't think anyone could have expected this when we started, and now 14 years down the line (In March 2017) we are not only going well, but growing strong.

So what does the year hold in store for us ? I hope even more growth, more junker radios being restored to former glory, more interest in our nets and better band conditions. I can see good probabilities for at least three out of the four there.

Should the bands improve,

that would be a 100% improvement. What more could we ask for ?

There have also been a few of the old stalwarts who have left this earthly existence and become silent keys and we would pause a moment to reflect on pleasant memories of them.

If there is one thing that I have learned in this short time spent on this planet, it is that nothing is set in stone. People are fickle, well some of them anyway, and mostly out to get what they can out of life without any consideration to others.

Now this will probably raise a few eyebrows, as comments of this type normally do, but let me reiterate, only some of them.

Unfortunately this tends to place a general stigma on many non-guilty parties who will often get included in the collective, although they don't belong there.

Lets classify them as collateral damage. I often feel that I have been included in this group, even though I don't belong there, and then realise so have so many others.

Is this just a knee jerk human reaction when some people feel hard done by, or that they have been done in by other unscrupulous deviants out to get their pounds worth ? I don't know.

Whatever it is, I do believe the time is drawing near when amateurs are going to have to stand their ground and show others what communication is all about and that we are not just going to allow people to walk all over us and take away the rights we have worked so hard for. I think that could be a comment from Snoopie Dog, in Peanuts, but then I'm not too sure about that either.

Best 73  
 DE Andy ZS6ADY

## WIKIPEDIA

### Electrical Telegraph

Samuel Morse independently developed and patented a recording electric telegraph in 1837. Morse's assistant Alfred Vail developed an instrument that was called the register for recording the received messages. It embossed dots and dashes on a moving paper tape by a stylus which was operated by an electromagnet. Morse and Vail developed the Morse code signalling alphabet. The first telegram in the United States was sent by Morse on 11 January 1838, across two miles (3 km) of wire at Speedwell Ironworks near Morristown, New Jersey, although it was only later, in 1844, that he sent the message "WHAT HATH GOD WROUGHT?" over the 44 miles (71 km) from the Capitol in Washington to the old Mt. Clare Depot in Baltimore.

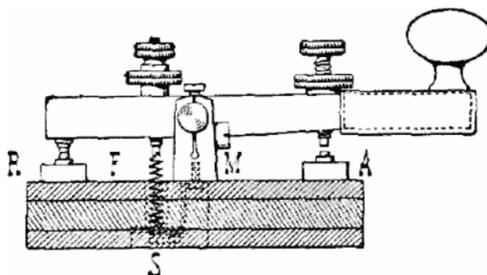


Fig. 6.

## HF Happenings

### How to Learn Morse Code - Semiconsciously

Scientific American magazine reports learning Morse code, with its tappity-tap rhythms of dots and dashes, could take far less effort—and attention—than one might think. The trick is a wearable computer that engages the sensory powers of touch, according to a recent pilot study. The results suggest that mobile devices may be able to teach us manual skills, almost subconsciously, as we go about our everyday routines. Ph.D. student Caitlyn Seim and computer science professor Thad Starner of the Georgia Institute of Technology tinker with haptics, the integration of vibrations or other tactile cues with computing gadgets.

Last September at the 20th International Symposium on Wearable Computers in Heidelberg, Germany, they announced that they had programmed Google Glass to passively teach its wearers Morse code — with preliminary signs of success.

Read the Scientific American story at

<https://www.scientificamerican.com/article/how-to-learn-morse-code-mdash-semiconsciously/>

### African DX

Mauritania, 5T0. Jean, ON8RA/5T0JL, will be active with the special call sign 5T0ITU from Mauritania until 31 December. The special call sign will be tentatively activated during ITU events that are listed on his QRZ.com page. Activity will be on 80 to 10 metres using CW. Suggested frequencies are 3 504, 7 004, 10 104, 14 004, 18 069, 21 004, 24 893 and 28 004 kHz. QSL via ON8RA.

Algeria, 7V7. Vlad, UA4WHX, continues his African tour and is now active using a special call sign, 7V7V, from Dira, Algeria, on the way to Bou Saada. As this was being written, activity has been on 80 metres CW, but also look for him to possibly be on 40 and 30 metres using CW, SSB and RTTY. As always, the length of his stay is not known. QSL via his home call sign.

African Tour (Reminder). Peter, HA3AUI, will once again be active from two West African countries between (approx.!) 20 January and 5 March. His plans are to be active as 6W2SC from Cabrousse, Senegal and as J5UAP from Cabroxo, Guinea-Bissau. Specific dates were not provided. Watch his Web page for possible updates at <http://cqafri-ca.net/en/welcome/index.html>

He does state that from Senegal (6W) he will have a K3, Spiderbeam, 100 or 500 W and will operate on 20 to 10 meters CW (other bands/modes on request). Peter may activate some IOTAs and/or WFFs as 6W2SC/p. From Guinea-Bissau (J5), he will have a K3, 100 w, verticals, and operate 20 to 10 metres CW (other modes on request). QSL via LoTW or direct via his home call sign HA3AUI.

Senegal, 6W. Ron, VE3REV, moved to Dakar, Senegal in August 2016 and is now active as 6W1SU. He will be there for two or three years and will be active on 80 to 6 metres "phone only, but hoping to tackle CW later." He asks DXers to be "tolerant, patient, polite and supportive" with him. QSL via M0URX's OQRS at [www.m0urx.com/oqrs/](http://www.m0urx.com/oqrs/) and LoTW; traditional cards via M0URX (direct only).

Namibia, V5. Georg, DD8ZX, and Klaus, DJ9KM, will be active again as V5/DD8ZX and V5/DJ9KM from Namibia between 6 and 18 February. They will operate SSB, RTTY and PSK on 160 to 10 metres and if possible on 6 m. Plans are to participate in the CQ WW WPX RTTY Contest (11 and 12 February), possibly as V55V (QSL via DJ8VC). QSL via V5/DD8ZX via DD8ZX (direct or bureau); QSL V5/DJ9KM via DJ9KM (direct or bureau) and LoTW.

Melilla, EA9. Look for Tom EA9/DJ6TF, Sigi EA9/DL7DF, Juergen EA9/DL7UFN, and Frank EA9/DL7UFR to be active from Melilla between 15 and 22 March. They will operate CW, SSB, RTTY and PSK31 on 160 to 10 metres with two stations. QSLs via DL7DF, direct or bureau and LoTW "within six months after the DXpedition". OQRS and further information can be found on [www.dl7df.com/ea9/](http://www.dl7df.com/ea9/).

### February

#### 5 - AWA CW Activity

10 to 12 - Love Rosendal Festival

11 and 12 - **SARL National Field Day**; Midmar Mile; Magoebaskloof Berry festival

14 - Valentine's Day

18 - **SARL Youth Sprint**; **AMSAT SA SDR Workshop at the NARC**

22 - **Closing date articles for March Radio ZS**

24 and 25 - Clarens Craft Beer Festival

25 - **West Rand ARC Flea Market**

26 - **SARL Digital Contest**

24 to 26 - Stellenbosch Wine Festival

27 - National Milk Tart Day

CIA documents about Ham radio declassified online

CIA reports about amateur (ham) radio in the former Soviet Union (including the Baltic States) and Warsaw Pact member countries have been declassified to a new online search engine.

The website is [www.cia.gov/library/readingroom/search/site/amateur%20ham%20radio](http://www.cia.gov/library/readingroom/search/site/amateur%20ham%20radio)

The documents include translations and assessments of : amateur radio clubs, including DOSAAF; training; monitoring sputniks; technology and equipment; and even qsl cards.

All the documents have been declassified and made available to the public for the first time in this internet archive; some were previously available in a closed system at the US national archives.

### Measurement Handbook

The fourth edition of the "Agilent Impedance Measurement Handbook" is available and it provides guidance on how to make accurate measurements under various conditions

<http://cp.literature.agilent.com/litweb/pdf/5950-3000.pdf>.

As automated measurements become more the

norm, the handbook also points out how to recognize and avoid inaccurate measurement results.

### Crystal radio

The Boy's Life website recently fea-

Ghana, 9G5X. The website for the 7 to 21 March 9G5X DXpedition to Ghana can be found at [www.ossett.net/9G5X](http://www.ossett.net/9G5X). Six operators will be active on 160-10 metres CW, SSB and RTTY with three stations. QSL via M00XO's OQRS and LoTW; log search with leader board on Club Log.

### 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

### US Naval Academy HFsat Coordinated for 15 to 10 Metre Transponder

The US Naval Academy has received IARU satellite frequency coordination for HFsat, a 1.5 U CubeSat carrying a 15 to 10 metre inverting linear transponder with a 30 kHz bandwidth (uplink 21,4 MHz, downlink 29,42 MHz) <http://aprs.org/hfsat.html>. The Mode K configuration is reminiscent of the old "RS" series of Russian satellites. The CubeSat will also carry an APRS digipeater on 145,825 MHz. The US Naval Academy's Bob Bruninga, WB4APR, said HFsat is designed to demonstrate the viability of HF satellites as a back-up communication system, taking advantage of HF radios found in a typical Amateur Radio installation or frequently used to support disaster and emergency response communication.

"HFsat will be gravity gradient-stabilized by its full-sized 10 metre half-wave HF dipole with tip masses," Bruninga explained on the HFsat web page. "HFsat will continue the long tradition of small amateur satellites designed by aerospace students at the US Naval Academy."

A standardized CubeSat VHF communication card based on the popular Byonics MTT4B all-in-one APRS Tiny-Track4 module for telemetry, command, and control is under development at the Academy. Students are working with Bill Riss, N6GHZ, on the HF transponder card. HFsat's control operator will be Todd Bruner, WB1HAI.

Bruninga sees a future for Amateur Radio satellites operating on the HF bands. "HFsat will operate under the ITU rules of the Amateur Satellite Service since not only does that service currently have allocations for satellite relay on HF, but it is also the only service with nearly a century of knowledgeable operators' experience with the HF bands under all conditions," Bruninga wrote on the HFsat web page. "Should the system prove viable, and should other services desire to use the transponder technology, then the lengthy process to obtain federal HF [satellite communication] allocations could be considered."

### Bye-bye 3,5 mm

Electronics industry analysts are predicting that 3,5 mm headphone jacks will increasingly be disappearing from high-end cellular phones and other consumer electronics over the next year [www.consumerreports.org/consumer-electronics-show/ces-2017-audio-preview/](http://www.consumerreports.org/consumer-electronics-show/ces-2017-audio-preview/). The trend, which started to be mainstream with the Apple iPhone 7, is accelerating. Many devices already have Bluetooth wireless circuitry, and eliminating the 3,5 mm jack cuts production costs and a potential source of a mechanical problem. Removing the hole in the case makes it easier to fluid-proof devices as well. With the retail prices of Bluetooth audio modules in the sub \$10 range, we will likely be seeing wireless audio capability built into our ham gear. Suitable audio latency is a headset characteristic to verify before using any CW application.

### Keeping track

Keeping track of connectors, small parts, hardware, etc., can be made easier with a good storage system and one of the top choices outside the US is made by Sortimo, as demonstrated in the video featuring Adam Savage [www.tested.com/art/makers/45036-inside-adam-savages-man-cave-the-tool-boxes/](http://www.tested.com/art/makers/45036-inside-adam-savages-man-cave-the-tool-boxes/).

## HF Happenings

*Items used with acknowledgement to the ARRL Letter, the ARRL DX News, the ARRL Contest Update, OPDX Bulletin, 425 DX Bulletin, DXNL Newsletter, WIA-News, the RSGB News, DxCoffee, Southgate ARC News, DX World and the Amateur Radio Newsletter*

tured a how-to article on building a crystal radio [http:// boyslife.org/hobbies-projects/ projects/40/catch-some-radio-wave](http://boyslife.org/hobbies-projects/projects/40/catch-some-radio-wave). The design uses a wound coil and germanium diode driving a telephone handset. The telephone handset may be the most difficult component to find.

### Co-ax

When good coax goes bad, it is often due to water ingress. DX Engineering has published a technical tip showing how to use a combination of rubber splicing tape and vinyl tape to make weatherproof coax connectors

<https://static.dxengineering.com/global/images/chartsguides/t/tes-2155.pdf>.

### Grounding in the Shack

The Flexradio folks have shared an application note regarding grounding in the shack

<https://helpdesk.flexradio.com/hc/en-us/articles/204779159-Grounding-Systems-in-the-Ham-Shack-Paradigms-Facts-and-Fallacies>. Single point grounding and the differences between RF and electrical grounding are among some of the topics discussed.

### Word to the Wise

Cans: headphones. It is said it originated from British slang, potentially among BBC employees.

## ***Broadcasting in the '20s and '30s***

# ***Better and Better***

***The first radio broadcasters were amateurs, i.e., "hams," and in the early days of commercial broadcasting, radio and recording were seen as competing with each other. Volume control was a big problem.***

By  
Jim Cook, W00XX



On this label on a 10-inch 78 RPM phonograph record from the 1920s that belonged to the author's father, the term "electric", at the top, was meant to convey "state of the art," meaning that it was recorded with a microphone, audio amplifier, and electric stylus, allowing for better regulation of volume. On the left side are the words, "Radio Broadcast Not Licensed For"; early radio stations hired their own musicians to avoid such license restrictions. The recording is of "I Don't Love Nobody," by the Fiddling Doc Roberts Trio, on the Perfect label.

**A**lthough communications between radio-telegraph stations had existed for more than 20 years before broadcasting began, no one had any experience providing a radio broadcasting service that would appeal to the general public. The earliest broadcast stations, such as KDKA in Pittsburgh, Pennsylvania, began as amateur radio stations. They brought news reports and sometimes set up a phonograph next to a microphone to play music for their listeners. Later, they had studios for live performances. But there were questions about how to pay for this service and what program material could be used.

In the United Kingdom, broadcasting would be owned and controlled by the government. Listeners had to pay a tax on each radio they owned to cover the costs of this broadcasting service. Although this possibility was debated in the United States, there was a strong desire to keep American broadcasting under the control of private companies and to make radio listening free to the public. For this to be financially feasible, advertising was allowed to cover the costs of broadcasting.

The development of the phonograph also had an impact on the radio broadcasting. Prior to the 1920s, all phonograph recordings were made acoustically by having the musicians perform in front of a giant horn that co-

lected the sound and carried it to a mechanical stylus that made the recording. The only way to control the loud-ness of the recording or the sound levels of each musician was to re-arrange them on the stage in front of the horn. In retrospect, it is amazing that some of the early acoustic recordings sound as good as they do. Fortunately, the development of vacuum tube amplifiers provided an opportunity to make better recordings. I have included an illustration of the label on a 10-inch 78 RPM phonograph record from the 1920s that belonged to my father. This recording is on the Perfect label, and the selection is "I Don't Love Nobody" by the Fiddling Doc Roberts Trio. At the top of the label is the word "Electric" which meant that this record was "state of the art," recorded with a micro-phone, audio amplifier, and electric stylus.

#### **"Radio Broadcast Not Licensed For"**

On the side of the record label is the statement, "Radio Broadcast Not Licensed For." The sentence structure is odd, but the meaning is clear. Most early radio stations hired their own musicians to avoid these limitations. Later, there was an understanding that having records played on the radio would actually increase the sale of phonograph records, benefitting everyone, and eventually arrangements were made to reimburse musicians whose records were used on the air.

By the 1930s, electric recording and reproduction of phonograph records provided the possibility of recording radio programs in advance on transcription disks. These were large records, typically 16" in diameter, that operated at 33 RPM, long before long-playing records at this speed were offered to the public. By using these transcription disks, a 15-minute pro-gram could be recorded without interruption. Transcription disks were largely replaced by magnetic tape recordings in the 1940s.

*Early broadcast stations transmitted at 5 watts; better vacuum tubes allowed power to be increased.*

*WLW of Cincinnati was given an experimental license for a 500,000 watt transmitter, but the experiment was short lived, and stations since have been limited to 50,000 watts.*



This photograph of the author's 1937 Silver-tone shows the markings for police, foreign, and amateur frequencies that were common on many radios during the 1930s

As radio broadcasting became popular, many companies were eager to put a station on the air. A list of radio stations included in the Fall 1925 edition of the *Radio Listener's Guide and Callbook* shows an interesting mix of stations, most owned by schools, religious organizations, radio shops, or retail stores. The transmitter power of some of these early broadcasting stations was as low as five watts, and there were only a few stations operating with power levels above 500 watts. There were only three stations listed with power levels of 5,000 watts. The listener had many stations to choose among, but only a few had enough power to break through the static and provide enjoyable listening.

By the mid-1920s, the Federal Radio Commission reassigned broad-cast frequencies to avoid interference, and eventually most stations used at least 500 watts of transmitter

power. The development of better vacuum tubes allowed transmitter power to be increased. By the 1930s, 1,000 watt and 5,000 watt stations became common. By the mid-1930s, there were even a few 50,000 watt stations, including station WLW in Cincinnati, Ohio, which was owned by Powel Crosley, Jr. who also manufactured Crosley radios. For a few years, WLW had an experimental license to operate a 500,000 watt transmitter, but the Federal Communications Commission later terminated this license and limited all AM broadcasting stations in the United States to a maximum of 50,000 watts, a power limit that is still in effect today.

Audio quality was also a problem in the early days. Carbon microphones were used, similar to the transmitter section of a telephone handset. They were not very sensitive and had poor frequency response. Fortunately, better microphone designs were developed and sound quality improved. Harold Black, an engineer with Bell Telephone Laboratories, invented negative feedback in 1927 to improve the performance of audio amplifiers. This invention was originally used for "repeaters" to amplify long-distance telephone calls but was later applied to audio amplifiers for other applications including radio broadcasting.

The technology of modulating the transmitter signal with the audio program material also improved. Throughout the 1920s, a method called Heising modulation was used. It worked, but was inefficient, especially for high-powered transmitters, and could not fully modulate the radio frequency signal. A better method called Class B Plate Modulation was developed by Loy Barton, an engineering instructor at the University of Arkansas, in 1930. This was the first modulation method that provided full 100% modulation. This improvement made AM radio signals sound better to the listener. The University of Arkansas radio station, KUOA, was the first to use Barton's invention, but it was later adopted by all broadcasting stations.

The use of leased telephone lines and phonograph recordings made remote broadcasting possible. Radio broadcasts could be made live directly from the sources of interesting events, or could be recorded for broadcasting later. An example of this capability was the memorable report of the crash of the Hindenburg air ship at Lakehurst, New Jersey, on May 6, 1937. Radio announcer Herbert Morrison described this shocking event as it was happening. That emotional broadcast is still available today on the internet.

By the 1930s, radio was being used by law enforcement organizations. Initially, police departments made arrangements with existing broadcasting stations to interrupt their programs with dispatches to their patrol cars. The Chicago Police Department used radio station WGN for this purpose. Later, police departments established their own radio stations on separate frequencies. Some were at the top of the AM broadcast band, between 1,650 and 1,720 KHz. Others had assigned frequencies between 2,400 and 2,450 KHz on the short wave band. These frequencies were often marked "Police" on radio dials, and listening to police dispatchers appealed to the public.

I read a report in an old radio magazine about a listener in Alaska who enjoyed tuning into the Los Angeles, California, police frequency, 1,712 KHz, when radio propagation conditions were favorable. He learned the names of the police dispatchers and could recognize them by their voices.

By the early 1950s, nearly all law enforcement organizations used two-way radios operating on VHF frequencies. The police bands marked on the dials of old radios are no longer used. My next article will discuss developments that allowed radio to move from the living room to the automobile, allowing broadcast listeners to enjoy their favorite programs on the road.

*JIM COOK, the son of a radio technician, became a licensed amateur radio operator at 15 and obtained commercial radiotelephone licenses before he was 20. He worked as a transmitter operator for two radio stations while studying electrical engineering at the University of Kansas. After graduation he became an electronic circuit designer.*

*(Reproduced with kind permission from Gateway magazine)*

---

# Possible Outings for AWA Members:

There are now 3 possible outings,

## 1) Skyclass classic scenic flight

We would like to know who would be interested in a 20min scenic flight in the Douglas DC-3 Dakota or Douglas DC-4 Skymaster, at around R850 per person. See attached flyer for more information. Not necessarily the next date as shown on the flyer, perhaps in a month or two.

## 2) Visit to the Rand Society of Model Engineers

2 April (Sunday)

No entrance fee, and only R10 per ride on the miniature trains

More info: [www.rsme.co.za](http://www.rsme.co.za)

## 3) Visit to the James Hall Museum of Transport

Possible date: Sunday the 21st of May when the museum will be celebrating International Museum Day!

More info: [www.jhmt.org.za](http://www.jhmt.org.za)

Please let Jacques ZS6JPS know should you be interested in joining any (or all!) of these outings. XYL's and friends always welcome:

[jscholtzp@gmail.com](mailto:jscholtzp@gmail.com)



Enjoy a 20 minute scenic flight on the Douglas DC-3 Dakota or Douglas DC-4 Skymaster from Rand Airport and appreciate Gauteng like never before.

**SkyClass Scenic Flights**  
Schedule 2017



Contact us to book your ticket

[enquiries@flyskyclass.com](mailto:enquiries@flyskyclass.com)

011 541 9913 / 082 496 4081

[www.flyskyclass.com](http://www.flyskyclass.com)



[www.facebook.com/SkyClassAviation](http://www.facebook.com/SkyClassAviation)

**CRYSTAL CARBON • MICROPHONES • STANDS**

**SHURE CRYSTAL MICROPHONES**  
A high grade line of new type crystal microphones. Noted for high quality sound reproduction. Extensively used for all types of P.A. work requiring exceptionally fine tonal quality. No mike current required.

**MODEL 70H SOUND CELL TYPE**  
H7731. List, \$28.00.  
**YOUR PRICE, \$38.22**  
A conveniently small, demountable wide-range crystal microphone for high quality reproduction. Has exceptionally good frequency response from 50 to 10,000 cycles. Employs a genuine Brush Sound-Cell. Completely chromium-plated including protective screen. Electrically shielded. 1 1/2 inches in diameter; 2 in. high. Supplied complete with integral slip and receptacle which fits all standard 1/2-inch stands.

**MODEL 70H DIAPHRAGM TYPE**  
H7601. List, \$22.50.  
**YOUR PRICE, \$13.23**  
A superior crystal microphone of the diaphragm pressure-actuated type. Special outliner principle employed aids in effectively handling music and speech. Output -60 db. Housed in cast chromium-plated case. Mounts directly on mike stands having 1/2-27 threaded shaft, or may be spring-mounted by means of hook supplied. 3 in. diameter; 1 1/2 in. thick. Supplied complete with 7 ft. shielded rubber-covered cable.

**74A "Spheroid"**  
H7698. List, \$37.50.  
**NET \$22.05**  
Radically new, absolutely non-directional wide-range crystal microphone of striking appearance. Specially shaped small diaphragm drives new type "Grain-Foil" diaphragm unit. Sound reaches the diaphragm uniformly from any angle through 360°. Exceptional frequency response is flat within 3 db. from 40 to 10,000 cycles. Output level, -55 db. Weighs only 1 1/2 oz. 2 1/2 inches diameter. Complete with locking slip and stand adapter having 1/2-27 thread.

**MODEL 73A LAPEL MICROPHONE**  
H7606. List, \$35.00.  
**NET \$14.70**  
Invaluable for speeches and stage presentations. Permits the speaker to move about freely. Assures consistently dependable pickup. Has exceptionally faithful response characteristics. Output level is minus 65 db. Free from internal or background noise. Weighs less than 2 ounces; only 2 inches in diameter. Has spring clip for easy fastening to clothing. Equipped with 1 1/2 ft. special shielded rubber-covered cable.

**ASTATIC CRYSTAL MICROPHONES**  
Newly developed, exceptionally well-built crystal microphones. Feature excellent frequency response characteristics and relatively high output level. Ideal for all high quality public address work.

**MODEL D-104**  
H2190. List, \$22.50.  
**YOUR PRICE, \$13.23**  
A new improved crystal microphone of rugged construction. Uses a Piezo Crystal element. Responds equally well in any position. No hiss or background noise. Has excellent frequency response essentially flat from about 40 to 10,000 cycles; output level -65 db. 1 1/2 in. impedance; may be connected directly to tube grid. No field or battery current required. Housed in an attractive chromium case. 3 in. diameter; 1 in. thick. Supplied with 6 ft. rubber covered shielded cable and handy mounting hooks. Threaded for 1/2-27 stands.

**D-2 WATCH CASE MODEL**  
H2192. List, \$25.00.  
**NET, \$14.70**  
A small, light crystal microphone of exceptionally good frequency response characteristics. Uses a newly perfected Grafoil diaphragm design. Non-directional; feedback tendency is reduced to a minimum. Remarkable frequency response is flat from 20 to 5,000 cycles. Output level -64 db. Very attractively finished in beautiful chromium. Sturdy, rugged construction. Case is extremely compact; only 2 1/2 inches in diameter; 1 1/2 inch thick. Threaded for use with 1/2-27 stands. 600 ohm P.C.S.

**MODEL K2 MULTIPLE UNIT**  
H2191. List, \$37.50.  
**NET \$22.05**  
A very attractive crystal microphone which employs two diaphragms working in a balanced opposition, driving a large crystal element. Utmost non-directional. Has essentially flat response characteristics from 20 to 5,000 C.P.S. and an advantage of 10 db. at 10,000 C.P.S. Output level, -75 db. Recommended for high quality sound work in Broadcasting Stations, high fidelity Public Address Systems, etc. 2 1/2 inches high; extreme end shielded receptacle to fit any 1/2-27 threaded shaft.

**BRUSH SOUND CELL CRYSTAL MICROPHONE**  
MODEL H28. Well-designed crystal microphone. Ideal for all sound work where true high quality is required. The special generating agent consists of two distinct platinum-lead plates connected in a balanced series circuit. This insures wide frequency response characteristics and the minimum internal noise. Output level -60 db. 4 1/2 inches high; 1 1/2 inch thick; 2 inches wide. 1 1/2 ft. of shielded cable. Fits all 1/2-27 threaded stands. Supplied with or less 3 prong adapter. H2199. With adapter, NET... \$27.93 H2194. Less adapter, NET... \$26.46

**SHURE MICROPHONE STANDS**

**MODEL 51DC**  
A new, modernistic desk stand. Very attractively finished in rubber black, brass with chromium circles on base. Has Automatic friction lock for adjusting height between 1 1/2 and 12 inches. Standard 1/2-27 threaded shaft. H7733. List, \$23.00.  
**NET \$3.82**

**MODEL 53R**  
High quality attractive floor stand with ring. Uses an automatic friction lock for simple sure adjustment of the stand to height desired. Has hollow stem for table. Ideal for use with all types of ring mounting microphones. Finished in 1 1/2 inch rubber black with chromium-plated collar and ring. Heavy metal base is 10 1/2 inches in diameter. Height adjustable (to top of ring), 50 to 72 inches. Supplied complete with neoprene springs. Rope. H7734. List, \$9.41.  
**NET \$3.94**

**MODEL 53RC**  
A very attractive and sturdy floor stand. Similar to type 53R, but less rigid. Excellent for all types of crystal, velocity and condenser microphones. Has standard 1/2-27 threaded shaft. Height is adjustable from 50 to 72 inches. Has pleasing professional appearance. H7735. List, \$9.50.  
**NET \$7.94**

**MODEL 63A**  
An inexpensive attractive floor stand with an automatic friction lock. Made in three sections adjustable from 31 to 60 inches. Has a moderate 10 1/2 in. base. Tubing is finished in rubber-black Japan with chromium-plated hardware. Complete with standard ring and springs. H7736. List, \$7.35.  
**NET \$2.94**

**MODEL 61A**  
High quality 16 inch Eucoset stand finished in polished nickel. Complete with ring and springs. H7737. List, \$2.94.  
**NET \$2.94**

**UNIVERSAL MICROPHONES**

**MODEL "XX" TWO BUTTON**  
H7550. List, \$10.00.  
**NET \$5.88**  
Develops truly faithful, natural tone. Has good frequency range. Equipped with Durakrome diaphragm, pure gold contacts. Ruggedly built, 200 ohm per button.

**MODEL "X"**  
H7551. Similar in design to above but of single button type. A high quality unit. H2199. With adapter, NET... \$4.41

**MODEL "BB"**  
Double button microphone with protected stretched diaphragm. Frequency range, 50 to 5,000 cycles. 20 ohm per button. 1 1/2 inch diameter; 1 1/2 inch thick. H7552. NET \$14.70

**MODEL "W" LAPEL MICROPHONE**  
H7555. List, \$35.00.  
**NET \$1.76**  
Very compact, sensitive lapel microphone 500 ohm single button. Gold spot center diaphragm. Size, 1 1/4 x 1/2 inches.

**2 BUTTON HAND MICROPHONE**  
Equipped with 1 1/2 inch 60 ohm switch in handle. Excellent for portable work. Sound Trunk, etc. Standard two-button type. Output, -55 db. 6 1/2 inches high; 6 ft. cable. H7209. List, \$9.00.  
**NET \$8.82**

**AMERICAN MODEL "EL" TWO BUTTON MICROPHONE**  
An outstanding carbon microphone value. A ruggedly constructed unit delivering natural tonal reproduction. Has stretched 200 Diaphragm diaphragm with gold spots and carbon contacts. Features flat frequency response from 50 to 3,000 cycles. Standard impedance, 200 ohms per button. 1 1/2 inch diameter; 1 1/2 inch thick. H2185. YOUR PRICE... \$4.90

## AWA CW ACTIVITY DAY

### 1. Aim

The aim of the CW Activity Day is for participants to contact as many amateurs as possible on the 20, 40 and 80 m amateur bands.

### 2. Dates

Sunday 05 February 2017

### 3. Times

From 15:00 CAT to 19:00 CAT (13:00 to 17:00 UTC)

### 4. Frequencies

14,000 to 14,060 MHz; 7,000 to 7,035 MHz; 3,500 to 3,560 MHz

### 5. Categories

- a) Single Operator All Band - Low Power (maximum 100W)
- b) Single operator All Band - QRP (Maximum 5W)
- c) Single Operator Single Band - Low Power (maximum 100W)
- d) Single operator, single band - QRP (maximum 5W)
- g) Short Wave Listener (SWL)

### 6. Exchange

RST, call sign and Grid Square locator.

### 7. Scoring

Contacts count 1 point for normal power, 2 points for QRP.

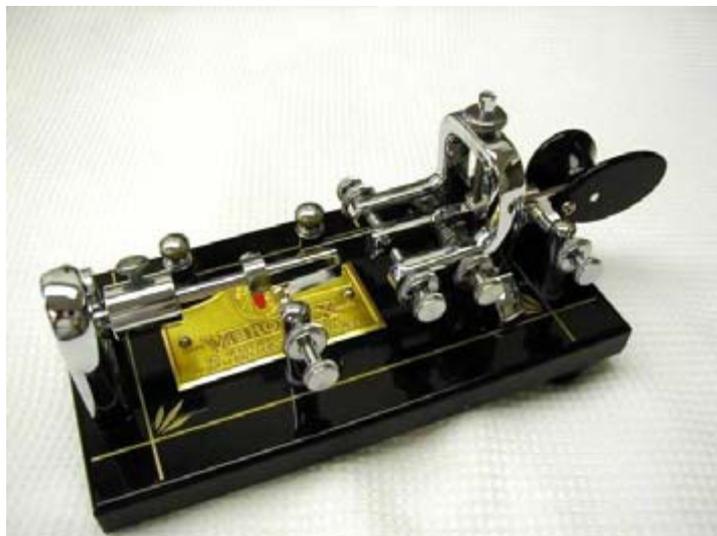
### 8. Awards

Certificates are awarded to the first three places and the highest single band score.

### 9. Sponsor

Southern African Antique Wireless Association,  
PO Box 12320,  
Benoryn, 1504  
E-mail: [andyzs6ady@vodamail.co.za](mailto:andyzs6ady@vodamail.co.za)

### 10. Closing date for log submission: Friday 03 March 2017



**CONTACT US:**

P.O. Box 12320  
Benoryn  
1504

Mobile: 082 448 4368  
Email: andyzs6ady@vodamail.co.za

**Get your backdated issues  
at  
<http://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](http://www.awasa.org.za)

**Notices:****Net Times and Frequencies:**

Saturday 06:00—AM Net—3620

Saturday 07:00—Western Cape SSB Net— 7140 (Alternate 3630)

Saturday 07:30—KZN SSB Net—3615

Saturday 08:30— National SSB Net— 7140; (Echolink connect to Sandton repeater ZS6STN-R)

Saturday 14:00— CW Net—7020

Wednesday 19:00— AM Net—3620, band conditions permitting.

---

---