



A Member
of the
SARL



**Antique
Wireless Association
of Southern Africa**

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AWA Committee:

- * President—Don ZS5DR
- * Technical Advisor—Rad ZS6RAD
- * Net Controller—Willem ZS6ALL
- * Secretary/PRO—
Andy ZS6ADY

AWA Newsletter

#53

May 2010

Reflections:

For many years now, we, last 50 years. Going from pose ?
as radio amateurs, have valve technology to multi-
always tried to keep the pin micro-technology has
purity of radio communi- certainly been a massive
cations something which leap.
we could be proud of.

From the days of only AM annals of amateur radio,
there was a struggle to get there is a group of hams
further and have the per- who are quite intent on
fect signal. To receive a destroying all our faith in
report of good quality from the technology which has
a fellow ham, was some- absolute idiots on the air. I
thing which was strived could think of a few differ-
for and we can be thankful ent choice words to try and
that this was something describe these people, and I
which was sought after am sure you could add a
with great diligence. few more which I would
prefer not to use.

Because of this seeking Yet, I see from some old
after “perfection” in qual- articles from radio maga-
ity of signal, we have SSB, zines more than 30 years
FM, Digital, EME, SSTV old, that these guys have
and many different forms been around for many
of radio technology which years.
developed. It is absolutely I wonder if they are spe-
amazing to think of the cially bred for this pur-
leaps and bounds technol- pose ?

Judging by these reports, it
would seem then we are not
going to be the last to deal
with these “special” people,
and they will more than
likely be around for many
years to come.

So what do we do ? Hunt
them down and kill them ? If
it would help, it might be
something to seriously con-
sider. All we can do, is as a
wise old Amateur friend of
mine used to say, on more
than one occasion, “Ignore
them, they will get tired and
move away to find someone
else to pester, where they
can get a reaction “. Very
wise words and ones which I
must often repeat to myself,
to try and keep some form of
sanity.

Best 73

De Andy ZS6ADY

Wikipedia—The Resistor

Ammmeter Shunt:

An ammeter shunt is a special type of current-sensing resistor, having four terminals and a value in milliohms or even micro-ohms. Current-measuring instruments, by themselves, can usually accept only limited currents. To measure high currents, the current passes through the shunt, where the voltage drop is measured and interpreted as current. A typical shunt consists of two solid metal blocks, sometimes brass, mounted on to an insulating base. Between the blocks, and soldered or brazed to them, are one or more strips of low temperature coefficient of resistance (TCR) manganin alloy. Large bolts threaded into the blocks make the current connections, while much-smaller screws provide voltage connections. Shunts are rated by full-scale current, and often have a voltage drop of 50 mV at rated current. Such meters are adapted to the shunt full current rating by using an appropriately marked dial face; no change need be made to the other parts of the meter.

CW Net:

This month we have a wonderful article from Vidi ZS1EL. I'm sure even the non CW officianado's will enjoy reading this article.

Of course Vidi has been playing CW for a good number of years and has achieved much during his time on the key.

Talking about achieving much, don't forget, if you took part in the CW section of the SARL Club Championships on Wednesday evening, then remember to submit your log with the AWA listed as your club. Lets see how much of an impact we can make.

The CW net grew quite nicely last month, but this month band conditions have certainly played a major role in skip again. So much so that we could not even hear Om John in Witbank. This really does put a

damper on things as we thought conditions were really on the up and up.

But we'll still be there when they eventually do improve and waiting for some good comms from all the divisions again.

It seems like it has been forever that we have been battling the poor conditions, yet despite it all, there is still always the opportunity for some kind of communication.

Mostly it has been Pierre ZS6BB, Barrie ZS6AJY and myself that have managed to get some comms going. It does give the opportunity to have a bit of rag chew on the band, but doing it in CW just takes a bit longer.

One thing that came out during one of conversations was that Barrie was one of the privileged few to have been on Marion



Island. He is listed as being radio technician in 1952. I think this needs a bit more introspection and demands some information from Barrie for this Newsletter, and we will certainly make some attempts at extracting more from him.

De ZS0AWA ... --

SSB activity:

As mentioned in the CW section, the bands have really not been good to us this past month.

Absolute minimum sunspots have resulted in conditions almost returning to where they were a few months ago with skip conditions becoming quite a regular thing.

Despite this, as before, this has not deterred many of the AWA net users from calling in on 40 and 80m. Thanks guys for all the support we get from so many of you calling in on the Saturday SSB net. It really makes it all worthwhile.

Please be patient with the net controllers

when we have difficulty hearing you. If you can't make it on 40m then try 80m, you might just be pleasantly surprised by the effectiveness of 80m. Either that or someone will always hear you and report it to the net controller. We do appreciate all the callers on our net.

Numbers still seem to remain fairly constant with between 16 to 20 calling in on a normal day.

What is amazing though, is when conditions do improve, how many of you are there just waiting for an opportunity to call in.

On a personal note, I want to thank all those

who regularly use 80m to call in. It helps in keeping the 40 to 80 relay going. There have been times when I have wondered if it worth keeping it going, but then 40 gives a wobbly, and there are more on 80m than on 40m.

Lets keep it going.



Johnson Viking Ranger I

AM:

The AM net on Saturday mornings has been surprisingly well attended. This could of course be due to the fact that during the winter months, the band opens up a lot later than in summer. Normally we would be on the go from around 05:15 but these days, 80m only comes to the fore well after 06:00.

Whatever it may be, the response to the AM net has been really good with up to 8 stations calling in. Not all take part in the MF's, but at least many report in and say they are listening. This is quite encouraging to hear.

Slowly but surely the group of AM users is growing as some newly restored rigs get switched on and tested. It's wonderful to

hear how many restoration projects are taking place with some fine all valve receivers being used to listen to the AM net.

So far we have over 20 stations call signs listed for the FR50B draw which will be taking place at the end of the year. So if you want to stand in line for this, then listen to the AM net and then send us a report on the stations heard and their signal strengths, or report in at the end of the net on SSB and give a report then. We take call in on SSB after each of the AM nets just in case you don't have AM capabilities for transmitting.

There is also a much smaller group who get together on Wednesday evenings from

around 18:00, band conditions permitting. So there are plenty of opportunities for you to call in or to listen in and give yourself a chance at owning this fine valve receiver.



Yaesu FR50B Rx

An unusual voyage into the world of CW Vidi - ZS1EL Part 1

My voyage into the world of amateur radio and especially CW involved many forms of transportation in one way or the other. The first was by bicycle. It all started at the age of 14 in Hillcrest, a suburb of Pretoria where I grew up. My daily bicycle trips to school and back took me past a house not far from us, where I noticed mysterious wires between trees and ladder-like feeders leading into the house.

One day coming home from school, my curiosity got the better of me and I decided to find out what it was all about. I parked my bicycle at the front gate, locked it up with padlock and chain and rang the doorbell. After a while I was greeted by a man in a terrible hurry who, without introducing himself, or even asking what I wanted, said that he was busy on the radio but that I should come inside. He hurriedly led the way into a room where, on a very tidy desk, there was a row of impressive looking electronic equipment. The letters ZS6AIC was displayed on a wood and brass plaque above the desk.

Crackling noises and beeping sounds filled the room. He went straight for his chair and started writing on a pad of paper with the pencil he was still holding in his hand since he opened the front door. When the beeping sounds stopped, he reached out and moved the lever of a large knife switch fastened to the side of the desk. Silence filled the room for a brief moment and then he started pounding on a brass instrument, which had a black round wooden knob. A pair of wires were connected between it and the big black box closest to him on the desk. I noticed several meters and dials on its front panel. The meters all came to life and their pointers started dancing around to the rhythm of the pounding. I was baffled and just stood there speechless, trying to absorb the strange things going on around me.

There was no side tone and I could only hear the clicking and clacking of the brass instrument as the man kept on relentlessly pounding it. It dawned on me that I was actually listening to a conversation going on in Morse code! The process carried on, changing from the crackling noises and beeps to the click-clack of the pounding. After a while this activity stopped and the man turned to me and introduced himself as Johan van der Linde. Only then he asked my name and the reason for the visit. He explained that he was a radio amateur and that he just had a conversation with his brother, Dr Emil van der Linde in a town way up in the northern part of the country.

I was given a tour of the station during which Johan pointed out the receiver, transmitter, power supply, Morse key, antenna and feed line. The transmitter had a lid which he opened to show me the glow of filaments in the several bottle shaped glass tubes. I was so interested in what I saw, that this visit led to many more. Watching and listening to Johan tune the receiver and seeing him operate the station while 'talking' to his brother on Morse code was fascinating and all I could think about.

After one of the many visits he gave me an old Morse key and a piece of note paper with the alphabet and dots and dashes next to each letter. He suggested that I should start memorizing the code and practice tapping the letters on the Morse key the way he did on the air. I had no audio oscillator and all I could do was to try my best to emulate Johan. This went on for a few months until on a day during one of my after school visits, he showed me how to send the letters CQ followed by DE and his call sign, using his big brass Morse key.

He carefully checked how I did that and fussed about the spacing of letters and letter groups. He had me do that over and over again many times until he was satisfied. Then he moved the lever on the knife switch and said I was on the air! I will never forget the excitement when after several CQs there was a reply from a station in Port Elizabeth! Johan quickly took over, because my knowledge of code did not go much beyond these few letters at that time.

In November 1954 my dad, who was a professor in educational psychology called a family meeting. This was only done when really serious things had to be discussed. Filled with anticipation my mother, sister Jana of 8 and I got together in my dad's study. Then the news broke that he was successful in obtaining a Carnegie Grant which would take him to 15 American state universities over a period of 12 months. Of greatest importance was that it would be possible for all of us to go along, provided we were prepared to rough it a bit and live on a very tight budget for 12 months in the USA. After some serious discussions about ramifications like interrupting schooling etc it was decided that we would all go along come what may, even if it meant spending an extra year at school when we return.

Our year of traveling and living out of suitcases began in January 1955. The second form of transport on my way to becoming a code operator started when we left Cape Town on board the Sterling Castle, a mail boat which operated between England and South Africa. After 2 weeks at sea, sailing on fairly calm waters to Southampton, England,

we boarded the Queen Mary for a one week 'hop' to New York. Being mid winter in the northern Atlantic, seas were extremely rough. This was the worst week in my life, ever. My stomach simply could not handle the motion and I was still staggering and suffering from nausea long after we set foot on firm ground in New York.

We moved into an furnished apartment on the 31st floor of Butler Hall near the Columbia University where my dad started a research project which would take three months to complete. The elevator of Butler Hall was the type which had to be operated by a trained person - no pushing of numbered buttons. There was a large crank handle which had to be moved manually from one position the opposite, depending on whether you were going up or down. This was the third form of transport which had a significant impact on me becoming passionate about code.

During the many trips riding up and down I became friendly with the operator, Bob Bailey and found out that he was a retired telegrapher from Trinidad. He was happy to meet a teenager from South Africa who had an interest in becoming a radio amateur. Bob had an office, no more than a small cubicle on the ground floor where there was a hotplate and kettle, two chairs and a small steel desk.

One day Bob, or Mr. Bailey as I always called him in respect of our big age difference, invited me to his office to show me an audio oscillator, Instructograph and a straight key which he brought from his home in the Bronx. The Instructograph was an early code-training instrument which, by running a perforated paper tape at variable speeds past a spring-loaded pair of contacts, keyed the audio oscillator. The following URL has some interesting information about this antique code training equipment.

<http://en.wikipedia.org/wiki/Instructograph>.

The straight key was a WW II surplus model J-37 as can be seen at the following URL:

<http://www.morsekey.net/j37.html>

This really started something and before the end of the three months in New York I had all the letters of the alphabet memorized thanks to the motivation and regular quizzing by Bob Bailey.

I helped my dad pick a used Plymouth in Hackensack New Jersey with which we planned to make the long trip by road from one university to the next. This was the fourth form of transport which had impact on my future ham radio activities. Before we took to the interstate highways, Bob gave me the Instructograph, key and oscillator as gifts so that I could keep up my code practice 'on the road', so to say.

In the months which followed we drove from one university to the next and stayed over in guest houses which were ubiquitous wherever we went. At the end of the year we had completed a full anti clock wise circle of the USA and covered about 8000 miles by road. During all this traveling there were many highlights including visits to National Parks such as Yellowstone, Sequoia, the Petrified Forest, Knots Berry Farm, the Grand Canyon and more. The trip took us via Salt lake City and we even spent a night in Las Vegas!

My mother and I had the responsibility of navigating and keeping family stomachs filled. Jana was a bit young to take any real responsibility and kept herself busy reading most of the time. Whenever we stopped over, her first priority was to check whether the guest house had TV so that she could watch her favorite show, the Howdy Doody Kids. I also helped out with the driving to give my dad a break from time to time. Despite a very full schedule of travel and living out of a suitcase, I managed to make time to keep up with some school work, and also keep up with code practice, using the equipment given to me.

Before sailing back to South Africa at the end of 1955 we made a final stop in New York. Although he was completely non technical, my dad was very supportive of the interest I showed in amateur radio. On the last day in New York the two of us visited Harvey Radio on West 43rd. I was out of my skin when my dad said that he wished to buy me an Eldico, crystal controlled transmitter kit to take home!

Back in South Africa my priorities had to change due to academic pressures, especially after missing a year at school. However, my enthusiasm about learning Morse code helped me keep up listening to the perforated paper tapes and practice sending code using the J-37 surplus key. Unfortunately I lost contact with Johan, ZS6AIC, because we relocated to the Western Cape where my dad took up a position as professor at the University of Stellenbosch.

Soon after my 18th birthday, the minimum required age for an amateur radio license, I made an appointment with the Post Master of our new hometown. On the big day, I cycled to the Post Office and arrived there, a near nervous wreck, carrying a basket containing the battery operated oscillator and key imported from the USA nogal. I reported at a counter and was shown into the postmaster's office.

It was a large, impressive room with heavy wooden furniture, lots of books on shelves behind glass doors and an enormous desk. Behind the desk sat a heavy built, cross-looking elderly man, wearing a suit and tie. He was busy seriously paging through some paper work. This was worse than any exam I have ever written at school, I thought. While hardly breathing due to nervousness, I patiently waited for the gentleman to finish with what he was doing. His secretary pulled a chair up for me to sit directly opposite him. After what seemed a very long time, he looked up, gave me half a smile and introduced himself as Mr Oosthuizen. He asked my name and wanted to know the purpose of the appointment.

He must have realized that he was dealing with a completely stressed out code candidate who would get nowhere in the state he was in. He started a friendly conversation and asked about where I was born and how I became interested in amateur radio. I managed to settle down a bit and started fumbling around with sweaty hands to set up the oscillator and key on my side of the desk. Mr Oosthuizen opened a thick book and paged around for a suitable paragraph for the test. He pointed at a paragraph, slowly slid the book towards me and asked me to start sending. At this time he turned his head towards a window in an obvious serious listening mode. Wow, I thought with a sigh of relief, sending was the easiest part and I was happy to do that for starters rather than battling to read code in a style different to the sound of the paper tapes I had memorized by now. I took a deep breath and started sending, carefully concentrating on letter and word spacing as Johan had taught me. A fumble here and there did not seem to upset Mr Oosthuizen too much and after sending only a few sentences I was interrupted by: "Stop maar boet, ek sien jy ken die storie" (You can stop kiddo, I see you know your stuff) Instead of him taking over the key to test my reading ability, he started filling in a form and said that I had passed!

I could not believe this and with a completely puzzled, blank look on my face, he said something to the effect that he did not have to go through all the formalities because he recognized a successful candidate after just listening to the first few words. I felt relieved and rather flattered but on the other hand disappointed that he did not put me through the whole drill for which I have been preparing for so long.

A few weeks later I received my first license with the call sign ZS1AL assigned to me. By this time I had 2 plug in crystals in the CW part of the 40m band for the Eldico. I was a full time student at the University of Stellenbosch by then doing a bachelors degree in physics and applied mathematics. I had great pleasure in building the Eldico in my spare time. My soldering was not wonderful, but good enough for the transmitter to pass its first test on the air! For a receiver I had a very junky Hallicrafters SX-43 which my dad found, by coincidence, at a used furniture store of all places. My antenna was a Windom fed with a single wire feed line. It was supported by a crooked bamboo pole of about 7m at one end and a telephone distribution pole in the far corner of our small city lot.

The 12 months of code slipped past with many QSOs in the log. Although 'phone' was now permitted, CW remained my favorite form of communication. One of the main reasons was that it was so thrilling to work DX with my down to earth (near to earth) Windom antenna. During the first year of operating I was surprised how unnoticed my code skills I picked up and that I could even follow a conversation without taking notes.

The first real friend I made on the air was Mac McKesson, W5KF of Albuquerque NM where he held a technical position at the Sandia military base. In his younger days like in the early 1950s, he used to be a telegrapher on board one of the thousands of cargo ships operating on the great lakes of the USA. He used a Vibroplex mechanical bug and had what was known as a Great Lakes Swing, with the first dah, typically of C, Y, W etc stretched out extra long. I still miss those musical, rhythmic fists which disappeared from the bands since electronic keyers became the norm. Mac and I met regularly and we started early morning CW skeds on 20 metres before I had to cycle to the university for lectures. This continued for more than a year during which time I often received small gift parcels containing a variety of used components. These helped me build up my early junk box of electronic odds and ends. He also sent me schematics with written instructions to help me build my first electronic keyer, using a pair of triode vacuum tubes and an open frame relay.

It was unusual for Mac not to show up for sked a few days in a row. While waiting for his reply to my many calls one morning, my mother came to the shack and handed me a telegram from Mac's wife. Shock and disbelief filled me when I read that Mac had passed away due to a heart attack a few days earlier.

It took me a very long time to put the loss of a friend, who I never met in person behind me and get back on the air to make new friends. But it did eventually happen and I can look back at years of enjoying amateur radio, making many friends all over the world.

After obtaining a bachelors degree in physics at the University of Stellenbosch, I applied for my first job at the Johannesburg satellite tracking facility which was run by the South African Council for Scientific and Industrial Research (CSIR) in a contract with NASA. My call sign then changed to ZS6AL. This era was in the early days of space research and South Africa played an important role, being the first continent a satellite would cross after being launched from Cape Canaveral, Florida. I enjoyed those interesting and inspiring years during which I met many

American radio amateurs who were involved in space research at the time. The first who comes to mind is Hugh Turnbull, W3ABC with who I had skeds on CW over many years until ill health made him retire from ham radio and settle in a frail care center. The more automated and sophisticated space technology became, the more long term career potential dwindled at the CSIR. In 1972 I accept a position with the South African Iron and Steel Corporation which, for financial reasons, was a move I had to make away from electronics. After a long and successful career I retired in 1994 after holding a position Manager Tin Plate Technology for a number of years.

I met Hester Ann, N4MPQ of Hendersonville, NC on 20m CW shortly after I retired. It was a hot summer evening in South Arica and a cold winters morning in Hendersonville. Regardless of weather conditions, a warm friendship started from the moment I answered that CQ call on 14.014mHz. At the time we met I had already made plans to travel to Canada and the USA and spend time with a few special radio friends I made over the years. The week in Halifax visiting Don Watters, VE1BN, was unforgettable. This was followed by a week with Jim Talens and Nina in Arlington VA from where I made daily excursions to the Smithsonian complex. Needless to say, at the stop over in Hendersonville on the way home had to be fitted in. That turned out to be the highlight of the trip when Hester and I discovered that there was more in store for us than just being friends.

In September 1996, the most important and exciting journey, this time not leading to code but as a result of code, was when Hester flew to South Africa with a one way ticket. This took quite a lot of explaining at the port of entry. Imagine a person holding an American passport coming to Africa and not having a ticket to go back!

We are both retired and enjoy life in Somerset West. From our house we have a view of the Atlantic ocean, the vast water mass which separated us for the few years after our first QSO. I still enjoy amateur radio, contesting and chasing DX while Hester started other interesting hobbies like painting and doing lots of reading.



ZS1AL 1960

SX-43 with matching loud speaker to its left. Then there is a surplus Command 3 mHz to 5mHz transmitter used as VFO which I used on 3.5 mHz and multiplied the output to give me drive on harmonically related bands. To the right of that is a home built electronic keyer with a home brew paddle in front of it. The AM modulator is to the right of that. On the top deck is the Eldico transmitter bought in NY in 1955, but by the time the photo was taken it had been modified quite a bit.

"The Restoration of Valved HF Communications Receivers"

A book by Chris Parry, BSc, G8JFJ

Introduction

Chris Parry has been an enthusiastic collector and restorer of valve radios of all types for many years, and has worked for UK companies that manufactured communications receivers. He is keen to pass on some of his experience to others wishing to restore complex valve radios and so has written copious notes on all aspects of the topic in an e-book format. Much of the material is, of course, relevant to restoring any type of radio.

He wants the book to be freely available to anyone interested so that as much equipment as possible can be retained in good working order for the future.

You may download the book from this site on the condition that it is not sold or used for commercial purposes, not posted on another web site, is not altered and if extracts are published, due acknowledgement of the author is made. Because this book is updated from time to time, anyone feeling it to be useful is welcome to post a link to this site so that the latest version is always accessed.

Chris welcomes suggestions and comments about the book and enjoys helping fellow enthusiasts. He can be contacted by phone or through the email address below.

The Book

The book contains 96 pages of text and is in Acrobat PDF format file, 600kb in size. It may be updated from time to time. A selection of photographs will be added shortly. The main sections cover

Publication History

8/7/2005 - Original edition - 91 pages

23/7/2005 - Second release - 96 pages

The book can be downloaded from <http://www.vk2bv.org/radio/parry1.htm>

Life span of an antenna...one man's joking opinion:

Well, generally it depends on hours spent listening.

The antenna converts electro-magnetic energy into electrical energy, which is basically electrons moving into your radio. There are only so many electrons in each inch of copper wire, so when they've been sent downstream into your radio, the wire will become "ionized" and deteriorate and probably fall down. This explains why, when you come home one day, your antenna is on the ground (see below).

What happens to all those electrons, you ask. Well, they migrate into your radio and accumulate. In older tube radios, there was a "grid leak" resistor circuit which allowed the electrons to fall on the ground. Now you can't see them, but they're there. As more pile up, they slide into your back yard.

Tube radios, because of the "grid leak" last a lot longer than solid state radios, which stop working when enough electrons have piled up inside to short it out.

Now those electrons in your back yard want to get back into the copper wire, so they "pull" the antenna down to be re-united with it. Since the antenna is high, and they're on the ground, this attraction is not strong, but on a windy day, the electrons get lifted from the ground towards the antenna, pulling it down again. The wind often brings in free electrons from your neighbor's homes (from TVs, etc), so there may be a lot of these things around. If too many electrons get lifted up all at once, they overload the antenna, causing a heat mark, or worse getting back into the radio. Now this is why your antenna usually falls down on windy days.

At least, that's how I understand it.

You can extend the life of your antenna by disconnecting it from your radio when you're not listening. But overall, 500 to 1000 hours spent listening will do in a long wire antenna

(Author Unknown)

By John Dilks, K2TQN

From QST, December 2003

Microphones

Probably the best-known ham microphone is the D-104 by the Astatic Company. Since the 1950s, when I first became interested in ham radio, it is the one microphone that I remember best. It seemed like every older ham had one in his shack.. I wanted a D-104, but of course I couldn't afford one at the time, which made it even more desirable.

Today I have a few of them and I feel much better now.

I am not alone. Most of my collector friends have at least one in their collection. They are easy to find. At just about every Hamfest they can be found for as little as \$20, making them easy to bring home. I remember one old-time ham who bought a D-104 every time he went to a Hamfest. He had almost 30 of them on his shelf. It was impressive.

In preparing for this column, I searched the Internet and found www.astatic.com. I found that Omnitratics LLC now owns Astatic. The Web page has good information about the D-104 and there is a forum where you can ask questions. They also have a short history of the company compiled by Keith P. Graham from the 1946 Astatic Catalogue where I found the following information. Please visit the Astatic Web page for more.

In 1930 the Astatic Company was started in Youngstown, Ohio by two radio amateurs, Creed Chorpensing, W8WR and FA Woodworth, W8AHW. Before 1930 they had been using carbon microphones. When they learned about the new condenser microphones, they built a few. Soon friends were asking, could you build one for me? So they formed a partnership and went into business

An old friend, Charles Semple of Cleveland asked them to visit him at the Brush laboratories, where he worked. He had been experimenting with phonograph pickups using Rochelle salts (sodium potassium tartrate), and thought they would be interested.

Through [Charles] Semple, the two visitors met A. L. Williams, electrical and mechanical engineer, and Dr. C. B. Sawyer scientist, who demonstrated the action of these new elements in relation to microphones, phonograph, speakers, recording heads, earphones and other devices where it was to transform mechanical energy into electrical energy or the reverse. Here, it seemed, they had found the answer to a simple, low-cost, dependable "mike" for the "ham rig."

In 1933 they incorporated and started building Crystal Microphones and Crystal Phonograph Pickups. Charles Semple joined the company as designer and later became the general manager.

The first advertising for Astatic I found was in the November 1933 issue of QST on page 83. It said:

There is something new under the sun. It's the PIEZO-ASTATIC Crystal Microphone. A highly developed general-purpose microphone

They offered it initially for \$17.50 in a suspension or stand mounting. By the following November the list price had risen to \$21, but was offered to hams for a net price of \$12.60.

By the end of 1934 they claimed thousands of sales to amateurs. I own one of the early D-104 microphones, serial 15,559, and based on Astatic's claims, I figure it was made in 1934 or 1935. It is the suspension mount version and was well used.

I remember reading in QST, I think, in the 1960s, that Astatic celebrated an anniversary and was searching for the earliest serial number still working. They offered some sort of a prize. I was not able to find this data, but it would be interesting to ask readers to let me know your early serial number, and whether it is still original and working. I'll print the best found in a future column.



Figure 1- Three labels from various models of the D-104. The mikes are from 1935, 1960 and the 1970s or '80s.

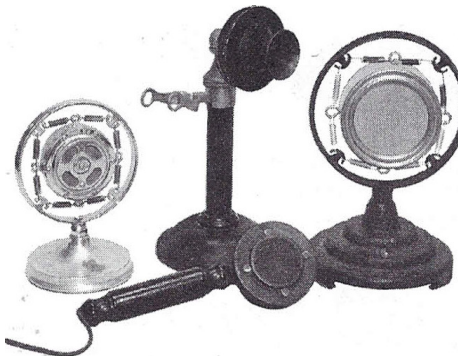


Figure 2- Two examples of a suspension microphone, a Shure 58 on the left and the Amplion GM on the right. The taller one is an old "Conn Tel & Elec Co" telephone converted into a mike, and the hand mike is an Amplion MH from the late 1920s or early 1930s.

ruggedly constructed having excellent frequency response. Cannot be overloaded acoustically. No adjustments required. No carbon rush or internal noise. No blasting or freezing; no button or field current; no polarizing voltage. Connects direct to grid or may be used with matching transformer. Chrome plated, 3" diameter, 1" thick, with 6 ft. shielded cord. THE MOST PRACTICAL MICROPHONE EVER OFFERED. Licensed under Brush Development Co. patents.

How can you tell the early ones from the later models? Figure 1 shows three D-104 labels. The top one is my early 1935 version, the middle is from the 1960s and the bottom one is from the 1970s or 1980s. You can see the differences. The early ones have ID plates with a serial number and rivets, while the newer ones have a sticker label, without a serial number.

D-104s are still used on a regular basis in many ham stations today. Wiring diagrams and hook-ups are available on the Internet so they can be adapted to almost any radio. They are especially popular with the radios of the AM era and early SSB rigs. They often show up at garage sales, flea markets, antique shops and on the Internet, so good hunting. Replacement elements are available from many sources if yours doesn't work. And there is enough room inside to adapt almost any modern pickup in there.

Microphone Collecting

I've included several photos of microphones in groups, to help you identify mikes worth adding to your collection. If you aren't collecting yet, here's a great place to start. I'll begin with the earliest microphones, which tend to be fairly expensive as they become harder to find.

Suspension, or "ring" microphones, are always fun to find. They look great dis-



Figure 3-Several popular mikes designed for Amateur Radio



Figure 4-Several models of RCA microphones, which were popular in ham shacks for many years.

played anywhere in your ham shack. Figure 2 shows two, a more common Shure 5B on the left and a rare Amplion GM on the right. The Amplion GM was probably used in commercial broadcasting. (It is serial number 4 by the way, very early). The taller one is an old "Conn Tel & Elec Co" telephone, which some ham adapted to his early 1920s transmitter. The hand microphone is an Amplion MH from the late 1920s or early 1930s.

Figure 3 contains a representation of popular "ham" mikes. These are available at most hamfests from time to time. From left, Shure 737 A, Turner CX, Astatic 77, Electro Voice 630, Shure 555W, American D4TZ, Astatic D-104, Western Electric 633A (also known as the "Salt Shaker") and finally an Electro Voice 638. Each company mentioned has many models, so look for others.

Commercial grade microphones are really great to find. Most of these types originally cost a lot more than ham mikes, and will still cost you more today. Figure 4 shows some of the popular RCA microphones. From left, model 46 (also called the "Paintbrush"), MI-6226, a chrome "Aerodynamic," MI-6204 (an early ribbon mike), MI-2016 a two-tone Aerodynamic, model 45B, model 88 and an MI-12021. Note the stands they are on. The two chrome bases and the black stand under the 6204-ribbon microphone are early stands. You should look for these types to properly display your earlier mikes. The large stand in the center-front is modern, from the 1970s.

Art-deco microphones really stand out in your shack or display. In Figure 5, from the left, a Rauland W-1247C (also sometimes labeled Webster 1248), Amperite PGL "flying saucer," American D33 and an Altec 639B "Birdcage," also made earlier by Western Electric. Altec was a spinoff of Western Electric when they were made to divest themselves of the movie sound business. Altec later became Altec Lansing.



Figure 5-A selection of cool Art Deco style mikes.



Figure 6-At the left and right, two inexpensive Japanese mikes, with a suspension mike in the center.

The saucer-like disc on the Amperite microphone was said to increase the output of the microphone 4 dB. It was typically used on stage where the speaker was more than 12 inches from the mike. This microphone was also popular in ham shacks, with and without the ring. The plastic ring snaps on and was sold as an accessory.

In 1958 when I was getting started in VHF, I needed a microphone. Still in high school, I found that the Japanese manufactured affordable microphones. Figure 6 shows two of them. On the left is a Crown MC-60 dual

crystal element mike, signed to look like an expensive RCA model 77. It sold for under \$10. On the right is a single element crystal mike, a Herald M105. This was available for under \$5. Both of these mikes were sold by many of the chain stores, under several names. Aiwa, Argonne, Calrad, Fen-Tone, Midland, Olson and Philmore, to name a few. They all looked the same, except for the name labels, which were glued on.

In the centre sitting on a coffee cup is an old suspension mike from Japan, supposedly brought home by a GI after WW II. I have not yet been able to find any information on it. The English lettering says "LA-I" and "NO 168." The rest is in Japanese. It is a heavy piece, with the body carved out of white marble, and the works set inside. I'm guessing it is from the 1930s.

Microphone 101

So there you have it-Microphone 101. I hope you will be successful finding suitable ones for your collection. One note though: I occasionally get e-mails asking how much a mike is worth. I'm not a good person to ask, as I have not researched prices. I go by the rule, if I like it, if it is reasonably priced, and I can afford it at the moment, I purchase it. What I would pay is probably different from what others would pay.

Look for my hat at the hamfests, and say-hello.-K2TQN

CONTACT US:

P.O. Box 12320
Benoryn
1504

Fax: 27 86 620 3291
Mobile: 082 448 4368
Email: andy.cairns@xsinet.co.za

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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.

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National NC300



Drake 2C Receiver



Drake 2B Receiver with Q multiplier

These fine items are for sale through the AWA. If you are interested in any of them, contact Andy ZS6ADY on 0824484368 or by email andy.cairns@xsinet.co.za.

6146A Valves:

Hermen ZS6BGQ has a whole bunch of 6146A valves for sale. He is asking R100 per valve and will guarantee the valves are working before sending them out to any interested parties.

Contact Hermen on 011 787 3549 or on his cell during working hours 0721430177.

Websites to Browse:

Here's a Website from Rad for all those with SX 28 interests. Very enlightening.

<http://www.radioblvd.com/SX28Notes.html>

From Peter ZS5PJ, a website for some interest to BC348 and B17 aircraft.

<http://www.hpfriedrichs.com/rr-bc-348-htm>