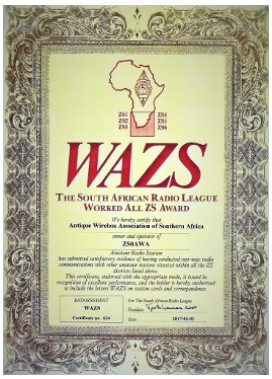
Antique Wireless Association of Southern Africa

# 204 July 2023





Inside this issue:



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# Reflections:

So the mid year has come and gone and slowly but surely we are heading back towards warmer weather. I have no doubt in my mind, that we are still going to get very cold before that happens, but it just goes to show how fast time is going by again.

I can never remember , the days when I was a lot younger, that time just flew past the way it does these days. I'm certain that 24 hours is still 24 hours, but somehow, the days do seem so much shorter than they did before.

One thing I do know is that band conditions have never been as bad as what they have been the last few years.

There was a period when it all seemed to be getting better. There was a lot of activity on 10,15, 17 and 20m and for a while we were all living in bliss as the QSO's rolled in. Then all of a sudden it all went pear shaped again. But we live in hope that things will still improve and we will see activity return to the bands. I love listening to the Guru's who spurt forth the words of wisdom about what should be happening with the space weather, and then nothing goes the way it should.

I have had a lot of success this first half of the year with DX CW, and have enjoyed the times the bands have been workable. Nearly 900 QSO's logged, I guess I can't complain too much about the band conditions. Even these days I still manage around 5 CW QSO's in an evening into Europe and the US on 15m, with the odd Japanese station in-between. I don't have a big station setup, although I do have a 3 element beam which does make it a bit easier, but I know that OM Tom ZS6OMT, who only has a wire ant G5RV has a lot of success with CW DX, even more than me. Perseverance is the payoff.

I still can't figure out why it is that so many of the CW ops still only want to QSL with paper cards. Maybe it's because the majority of them are still old school, and don't like modern technology much, but to me e-QSL is the only way to do it these days. Whether it be by LOTW or any of the systems available. Most of the e-QSL systems these days even allow you to print a custom QSL card from the person confirming, and he from yours. So you can still get a paper QSL should you want to decorate your walls.

We all seem to wonder what the next few months hold in store for us and whether or not there will be any improvement in the bands. I guess our next best times will be when the weather warms and hopefully an increase in sunspot activity. But only time will tell and those who are on the bands will be able to see the change coming.

My friend Dennis always says, be radio active. Get out there and call CQ.

Best 73

DE Andy ZS6ADY

# Wikipedia

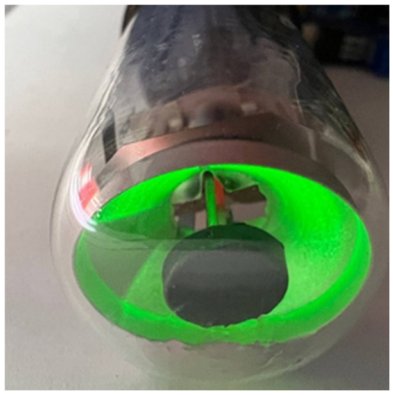
## Coronal Mass Ejection (CME)

CMEs erupt from the lower corona, where processes associated with the local magnetic field dominate over other processes. As a result, the coronal magnetic field plays an important role in the formation and eruption of CMEs. Pre-eruption structures originate from magnetic fields that are initially generated in the Sun's interior by the solar dynamo. These magnetic fields rise to the Sun's surface—the photosphere—where they may form localized areas of highly concentrated magnetic flux and expand into the lower solar atmosphere forming active regions. At the photosphere, active region magnetic flux is often distributed in a dipole configuration, that is, with two adjacent areas of opposite magnetic polarity across which the magnetic field arches. Over time, the concentrated magnetic flux cancels and disperses across the Sun's surface, merging with the remnants of past active regions to become a part of the quiet Sun. Pre-eruption CME structures can be present at different stages of the growth and decay of these regions, but they always lie above polarity inversion lines (PIL), or boundaries across which the sign of the vertical component of the magnetic field reverses. PILs may exist in, around, and between active regions or form in the quiet Sun between active region remnants. More complex magnetic flux configurations, such as quadrupolar fields, can also host pre-eruption structures.

# Magic eye

by Daniel Romila VE7LCG

The magic eye tube for tuning radio receivers was invented in 1932 by Allen B. DuMont. The first commercial such tube was made by RCA in 1935 and it was the 6E5 tube.

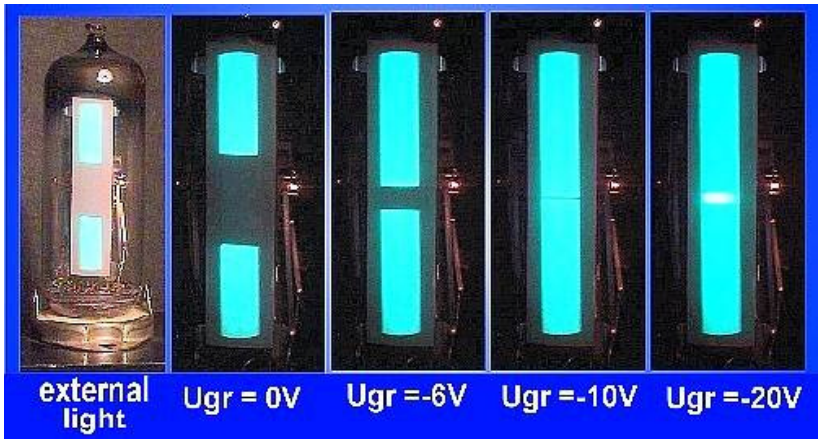


From Wikipedia: *"A magic eye tube or tuning indicator, in technical literature called an electron-ray indicator tube, is a vacuum tube which gives a visual indication of the amplitude of an electronic signal, such as an audio output, radio-frequency signal strength, or other functions. The magic eye (also called a cat's eye, or tuning eye in North America) is a specific type of such a tube with a circular display. Its first broad application was as a tuning indicator in radio receivers, to give an indication of the relative strength of the received radio signal, to show when a radio station was properly tuned in."*

The indicator tube, the magic eye, is a fast vu-meter capable of following in real time the input signal. It was put in the old tube receivers' schematic to take its input from AGC voltage (automatic gain control), so – generally speaking – its fast speed capability was not used much. Putting such a magic eye tube to follow a fast-changing audio signal makes justice to the capabilities of the magic eye.

The EM84 tube had a different indication; it's display is made by two segments of light lines coming towards each other. I took the following picture from

https://mauser.pt/catalog/product_info.php?cPath=145_3028&products_id=086-0216

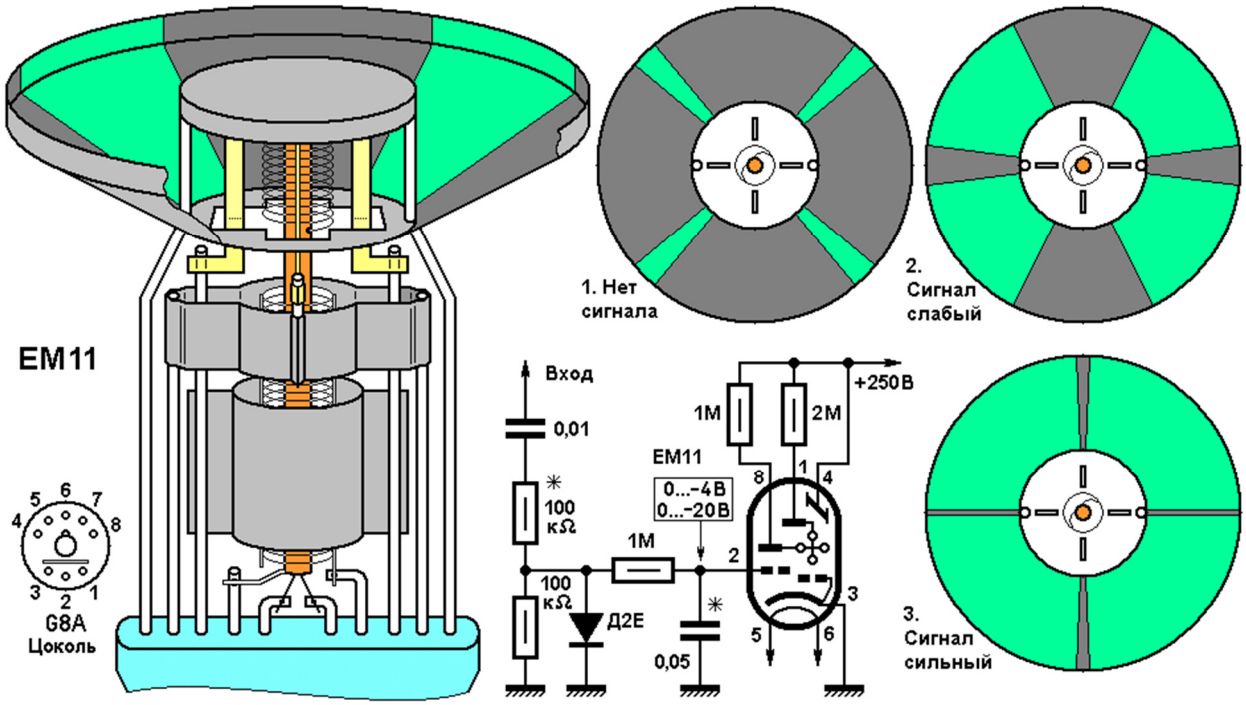


The display of this tube resembles very much the LED vu-meter displays that appeared many, many years later.

For those who want to try themselves to build a magic eye vacuum tube vu-meter I found an article with plenty of details at:

http://boginjr.com/electronics/lv/magic-eye/

The author uses an EM11 (made by Telefunken) old circular indicator tube, but the schematic can be adapted for other tubes. EM11 is equivalent to 6UG5. I found some characteristics and use schematic at: https://www.gstube.com/data/5340/




One can see in the catalogue schematic that the rectification of command/input AC is done by shortcutting to the ground of the positive component, so only negative tension gets to the grid of the tube.

Josef Bogin (the author of the vu-meter project) also made a short video with his project in function posted at: https://www.youtube.com/watch?v=FfZlcEtdUSg&t=110s

The schematic used by Bogin in 2018 is very similar with the schematics I can find in June 2023 on Chinese websites selling vu-meter kits with magic eye tubes:

# T. R. McELROY

*World's Champion Radio Telegrapher*

*Official Record*
69 wpm Brockton 1935

23 BAYSIDE STREET

UPHAMS CORNER P. O.

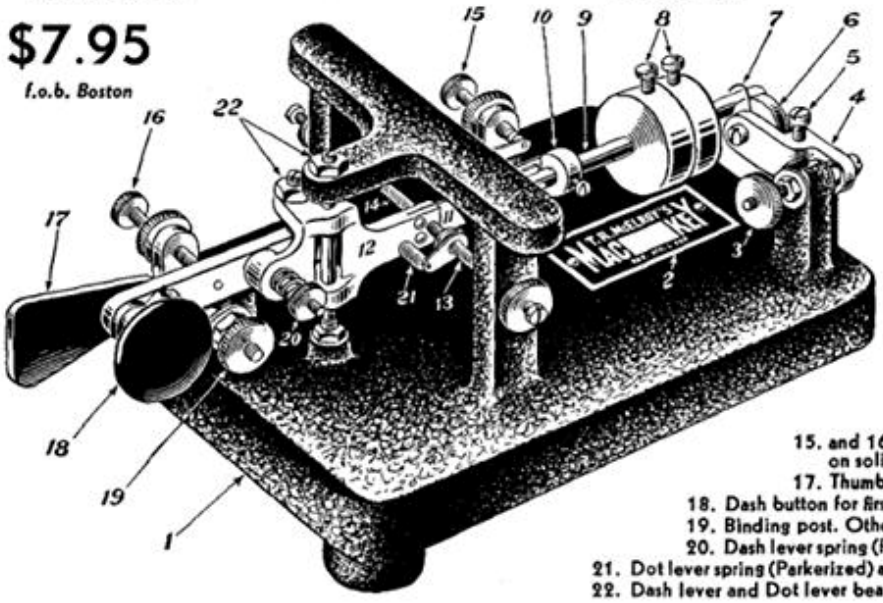
BOSTON, MASS.

51 WPM BOSTON 1920 | 56½ WPM CHICAGO 1922 | 55 WPM NEW YORK 1921

## *You can send better with a MAC KEY or your money refunded after five day trial*

1. Massively constructed base and superstructure one solid casting. Vibrationless.
2. Name plate with serial number for operator's protection.
3. Binding post. Other post is number 19.
4. Vibration dampener on swivel so may be thrown out of way for handling weights.
5. Vibration dampener adjustment screw so that roll hits rod exact center.
6. Vibration dampener roll in machined slot for beautifully stutterproof sending.
7. Straight key changeover lever, locks rod for shipping and handling also.
8. Speed governor weights. 5 wpm to 50 wpm.
9. Vibrating rod.
10. Dot U spring holding and adjusting collar. This U spring formed in a die out of highest quality Swedish blued steel of exact weight desired and then Parkerized for longevity.
11. Main spring also selected after exhaustive experimenting for correct weight and also Parkerized.
12. Main lever yoke casting which provides the excellent dash lever suspension.
13. Dot lever back stop screw.
14. Dot lever travel screw.
15. and 16. Dot and Dash contact screws on solid bar for perfect alignment.
17. Thumb paddle for dots.
18. Dash button for first and second fingers.
19. Binding post. Other post is number 3.
20. Dash lever spring (Parkerized) and adjustment nut.
21. Dot lever spring (Parkerized) and adjustment nut assembly.
22. Dash lever and Dot lever bearing adjustment screws.

**$7.95**
*f.o.b. Boston*




## FOR TELEGRAPH OPERATORS $10.00

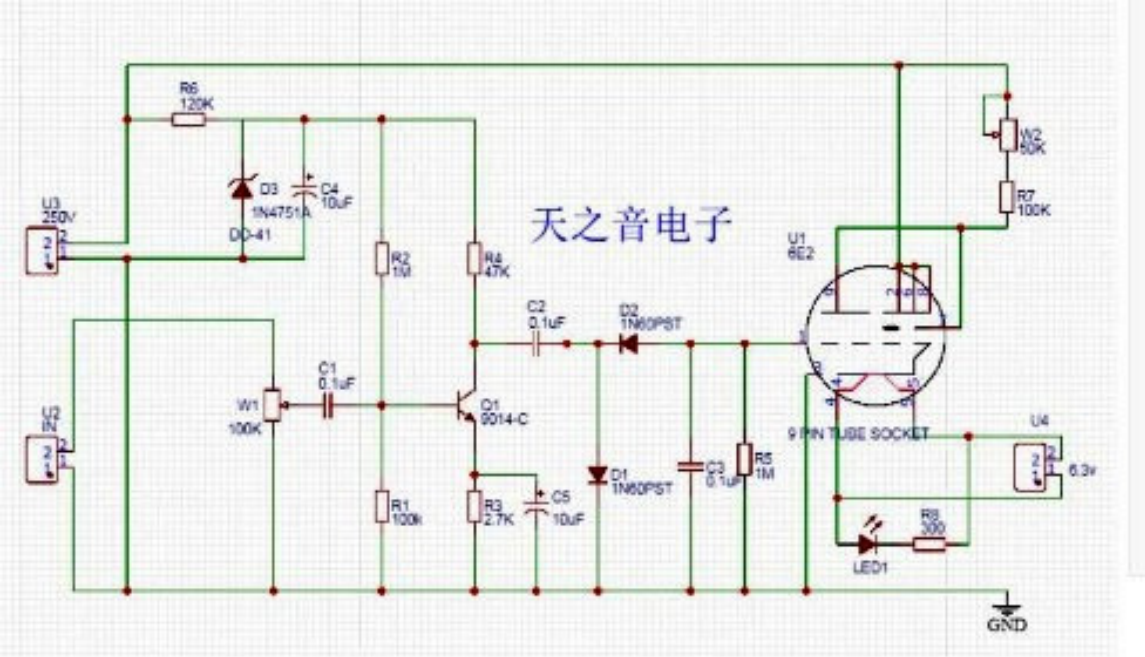
I have a special model with circuit closer and my Mac Cord affixed to binding posts, which I've made up because so many telegraph operators wanted my key but needed these extras for use on telegraph wires.

## MAC OSCILLATOR @ $3.95

*(either AC or DC)*

Tone control, 1000, 800, and 600 cycle note. Phone output 2000 ohms and 10 DB. Separate output 200 ohms — 30 DB. This oscillator is really a great asset in improving code. Uses 2 No. 76 tubes.

*All Mac Items Stocked and Sold by Nearly All Distributors*




What I do not like in these schematics:

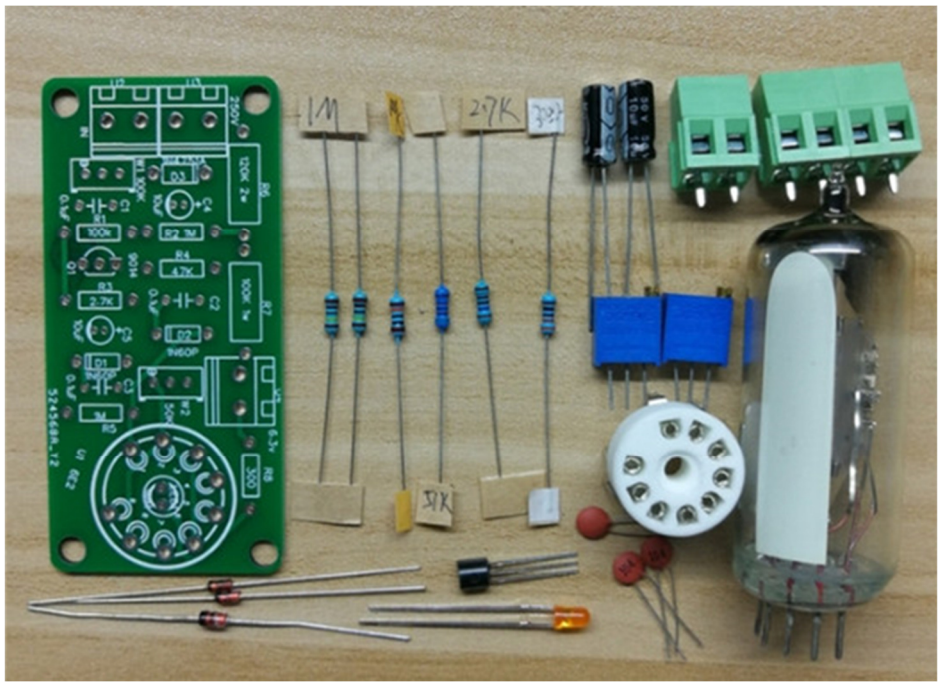
Use of a low voltage transistor.

They obtain the low voltage required for the transistor amplifier stage through a resistor, a Zener diode and a filtering capacitor. If the Zener diode dies, the whole first transistor block will die, and high voltage can get at the input connector.

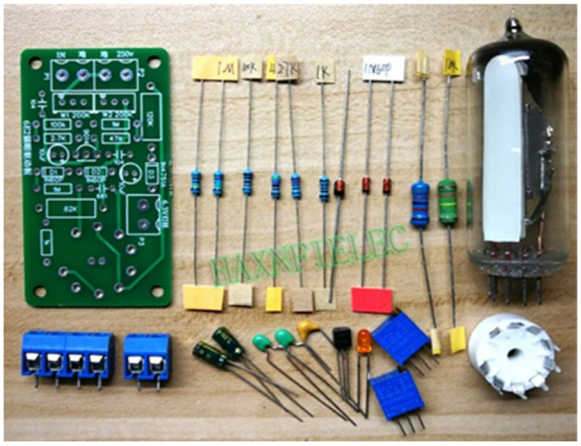
The input does not have a transformer, which to safely separate the low AC signal from the high DC voltage (250 Volt).

There is a LED in series with a 300 Ohm resistor put to indicate the presence of the filament 6.3 Volt. In 2023 LEDs are very efficient, and a higher value resistor, like 1 KOhm would be more appropriate, not to allow the LED to make light competition with the indication of the magic eye tube. The 3 mm LED gives a clear indication even at mA current.

But kits are made to be cheap. For the above schematic, here are more pictures, available all over the Chinese websites:

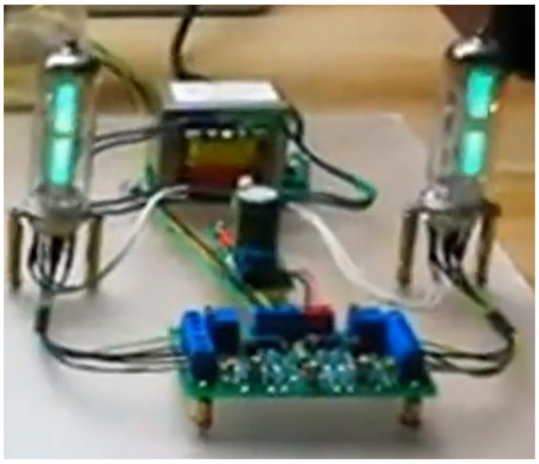



I was looking for more versions, which pretty much are the same thing:




As with the majority of the tube projects, high voltage is always a danger to take in consideration. One has to supply hundred of volts, and also to be safe from it.

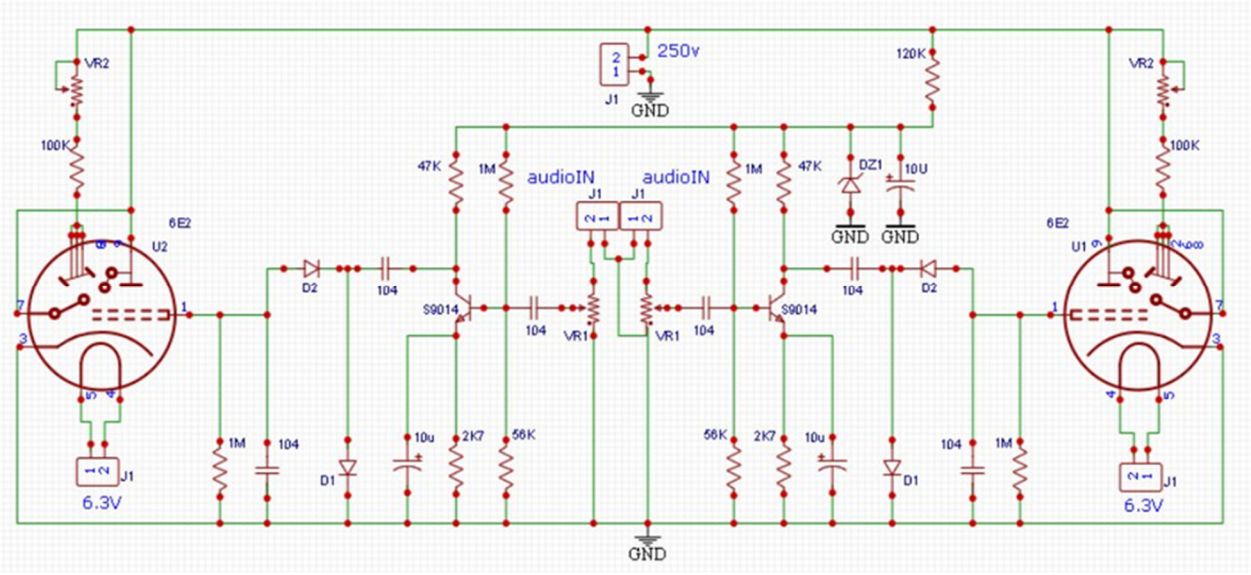
Some kits, available for example at aliexpress.com, but also at amazon.com, use two magic eye tubes 6E2 for a stereo audio vu-meter. Buyers report that the tubes are poorly matched, and the left and right channels are not alike. Buyers solved the problem by buying more kits, and matching themselves the tubes from various kits. It looks like a good method for the sellers to push more merchandise (LOL) into buyers.

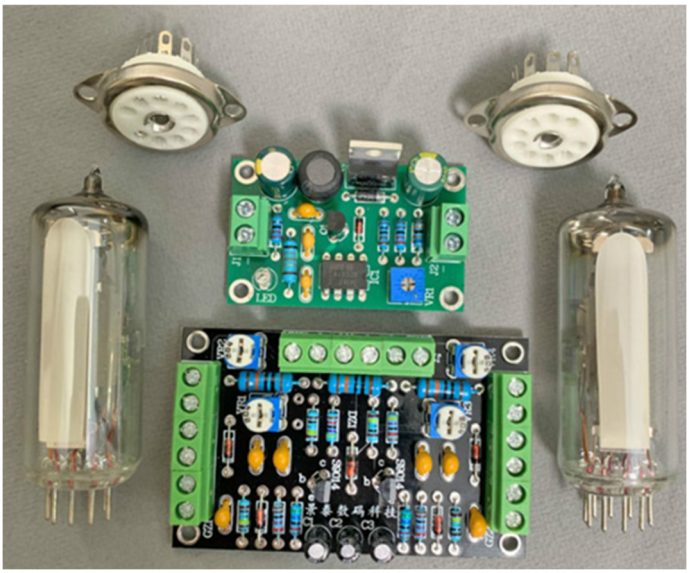


Those kits contain two boards. One board is a DC-DC booster, to obtain the high plate voltage for the tubes.

Even so, even supplying only 6.3 Volt or 12.6 Volt, still is dangerous because there is no transformer separation AC -DC at the input. I would not use such kit with a cellphone, for example.

The schematic of the amplifier and magic eye board is similar to the mono boards:





Whoever says tubes are things of the past does not know how much fun they can bring even today.

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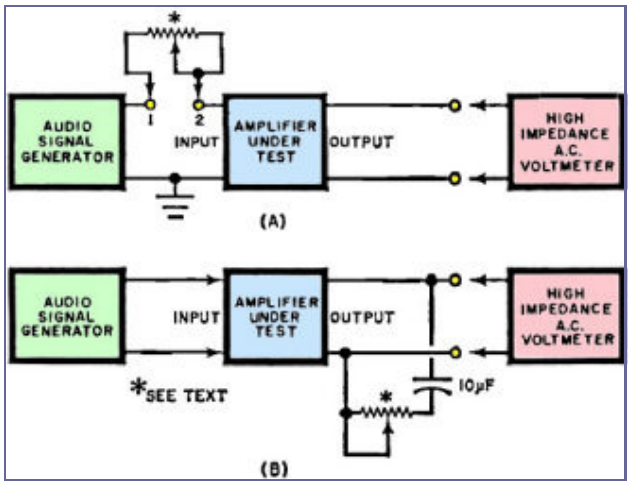
# Calculating Input and Output Impedances
## June 1969 Popular Electronics

While not a precise method of determining the input and/or output impedance of black box type devices, the described voltage division method suffices for many - if not most - situations. The June 1969 issue of *Popular Electronics* magazine offered this process of placing a variable resistance (potentiometer) at the device under test (DUT) input and/or output and adjusting the voltage reading to be half the value without the resistor. When both the source and the load are pure resistance (no capacitance or inductance), it is safe to assume the after-adjustment value of the resistor represents the DUT impedances - that is only a real part and no imaginary part ($Z = R \pm j0\ \Omega$). The precise method of determining the impedances requires a little extra work. Rather than describe it here, I refer you to a very nice c2008 paper by Mr. Kenneth A. Kuhn entitled, "A Simple Circuit for Measuring Complex Impedance."

### Calculating Input and Output Impedances




*The upper circuit (A) is used to determine input impedance, while the lower circuit (B) is used for output impedance measurements. Although not exactly "on the head", system is accurate enough for most experimenters.*

Simple method gives answers without complicated mathematics.

When you buy or build an audio amplifier, you are given values for most of the important characteristics. Unfortunately, input and output impedances are not usually included. To get the most out of any amplifier, you need to know its input impedance so that you can match it to the output impedance of the signal generating device (preamp, mike, tuner, etc.). Similarly, the amplifier's output impedance should match the input impedance of the load (loudspeaker, power amplifier, etc.).

Means of determining input and output impedances are omitted in most cases because they involve complicated mathematics and sophisticated measurement techniques. Here is an impedance measuring technique which is simple and easy to perform. Mathematics have been reduced to the bare essentials and the results, although not exact, are close enough for use by most electronics experimenters. The measurements can be made on either transistor or vacuum-tube amplifiers and they require the use of only an audio signal generator, a high−impedance a.c. voltmeter (VTVM or TVM), a potentiometer, and perhaps a capacitor.

**Input Impedance**

To measure input impedance, use the circuit shown at (A). The output level of the signal generator should be equivalent to the normal input of the amplifier and it should be set for a frequency of 1 kHz. The potentiometer should have a resistance of 10,000 to 25,000 ohms for a conventional bipolar transistor input and several megohms for a field−effect transistor or vacuum−tube input.

First, short out the potentiometer (terminals 1 and 2 in the diagram). Apply the recommended input to the amplifier from the signal generator and read the output on the voltmeter as closely as possible. Without disturbing the controls of the generator or the amplifier, remove the short from across the potentiometer. (Note that one end of the potentiometer is connected to the rotor.) Adjust the potentiometer until the voltmeter indicates exactly half the previous reading. Without disturbing the setting of the potentiometer, remove it from the circuit and measure its resistance from the open end to the rotor. This value very closely approximates the input impedance (at 1 kHz) of the amplifier under test. The input impedance at any other audio frequency can be measured similarly.

**Output Impedance**

In the circuit shown at (B), the output of the signal generator is coupled directly to the input of the amplifier and the voltmeter is used to measure the amplifier output across a variable load. The resistance of the potentiometer should be up to 50 ohms for a loudspeaker load, up to 25,000 ohms if the load is a transistor power amplifier, and up to 1 or 2 megohms if the load is a tube circuit. If the amplifier does not have a capacitor−coupled output, the variable load resistor should be connected to the output through a large−value capacitor whose reactance is low at the testing frequency.

Set the load potentiometer close to its maximum resistance and apply a signal to the amplifier. Record the voltmeter reading as V1. Reduce the value of the load resistor until the voltmeter reads about 10% less than before. Record this voltage as V2. Without disturbing the setting of the potentiometer, remove it from the circuit and measure the resistance between the free end and the rotor. Record this value as RZ.

The output resistance can then be calculated from Z = R1/[V2(V1 - V2)].

For example, if R1 is 3000 ohms, V1 is 3 volts and V2 is 2.5 volts, the output impedance of the amplifier is

***3000/[2.5(0.5)] = 2400 ohms.***

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# Whatever Happened to Atwater Kent?
## July 1969 Popular Electronics

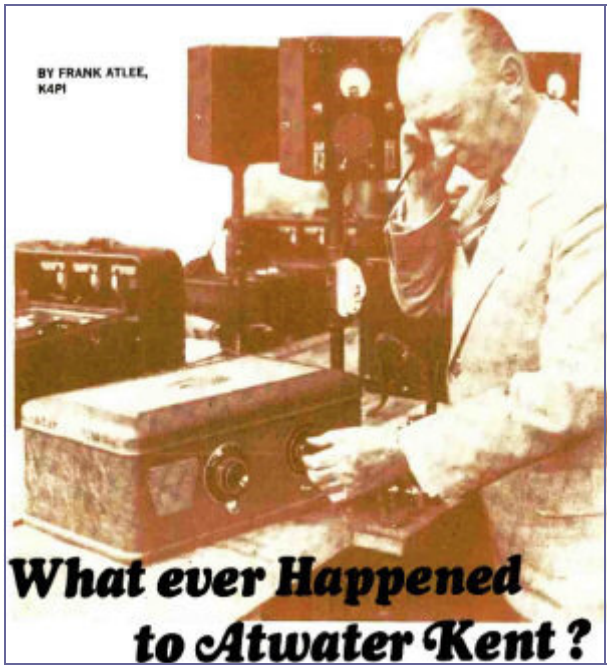
I have to admit that when presented with the Atwater Kent Award upon graduation from the University of Vermont in 1989, I had no idea who the fellow was. It wasn't until years later I read the name in IEEE's Spectrum magazine article (this one is from a 1969 issue of *Popular Electronics*) and learned he was a radio designer and manufacturer. In the course of publishing the RF Cafe website, Atwater Kent's name appears on occasion in Radio Data Service Sheets like this Model 776 in the June 1936 issue of *Radio-Craft* magazine. According to this article entitled "Whatever Happened to Atwater Kent?," that was the year he shut the doors of his extremely profitable business because he refused to give in to union thugs attempting to organize his employees. If you are not familiar with the history of Mr. Arthur Atwater Kent, then this story is one you will appreciate. He was one of the relatively few entrepreneurs who managed to thrive during the Great Depression years.

### Whatever Happened to Atwater Kent?

By Frank Atlee, K4P1

Although more than 40 years have elapsed since the name Atwater Kent was a household word, the radio receivers he manufactured were so well made that thousands are still in existence and in operating condition. Many more Atwater Kent receivers are unearthed daily from cellars and attics to be restored by antique-radio collectors and made conversation pieces for modern living rooms.

The story of this unusual man and his company in many ways parallels the heyday of mass production ascribed to the Ford Motor Company. At one time, Atwater Kent was a company known the world over and even the most conservative estimate of its manufacturing facilities indicates that it produced well over 5,000,000




*World Renown ... Manufacturer of 5,000,000 Receivers ... Famous for Quality ... But He Closed the Doors and Walked Away*

radio receivers.

The Atwater Kent Company was a well-established manufacturing business nearly 20 years before the first radio broadcast. Starting with the making of voltmeters for telephone linemen, the company gradually expanded to include the manufacture of ignition systems, starters and generators for pre -World War I automobiles.

Residing on the "Main Line," then the home of many wealthy Philadelphians able to purchase the fine cars of the day, Kent observed that ignition systems and electric starters (if any) were usually under-designed and subject to frequent failures. Kent purchased several dozen used cars on which to work toward developing improved electrical systems. In a short time, he had invented the "Unisparker" and in 1914 received a medal from the Franklin Institute of Philadelphia. He also developed his type "LA" ignition system for the Model T Ford. Having worked closely with 4- and 6-cylinder engines, Kent predicted that eventually the 4-cylinder engine would be a thing of the past.

**First Expansion**

Sensing that the market for his automotive products was rapidly expanding, in 1914 Kent purchased a large tract of ground north of the Wayne Junction branch of the Reading Railroad in Germantown, Philadelphia. As soon as this factory was completed, he partially switched over production during World War I to the manufacture of gun sights.

Kent's long-range plans for the postwar economic boom did not materialize and in 1920-21 Kent found himself in a temporary business depression. Scouting around with his usual keen vision for products to manufacture, he decided to look into the new craze of radio broadcast listening. Kent hired two well-known Philadelphia radio engineers and from a modest start in making transformers he rapidly branched out into the manufacture of tuning units, detectors, and one- to three-tube amplifiers.

Kent even assembled a five-tube radio receiver with all transformers sealed in tar in a metal container about the size of a one pound coffee can.

Labeled the Model 5, 100 of these "breadboard" receivers were sent to each of Kent's nationwide auto parts distributors. A somewhat similar experimental receiver had been presented to President Harding in August, 1921. This was the first radio receiver installed in the White House and it was this type of publicity which Kent used more and more during the "Roaring 20's." Until late 1923, Kent concentrated on the manufacture of individual radio parts, all of beautiful appearance and fine construction. At the same time Kent conducted a vigorous advertising campaign in consumer magazines such as The Saturday Evening Post, plus hobby magazines like Radio News (now Electronics World).

To avoid becoming entangled in the complicated patent situation that existed regarding radio circuits, Kent purchased, for a moderate sum, the rights to a number of inventions of his previous patent attorney and hired a new attorney to help plan for future developments.

**Mass Production**

Quick to watch for business opportunities and to consider suggestions from his nationwide distributors, Kent announced, for the Christmas buying season of 1923, his famous Model 10 radio. This was a five-tube receiver with all parts mounted on an attractive wooden board and the wiring channeled out of sight beneath the board. The immediate demand for this receiver was tremendous and some months later, Kent modified and improved the original Model 10 and added a four-tube Model 9 receiver to his line.

In late 1924 at the insistence of his distributors and in view of the competition from the growing number of makers of console-style receivers, Kent announced the Model 20 - a five-tube TRF receiver in an attractive mahogany cabinet with a gold-color nameplate. By the spring of 1925, his engineers had designed an almost identical receiver about half the physical size, which Kent personally named the "20 Compact." Kent felt that this name was a concession and an attraction to the growing number of women who had become fascinated by listening to radio broadcasts.

Kent now envisioned an unlimited increase in demand for radio receivers and decided to enlarge his manufacturing facilities. He purchased a large vacant parcel of ground on Wissahickon Avenue in Germantown. The new factory was a single-story modern (then) building with good lighting for both factory and office employees. There were imposing entrances and when one passed through the reception area, practically the entire office force was visible and the heads of departments were located so that they could keep an eye on the lower echelons of office workers. This is not to say that the arrangement was designed to encourage staff heads to spy on employees; as a matter of fact, all desks were well separated and office employees were treated with more consideration than those of competitive radio manufacturers.

Kent himself occupied a complete suite of offices including a dining room, kitchen and dressing room. This ar-

rangement was used to great advantage since every day Kent invited to lunch a number of his company executives. Many of the important future plans were announced over the luncheon table with Mr. Kent speaking in a semi-New England accent with the intermittent broad "a."

**The Peak Years**

From the time of his move into the larger new factory until the depression of late 1929, the Atwater Kent business expanded by leaps and bounds. While progress was being made in the design of radio receivers, Kent continued to manufacture ignition systems for the Model T Ford, which itself remained in mass production until late 1928.

The small three-dial console receiver was replaced in early 1926 by the single-dial Model 30, plus variations of the latter such as the Model 33 with a tuned antenna circuit and, later in 1926, the Model 32 with four stages of tuned r.f.

In 1927 Kent turned out a battery eliminator of pleasing appearance to replace the unsightly B batteries, but it was not until RCA developed tubes in which the filaments could operate on alternating current that the true all-household electric radio receivers became a reality at a moderate price. In 1928, Atwater Kent sold nearly 1,000,000 a.c.-operated radio receivers, mostly table models, in metal cabinets with a single tuning dial.

In the early 20's, while still located in the Stenton Avenue plant, Atwater Kent did not make a loudspeaker, only an attachment used to play the output of the phonograph. These attachments did not do justice to the audio quality of the receiver and in 1924 Kent had his engineers trying to develop a loudspeaker with quality equal to that of the receiver.

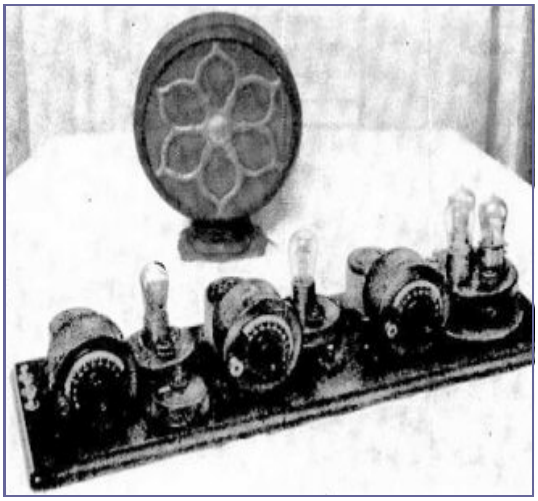
At that time, the Timmons Company was doing a brisk business selling a large "Music Master" horn loudspeaker with a wooden bell. The Kent engineers concluded that an all-metal horn loudspeaker could give better performance. A variety of sizes of metal horn loudspeakers was made and they sold in large quantities until the magnetic cone loudspeaker with more pleasing and decorative appearance - as well as excellent reproduction-replaced horn speakers. Many different sizes and finishes of cone speakers were made in 1927-28. Advertisements showing the Atwater Kent receiver and loudspeaker appeared around the world in newspaper, magazine and catalog advertising.

**Competition and the Depression**

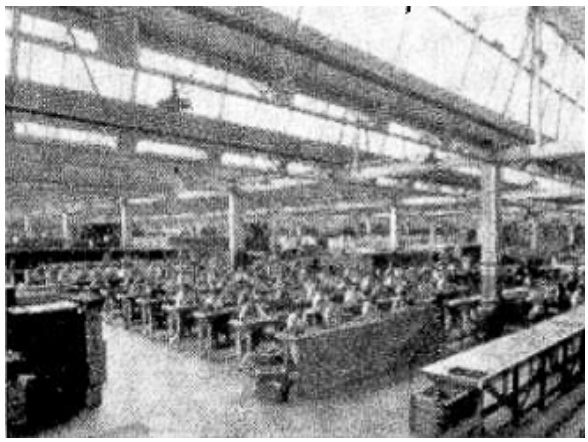
Competitors to Atwater Kent were not sitting on the sidelines while such enormous inroads were being made in the volume sales of radio receivers. By 1928 the Majestic Corporation had developed a high-quality dynamic speaker that was capable of reproducing a much lower range of musical notes and in 1929 Kent designed a table model for use with a separate dynamic speaker. The distinctive mark of all of these 1928-29 radio receivers was a gold-plated emblem of a full rigged sailing ship secured to the top or lid of the unit. Meanwhile, Kent used up the remainder of his magnetic speakers by manufacturing a limited quantity of "End Table" metal receivers using the 1928 chassis.

At the annual sales convention in August, 1929, the Kent wholesalers had placed enormous orders in anticipation of a continuing sales boom in radio receivers. After the stock market crash however, orders were cut substantially and Kent was obliged to trim his sails. In early 1930, he had concluded that new aggressive sales techniques and advertising methods were called

*The A -K Model 37 was a 7 -tube a.c. operated receiver with the popular 2 r.f., detector, 2 audio circuit.*



*Model 10 was next to the top of the A -K line in 1923 selling for $80. Open breadboard design with the connecting wires hidden under the fine wooden finish was a particular trademark of A -K. Speaker in background is from another A -K era around 1927 when Kent recognized the importance of selling loudspeakers. (Author's collection)*



*Kent followed the Henry Ford thinking and manufactured receivers on an assembly line. Factory conditions were better than most companies of the day.*

for.

Meanwhile, his engineers were furiously designing a console-type receiver chassis that would surpass in appearance and performance that of his competitors. At the August, 1930 sales convention in Atlantic City, Kent announced and displayed the famous Model 70 and showed samples of a console cabinet which Kent was not going to manufacture. He informed his distributors at the convention that installation of the chassis into the console was to be made either by the wholesaler or retailer. The entire receiver, which was called the "Radio with the Golden Voice," was promoted in national magazine ads and billboards throughout the country. The dial, in the shape of a large illuminated arc, soon became well-known in the trade and to the general public. The price of this receiver was $275!

Meantime, a local competitor announced a four-tube table model radio receiver with a founded top selling at the attractive price of $59.50. While there was probably little profit in this small receiver, it was intended as a lever for retail salesmen to talk the buyer up to the price level of a console. But, as the depression worsened and it became clear that prosperity was not around the corner, Kent's wholesalers insisted that he make a competitive model. Unfortunately, he held off doing so until the spring of 1931 with the result that receiver sales in 1930-31 were drastically reduced.

Although it had become painfully evident that the boom sales of the early and mid-1920's could no longer be expected, Atwater Kent continued to turn out high-class models, both table and consoles, as well as radio phonographs. In the 30's, Kent also turned out several radios for use in automobiles and to satisfy the public's interest in shortwave listening, Kent announced various models with two, three or four bands. Later, in 1935, Kent conceived the idea of adding some home appliances to his line of products. The company designed and sold 6000 electric refrigerators. However, the venture was not as successful as had been expected and was abruptly discontinued.

**Big Government and Big Labor**

Atwater Kent treated his employees exceptionally well. Although he paid no bonuses and sold no stock in his company, he realized that public generosity could benefit the image of a multi-millionaire manufacturer. Insofar as his employees were concerned, as early as 1925 Kent had established a "Welfare Fund" and had made sizable contributions to it. When seasonal layoffs were required, this fund was used to tide over his unemployed personnel until full manufacturing production was resumed. Such an arrangement was unique in the days before Social Security and Unemployment Compensation.

Possibly because Atwater Kent was such a staunch Republican and strictly a self-made millionaire, the New Deal programs of President Franklin D. Roosevelt seemed an invasion of his personal rights. The very idea of enforced Social Security and Unemployment Compensation rubbed Kent the wrong way.

In the fall of 1933, union organizers began to muscle in on the radio manufacturers in the Philadelphia area. This resulted in a short strike at the Atwater Kent Company and it was settled by

*This is a corner of the author's fine collection of Atwater - Kent and other antique radio receivers, microphones and keys of 1920-25. Author worked at the A-K factory.*

**Some Highlights in the Atwater Kent History**

In late 1926, Atwater Kent announced that he had manufactured his one millionth a.c. operated radio receiver. The original of this receiver was allegedly donated to the then King of Spain. However, a sufficient number of these sets (the Model 35) all in a gold-plated finish and all with serial numbers starting at 1,000, 000 were shipped to his wholesalers for display. In 1927, Kent was visited by Helen Keller and her companion. Miss Keller was personally conducted on a tour of the plant and was presented with a special radio receiver and magnetic cone speaker. By pressing her fingers lightly on the speaker cone she was able to enjoy music through the delicate vibrations of the cone. In the next year, the famous Russian inventor, Leon Theremin, visited the Kent factory with the intention of selling the patent rights to the manufacture of his electrical musical instrument. A working model of the Theremin was in the Atwater Kent laboratories for several months when it was finally decided that the instrument was too much of a novelty. A year later, RCA bought the patent rights, but at a selling price of $300 per Theremin, the project was a financial failure and gladly forgotten. In August, 1928, the two millionth radio receiver was given to Mrs. Thomas A. Edison.

**Atwater Kent, the Philanthropist**

Always very publicity conscious, Kent's most notable contribution was in promoting the public's interest in music. In particular, he sponsored opera broadcasts on the radio networks. The first of these broadcasts was in October, 1925. In addition, Kent supported local schools of music in Philadelphia and provided scholar- -ships in music to promising local singers, including Philadelphia's Wilbur Evans, who later became nationally famous. Through his original connections with New England, he contributed liberally to the Perkins School for the Blind; and, toward the end of the manufacturing period for battery-operated radio receivers, he ordered the donation of a large quantity of these receivers to the merchant fishing fleet sailing out of Boston Harbor. Another step taken by Atwater Kent to prevent his name from becoming forgotten was the establishment of the Atwater Kent museum in a small building on South 6th Street in downtown Philadelphia, not far from his original place of business. The museum does not display his manufactured products but is devoted primarily to historical items of Philadelphia. His many philanthropic and charitable contributions were not tax deductible since there was no applicable income tax in those days. Considering that the Atwater Kent Manufacturing Company, Inc. was owned and controlled by Mr. Kent himself, with only one other minority stockholder, one can scarcely imagine the profits that were made during the free-spending boom years of 1924-1929.

an agreement involving a 10% pay increase. At the time of the settlement, Kent informed the union leaders that any future attempt to interfere with his management of the business would result in his shutting down the manufacturing plant for good. From then, until June, 1936, the Atwater Kent Company continued to produce new models to conform with the trend of the times, but as sales gradually decreased and profits became marginal, it was abundantly clear that the time left for the company was growing shorter.

Arthur Atwater Kent was then 62 and there was no individual, or group, he felt he could trust to maintain the good name he had built up over the years. Consequently, when union organizers approached Kent in the late spring of 1936, he bluntly informed them that, rather than grant any of their demands, he would close down the manufacturing plant and put the business up for sale. To the several thousands of employees still working, this announcement was a tremendous shock. The engineering and production departments had been planning for a vigorous fall selling season and his employees undoubtedly assumed that Kent would make a settlement. When it became clear that Kent was as good as his word, a group of about 20 of his top men pleaded with him to allow them to take over the business. To their mutual dismay, Kent refused and in June, 1936, the doors of the plant were closed for good.

Those employees that had been working for Kent for 20 years were given three months salary as severance pay, but most of the others were fortunate if they could find employment either with competitive radio manufacturers or in the now well-established appliance business.

Kent himself immediately headed for California, bought a palatial estate in the Bel Air section of Los Angeles and proceeded to enjoy the fruits of his many years of highly profitable enterprise. He became well acquainted with many of the celebrities of Hollywood and was noted for the extravagant parties that he gave on his estate. In the spring of 1949 he became hospitalized with a virus infection and passed away at the age of 75.
At the time of the closing of the Atwater Kent manufacturing plant, the building had been put up for sale and was to include his past advertising, name, trade outlets, and good will - all for a price of $11,000,000. However, 1936 was not a propitious year for such a sale and it wasn't until 1939 that the Bendix Corporation occupied half of the plant to manufacture war materials. The other half of the plant (the 1929 addition) was soon occupied by the U.S. Signal Corp. as a training school for radio inspectors and a depot for accumulating the amateur radio equipment used by the Armed Forces in 1942-43. After the war, the entire plant building was Taken over by the Veterans Administration and is still occupied by that organization.

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# AWA Open Day at SAIEE


The AWA in conjunction with the South African Institute of Electrical Engineers is holding another open day at the grounds of the SAIEE.

The museum will be open for viewing, the SAIEE shack will be operational. Should you wish to bring along some of your valuable jewels that you no longer have space for and want to either sell or barter them, bring them along. A boot sale will be available. There are no tables, so if you need one, you can bring your own along.

There will be refreshments available, and maybe even some rolls with meat inside.

If you want to come and view what the AWA is all about, (Our amateur Heritage) it is there to be seen in all it's glory.

Times will be from 09:30 to 14:00

The address is 18a Gill Street, Observatory or look for directions on the AWA website, under "Museum".

Dates are 15 July; 19 August; 16 September; 14 October….further dates will be announced.

Any members wishing to help out at the SAIEE can let Andy ZS6ADY or Renato ZS6REN know when you will be available. We need more hands to help out.

**CONTACT 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.

# Notices:

**Net Times and Frequencies** (SAST ):
Saturday 07:00 (05:00 UTC) —Western Cape SSB Net— 3.640; Every afternoon from 17:00—7.125
Saturday 08:30 (06:30 UTC)— National SSB Net— 7.125; Sandton repeater 145.700
Echolink—ZS0AWA-L
Relay on 10.125 and 14.135 (Try all and see what suits you)
Saturday 14:00 (12:00 UTC)— CW Net—7025

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**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 Telegram App first. …..+27824484368

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WANTED:

I am looking for crystals for the restoration of a BCC HF156 transceiver. The radio is immaculate in every respect except for the removed crystals.

The frequency range of the set across six channels is 2500 to 7500 khz. The TX crystal is the same as the signal frequency, and the RX crystal is signal frequency less IF which is 465 khz.

I would be very happy to find crystals for the above range anywhere in the amateur bands

Stuart Burgess
stuart@burgess.org.za
0711998012

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