

This illustration was part of the original manuscript received by the Institute of Radio Engineers, May 15, 1933. Then it was presented before Eighth Annual Convention, Chicago, Illinois, June 26, 1933. (and presented before New York Meeting, October 4, 1933.) It was recorded in the Proceedings of the Institute of Radio Engineers Volume 21, Number 12 December, 1933 See the story on page 3 and following.

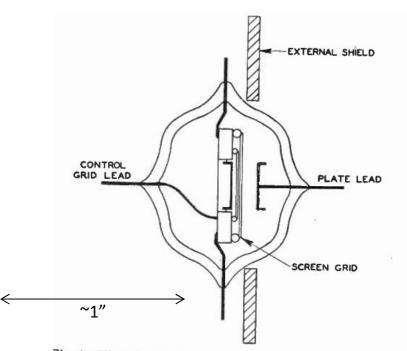


Fig. 4—View showing the screening arrangement used with the small screen-grid tube.

## The Acorn - Edition #3 The Bald Headed News

# 2020 Virus Edition #3

#### **Table of Contents**

"Stay-at-Homes" advertising	2
A Tiny Tube at the Institute of Radio Engineers 1934	
Mighty Oaks from Tiny Acorns grew 1935	6
The Acorn Goes to War 1942	8
Free Concerts	9
Remote Broadcasting circa 1930	10
Quarantine Show and Tell	12
Towers on Long Island	13
Collector's News 1974	14
Gridcap Callahan, by Pete Petersen	15
From the other side of the Mic	17
The Readers Write	
A Tough Job Well Done !	19

This is the third edition of a fun history hobby e-letter published for your enjoyment. Share it and pass it around. Show people a fun newsletter about the great hobby of vintage radio.

The **Bald Letter** is the work of Dick Karman who is solely responsible for its content. He would welcome your comments, complaints and corrections. <u>dick@karmans.net</u>

#### Special Thanks ...

To Ronald Kramer, for his excellent research work and his book. To Hue Miller and his associates on the Milsurplus interest group. They were invaluable with their input and stories on the uses of the "A corn" type tubes in WWII. (If you're interested in military surplus communication gear, they'd be interested in you, contact Hue at <u>Kargo cult@msn.com</u>.) To Kevin Parish, Morgan McMahan, Pat Kagi, members and officers of the California Historic Radio Society, and members and officers of the Puget Sound Antique Radio Association for helping out.

**Stay Tuned**. If I outlive the virus for another three weeks (and nothing is certain) we'll do it again. If not, we know that to be absent from the body is to be present with the Lord. 2 Corinthians 5:6-8 [DK]



#### WHERE DID IT COME FROM?

The cover art from Bald Letter #2 came from this ad:



Many readers have responded to the cover art from issue #2 of the Bald Letter. This Magnavox Amplifier and Speaker ad came from 1923 issue of **Radio World**. Thanks for your encouraging notes.

### HIGH FREQUENCY TUBE OF THE FUTURE FROM RCA

By John M. Borst From **Radio News** in March 1934

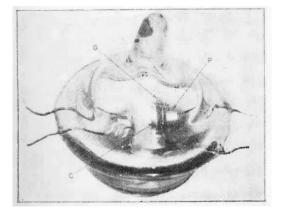
Tubes no larger than a button on your coat were recently demonstrated at the Institute of Radio Engineers. One of the tubes was employed as an oscillator on a wavelength measured by means of Lecher wires, of 40 cm. Another tube, oscillating at a frequency of approximately 300 megacycles, was modulated by a program picked from the air. The 300 mc. signal traveled across the room to a receiver, employing two tuned r.f. stages and detector- three tuned stages in all. The oscillators employed regular inductive feedback.

These small micro-wave tubes were developed by B. J Thompson and G. M. Rose, Jr., engineers of RCA Radiotron.

While the usefulness of shorter and shorter radio waves has become known, it is very difficult to generate and amplify them by means of the conventional tubes and circuits. The reasons lie in the mechanical construction of the tube. Interelectrode capacitance, the length of the leads inside the tube and the path of the electrons are all of too large dimensions for the extremely short waves involved. There is a practical limit to the frequency which can be reached with the normal triode. Special circuits have been designed to overcome these difficulties such as the Barkhausen-Kurz oscillator, but these have many drawbacks.

It was reasoned that shorter waves could be reached if a tube could be made which had considerably shorter leads, smaller internal capacity, etc. This has been accomplished in the tube shown in the illustration at three times normal size.

Experimental tubes were made in two types, a



triode and a screen-grid tube. These very small tubes equal larger tubes in efficiency, chiefly because the spacing between the electrodes and the size of the electrodes have been reduced in proportion.

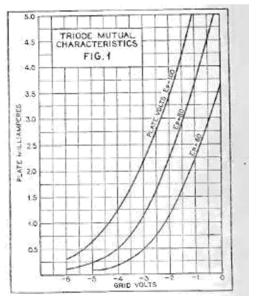
The triode has an amplification factor of 14.7, a transconductance of 1550 micromhos and a plate resistance of 9500 ohms. It requires 3 volts to heat the filament. When the plate potential is 67.5 volts and the grid bias -2 volts, the plate current is 4 ma. Interelectrode capacitances are: grid-athode, .7 mmfd.; plate-cathode, .07 mmfd.; grid-plate, .8 mmfd. Curves of the triode are shown in Figure 1.

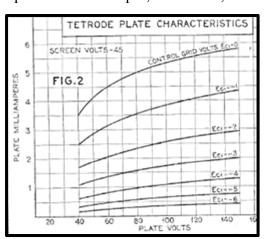
The screen-grid tube

requires a filament voltage of 3 volts, screen voltage of 67,5 volts, plate voltage of 135 volts, and grid bias of -.5 volt. Under these conditions the plate current is 4 ma, transconductance, 1100 micromhos; plate resistance, 360,000 ohms and amplification factor 400. The interelectrode capacitances are: input, 2.5 mmfd.,

output, .5 mmfd; plate-grid, .015 mmfd. Curves of the screen-grid tube are shown in Figure 2.

The tubes are of parallel plane construction; in the case of the triode, the plate and grid are supported by their leads, which are very short. Consequently, there is no stem and the various leads come out through the glass seal. The elements can





be seen in the enlarged photograph.

The screen-grid tube is a little different in construction. Here the elements are assembled upon a small ceramic disc. The grid and plate leads come out on opposite sides of the bulb, while the other leads pass through the seal. The tubes can therefore be mounted in a hole in a shield in such a way that the external shield is in the same plane as the screen, while the plate and grid leads come out on opposite sides of the shield. This construction makes for effective shielding and very short leads.

The spacing between elements is very close; some are separated only a few thousandths of an inch. Experimental receivers and transmitters were built in order to investigate their action on ultrashort waves. One receiver, consisting of two r.f. stages, a detector and one audio stage, was seven inches long, three inches wide and three inches high. On the inside, it consisted of three shielded sections, one for each tuned circuit, and another section for the detector and studio stage. The screen-grid tubes were mounted in holes in the shield partitions between stages, thus taking advantage of the shielding possibilities mentioned above.

The other receiver had one r.f. stage and a grid-leak detector. This tuned around 75 centimeters. It is claimed that the gain per r.f. stage is approximately four.

These ultra-short-wave tubes are an experimental development only and are not available on the market. Illustrations and data for this article were supplied by the RCA Radiotron Company.

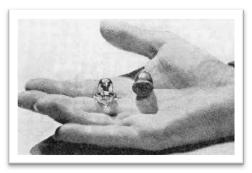
This story from the March 1934 **Radio** News is based on a paper recorded in the Proceedings of the Institute of Radio Engineers Volume 21, Number 12 December, 1933, titled VACUUM TUBES OF SMALL DIMENSIONS FOR USE AT EXTREMELY HIGH FREQUENCIES BY B. J. T HOMPSON and G. M. ROSE, JR. It makes fascinating reading and has photography and illustrations far and away better than a trade magazine of its time. You can find it at AMERICANRADIOHISTORY.COM By January 1935 the Acorn tubes were commercially available from RCA and again written up in RADIO NEWS (see page 6)

## MIGHTY OAKS FROM TINY **ACORNS** GRE**W -1935**

By A. Fenderson From the January, 1935 issue of *RADIO NEWS* 

Mr. John Borst first described a new short-wave tube, invented

by B. J. Thompson and G. M. Rose, Jr.; a "Lilliput" tube no bigger than a button on your coat. Due to the tremendous interest shown in this tube for the ultrashort-wave field, a new model of this radio tube of miniature size has been placed on the market for the especial purpose of aiding



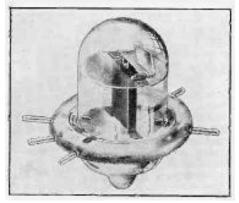
amateurs and experimenters in micro-wave tests.

The tiny valve, recently introduced by RCA-Radiotron, now has been officially named the "Acorn Tube" due to its resemblance to an acorn in size and shape.

Emphasis was laid by the manufacturer on the fact that the tiny

tube has been devised exclusively for amateur and experimental use and that it is in no way to be considered a substitute for use in standard types of receivers!

The application of the new tube depends on the uses found for it by the purchaser after studying its technical characteristics. It is not planned to immediately market



any receiver or transmitter to accommodate the tube.

Amateurs have been accorded considerable praise for their constructive work which led up to the practicable application of

short-waves. Now, it is felt that much of the future of the ultra-high frequencies depends on the groundwork laid out by these experimenters.

The 955, as the tube has been designated, is a heater-cathode triode adaptable as an amplifier, detector or oscillator at frequencies up to 600 megacycles-approximately  $\frac{1}{2}$  meter in wavelength. This valve is said to be the only true triode capable of operating on ultra-short-waves and is therefore considered indispensable for application to work in the 2  $\frac{1}{2}$ -meter and lower wavebands.

Just as other receiving tubes are used in transmitters by amateurs, the 955 may be so applied, despite the fact that it is not especially designed for transmission purposes. When used in a transmitter, though, sufficient power output is usually available to cover the average "line-of-sight" distances spanned by ultra-shortwave transmissions.

Characteristics of the 955 are as follows: Heater voltage, 6.3 volts; Heater current, .16 amp.; Maximum plate current, 4.5 milliamps.; Mutual conductance, 2000 micromhos; Maximum plate voltage, 180 volts; Grid voltage, 5 volts; Amplification factor, 25; Plate resistance, 12,500 ohms.

This information [1934] may not be the characteristics of the tube after it was adapted for use during World War II. – Editor

**70 Years of Valves and Tubes** by John Stokes (Vestal Press, 1983, page 137) reports "As far back as 1934 RCA had announced the first indirectly heated miniature [tube] known as the 'A c or n' type. The type 955 was a triode type of highly specialized construction intended for amateur and experimental use at extremely high radio frequencies. It was followed in 1935 by the type 954, an RF pentode, and in 1936 by type 956, a vari-mu pentode."

See story on page 8 on how the 'Acorn' tubes were used in some military equipment of World War II.

## THE ACORN TUBE IN WW II

With the assistance of Hue Miller and the Military Surplus Interest Group, I followed a trail of "Acorns" into the war years and into military equipment.

Hallicrafters built an R44/ARR-4 (VHF airborne search receiver) using a JAN-954, 955, and a few 956s. According to some it was a militarized Hallicrafter S-36A, which was also used as the Navy RBK which was used as an airfield receiver, for the same use as the BC 639 (both 100-156 MHz).

RCA built a Navy radio known as the ARB. The homing device for it was the ZB homing system and it used RCA 954s.

Hue Miller tells us about those homing systems:

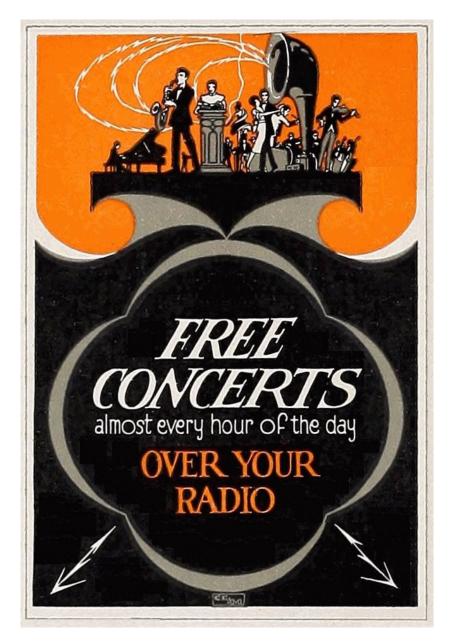
ZB and AN/ARR-1 were "homing adapters" for U.S. Navy WW2 aircraft radio receivers type RU and ARB. These converted 230-258 MHz navigation beams from aircraft carriers or land stations to aircraft. The VHF signal was modulated, but NOT by audio, it was modulated by a signal in the actual "AM broadcast band", 550 – 1000 kHz. The adapter was a TRF receiver whose output went to a receiver that could tune the medium frequency band, which received it and put out audio signal, a single alphabet letter which indicated the angle beam from the transmitting station. This was a "secret" system and it was reckoned that the Japanese could not figure it out and also never build equipment to decode it.

Between 1939 and 1941, Westinghouse rolled out a VHF satchel set using 1.5 volt tubes including several of the Acorn type. They were called Handy Radios. After Pearl Harbor, they were quickly adapted by the Navy, given expanded frequency coverage, and named the TBY-8. By 1943 they were found not suitable for rapid deployment, so were removed from service.



TBY-8 courtesy of www.radiomilitari.com

An APN-1 was an airborne FM radar altimeter used to provide direct altitude above terrain to the pilot during flight. It used a pair of 954s and a pair of 955s in both the transmitter and detector.



Radio dealers of the 1920s were taking out ads in all manner of publications to draw potential buyers into the "new" world of radio!

Then, like now, exaggeration was perhaps the name of the game.

#### PORTLAND REMOTE BROADCASTS DURING THE DEPRESSION

From the research of Author Ronald Kramer

One of the most colorful characters in Oregon's radio history is Harry Read. Read had a hand in the beginning of several of the original broadcast stations in the 1920s. For a more complete documentation of Harry's creativity you should look into "*Pioneer Mikes*" by Ron Kramer, published by the Western States Museum of Broadcasting, 2009. The following incident which was written about and commented on in publications of the time as well as histories of more current source is one of my favorites.

Perhaps the most widely known "Harry Read" story sprang from his abhorrence of corporate monopolies of public utility. Having moved to Portland, circa 1927, Read was loathe to order telephone lines from the phone company to permit live remote broadcasts from throughout the city. Leasing phone circuits for such purposes had become fairly common as radio stations sought deeper community involvement. Stations also discovered that they could cost-effectively broadcast entertainment/programming that was already being produced in another location such as a hotel dance band or a sporting event which further fueled use of these remote broadcasting circuits. Wilbur Jerman's KFWV/KWJJ, for example, maintained phone circuits to approximately seven different Portland, Oregon theatre locations for such broadcasts.

But Read's mistrust, or dislike, of utility monopolies led him to seek alternatives to leasing phone lines from the 'hated monopoly' phone company. Either from KXL's Multnomah Hotel studio, or from KOIN's studio location in the Heathman Hotel (or both), he discovered that he could flush a tennis ball – to which a wire was attached – down a men's room toilet. He could then flush a tennis ball down a toilet at the intended broadcast location and then, lifting a strategically identified sewer manhole cover, he would "fish" for the two wires with a fishing pole, connect [the pair] and complete the circuit. He apparently became quite a scholar of Portland's underground sanitary and storm drains and grew adept at "wiring" the station's studios to different remote broadcast locations using his "sewer system" of interconnection. While KXL and KOIN were both young stations, the sense of these stories is that Read's unique method of "floating" remote circuits stemmed more from his dislike of the phone company and his sense of challenge rather than from lack of funds to lease circuits. Reportedly, Read used this system for some years until the phone company pushed the City public works officials to put a stop to Read's self-installed remote broadcast circuits.

Read's "sewer system" of remote broadcast circuits became legendary in Portland radio circles and has variously been incorrectly attributed to several other early broadcasters. Ron Kramer's research, however, makes it seem clear that the story is vintage, and uniquely Harry Read and was obviously well-known at the time.

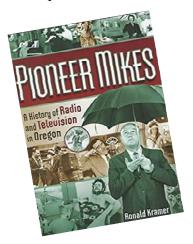
Evelyn Lampkin's, (who was a colleague of Harry Read at the time) report implied the station may have been KEX with a slight variation on the method related above. She says in her book "*Of Mikes and Men*" (McGraw Hill, 1951) that Mr. Read ran heavy string down from both locations (behind the tennis balls) to the mutual manhole where they were fished out and tied together. Then a single (unspliced) wire pair was fed (pulled by the string) from one location to the other. She implied also that several of these strings (not wires) remained in place for future use when the need arose.

No matter which recollection was more accurate, the method was novel, documented and remained in use for the years at the end of the 1920s and into the 1930 when the depression made

string quite a bit less expensive than a dedicated broadcast line from the telephone company.

That's the way Portland did broadcast remotes 90 years ago.

A special thank you to Ron Kramer for his excellent research work in his book "Pioneer Mikes: The History of Radio and Television in Oregon."



### **QUARANTINE SHOW AND TELL**



*Bald Letter* reader Kevin Parrish of Long Island, NY sent in this photo and I have placed it in the "Show and Tell" category. It is the Armstrong Tower constructed by Edwin H. Armstrong in Alpine, New Jersey in 1938 as part of his early Frequency Modulation experiments. Thus Alpine, New Jersey became known as the birthplace of FM.

Alpine borough is the eastern most tip of the state of New Jersey overlooking the Hudson River. The tower is steel lattice construction and stands 425 feet tall. The original Armstrong Radio

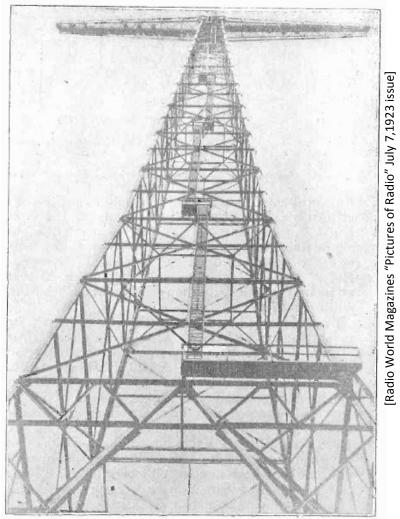
Laboratory still sits at the foot of the tower approximately 300 feet west of Route 9W, north of Timberline Drive.

Mr. Parrish didn't include this picture only because he enjoys looking across the Hudson and seeing this sentinel of FM broadcasting. He is a Radio Frequency Engineer for the National Broadcasting Company, New York (Universal) and I am sure that more than once he has been involved with the circuitry of the repeaters, transmitters and antennas on this tower and elsewhere in the "Big Apple." He offered me some great insight into (and sights of) remote broadcasting and program sourcing, and news gathering in these quarantine times.

Thanks, Kevin, for writing, for the video, and for the kind words!

In early radio, remotes were not a matter of fiber optics or microwave relay. Check out the "old way" on page 10.

## 1922 RCA Towers at Port Jefferson, Long Island



This is one of 72 giant 652-foot towers of the transoceanic station of the Radio Corporation of America. These self-supporting towers are the largest used by any commercial radio station. They form a wheel, six to each spoke; twelve spokes, enabling communications with radio stations around the globe. Each set of towers has its own transmitters and controls, in certain circumstances they can be linked to transmit together.

#### FROM COLLECTOR'S NEWS

From February 1974 A quote from Morgan McMahan

"You thought the thrill of the chase was gone. You've already got all the Blob-dome insulators, and have a complete line of regulator clocks? Here's the latest collecting sport: Wireless, radio and early TV. It's everybody's ball game. Anyone can play. The name of the game is to keep these pieces of history from being tossed on junk heap, and to turn them into collector's items instead."

Morgan went on (46 years ago) to list where to look for radios, how to determine their age and what should be inside those empty cabinets you find in the attic. If you're not familiar with his work, back in 1974, Morgan McMahon published two of the early "collector's guides" to vintage radios: *A flick of the Switch*, and *Vintage Radio*. Many of us followed his advice. We stalked the local landfills, and slipped \$5 to the local junk man to call us if he found a set sitting at the curb. Some of us offered to clean out attics or shovel out basement junk in the hopes of getting to that console we saw in the corner. Oh what days!

Amazingly the quote above ran in *COLLECTOR'S NEWS*, a publication which talked about European antiques, 17th century clocks, Grecian vases, collector's art, "priceless coins," and 1000-year-old oriental fans. It might have seemed to these folks that Morgan, seeking after 40 year old radios, had a couple of his capacitors uncoupled. But truth be told, several groups across the US and Canada were forming in those younger years and the "sport" of chasing the illusive battery radio may have been just as strong in 1974 as it was in the 1990s when the price for a restore set far exceeded our wildest dreams.

Recession and fear of depression (2008) might have lowered the prices, but the love of vintage technology still reminds me of the days when I invested \$5 in the hopes that the junk man might bring me an Atwater Kent in a Kiel Table or on a Breadboard.

#### **GRIDCAP CALLAHAN**

By Pete Petersen PSARA, WY7Z Silent Key

You would have liked Gridcap Callahan. He was somewhat of a curmudgeon, but kindly at heart. During the 1930s he ran a radio repair shop in my old neighborhood and everyone depended on him to keep their modest little radios working at prices they could afford. Customers didn't ask how he managed to keep his prices lower than other shops, they just accepted it, along with his grumpy demeanor.

The kids especially liked Gridcap and appreciated the help he gave them. When one ten-year-old, for example, complained that his home made two-tube receiver didn't bring in many stations, Gridcap growled something like "Why didn't you put a decent antenna on that pile



of junk." Then his mood softened as he patiently explained about insulators, lightning arresters, and how a decent antenna is made. Scoutmasters lost count of how many boys he helped earn their Radio Merit Badges.

Competing shops wondered how Gridcap could keep his prices so low. They wondered how he could trouble-shoot so quickly, especially when they compared their modern oscilloscopes and analyzers with his ancient and antiquated equipment, some with penciled marks on the dials to show often-used settings.

One day Gridcap was riding in a streetcar that collided with a coal truck. He was injured and unable to do much work for a while, other than diagnostics. The owner of a competing shop offered to let his apprentice, Jerry, work for Gridcap until his injuries healed. This offer wasn't as compassionate as it sounded; The competitor planned to have Jerry tell him all he learned and saw while in Gridcap's shop.

Jerry innocently came to work for Gridcap and at first he was bewildered by what Gridcap did at his workbench. After a quick visual inspection he seemed to do little more than touch the radio a few times, then growl to Jerry to "Replace the audio tube," or "Solder a new bypass condenser in the detector circuit."

Jerry worked hard and learned a lot, more than just radio repair. He learned to charge a fair price. He learned not to embarrass customers of limited means by suggesting accessories they couldn't afford. He also learned the method that enabled Gridcap to diagnose trouble so quickly and earned the nickname given to him by his old buddies in the Signal Corps during the Great War.

Gridcap could tell by the sound he heard (or lack of sound) in a radio's loud speaker, when he touched the grid caps one by one with his fingertip which stage of a radio needed repair. He taught this to Jerry, and also how to tell whether the tube or another part needed replacement by having the grid clip attached, then unattached, when touching the cap.

As time went on Gridcaps injuries mended and he was able to work at his bench all day. He gave Jerry his final paycheck and a bonus to show his appreciation of Jerry's work. Jerry thanked him and sadly said goodbye to the man he had come to respect, not just as an employer, but also as a friend and mentor.

The next morning Jerry was back at his old job in the competitors shop. As he plugged in his soldering iron, the shop owner started a casual conversation with him. As they talked, the owner started asking questions about Gridcap that made Jerry uneasy. The questions became more pointed and Jerry saw through the scheme. He then asked himself what might become of this gruff old man who had befriended him if competitors learned his tricks. He wondered if Gridcap might have to change the way he treated his customers or helped the neighborhood kids, Jerry wondered about a person's obligation to a friend.

Jerry tactfully managed to avoid most of the questions. Exasperated at learning so little, the owner ended his questions with "How did Gridcap get such a silly nickname anyway?" Jerry just smiled.

Pete Petersen was a radio collector, a story teller, a Navy aviation radioman in WWII and a past president of the Puget Sound Antique Radio Association. He gave your editor this story and others for publication in the 1990s. They are cherished memories. He is missed. Pete became a silent key in May of 2016.

#### THE OTHER SIDE OF THE MIC

#### By Dick Karman

I have heard radio sets from the 1920s and the 1930 sound every bit as good as transistor-tuned radios from the 1990s. Much of that is in the tender loving care that was invested in their restoration. But too often the poor sound that people get out of their restoration has to do with the reception, not with the circuitry. When you are considering the other side of the mic, consider a clean clear signal that you are transmitting.

Most people just plug an MP3 player into an SStran AMT3000. It is received by their vintage radio, but it doesn't sound like broadcast. What you hear from an AM station has been processed and compressed. Recorded music has been EQed and compressed in the studio where it was recorded and then again in the radio station before it was broadcast. This, while criticized by some classical music fans, fills the volume spectrum that we are used to hearing and makes it sound like "radio."

When I am acting as Disc Jockey or recording voice over tracks I run my material through another stage of compression. It normalizes most of my levels and places my volume at about 90% of saturation. My circuits aren't up to broadcast specs, but they do produce a tighter sound. The other benefit is most of these pieces of equipment use a noise gate (and ducking). That gate "closes" when you're mixing and no significant sounds are present. Thus you don't mix in the noise at the low volume end of the range.

So when you're considering program material for your vintage radios, make it the best that it can be, so that your radios sound the best that they can sound. That's it from the other side of the mic.





### **READERS WRITE**

These words are from a few of the folks who read and were kind

enough to write to the *Bald Letter*.

This bedtime story was found by a reader in *Broadcasting Magazine* 1940 and fit the format for us to take a look at radio before the war.

Roger from Morgan Hills, California wrote to report that he's a fan of the Bald Letter. He's been a fan of radio for 67 years. Back then he used this as his business card:



Keven Parish, of Long Island not only wrote, but sent along some great

#### CALL-LETTER TALE

Station Designations Used as Basis of Word-Play

BEDTIME story built around U. S radio station call letters, concocted by one Barry Wood, on April 15, 1940 appeared in John Chapman's "*Mainly About Manhattan*" column in the New York Daily News.

So, kiddies, once upon a time:

"KATE WHO came from KIEV was a WISE KIDS she packed her KIT and went WEST to win KALE and KOIN because she was KEEN on living WELL.

The prairie **WIND** blew like **WHIP** and tangled her hair like a **KOIL** of **WIRE**. But **KATE** went to **WORK** and after a quick **WASH** gave her tresses a **WATR WAVE** with her **KOME**. The little **WREN** looked like a **WOW**.

KATE didn't KNOW it, but WHOM do you suspect of waiting in the WOOD for her? A WOLF! WHAT? WILL no one WARD off the peril? "Hello, KIDO," said the WOLF with a WAGA his tail. But KATE was WISE and went WHAM on the WOLF's KOKO and with a WRAW he lapsed into a KOMA."

footage and a great shot of the Armstrong Tower (see page 12).

Thanks to all of you for the kind words and, as they used to say in radio, "keep those cards and letters coming!"

### A JOB WELL DONE

The Clubs, Societies and Associations that were founded 40 years ago (see page 14) are part of what makes our hobby great. Your editor, over the last 40 years, has taken his turn as founder, president, promoter, and editor for charitable and historic non-profit organizations across the country. He knows the work and sacrifice it takes to do a good job. Here is a quarantine "pat on the back" to a few that he knows have walked the extra mile.

In Seattle, **President Jason Rogers** is doing a great job juggling the responsibilities of the Puget Sound Antique Radio Association under the stay at home rules. Monthly meetings aren't happening but the day-to-day business is. Jason counts on the tireless work of PSARA **Secretary Lynda Glaspey**. The board of directors works together so an additional thank you to VP Matt D'Asaro and Treasurer Rodney Boleyn. The Bald Letter editor has worked closely with the PSARA and thanks *Horn of Plenty* editor Adam Bruckner and Web Site editor Richard Quam for their thankless labors in communicating and sharing "community" with the members of the PSARA. A monthly newsletter keeps Adam busier now that there aren't monthly meetings. And Richard's excellent work on the web site is appreciated as a center of news and announcements. In these uncertain times even the memorial page is looked upon warmly as a place to remember friends from the past.

Enough can't be said for folks who have put the California Historical Radio Society on the map. They have helped the spread the Bald Letter from coast to coast, but the work they have done in the San Francisco Bay area and throughout California is beyond words. I can't summarize it so you'll just have to take a look at the list: <u>https://californiahistoricalradio.com/about/</u>.

I especially thank **President Steve Kushman**, who also acts as the project manager for the Radio Central Project in Alameda, and **Mike Adams** who maintains the web site, does video and a lot of the photography and is the chairman of the board. There are more than a dozen folks who have responsibilities at RADIO CENTRAL and the job of immortalizing the *Birthplace of Broadcasting*.

The CHRS emailing is a log rather than a letter. It logs the events, works, awards and miraculous accomplishments of CHRS.

[This is the end of the 3<sup>rd</sup> edition of the *Bald Letter*]