The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

December 2016 Volume 22 Issue 12

MEETING/ ACTIVITY NOTES

Reported by
Marv Beeferman

MEETING NOTICE

NO MEETING THIS MONTH!
HOLIDAY PARTY - DECEMBER 10th

The ON-LINE Broadcaster

The *Jersey Broadcaster* is now on-line. Over 150 of your fellow NJARC members have already subscribed, saving the club a significant amount of money and your editor extra work. Interested? Send your e-mail address to mbeeferman@verizon.net. Be sure to include your full name.

NJARC President Richard Lee would like to thank all participants at the club's Fall swap meet for their patience with the late opening of the PAL facility. Richard was told that the cause was illness on the part of the properties and facilities manager. However, everyone pitched in to lend a hand and the meet got back on schedule. The event was sold out and the club netted $835. Richard would also like to send a shout-out to Len Newman for helping with the canteen and front entrance table.

Space does not permit me to include photos of the November meet in this month's *Broadcaster* but you can see a six minute sample of the goings on Bob Bennett's *Radio Wild* offering on YouTube: (https://www.youtube.com/watch?v=LDn3rZXfvGw)

NJARC President Richard Lee opens bidding for a very nice piece of test equipment at our November swap-meet's walk-around auction.

Member Dave Sica, who records and broadcasts our monthly meetings over the web, made the following comment about the quality of the audio:

"If you were one of the people tuning in to the webcast of the November meeting on the web, you may have noticed that the sound was noticeably clearer than it has been recently. I watched my first meeting while away last summer and it was tough to hear what was going on."
"I've been trying to figure out a way to do a better job than just pointing a phone across the room toward the person speaking. The problem is that it's not easy to connect a phone to a PA system. I found an audio adapter circuit that promises to make things better, but last night I had an inspiration for another solution. If you were there, you may have noticed the duct tape wrapped around my phone."
"I would be interested in what you think. If you missed it, you can check out the meeting on our Facebook page: https://www.facebook.com/new.jersey.antique.radio.club."

Technical Coordinator Al Klase has announced the dates for our upcoming 2017 Broadcast Band DX Contest: January 20th thru January 29th. Picking out those hard-to-find stations from the ether has always been a lot of fun and is a great way to spend a cold January night or two. Full details may be found on page 7 of this month's *Broadcaster*. Al suggests that you might want to consider categories 1, 2 or 3 to increase your chances of winning since not that many members submit entries for these types of receivers. Also, try to keep a camera at the ready and send a photo of you and your rig to mbeeferman@verizon.net for inclusion in the *Broadcaster*. Including the specifications of your entry and a few words about your listening experience would also be appreciated.

Contest materials may be found at www.njarc.ar88.net/contest.html. Here you will find a suggested log sheet, a compilation of 50KW stations operating nights on "clear" channels, a listing of great-circle distances to cities with bigtime AM stations from Freehold, NJ, a dial calibration list of NYC daytime local stations and a list of DX target stations.

It's extremely important that you get your Holiday Party Reservation form (page 7) in by no later than November 3rd when we have to supply a headcount to the caterers. If you find that your mail request won't reach me by this date, I will reluctantly accept reservations by email (mbeeferman@verizon.net) or phone (609-693-9430: leave message). However, once you commit, ensure you get payment in the mail immediately; I don't like to collect money at the party.

November marks the fifteenth anniversary of the opening of the first InfoAge museum space in cottage 9002. It was around 1,000 square feet. Today, we now have over 67,000 square feet in 14 structures approved for use and filled with artifacts. The general council of the National Trust for Historic Preservation, Ms. Elizabeth Merritt Esq., described our efforts as an "extraordinary success" as quoted in *The New York Times*. Our NPS liaison, Ms. Lisa McCann wrote that "when someone says it can't be done, I will point to InfoAge."

Thanks goes out to Wall Township and all the InfoAge men and women volunteers, including members of the NJARC, for supporting this work. Saving Camp Evans is a gift to our Nation! The site that helped save democracy is thriving and noting this anniversary during a bitter election season has a bit of poetry.

THE JERSEY BROADCASTER is the newsletter of the New Jersey Antique Radio Club (NJARC) which is dedicated to preserving the history and enhancing the knowledge of radio and related disciplines. Dues are $25 per year and meetings are held the second Friday of each month at InfoAge or Princeton University.
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A 1920s-STYLE UNIDYNE RECEIVER

By
Bruce Ingraham

At last month's Show & Tell, member Bruce Ingraham described building a 1920s-style Unidyne receiver. The following article describes Bruce's project and some additional information for those of you who are considering building one of your own. Unfortunately, space prevents me from including all the material that Bruce supplied to me but hopefully the majority of it was captured. I'm sure that Bruce will be happy to answer any additional questions that you might have (bingra@verizon.net) ..Ed.

With the advent of radio broadcasting in the early 1920s, there was a great increase in the technical innovations of that period. This was also the period of experimenting with *home-brew* radio sets.

The use of spiderweb coils as the tuning element in small regenerative receivers was a common practice. Due to the high cost of component parts, many small receiving sets had only one radio tube, and were often referred to as "*unidyne*" sets. Headphones were required due to the low gain of these sets. A modern one-tube *unidyne* set of this type that I have recently built is shown in Figure 1.

Spiderweb coils were wound and designed into elaborate tuning arrangements consisting of one, two, or three coils...my set employs three. These coils were usually wound with #22, 24 or 26 double cotton-covered (dcc) wire. An X-99, #30 or #230 triode vacuum tube were commonly used in these sets.

An article describing my receiver was originally presented in *ELECTRONICS Australia*, November 1983, and republished in *Hands-On Electronics*, Fall 1984. These sets utilized a single vacuum tube of the 210LF, UY-227, UX-199 or WD-11 type. Spider coil arrangements for three-coil sets were described in *Popular Radio*, October 1922.

The October 1922 issue of Popular Radio describes *How to Make a Spider-Web Tuner.* I chose the mounting arrangement illustrated in Figure 2 showing the relative positions of what was described as the tickler (variable), the primary (fixed tuned) and the secondary (regeneration) coils. The coils that I wound for this 1920s-Style set are shown in Figure 3.

All three spiderweb coils for this set, which were my biggest challenge, were wound identically, with 38 turns of #26 cotton-covered wire for each coil, wound in the same direction, on 4" diameter forms. The forms were cut from the bottoms of paint bucket cans. The finished coils and mounting details are pictured in Figure 4 and Figure 7.

The original circuit for this set, as illustrated in *Australia Electronics*, Nov. 1983, is shown in Figure 5. In my set, I eliminated the output transformer. The 2Kohm headphones are directly driven. I added a switch to select the band set capacitors. An ON/OFF Toggle switch selects internal batteries in the *ON* position and external batteries in the *OFF* position; a center-off switch may also be used. This is illustrated in the modified circuit shown in Figure 6.

A Hi-Z output is provided via a phone jack to drive an external audio amplifier and speaker system. The 2 Volts required for the #30 tube filament is supplied from the -3V side of the 'A' Battery (two 'D' cells). In the directly heated filament circuit of the #30 tube, the + side of the 'A' battery is grounded. The grid leak detector circuit, through the tuning coils, goes to this + terminal/ground point. As previously noted, an X-99, #30 or #230 triode vacuum tube may be used as the detector.

At the November Show & Tell, Bruce noted that his build took about 16 hours. One challenge was finding the metal rods and handles (made from bamboo) for the spider coils. Another holdup was finding double silk-covered wire but cotton-covered wire obtained from member Al Klase was finally settled on. This wire was dyed with green food coloring...Ed

Figure 1

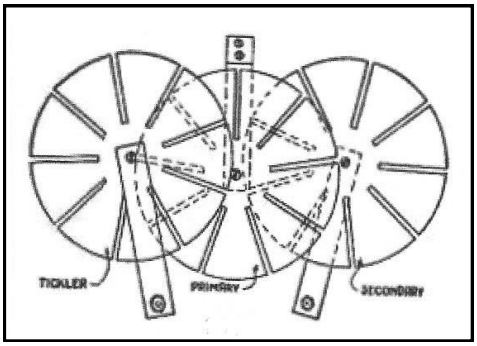


Figure 2

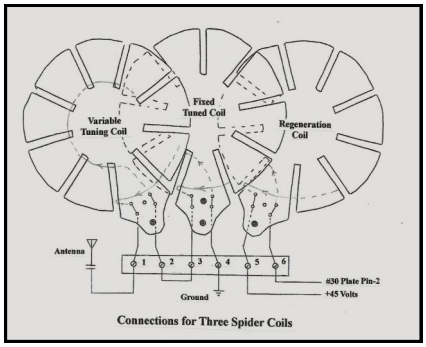


Figure 3

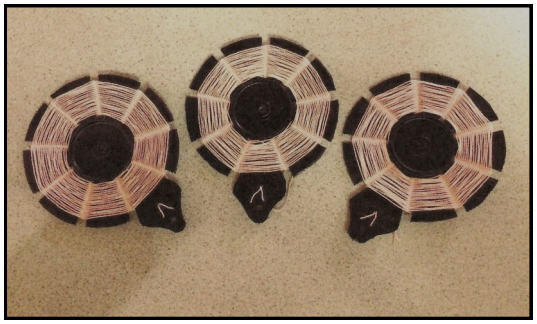


Figure 4 - Completed spiderweb coils. The wire was dyed green for contrast.

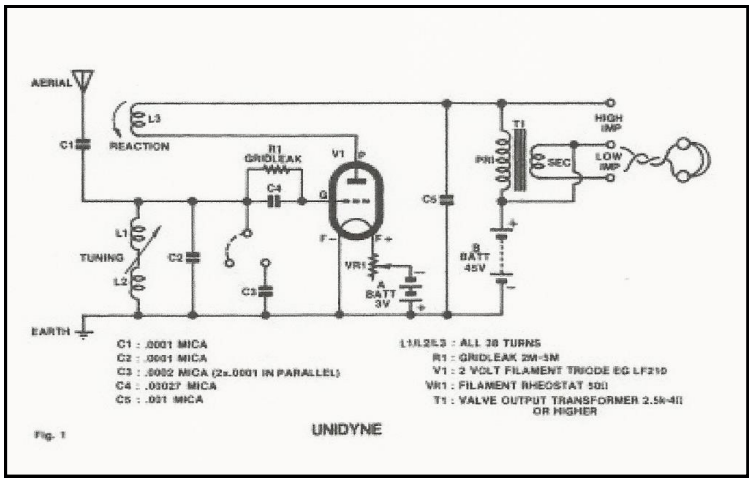


Figure 5 - Original Unidyne circuit.

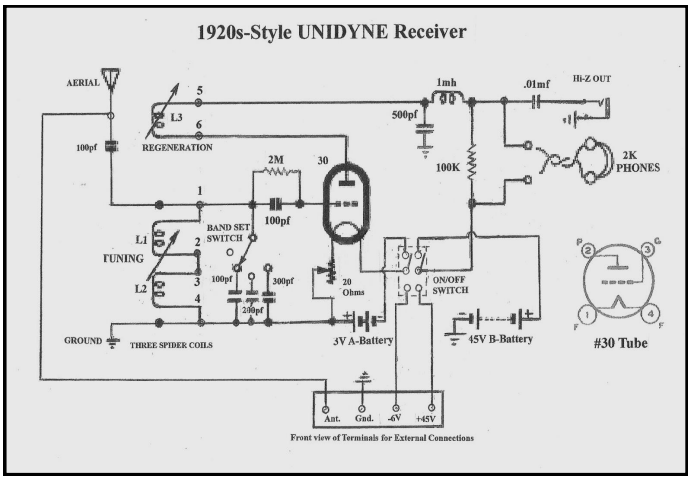


Figure 6 - Modified Unidyne circuit.

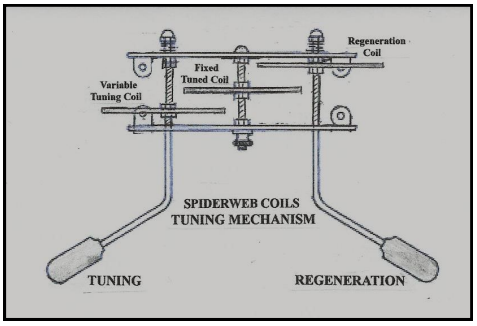
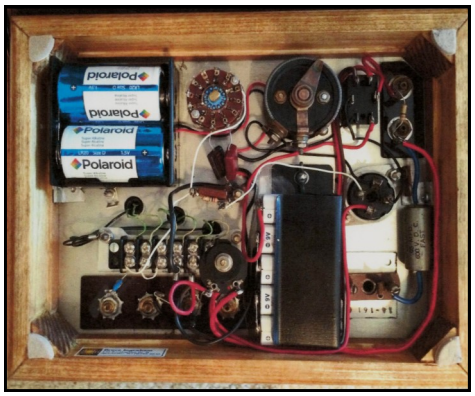


Figure 7 - Spidercoil mounting



Bottom view of Bruce's Unidyne receiver.

SHOW & TELL

By
Marv Beeferman

At last month's meeting, some interesting artifacts, ephemera, stories and a touch of "radio humor" made for a very enjoyable evening as illustrated and summarized below. Thanks to all members who contributed.

Richard Lee purchased this multi-function, homebrew counter from "Junkman Steve" at a Sunday morning, Long Island flea market. Richard said that its workmanship was "amazing" with its unique utilization of "junk box" parts.

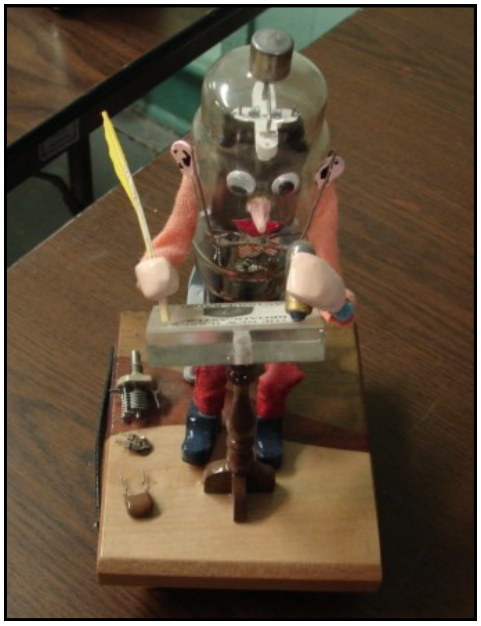
Bob Bennett (*Radio Wild)* buys tube lots but says he doesn't make that much from the tubes he offers for sale. In one lot, he came across an interesting 1949, QF491 tube marked "experimental" which he thought might be a klystron. Having my doubts, my research identified it as a subminiature dual electrometer. Electrometer tubes are used to amplify and measure small currents in circuits with very high resistance. Although seldom used for Geiger counters, the tube is used in instruments that measure very small currents, ionizing effect of cosmic rays, ions in gas chromatography, etc.

Charles Blanding described what he coined "the worst American transistor radio ever made," a 1962 Sylvania 4P19WD that sold for $29.95. The radio's "features" include a) no AGC; the volume control shorts out the antenna coil, b) actually 3, not the 4 transistors advertised - one functions as a detector, c) horrendous sound - "only radio made that hisses on WOR," d) "Cheesy" gold paint, no plastic covering station peephole, zero serviceability. Member Ray Chase compared the radio's circuitry to an Atwater Kent of the 1920s.

Bruce Ingraham's 1920s-style Unidyne receiver is the subject of an article in this month's *Broadcaster* - see page 2 for details.

Phil Vourtsis purchased his high-end SONY radio for $100 in 1966 while attending college. His professor allowed him to play it during electronic construction labs. On his way home, the handle broke while getting into his friend's car and it was run over. Many years later, he found another in perfect condition at Kutztown including the case.

Phil has been restoring a couple of wire recorders at our Radio Technology Museum. He recently found a reel that contained the 8th and 9th innings of game 7 of the 1947 Yankees/Dodgers World's Series. Listening to the game on Phil's restored recorder announced by Mel Allen was very nostalgic, especially with the knowledge that this was Jackie Robinson's rookie year.



Former member Bernie Gindoff, who recently passed away, produced the above caricature of your editor preparing the next *Broadcaster*. A vacuum tube and other electronic parts made this piece very whimsical. Other items shown included a "Marvin" (my first name) tube carton and a pretend "Beefertron" tube carton ("warms your fingers," "heats the house," "no wimpy digital technology") created by tube guru Ludwell Sibley.

Dave Snellman described the features of two high-quality LW/BC/SW/FM radios similar to that of his Braun T-1000 featured in the October *Broadcaster*. These included a 1964 Nordmende obtained at a hamfest some 20 years ago and the first of the "Satellit" series Grundig's which sold for about $400 at the time. Both are enclosed in vinyl-covered wooden cases and feature multiple SW bands although the Nordmende is not full coverage. You can still purchase the Grundig Satellit but it is now made in China.

Ray Chase says he likes to collect "weird" stuff; his S&T offering was no exception. The above homebrew item was made by the Cinaudagraph company of Stanford, CT and was labelled as a "speaker demonstration radio" but could have also been a sophisticated signal generator. Ray says it appears to be of TRF design with a 6-gang capacitor (only 3 are used), two "6D6" rf amps, an "84" detector, no power amp and a complicated BFO.

The Cinaudagraph company produced high-end speakers designed to have an ideally flat response curve up to 16,000 cps. Ray talked about the biography of one of the company's engineers, Irving Kalikow, who noted "I never understood my boss's obsession with 16,000 CPS...it's beyond the hearing range of many people and reproduction systems of the period." Ray also noted that Rudy Bozak also worked for Cinaudagraph and designed their "Magic Magnet" speaker.

The radio that Frank Feczko's dad won for him at the Jersey shore (while Frank was stuck at home dealing with summer school) was not the greatest but at least the bands lit up. When dad went back to "trade up", he even got a worse radio. Perhaps a little shame resulted in Frank getting a belated Christmas gift in 1970, a 5-band, 18-transistor beauty that Frank calls "the cornerstone of my collection" - his first solid state, multiband radio.

Darren Hoffman talked about his Western Electric 618A microphone, the first moving coil, dynamic microphone that was commercially successful. Developed by Bell Labs in the early 1930s, it was the standard news conference mike that was used by FDR for his fireside chats.

Darren also described his brand new, premium version of the Electro-Voice 664, plated in 18K gold. Few of these survived in the condition of Darren's example since, due to the very thin layer of gold plate, pitting cannot be polished out.

Steve Calandra was very proud of the Westinghouse phonograph he was given in 1960 at the tender age of three. Although it had a BSR turntable and described as a "hi-fi" unit, "it sounded very bad." Years later, Steve was able to find the same replacement shown.

THE 2017 NJARC DX-PEDITION

As a prelude to our 2017 Broadcast Band (BCB) DX Contest, Technical Coordinator Al Klase will host our annual "DX-pedition" at InfoAge as part of the January monthly meeting. The basic concept of the DX-pedition is to gather together a working collection of radios representing the various eras of receiver design in an environment that will allow participating NJARC members an opportunity to operate each type of set. Hopefully, the experience will provide inspiration for greater participation in our BCB DX Contest to be held between January 20th and January 29th.

We're going to take advantage of the great facilities and hopefully quiet listening environment available to us at InfoAge. The primary theme will be broadcast band DX and battery-operated sets, but antenna facilities will also support short-wave and long-wave operation as well.

If you plan to attend the January meeting, please try to come with sets in good working order that you don't mind having other club members operate. If you could bring a length of coax with a BNC connector on one end that can be connected to your radio, it would be helpful. We'll try to supply additional cables and adapters, but your help would be appreciated.

We'll try to coordinate the different types of radios that show up so we don't end up with mostly All-American-Fives. Please contact Al Klase at 908-892-5465 or ark@ar88.net to register the type of radio(s) you plan to bring. It would be nice to have representative receivers in the following categories:

- Crystal sets
- Battery sets: Regens, TRF-regens, TRF's and Superhets
- 1930s and 40s AC sets: TRF's and Superhets
- Other entertainment sets
- Communication receivers: TRF Autodynes, single conversion, multiple conversion
- Transistor radios

Various antennas will be provided and you're welcome to bring your own tuned loops for the broadcast band. We might consider playing into the wee hours if enough interest exists.

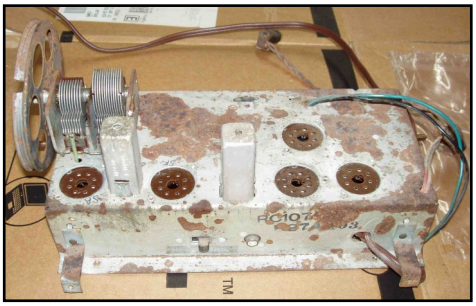
NEW HOPE FOR RUSTY CHASSIS

By
Phil Vourtsis

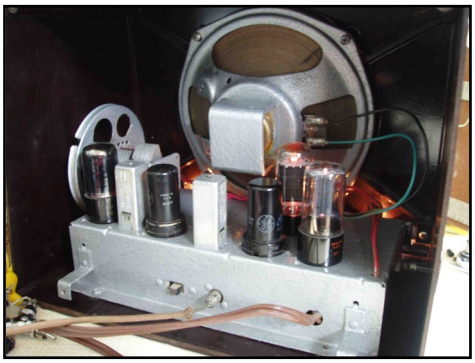
Sometimes you come across a radio or piece of electronics that has a rusty chassis. This was the case when I picked up an RCA Victor Bakelite table radio at an AWA Carolina meet in Charlotte, SC. The Bakelite case was in very nice condition so I couldn't pass it up for $10. Unfortunately, after getting the radio home and opening the case, I was pretty disappointed by its rusty chassis. Then I remembered that the previous weekend I had painted the inside trunk area of my vintage '67 Pontiac Tempest convertible with an interesting paint from Rust-Oleum. It's a unique silver "hammered" finish that can be applied directly to rust without using a primer. The manufacturer advertises that the finish "hides flaws and imperfections, requires minimal surface preparation, and is ideal for scratched, rusted and pitted metal." It comes in a 12 oz. spray or quart can.

I decided to try using it on the radio chassis. After some sanding prep, I brushed it on and was astounded how well it covered the rust. It was an expensive paint but well worth every penny.

As a side note, for those of you who have 45 rpm record player attachments (45J, 45J2, 45J3), these types of RCA radios are the best to play the attachments through because they have a decent sized output transformer and a big speaker. Most RCA Victor radios from this era come with an RCA jack and switch to accommodate the attachment.



"I was pretty disappointed by the rusty chassis."



"I was astounded how well it covered the rust."

The final product following restoration.

NEW RADIO REPAIR WORKSHOP OPEN FOR BUSINESS

By
Marv Beeferman

The new vintage radio repair workshop at InfoAge is now open for business. Thanks to all NJARC members who participated in taking it to its successful completion. The purpose of the workshop is to provide a clean, comfortable and safe environment for NJARC members to repair and restore vintage equipment for use as museum displays and museum-associated projects. If space and time permits, members can work on their own projects. In addition, the workshop will display a typical 1930's radio repair facility. It is hoped that the workshop will also allow visitors to our Radio Technology Museum (RTM) to interact with NJARC members working on repair projects and observe restoration basics first hand.

The workshop is presently open on Wednesday, Saturday and Sunday. Basic test leads, connectors and test equipment will be provided but it is suggested that you bring any unique items not immediately available. This is especially true for power supplies for battery sets, "lightbulb" test loads, isolation transformers, etc. We will supply these items in the future.

We will try to supply as many replacement parts, including tubes, as we have room for. If you are working on a museum project, there is no cost for replacement parts. If you are working on your own project, we are asking for a nominal amount to supplement workshop maintenance and improvement.

Cleanliness and safety is a must! Tools, connectors, test leads, etc. must be returned to their labeled drawers or locations at the end of the day. Benches must be left completely clear of all projects, test equipment, parts, solder splatter, dirt, etc. Depending on the project, an isolation transformer is a must. It is suggested that the "one hand" rule be maintained.

But most of all, visit us and enjoy using the facility!

The 2017 NJARC BCB DX Contest - January 20 to January 29

In the 1920's and 1930's, some radio listeners would compete with each other for the reception of the most distant stations using the same receivers that we now restore and cherish. We can recapture some of the excitement that the early DX'ers experienced in our own contest.

Official Contest Rules

THE OBJECT: To use vintage radio receivers to receive broadcast-band signals from the greatest possible distance. Performance will be judged by the total mileage for your ten best loggings during a 24-hour session. You will be competing against competitors using similar receivers.

ELIGIBILITY: The contest is open only to members in good standing of the New Jersey Antique Radio Club.

CONTEST PERIOD: The contest period will be from 12:00 Noon, local time at the receiving location, Friday, January 20, 2017 through 12:00 Noon, Sunday, January 29, 2017.

SESSIONS: Contestants may submit logs for any two 24-consecutive-hour sessions (noon to noon) during the contest period. You may use only one receiver during a session. That means you may not "bird dog" the simple radio with a more complex radio. You may submit logs for two different receivers. They need not be in the same category.

FREQUENCIES: The Broadcast Band, as defined for the contest, will be from 530 to 1600 kilocycles. No stations on the new extended band, 1610 to1710 kilocycles, will be counted since many early radios did not cover those frequencies.

RECEIVER CATEGORIES:

A - Crystal radios
B - Primitive tube or transistor receivers (homebrew also) -1 to 2 tubes or transistors, plus power supply.
C - 1920's battery sets (homebrew also) - batteries or modern power supply are OK.
D - Other tube radios sold for home entertainment.
E - Amateur, commercial, and military tube-type communications receivers.
F – Any radio of your choosing.
G – "Light-Weight": Any radio weighing less than one pound (454 grams).

SPECIAL AWARDS will be given for the best performances by first-time contestants.

ANTENNAS: Anything you like.

LOGS: Submit a log for each of your contest sessions (maximum of two). Each log header should include contestant's name, address, e-mail address if applicable, phone number, category, and description of receiver and antenna. Please include your listening address if it is different from you mailing address.

Make a log entry for each station you claim to have heard. Stations must be positively identified. (This is being done on the honor system, and is a somewhat variable concept. If you hear Boston weather on what you know is 1030KHz, then go ahead and log WBZ. However, just because you heard a signal on 1160KHz doesn't mean you heard KSL in Salt Lake City.) The contest committee reserves the right to disallow what it feels are outrageous claims. Each entry should include time, frequency, call letters, location, and optional comments. Although we're only judging your ten most distant loggings, submit as complete a log as possible. The committee may make special awards for most stations, most interesting log, etc. as it sees fit.

A log sheet has been provided by Al Klase for convenience. You may reproduce it or generate a similar one of your own.
Logs must be postmarked not later than midnight Monday, February 6, 2017.
Logs may be submitted as email attachments.

SCORING: Distances to stations will be calculated by the committee, and will be based on great circle distances from Freehold, New Jersey for listening posts within a 100-mile radius of Freehold. We will calculate mileage for other entries based on actual listening location. In all cases, please indicate your ten best loggings to make our job easier.

Special Rule #1: A contestant may claim only one of the Cuban time stations, Radio Reloj, regardless of how many are actually heard. All will be scored as 1279 miles (Havana).

Submit logs to: Tom Provost, 19 Ivanhoe Dr., Robbinsville, NJ 08691, tprovost@pppl.gov

Questions: Al Klase - 908-892-5465 - ark@ar88.net, Tom Provost - 609-243-2508, tprovost@ppl.gov

A photo of you and your rig and its description and comments on your listening experience will be greatly appreciated. Please send to Marv Beeferman at mbeeferman@verizon.net.

NJARC Holiday Party

Date: **Saturday, December 10th, 2016**
Time: **5:00 PM – Cocktail Hour**
6:15 PM – Dinner
Place: **West Lake Golf & Country Club**
1 Pine Lake Circle
Jackson, NJ 08527

Members: $**25 each**
Non-Member Adults and Children over 12: **$25 each**
Children under 12: **$5 each**

Cocktail Hour, Dinner Buffet, Mystery Grab Bag, Surprises
A wonderful evening of fun, good food and fellowship with a radio theme.
*******RESERVATIONS REQUIRED *******
If you plan to attend, please fill out the attached coupon, detach it and mail it with a check to:

Marvin Beeferman
2265 Emerald Park Drive
Forked River, NJ 08731
609-693-9430/mbeeferman@verizon.net

by December 7th. **Everyone who plans to attend must send back a response form with the name(s) of attendees.** Reservations must be made via the form below; **please refrain from telephone or email reservations unless absolutely necessary!** Payment must accompany the form.

----------Cut here ----------

Name(s): _____ _____

_____ _____

Telephone or email: _____

Number of **Members**: _____ X $25 = $_____
Number of **Children** under 12: _____ X $5 = $_____
Number of **Non-Members:** _____ X $25 = $_____

TOTAL: $_____

Make checks out to **NJARC**, enclose with this form and **mail before 12/05/16.**
(Note: The cost of this party is supplemented by the NJARC.)