



New Jersey Antique Radio Club News

Volume 1

Autumn 1993

Number 3

NJARC MEMBER WINS AWA HOUCK AWARD

Our member Mike Feher, N4FS, is to be congratulated on winning the AWA Houck Award for Preservation for 1993. Mike was cited for his comprehensive and carefully displayed collections of early tubes, prototype transistors, wireless gear, crystal sets, and military communications equipment. These items represent both American and foreign material, much of it rare indeed.

This honor is the "collector's complement" of the AWA Houck Award for

Documentation, which goes to each year's top writer.



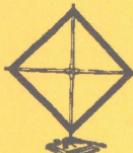
Winners of this award in earlier years include Al Jones (the Transmitting Tube Museum), Bob Paquette (Microphone Museum), Bruce Kelley (AWA Museum), Ralph Williams (Atwater Kent Museum), Bro. Patrick Dowd (Manhattan College tube display), Ralph Muchow (Muchow Museum at Elgin), and similar heavy-hitters. So our man's in good company!

LOOP ANTENNAS: APPLICATIONS AND CONSTRUCTION

by Tom Provost

Applications

- May be an alternative if room for outside long wire is limited
- Duplicates style of period antenna for vintage equipment, especially battery sets. Authenticity of appearance relies on woodworking efforts.
- For use with more modern equipment where goal is direction finding or nulling of interfering signals.
- May be used with simple RF amplifier to compensate for inherent lower signal level compared to longwire. This is



a necessity with receivers not having RF amplification.

Construction Notes

- Use of coax on low impedance winding to receiver is acceptable. Coax is not recommended on resonant winding. Use twisted pair or 300 ohm TV twinlead on resonant winding.

Choose number of turns for highest frequency desired using minimum capacitance of variable capacitor, then add more capacitance to go lower in frequency. Add more gangs on multi-gang capacitors or add fixed

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- Club News
- Swapmeets
- Meeting Reviews
- The Loop Antenna
- "Restoring" 35Z5's
- Buy/Sell Ads

The New Jersey Antique Radio Club News is published monthly, on a volunteer bases, by and for members of the New Jersey Antique Radio Club. The New Jersey Antique Radio Club News is distributed by mail to club members. NJARC can not be responsible for transactions between buyers and sellers advertising in the newsletter.

Dues and address changes: Kathleen Flanagan, Secretary, 92 Joysan Terrace, Freehold, NJ 07728 (908) 462-6638. Make check payable to NJARC. Dues: \$10.00 per year (includes NJARC News). A one dollar donation is collected at each meeting to help offset the cost of the meeting space rental.

Newsletter Articles, Classified Ads: David Sica, Newsletter Editor, 1459 St. Georges Avenue, Rahway, NJ 07065 (908) 382-0618.

Swapmeet: John Ruccolo, 335 Butcher Road, Hightstown, NJ 08520. (609) 426-4568.

Official Business: Tony Flanagan, President, 92 Joysan Terrace, Freehold, NJ 07728. (908) 462-6638

Officers

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Secretary/Treasurer: Kathleen Flanagan (908) 462-6638

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Sergeant-at-Arms/Steward: Don Cruse (908) 542-2848

Newsletter Editor: David Sica (908) 382-0618

Trustees: Mark Mittleman, Ludwell Sibley

Calendar of Events

October

08 Regular monthly meeting
23 Fall '93 Swapmeet

November

15 Regular monthly meeting

December

10 Regular monthly meeting

January

14 Regular monthly meeting

MEMBERSHIP BENEFITS

- Monthly Meetings
- Technical Seminars
- Swap Meets
- NJARC News
- Free Buy/Sell Classified Ads
- Tube Program
- Tube Testing
- Informal Networking with local collectors.

Monthly Meetings. Collectors in the New Jersey area finally have an opportunity to get together with other collectors on a regular basis to keep abreast on what's happening in the field.

Technical Seminars. Featured presentations at the monthly meetings focus on various issues related to collecting antique radios. At our past meetings, we've covered topics from Vintage Equipment operating demonstrations to a review of Military Communications Equipment.

Swap Meets. Held 3 times annually, the NJARC Swap Meets have quickly become the most eagerly awaited events of the year. Vendors from near and far gather to offer a rich and varied assortment of radios and related items for sale.

NJARC News. The club newsletter serves to keep members informed about club events, providing notice of upcoming events, reviews of past events and other club-related information. The newsletter also serves as a forum for member interaction and offers free classified ads to members and non-members alike for the purposes of buying, selling or trading radio-related items.

Tube Program. The club offers tested, cleaned and boxed tubes to members at bargain rates. Tubes are available at each meeting, and all proceeds benefit NJARC.

Tube Testing. Members can bring tubes to any meeting for free testing on a high quality tube tester.

Networking. For too long, New Jersey collectors operated in isolation, or in small, informal networks of a few collectors. Collectors have an opportunity to get together with those of like interests to share tips, techniques and "war stories" and socializing. NJARC offers the opportunity for collectors from all over the area to share their expertise and their experiences.

FROM THE BOARD ROOM

Program Committee Seeks Input

The **Program Committee** solicits information from members on restoration, repair, collecting tips and other topics of interest to the membership. Please contact Tom Provost or Tony Flanagan regarding any skills, expertise, information, anecdotes, etc. which you are willing to share with other NJARC members.

Upcoming Meetings

At our November 1993 meeting, Ludwell Sibley will make a presentation on the topic of "Repairing radio books, documentation and other paper-based collectibles."

In December, Phil Vourtsis will make a presentation on "Phonograph Collecting."

THE PRESIDENT'S BROADCAST

by Tony Flanagan

We've got a good mix of experienced collectors and relative beginners in NJARC. Since we're always welcoming new members and encouraging those new to radio collecting, here's

Some Advice to Novice Radio Collectors

Once the bug bites, you're off and running. There's no stopping you now. Believe me, I know, because it happened to me.

Although it's easy enough to begin the hobby, beginning to collect radios is a bit like starting to play golf -- it pays to take a few lessons or you may develop some bad habits.

A few simple resources can help you get up to speed fast:

First, **join a good club**. I happen to of one right here in New Jersey which comes highly recommended. Talking with fellow collectors is one of the best ways to get educated about the hobby quick.

Next, **get the most recently published price guide** -- this gives you a list of many collectable radios and their relative values. These price guides aren't the final word by any stretch of the imagination, but they'll give you some confidence and a starting point. It's important to remember that most times, the price listed in the guide is for a mint condition set. If the set you're interested in isn't in mint condition, you'll have to make an adjustment to the published value according to it's actual condition.

Get some business cards printed up. Then, don't put them in your wallet and forget about them! Hit the flea markets, second hand stores, yard sales, antique stores, or anywhere else you think you might run across old radios. If you don't see what you want, ask. Talk to friends and relatives, too!

Inspect your finds carefully. When you find an interesting piece, look it over very carefully. On any type of plastic radios, look for cracks or chips. Look real close. If the

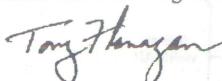
radio is dirty, wipe it off. Any cracks greatly reduce the value of the set. Be especially sure that the knobs are there, that they match, and that they are the actual original knobs that came with the set. Finding an original knob to replace a missing one on a valuable catalin set can be a difficult or impossible task.

Wooden radios should also be thoroughly inspected for cracks, damaged veneer or other defects, although these are more readily repaired than plastic. Again, make sure the knobs are there, and that they're original.

On any set, check to see if the dial string is broken. Examine the dial glass carefully. Is it in good condition? Is it plastic or glass? If it's glass and it's broken, are the numbers printed on the glass? If so, the glass will be very hard to replace. Look to see if the brand name, model number or schematic is anywhere on the set -- you'll need that information if you intend to restore the radio. Inspect the grill. What kind of condition is it in?

If you can get to the chassis, look it over. Does the set come with tubes? Because of the rising price of tubes, many early sets are now being sold without tubes. Buying tubes for a set that came without them can cost you a bundle!

The above information can help you negotiate a fair price and obtain a restorable radio for your collection. Collecting radios, I sincerely believe, is addictive. But you'll be OK, because they're out there. And above all, make sure to have a good time!



P.S. If you find any wooden table top sets, late 30's vintage, particularly the Emerson brand, for -- say--five bucks or so, even if you don't want it, buy it anyway. I'll take it!

LOOP ANTENNAS: APPLICATIONS AND CONSTRUCTION

(continued from front cover)

capacitance in parallel.

- Modern receivers usually are low impedance. Use the 1 or 2 turn winding to receiver input. Older receivers may like to be connected directly to the resonant antenna (loop & capacitor).

Table 1 gives the inductance and frequency range of square loop antennas that are 12", 24" and 36" on a side. Wire spacing for $\frac{1}{4}$ " and $\frac{1}{2}$ " spacing are shown. Other size frames and wire spacing can be determined by interpolation. The frequency range shown is based on using a variable capacitor of 500 pf.

For a larger loop, 5 foot square on a side, with wire spacing of $\frac{1}{2}$ ", the frequency range would be:

Using a 650 pf variable capacitor:

4 turns	1500 to 750 kHz
8 turns	855 to 428 kHz
16 turns	600 to 300 kHz

Using a 1400 pf variable capacitor:

4 turns	805 to 460 kHz
8 turns	750 to 315 kHz
16 turns	443 to 130 kHz

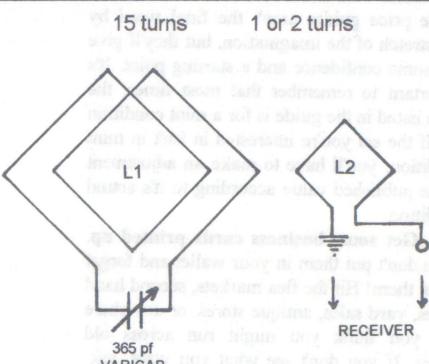
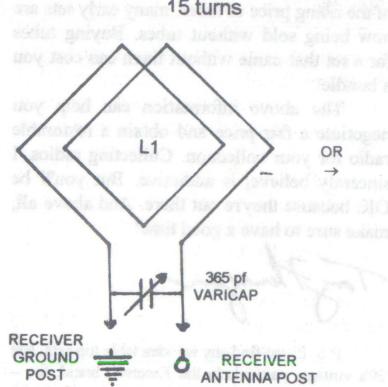
Table 1: Loop Antenna Construction Data

"L" is the inductance in microhenries

No. of turns	12" square			24" square			36" square			Wire Spacing
	L	kHz max.	kHz min.	L	kHz max.	kHz min.	L	kHz max.	kHz min.	
4	13	6240	1978	32	3980	1260	52	3120	988	$\frac{1}{4}$ " spacing
8	41	3510	1112	103	2215	703	173	1710	542	
12	78	2546	807	203	1576	500	346	1210	383	
16	131	1968	623	323	1252	397	559	952	301	
20	168	1736	550	462	1047	332	809	792	250	
4	11	6780	2150	28	4260	1347	46	3315	1050	$\frac{1}{2}$ " spacing
8	32	3980	1260	85	2440	773	145	1816	592	
12	57	2980	943	161	1773	562	281	1343	426	
16	86	2425	768	245	1437	456	439	1072	340	
20	113	2120	672	342	1218	386	625	901	285	

Broadcast Band Loop Antennas

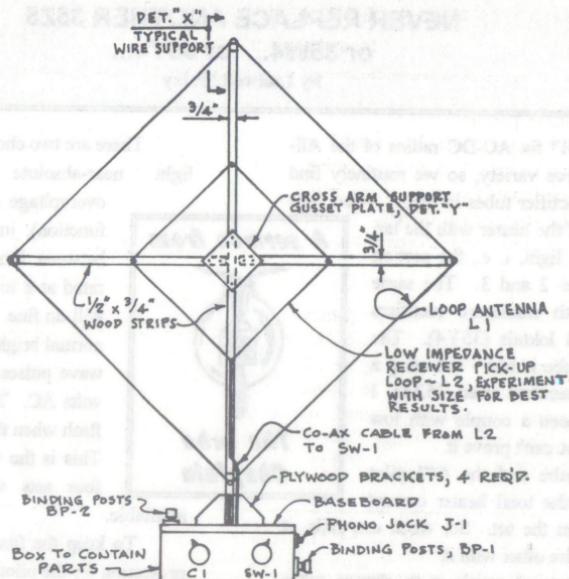
25" square loop



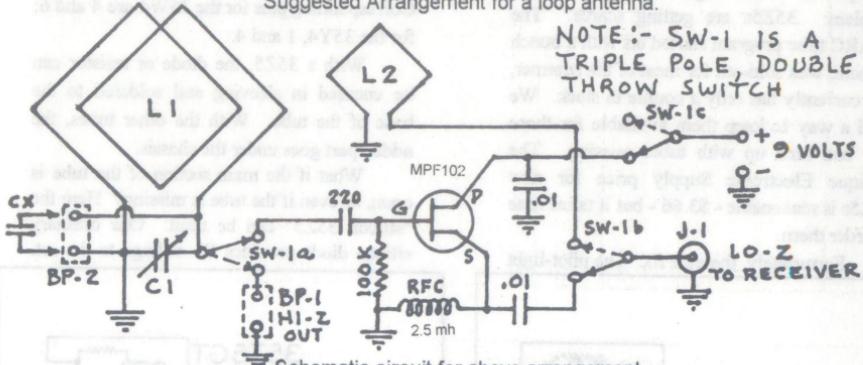
* L2 coupled to L1 (i.e. $\frac{1}{4}$ " away from L1 winding)

High Impedance Output

Low Impedance Output



Suggested Arrangement for a loop antenna.



Schematic circuit for above arrangement.

FALL '93 NJARC SWAPMEET

The New Jersey Antique Radio Club presents its third swapmeet for 1993, outdoors at the Hightstown Country Club, on October 23. Hours will be 8 AM to 1 PM, with seller setup beginning at 7 AM. Vendors will be offering a spectrum of collectible old-time radios - table-model, console, transistor, Bakelite, communications - with related literature and parts. Ample on-site parking. Everyone is welcome!

Directions: The location is off Route 33, reached from Exit 8 of the New Jersey Turnpike. From the Turnpike, go east on Rte. 33 about 1/4 mile past Mom's Peppermill restaurant. The meet site is behind the restaurant. At the jughandle (second traffic light), loop west on 33. At the first traffic light, bear right onto Monmouth St. about 200 yards to the site. Look for the big white building, the "Hightstown Country Club Ballroom."

For out-of-area visitors, accommodations are available at the Town House Motel on Rte. 33 at special rates - mention the "radio meet." Telephone numbers for the Town House are (609) 448-2400 within New Jersey, and 800-922-0622 from out-of-state. Ramada Inn and Days Inn motel accommodations are nearby.

Seller rates are \$12 per table for NJARC members, \$15 for others. Contact: Tony Flanagan, 92 Joysan Terrace, Freehold NJ 07728, (908) 462-6638.

NEVER REPLACE ANOTHER 35Z5

or 35W4... or 35Y4...

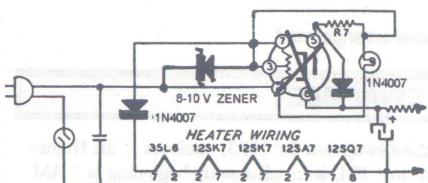
by Ludwell Sibley

We "all" fix AC-DC radios of the All-American Five variety, so we routinely find bad 35Z5 rectifier tubes in them. What fails is the part of the heater with the tap for the pilot light, i. e., the section between Pins 2 and 3. The same happens with miniature rectifiers (35W4) and loktats (35Y4). The rest of the tube is fine - in testing a couple of hundred used 35Z5s, I *may* have seen a couple with low emission, but can't prove it.

The tube and the #47 pilot light share the total heater current (150 mA) in the set. So, when one fails, it soon takes the other with it.

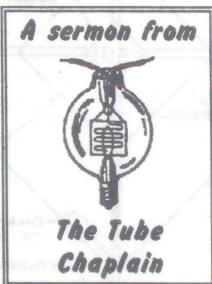
The natural repair is to change tubes and put in a new light bulb. Here's the problem: 35Z5s are getting scarce. The NJARC tube program started off with a bunch of them, was sold-out for most of the summer, and currently has only a couple in stock. We need a way to keep them available for those sets that turn up with tubes missing. The Antique Electronic Supply price for new 35Z5s is reasonable - \$3.66 - but it takes time to order them.

Fortunately, there's a fix. The pilot-light



The "silicon 35Z5."

section of the tube heater does two things: mainly, it acts as a protective ballast resistor for the lamp. Secondarily, it acts as a fuse in case the input filter capacitor or part of the heater string shorts out. It has negligible effect in heating the cathode of the tube - that's the job of the full-current, 29-volt section between Pins 3 and 7.

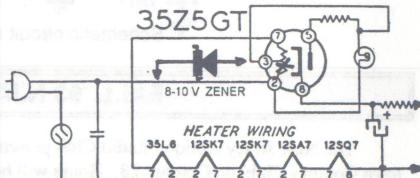


light There are two choices. To give the pilot near-absolute protection against overvoltage (but without the fuse function), just wire a zener diode between Pins 2 and 3. A diode rated at 8 to 10 volts and one watt will do fine. The light then runs at normal brightness from square half-wave pulses equivalent to about 5 volts AC. There is no more bright flash when the set is first turned on. This is the way I've fixed three or four sets when tubes were un-

To keep the fuse feature, but with less protection for the pilot light, use a resistor (68 ohms or so, 1 watt) across Pins 2 and 3. Corresponding pins for the 35W4 are 4 and 6; for the 35Y4, 1 and 4.

With a 35Z5, the diode or resistor can be encased in sleeving and soldered to the base of the tube. With the other tubes, the added part goes under the chassis.

What if the main section of the tube is open, or even if the tube is missing? Here the "silicon 35Z5" can be used. One ordinary silicon diode provides B+ voltage to the set.



Saving a partly open rectifier.

another acts as a sort of "half-wave dropping resistor" to simulate the original tube's voltage drop. A zener diode (or resistor) protects the pilot light as before. The dead tube can stay in the socket for appearance. I used this circuit in a Hallicrafters S-38 for some years.

These tricks will let you preserve spare tubes for the times when they're really needed.

MEETING REVIEW

by Dave Sica

Friday, October 8: Martin Friedman "The Teleautograph"

In October, NJARC was treated to a demonstration of something slightly out of the ordinary. The Teleautograph - not a radio, not wireless - nonetheless formed an important link in communications history, from it's invention over 100 years ago to installations where it continues in service to this very day!

The Teleautograph is actually an early form of facsimile transmission -- more of a precursor to the fax machine than anything else. In this "writing telegraph" system, servo mechanisms in the receiving unit move an actual pen across a paper in direct correspondence to the movements of the pen on the transmitting end. Any handwriting or even drawings made by the sender are faithfully reproduced by the pen in the receiver.

The Teleautograph evolved over the years to incorporate refinements such as solid state electronics and ability to work over a standard telephone line rather than the earlier dedicated direct current connecting cables.

Teleautographs were used extensively prior to the advent of computer display screens and fax machines to transmit time-sensitive information to one or many points instantly. Horse racing tracks used the system to ensure timely recording of wagers, and factories depended on the system's ability to communicate information in environments too noisy to permit telephone conversation.

Thanks to NJARC member Martin Friedman for a fascinating look at a very different type of communications tool.

MEETING REVIEW

by Jim Whartenby

Friday, September 10: Tom Provost "Loop Antennas" - technical discussion.

At our September meeting, club member Tom Provost discussed the application and design of tuned broadcast band loop antennas. In addition to providing a handout describing applications and construction details, Tom also displayed two examples of loops he has constructed.

Both antennas were approximately two feet square and made with two enameled wire windings. The first winding consisted of 15 turns and is connected in parallel with a 365 pf variable capacitor to form the resonant

section. Tom explained that many older receivers do not have a low impedance antenna terminal. In these cases, the resonant loop would be connected directly to the radio's antenna terminals. The second winding of two turns provides a low impedance output for receivers equipped with such a connection.

Mark Mittleman brought three examples of 1920's vintage loop antennas which were foldable and used Litz wire for the coils.

For detailed information on building a loop antenna, see Tom's article "Loop Antennas: Applications and Construction" in this issue.

Classified Ads

WANTED: Cable-operated car radios, tubed car radios, parts and literature. Any old auto radio-related items - car speakers, antennas, antenna kit boxes, etc. Bryan Hodgson, 14 Evergreen Drive, Voorhees, NJ 07043. Tel: (H) (609) 424-0312, (W) (609) 722-2886.

WANTED: Guild radios: Grafonola and Tea Pot. Jim & Ruth Whartenby, 120 West Franklin Street, Bound Brook, NJ 08805. Tel: (908) 271-7701

WANTED: Old, Old, Old (!!!) test equipment. Circa 1930's, preferably by RCA. RCA test equipment from the '50's and '60's. (Blue cabinet/blue knobs) RCA memorabilia. Will pick up at monthly meeting. Bryan Hodgson, 14 Evergreen Drive, Voorhees, NJ 07043. Tel: (H) (609) 424-0312, (W) (609) 722-2886.

WANTED: Need the following W.E. tubes: 101D/F, 104D, 205D/F, 252A, 274A/B, 275A, 300A/B, 350B, VT-25, VT-52. Richard Brill, P.O. Box 5361, Old Bridge, NJ 08857. Tel: (908) 679-8026 Fax: (908) 679-8524,

FOR SALE: Used and out of print books on telegraph, wireless, radio and TV bought and sold. Jerry Simkin, 10 Avalon Lane, Matawan, NJ 07747 (908) 583-5196.

WANTED: Philmore #400 Crystal Set (original N.I.B. a plus). Frank Feczko, 37 E. 36th Street, Bayonne, NJ 07002. (201) 437-6895.

WANTED: Idler wheel for an RCA 45-J-2 changer. Frank Feczko, 37 E. 36th Street, Bayonne, NJ 07002. (201) 437-6895.

FOR SALE. The AWA Review vols. 1, 2, 3, 6, 7 & 8 are available at NJARC meetings at the special discount "conference" price (\$10.00 each). Also, back issues of the AWA Old Timer's Bulletin can be purchased at the conference price (\$2.00 each).



New Jersey
Antique Radio Club
92 Joysan Terrace
Freehold NJ 07728

AWA REVIEW VOLUME 8 AVAILABLE

The Antique Wireless Association has published its book for 1993, AWA Review Vol. 8. Contents of this 154-page, heavily illustrated paperback are:

- Unusual Military Morse Keys (Louis Meulstee, PAOPCR, world-wide military-radio author - has great photos of British and German suitcase "spy" radios)
- Rare Tubes: How to Recognize Them, and Why They Are Rare (Gerald Tyne, of Saga of the Vacuum Tube, covering some never-seen tubes)
- New Bibliography of Reginald A. Fessenden (David Kraeutler, patent researcher and bibliographer, with a view on Fessenden's extraordinary range of publications)
- "Federal" as a Telephone Company (Ludwell Sibley, showing Buffalo's Federal battling it out with New York Telephone)
- The KFS-Federal-Mackay Story: From CW Arc to Silicon Valley (Hank Olson, W6GXX, and Bill Orr, W6SAL, well-known amateur-radio writer, on a coastal station traceable back 80 years)
- Joseph T. Fetsch: Vacuum-Tube Engineer and Collector (Jerry Vanicek, tube collector, with photos of an almost-lost collection)
- A History of the National Electrical Supply Co. (Edward B. Duvall, former NESCO employee)
- Navy Electronics Directory (Frederick Chesson, author on WW II military radio, indexing Navy radios up to ca. 1943)
- A Glimpse at Old-Time Transmitter Development (Walter Nelson, GE engineer in 1930, with a story of struggle and success)

Copies of this issue are available from Ludwell Sibley at NJARC meetings for \$10, or a 20% saving from the price by mail. Vols. 2, 6, and 7 are also available.

Jerry Sinker
10 Brookdale
Metuchen, NJ 07747

