

The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

July 2001

Volume 7 Issue 7



MEETING/ ACTIVITY NOTES

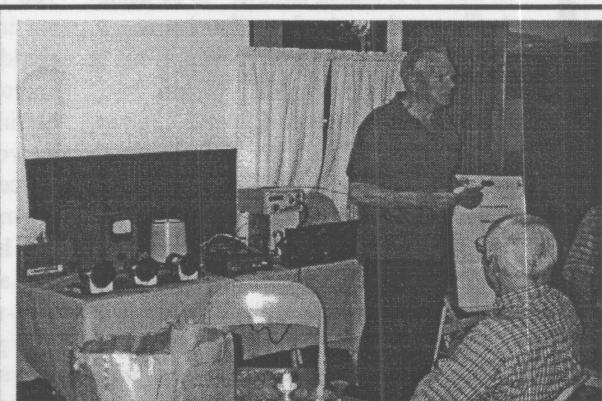
Reported by Marv Beeferman

Before reviewing the events of the last meeting, be sure to note that the **August meeting date has been moved to the 17th**. This will allow both vendors and setup people to get a good night's sleep and prepare for our swapmeet on August 11th. With next month being somewhat hectic for your editor, please mark your calendar with this reading since you probably won't receive another *Broadcaster* reminder until the week of the 17th.

John Butz Fiscina started the ball rolling for July's meeting with a short talk on a Mende Super 216W which he picked up in Germany. While asking a local resident about the operating hours of an antique store he was interested in, the conversation inevitably turned to old radios. John's acquisition was the result; it still bares the scars of a WW II bombing raid in the form of a small crack on its side when it fell off the table. Needless to say, John noted that this crack will remain unrestored.

The meeting's technical session was conducted by Art Kingsley who presented the interesting topic "What Kind of a Radio is it Anyhow?" By making a few minor modifications to a standard Freshman Masterpiece, Art was able to simulate close to 10 different radios with reception into the FM and SW bands. In Art's own words:

It looks like a simple Freshman Masterpiece, but its performance far exceeds any conventional T.R.F. that I have ever seen, the only modifications to the radio are a simple phone jack and a .00025 capacitor. After hearing it operate



Art Kingsley performs his magic on a Freshman Masterpiece.

Now we replace all the tubes and by careful adjustment of all controls in a non-conventional T.R.F. manner, and by inject-

tion of external signal from a signal generator, we are able to convert it to a "Superheterodyne." All broadcast band stations from one end of the dial to the other are very nicely covered. With a minor antenna input change the set now becomes a short-wave receiver. All frequencies up to 33 MHz are covered very nicely. Quite an accomplishment for a Freshman Masterpiece. And last but certainly not least, we convert it to a "Regen." We remove three tubes and plug a feedback coil into the new telephone jack that has been added to the set. Also, the antenna is moved to the only other additional component added to the set, a .00025 capacitor. We tune in a station, preferably near the center of the dial, one that can just barely be heard in the loudspeaker, yes, that's right, a loudspeaker. Now we carefully couple the feedback coil to the third R.F. coil, and listen as the volume fills the loudspeaker. As is usual with any "Regen," this feedback has to be carefully controlled to minimize having the set break into unwanted oscillation. The only thing it cannot do is reflex or inverse duplex.

Through the efforts of John Dilks, we finally have received the green light to

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 \$15 per year and meetings are held the second Friday of each month at the Grace Lutheran Church, corner of Route 33 and Main Street in Freehold N.J. The Editor or NJARC is not liable for any other use of the contents of this publication.

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send a work party to a house in the Camden area to do a little "cleanup." If you recall, the place is a packrat's heaven, with so much junk piled up John could not, in some cases, find the bottom. We know there are radio tubes and parts included in the mess but we don't know what gems "lie beneath" (from the movie of the same name). If you're interested in helping out the club, participate in a modern-day treasure hunt and most of all have some fun, please contact Phil Vourtsis at (732)-446-2427 or e-mail him at pvoverts@att.com. We are trying to target the weekend of 7/14 or 7/21.

Ray Chase reports that he is going to bring an absolutely pristine Philco 41-290 console for auction. This is a 10-tube multi-band chassis with large speaker, two XXL tubes and a pair of 41's for output (techies take note). The plastic bezel is in good shape and the knobs are correct. The radio is working but the filter capacitors will require replacement. Ray will also be bringing another "to be designated" console and a few other items.

John Dilks' old radio museum bus is scheduled to be at the Mid-Atlantic ARC hamfest in Kimberton, Chester County, PA on Sunday, July 15th. Kimberton is located near Phoenixville, PA between exists 23 and 24 of the PA Turnpike. Vendors of new and used ham radio and high-tech equipment will also be there. More information about the hamfest is at <http://www.marcradio.org/hamfest.html>.

The Executive Board will be accepting nominations for the Tony Flanagan Memorial Award; nominations are due by the September 30, 2001. The first award was presented to John Dilks but an award was not presented last year. Nominees will be considered based on their contributions to the promotion of the antique radio hobby, the preservation of radio and electronic communication history and the history of their associated disciplines through artifacts and documentation, and the promotion of the public awareness of radio development and history through books, articles and exhibitions. Primary emphasis should be given to these considerations and not necessarily to the individual who has done the most for the club. Additional guidelines include:

- Nominees may be club or non-club members.
- Nominations may be made by any club member; a short explanation of the reason for the nomination must be submitted.
- The Executive Board will determine the winner from all submittals.
- If an appropriate candidate cannot be selected, the award will be deferred to the following year.
- If available, Kathleen Flanagan will present the award at the club's annual holiday party.

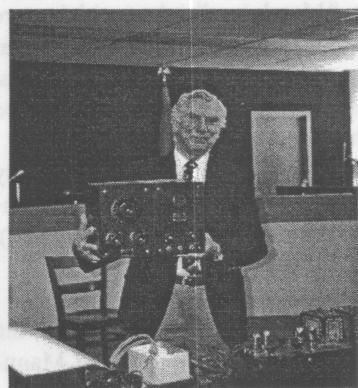
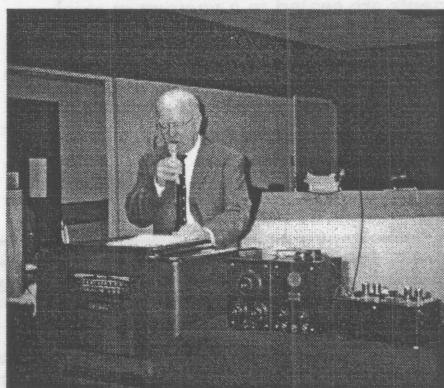
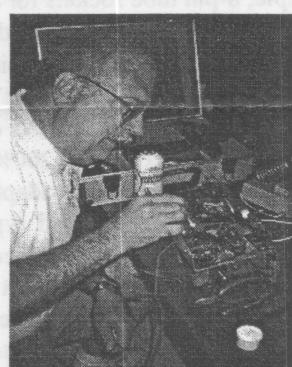
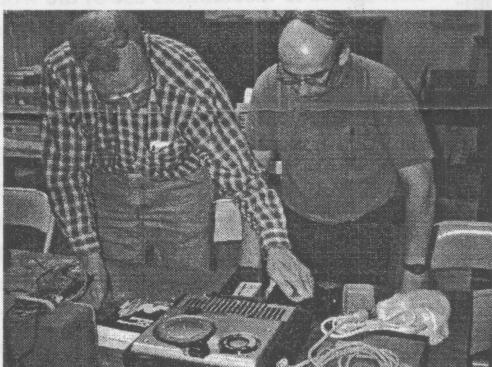
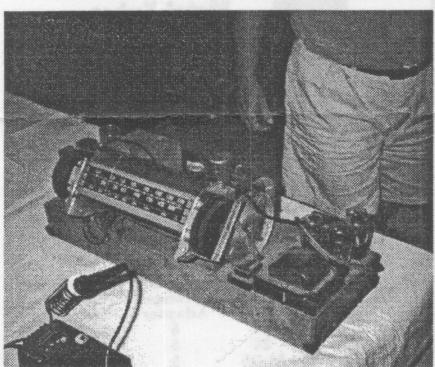
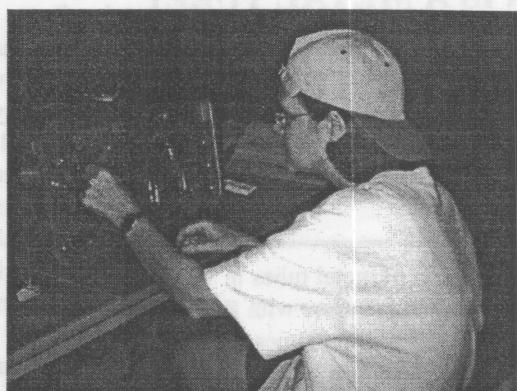
The award consists of a plaque and a certificate, with the club maintaining a plaque with the names of past winners. With all the deserving individuals who have supported our hobby, expectations are high for a number of candidates to choose from.

Preparations for the August 11th Swapmeet are proceeding smoothly. If you have changed your mind about supporting this event, please let us know; we could use the help since we're a little short on volunteers. In addition, as a club member intending to attend the meet, you can do your part by reserving a table in advance. This saves us the effort of collecting money and assigning tables during the first hectic hour in a new environment.

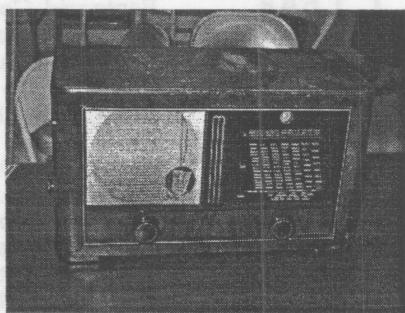
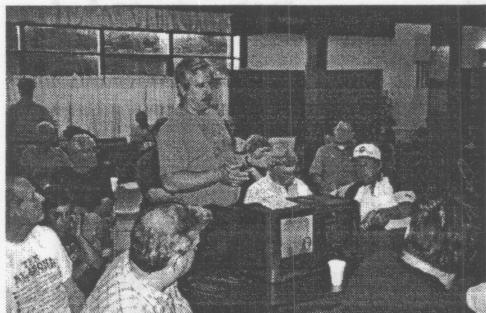
Last month's repair clinic was another well-attended event with over 20 members participating. The popularity of this club activity has prompted many members to request an increase in frequency but at present, 3 sessions a year seems to be the limit. If we ever obtain a permanent home at Info-Age next year, the Executive Board will make this one of our top priorities. Your editor wasn't able to attend, but Phil Vourtsis has provided some action photos.

Last month, John Dilks circulated a Web message regarding replacement headphone cords. AWA member Lou Leonard (WA2UIJ) is trying to negotiate with Phoneco, an antique and novelty telephone restorer and hardware provider, to go into production to supplement the dwindling supply of NOS cords which are becoming a rarity. If you're interested in Lou's progress to date, he may be contacted at 914-779-2969 (Yonkers, NY) or at WA2UIJ@aol.com.

MEN (AND LADIES) AT WORK



The May *Broadcaster* reported on a talk given at the "Old Guard" of Summit, New Jersey hosted by Ray Chase and Joe Bentrovato. Here's some photos of the presentation courtesy of Ray Chase...which only goes to prove you CAN put a coat and tie on a radio collector and take him out in public.



John Butz Fiscina talks about his Mende Super 216W.

Some mini-auction items.

WHEN IS A METAL TUBE NOT A METATAL TUBE?

By Marv Beeferman

The introduction of metal tubes in 1935 provided many manufacturers with the opportunity to ride the economic coat tails of this latest advancement in tube technology. For example, 8-pin tube sockets for accommodating the new octal bases sold for as much as four times the price of 7-pin sockets. The Arcturus line of "Coronet" metal tubes, with identical characteristics of their glass brothers, could cost up to 200% more. In addition, a 4, 5 or 6-prong adapter was required to modernize an "old type" receiver. Arcturas ads "guaranteed" improved reception without any hint of the potential for signal degradation resulting from changes in shielding characteristics and circuit inductance from use of the required adapter. Sylvania introduced a line of "G" or "Metalglass" tubes which were nothing more than glass tubes with metal tube bases. These tubes were sold at metal tube prices (or even higher) yet offered none of the advantages.

While going through my files, I recently came across a copy of Federal Trade Commission stipulation 1668 (May 29, 1936). It reads as follows:

In a stipulation entered into with the Federal Trade Commission, Triad Manufacturing Co., Inc., Pawtucket, R.I., has agreed to cease representing in advertising

or in printed matter that certain glass radio tubes it manufactures and sells are "metal tubes."

The stipulation of facts points out that glass tubes were in general use by the radio industry until 1935, when the so-called metal tubes became popularized in the trade and by the purchasing public, and also describes glass tubes as having the technical elements sealed in a vacuum in glass, while in the metal types the technical elements are contained in a vacuum in steel.

Specifically, the respondent corporation agrees to discontinue use of the words "metal tubes" as descriptive of its products, so as to imply that such products are those which have become popularly known as metal radio tubes.

The stipulation provides that if the technical elements of the respondent corporation's product are sealed in a vacuum in glass which is placed within a metal shell, and if the words "metal tube" are used to describe the shell, then such words shall be accompanied by other suitable words to indicate clearly that the product is not a tube wherein the technical elements are sealed in a vacuum in steel.

Indeed, the Triad was nothing more than a glass tube covered with metal, equivalent to putting a tube shield on the tube itself (similar to the earlier Majestic "spray shield" tubes). As you can see from the

accompanying ad from Wholesale Radio Service catalog number 59, Triad paid heed to the FTC stipulation by now identifying their tubes as "metal shielded...in which a newly developed glass is used for maintaining the vacuum." The line was further defined as the "MG" (metal glass) series to differentiate it from the purebreds.

When is a metal tube not a metal tube? Look for the Triad MG.



ARCTURUS "Coronet" Metal Tubes

Through a recent development of the Arcturus company, old type receivers can now be modernized to take the new type metal tubes. The Coronet line of tubes, all metal types, are designed to replace the popular types of glass envelope tubes used in the receivers of the past several years. No other changes than the use of an adapter are necessary for installation. Improved reception will result.

Coronet Type No.	Replaces Type	No. of Prongs	Your Cost Each
24	24	5	\$.95
27	27	5	.95
51	51-35	5	.95
55	55	6	1.08
56	56	5	.95
57	57	6	.95
58	58	6	.95
75	75	6	1.08
77	77	6	.95
78	78	6	.95
80	80	4	.81
85	85	6	1.08
2A6	2A6	6	1.08

Adapters for Above

YL11536—4 prong.

YL11537—5 Prong.

YL11538—6 prong.

Your Cost, Any Type . . . **25¢**

TRIAD Metal Shielded Tubes

THESE tubes comprise a new line known as the "MG" series. The tubes in this series are non-breakable, fully shielded by metal, and in which a newly developed glass is used for maintaining the vacuum. The new standard octal bases are employed throughout. They are fully interchangeable with existing all-metal types. In addition, four more types, in metal-glass, are offered for AC-DC use.

Laboratory Sockets

Designed for laboratory use. Molded black bakelite with special phosphor-bronze springs and knurled posts.

Your Cost 10		
JNo.	Prongs	Each for
5675	4	12c \$1.15
5676	5	12c 1.15
6937	6	12c 1.15
7499	7 (large)	12c 1.15
10018	7 (small)	12c 1.15
11469	8 (octal)*	45c 4.25

*For METAL tubes.

TYPE	DESCRIPTION	LIST	YOUR COST
6A8	Pentagrid Converter	\$2.00	\$.98
6C5	Det., Amplifier Triode	1.50	.73
6D5	Triple Grid Super Control Ampl.	1.75	.85
6F5	Hi-Mu Triode	1.75	.85
6F6	Power Amplifier Pentode	1.75	.85
6H6	Twin Diode	1.50	.73
6J7	Triple Grid Det., Amplifier	1.75	.85
6K7	Triple Grid Super Control Amp.	1.75	.85
6L7	Pentagrid Mixer Amplifier	2.00	.98
5Z4	Full-Wave Rectifier	2.00	.98
25Z5MG	Same as old tube; Metal-glass	1.75	.85
43MG	Same as old tube; Metal-glass	1.75	.85
50A2MG	AC-DC Ballast. 50 volt drop	1.50	.69
50B2MG	AC-DC Ballast. 50 volt drop	1.50	.69

HINTS FOR IDENTIFYING RADIO STAGES

Edited by Marv Beeferman

(National Radio Institute, Wash., D.C.,
Job Sheet 17, 1939)

The practical side of radio restoration for new collectors (getting the set to play) can be greatly simplified if tube layout diagrams showing the positions of all stages and all adjusting screws, and pictorial layout diagrams showing the positions of all parts, are available for use along with schematic circuit diagrams. These are typically found in the volumes of Rider's "Perpetual Troubleshooter's Manual." But at times, we may be confronted by a situation where only a circuit diagram is available or no diagram can be found. This has often occurred at NJARC radio repair clinics. However, many receivers can be easily serviced by signal tracing without the aid of diagrams if their various stages are located and correctly identified.

Identifying the Type of Receiver

The first step in attacking a receiver without a service manual is to identify it as either a tuned radio frequency (T.R.F.) or superheterodyne (super) set. There are a number of clues which identify a receiver as a super; if these clues are absent, you know that you have a T.R.F. receiver.

If the tuning dial indicates that you have an all-wave or 2-band receiver, it is safe to say that it is a super. In the case of a single band receiver, the presence of one or more I.F. transformers is the most important clue to a super. Most I.F. transformers are housed in small aluminum cans having one, or more often two adjusting screws either on the top or on one side; in a few instances, however, the trimmer capacitors and their adjusting screws will be located on the chassis near the I.F. transformer shields, making identification somewhat more difficult. If there is a flexible lead going from one of these metal cans to the top cap of a tube but there is no lead going from the can to the variable tuning capacitor, you

can be quite sure that the can houses an I.F. transformer.

If a single-band A.C. receiver has six or more tubes but only two sections in its variable tuning capacitor, it is invariably a super; if the rotor plates in one variable capacitor section are shaped differently from those in the other, you can positively identify the receiver as a super. Here is another clue; it is safe to assume that any receiver which uses a pentagrid converter tube is a super.

Single-band receivers which do not have pentagrid converters or I.F. transformers are of the T.R.F. type. Four-tube universal AC-DC receivers generally employ a T.R.F. circuit, but always make sure by looking for the I.F. transformer since there were some supers that were made which had only four tubes including the rectifier. Receivers having four or even five sections in the gang tuning capacitor can generally be identified as older T.R.F. sets.

Identifying Stages

The identification of stages without a circuit diagram is to a certain extent a process of elimination. The easiest stages to identify are eliminated first so you can concentrate on the remaining stages.

The tube used in each stage of a receiver will be the most valuable clue for identifying the function of the stage. Its number, size, shape and appearance of the electrode structure in the case of a glass tube should all be noted, and tube charts should be referenced in order to find the tube's most common function. (Note: Since the majority of receivers requiring more extensive troubleshooting are of the AC superheterodyne type, the remainder of this discussion for identifying stages without circuit diagrams will apply to these receivers unless otherwise indicated.)

Identification of stages usually starts with the rectifier tube since this is the easiest to locate. As a rule, it will be one of the larger tubes, and will be located near the power transformer. Since most AC receivers employ full-wave rectifiers using glass-envelope tubes, you will be able to see the two long rectangular plates inside the envelope which are characteristic of full-wave rectifiers.

The power output stage is located next. This will either have one tube or two identical power output tubes, and these will quite often be just as large as the rectifier. Power output tubes have large electrodes which are quite easily recognized once you have become familiar with the tubes such as the 42, 45, 47, 2A3, 6A3, 6L6, 6V6 and 25L6.

The receiver input stage is next located, for the variable tuning capacitor is a valuable guide to its location. If there are only two sections in the gang capacitor, you know that there is no R.F. amplifier stage, and therefore look for the mixer-first detector. If you find a pentagrid converter (such as a 6A7, 1A6, 1C7, or 6A8), you have identified the oscillator-mixer-first detector stage; the tuning capacitor stator which is directly connected to the top cap of the pentagrid converter is in the tuned input circuit for the converter, and the other section will therefore belong to the oscillator. The presence of cut rotor plates on one tuning capacitor section is a positive indication that it is the oscillator section. If there is a two-section tuning capacitor but no pentagrid converter tube, locate the mixer-first detector tube first; it will have a top cap, with a flexible lead running from this cap to one of the tuning capacitor stators. The oscillator tube will be a triode, and since triodes were only used as R.F. amplifiers in early sets, you can be rather certain that a triode located near the gang tuning capacitor will be the oscillator.

If the gang tuning capacitor has three sections, with flexible leads from two of the sections to the top caps of tubes, you know that the receiver has an R.F. amplifier stage ahead of the mixer-first detector. Locate the oscillator section of the tuning capacitor first; this is easy to do because the stator of this section does not usually connect to a top cap, and will be one of the end sections. The other end section may then be assigned to the preselector stage, and the tube connected to this stator will be the preselector tube. The middle section of the gang tuning condenser will be in the input circuit of the mixer-first detector, so by following the flexible lead from the stator of this section, you can locate the mixer-first detector tube. If a receiver has a pentagrid converter tube along with three tuning capacitor sections, there will

be no separate oscillator tube. There will be a lead from the mixer-first detector stage section (usually the middle section) to the top cap of the pentagrid converter tube, and another lead from an end stator section to the preselector tube. Occasionally you may encounter a three-section tuning condenser with only one flexible lead from a stator to a tube top cap; in this case the receiver has what is known as band-pass input to the mixer-first detector, and there is no preselector (R.F. amplifier) stage. The single flexible lead will go to the mixer-first detector tube.

Any tubes which have not yet been identified but which are tetrode (screen grid) or pentode tubes and have top caps can now be tentatively identified as I.F. amplifier tubes. For a more positive identification, locate the I.F. transformers. At least one I.F. transformer will have a flexible lead emerging from the side or top of the can and going directly to a tube top cap; that tube will definitely be identified as an I.F. amplifier tube. You must be able to distinguish between I.F. transformers and the shielded coils used in preselector-mixer-first detector and oscillator circuits; when in doubt, you can identify the latter coils by their under-chassis connections to the tuning capacitor sections or the wave-band switch.

I.F. stages can also be identified by tracing sections under the chassis. Start at the mixer-first detector tube, which you have already identified, and trace from its plate terminal to an I.F. transformer. From the secondary of this transformer you will be able to trace to the grid of a tube either through a flexible top cap connection coming from the transformer or, in the case of older receivers using triode I.F. amplifier tubes, through a lead to the grid terminal of a tube socket. That tube will then be the first I.F. amplifier tube. If there are two I.F. stages, you will be able to trace from the plate of the first I.F. amplifier tube to the primary of another I.F. transformer, and from the secondary of that transformer to the grid of the second I.F. amplifier tube. If there is only one I.F. stage, the secondary of the second I.F. transformer will trace to either a diode or a triode tube which is serving as the second detector. Be on the lookout for type 27, 56, 75, 85, 2B7, and 6H6 tubes, all of which are typical second detector tubes.

A triode tube which is located near the second detector tube or near the output tube can be identified tentatively as an audio or driver tube; it may or may not have a top cap. If you can trace from the plate or load of the second detector to the grid of this triode tube, you have an additional identification, and if you can trace from the plate of this triode tube through a resistor, an iron-core choke coil or a transformer winding to the high voltage D.C. terminal of the power pack, you can positively identify the tube as the first A.F. amplifier tube. If there is no driver stage, the second detector will feed directly into the audio power output stage which you have already identified.

If there are still some tubes left on the chassis after you have completed the identification of stages up to this point, they are probably special control tubes, and these may not be easily identified. The only safe procedure in this case is to secure a circuit diagram for the receiver, in the event that it is necessary to know the functions of the remaining tubes. Cathode ray tuning indicator tubes (magic eyes) can of course be identified by their appearance.

A T.R.F. receiver will have one or more tuned R.F. amplifier stages, a demodulator (detector) and a power audio output stage. The R.F. stages are easily located, for the grid of each R.F. tube will be connected to one of the stators of the gang tuning capacitor. If there are three sections in this capacitor, there will be two R.F. amplifier tubes, and the third section will connect to the detector tube. If there are four sections, there will be three R.F. amplifier tubes.

Further Troubleshooting

When the stages in a receiver have been identified, further tests for isolating a defective stage can be made even though a schematic diagram is not available. The act of tracing through the tube elements on a chassis automatically serves to identify each part, since you can apply your knowledge of what various tube element circuits normally contain. You can then proceed to make the usual continuity tests between tube elements and the highest positive and lowest negative D.C. supply terminals, since you know the type num-

bers of the tubes in the receiver and can determine their socket connections by reference to a tube chart. Since resistors and coils are the only parts which can provide continuity in an element supply circuit, these are the only parts you need to look for on the chassis if continuity problems are suspected.

Circuit diagrams should be referred to whenever they are available, but, when necessary, effective results can still be obtained without them with a basic knowledge of tube functions and stage identification.

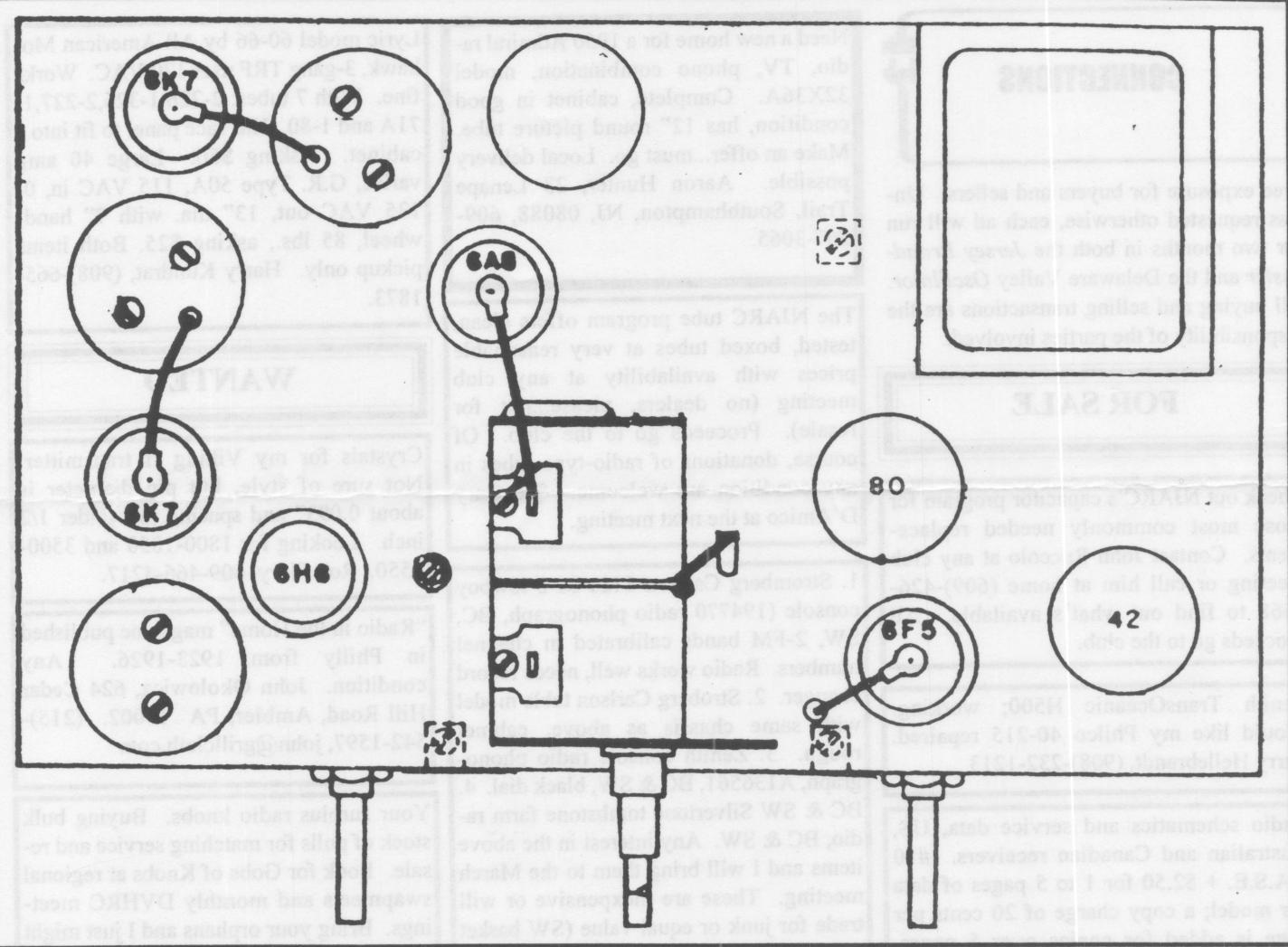
Test Your Knowledge

The diagram on page 7 contains the important clues you would need in order to identify the stages of a General Electric model F-88 receiver without a service manual. To practice your stage identification IQ, try to identify the function of each of the seven tubes, then check your results with the answers below (preferably without first peeking).

80 - One of the most common rectifiers and located near the power transformer.

42 - Tube charts identify this as a power amplifier pentode. Almost as large as the rectifier, this serves as the power audio output tube. **6A8** - This pentagrid converter serves as an oscillator-mixer-first detector. Note that its top cap connects to one stator section of the variable tuning capacitor and thus serves as the mixer input section; the other stator section therefore belongs to the oscillator, and there is no preselector stage. **6K7, 6K7** - These pentodes are the I.F. amplifiers. Each has a top cap with a lead connecting to its associated I.F. amplifier. The transformer closest to the 6A8 pentagrid converter is the first I.F. and can easily be verified by tracing connections under the chassis.

6H6 - The size of this tube is a clue since it was one of the smallest early metal tubes made. Tube charts identify it as a diode second detector and is located near the third I.F. transformer (lower left) to which it must connect. **6F5** - Tube charts reveal that this is a triode, so we know it isn't an R.F. stage. Being near the 42 output tube, we can safely assume it to be an audio amplifier.



MAKE YOUR
RESERVATIONS
TODAY!



New Jersey Antique Radio Club Antique Radio Indoor Swap Meet

Saturday, August 11, 8:00 AM (7:00 AM vendor setup)

American Legion Hall, Dover, NJ

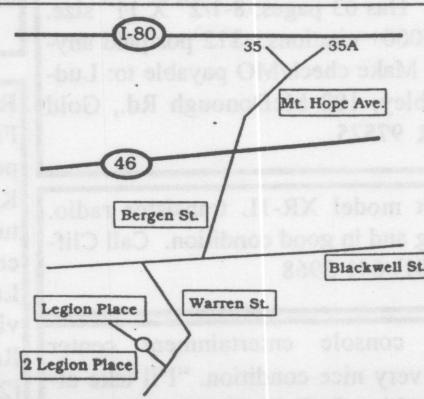


NJARC presents its Summer swapmeet at the spacious, air-conditioned American Legion Hall in Dover, N.J. Spaces are guaranteed to the first 65 reservations. A \$2.00 buyer donation is suggested.

DIRECTIONS: From the East, North or South, take I-80 West to Exit 35A (Dover). [I-80 West can be reached from the North via I-287 South or the Garden State Pkwy (South) or from the South via the N.J. Turnpike (North) to the Garden State Pkwy (North) to I-280 West.] From the West, take I-80E to Exit 35 (Mt. Hope, Dover). Follow Mt. Hope Ave. South, crossing Route 46 (where Mt. Hope Ave. becomes Bergen St.) and turn right on Blackwell St. Go to the third light and turn left on Warren St. Go two blocks, crossing the RR tracks. The American Legion is on the right (2 Legion Place).

RATES: NJARC members \$15/space; non-members \$20/space.

RESERVATIONS: Marv Beeferman, 2265 Emeraldalda Park Drive, Forked River, NJ 08731 (609-693-9430). Phil Vourtsis, 13 Cornell Place, Manalapan, NJ 07726. (732-446-2427).



CONNECTIONS

Free exposure for buyers and sellers! Unless requested otherwise, each ad will run for two months in both the *Jersey Broadcaster* and the *Delaware Valley Oscillator*. All buying and selling transactions are the responsibility of the parties involved.

FOR SALE

Check out NJARC's capacitor program for those most commonly needed replacements. Contact John Ruccolo at any club meeting or call him at home (609)-426-4568 to find out what's available. All proceeds go to the club.

Zenith TransOceanic H500; working. Would like my Philco 40-215 repaired. Larry Hellebrandt, (908)-232-1213

Radio schematics and service data, US, Australian and Canadian receivers. #10 S.A.S.E. + \$2.50 for 1 to 5 pages of data per model; a copy charge of 20 cents per page is added for copies over 5 pages. (Questions/quotes answered by e-mail or a S.A.S.E.) Steve Rosenfeld, P.O. Box 418, Manahawkin, N.J. 08050 Phone: 609-597-2201; srosenfeld@ems.att.com

New index to AWA publications (*Old Timer's Bulletin*, *AWA Review*, misc.), 1960 through Aug. 1999. Formatted like the earlier version but with new "Author" section. Has 63 pages, 8-1/2" X 11" size. Gives 7000+ citations. \$12 postpaid anywhere. Make check/MO payable to: Ludwell Sibley, 102 McDonough Rd., Gold Hill, OR 97525.

Heathkit model XR-1L transistor radio. Working and in good condition. Call Clifford, (201)-641-3968

Andrea console entertainment center (1950), very nice condition. "I'll take almost anything for it." Douglas Eldridge, (973)-674-8194

Need a new home for a 1950 Admiral radio, TV, phono combination, model 32X36A. Complete, cabinet in good condition, has 12" round picture tube. Make an offer...must go. Local delivery possible. Aaron Hunter, 23 Lenape Trail, Southampton, NJ, 08088, 609-267-3065.

The NJARC tube program offers clean, tested, boxed tubes at very reasonable prices with availability at any club meeting (no dealers, please...not for resale). Proceeds go to the club. Of course, donations of radio-type tubes in any condition are welcome. See Gary D'Amico at the next meeting.

1. Stromberg Carlson 1121-M-2 lowboy console (1947?0 radio phonograph, BC, SW, 2-FM bands calibrated in channel numbers. Radio works well, needs record changer. 2. Stromberg Carlson table model with same chassis as above, cabinet rough. 3. Zenith console radio phonograph, A136561, BC & SW, black dial. 4. BC & SW Silvertone tombstone farm radio, BC & SW. Any interest in the above items and I will bring them to the March meeting. These are inexpensive or will trade for junk or equal value (SW basket cases, etc.) Email or call... Steve Goulart, sgoulart@att.com, 732-219-6193.

Selling new and used TV and radio tubes; also have some phono needles and cartridges. Send want list to: Don Smith, 2706 Cub Hill Rd, Baltimore MD 21234 or call (410)-665-8536

RADIOS: Regal 747 4-tube portable, Fisher FM-80 tuner, Philco "Tropic" portable, Zenith 10S549 console, Atwater Kent Model 40, others. **PARTS:** Big-pin tubes, vintage semiconductors, geiger-counter parts. **PAPER:** Vintage Allied, Lafayette, etc. catalogs, service notes and vintage manuals - list available. John Rohr, 348 Farm Lane, North Wales, Pa., (215)-661-1134. FAX-(215)-661-2910. jaxrohr@netreach.net

Lyric model 60-66 by All-American Mohawk, 3-gang TRF uses 120 VAC. Works fine. With 7 tubes: 2-226, 1-326, 2-227, 1-71A and 1-80. Has face panel to fit into a cabinet. Asking \$50. Large 40 amp variac, G.R. Type 50A, 115 VAC in, 0-135 VAC out, 13" dia. with 7" hand-wheel, 85 lbs., asking \$25. Both items pickup only. Harry Kundrat, (908)-665-1873.

WANTED

Crystals for my Viking II transmitter. Not sure of style, but pin diameter is about 0.093" and spacing just under 1/2 inch. Looking for 1800-1850 and 3500-3550. Rob Flory, 609-466-4217.

"Radio in the Home" magazine published in Philly from 1923-1926. Any condition. John Okolowicz, 624 Cedar Hill Road, Ambler, PA 19002. (215)-542-1597, john@grillcloth.com

Your surplus radio knobs. Buying bulk stock of pulls for matching service and resale. Look for Gobs of Knobs at regional swapmeets and monthly DVHRC meetings. Bring your orphans and I just might have its relatives in stock. Dial pointers also available. Mike Koste, 57 Tennis Ave., Ambler, PA 19002. (215)-646-6488

GE Semiconductor Data Handbook # 451.90 (early 70s?) or earlier. Marv Beeferman, 2265 Emerald Park Drive, Forked River, NJ 08731 (609)-693-9430 mbeeferman@cs.com

Mitsubishi CRT's (for monitor): AT20A9LEB22TC9, AT20A9LEB229, AT20A92EB22TC9, AT20A92EB229, AT20A92EB2L5(L9)TC9, or anything close to these models. Marv Beeferman (see address on ad above).

Zenith 12-S-265 Blackdial console. Must be in excellent condition. Contact: Sal Brisindi at salb203@aol.com or 732-308-1748.