

The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

July 2000

Volume 6 Issue 7



MEETING/ ACTIVITY NOTES

Reported by Marv Beeferman

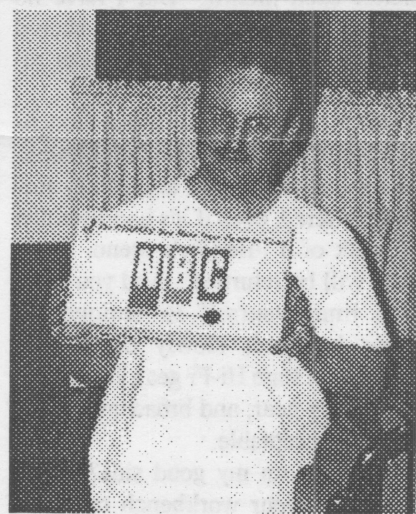
Club elections was the main agenda for the June meeting resulting in changes to two positions. Congratulations to Richard Lee who will take Jim Fisher's place as Vice President (Jim has moved out of the area) and John Ruccolo who will replace Mark Mittlemen as a trustee. Probably the first order of business for our board will be to find a more desirable location for our swapmeets. We have discussed this many times in the past, leaving it to individual club members for recommendations. It appears that the only definitive way to resolve this question is to appoint a committee, with reportability to the Board and membership and commitment to a reasonable date for selecting a suitable site. As it stands now, our next meet will probably be at the Hightstown Country Club toward the end of September.

Tom Provost hosted another lively and entertaining show-and-tell session that represented the wide range of interests and expertise of our members:

- John Ruccolo displayed a Lafayette "Professional 9" amateur receiver which he found at a yard sale for \$10. The unit sold as a kit for \$36.75 in 1935 and was the subject of an article that appeared in the October 1935 issue of "Short Wave Craft." The interest in this piece is its pre-assembled and pre-adjusted front end. Read the piece based on this article in this month's Broadcaster and find out why.
- George Shields showed a 1932 Mende of German origin that he purchased from Great Britain on e-bay. This very sensitive reflex/regenerative set utilizes 3 tubes plus a rectifier to cover

the LW/MW/SW bands. By tapping into the 5 volt rectifier winding of the set and adding 2 power resistors, George was able to obtain 4.2 volts @ 1 amp for the filaments (the original set required 4 volts). Additionally, George emphasized the "look locally" theme with a pristine replica of the NBC chimes in its original box (including a leaflet with its history) found at a New Jersey antique show.

- Jerry Dowgin is taking appointments



What's in the box? See page 2.

for treatment with a quack medical apparatus that he exhibited which is guaranteed to cure dandruff.

- Ed Ledner illustrated the enthusiasm of the antique radio hobby fraternity

MEETING NOTICE

The next meeting of the NJARC will take place on Friday, July 14th at 7:30 PM in the Grace Lutheran Church, corner of Route 33 and Main Street in Freehold. Contact Marv Beeferman at 609-693-9430 or Phil Vourtsis at 732-446-2427 for directions. The evening's technical session will feature a demonstration of military field radios. If you have any working models that might add to Al Klase's presentation, you are welcome to bring them along. For more information, contact Al at 908-782-4829. We'll also try to firm up a date for the September swapmeet.

in coming to the aid of its fellow collectors. He displayed an unsolicited, 4-page, hand-written letter received from a Canadian collector explaining the workings of the eye-tube resulting from a passing question that he had on the subject.

- Bob Allerton showed some interesting parts including handmade tuning coils wound on metal soap cans.
- John Dilks described a Gernsback Shortwave League lapel pin from the early 20s.
- Ray Chase showed a handmade SW superhet and an SCR 288 transceiver based on late 30s technology but still used throughout WW II.
- Richard Lee exhibited a cordless 200-watt soldering iron. The iron used a replaceable chemical charge that was mechanically ignited to produce the required heat and was mostly brought into service by telephone linemen for fieldwork.
- Ben Tongue described an ornamental RCA/Cunningham 6H6 fashioned into a paperweight and probably used as a giveaway or an award.
- Wendel Klinker showed two beautifully framed amateur licenses, a 1916 original and 1920 renewal where the recipient attained the minimum speed of 12 WPM and "swore to an oath of secrecy" in regard to any state secrets he might uncover during his activities.

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 buying and selling transactions or for any other use of the contents of this publication.

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- Issac Blonder presented a Zenith Traveler and went on to relate his experiences when assigned to the British Army as a radar researcher in 1942.

While thumbing through some back issues of the "Gazette" of a Southern California club, I came across some disturbing notices:

"This place is empty because I ran out of material."

"Still another blank spot brought to you by neglect."

This is not the first time I've seen exhortations such as these and they are not limited to one publication alone. Quite frankly, I think they're a little unprofessional and I'd never resort to a tactic like this to make a point, but they do have substance.

I find it incomprehensible that with the vast reservoir of talent and interests that our membership enjoys, I'm lucky if I receive one or two contributions to the Broadcaster each year. The publication I referred to above receives significantly more, yet there is still a complaint. Please do not perceive this as a threat, since I take pleasure in publishing our club newsletter each month. But I have no reservations about stating that we should be collectively ashamed of ourselves regarding this state of affairs.

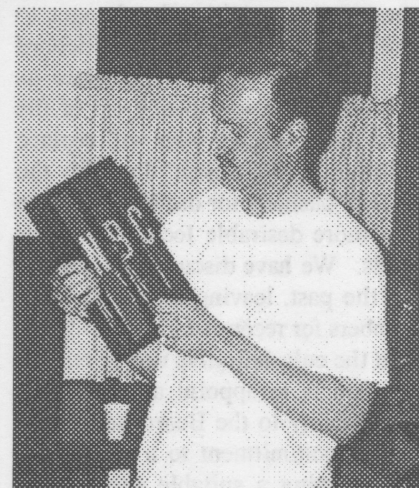
I'm not looking for any approach-ing a research dissertation with bibliography and footnotes. I will accept any format that's offered, even if it's hand-written on the back of a Friendly's menu. Photographs will be returned. And you don't have to limit yourself to antique radios...our hobby is slowly expanding. Tube and solid state Hi-Fi gear, B&W and color TVs, test gear, and broadcast equipment are all acceptable.

Want to get on my good side? Send me a photo at your workbench restoring something. No workbench? How about a picture of you tearing into a dead Crosley with parts all over the kitchen table and your smiling wife providing inspiration? What about a recent acquisition or restoration tip? Here's a typical example from Norman Leal provided to a Califor-

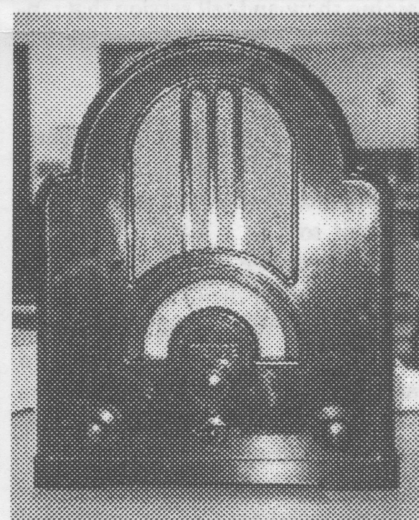
nia club:

"For cleaning tube pins use Naval Jelly. Apply it with a toothbrush then wash it off after a couple minutes. Even the dirtiest pins come out looking almost like new. The Navel Jelly cleans away the dirt and oxidation but doesn't hurt the plating. So often I've seen where a person has sanded the pins scratching right through the plating."

Thanks Norm...see, it's simple and painless. Let's hope future newsletters can include a "thanks" to Bill, Fred, Diane, Bob, Mark, Jim, Tom, Ralph, Betty or Joe.

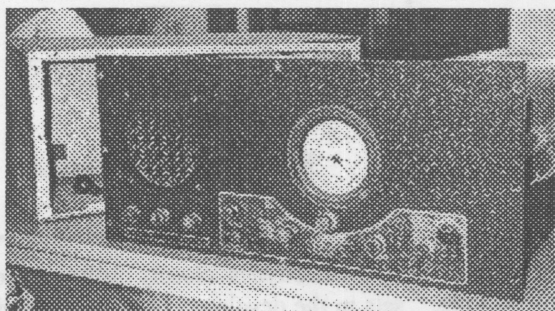


George Shield's NBC chimes.



George's 1932 Mende

SHOW-AND-TELL



John Ruccolo's "Professional 9." Offered by Lafayette in kit form, it's featured in an article in this month's *Broadcaster*.



A rear view of the "Professional 9."



A close inspection of Jerry Dowgin's quack medical cure-all.



Issac Blonder demonstrates the Zenith Traveler.



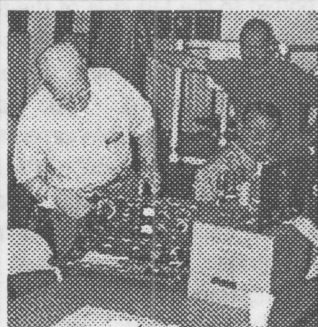
John Dilks shows a Gernsback Shortwave League pin.



A 1916 amateur license shown by Wendel Klinker.



Our new Vice President Richard Lee shows a portable soldering iron.



Ray Chase's SCR 288 and homemade superhet SW receiver.

THE LAFAYETTE "PROFESSIONAL 9"

Edited by Marv Beeferman

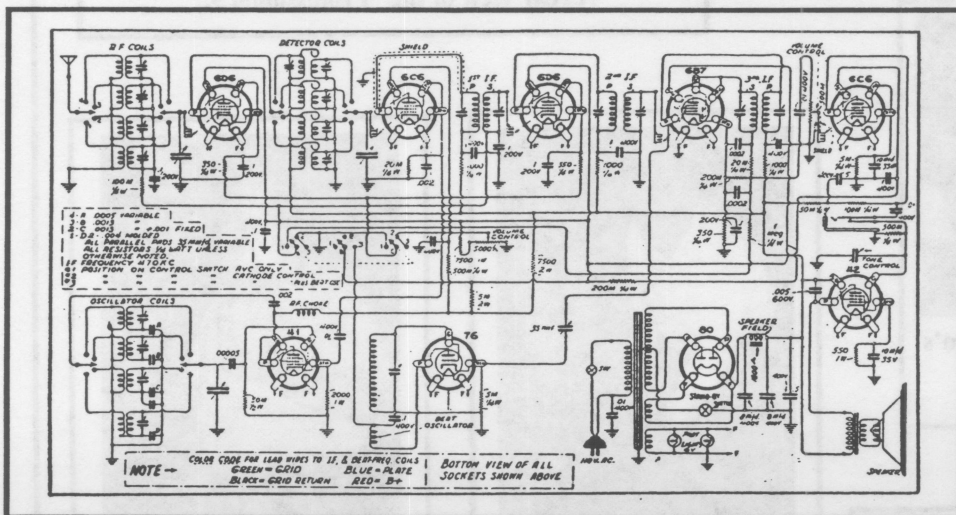
The following is an adaptation of an article by Frank Lester that appeared in the October 1935 edition of "Short Wave Craft."...Ed

When the popular amateur receivers were of the tuned R.F.-regenerative type, there were plenty of good kits on the market, and the ham who wanted to assemble his own had a wide choice of models to choose from. After the superheterodyne gained favor, excellent factory-built re-

ceivers were offered but the market offered very little in the form of worth-while superhet kits. The reason for this was simple - the average ham experienced quite a bit of difficulty in lining up the R.F. signal circuits. Unless an accurate service oscillator and reliable output indicating device was available, this was a pretty messy job and the builder was never certain that the receiver was working at peak effectiveness. Of course, regenerative receivers were not subject to this shortcoming since their circuits contained no fixed-tuned elements.

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The answer to this problem was solved by the Lafayette "Professional 9" which contained a pre-assembled and adjusted tuning unit. The receiver was supplied in complete kit form with a tuning range from 9.7 to 560 meters, an average sensitivity of less than 1 microvolt and a 7 kHz selectiv-

ity. The entire R.F. section, including a husky band switch and the twelve coils used in the pre-selector, mixer and oscillator circuits, was furnished as a single, wired unit, which bolted to the right side of the chassis. It was connected by a few short leads to a three-gang tuning capacitor and associated tubes. Assembly, wiring and adjustment of the set was simple and all concerns about tracking and proper overlap were eliminated.

The receiver itself was standard. An R.F. amplifier using a 6C6 was followed by a 6C6 mixer, a 41 local oscillator, a 6D6 first I.F. amplifier, a 6B7 second I.F. amplifier, a diode detector and AVC tube, a 6C6 A.F. amplifier, a 42 power output tube, a 76 beat frequency oscillator and an 80 rectifier. The use of a 41 as the local oscillator was a bit out of the ordinary but resulted in a high conversion value and strong oscillation at high frequencies.

A dynamic speaker, power supply and audio output stage were mounted on a separate chassis which was normally bolted to the left side of the tuner chassis. However, the unit could be separated and placed a short distance from the main chassis if desired. Tone was controlled with a small variable capacitor (not a resistor) across the grid of the audio output tube. The receiver also had a stand-by switch which opened the B-minus side of the power pack and killed the receiver during transmission.

For quick tuning, a low ratio drive of 25:1 was used; for accurate band-spreading, a 125:1 ratio was used.

NEUTRALIZING THE NEUTRADYNE

By Marv Beeferman

Neutrodyne sets closely followed reflex sets in the development of radio receivers and co-existed with 3-circuit regenerative sets for a while until the superhets took over. They were very popular when first introduced for their ability to tune in stations without squealing (oscillating); in fact, thousands were still being used in the late 30s. In addition, besides its high efficiency and freedom from oscillation, the neutrodyne had a novel and valuable feature - you could actually log it! That is, a station often would come in at the same place on the dials (there were three of them) twice in succession.

Unfortunately, once a neutrodyne got out of adjustment, it would howl with the best of them. Although most collectors are happy to get their restorations in at least a working condition, this article takes the process one step further, offering the methods that were used in the good old days to neutralize or "rebalance" a squealing neutrodyne receiver.

The neutrodyne circuit employs triodes as R.F. amplifiers, with special coils and capacitors to neutralize the R.F. voltage which, if allowed to feed backward through the tube's plate-to-grid path, would cause regeneration or squealing. General aging of parts, tube replacement or even changing the position of wiring will often change the neutralizing adjustment with the result that sharp hissing noises and squeals are heard when stations are tuned in. No doubt, most flea market acquisitions and finds retrieved from the dark recesses of an unforgiving attic have suffered such a fate.

How do you identify the neutrodyne? The mere fact that the receiver squeals when stations are tuned in does not mean that you have a neutrodyne. Many re-

ceivers which used triode R.F. stages usually had grid suppressor resistors connected between each control grid and tuning circuit to drop R.F. feedback and prevent squeals. Identifying characteristics of neutrodynes are triode R.F. stages with one neutralizing capacitor for each tuned stage. The capacitors are usually mounted on the chassis or on a small insulating panel. Midget trimmer capacitors (sometimes referred to as book condensers) are provided as neutralizing adjustments. Once they are located for each stage, you can carry out

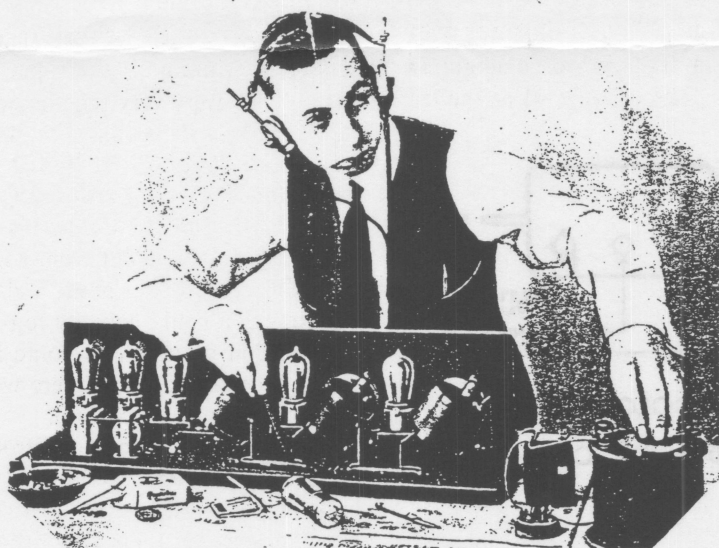
2. Tune the receiver to a local broadcast station operating somewhere near 1,500 kHz or connect a modulated signal generator to the antenna and ground terminals of the receiver and tune to 1,500 kHz.
3. Open the filament circuit of the tube at the last R.F. stage either by unsoldering the lead to the filament terminal or by slipping an insulator (a short length of shrink tubing or even a soda straw) over one filament prong. In the past, standard neutralizing adapters were available and inserted between the tube and its socket.

all, do not change the tube. Proceed to neutralize all other R.F. stages in the same manner, one by one, working toward the antenna.

9. If the receiver squeals at some other frequency (say 800 kHz) after eliminating the 1,500 kHz squeal, repeat the neutralizing adjustment at this frequency. If this produces oscillations again at 1,500 kHz, it will be necessary to reduce regeneration in some other way, possibly by reducing plate voltage. But before making any changes in the power supply system, be sure that there are no receiver circuit problems which could be causing regeneration.

References:

1. National Radio Institute, Radiotrician's Service Manual, Job Sheet No. 22, 1939.
2. K. H. Stark., How to Build Hazeltine's Neutrodyne Circuit Radio Receiver, August 1923.



The neutralizing procedure...the ashtray, pack of Chesterfields and matchbook shown in the lower left are not required.

the neutralizing procedure that follows regardless of the type of circuit employed.

Don't confuse alignment trimmer capacitors (which are mounted on variable capacitors) with neutralizing capacitors. On very old neutrodyne receivers, the neutralizing capacitor may consist simply of two metal rods mounted a short distance apart in a glass or fiber tube, with a metal sleeve fitting over the tube; the position of the sleeve is changed to vary capacitance.

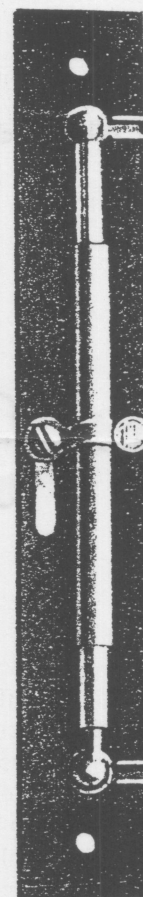
General Neutralizing Procedure

1. Always neutralize before aligning; a second neutralizing procedure may perhaps be necessary after alignment. Of course, if the set is originally way out of alignment, it may be wiser to align before neutralizing, and repeat both adjustments once again.

4. Turn the receiver on. With no filament emission, plate current will not normally flow through a tube. If a signal can be heard at the output, we know that the signal is passing from the grid to the plate through the inter-electrode capacitance of the tube. Therefore, this stage needs neutralizing in order to cancel the undesirable feedback signal. If signals can flow through the cold tube in this direction, they can also flow in the opposite direction when the tube is operating and produce oscillations.

5. Adjust the neutralizing capacitor in the stage until the signal is at minimum volume or cannot be heard. Then, retune the receiver dial for maximum volume and readjust the neutralizing capacitor for minimum volume.

6. Once the stage has been neutralized, do not make any more changes and, above



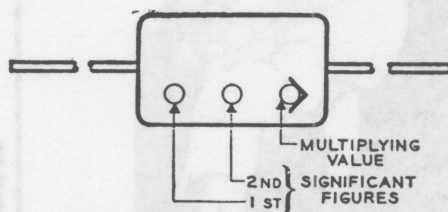
The Fada "Neutrodon" or neutralizing capacitor.

Obsolescent RMA Color Codes for Molded Mica Capacitors

Trying to figure out the color coding of molded mica capacitors can be difficult, especially if you're interested in voltage ratings, tolerance, insulation resistance, minimum Q, etc. One factor that adds to the confusion is that, in 1946, a new code was adopted based on the Joint Army-Navy (JAN) "black dot" color code. The revised six-dot code is easily recognized (if you still can read it) by a white dot in the upper left position of the two rows of color spots. The new code made no provision for a voltage dot since the working voltage of a particular capacitance in a particular mode was fixed by specification at 500 or 300 volts.

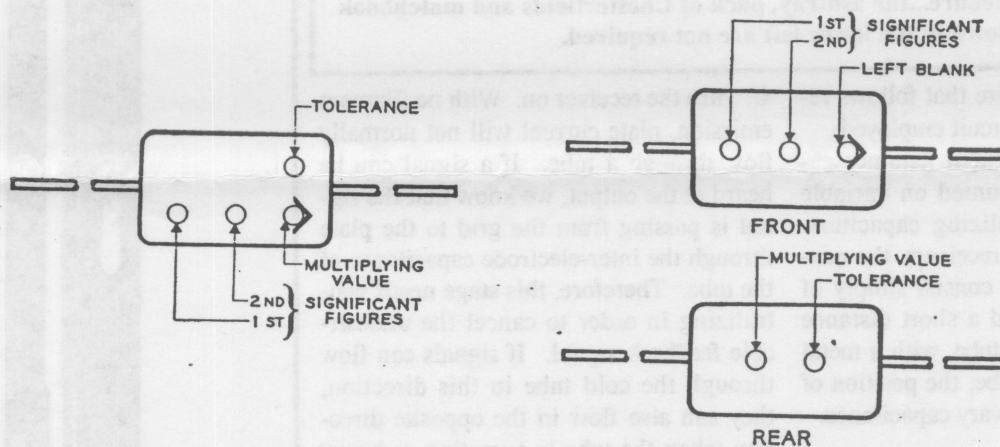
The old pre-war RMA code was supplemented between 1938-1941 by a rash of special streaks, stripes, squares, bars and other markings specified by receiver manufacturers to supplement identifying capacitor performance. These markings differed from manufacturer to manufacturer. The 1946 code can be found conveniently in most references. Published here, as an aid to restoring pre-1946 receivers, is the old RMA code which might be more difficult to find.

Source: Solar Manufacturing Corp., The Solar System, Vol. IV, No. 2 (July-August, 1946)



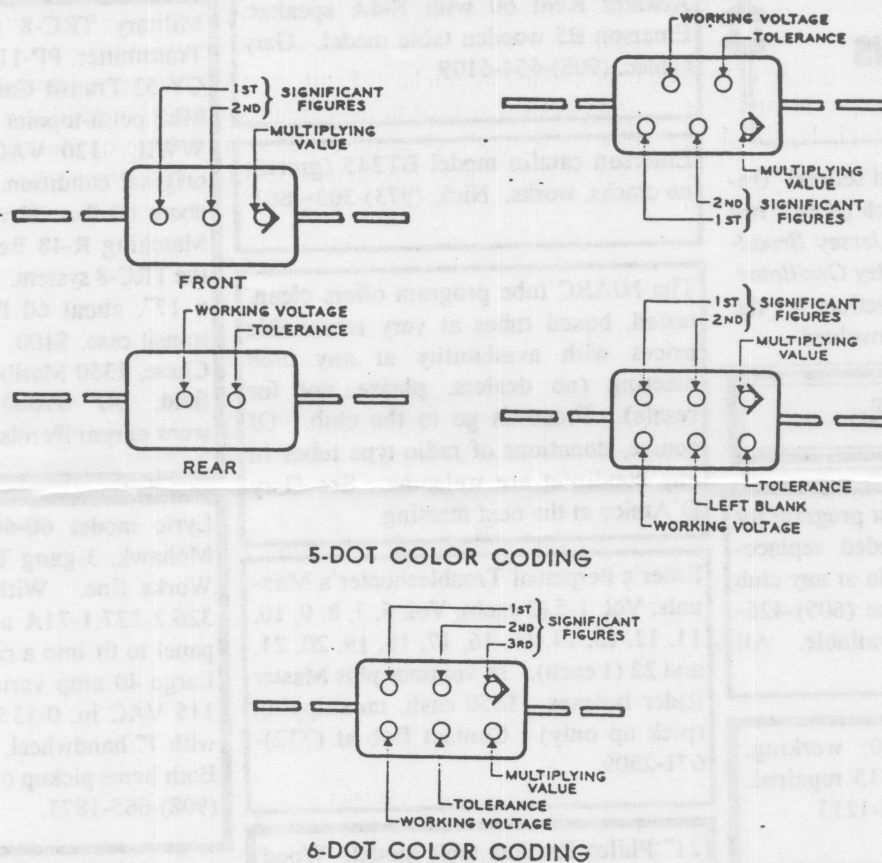
3-DOT COLOR CODING

All capacitors were rated at 500 WVDC. Capacitance tolerance was $\pm 20\%$.



4-DOT COLOR CODING

All capacitors were rated at 500 WVDC.



Color Significance for Obsolete RMA Capacitor Color Codes

Color	Significant Figure	Multiplying Value (mmf)	Capacitance Tolerance (%)	Voltage
Black	0	1		
Brown	1	10	± 1	100
Red	2	100	± 2	200
Orange	3	1000	± 3	300
Yellow	4	10,000	± 4	400
Green	5		± 5	500
Blue	6		± 6	600
Violet	7		± 7	700
Gray	8		± 8	800
White	9		± 9	900
Gold		0.1	± 5	1000
Silver		0.01	± 10	
No Color			± 20	500

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 and Canadian receivers, 1920s to 1960s. #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, PO Box 387, Ocean Gate, NJ. 08740. Phone: 609-597-2201; srosenfeld@ems.att

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.

Howard W. Sams Photofact Service Manuals, Volumes 1 thru 26, Sets 1 thru 260. \$50 or best offer. Bill Kilmurray, 908-852-3985, kilm@goes.com

Atwater Kent 60 with F-4A speaker. Emerson B5 wooden table model. Gary Gadec. (908)-654-6109

Emerson catalin model BT245 (green); no cracks, works. Nick. (973)-305-4861

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.

Rider's Perpetual Troubleshooter's Manuals: Vol. 1-5 (2 each), Vol. 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 22 (1 each). 18 volumes plus Master Rider Indexes. \$650 cash, no shipping (pick up only). Contact Bob at (732)-671-2809

21" Philco Predicta table model. Wood with walnut finish. Includes functional (not original) floor stand. Works, but picture is rough - \$450. RCA Radiola 18 (wooden cabinet is about 30" x 9" x 9"). Includes stand with speaker; works: \$150. Delivery a possibility. Bruce Knapp. Rutherford, NJ; 212-337-0077

Military WWII RAK-7, CND 46155 low freq., 6-band, 15kHz to 600kHz receiver with matching CND 20131 power supply and cable, all in "like new" condition; made by Andrea. \$100 Ray Chase, 1350 Malborough Ave., Plainfield, NJ 07060 (908)-757-9741 enrpnr@erols.com

Hallicrafters "Boat Anchor" communications receivers S-37, S-27, S-36A, SX-24, SX-25, SX-28(2), and SX-42. Also an RBL-5 14kc to 640kc receiver by National with some spare parts. No shipping, pick up at my QTH or will deliver to local meets. Call for price and condition. Ray Chase, 1350 Malborough Ave., Plainfield, NJ 07060. (908)-757-9741, www.enrpnr@erols.com

Military TRC-8 consisting of T-30 Transmitter, PP-115 Power Supply and CY-52 Transit Case. This is 230-250 Mhz point-to-point comm. gear from WWII. 120 VAC powered, in new original condition, 25" x 18" x 16.5", about 80 lbs. Have two - \$100 each. Matching R-48 Receiver, also part of the TRC-8 system. 120 VAC, 23" x 19" x 17", about 60 lbs., new in CY-51 transit case. \$100. Pick up only. Ray Chase, 1350 Marlborough Ave., Plainfield, NJ 07060. (908)-757-9741, www.enrpnr@erols.com

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" handwheel, 85 lbs., asking \$25. Both items pickup only. Harry Kundrat, (908)-665-1873.

WANTED

Information on "Lang" radios: literature, pictures, pricing, etc. Charles J Dreitleio, 515 Elizabeth St., New Milford, NJ 07646 (201)-384-3862

Information, circuit diagram, and purpose of the following set: 30-50 MC FM monitor, Knight model KG-220 by Allied Radio, Chicago, service number 8343111-610003-6N. Alton A. Dubois Jr., Peggy Ann Rd., Queensbury, NY 12804

Philco 116B shouldered tombstone radio. Norm Skolnick. 179 Prestwick Way, Edison, NJ, 08820. (732)-516-0046.

Repairs wanted: Have wind-up floor model Victrola. Winds and turns but stops when needle is lowered to record. Mildred Coleman, 5038 Gainer Rd., Phila. 19131. 215-879-3047 Ans. Machine: 215-477-8151