

THE NEWSPAPER FOR THE HOBBYIST OF VINTAGE ELECTRONICS AND SOUND

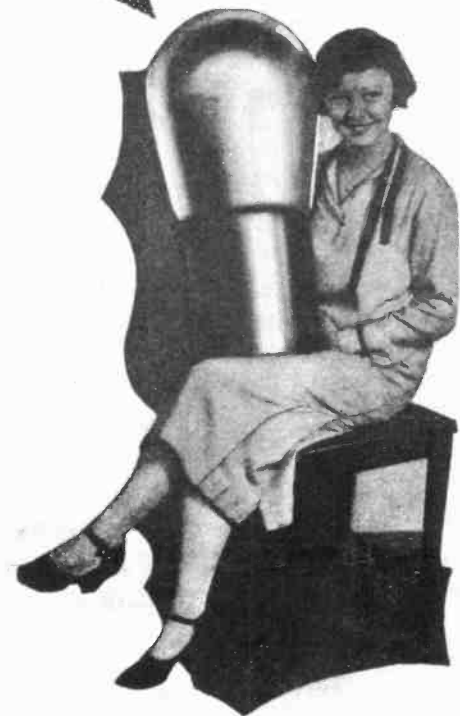
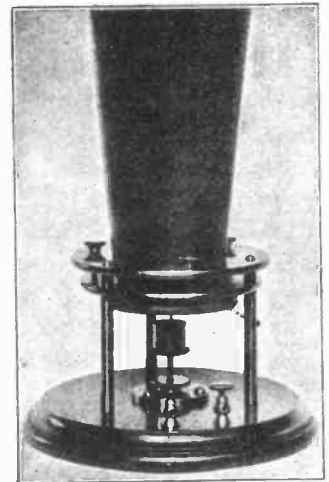
TELEPHONE CENTENNIAL 1876 - 1976

THE HORN SPEAKER

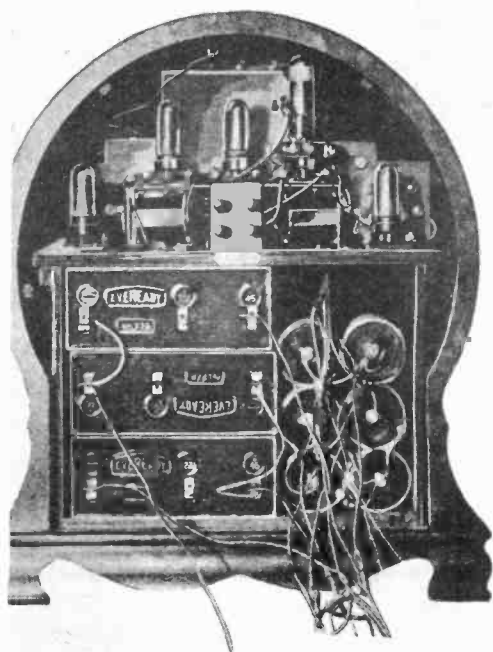
MERRY CHRISTMAS

1925

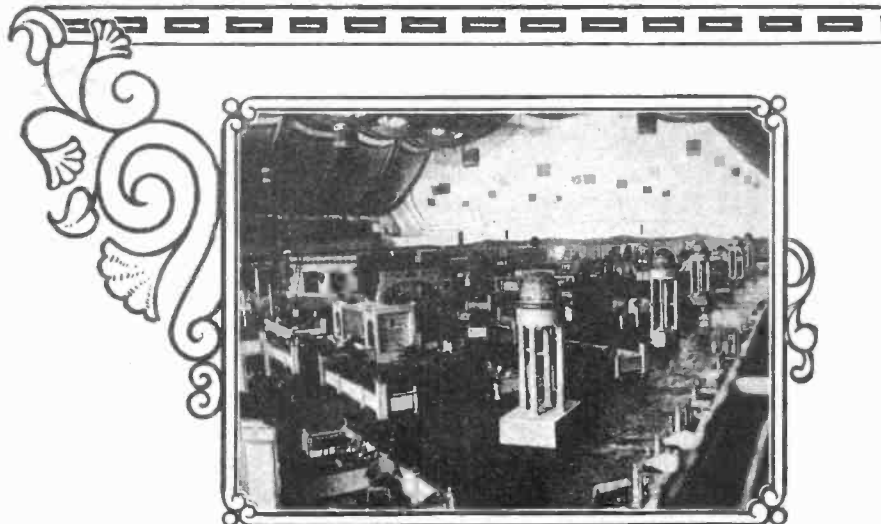
Radio Expositions



THE WORLD'S LARGEST VACUUM TUBE. Nearly everything at the radio shows in New York City was either "the largest or the smallest in the world" and the above appellation holds for this tube. © Fotograms.



RADIO RECEIVER RESEMBLES A CLOCK. Above is the rear view of the set shown on the opposite page. As can be seen, all the accessories are contained in the cabinet. © P & A Photo.



GENERAL VIEW OF RADIO WORLD'S FAIR. This exposition was held at the same time as the National Radio Exposition at the Grand Central Palace, both taking place in New York City. At both these shows many new developments in the radio art were shown for the first time.

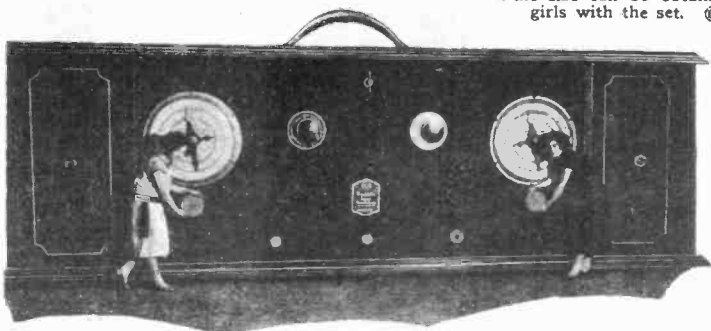
SOME idea of the actual greatness of radio may be gained from the fact that during the autumn season just passed, there have been more than a dozen radio shows given in this and foreign countries, which were attended by more than a million people. By comparison with other shows of a strictly class nature or appealing to a definite trade or industry, this is a record at which to marvel.

The opening of the season came in New York with its two shows, one given at the Grand Central Palace and the other at the 157th Regiment Armory. They were run from two different points of view and both received a large number of attendants. The total at the Palace ran to well near 100,000 people for the seven days.

Since the fall is the opening of the radio season, there were several novelties presented in both sets and equipment. As a matter of fact, a new trend was shown which has been predicted by RADIO NEWS for several months past. This trend is, of course, the single-control idea. An editorial in this magazine more than a year ago called attention to the logic of this design. And that the idea has at last been taken up by the chief manufacturers of the industry cannot be denied. A good percentage of the sets shown incorporated this idea and the others showed a visible reduction in the number and intricacy of controls.

Some of the interesting points in connection with the various shows are given in these two pages of illustrations.

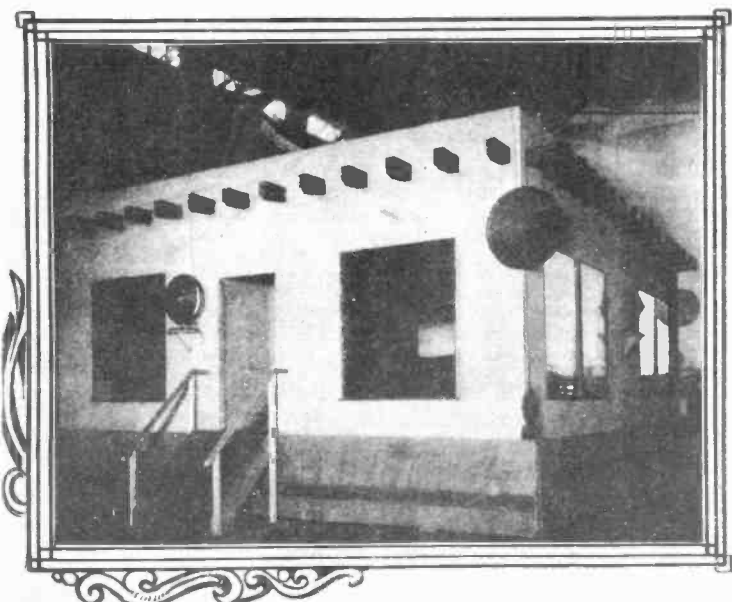
THE WORLD'S LARGEST RECEIVER. This monster "super-het" attracted great interest at the show. Some idea of the size can be obtained by comparing the girls with the set. © Kadel & Herbert.



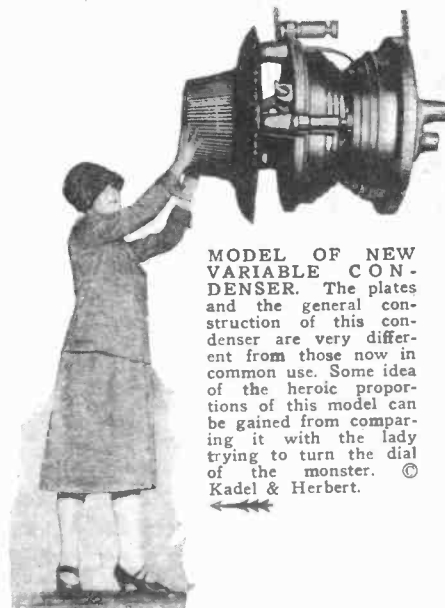
Following the New York shows which opened the season, there were others which took place in rapid succession in Philadelphia, Washington, D. C., Baltimore, Boston and Chicago. With one exception every show was a huge success and drew an attendance which compared favorably with that of the New York shows.

There were several other innovations besides the single-control idea which made their appearance. Of course, one of the most important was the incorporation of rectifiers and filters so that both the plate current and the filament supply could be

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THE CRYSTAL BOOTH AT THE RADIO WORLD'S FAIR. From this booth several interesting programs were put on the air by WRNY. © Fotograms.



MODEL OF NEW VARIABLE CONDENSER. The plates and the general construction of this condenser are very different from those now in common use. Some idea of the heroic proportions of this model can be gained from comparing it with the lady trying to turn the dial of the monster. © Kadel & Herbert.



FIND OF THE MONTH

I would like to relate to you an experience I had in my collecting. Like most collectors when traveling, I like to stop at every antique shop I see. On this particular day I had stopped at a little shop near Fulton, Kentucky, and asked the man who operated the shop if he had any old radios. He said that he didn't but that there was a part of an old radio on the floor in a corner of the shop. I picked it up and immediately saw that it was a Radiola III with one WD-11 in it. It was in very good condition except for the dust and dirt that covered it. Before I had a chance to ask the price of it, he said that he was asking eight dollars for it but that I could have it for five if I wanted it. Now if only I can be lucky enough to find an Atwater Kent Breadboard for a price like that! I'll continue looking.

I'm sure there are other collectors in the Memphis area. I would like to hear from them.

Sincerely,
Willis A. Rudolph
5608 Elmhurst Ave.
Memphis TN 38118

LETTERS

Dear Mr. Cranshaw:

I am very happy to see the reprints in the last 2 issues of The Horn Speaker of old phonographs.

I was especially pleased to see the copy of Edison records for 1908. These help to date records that people like me collect.

Would like to know if any of the readers have any original Russ Columbo records (Victor 22000 series) or any Bing Crosby records (Brunswick 6000 series)... am also interested in Paul Whiteman and Ted Lewis records of the 20's.

Thanks and best wishes.

Sincerely,
William Smith
6105 Queens Chapel Rd.
Hyattsville, Maryland 20782

Dear Brent:

I haven't written to you in a long time, but that article in the Sept. Horn Speaker, was a jewel, and I thought I'd better let you know how much I enjoyed it. That sort of thing is what the collecting hobby needs. Guys like you who have a lot of savy, and are willing to share it with others.

Regards,
Bob Lucas
9014 Mahoning
Houston TX 77074

Dear Sir:

I receive your fine Horn Speaker and enjoy it very much.

I would like to learn much more about Radio-Electronics Pioneer Hugo Gernsback and his writings. Can you put me on to some reading material that deals with this?

Any help would be appreciated.

Thank you,
K. A. Ladd
7525 Wentworth Ave.
Richfield, Minn. 55423

BACK ISSUES

The Horn Speaker

- All 10 back issues for 1973...\$8.00
- Single issues....\$1.00 each
- All 10 back issues for 1974...\$6.00
- Single issue.....\$.75 each
- All 10 back issues for 1975...\$5.00
- Single issue.....\$.75 each

Later, we should have complete volumes for 1972.

The Horn Speaker

Box 12 Kleberg, Texas

75145

REPAIR SERVICES GUIDES

For those who want to learn...

ATTENTION ANTIQUE RADIO COLLECTORS, EXPERIMENTERS, HERE IS OUR NEW HISTORICAL PACKAGE OF REPRINT LITERATURE!!!!!! VERY RARE BOOKS, MANUALS, AND CATALOGS!!!!!!

Solve all your old time radio problems...save on the long distance phone calls, inquiries, letters, and both of our valuable time. These rare books will enable anyone to repair, restore, find out about that unknown 1920-25 Kit radio, build from construction plans (like the old days) crystal sets, the First Marconi wireless sets and stations, one through 10 tube sets, any type of circuits, up to and including early mechanical Television Sets...use the same procedure a radio design engineer or technician uses: Most large old radio catalogs list the radio model number and exact part numbers, technical specifications of that unknown or bad transformer...use this data to secure a modern replacement, plus it is very educational...IF YOU PLAN TO DISPLAY your equipment, the judges will give you more POINTS with supporting LITERATURE!!!!!!

1. 1917 Practical Wireless Telegraphy "Ev. Ed., By Elmer Becher (10,000 printed) A complete text for students of radio comm., when radio was born, rare theory based on all MARCONI'S works, 350 illustrations, 17 chapters, 350 pages, appendix contains Questions and Answers to all...FIRST BOOK WIRELESS.....\$19.95.
2. 1920 The Wireless Experimenter's Manual By Elmer Becher Brother book to above HARK design and construction (how to build) ALL MARCONI'S equipment from each component to his complete station, a step-by-step analysis to show Radio Amateurs Radio Communication (started here) 358 pages, 14 chapters, over 244 illustrations, RARE Marconi wiring diagrams, other early manufacturers' such as De Forest, Grebe, Weagant, Poulsen, (try and buy the originals) all in museum...most comprehensive manual printed...all details.....\$19.95.
3. 1924 POPULAR RADIO HANDBOOK NO. 1, By Banning and Cockaday, All details How to construct and build crystal sets, one thru five tubers...all circuits, Book was the result of all their radio projects published in Popular Radio Magazine/newspapers, excellent for unknown kit radios, 100 pages.....\$6.95.
4. 1923-1924 Electrical Research Laboratories Bulletin No. 17 and 18 HMA Use-Matrix circuits//Scientific Audio Amplification, all design and construction plan of how to build these early radio stages, 20 pages.....\$2.95.
5. 1924-25 Modern Radio Reception, By Charles E. Louth A step by step detail analysis of all his works, How to build Regenerative, Super-sets, Filodoms, laboratory, transmitting data and equipment: He used parts from 17 major sources and made the first Classic A-its, Super sets, Models C7, C, Palmar, Super L, C-10, S, J, Type T22, Cunningham tubes all types, Rare Diagrams of Western Electric Equipment, Gen Electric and Radio, over 260 of the finest well illustrated diagrams test equipment, Complete Chapter on his law suit RCA, 345 pages...\$19.95
6. 1924 Radio Reading Course with 5 Lecture Books, By Prof. J.H. Marescault, We combined five books into one that covers Theory, Design, Construction, Operation, Maintenance, most authoritative on Radio Telephony, for general public to clear up misconceptions of radio experts during wartime and after, 188p.....\$2.95
7. 1927 RADIO KEY BOOK, By E.N. Rauland How to build models: All-American, All-Amat Jr., Sr., Browning Drake 4-2, Roberts-5-tube, Foraid, Lantry, Raulands, and 25 other radios, well illustrated, all details...ONE OF THE BEST REF. WE USE, 50p \$3.95
8. 1932 Radio Trading Co. Catalog No. 25, Radio bargains for all, covers all phases well illustrated, very educational, loaded with the Earliest TV'S/all accessories, manyidget receivers, tubes, all parts/model no's, etc., you will love it, 100p \$7.95
9. 1922-33 EMRO RADIO Catalog, 100 8 1/2 x 11 well illustrated, Radios: EMRO cathedrals, Washington Batt.-types, Crosley Johnny Smoker, Air King, Supreme, Jewell, Monarch, Envoyette, Grebe MU-1, Globe, National, RCA, Superior, best selected types, 100p \$7.95
10. 1933 RADIO-TV SUPPLY CO. WHOLESALE GUIDE CATALOG, 225 pages 8 1/2 x 11 selected and used by us, contains valuable descriptive data/tech, information for Radio dealers, Service men, Engineers and Amateurs...so well illustrated some parts are almost full page, contain model no., which use every part/subs THE BEST.....\$14.95
11. 1924-25 RCA Radiola Sales Catalog Booklet, Models: all sets and accessories Made in these years; III, III-4, VIII, Super-Hit, 25, 26, 28, 30, 20, Spiks, 22p.....\$2.95
12. 1927-28 RCA Sales Booklet, By Strawn March, Co. Texas, RCA'S: 16, 18, 30-A, 51, 50, 62, 64, all AT&T Access, Spiks: 100-A, 103, 106, tubes, 28 pages.....\$2.95

You

can't

beat

our

System

Literature



SHOP BY MAIL

We

aim

to

please

for those who want to remember...

13. 1929 RCA Radiola Model 66 Super-Heterodyne Instruction and Operations Manual Complete with wiring diagrams 16 pages, well illustrated.....\$2.95
 14. 1930 BURLY "Radio Instruction Book By Spiegel-May-Starn Co., For Screen Grid Models: 2F9853, 55, 57, 54, 56, and 9858 RARE 18 page with illustrations.....\$2.95
 15. RADIO TUBE TECHNICAL MANUAL, 80 pages we compiled by us as an result of alot of questions and answers, Contents: Theory of Radio Tubes, Radio tube tables featuring Receiving tube data from RCA and National Union (first tube spec sheets illustrating the earliest RARE tubes) kinescopes included, all diagrams, characteristics, Specification sheets and own hints on WD11, 99, 120, 201A, etc.....\$2.95
 16. OFFICIAL RADIO SERVICE MANUAL INDEX FOR 1931-32-33, 10 pages.....\$1.95
 17. J. F. RIDER'S MASTER INDEX FOR RADIO VOLUMES 1, 2, 3, 4, 42p write for others.....\$2.95
 18. J. F. RIDER'S MASTER INDEX FOR TV VOLUMES 1 thru 4, 50pages write for others.....\$2.95
 19. SUPREME PUBLICATIONS MASTER INDEX FOR ALL RADIOS/TV 1926-1952 34 pages.....\$2.95
 20. 1947 ARVIN RADIO DIAGRAMS-Supreme Publications, 34 pages, 38 models.....\$2.95
 21. 1947-48 PHILCO TELEVISION YEARBOOK, Years of the first production TV'S, contains Complete Service Information for all sets made...Projection Model 48-2500, schematics, diagrams, photos, well illustrated over 145 pages.....\$1.95
 22. 1924 VICTROLA BOOKLETS How to get the most out of your Victrola...36pages 1924 VICTROLA BEARING MOTOR TYPE Instructions, OperationsBook ...8pages BOTH BKS \$4.95
 23. 1921 RCA 4-1927 VICTOR RECORD AND MAGAZINE LISTING We have over 20 Major (620pages) booklets, magazines, catalogs, first issued, a must for the Record and Radio Collectors, lists the very RARE RADIO-RECORD Combinations Consoles such as Automatic Electrola No. 1070, prices included, Too numerous to mention Send \$1.00
 24. E. H. SCOTT CLASSIC RADIO FACTORY SERVICE MANUALS/LITERATURE LISTING: Reprints of literature 1922-1950, Rare items lots of pages.....\$1.00
 25. 1949 EMERSON RADIO/TELEVISION ORIGINAL FACTORY SERVICE MANUAL This consist of 50 different individual FSM combined into one 264 page manual, 121 models...\$14.95
 26. ORIGINAL TUBE SPECIFICATION SHEETS (wrapped around tubes in carton) For WD11, V1-5 W.M. 215A, De Forest VT Audion, Original Tubular Audion Vacuum Amplifier, C-299, UX-120, Radiotron UX-201A, Cunningham CX-37-A/301-A, RCA UX-250 each have their own circuits, we have left room for you to cut out label FOR USE IN LAST AUDIO STAGE ONLY, use on 71A and 112A/120 all 8 1/2 x 11 7 pages.....\$1.50
 27. NEED AN APPRAISAL? Any Radio, or early Scientific Device 1850-1950 \$3.00 each, ANY piece of literature \$0.50 each. Each appraisal comes on our standard form dated and signed, any and all sentimental value discarded, 100's have been done for collectors, antique shops etc., RULES: Send a good Photograph, Model No. if known, Manufacturer, tubes, knobs, dials, Style, condition, if all UNKNOWN, a rough sketch of all, 26p in stamps, all Photos returned, monies returned if we can not appraise. Send \$1.50 FOR ANY ITEM RESEARCHED, \$1.50 Any Schematics (5 pages) per set 1890-1950 Radios or any electrical device, ANY INQUIRY 26p in STAMPS PLEASE! OUR LATEST RADIO/WIRELESS RARE TUBE/REPRINT CATALOG \$1.00 (refundable first order)
 28. 1920-33 8 1/2 x 11 SHART, in living COLOR, of 54 Carbon Resistors 50 ohms to 10 megohms, solve all your mystery resistor problems, suitable for framing...\$2.25 each.
 29. 1924-1930 ORIGINAL ATWATER KENT FACTORY SERVICE MANUAL ENCYCLOPEDIA, revised and reprinted, 225 pages, 300 illustrations which covers everything you need to know about all models, speakers, accessories, 3 volumes, BEST SOURCE EVER \$15.00.
 30. NEW 1976 RADIO ANTIQUER'S DIRECTORY AND COLLECTOR'S GUIDE SERVICES QTR, covers all phases from A to Z, over 75 pages, the MOST IMPORTANT BOOK YOU CAN GET IN OUR HOBBY, STANDARD COPT \$5.00, all photo in living COLOR (where applicable) \$9.95.
 31. LATEST FLEA MARKET QUARTERLY DIRECTORY covers all markets in alphabetical order throughout U.S.A. and CANADA, getting bigger than ever, others who bought know \$2.25.
- NOTE: UNLESS OTHERWISE SPECIFIED ALL BOOKS SHIPPED BOOK RATE: For First class ADD \$3.00 per book, Special Handling To 2lbs 50¢, 2-10 lbs., 70¢, Over 10 lbs \$1.00 each, some weigh 3 lbs., If in doubt leave check blank, we will fill-in, refund excess. Calif. Res. 6% ST. CANADIANS: same as USA, NO insurance on AIR, PAYABLE IN US FUNDS, NO STAMPS, ADD \$2.50 For your check exchange rate, SAME FOR OTHER COUNTRIES. U. S. POSTAL SERVICE now requires a week for P-C MAIL, BK RATE 3 to 4 weeks, WE require 10 days to Process and Deliver. Insurance extra, Min. 40¢ 80¢ to \$100, ORDERS OVER \$30 FREE BONUS, Money Back Guarantee! ORDER ALL: HISTORICAL RADIO SERVICES, BOX 15370, DEPT. R310 Long Beach, Ca. 90815 USA.

Club News

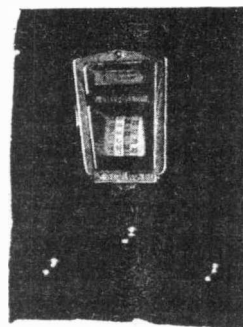
CONTEST WINNERS OF THE 1976 CONVENTION OF THE SOUTHWEST VINTAGE RADIO AND PHONOGRAPH SOCIETY

Best of Show: Walt Jackson (won the extra large trophy)

Catagories: a. is first prize, b. is second and c is third.

1. Crystal Sets
 - a. Glen Zook
 - b. Basil Abbott
 - c. Bill Miller
2. T.R.F. Receivers
 - a. John Alford
 - b. Walt Jackson
 - c. Bob Lucas
3. Regenerative Receivers (pre 1930)
 - a. Clarence Johnson
 - b. John Alford
 - c. Bob Sullivan
4. Super Heterodyne Receivers (pre 1930)
 - a. Basil Abbott
 - b. No entry
 - c. No entry
5. Components and Assemblies
 - a. Glen Zook
 - b. Jim Collings
 - c. Mr. Edwards
6. Loudspeakers (horn, cone, etc.)
 - a. Basil Abbott
 - b. John Rawlins
 - c. Glen Zook
7. Homebrew and Kit Receivers (pre 1930)
 - a. Clarence Johnson
 - b. Ross Smith
 - c. O. H. McDonald
8. Table model AC receivers (past 1930)
 - a. John Alford
 - b. O. H. McDonald
 - c. Bill Boruff
9. Console AC Receivers (past 1930)
 - a. Charles Lamb
 - b. Jim Collings
 - c. O. H. McDonald
10. Classic Receivers
 - a. J.W.F. Puett
 - b. No entry
 - c. No entry
11. Ham gear (pre 1940)
 - a. John Alford
 - b. Dave Medley
 - c. Glen Zook
12. Phonographs, outside horn
 - a. Bill Boruff
 - b. David Boruff
 - c. No entry
13. Phonographs, inside horn
 - a. Bob Sullivan
 - b. Bill Boruff
 - c. David Boruff
14. Telephone/Telegraph
 - a. Walt Jackson
 - b. Ross Smith
 - c. James Todd

TURN BACK THE DIAL



April 23, 1938
by Fred L. Davis

Metro-Goldwyn-Mayer's 14-year-old "Good News" songstress, Judy Garland, really was called back from her personal appearance tour because audiences disliked seeing such a youngster whip out burning TORCH SONGS....

Boners came in threes: When the LUX RADIO THEATER was aired on April 4th, pinch-hitting Edward Arnold slipped twice by announcing "Noyd Lolan" for Lloyd Nolan, and everybody held their breath awaiting the third muff. It came when mikesman Mel Ruick started his sign-off with "This is the National - - -" and then remembered that the show was on the Columbia Broadcasting System.

Jimmy Wallington, met on his return from New York, explained his differences with Eddie Cantor as merely over salary and the exclusive clause Eddie wanted in the contract. Jimmy is taking his first vacation

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LIST #15

CLOSE OUTS.....CLOSE OUTS.....CLOSE OUTS.....CLOSE OUTS.....SAVE \$\$\$

1. American Railway Assn. "Code of Rules" governing the condition of, and repairs to, freight and passenger cars 1931, WAS \$7.50, NOW \$4.00
2. Anderson, Edwin P., "AUDELS RADIOMAN'S GUIDE" 1948, WAS \$8.50, NOW \$4
3. Atherton, Ralph A., "PRINCIPLES OF RADIO FOR OPERATORS," 1945, 344 pages, WAS \$4.00 NOW for the small sum of \$2.00
4. "AUDELS NEW ELECTRIC LIBRARY", vol II, 1942, WAS \$5.00, NOW \$2.00
5. "ELEMENTARY ELECTRICITY", 1918, Illustrated, WAS \$8.00 NOW \$4.00
6. American School of Correspondence, 4 Vol "CYCLOPEDIA OF TELEPHONY AND TELEGRAPHY" 1911, See list 13 for full description, excellent set that must find a home WAS \$35.00, NOW \$20.00 Grab this set fast!!!!
7. "DO YOU WANT TO GET INTO RADIO?", 1940 (broadcast) WAS \$5.00, NOW \$3
8. "A TEXT OF GENERAL INFORMATION" long lines of AT&T WAS \$11.95 NOW \$5.00
10. "BOSTON, A GUIDE BOOK" including telephone landmarks in and near Boston, 1928, WAS \$6.50, NOW \$3.00
12. AIRBRAKE CATECHISM" Westinghouse Air Brake Co, railroad, WAS \$10., \$5.00
13. Burns, E.E., RADIO-A STUDY OF FIRST PRINCIPLES 1928 WAS \$7.50 NOW \$4.00
16. 3 book set, COYNE ELECTRICAL AND RADIO SCHOOL REF ENCYCLOPEDIA 1943 1212 pages WAS \$18.00, NOW \$9.00
17. APPLIED PRACTICAL RADIO, 3 books, 1947 WAS \$10, NOW \$6.00
19. THE MOON ELEMENT 1924 well illustrated, WAS 15.95 NOW \$8.00
20. ELECTRICAL AND RADIO DICTIONAR' 1945 WAS \$3.95, NOW \$2.00
21. GE HAM NEWS bound vol VI, No 1 thru vol X No.6, WAS \$10.00 NOW \$7.00
22. Gernsback library, TRANSISTORS THEORY AND PRACTICE 1957 4.50 NOW \$2.00
23. Ghirardi RADIO PHYSICS COURSE 1932 & 33, WAS \$10.95 NOW \$6.00
24. principles of radio eng 1936, good pix and illus. WAS \$6.95 NOW \$3.00
25. HAWKINS ELECTRICAL GUIDE, books 1 thru 8, fine set You need this group, so you can read all winter \$25.00, NOW \$15.00
27. MODERN RADIO PRACTICE 1927, well illustrated WAS \$8.95, NOW \$4.00
29. BASIC RADIO tubes and their circuits, 1942 NOW \$3.00
30. Henney, PRINCIPLES OF RADIO 1938, illustrated, WAS \$4.00 NOW \$2.00
31. Iles, FLAME ELECTRICITY AND THE CAMERA inc. telegraphy, a real fine history book, WAS \$ 20.00, Now \$9.00
33. ELECTRIC WIRING, 1936, WAS \$5.00 NOW \$2.00
34. ELECTRICITY AND MAGNETISM 1902 WAS 9.95 NOW \$5.00
36. WIRELESS TELEGRAPHY 1906 WAS \$15.95, NOW \$8.00
37. PRIMARY AND STORAGE BATTERIES 1945 WAS 6.50 NOW \$3.00
38. INDUSTRIAL ARTS ELECTRICITY 1956 WAS \$ 3.50 NOW \$2.00
39. ELEMENTS OF RADIO Vol I 1943 NOW \$6.00; Vol II, \$6.00, BOTH \$10.00
40. ELEMENTS OF RADIO, 1943 WAS \$7.95 NOW \$5.00
41. RADIO AND ELECTRONIC DICTIONARY 1931, WAS \$8.95 NOW \$4.00
42. DRAKES CYCLOPEDIA OF RADIO AND ELECTRONICS 1951 WAS \$12.50 NOW \$5.00
43. THE FIRESIDE UNIVERSITY 1912 (science) WAS \$25.00 NOW \$15.00
45. RADIO OPERATING QUESTIONS & ANSWERS 1948 NOW \$3.00
46. STORAGE BATTERIES SIMPLIFIED 1919 WAS \$10.00 NOW \$6.00
49. ARITHMETIC OF ELECT 1906 WAS \$5 NOW \$2.00
50. ESSENTIALS OF RADIO 1948 NOW \$2.00
51. ESSENTIALS, ELECTRICAL OF RADIO 1944 NOW \$1.00
52. ESSENTIALS OF RADIO 1948 reprinted for Armed Forces... NOW \$1.00
53. ESSENTIALS OF ELECTRICITY 1913 WAS \$8.00 NOW \$4.00
54. BASIC ELECT FOR COMMUNICATIONS 1943 WAS \$4.00 NOW 2.00

56. THE ELECTROMAGNET 1903 WAS \$8.00 NOW \$3.00
57. THE FUNDAMENTALS OF ELECTRONICS 1945 WAS \$3.00 NOW \$1.00
- 58.
58. THE ELECTRIC TELEGRAPHIC CODE 1901, WAS \$25.00 NOW \$20.00

LIMITED QUANTITY.....NEW (OLD)

BOXED TEST METERS

THE UKO TEST METER makes it possible for YOU to test your own 1 1/2-90 volt radio A-B Battery. Simple directions tell you how to test the A and B sections of your battery. See for yourself if it needs replacement. No use discarding a live battery. Save time and money with a UKO Test-Meter.

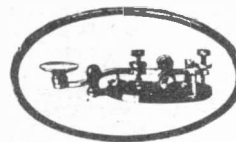


The UKO \$8.00 Postpaid TEST-METER

CLOSEOUT ON MUSIC BOX..... DESIGNED LIKE OLD CURVE TOP RADIO IDEAL FOR PRESENT "HAPPY DAYS" BUY SEVERAL AT THIS LOW PRICE 3 1/2" TALL

63. Collins, A. Frederick, THE RADIO AMATEUR'S HANDBOOK, 1943 \$7.50
64. Collins, A. P. THE BOOK OF WIRELESS 1915 \$12.00
65. CBS RADIO IN 1937 surveys, a book for executives who wanted to know the number and quality of families in the radio audience \$8.00
66. ELECTRICITY NOTES ON ELECTRICITY published by His Majesty's Stationery office, 1911, 236 pages, \$8.50
68. Frederic, Wilson, TELEGRAPHY AND HOW TO LEARN IT 1901 89p. \$15.00
70. Hale, J.W. PRACTICAL MECHANICS AND ALLIED SUBJECTS 1915 \$4.00
74. ICS A TEXTBOOK ON ELECTRIC LIGHTING AND RAILWAYS 1901 \$6.00
75. Keen, R. WIRELESS DIRECTION FINDING 1947 \$3.00
76. Laughter, Victor WIRELESS TELEGRAPH AND TELEPHONE HANDBOOK \$14.00
81. Mills, John RADIO COMMUNICATION THEORY AND METHODS WITH AN APPENDIX ON TRANSMISSION OVER WIRES, 1917 \$5.00
82. Moreton, David P. DRAKE'S TELEPHONE HANDBOOK 1915. \$11.00
83. Popular Science RADIO FOR THE MILLIONS 1943 \$5.00
85. Radcliffe, W.H. TELEPHONE CONSTRUCTION, INSTALLATION, WIRING, D OPERATION AND MAINTENANCE
86. Sperry Gyroscope Co MICROWAVE TRANSMISSION DESIGN 1944 a \$2.00

WALTS EMPORIUM



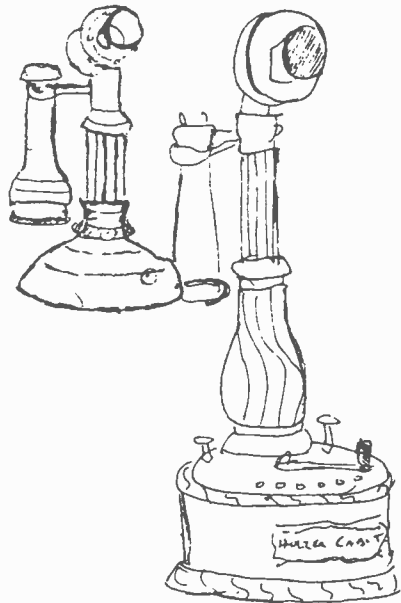
WALT JACKSON

P O BOX 19406 DALLAS, TEXAS 75219
EVENINGS - 214 762-7855

PLAN NOW TO ATTEND SOUTHWEST VINTAGE RADIO AND PHONOGRAPH SOCIETY CONVENTION-1977

THE TELEPHONE HISTORICAL CHRONOLOGICAL CHART

by Brent Dingman



1875:

6-2-75

Alexander Graham Bell and Tom A. Watson develop the first Telephone-Harmonic Telegraph receiver at 109 Court Street, Boston, Mass.

1876:

3-7-76

First telephone patent issued Alexander G. Bell.

3-10-76

First complete sentence transmitted by Bell's telephone.

4-10-76

First two-way telephone transmission over an outdoor line, two miles, Boston to Cambridgeport, Mass.

6-6-76

First transmitter and receiver exhibited at the Philadelphia Centennial.

1877:

2-7-77

Thomas A. Edison invents and patents the Carbon Transmitter.

5-77

The first telephone switchboard was installed in the office of E. T. Holmes, Boston, Mass., serving four banks, by day a telephone system, night burglar Box and wooden hand-type telephones were introduced and used.

6-77

First Telephone Organization established: A. Bell, T. Watson, T. Sanders, and G. Hubbard, they now owned the patent and eventually became parts of Bell Tel.

7-7-77

First real non-profit telephone exchange was established at Bridgeport, Conn.

8-77

1878:

2-78

Wall telephone complete in wooden box introduced, also Wall Transmitters.

2-78

Formation of the New England Telephone Company.

1-28-78

First Switchboard for Commercial Telephone exchange use installed at New Haven, Connecticut with 21 subscribers, another at Meriden Conn.

2-17-78

California Telephone Exchange at San Francisco.

3-18-78

New York Telephone Exchange at Albany.

4-78

Delaware Telephone Exchange at Wilmington.

4-19-78

Massachusetts Telephone Exchange at Lowell.

5-1-78

Missouri Telephone Exchange at St. Louis.

6-18-78

Illinois Telephone Exchange at Chicago.

7-78

The Bell Telephone Company was formed for Commercial development.

8-2-78

Oregon Telephone Exchange at Portland.

8-5-78

Michigan Telephone Exchange at Detroit.

9-1-78

New Hampshire Telephone Exchange at Manchester.

9-2-78

Iowa Telephone Exchange at Keokuk.

9-2-78

Ohio Telephone Exchange at Cincinnati.

11-14-78

Pennsylvania Telephone Exchange at Philadelphia.

11-15-78

Wisconsin Telephone Exchange at Neenah.

12-1-78

District of Columbia Telephone Exchange at Washington.

1879:

1-2-79

First Universal Switchboard is introduced.

1-2-79

Maryland Telephone Exchange at Baltimore.

1-3-79

Candlestick with Wooden Box on top with transmitter Desk-type introduced.

1-79

Boy Operators are used.

1-79

First Multiple Switchboard was installed in Chicago, Illinois.

2-15-79

Minnesota Telephone Exchange at Minneapolis.

2-24-79

Colorado Telephone Exchange at Denver.

2-25-79

Kentucky Telephone Exchange at Louisville.

3-79

The Bell Telephone Company and New England Telephone Company merged into the National Bell Telephone Company.

3-79

Indiana Telephone Exchange at Indianapolis.

3-79

Hawaii Telephone Exchange at Kahului, Maui.

3-15-79

Louisiana Telephone Exchange at New Orleans.

4-1-79

Virginia Telephone Exchange at Richmond.

4-2-79

Rhode Island Telephone Exchange at Providence.

6-1-79

Vermont Telephone Exchange at Burlington.

6-1-79

Nebraska Telephone Exchange at Omaha.

6-1-79

Georgia Telephone Exchange at Macon.

8-15-79

New Jersey Telephone Exchange at Camden.

8-21-79

Texas Telephone Exchange at Galveston.

8-26-79

South Carolina Telephone Exchange at Charleston.

1879:

9-1-79

Maine Telephone Exchange at Portland.

9-20-79

North Carolina Telephone Exchange at Raleigh.

11-1-79

Arkansas Telephone Exchange at Little Rock.

11-15-79

Alabama Telephone Exchange at Mobile.

12-79

Tennessee Telephone Exchange at Nashville.

12-79

Kansas Telephone Exchange at Topeka.

1880:

1-1-80

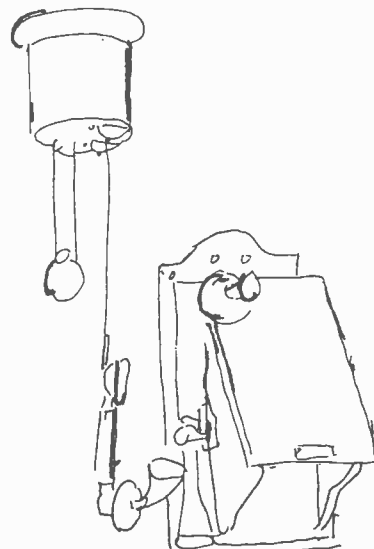
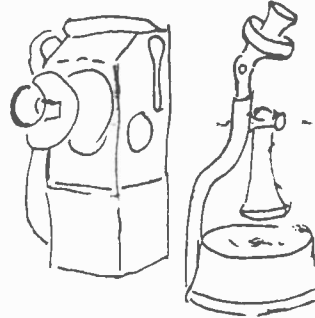
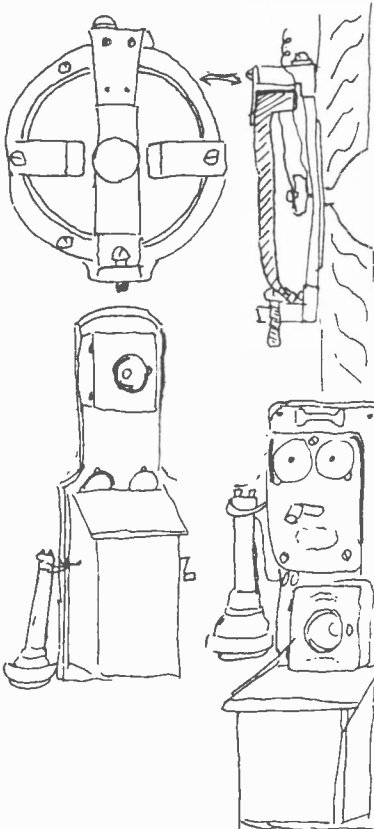
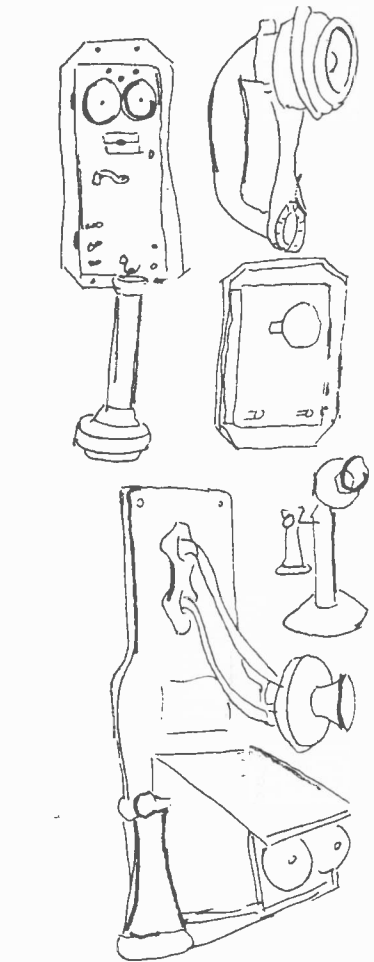
The Law and Gilliland Boards are introduced, Operators headsets weight is 6 pounds, the transmitter wooden box same as small wall phone.

1-1-80

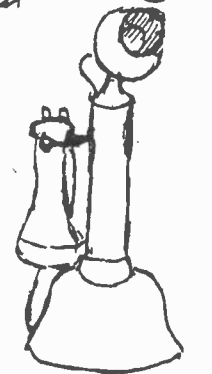
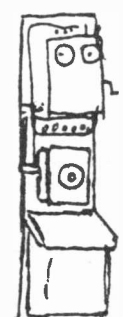
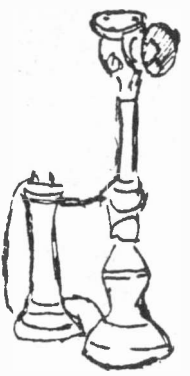
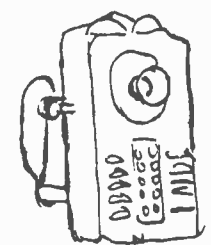
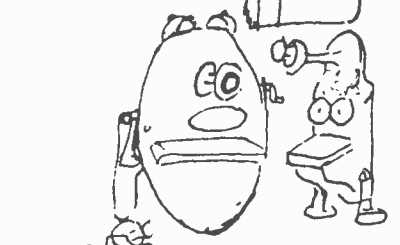
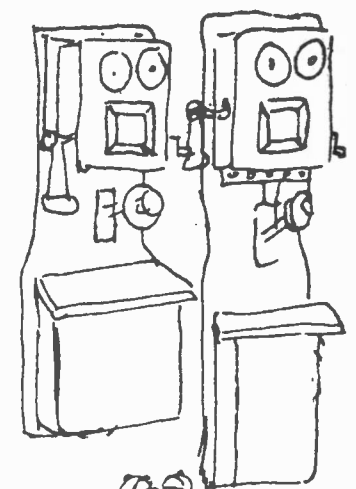
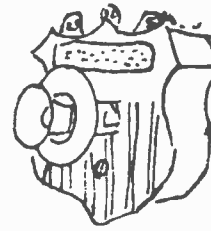
47,900 telephones now in use, all Bell owned.

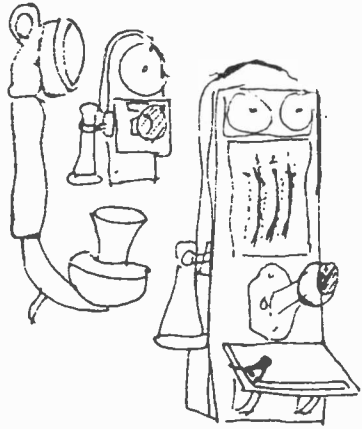
4-80

National Bell Telephone Company needed further capital, therefore was reorganized by the management of Theodore N. Vail and William H. Forbes and formation of the American Bell Telephone Company was born.



- 5-15-80 West Virginia Telephone Exchange at Wheeling.
 5-24-80 Florida Telephone Exchange at Jacksonville.
 9-80 Utah Telephone Exchange at Ogden.
 10-80 South Dakota Telephone Exchange at Deadwood.
 1881: Conversation by overhead line 45 miles—Boston to Providence.
 1-1-81 Conversation by underground cable 1/4 mile.
 1-81 Western Electric Company Consolidation and history:
 In 1869 Elisha Gray and Enos Barton formed Gray and Barton, in 1872 Gray and Barton became the Western Electric Manufacturing Company—world's largest manufacturer of telephone equipment, the predecessor of Western Electric Company a subsidiary of the Bell system.
 1-10-81 Mississippi Telephone Exchange at Vicksburg.
 3-1-81 Montana Telephone Exchange at Miles City.
 3-22-81 Wyoming Telephone Exchange at Cheyenne.
 4-1-81 North Dakota Telephone Exchange at Fargo.
 4-1-81 Arizona Telephone Exchange at Tucson.
 8-1-81 New Mexico Telephone Exchange at Las Vegas.
 1882: 1-18-82 Western Electric Company became the headquarters for Bell Telephone, apparatus and equipment—through 1940 W. E. had three principal Plants, Hawthorne Works—Chicago, Ill., Manufactures Telephones, Dial-Central Office equipment, loading coils, local and toll cable; 2nd largest is the Kearny Works—on Passaic river New Jersey—Switchboards, vacuum tubes, cables, Non-Bell-type equipment transmitting and receiving equipment for marine, aviation, police, public address, hearing aids, and scientific instruments; Point Breeze Works—at Baltimore, MD.: Wire, cable, cords, fuses, and terminals, along with 30 warehouses in principal cities of the U. S. A.
 2-1-82 First experimental cables were laid for a short distance along a railroad track in Massachusetts. First Pyramid Switchboard used.
 2-1-82 Nevada Telephone Exchange at Virginia City.
 1883: 3-7-83 Washington Telephone Exchange at Seattle.
 6-15-83 Oklahoma Telephone Exchange at Oklahoma City.
 9-15-83 Idaho Telephone Exchange at Hailey.
 1884: 1-84 Conversation by overhead line (hard-drawn copper), 235 miles Boston to New York.
 1-84 105,000 telephones all Bell owned.
 1885: 1-85 The American Telephone and Telegraph Company was organization towards national telephone service and formed to build and operate long distance lines to interconnect the regional companies that developed, by merger, growth, from local and early licensee companies. Theodore N. Vail Became the FIRST PRESIDENT.
 1886: 1-1-86 By this date there were only 34.17 miles of wire underground out of 155,791 miles.
 1887: 1-1-87 Introduction of twisted pair conductors paved the way for the extensive use of all cables.
 1890: 1-1-90 227,900 telephones, all Bell owned.
 1891: 3-10-91 First Automatic Telephone Exchange Patent Number 447,918 issued to Almon B. Strowger. Strowger Automatic Telephone Exchange Company was formed, became Automatic Electric Company—now (1976) a Subsidiary of General Telephone Electronics.
 1892: 1-1-92 First Desk-type telephone introduced with base (wooden) terminals on top, receiver with cradle-holder.
 1-1-92 First conversation by overhead line, 900 miles—New York to Chicago.
 11-11-92 First Automatic Telephone Exchange (push-button-system) installed at La Porte, Indiana in the old ridgeway Building, second floor apartment.
 1895: 1-1-95 Three new types of desk telephones introduced—candlesticks—no terminal visible.
 1896: 1-1-96 First (automatic) Finger-Wheel-Dial System (type used today) installed at Albion, New York. 10 different types of desk telephones introduced.
 1898: 1-1-98 Alaska Telephone Exchange at Juneau.
 1900: 1-1-00 The American Telephone and Telegraph Company took over all assets of the American Bell Telephone Company becoming the central and main headquarters of the present Bell Telephone System; Western Electric—Bell Laboratories—as of 1940 24 controlled U. S. Telephone systems—two non-control. 855,900 telephones owned by or connecting with Bell System.
 1-1-00
 1901: 1-21-01 Elisha Gray Died: Inventor/Educator founder Western Electric Manufacturing Co.
 1902: 1-1-02 First Conversation by long distance underground cable—New York to Newark.
 5-26-02 Almon Brown Strowger Died.





1906:

1-1-06

Conversation by underground cables 90 miles-New York to Philadelphia.

1909:

3-1-09

After an early sleet storm that swept the Atlantic Seaboard, paralyzing communications and isolating the capital at the time of President Taft's inauguration...Theodore N. Vail President of ATTC issued a note to all "Put those wires underground"

1910:

1-1-10

5,683,000 telephones owned by or connecting with the Bell System.

1911:

1-1-11

Conversation by overhead line, 2,100 miles-New York to Denver.

1913:

1-1-13

Conversation by overhead line, 2,600 miles--New York to Salt Lake City Utah.

1-1-13

Conversation by Underground Cable, 455 miles--Boston to Washington, D. C.

1915:

1-1-15

Bell Engineer's develop tubes for long distance telephone amplifiers.

1-1-15

First successful demonstration of RADIO TELEPHONY, Speech was transmitted from Montauk Point, Long Island to Wilmington, Delaware-250 Miles.

1-10-15

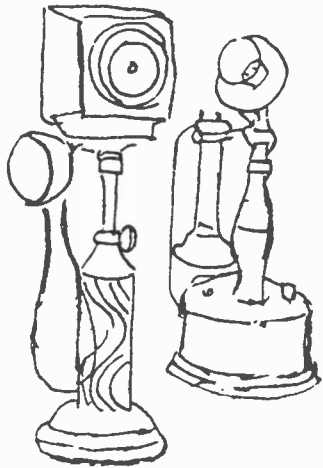
First Conversation by transcontinental line, 3,650 miles-Boston to San Francisco

1-15-15

First Conversations by transcontinental-telephone-the Panama Pacific Exposition at San Francisco..Line was opened between President Woodrow Wilson at Washington D. C., Alexander G. Bell at New York, Thomas A. Watson at San Francisco, Theodore N. Vail at Jekyl Island off Georgia.

10-1-15

Experimental Transoceanic Radio Telephony with Speech was First Achieved from Arlington, Va., across the Atlantic to the Eiffel Tower, Paris, back to the American continent to Honolulu, Hawaii....nearly 5000 miles.



1920:

1-1-20

12,602,000 Telephones now owned by or connecting with Bell System.

2-1-20

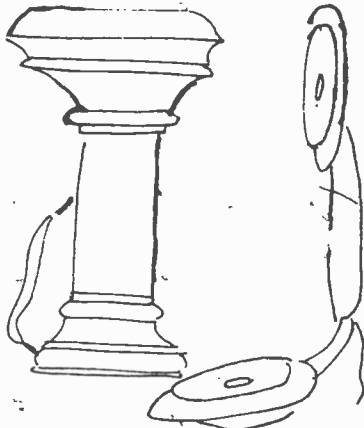
First regular commercial Radio Telephone Service was established between Santa Catalina Island off California (L. A.) and the U. S. A.

4-16-20

Theodore N. Vail Telephone Utilities Pioneer/Executive Died

5-1-20

First ship-to-shore radio telephone communications between two ships from Deal Beach, N. J. was successful.



1921:

1-1-21

Conversation by deep sea cable 115 miles-Key West, Fla., to Havana Cuba.

1-1-21

First conversation between Havana and Catalina Island by Submarine Cable, Overhead and Underground lines and radio telephone-5,500 miles.

2-1-21

Boston to Philadelphia extension cable to Pittsburgh-621 miles.

1922:

8-2-22

Alexander Graham Bell Inventor of the Telephone Died.

1923:

1-1-23

Ship-to-Shore conversation by wire and wireless between Bell Telephones in homes and offices and the S. S. America 400 miles at sea in the Atlantic.

2-1-23

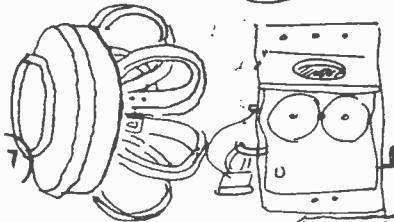
A Southern route by way of El Paso Texas and Los Angeles, Ca. completed.

2-10-23

Successful demonstration of transoceanic radio telephony from New York City to a group of Scientists and journalists in New Southgate, England.

12-6-23

The first events of national importance to the public was President Coolidge's first message to Congress which was simultaneously broadcast by six stations in New York, Washington, Providence, Kansas City, St. Louis, and Dallas.



1924:

2-1-24

First Public Demonstration of Picture Transmission over Telephone Circuits New York to Cleveland, Ohio.

1925:

2-1-25

New York to Chicago Storm-proof cable (861 miles) overhead-underground; 16,720,000 telephones interconnected in the United States.

1926:

3-1-26

Graybar Electric Company Incorporated.

5-1-26

Successful test of two-way transatlantic radio telephony.

6-10-26

New York to Chicago, all-cable telephone line extended to St. Louis.



1927:

1-27

Transoceanic telephony service inaugurated between New York and London.

2-27

Northern transcontinental telephone line formally opened.

4-7-27

First Public demonstration of Television by Radio and wires-at Washington D.C. and New York all parties could see and hear conversations both ways..later in the year using telephone circuits Bell labs demonstrated Television between New York and Whippany N. J.

7-7-27

Telephone service between the United States and Mexico was established.

1928:

2-1-28

Transoceanic Telephone Service extended to principal countries of Western Europe. Also Graybar Electric Company Employee' bought all shares from Western Electric Manufacture Company.

1929:

4-1-29

Ship (S. S. Leviathan) to Shore Telephone Service was established.

5-1-29

Color Television was demonstrated by Bell Laboratories;

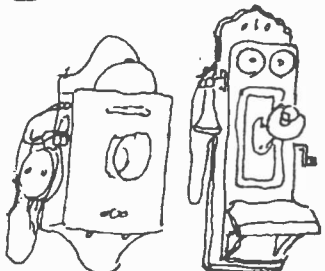
1930:

7-1-30

Transoceanic telephone service opened to South America and Australia.

7-30

20,093,000 telephones interconnected in the United States.



- 1931:**
 1-31 First Teletypewriter exchange service established.
 2-31 Fourth major telephone cable to Cuba Opened.
 8-1-31 Transoceanic service extended to Java, Sumatra, Bermuda, Hawaii, Canary Isl.
 10-18-31 Thomas Alva Edison Inventor Died.
- 1932:**
 1-32 Transoceanic service extended to South Africa, Egypt, Siam, Bahamas.
- 1933:**
 1-33 A telephonic system for high quality transmission and reproduction of orchestral music demonstrated by Bell Engineers.
- 1933:**
 2-33 Transoceanic Service extended to the Philippines, Canal Zone, Central American Countries, Palestine and India.
 2-33 Ship-to-Shore Radio Telephone Service was initiated for small boats operating in the vicinity of Boston. Now all major coastal cities utilize this system.
- 1934:**
 1-34 T-Service extended to Japan, Transoceanic.....
- 1935:**
 1-35 First Telephone Conversation around the world.
- 1936:**
 1-36 First new development by Bell Engineer's of a coaxial Cable capable of transmitting more than 200 telephone conversations.
- 1937:**
 1-37 First Motion Pictures using this new coaxial cable system were transmitted proving its characteristics were suited for television purposes, now wider frequencies and bands will increase capacity to about 500 channels.
 4-1-37 Transoceanic Service extended to China, Bulgaria, Alaska, Haiti, and Iraq, now 95% of the world's telephones are within reach of any Bell System Telephone.
- 1938:**
 1-38 Direct radio telephone circuit established between San Francisco and Australia.
- 1939:**
 1-39 Desk type Telephones-four types similar to the ones we use today (1976) introduced. A complete ship-to-shore network was established. Operator's Headset weight is reduced to 13 oss.
- 1940:**
 1-40 Network established for a message from the President using special wire hook-up (telephone circuits) to Broadcasting Stations in the U. S. A.
 A. One Program Originating Point-Washington D. C. B. 178 Radio Stations
 C. 117 Telephone offices feeding radio stations.

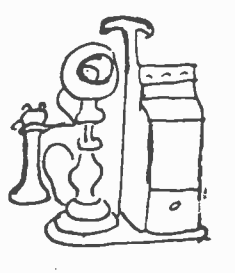
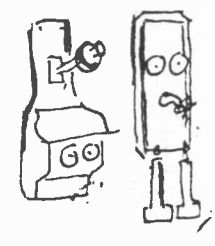
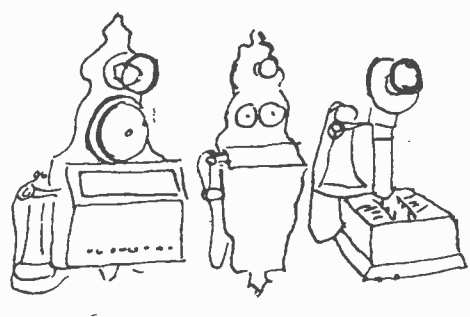
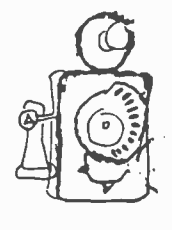
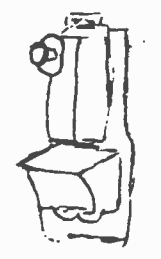
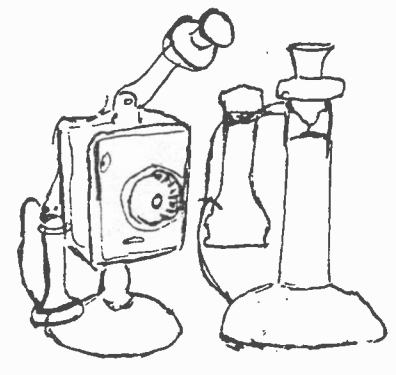
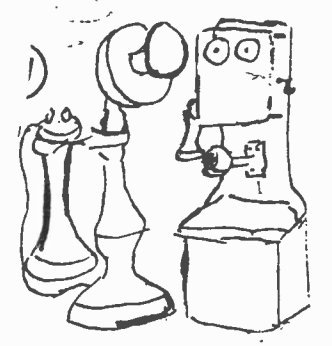
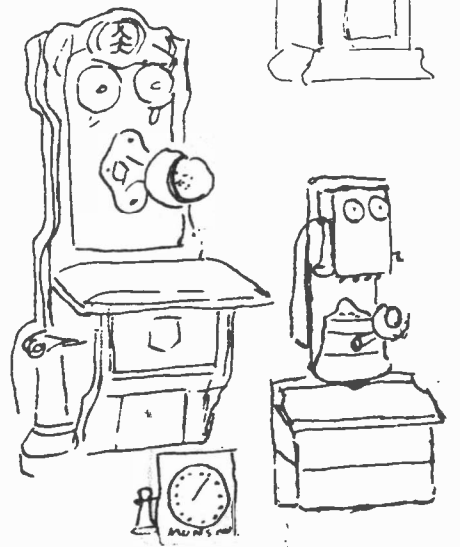
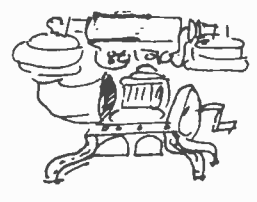
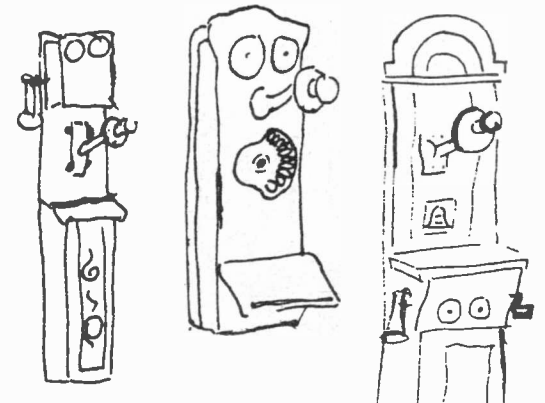
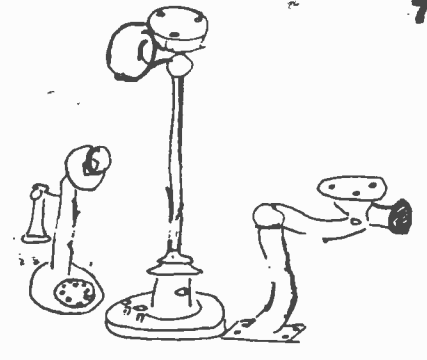
1941-1976:

So many inventions and improvements to the telephone systems have advanced so fast they are too numerous to mention, we hoped you have enjoyed this Chronology listing of the first 74 years without going through tons of books. Today we can see how the telephone industry has played a very important role in all phases of communications, Radio, Television, the Space Program etc., To fill in these 36 years and the past, we recommend the Book "Singing Wires"...it is 496 pages of Telephone History with 200 color and black and white pictures, illustrations.

ACKNOWLEDGEMENTS

Companies: American Telephone and Telegraph Company, Bell System, General Telephone Company of California, General Telephone Electronics, Automatic Electric Co., Western Electric Company, Pacific Plantronics, Inc., Pacific Telephone and Telegraph Company, Graybar Electric Co., RCA Communications, American Telecommunications Corporation, Billard's Old Telephones, Sears and Roebuck Co., and any other Companies Private-owned, Rural Telephone Association, that we may have over-looked.

Literature: 1930 Telephone in America Book by AT & TC; 1924 Audel's Practical Electricity, 1929 Physical Apparatus and Instruments by Central Scientific Co., 1955 Mr. Bell Invents the Telephone by Kathern B. Shippen, 1920 Scientific American Reference Book, Dr. Alexander Graham Bell, Prehistoric Telephone Days. National Geographic Magazine, March 1922, Talking Round the Earth by F. E. Benz-Dodd, Mead Co., Beginnings of Telphony F. A. Rhodes, Harpers and Co., 1920, Saturday Evening Post July 29, 1961, 1908 Sears, Roebuck Catalogue No. 117, 1923 Radio News December Issue, American Science and Invention-1960, M. Wilson-Bonanza Books, 1941 Building America-Americana Corp.



SCENES AT THE 1976 CONVENTION OF THE SOUTHWEST VINTAGE RADIO AND PHONOGRAPH SOCIETY

PHOTOGRAPHERS: 5 SMALL ONES, BRENT DINGMAN; 2 LARGE ONES, GLEN ZOOK.



TROPHY WINNER, JOHN ALFORD



JOHN RAWLINS AND JIM COLLINGS



BILL MILLER ALL SMILES

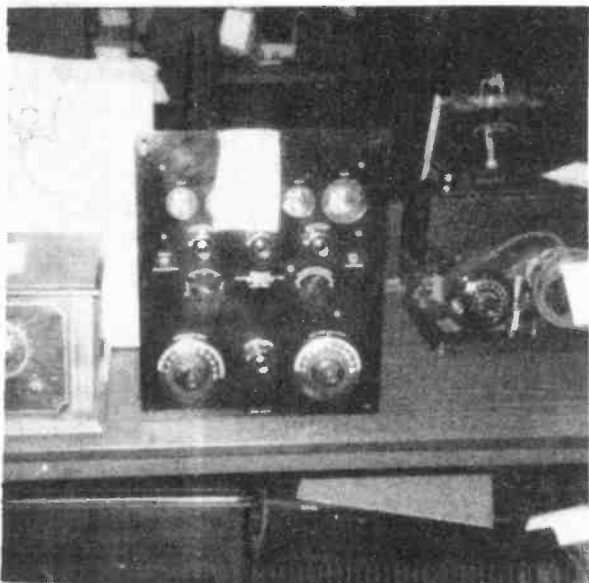


BILL BORUFF GIVING A PHONOGRAPH LECTURE



AGAIN, AT THE AUCTION

ONLY A SAMPLE OF THE AUCTION



RAY POINDEXTER, GUEST SPEAKER

For some—a "radio" For others—Zenith!



Super-Zenith IX
Built-in Zenith loud-speaker;
ample compartments for dry
and storage batteries.

Super-Zeniths priced from \$240 to \$355.
DeLuxe Art Model Cabinets from \$500 to \$2,000
Other Zenith Sets \$100 and \$175



New Zenith De Luxe Chinese Model
Equipped with two built-in loud speakers, Bares
Rotary Log, illuminated dial, single control
specially constructed Zenith Radio Circuit.

Some prefer the blare of a circus band—or the friendly jangle of a hurdy-gurdy. To them it is the only music.

Those who delight in blare and jangle do not need a Zenith—but they will find that even such music rings truer to their ears brought in by Zenith radio.

Others go breathless at the golden notes of a lyric soprano—or the rapturous harmonies of a great symphony.

Such people—born with a love for music—should never content themselves with any radio instrument less fine than Zenith.

Zenith's appeal to the eye is instant—and enduring. Its clear, sweet tone is a revelation.

To see and hear one of the new Super-Zeniths for the first time is a memorable experience. Yet that experience is yours for the asking—in your own home if you so desire.

Simply telephone your nearest Zenith dealer.

Again Commander Donald B. MacMillan chose Zenith for his Arctic Expedition. When human lives may depend upon the reliability of radio performance, only one reason can explain his choice: Zenith has proved to be the best obtainable at any price.

ZENITH RADIO CORPORATION
Straus Building, Chicago



It Costs More
But It Does More!



A UNIQUE RADIO RECEIVER.
The cone loud speaker in this set acts also as a dial for tuning as well as performing its usual duty. © Fotograms.

taken directly from the house-lighting circuit. There were some three or four of this type of set in evidence and most of them seemed to work very well.

Along the same line, as was to be expected, there were numerous straight "A" and "B" battery eliminators as individual units. Very little that was actually new was incorporated in the design, but undoubted improvement has been made during the past year in constructional and technical details.

One would have thought that these devices would be among the most popular exhibits in the show. They elicited very little more interest, however, than the remainder of the instruments.

Another disappointment was the fact that there were not so many new tubes as might have been expected, following the release of the original tube patent. The chief interest here seemed to be in new rectifiers, there being one or two very interesting new tubes for this purpose.

All of the shows this year found one striking difference to those which have been held in years past. This difference was in the absence of the educational displays. Almost everything this year seemed to be from the "selling" point, made directly to attract the potential buyer, to interest him in some particular type of set.



THE RADIO GIRL OF 1925-1926. This young lady is wearing a real radio evening costume. A miniature loop adorns her coiffure, while the familiar dials, coils and condensers are the principal decorations of the "short-wave" dress. © Kadel & Herbert.

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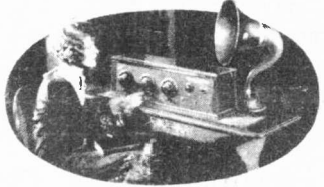
in years, fishing and getting acquainted with Baby Barbara. He expects to start work in more pictures soon.

"GRAND CENTRAL STATION" ends its run on the NBC-Blue Network over which this series of dramatic sketches has been heard on Friday nights. Starting on April 24, it moves over to the CBS studios and will be heard Sunday nights at 10 o'clock EDT.

In case you didn't know, Teddy Bergman also plays the role of "Asa Griffin" in BIG SISTER. For seven months he played the part of "Boss Vanessi" in the MYRT AND MARGE scripts and he was bemoaning the fact that he was bumped off that afternoon, so now he is off the program. He's going to be back on the show soon as "Mr. Binstein."

Old Radio Treasures

There's a rare old radio waiting for you somewhere. Here's how to have year-round fun discovering valuable old sets in your attic, local swap meet or antique barn. You'll enjoy McMahan's fascinating books, truly fine collector's references.



VINTAGE RADIO, 1887-1929: Pictorial story of pioneer days, 1,000 photos, 263 pages. \$10.95 hard-cover, \$8.95 soft.

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RADIO COLLECTOR'S GUIDE, 1921-32: Data book with 50,000 facts on 9,000 models by 1,100 makers, 264 pages, \$6.95.

1926-38 RADIO DIAGRAMS: Beitman's classic of 600 models, 240 pages, \$7.00.



Here are the ideal holiday gifts.

ORDER NOW

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Celebrated to be the world's largest privately owned collection of battery operated radios and accessories and phonographs is the one located in Opelika, Alabama. The collection is owned by J. Herbert Orr, a pioneer in magnetic recording tape and the allied arts. Mr. Orr has been written up in Time, Billboard, and Christian Science Monitor for his feats in magnetics. His major development now is a magnetically tape played piano which plays and records. It actually operates the piano, no audio involved. Mr. Orr's collection includes both cylinder and platter type phonographs and they all work. He has so many they are housed in several buildings. The radios are exemplifications of the past's craftsmanship, the beautiful wood work on the cabinets are simply not to be found today. The entire collection consists of many thousand pieces and is said to be the world's largest private collection of this type.

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WANTED

11

I have 106 issues of WIRELESS WORLD 1922-1924; 28 issues of WIRELESS AGE 1915-1918, (Oct. 1917 to Sept. 1918 bound); QST 1922, 1929 bound, set of RIDERS MANUALS, Riders Vol. 1-5 abridged, Radiola 60 cabinet, RADIO REVIEW early issues, bound. Sell or trade any or all for clean radios I don't have. Want Crosley VI, VII, RCA 1925 or earlier, Tuska etc. Merrill W. Bancroft, 169 South Row Road, Townsend, Mass. 01469.

FROM TIN FOIL TO STEREO, great classic of phonograph history now available at \$9.95 softbound, \$19.95 hardbound. Sams' TUBE SUBSTITUTION HANDBOOK, a must for restorers only \$2.25. Also see our display ad. Vintage Radio, Palos Verdes CA 90274.

FOR SALE: Philco Cathedral Model 89 \$65.00; RCA Cathedral Model T4-8 \$55.00; Philco radio/phonograph model 46-1201 \$40.00; Freed Eisemann model 40 \$70.00; Arborphone model 45 \$60.00. Above radios very clean and in good operating condition. Howard Granoff, 2445 Lyttonville Rd., Silver Spring MD 20910.

ATWATER KENT instruction book Vol. 2, for models 9 through 24, and models 20-21 compact. (1925) Reprint comparable to original. If you haven't seen the original you wouldn't know the difference, offset print, 48 pages \$6.00 postpaid. William Huntley, R #2, Box 155, Coatesville, Ind. 46121.

FOR SALE: Solid-State power supply provides most needed "A", "B", and "C" voltages. Send SASE for special sheet. G. B. Schneider, 6848 Commonwealth, Parma Hgts, Ohio 44130.

FOR SALE: Miscellaneous books, headphones, tubes, parts, Radio Boy books. SASE to G. Schneider 6848 Commonwealth Blvd., Parma Hgts., Ohio 44130.

FOR SALE/TRADE: Radiola III (no case), \$28.; AK 40 \$45.; 100A Speaker, Magnavox Beverly dynamic, old chargers, meters, keys, etc. SASE for list. R. Kramer, 134 Coolidge St., Ashland OR 97520.

WD11 Adaptors, use UX199, 120, VT24. No wiring changes, Radiola III's battery hook-up included \$5.25 pp., 2 for \$9.25. Keith Parry, 17557 Horace St., Granada Hills CA 91344.

FOR SALE: Large collection early Radio and Wireless material, radios, tubes, catalogues, literature, parts and miscellaneous. Large SASE for list. Willis Otto, 2009 West 10th Street, Davenport, Iowa 52804.

FOR SALE: WD & 99 TUBES X99/20-\$5. V99/20-\$7. WD11-R-\$10. Send SASE for details. Hanson, 3403 E. Broadway, Long Beach CA 90803.

SEND \$1.00 for the newly published booklet "A Pocket Guide to Antique Radio Collecting." Antique Radio Press, Box 42, Rossville IN 46065.

FOR SALE OR TRADE

HAVE AVAILABLE following books: "TV Picture Projection and Enlargement, by Lytell for Rider 1949; "Principles of Radar" by MIT Radar School staff 1946; "Radio Physics Course, Ghiradi 1942; "Modern Radio Servicing" Ghiradi 1935; "Servicing Superhetrodynes" Rider 1942; "Aviation Radio," Roberts 1945; "Aeroplane Radio Equipment," Molloy 1941; "Automatic Record Changers and Recorders," Rider 1941; Rider Perpetual Troubleshooter's Manuals 7, 9, 10, 15 and 18. H. Moncure, 47-734-2 Hui Kelu, Kaneohe HI 96744.

Six RADIO NEWS magazines containing the complete series "Evolution of the Phonograph" \$18. postpaid. Same series but missing part six \$15.00 postpaid. Excellent information and illustrations. Bob Lessard, 4807 Northeast Fifth St., Minneapolis, Minn. 55421.

FOR SALE: We have many hours of quality old time radio programs from late '20s to mid'30s. Fun to play the actual old programs thru the horn speaker -- just like back when. Custom made tapes any method. Blalock's Sound Library, 609 Blue St, Richland, Wash. 99352.

Three radio lists of items for sale. #1 Radios; #2 Radio publications and #3 Misc. speakers, tubes, etc. \$1.00 each plus a 26¢ SASE. Radio Americana, Box 128, Woodstock, New York 12498.

BLANK BAKELITE STOCK cut to size, 1/8" to 1/2" thick. Fabricating and engraving services available. SASE for pricing sheet. Norman A. Parsons, 22 Forest St., Branford CT 06405, Phone: 203 488-4267.

FOR SALE: AK Breadboard 10 \$300.00; AK Breadboard var-couple-condenser two tube \$200.00; 5-201 brass base \$10.00 each. Crosley 51-52 \$75.00 and \$100.00 with tubes or working. E. A. Smith, 2706 Cubhill Rd., Baltimore MD 21234.

FOR SALE OR TRADE: Freed Eisemann NR-5, Stewart Warner Model 300, Colby, AK 35, AK Model 40 w/F2 Speaker, and others send SASE for list. B. Mager, P.O. Box 172, Whitestone N.Y. 11357.

FOR SALE: Airline 62-434 battery set \$30. Crosley model 48 in Repwood carved cabinet, works \$75. Crosley Gembox cabinet and chassis \$15. 1924 Day Fan \$60. Charles Green, 2123 Adams, Great Bend KS 67530.

FOR SALE: Radios, speakers, tubes, parts, books and magazines. List #R1-77 SASE and 50¢ for list. Krantz, 100 Osage Ave., Somerdale N.J. 08083.

FOR SALE: Send a SASE for list of battery and A.C. radios plus early magazines for sale and trade. Rich Wolven, 2614 Reno Rd., Castleton N.Y. 12033.

WANTED: Any radio fan magazines. Also, any radio magazine with commercial broadcast or star information. Examples--Radio Guide, Radio Stars, Radio-TV Mirror, etc. Also Photoplay magazines. 1 or a 100. Fred L. Davis, 5106 Skippy Street, Memphis, Tennessee 38116.

WANTED: RADIO MAGAZINE - All 1920-1921, RADIO BROADCAST - Nov. 1926, Dec. 1928, many WIRELESS AGE 1921 to 1925. Buy or trade. Thompson, 2930 Delavina, Santa Barbara CA 93105.

WANTED: Power supply and speaker cabinet for McMurdo Silver Masterpiece, quack medical devices and parts, electrodes and leads for diathermy machines, good brass base WD-11, information on old diathermy machines. Cecil Bounds, Pine Springs Rte., Carlsbad N.M. 88220.

Seeking RADIO NEWS: August, 1943. POPULAR RADIO, December 1926. All Crosley model 59AC. Greg Dockter, 2519 Ave. C, Bismarck, N. D. 58501.

WANTED: Base & drivers for Music Master, Thorola, Atwater Kent and other horns. Schematic for RCA 18T Radio. Sell, bound "Wireless Age," Oct. 1917 to Sept. 1918. Offer. M. W. Vancroft, 169 S. Row Road, Townsend, Mass. 01469.

WANTED: "Radio Craft" March 1938 and "Radio News," March 1925.

FOR SALE: I have QST and CQ in binders also 73 and "Ham Radio" mag. McKenzie, 1200 West Euclid, Indianola, Iowa 50125.

WANTED: Scott, McMurdo Silver, Lincoln, and other classic receivers. Also pre-1930 battery sets, speakers, mikes, etc. J. E. Cunningham, 23W 675 Ardmore, Roselle IL 60172.

WANTED: Radio chassis RC-427 (panel has ten pushbuttons), power supply RS-83, 12" speaker RL-70F-5, as used in RCA TRK-120, TRK-12, etc. C. Sarver, 256 West 88th St., New York NY 10024.

WANTED: Front door latch for Radiola II.

Bakelite front for AK Variometer; Lid Plate for AK 30; 3 chrome tube covers for "Neutrowound"; Tuning bands for AK 25; Tube socket assembly for AK 21; Cabinet for Gilfilian Model 10; Tube adapters UV199 to UX; DeForest DV5 tubes-trade for DV2. Bill Pugh, 2126 E. Myrtle, Phoenix AZ 85020.

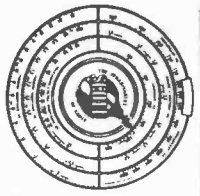
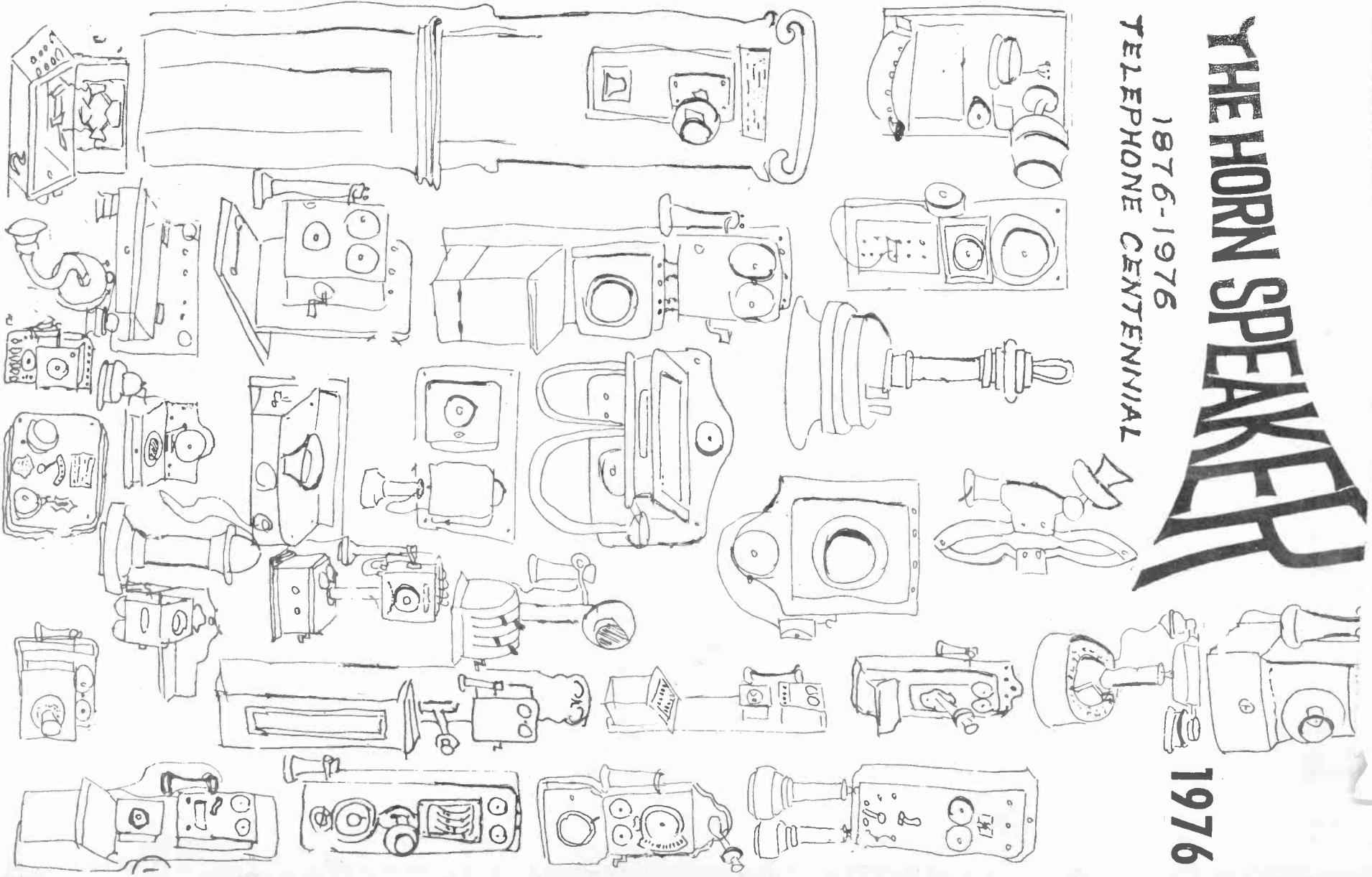
WANTED: Two audios type 376 for Freed Eisemann; two audios and schematic for Erla Monodic S-S1; two variable capacitors for Bremer-Tully "6". Dave Brodie, 315 Cotton St., Menlo Park CA 94025.

WANT--2 Audio Frequency Transformers for Crosley-Trirdyn and Power Transformer or complete Power Supply for a Radiola-17. Lane M. Poulter, 6344 Garwood Ave., Las Vegas, Nevada 89107.

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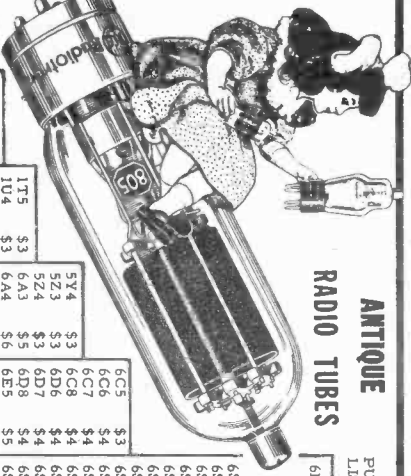
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| 1A9 | \$4 | 7C8 | \$4 | 12U7 | \$4 | 25V7 | \$3 | 53 | \$5 | 484 | \$5 |
| 1A0 | \$4 | 7C9 | \$4 | 12V7 | \$4 | 25W7 | \$3 | 54 | \$5 | 483 | \$5 |
| 1A1 | \$4 | 7D7 | \$4 | 12W7 | \$4 | 25X7 | \$3 | 55 | \$5 | 482 | \$5 |
| 1A2 | \$4 | 7E7 | \$4 | 12X7 | \$4 | 25Y7 | \$3 | 56 | \$5 | 481 | \$5 |
| 1A3 | \$4 | 7F7 | \$4 | 12Y7 | \$4 | 25Z7 | \$3 | 57 | \$5 | 480 | \$5 |
| 1A4 | \$4 | 7G7 | \$4 | 12Z7 | \$4 | 26A7 | \$4 | 58 | \$5 | 479 | \$5 |
| 1A5 | \$4 | 7H7 | \$4 | 13A7 | \$4 | 26B7 | \$4 | 59 | \$5 | 478 | \$5 |
| 1A6 | \$4 | 7J7 | \$4 | 13B7 | \$4 | 26C7 | \$4 | 60 | \$5 | 477 | \$5 |
| 1A7 | \$4 | 7K7 | \$4 | 13C7 | \$4 | 26D7 | \$4 | 61 | \$5 | 476 | \$5 |
| 1A8 | \$4 | 7L7 | \$4 | 13D7 | \$4 | 26E7 | \$4 | 62 | \$5 | 475 | \$5 |
| 1A9 | \$4 | 7M7 | \$4 | 13E7 | \$4 | 26F7 | \$4 | 63 | \$5 | 474 | \$5 |
| 1A0 | \$4 | 7N7 | \$4 | 13F7 | \$4 | 26G7 | \$4 | 64 | \$5 | 473 | \$5 |
| 1A1 | \$4 | 7P7 | \$4 | 13G7 | \$4 | 26H7 | \$4 | 65 | \$5 | 472 | \$5 |
| 1A2 | \$4 | 7Q7 | \$4 | 13H7 | \$4 | 26I7 | \$4 | 66 | \$5 | 471 | \$5 |
| 1A3 | \$4 | 7R7 | \$4 | 13J7 | \$4 | 26J7 | \$4 | 67 | \$5 | 470 | \$5 |
| 1A4 | \$4 | 7S7 | \$4 | 13K7 | \$4 | 26K7 | \$4 | 68 | \$5 | 469 | \$5 |
| 1A5 | \$4 | 7T7 | \$4 | 13L7 | \$4 | 26L7 | \$4 | 69 | \$5 | 468 | \$5 |
| 1A6 | \$4 | 7U7 | \$4 | 13M7 | \$4 | 26M7 | \$4 | 70 | \$5 | 467 | \$5 |
| 1A7 | \$4 | 7V7 | \$4 | 13N7 | \$4 | 26N7 | \$4 | 71 | \$5 | 466 | \$5 |
| 1A8 | \$4 | 7W7 | \$4 | 13O7 | \$4 | 26O7 | \$4 | 72 | \$5 | 465 | \$5 |
| 1A9 | \$4 | 7X7 | \$4 | 13P7 | \$4 | 26P7 | \$4 | 73 | \$5 | 464 | \$5 |
| 1A0 | \$4 | 7Y7 | \$4 | 13Q7 | \$4 | 26Q7 | \$4 | 74 | \$5 | 463 | \$5 |
| 1A1 | \$4 | 7Z7 | \$4 | 13R7 | \$4 | 26R7 | \$4 | 75 | \$5 | 462 | \$5 |
| 1A2 | \$4 | 7A7 | \$4 | 13S7 | \$4 | 26S7 | \$4 | 76 | \$5 | 461 | \$5 |
| 1A3 | \$4 | 7B7 | \$4 | 13T7 | \$4 | 26T7 | \$4 | 77 | \$5 | 460 | \$5 |
| 1A4 | \$4 | 7C7 | \$4 | 13U7 | \$4 | 26U7 | \$4 | 78 | \$5 | 459 | \$5 |
| 1A5 | \$4 | 7D7 | \$4 | 13V7 | \$4 | 26V7 | \$4 | 79 | \$5 | 458 | \$5 |
| 1A6 | \$4 | 7E7 | \$4 | 13W7 | \$4 | 26W7 | \$4 | 80 | \$5 | 457 | \$5 |
| 1A7 | \$4 | 7F7 | \$4 | 13X7 | \$4 | 26X7 | \$4 | 81 | \$5 | 456 | \$5 |
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| 1A9 | \$4 | 7H7 | \$4 | 13Z7 | \$4 | 26Z7 | \$4 | 83 | \$5 | 454 | \$5 |
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| 1A1 | \$4 | 7J7 | \$4 | 14B7 | \$4 | 27B7 | \$4 | 85 | \$5 | 452 | \$5 |
| 1A2 | \$4 | 7K7 | \$4 | 14C7 | \$4 | 27C7 | \$4 | 86 | \$5 | 451 | \$5 |
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| 1A5 | \$4 | 7N7 | \$4 | 14F7 | \$4 | 27F7 | \$4 | 89 | \$5 | 448 | \$5 |
| 1A6 | \$4 | 7O7 | \$4 | 14G7 | \$4 | 27G7 | \$4 | 90 | \$5 | 447 | \$5 |
| 1A7 | \$4 | 7P7 | \$4 | 14H7 | \$4 | 27H7 | \$4 | 91 | \$5 | 446 | \$5 |
| 1A8 | \$4 | 7Q7 | \$4 | 14I7 | \$4 | 27I7 | \$4 | 92 | \$5 | 445 | \$5 |
| 1A9 | \$4 | 7R7 | \$4 | 14J7 | \$4 | 27J7 | \$4 | 93 | \$5 | 444 | \$5 |
| 1A0 | \$4 | 7S7 | \$4 | 14K7 | \$4 | 27K7 | \$4 | 94 | \$5 | 443 | \$5 |
| 1A1 | \$4 | 7T7 | \$4 | 14L7 | \$4 | 27L7 | \$4 | 95 | \$5 | 442 | \$5 |
| 1A2 | \$4 | 7U7 | \$4 | 14M7 | \$4 | 27M7 | \$4 | 96 | \$5 | 441 | \$5 |
| 1A3 | \$4 | 7V7 | \$4 | 14N7 | \$4 | 27N7 | \$4 | 97 | \$5 | 440 | \$5 |
| 1A4 | \$4 | 7W7 | \$4 | 14O7 | \$4 | 27O7 | \$4 | 98 | \$5 | 439 | \$5 |
| 1A5 | \$4 | 7X7 | \$4 | 14P7 | \$4 | 27P7 | \$4 | 99 | \$5 | 438 | \$5 |
| 1A6 | \$4 | 7Y7 | \$4 | 14Q7 | \$4 | 27Q7 | \$4 | 100 | \$5 | 437 | \$5 |
| 1A7 | \$4 | 7Z7 | \$4 | 14R7 | \$4 | 27R7 | \$4 | 101 | \$5 | 436 | \$5 |
| 1A8 | \$4 | 7A7 | \$4 | 14S7 | \$4 | 27S7 | \$4 | 102 | \$5 | 435 | \$5 |
| 1A9 | \$4 | 7B7 | \$4 | 14T7 | \$4 | 27T7 | \$4 | 103 | \$5 | 434 | \$5 |
| 1A0 | \$4 | 7C7 | \$4 | 14U7 | \$4 | 27U7 | \$4 | 104 | \$5 | 433 | \$5 |
| 1A1 | \$4 | 7D7 | \$4 | 14V7 | \$4 | 27V7 | \$4 | 105 | \$5 | 432 | \$5 |
| 1A2 | \$4 | 7E7 | \$4 | 14W7 | \$4 | 27W7 | \$4 | 106 | \$5 | 431 | \$5 |
| 1A3 | \$4 | 7F7 | \$4 | 14X7 | \$4 | 27X7 | \$4 | 107 | \$5 | 430 | \$5 |
| 1A4 | \$4 | 7G7 | \$4 | 14Y7 | \$4 | 27Y7 | \$4 | 108 | \$5 | 429 | \$5 |
| 1A5 | \$4 | 7H7 | \$4 | 14Z7 | \$4 | 27Z7 | \$4 | 109 | \$5 | 428 | \$5 |
| 1A6 | \$4 | 7I7 | \$4 | 15A7 | \$4 | 28A7 | \$4 | 110 | \$5 | 427 | \$5 |
| 1A7 | \$4 | 7J7 | \$4 | 15B7 | \$4 | 28B7 | \$4 | 111 | \$5 | 426 | \$5 |
| 1A8 | \$4 | 7K7 | \$4 | 15C7 | \$4 | 28C7 | \$4 | 112 | \$5 | 425 | \$5 |
| 1A9 | \$4 | 7L7 | \$4 | 15D7 | \$4 | 28D7 | \$4 | 113 | \$5 | 424 | \$5 |
| 1A0 | \$4 | 7M7 | \$4 | 15E7 | \$4 | 28E7 | \$4 | 114 | \$5 | 423 | \$5 |
| 1A1 | \$4 | 7N7 | \$4 | 15F7 | \$4 | 28F7 | \$4 | 115 | \$5 | 422 | \$5 |
| 1A2 | \$4 | 7O7 | \$4 | 15G7 | \$4 | 28G7 | \$4 | 116 | \$5 | 421 | \$5 |
| 1A3 | \$4 | 7P7 | \$4 | 15H7 | \$4 | 28H7 | \$4 | 117 | \$5 | 420 | \$5 |
| 1A4 | \$4 | 7Q7 | \$4 | 15I7 | \$4 | 28I7 | \$4 | 118 | \$5 | 419 | \$5 |
| 1A5 | \$4 | 7R7 | \$4 | 15J7 | \$4 | 28J7 | \$4 | 119 | \$5 | 418 | \$5 |
| 1A6 | \$4 | 7S7 | \$4 | 15K7 | \$4 | 28K7 | \$4 | 120 | \$5 | 417 | \$5 |
| 1A7 | \$4 | 7T7 | \$4 | 15L7 | \$4 | 28L7 | \$4 | 121 | \$5 | 416 | \$5 |
| 1A8 | \$4 | 7U7 | \$4 | 15M7 | \$4 | 28M7 | \$4 | 122 | \$5 | 415 | \$5 |
| 1A9 | \$4 | 7V7 | \$4 | 15N7 | \$4 | 28N7 | \$4 | 123 | \$5 | 414 | \$5 |
| 1A0 | \$4 | 7W7 | \$4 | 15O7 | \$4 | 28O7 | \$4 | 124 | \$5 | 413 | \$5 |
| 1A1 | \$4 | 7X7 | \$4 | 15P7 | \$4 | 28P7 | \$4 | 125 | \$5 | 412 | \$5 |
| 1A2 | \$4 | 7Y7 | \$4 | 15Q7 | \$4 | 28Q7 | \$4 | 126 | \$5 | 411 | \$5 |
| 1A3 | \$4 | 7Z7 | \$4 | 15R7 | \$4 | 28R7 | \$4 | 127 | \$5 | 410 | \$5 |
| 1A4 | \$4 | 7A7 | \$4 | 15S7 | \$4 | 28S7 | \$4 | 128 | \$5 | 409 | \$5 |
| 1A5 | \$4 | 7B7 | \$4 | 15T7 | \$4 | 28T7 | \$4 | 129 | \$5 | 408 | \$5 |
| 1A6 | \$4 | 7C7 | \$4 | 15U7 | \$4 | 28U7 | \$4 | 130 | \$5 | 407 | \$5 |
| 1A7 | \$4 | 7D7 | \$4 | 15V7 | \$4 | 28V7 | \$4 | 131 | \$5 | 406 | \$5 |
| 1A8 | \$4 | 7E7 | \$4 | 15W7 | \$4 | 28W7 | \$4 | 132 | \$5 | 405 | \$5 |
| 1A9 | \$4 | 7F7 | \$4 | 15X7 | \$4 | 28X7 | \$4 | 133 | \$5 | 404 | \$5 |
| 1A0 | \$4 | 7G7 | \$4 | 15Y7 | \$4 | 28Y7 | \$4 | 134 | \$5 | 403 | \$5 |
| 1A1 | \$4 | 7H7 | \$4 | 15Z7 | \$4 | 28Z7 | \$4 | 135 | \$5 | 402 | \$5 |
| 1A2 | \$4 | 7I7 | \$4 | 16A7 | \$4 | 29A7 | \$4 | 136 | \$5 | 401 | \$5 |
| 1A3 | \$4 | 7J7 | \$4 | 16B7 | \$4 | 29B7 | \$4 | 137 | \$5 | 400 | \$5 |
| 1A4 | \$4 | 7K7 | \$4 | 16C7 | \$4 | 29C7 | \$4 | 138 | \$5 | 399 | \$5 |
| 1A5 | \$4 | 7L7 | \$4 | 16D7 | \$4 | 29D7 | \$4 | 139 | \$5 | 398 | \$5 |
| 1A6 | \$4 | 7M7 | \$4 | 16E7 | \$4 | 29E7 | \$4 | 140 | \$5 | 397 | \$5 |
| 1A7 | \$4 | 7N7 | \$4 | 16F7 | \$4 | 29F7 | \$4 | 141 | \$5 | 396 | \$5 |
| 1A8 | \$4 | 7O7 | \$4 | 16G7 | \$4 | 29G7 | \$4 | 142 | \$5 | 395 | \$5 |
| 1A9 | \$4 | 7P7 | \$4 | 16H7 | \$4 | 29H7 | \$4 | 143 | \$5 | 394 | \$5 |
| 1A0 | \$4 | 7Q7 | \$4 | 16I7 | \$4 | 29I7 | \$4 | 144 | \$5 | 393 | \$5 |
| 1A1 | \$4 | 7R7 | \$4 | 16J7 | \$4 | 29J7 | \$4 | 145 | \$5 | 392 | \$5 |
| 1A2 | \$4 | 7S7 | \$4 | 16K7 | \$4 | 29K7 | \$4 | 146 | \$5 | 391 | \$5 |
| 1A3 | \$4 | 7T7 | \$4 | 16L7 | \$4 | 29L7 | \$4 | 147 | \$5 | 390 | \$5 |
| 1A4 | \$4 | 7U7 | \$4 | 16M7 | \$4 | 29M7 | \$4 | 148 | \$5 | 389 | \$5 |
| 1A5 | \$4 | 7V7 | \$4 | 16N7 | \$4 | 29N7 | \$4 | 149 | \$5 | 388 | \$5 |
| 1A6 | \$4 | 7W7 | \$4 | 16O7 | \$4 | 29O7 | \$4 | 150 | \$5 | 387 | \$5 |
| 1A7 | \$4 | 7X7 | \$4 | 16P7 | \$4 | 29P7 | \$4 | 151 | \$5 | 386 | \$5 |
| 1A8 | \$4 | 7Y7 | \$4 | 16Q7 | \$4 | 29Q7 | \$4 | 152 | \$5 | 385 | \$5 |
| 1A9 | \$4 | 7Z7 | \$4 | 16R7 | \$4 | 29R7 | \$4 | 153 | \$5 | 384 | \$5 |
| 1A0 | \$4 | 7A7 | \$4 | 16S7 | \$4 | 29S7 | \$4 | 154 | \$5 | 383 | \$5 |
| 1A1 | \$4 | 7B7 | \$4 | 16T7 | \$4 | 29T7 | \$4 | 155 | \$5 | 382 | \$5 |
| 1A2 | \$4 | 7C7 | \$4 | 16U7 | \$4 | 29U7 | \$4 | 156 | \$5 | 381 | \$5 |
| 1A3 | \$4 | 7D7 | \$4 | 16V7 | \$4 | 29V7 | \$4 | 157 | \$5 | 380 | \$5 |
| 1A4 | \$4 | 7E7 | \$4 | 16W7 | \$4 | 29W7 | \$4 | 158 | \$5 | 379 | \$5 |
| 1A5 | \$4 | 7F7 | \$4 | 16X7 | \$4 | 29X7 | \$4 | 159 | \$5 | 378 | \$5 |
| 1A6 | \$4 | 7G7 | \$4 | 16Y7 | \$4 | 29Y7 | \$4 | 160 | \$5 | 377 | \$5 |
| 1A7 | \$4 | 7H7 | \$4 | 16Z7 | \$4 | 29Z7 | \$4 | 161 | \$5 | 376 | \$5 |
| 1A8 | \$4 | 7I7 | \$4 | 17A7 | \$4 | 30A7 | \$4 | 162 | \$5 | 375 | \$5 |
| 1A9 | \$4 | 7J7 | \$4 | 17B7 | \$4 | 30B7 | \$4 | 163 | \$5 | 374 | \$5 |
| 1A0 | \$4 | 7K7 | | | | | | | | | |