



TCA Index 1999-2019



1999-2019 INDEX

This index covers *Tube Collector*, 1999 through 2019; the photo CD-ROM that came with TC 2-18; the TCA "Data Cache" DVD-ROM set; and the Special Publications:

No. 1	Manhattan College Vacuum Tube Museum - List of Displays	1999
No. 2	Triodes in Radar: The Early VHF Era	2000
No. 3	Auction Results	2001
No. 4	A Tribute to George Clark, with audio CD	2002
No. 5	J. B. Johnson and the 224A CRT.....	2003
No. 6	McCandless and the Audion, with audio CD.....	2003
No. 7	AWA Tube Collector Group <i>Fact Sheet</i> , Vols. 1-6	2004
No. 8	Vacuum Tubes in Telephone Work.....	2004
No. 9	Origins of the Vacuum Tube, with audio CD.....	2005
No. 10	Early Tube Development at GE.....	2005
No. 11	Thermionic Miscellany.....	2006
No. 12	RCA Master Tube Sales Plan, 1950.....	2006
No. 13	GE Tungar Bulb Data Manual.....	2007
No. 14	Eimac's Magic Books	2008
No. 15	The RJ4 Detector and The Wallace Mystery	2008
No. 16	RCA Water-Cooled Transmitting Tubes and Certain Air-Cooled Tubes (TT-2)	2009
No. 17	Mid-Year Review Meeting, July 16, 1959 - Eitel-McCullough	2009
No. 18	Public Address Systems - 1922 AT&T Bulletin.....	2010
No. 19	Index of RCA Developmental and Commercial Type Numbers.....	2010
No. 20	The Gammatron	2011
No. 21	Tube Complements in Old-Time Communications Equipment	2012
No. 22	German Centimeter-Wave Tubes of WW II.....	2013
No. 23	The Story of Electronics Development at the General Electric Company.....	2014
No. 24	Cunningham Vacuum Tubes 1922-1923.....	2015
No. 25	Moorhead and His Valve.....	2017
No. 26	The M-Type Carcinotron	2018

TOPICS

Auctions - Conventional	2	
Auctions - eBay	2	
Biographies, Obituaries, Personalities	2	
Collecting and Collections	4	
General	4	
Histories and Anecdotes - Makers and Brands.....	7	
Literature.....	12	
TCA.....	13	
Testing and Restoration	13	
Technology and Construction.....	13	
Tubes, by Type		
U. S. / Canadian..... 17	Australian..... 24	European..... 24
Argentine/Brazilian..... 24	British..... 24	Japanese/Chinese..... 25
CRTs - All Countries		26
Tube-Based Equipment.....		26
Author Index		27

Abbreviations used herein:

1-5-4 (example) - <i>Tube Collector</i> , Vol. 1 No. 5, p. 4	@ - Three pages or more
SP - Special Publication	(R) - Reprint
FC - Front Cover	(O) - Out-of-print (book)
RC - Rear Cover	.W. - Westinghouse
* - Full page or more, but fewer than three pages	

AUCTIONS - CONVENTIONAL

Aseltine Collection	7-4-10*
Boyer Estate, 3-05, at CC-AWA-Charlotte	
Announcement	7-1-1*, 7-2-1
Results	7-3-18@
CC-AWA, 3-08, results	10-3-2*
CC-AWA, 3-10, tube results	12-3-2*
CC-AWA, 3-12, tube results	14-3-1
Estes, 9-03 (Medina, OH; LRS Relays, etc;)	
.....	5-4-1, 5-5-5@
Estes, 4-06 (Burbank, OH)	8-3-10*
Muchow Estate	3-1-1, 3-4-1
Sales Report	3-5-19@
"Radioactivity," 2007	9-4-1
Rochester Tube Auction	
1999	1-5-4*
2000	2-5-5*
2002	4-5-19*
2003	5-5-12*
2004	6-5-4*
2005	7-5-4*
2006	8-5-16
Summary Report, 1992-2001	3-5-1
At TCA tube conference	
2007	9-6-4*
2009	11-6-2*
2010	11-6-2
2012	13-5-2*, 13-6-1, 14-1-1*
At TCA Member Meeting	
2005	7-5-13
2006	8-5-14
2008	10-3-1
2009	11-1-1, 11-3-2
2011	13-1-1, 13-2-1, 13-3-1
2012	14-3-1, 14-5-3*
2019	21-2-1 (catalog included), 21-3-1
Thorn Estate	4-4-27*

AUCTIONS - eBAY

Issue of <i>Tube Collector</i> gave eBay results, usually at rear just before Want Ads, up through August 2015 (Vol. 17 No. 4)..	
Hype (De Forest 552)	4-6-26
Hype (5751)	3-2-23*
Relative scarcity of collectibles	9-3-19
Summary report, 1992-2001	3-5-1
Thoughts on	2-1-1, 2-2-1, 11-4-29
Weingarten tube lab	5-4-insert

BIOGRAPHIES, OBITUARIES, PERSONALITIES

Adler, Robert	9-4-2*
Anton, Nicholas	6-4-20*
Armstrong, Edwin, and regen. patent.....	SP15-11*
Armstrong, Edwin, and Eimac.....	SP15-4, 10-4-15@
Badger, George.....	12-1-1; (pic) 14-2-13
Barbour, Eric	
and AWA Tyne Award	1-6-1
and Stokes Award.....	6-5-1
Belanger, Brian, & AWA Houck Award.....	4-1-1
Bricker, Glen (pic).....	3-4-RC
Brewster, Richard, and AWA Taylor Award	19-4-

Brown, Orrin H. (Hank) (obit)	1-4-1
Burman, Rod.....	20-1-1
Bush, Vannevar	21-3-2
Chirelstein, Nathan.....	12-6-17
Ciardiello, Emilio, and Stokes Award	18-5-1
Clark, George C.	6-6-2*
Clark, George H.	SP4
Coffin, Bruce and Lloyd	14-1-11
Condon, Bill, and Stokes Award.....	5-5-4
Cortese, Domingo.....	9-6-17
Cusack, F. H.	15-5-15
De Forest, Lee	
Celebration (140th anniv.).....	15-4-37@
Celebration, by Cornell-Dubilier.....	18-5-16*
"Cites his amplifier invention"	21-6-12#
and H. W. McCandless	SP 6
and Roy Weagant (pic)	10-5-FC
and Harvey Harper of Tung-Sol.....	13-6-23
and transistor patent	18-5-21@
Lab notebook, 1912-14	19-2-20@
Receives Sylvania 3 billionth tube	18-5-25
"Snippet" from 1948	11-6-33
Telephone repeater (1912).....	3-3-18*
"Wises up" (regarding ions)	3-2-20*
Denning, J. Henry.....	AP25-22
Deuel, Bob (pic)	3-1-FC, 3-4-RC
and AWA Tyne Award	6-5-3
Dilks, John, and AWA Houck Award.....	4-5-30
Donle, H. P. (pic).....	SP7-34
Douglas, Alan (obituary)	17-6-insert
Dowd, Bro. Patrick (pic).....	3-4-RC
as honorary member.....	3-5-3
and Schrader Award.....	10-6-1
Obituary	16-5-2
Dubilier, William.....	18-5-16*
Du Mont, Allen B.....	13-4-15
Edberg, Eric, and Varian.....	15-4-3, 15-4-RC
Eisler, Charles.....	15-2-9*
Eitel, Wm., and Edwin Armstrong	10-4-15@
Eitel, Wm., general.....	14-2-3
Eliçabe, Alberto Nicolás	12-5-15
Estes, Richard (obit).....	18-1-31
Ewing, Ed, and Microtubes Inc.	17-2-2@
Fazano, Carlos Alberto	
and AWA Houck Award	8-5-16
and centenary display.....	15-4-3
and expanded Web site	14-5-2
Farnsworth, Philo, and image dissector ...	10-3-6@
And multipactor tube	10-6-17@
Fathauer, George (obit)	17-1-3
Forsberg, Björn (pic).....	14-1-FC
Hagenbuch, Frank, as awards administrator	18-3-1
Hammond, Fred.....	1-6-25
Harmer, Jeremy, and Schrader Award	5-5-4
Heil, Oskar	SP22-1
Heuser, Eric	12-3-25
Hicks, Hugh (obit).....	4-4-1
Hoover, Herbert, RCA advertising piece featuring (pic)	15-3-33

Houck, Harry 16-3-7*, 20-1-6@
Housekeeper, Wm. (pic) 7-4-FC*
Howard, H. Taylor (obit) 4-6-insert
Hunolt, Greg (obit) 18-1-31
Industry personalities, 1948-44 19-1-2
Iverson, Jack (death notice) 17-3-1
Jennings, Jo Emmett 17-3-25*
Jensby, Will (obit) 20-6-1
Jessop, George, and Stokes Award 4-5-18
Joho, Reinhard (pic w/ collection) 2-5-11
Johnson, John B. SP5-i
Jones, Al
(pic with collection) 1-6-2, 3-1-3*
(pic) 3-4-RC
and Schrader Award 6-5-1
as honorary member 5-5-3
obituary 20-6-23*
Jury, Floyd (pic) 3-5-RC*
And AWA People's Choice Award 18-1-12
Knight, Joe (pic) 14-5-FC
And Schrader Award 18-5-1
As AWA Tyne Award administrator.. 14-2-1, 14-3-2
As AWA Tyne Award winner 18-5-1
Koski, John (pic) 14-2-5
Krahulkova, Jozefina 13-1-6
Krim, Norman 14-1-20*
Kron, Dr. Eunice 11-5-14
Kron, Dr. Riccardo 11-5-11*, 15-3-2
Langmuir, Irving, and research SP23-10@
Landell de Moura, Fr. Roberto, stamp 13-2-1
Lane, Clifford 1-4-1
Lawrence, Ron
and AWA Houck Award 10-5-1
and AWA Tyne Award 14-5-1
in *Popular Communications* 7-4-1
(pic with Danial Stocks) 10-1-FC
Lewis, Garrett 11-1-18*, 12-1-15*
Leonard, Rad 15-5-8
von Lieben, Robert 8-4-2*
Lindsay, Robert (death notice) 8-6-2
Link, August, and AWA Houck Award 8-5-16
Link, Fred 4-6-1
Lyons, Floyd 11-1-FC, 11-2-22*
Magers, Bernie 2-4-3; (obit), 10-1-19
Malignani, Arturo 13-6-33
Martin, Lucio 5-5-19
McCandless, Henry W. SP 6
McConville, Jim (pic) 14-5-FC
McCullough, Jack 14-2-3@
McCullough, Jack (obit) 3-3-28*
McMahon, Morgan 20-1-1
Melvin, Bob 6-2-11
Millard, Robert
and AWA Tyne Award 4-5-30
and Stokes Award 3-5-3
Miram, George (death notice) 13-3-1
Moorhead, Otis SP25, 19-3-1@, 19-4-3
Muchow, Ralph (obit) 2-2-1
Mullard, Capt. Stanley, and "Interservice" Base 15-2-21
Musselman, A. J. 21-6-50*
Myers, Elman 10-2-17@
Ohtsuka, Hisashi
and Schrader Award (pic) 11-5-FC
and AWA Tyne Award 16-5-1
Pic 14-1-FC
Peckham, Lauren (obit) 17-1-3
Pichler, Franz, and Stokes Award 8-5-15
Prowell, Tod, death notice 10-1-1
Otero, Juan A. 12-5-15
Quinn, Clara, and refillable tube 18-1-25@
Qvigstad, Just 8-3-4
and Schrader Award 8-5-15
Patay, Imre 12-6-7
Philipse, Frank, and Stokes Award 12-6-1
Radtke, Udo, and Schrader Award 4-5-18
Reisz, Eugen 8-4-3
Repogle, Delbert E. 6-2-15, 16-1-27
Röntgen, Prof. W. C. (letter by) 3-3-4
Roome, Harry V. 6-1-2, 6-2-1, 11-4-24*
Rose, George M.
Biography SP1-92*
Contributions of SP1-20@
Ross, Bill 18-3-1
Samuel, Arthur 17-2-19*
Santoro, Abel (pic) 14-6-10, 17-6-1
And Stokes Award 17-5-2
Schertzer, Dr., interrogation 17-3-12@
Schiaffo, Jos, 5-5-19@
Schmidt, Adolph, at Rauland 2-1-13*
Schrader, Howard
Tribute to 2-2-4@
Further notes on 2-2-7*, 2-3-2
Schrock, Rodney 20-1-1
Senauke, Alexander 6-1-11
Shepard, Steve, and Schrader Award 3-5-3
Shockley, William 17-3-2@
Sibley, Ludwell (pic) 3-4-RC, 15-5-RC
as honorary member 8-5-13
Smith, Ross (obit) 2-4-insert
Soddy, Frederick 13-6-36
Steimel, Karl SP22-1 and 30
Stocks, Danial, and Stokes Award 7-5-14
Stocks, Danial (pic with Ron Lawrence) .. 10-1-FC
Stokes, John (pic) 11-1-FC
Stokes, John (obit) 1-5-13
Stone, John Stone SP4-3*
Strauss, Siegmund 8-4-5
Strohmeier, Charles F. 3-4-15
Suffield, Fred (obit) 2-3-1
Sutherland, Robert (obit) 6-2-11*, 6-2-13
Sutherlin, Lee 6-2-6, 6-3-2
Swackhammer, Lloyd (death notice) 17-3-1
Swensson, Bengt (pic) 14-1-FC
Szezhő, C. S. 14-5-7
Taylor, Warren G. 13-5-7
Tongue, Ben, in NJ Inventors Hall of Fame ... 4-2-2
Tongue, Ben, obituary 17-5-16*
Trochelman, Heinz, and Schrader Award ... 9-5-1
Tyne, G. F. J. (photos) SP9, FC, RC
Vaic, Alesa 15-3-2*

Van de Walle, Jac	15-3-5	Qvigstad collection	8-3-FC, 4, RC@
Vanicek, Jerry	19-1-5	Schrader, Howard	2-2-4@
Varian, Sigurd and Russell	6-6-20,	Shepard, Steve, collection (pic)	3-6-RC*
20-2-9@, 21-3-10@		"Trip to Remember, A"	12-4-3
and Eric Edberg	15-4-3	"Tube Collector" club, <i>Radio News</i>	7-3-24*
Vyse, Barry, and Stokes Award	4-1-18	Tubes, "general precept" on selling	14-3-21*
Walker, John (pic)	15-5-RC, 20-4-1	Tubes, selling in kits	18-1-29@, 18-5-4
Wallace, Paul	SP15	"Tubish Widgets," scarcity	9-3-19
Walz, Rüdiger, tube lab (pic)	3-2-29	Tyne Award, AWA, cum. list of winners	17-1-2
Ward, Jack, and Schrader Award	17-5-2	Walker, John	3-1-13*
Warnecke, Robert	SP26-2@	Demo at 2018 member meet	20-4-1
Watson, Paul	5-3-4	Walz, Rüdiger, constructing tubes	11-6-11@
Weagant, Roy, and Lee De Forest (pic)	10-5-FC	Watson, Paul, collection	5-3-4@
Weingarten, Philip	5-4-insert	Weston, McVitie collection	2-1-2@
Wenaas, Eric, and AWA Awards		U. S. Army Comm-Elec Museum, to move	8-3-1
Bruce Kelley - OTB	19-4-60	Zawada, Aleksandr, constructing tubes	16-2-18*
Houck Documentation	9-5-1		
Houck Preservation	14-5-1		
Tyne	18-1-12		
White, William C.	SP23-1		
Willi, Eduard (photo)	9-1-FC		
Willi, Eduard, and Stokes Award	9-5-1		
Wilson, Norm, and Schrader Award	7-5-14		
Wilson, Norm, and AWA Tyne Award	9-5-1		
Windus, Laughton and Enrique	9-6-17		
Woerner, John	15-5-8		
Yukawa, Prof. (pic)	14-1-FC		
Zworykin, Vladimir, contrib'ns	SP1-44* & -95@		
Zworykin, Vladimir, and iconoscope	10-3-6@, 18-1-1		

COLLECTING AND COLLECTIONS

American Museum of Radio & Electricity, and Jones tube collection	5-2-1, 6-4-1, 9-6-1
Bolack, Electromech. Museum	2-3-2, 4-6-15
Cache found: Fleming and Weagant Valves, American Marconi "D"	6-3-4@
Collecting, "what's new"	1-1-1
Condon, Bill, Web site on	5-5-1
D'Agostino, Joseph, collection	2-4-11*
De Forest tubes, relative rarity	7-1-6
Bowd Collection, end of	21-5-3
Evans Signal Laboratory, 1947	18-4-FC*, 18-4-1*, 18-4-14*
Hart, Paul, talk on testeres, 2018	20-4-1
History San Jose, gets Perham collection	5-2-2
History San Jose, Perham collection at	SP20-23*
Lighting-up tubes on display	10-2-13*
Joho, Reinhard (pic w/ tubes)	2-5-11
Jones, Al (pic w/ collection)	1-6-2
Jones, Al, tubes to Am. Museum of Radio	5-2-1
Jury, Floyd (displays)	3-5-RC*, 5-5-RC*
Kittleson, Charlie, sale	10-3-1
Lawrence collection, Web link to	10-3-1
Manhattan College (Dowd)	SP1@
MacQuarrie, Charles, collection	8-6-2
"Mrs. K," lost collection	4-6-20*
Ohtsuka collection, to university museum	7-2-1
(pic)	11-5-RC*, 14-1-FC, 16-5-RC
Packing tubes for shipment	6-2-12*
Perham collection, to History San Jose	5-2-2

GENERAL

AC-heated tubes, European, early	2-2-22*
Acorns, identifying by construction	1-4-17
Amplifier, audion RCA demo board	21-3-41*
Archives	
Dowd-RCA	2-3-1, 7-6-10@, 10-3-1
Copies of standards from	3-1-2
Marketing files from	TCA Data Cache@
Perham-Eimac (History San Jose)	2-1-3, 7-6-10@
"Radioana," Smithsonian	SP4
Vacotron (Telefunken)	18-5-18
"Audion Story, An"	2-5-7*
Audion bulb detector, Adams-Morgan	21-3-RC*
Audion development (Espenschied view)	16-2-22
Audion sales & customers	1-1-3*, SP6-11*
AWA Tube Group roster, 1977	SP7-14*
AWA, "Demise of"	11-5-8*, 11-6-1
AWA, collapse of awards	19-2-1
AWA, "top 3" awards, 2016	18-5-1
Barrage jamming, FM	21-1-13*
British valves	
Brands and numbering systems	5-1-10*
Equivalents of '30s types	1-6-11*
Ericsson (Br.) Dekatrons	12-4-9
ETL and Etelco Dekatrons	12-4-8@
Historic (CV53/53A/146J, CV1698/A891, CV-1699/SP41, 220 OT, DET23, YL1130)	4-5-2*
Hivac, Dekatrons	12-4-7*
Hivac, types	1-3-17@
Hivac, ad for "midgits"	4-6-RC*
Nomenclature systems	
Brimar	5-2-27
Cossor	5-5-23*
Ever Ready	6-6-11*
Ferranti	6-5-15*
Silica valves	5-4-4@, 5-6-18*, SP11-26, 14-3-22@
Tunograph (STC)	3-6-8*, 4-1-1
Calif. Hist. Radio Soc, AWA Houck Awd	18-1-12
Carton, to sell tube-test service	4-5-RC*
Cartons, w/ info pasted-over	2-2-3, 2-3-3
Cartons, '30s sealed	16-5-3

Cathode-ray tubes	"Dept. of Commerce" types (XT-03A, etc.)	1-2-3	
100th anniversary of.....	"DOD" military types.....	4-1-6*, 5-5-25*, 5-6-1, 7-1-25, 8-5-17*	
Historically important	Drafting templates, tube-based.....	21-2-4	
"Odd".....	Duds, saving, "why do they do it?"	8-3-37	
12AP4 / 1803P4.....	Eaton collection, 1919.....	18-6-15@	
Code	Electronic Industries Assn. / RMA registrations	TCA Data Cache	
Cunningham, date and factory, pre-WW II	Electronic-organ types	4-4-29*	
17-1-25@	Eyes, "magic"	5-4-15*	
De Forest date, mid-20s	Eyes, "magic," dimming of	14-3-11	
7-1-4@	"Filteramic" antenna, RCA	21-3-9	
GE "dot," call for info	"G" tubes, not in "G" bulbs.....	1-4-4	
5-5-1	Failures, "comments on avoidable"	17-1-10@	
GE "dot," deciphering	FM barrage jamming.....	21-1-11*	
12-6-2@	"Grumping About Tubes (Philco).....	20-3-13	
Japanese "JIS" receiving types ...	INATEL, history lecture	13-5-5*	
5-6-8*, 7-2-21*	Indexes, TCA-AWA-VTV on Web	17-5-1, 18-1-1, 21-6-3	
Japanese "JIS" transmitting types.....	Index, reference, Eimac tubes in		
8-2-19*	amateur use.....	17-5-28@	
Philips date / factory.....	"Industry directory" from RCA	9-2-17@	
2-3-13@	Klystron ceramics, cleaning.....	9-5-25	
RCA, date and factory, pre-WW II	Klystrons, lab tests on	4-4-22@	
17-1-25@	Lewis Electronics tubes as collectibles.....	11-1-23	
RCA, for CRT plate numbers	Locked-door tube factories	18-4-16@	
4-4-30	LRS Relay (Espenschied view).....	16-2-23	
RCA factory-identifier, early.....	LRS Relay, early version	17-4-43	
SP7-13*	Metal		
RCA factory identifier, late	Base stampings, Ken-Rad.....	13-3-8	
8-2-12*, 10-6-27*	Base stampings, RCA	1-5-16@	
RCA "delta" identifier on stems	Construction of "first nine".....	5-4-19*	
9-3-21*	Crosley "declares in favor".....	12-3-22*	
Signal Corps inspector	Development history.....	12-3-3@, 12-3-18@	
9-3-15*	European	8-6-41*	
Sperry type-numbering, microwave.....	GE developmentals, very early (pix)	12-4-FC/ RC, 12-4-34	
3-3-12*	"More on," including early production..	12-4-34	
Sylvania, 1943-1988 date	Manufacturing view (Sylvania).....	15-6-14	
21-6-73#	Philco view, 1935.....	9-2-12*, 20-4-6*	
Tung-Sol, guarantee type	Start of production, RCA.....	5-4-21@	
9-1-15	Service magazine view, 1935	9-2-11*	
Type numbering, US Navy, WW I.....	"Missing" (abandoned identifiers)	4-1-2*	
18-3-7	Moon radar, 1946.....	21-5-1	
Varian types	Museum, International Vacuum tube.....	18-1-1, 18-2-1	
7-3-21*	Music power output vs. max. power out (old-time	controversy)	21-2-2*
Codes, date	Navy, U. S.		
Bell Labs developmental transistors	Costs, tubes, 1944	15-2-25@	
12-5-5	Data on WW I types.....	4-6-8	
Bell Labs developmental tubes	Data on 1928-vintage types	7-5-12*	
7-3-22, 11-5-2	Rules on administering stocks	5-3-17*	
Eimac wartime.....	Nomenclature		
10-3-10	Brimar	5-2-27	
Electrohome	Cossor	5-5-23*	
1-2-20	Ever Ready	6-6-11	
GE "dot".....	Ferranti.....	6-5-15*	
12-6-2	European receiving-tube	2-2-9@, 2-3-4	
GM Delco	Japanese receiving (JIS).....	7-2-21*	
1-2-19	Japanese transmitting (JIS).....	8-2-19*	
Internal control symbols, RCA tubes..			
18-3-18@			
Ken-Rad, 1940-41			
13-2-22			
Packard Bell.....			
1-2-20			
Philco.....			
1-2-19			
Philips.....			
2-3-13@			
Raytheon			
7-6-14*			
Raytheon 1940-41			
13-2-22			
RCA-made			
1-2-16@			
RCA metal, by label style			
12-3-15*			
Sylvania, date call for info.....			
5-5-1			
Sylvania 1940-41.....			
13-2-22			
Sylvania, 1943-1988			
21-6-73#			
Telefunken			
2-4-7*			
Tung-Sol, 1961-62			
21-5-46			
Tungsram			
8-1-20*			
Code, factory-identifier, for "CV" valves..			
12-2-21*			
Codes, special, on RCA CRTs.....			
1-2-20			
Codes, telegraphic ordering			
6-4-12*, 7-3-23*			
Compactron			
"Confusion" (mis-branded novar)			
7-4-11			
History and equivs.			
4-6-16*; 6-5-19*			
Use in CB amps			
6-5-20*			
Construction trends, 1908-38.....			
2-6-19@			
Corona, spotting in TV sets			
21-3-40			
Costs, tubes, U. S. Navy 1944			
15-2-25@			
Crate markings, "chatty" RCA			
1-3-20*			
Counterfeit, racket exposed			
15-2-20, 212-2-3*			
Counterfeiting, tube			
17-4-1			

Vatea	12-6-14	Salesman's report, RCA, re USAF	5-3-20*
National tubes as collectibles.....	11-1-23, 11-2-20	Salesman's report, RCA, re 6C4 and 6F4 ..	12-5-16
Nullode, Telefunken TR tube	5-1-1, SP22	"Seconds," in tube manufacture	3-2-21*,
Nuvisaplug	12-6-36@	13-2-32, 20-2-17^	
Nuvisor, RCA	4-1-10@	"Seconds," 1934 catalog listing	11-5-19*
Introduction.....	20-6-66*	Selling tubes on consignment	18-4-11*
Non-commercialized developmental ...	SP19-43*	Schlockers, in tube sales	3-3-10*, 21-5-2*
Obsolete types, "never die"	6-3-2	Selections, tube, RCA	2-1-18*
Obsolete types, 1936 discontinuance	11-5-21	Service, transcontinental tel., centennial..	16-4-2@
Packing tubes for shipment.....	6-2-12*	Silica valves	5-4-4@, 5-6-18*, SP11-26*
Part numbers for tubes, private-brand		Slide rule, 1929 class in	12-2-1
Bendix-Friez	7-5-11	"So you want a new transceiver?"	18-5-13
Delco	7-5-11	Sockettes (wartime tube adapters).....	2-6-18
Eclipse-Pioneer	7-5-11	Song, "A Tube-Maker's"	17-1-9
Electronic Associates	7-5-11	Sound system, stereophonic.....	11-1-7@
Honeywell	7-5-11	"Storage List," Signal Corps, 1920	19-3-12*
IBM	6-2-22*	Tags, radio price, RCA tube-shape	9-3-10
Minneapolis-Honeywell.....	7-5-11	Technology, "the conumdrum"	13-2-6*
Patents, RCA vs. Taylor and Sylvania	14-4-3	Transatlantic flight, U. S. Navy, 1919	18-3-2@
Phono adjuster, simple	21-5-17	SP25-16*	
Photography, vacuum-tube	SP7-18@	Tektronix museum / Website plan ..	11-5-2, 13-6-1
Picture tubes, failures of (R).....	15-4-40@	Transceiver, "so you want a new?"	18-5-13
Picture tubes, <i>TV Guide</i> looks at	15-1-17*	Transistor amateur gear, "first"	11-4-16@
Pin numbering, GE-RCA vs. RMA.....	1-6-4	Transistors, Raytheon CK721, CK722	21-4-3#
Poem, "Lament of a Retired 210"	10-4-29	Transistor, GE 2N107	14-5-29
Poem, "The Day Before Christmas"	15-6-37	Transistors, RCA 2N32, 2N33, 2N34, 2N35.	21-4-3
Poem, "The Night Before Christmas"	14-6-17*	Transistor, naming the.....	14-5-11*
Poem, "The Radar Man"	10-2-12	Transistor radios, first	4-3-13*
Poem, "The Tube That Jack Built"	6-4-19*	Transistor, Sylvania tetrode point-contact.	12-5-14
"Playthrough" effect, in diode-triodes	5-4-18	Transistors, first RCA dev. and prod'n....	10-4-7@
Pricing philosophy, tube, 1933	8-4-19*	Transistors, "Bell Labs summary of early WECO"	19-1-12*
QSO, first transatlantic solid-state.....	19-5-11	Transistors, power, history on the Web	9-6-31
Quality Improvement, Philco tubes.....	18-3-26*	Transistors, vs. tubes, 1952 view	9-5-14@
Quartz, clear, hype for.....	10-1-45	Triode, 100-kW demountable, GE, 1939.	18-4-29*
Radar, Australian μ wave, tubes... 5-6-9@,	6-2-21*	Tube displays, as fundraisers.....	2-1-2
Radar, at InfoAge museum	15-4-15@	Tube Industry, general survey, 1931	16-1-20
"RCA" connector.....	21-6-7	Tube merchandising, five points on	18-6-37@
Replica tubes		Tube-test labels, repair-shop.....	17-1-FC*
Diaz Pumara.....	5-4-12@	"Tubes, Inc." editorial	SP11-28@
"Reprise on"	7-5-18	"Tube-F-O" story.....	8-2-2*
Edison lamp	13-2-2	Tyne Award, AWA, 2011-12 failures. 13-6-1,	14-3-2
Fleming Valve	13-2-3	Type approval, U. S. military	8-1-23*
Spherical audion, spurious.....	5-6-1	Ultraviolet light, on tube seals and CRTs...	11-3-2
Swan lamp.....	13-2-2	"Underwriters problem," the.....	1-4-8@
Walz	11-6-11@; (pic)	"Undocumented aliens"	4-3-20@,
Weingarten.....	5-4-insert	5-1-10*, 7-1-7@, 7-2-2	
Rectifiers, "calibrated"	10-2-29	US Government, tubes bought a century ago	
Rectigon, "motto"	21-5-38	20-6-21	
Repair, radio, "80 years ago"	18-1-27*	Vreeland oscillator	17-4-43
Repair, radio, unreliability, 1941.....	21-1-3@	Warranty-indicator colors on GE tubes	14-3-19*
Reprocessed tube racket, the.....	20-3-6@	WW II surplus, Sylvania distributor ad	19-5-33*
Rochester AWA conference, "tubes at"		Water-cooling systems, cleaning.....	9-4-12
1999	1-5-2*	WECO "X"-marked tubes.....	1-3-2
2000	2-5-4*	WECO, courtroom exhibit.....	9-2-14*
2002	4-5-19*	"We ScrapTubes" song (Varian)	8-6-49
2003	5-5-12*	X-Ray, history and collecting.....	20-1-19@
2004	6-5-3	50 watts, from "5"-watt tube.....	13-2-33*
2005	7-5-4		
2006	8-5-17		
2010	12-6-6*		
Running through corridors, Raytheon rules	18-4-24		
Sales, old-time ways to push	9-1-16*,		
9-3-14, 10-3-12			

100 years of electronics..... 8-5-1

HISTORIES AND ANECDOTES - MAKERS AND BRANDS

A B C grades, old-time..... 12-2-2*
Adams-Morgan, audion bulb detector.....21-3-RC*
Adzam, cover pic..... 21-3-1
AEG, and LRS Relay 8-4-6
Aerovox "Tinkertoy" circuit modules..... 13-5-1*
Altec-Lansing Co. 19-2-18*, 19-3-5
American Electro Metal Co. 15-6-15@
American Marconi, and tubes..... 6-3-4@
American Television Labs 2-1-16*
Amperex
 Electronic Products 6-4-20, 18-2-30@
 "Inside-out" UHF amplifier 4-1-8*, 18-2-30
 "Premium Quality" line..... 9-4-5@, 17-2-21@
Amplex Electronic Products 6-1-13
Anton Electronic Labs..... 6-4-20*
Arcturus
 Arcturus Electronics 6-2-14
 "Coronet" line 18-4-25@, 19-2-1, 21-4-33*
 "China Appoints" 20-3-25
 "Coronet" line (ad) 9-2-RC*
 "Midget Types Announced" 21-2-22
 Photolytic cell 4-3-11*, 13-5-14@, 18-5-3
 (pic w/ box)..... 7-5-22
 Retains Allen Du Mont 12-5-27
 "Safety" Mercury Rectifiers 16-2-20
 "They're Darn Good" promotion 12-4-49
 Tube carrying case 13-3-37
 Whole history 18-5-2@
 15-V AC tubes, why 15 V 2-1-7*
Argentina, brands in '20s..... 7-6-17@
Argentina, production and rebuilding in .. 9-6-17@
ASSA Ltd. 9-6-17@
Armstrong Electric & Mfg. Co..... 6-6-8
AT&T - transcontinental tel. svc. 16-4-3@
Australia, history, general 16-1-6@
Austria, 1920s industry 17-4-2
Austria (brand, Adele Pasut Co.)..... 17-4-10
Automatic assembly, tubes for 15-5-22*
Autopower, Inc. mercury rectifier 21-1-13
AWV, general 16-1-6@
AWV Radiotrons, 1946 line 7-2-16@
Baird-Atomic, special tubes..... 3-3-6*
 Dekatrons 12-4-10*
Barex (getters) 19-1-6@
Bell Labs
 1945 work program 2-4-9@
 "Controls tubes" 12-2-4*
 Develops 6AJ5..... 10-6-25*
 Names the transistor 14-5-11*
Bendix
 Aircraft ignition systems 4-3-16@
 "Red Bank" tubes 4-5-22@, 9-6-1,
 2-2-20*, 15-4-3@, 19-1-3*
 "HY-G-500" Series 19-1-3@
Birdseye Foods, and RCA lamp 15-4-2
Blackburn, 2011 status 13-5-3

Bogen, David, and ratings of tubes 6-4-18
Bomac Labs, and Carcinotrons..... SP26-43
Boonton Radio, and tube selections 11-3-35
Brach, L. S., vacuum lightning arresters.... 11-1-12
Brazil, "thermionic age" in 11-3-5@,
 Philips 20-3-21@
Brazil, kinescope-making in .. 17-5-3@, 20-1-29@
Brands
 201/201A
 Early list..... SP7-59
 Additional brands 1-2-2
 628 brands of SP1-89@
 Enlarged list..... 14-3-4@
 Star 4-4-1
 Aladdin..... 21-5-2
 American Radio Tube (ART)..... 21-5-2
 Atlantic-Pacific 5-2-23*
 Burnham, Harvey 3-3-4
 Chief 21-5-2
 Continental..... 21-5-2
 Federal..... 21-5-2
 "Fourth-Tier" 20-1-3@
 Los gatos 21-5-2
 Moorhead..... 5-2-3@, 18-3-4@
 Mytron..... 4-1-23
 Private, RCA and..... 1-1-9*, SP11-12@
 RAVAC 21-5-2
 Reliable Selectron 21-5-2
 Repsco MR 21-5-2
 Sheldon 21-5-2
 Speed (Cable)..... 19-6-11@
 "Telefunken" by RCA..... 9-1-2
 Thunderbird..... 21-5-2
 Triangle A..... 21-5-2
 Truetone 21-5-2
 Variety..... 21-5-2
California Tube Labs..... 2-6-2
Cable Radio Tube Co..... 19-6-11@
Canadian GE, maker of "Taylor" types 13-5-13
Cascade Research..... 11-1-21
CeCo, letter-designated types SP7-21
CeCo, "Citation" line 19-4-10*, (pic) 14-5-28
Central Sales 16-1-@
China Electric Co. 11-6-26
CIFTE..... 20-6-2
CGR..... 20-6-5
Compañía Standard Eléctrica Argentina... 11-6-27
Crozé 20-6-5, 20-6-9
CSF, and Carcinotrons SP26
Czeija, Nissl, and Co. 11-6-24
Clark Radio Mfg. Corp. 6-6-3
Collins oscillator 17-4-44
Communications & Power Industries
 Anniversary and plant move 6-5-1
 2011 status 13-5-4
Condor tubes 4-6-2@
Corporación de Radio de Chile 13-2-10
Cossor, A. C. 5-5-23*
 and metalized bulbs..... 14-5-24*
Crosley Vacuum Products Corp. 15-5-16*

CSF, and radar countermeasures SP26
Cunningham, E. T., patent suit 1-5-11*
Cunningham, E. T., 1922 product line SP25
De Forest
1914 Audion promotion 16-4-13@
Broadcast and police transmitters 20-2-6@
De Forest Radio Co., 1929-1933 21-6-9@
DL-DV-DR line, 1927 SP7-5
Sales to Govt. to 1918 20-6-21*
Transistor patent 18-5-21*
Tube kits, 1931 12-2-9, 16-3-49
Deflex Vacuum Tube Co. 13-1-10
Du Mont
CRTs, 1932-42, whole line 10-2-2@
General history 13-4-15@
House-numbered tubes 9-6-21@, 10-1-10@
On Wikipedia 13-4-28@
Duo-Vac 6-4-20
and Tune-A-Lite 6-1-11
Econco 2-5-8@
Edison, Thomas, and Edison Effect SP23-4*
Edison Mazda Lamps, New Low Prices ..21-3-30*
Eitel-McCullough (see Communications & Power
Industries for post-1997 items)
and 416C 9-6-10@
Ads in *Electronics*, 1936-41 SP15-10*
"CD" stacked receiving tubes 16-6-3@, 16-6-FC
Company status, 1959 SP17@
Competitive analysis, 1947 (re 4X20,000A)
19-1-18@
Considers making 30BP4s 21-5-45*
Daily bulletin, 1945 2-4-4
and Gammatrons 6-4-22
and General Electronics 6-2-14, 8-4-29
and Heintz & Kaufman, 1941 SP20-41*
"Heartbreak on the test floor" (klystrons). 2-6-13@
History 14-2-3@
and WW II Japanese radar triodes.. 2-3-9@, 2-5-2
Klystron autopsy 5-1-13*
KSBRR 13-1-2@
Life-test setup, 1943 8-2-FC, 8-3-2
Non-Tubes from 19-6-2*
and Pacific Electronics 11-1-24*
Picture tubes, production of 1-5-14
Planar triodes 7-6-2*
and VT-127A 6-3-11@
and "Wemac" 29-1-38*
Prototype four-unit triode (pic) 7-6-FC*
Search for electrical gear to make tungsten
8-3-16@
Sales (units, income, buyers), 1936-41 ... SP14@
Trip report, Eastern CRT makers 15-5-18@
Tubes made for others 8-6-40
Vacuum capacitor development (lab pic) 6-5-RC*
VT-158 (Zahl) tube, production-line photos
TCA Data Cache@
1941 at 15-3-6@
Dubilier Condenser & Radio Corp. 16-3-8
Eagle (Austria) 17-4-8
Edgerton, Germeshausen, & Grier 21-5-42*
Eisler Engineering Co. 15-2-9@
Electrad Corp. of America 14-1-3, 16-3-7*
Electronic Enterprises, Inc. 15-6-29@
Electronic Laboratories Inc. 6-4-20
Electrons, Inc. 16-2-25@
Elmet Corporation 15-6-15@
Emission Labs 12-2-11@
ENIAC, tube failures in 12-3-29@
EON Corporation 6-4-21
Ericsson, L. M.
General 1-6-16@
Special-purpose tubes 3-6-14@
EuroAudioTeam 13-1-6@
European makers, 1948 21-6-25#
Federal Radio Corp., merger 18-1-26
Federal Telegraph, 1912 site (pic) SP9-16*
Federal Tel. & Radio, power-tube mfg. ... 14-1-4@
F. I. V. R. E. (Fabbrica Italiana Valvole Radio
Elettriche) 13-3-15@
RMA-numbered prewar octal tubes 13-3-20
Fotos, Fotos-Grammont 20-6-4
Freeland Products 7-1-2
Furniture deliveryman, as tube seller 6-3-37
G & R Valve Co. 16-1-8
Ganz & Co. (Austria) 17-4-7
Geisler Laboratories 12-1-16*
General Electric
Argentine ad, 20s 7-6-22*
As successor to Ken-Rad 13-3-5
Ceramic planar triodes 20-4-16@
Contributions in WW I 17-6-15@ + 18-1-9
New carton design 17-4-28
CRT production in Syracuse 10-1-1@
Development, early tube SP10@, SP23-31@
Development, electronics SP23
Disc-seal tubes, development SP23-44*
John Hayes Hammond relay tube 18-2-8@
Metal tubes, development SP23-55@
National Works, in WW I 14-6-27@, SP23-21@
Patent notice, carrier-current tubes 5-1-29
Power tubes, development SP23-39@
Prepares to market '20s tubes .3-2-11@, 9-2-20@
Relationship to RCA SP23-28*
2011 status 13-5-4
Warranty-indicator colors on tubes 14-3-19*
WW I receiving types, successful! 19-3-12*
GEMA, WW II 3-3-9
General Electronics, history and product line
6-2-14@, 6-3-2, 8-4-29
Gold Seal metal-glass 4-2-13*
Goosens, Pope, & Co. 4-6-2@
Heathkit, modern 18-1-1, 18-2-1
Heil tubes 4-3-4@
Heintz & Kaufman
Ad for vacuum gauges 9-3-RC
as seen by Eimac 7-6-9
Farnsworth TV transmitters, to make 16-2-10
General history SP20, 14-2-4*
Helikon (Austria) 17-4-9
Hewlett-Packard, part nos. for tubes 15-4-7@

Hickok, and RD-1700 tester 17-6-26@

Hitachi, 1961-62 line..... 7-3-26@

Hivac, company history 1-3-17@

 "Midget" line4-6-RC*

"HMV" and "Columbia" brands 1-4-2

Hytron and CBS-Hytron 14-1-11@

Hytron "Bantam Junior" line 18-2-15@

Hytron, HY-69 endorsed by Portland police
 20-2-27*

Hytron, HY113 vs. HY123, etc. 4-4-28

IBRAPE (Brazil) 11-3-17*, 20-1-29@

Importadora Electronica..... 11-2-12@

Industrial and Commercial Electronics..... 11-3-4*

"Industry directory" from RCA 9-2-17@

International Standard Electric Corporation. 11-6-20@

International Tel. & Tel., cos. worldwide.. 7-3-15*

Jennings Radio Mfg. Co. 17-3-25@

Johnsonburg Radio Corp..... 3-4-15; 6-6-27@,
 16-3-23@

 Carton (pic).....9-5-22, 16-3-27

 Newspaper story on, 1929 16-3-29*

 and 2B6 16-3-30@

Kellogg tubes, radios using..... 13-2-27

Ken-Rad 13-3-3@

Ken-Rad, 1945 ad.....9-4-RC

KIP Electronics..... 7-3-2*

KR Audio Electronics 11-5-11@

 And Type 45 18-1-31

 And KT88 19-4-7*

Kremenezky (Austria)..... 17-4-6

Kuthe Electronics 18-6-34*

La Radiotechnique

 "Factory tour"..... 8-2-4@, 8-2-RC

General 20-6-2

 Lansdale, picture tubes at, 1949 15-5-19*

Lenkurt Electric Co, branding on tubes. 19-2-2*

Lee De Forest Mfg. Co. (L.A., 1931)..... 16-6-18*

Lenkurt Electric Co, branded types..... 19-2-2*

Lestron..... 10-6-22*

Lestron 44 (pic) 13-2-RC*

Lewis Electronics 11-1-19*

Lewis & Kaufman` 11-1-21*

 Acquires Taylor Tubes..... 14-4-1

Lissen ad 14-4-RC

Litton Industries, and Carcinotrons..... SP26-37@

LMT 20-6-58*

Loewe

 Tubes 4-2-14@

 Quartz-in-neon frequency indicator 4-2-19

Lucien Tube Corp..... 18-1-26

Lumitron..... 3-6-2@, 4-1-9

Machlett Labs, as owner of Deflex 13-1-10

Machlett, 2011 status..... 13-5-4

Magnatron 4-5-5*

Magnavox 16-2-FC, 16-2-3@

Manufacturers, current U. S..... 5-2-28@

Manufacturers, French 20-6-2@

Manufacturers, glass-tube, worldwide 5-3-15*

Marathon, 1929 product line..... 7-3-23*

 '20s Argentine ad 7-6-21

Margo diode..... 21-4-11*

Marshall Electronics..... 11-1-23

McCandless, H. W. & Co. SP 6, SP15-1

 Audion sales 1-1-3*, SP 6-10*

Métal, '20s Argentine ad 7-6-20*

Microtubes, Inc..... 17-2-2@

Moorhead 5-2-3@, SP25, 19-3-1*

M-O Valve, and silica valves 5-4-4@

M-O Valve, and Q, QX, and V.24 16-1-2@

Mullard, and silica valves 5-6-18, 14-3-33*

Mullard, 2011 status 13-5-3

Multi-Tron Laboratory..... 11-3-34

Murdon (ad)..... 15-1-RC*

Musselman (ad)..... 11-3-33

Mytron..... 4-1-23

National Radio Tube Co. 11-1-18*, 11-1-24@

National Union 12-6-17@

National Union, "Sound X/Tra" 3-1-10*; 16-6-12*
 (ad) 10-2-RC

National Video..... 2-1-16*

Neotron..... 20-6-6*

New Jersey, makers in 1940 7-5-29*

Nippon Electric Co. 11-6-24*

Northern Electric, moves 416C to Eimac ..9-6-10@

Nowak (Austria) 17-4-10

Omega S. C. A. 7-5-2*

Ostar 17-4-7

Pacific Electronics 11-1-21

Penta Laboratories 14-3-9*, 15-5-7*

Philips

 and Condor/Pope 4-6-3*

 Argentina 11-4-4@

 Australia 16-1-7*

 Brazil 20-3-21@

 Elmet Corporation 15-6-15@

 Rectangular picture tubes 11-1-13@

 Transmitting, "classical," wide range of 12.4.25@

 '20s Argentine ad 7-6-20

 Philco, sales promotion 21-2-8

 Philco, British 7-3-6*

 Pope..... 4-6-2*

 Philips NV (French) 20-6-8

 Postal Telegraph Co., tubes in use by 11-1-4*

 Product lines, renewal receiving tubes, 8 vendors .
 13-6-25

 QRS, and Moorhead..... 5-2-24

 Racon, fake 1943 ad 16-2-16*

 Radio Mfrs.' Assn., "tube hospital" 11-4-24

 Radio Mfrs.' Assn., "to reduce tube types" 11-5-10

 Radio Telephone Co..... SP15-1@

 Rauland

 and Rauland-Borg 14-5-5@

 Official history of 2-1-12*

 Liquidation of 2-1-9@

 Picture tubes at, 1949 15-5-21*

 Raytheon

 2A3, introduction vs. RCA 21-4-14@

 Announces 6H5 "eye," 6C8G, 6W5G 14-4-10

 Bit of History, A 19-4-8, 20-6-18*

 Carcinotrons..... SP26-32@

Developmental gas rectifiers (pic)SP7-51
 Four-Pillar List 20-6-20"
 Innovations by 2-4-5*
 "Iraq" ad5-2-RC*
 "QK" types, early 2-6-5*
RCA
 100th Anniversary21-5-1
 1931 tube prices.....21-5-43
 Air Force, complaint from3-4-13*
 Air Force, salesman's report on 5-3-20*
 Application Notes
 AC-DC Stereo Amplifiers, with 100-mA
 Tubes, AN-190 20-4-26@
 - AC-DC Receivers, with 100-mA Tubes,
 AN-189 21-3-31@
 Hum in Heater Tubes 21-4-5@
 Index to 19-5-18@
 2A3, AN-29 19-6-26@
 6-volt Receivers, Design, AN-46 21-2-14@
 6L6 55-Watt Amplifier, AN-68 20-3-26@
 42 & 2A5, Triode Operation, AN-35...21-1-15
 7199, AN 183 20-6-12@
 Miniature Tubes, AN-106.....20-5-22@
 Miniature-Tube Hearing Aid, AN-10719-5-31*
 Receiver Design, AN-75 21-5-15@
 "Between the Halves" (sales promo)..... 7-5-6@
 in Brazil 11-3-19@
 in Brazil, kinescopes in 17-5-4*
 "Bullet" developmentals 8-3-14*
 "Bureau of Investigation" 1-6-3, 2-1-2, 2-2-2
 and "child labor" tubes 9-3-22
 Chilean factories and tubes 13-2-10*
 "Clause 9" in license contract 13-4-12
 Developmental tubes, listing and drawings . SP19@
 "Dual standard" for quality 9-1-22
 "Educational show," '20s SP4-14@
 Evans Signal Laboratory contact 7-5-17*
 Fends off Sylvania on the 6J4 18-5-10*
 Fixes 6BQ6 quality 6-6-25*
 And flap over failures of 1619s 19-1-24@
 Four-tier tube prices 8-1-7*
 Harrison, NJ plant (pix) 7-5-RC
 Harrison, "lurid night sky" 16-4-35*
 IBM field contact 3-3-20@
 Lancaster plant, 1948 view 14-3-12@
 Logotype, changed in 1957 7-6-16
 and marine tube sales 9-6-29*
 Magnetron development 21-4-25?
 Marion plant, startup 17-5-17
 Military production, July 1952 3-6-12*
 "New Super-Phonic Tubes" (ad) 15-3-RC
 Neon store lamp and Birdseye foods 15-4-2
 Nuvistor 4-1-10@, 20-6-33*
 Phototubes for proximity fuzes 8-6-43, 11-6-4
 Picture-tube manufacture process 15-5-18
 Pilot 3" TV set, RCA and 21-6-72
 Pinouts, RCA standards for 10-5-29
 Preferred-types program, 1939.. 10-5-8@, 15-6-25*
 Prepares to sell '20s tubes 3-2-11@
 Product-management files TCA Data Cache
 Prunes its product line, 1952 10-4-19*
 Radiotron Sales Manual, ca. 1931..... 10-3-14@
 "Radiotron man" figure 11-1-FC*
 "Salvage schedules" 21-6-4^
 Sarnoff, David, visits Camden plant 19-2-10*
 "Selling Fool" figure 11-3-FC, 15-5-FC
 "Some frustration at" 8-1-22*
 "Special Red," line 16-5-21
 "Special Red," user view 5-5-28*
 and "Telefunken" tubes 9-1-3
 Views Telefunken 12AX7s 13-2-12
 Transmitting types, data on 1934 SP16@
 Tube computers, field report 8-4-21*
 Tube "recovery" 8-5-19*
 Tube suits settled 13-3-14
 Type assignments, plant-by-plant 7-4-12*
 1AE4, "no joy" with 6-2-23@
RCA / Cunningham
 2A3, first release on 9-6-24@
 2A3, vs. Raytheon version 21-4-14@
 2A3, metal version (A2016) 12-3-19
 6AC7, ruggedized 19-3-14
 Renewal sales. "talking turkey" about .. 19-3-18*
 '20s tubes, years of introduction SP7-10
 Trademarks, abandoning four 12-6-38
 Tubes to 1933 1-5-6@
 Tube kits 1-2-6*
RCA Victor Chileña 13-2-10
Radio Manufacturers Association
 "Radio Progress Week" 7-5-8*
 Tube releases, 1933-50 SP7-59
RD Instruments, and 1700 tester 17-6-26@
RFT, and "Gnome" tubes 8-4-22@
Rogers
 History & products 2-3-5@
 Unique types 2-2-14@
 Substitutes for 8-5-20*
Royal Radio Tube Co. 18-1-26
SAIRA (Argentina) 13-4-9@
Sal-Mar Laboratories 14-4-11
Schickerling .. 1-1-11@, 4-4-1*, 4-4-4@, 20-2-29*
 "Tube Engineer" badge (pic) 7-3-32
 "Z" tube 19-6-14*8
SER (Sweden), and "WE" tubes 5-4-1
Shaw tube bases (ad) 10-4-RC
Sheldon 14-4-11@
Sheldon, copies of Eimac 11-4-22
Schrack (Austria) 17-4-2
Shockley Transistor Corporation 17-3-2@
Siemens & Halske 11-2-3@
SIF 20-6-7*
Signal Corps, U. S., 1931 tube line 10-3-13*
Sirian Lamp Co. 18-5-6
Solar Atmospheres, powered by MRI power tube
 (variant of 4-1000A) 21-4-21*
Sonatron 18-1-13@
 "Sound Special" and "Sound X/TRA" tubes
 3-1-10, 3-1-RC*
Soviet microwave tubes, 1954 19-4-16@
Sparton (/ Cardon) 12-2-7@, 16-4-34*

Sperry	
Coding system, microwave.....	3-3-12*
Early types	21-3-10@
Wartime klystron sales.....	11-5-10, 11-6-30
Sperti, Inc.....	17-1-*
Stacked-electrode receiving tubes	16-5-22
Standard Electric Argentina.....	7-3-8@
Standard Electrica S. A. (Brazil)	11-3-13@
Standard Electrica SA (Brazil), CRTs	17-5-6*
Stanford University, klystron research.....	21-3-14*
Stanley Electronics, "tube crushing"	21-1-6
STC, Heil types.....	4-3-4@
STC Australia	16-1-10*
Svetlana, 2003 view	5-6-17*
Sylvania	
in Brazil.....	11-3-22
in Brazil, CRTs.....	17-5-9*
and carcinotrons.....	SP26-45
Clifton, NJ plant	17-6-57
"Chronology of an Era," 1955	21-6-6*
Graphite-anode tubes, "popular"	21-2-18
"House-numbered" CRTs, 2000.Series... ..	11-5-17*
"House-numbered" CRTs, 3000-Series ..	12-1-4@
Rebuilt vs. new picture tubes.....	19-3-15
"Perfect host" (Emporium)	19-5-5*
Special CRTs	9-3-37@
Special TV types, 1949 ad	19-3-11*
Subminiature program.....	9-2-2@
Transmitting types, '30s	15-2-2@
TV-replacement line.....	11-1-16
3 billionth tube.....	18-5-25
2011 status	13-5-3
50-year history.....	16-6-8@
Taylor, history and product line	13-5-7@
Taylor, and Lewis & Kaufman	14-4-1
Taylor, 2011 status	13-5-4
Tektronix CRTs	
1. Early years	8-3-5@
2. First Tek.....	8-4-9@
3. Classic (1955-59)	8-5-2@
4. Innovations: 1959-61	9-1-3@
5. The hybrid years, 1961-64.....	9-5-5@
6. For solid-state scopes, 1964-67.....	9-6-13@
Telefunken, and LRS relay	8-4-6*
Telefunken, centimeter-wave tubes of WW II	SP23
Telefunken, 12AX7, RCA view of.....	13-2-12
Texas Instruments, WECO HINs by	17-6-35*
Texas Instruments, ad for point-contact ...	20-5-RC
Thales	20-6-3
Thomson.....	20-6-3
Transmitting Equipment Co.	3-4-4
Transworld Electronics Argentina.....	12-1-9@
Tung-Sol	
General history	13-6-22@
Guarantee designator.....	9-1-15
Manufacturing in the '50s.....	13-6-32
"Shoots self in foot," 1932.....	13-6-30*
Visit, Bloomfield, 1956, by Mullard	14-4-3*
2011 status	13-5-3
Tungsram (French).....	20-6-8
Tungsram, "mini-loktal" tubes	10-3-38
Triad	3-4-15
and "tube inflation"	14-4-18*
and T-10S.....	18-5-8*
MG tubes	17-4-30@, 21-1-20@
Triotron (Austria)	17-4-3
TSF, '20s Argentine ad.....	7-6-23
Tubelec S. A.	7-5-3*
Tubes, receiving, "1950 view"	10-4-5
Tubes, receiving, availability during Korean War	16-1-298
Tungsram (Austria)	17-4-7
USSR, whole line	3-5-10@
Van Horne	15-6-32*, 21-6-51#
Varian Associates	
And carcinotrons	SP26-45
Type codes	7-3-21@
Honeycomb grids	12-4-37*
Vatea (Austria)	12-6-7@, 17-4-11
VEC (Argentine rebuilder)	12-3-25@
"Victor" tubes (UV-, UX-).....	1-2-2, 1-3-1
VAC-M lightning protectors	5-1-FC*,
5-1-2@, 5-1-RC*, 8-3-41, 21-5-36*	
Vaic, Alesa.....	15-3-2@, 15-5-4@
Victoreen tubes	1-4-3
Visseaux	20-6-4
Wallace & Co.	SP15
Warnecke Electron Tubes.....	SP26-45
Watt AG (Austria).....	17-4-7
Western Electric	
Ad, '20s Argentine.....	7-6-18*
Ad, Wholesale Radio Svc.....	8-5-RC*
Allentown Works	19-1-14@
Arnold-Langmuir court exhibit (pic)	9-2-14*
Ballast lamps	5-6-19@, 6-3-14@, 13-2-18*,
15-1-Index-26	
Broadcast equipment, tubes in.....	6-4-13@
Codes, tubes vs. relays	7-4-37
Dev. of tubes and sockets, WW I.....	9-4-16@
Government sales, 1952-56	4-4-31*
Proximity-fuze manufacture	11-6-4
Radar tubes, WW II, "accounting"	7-4-13@
Radioactivity in tubes	21-5-37*
Resistance lamps	5-6-19@, 6-3-16@
Tests competitors' tubes	1-6-5@
Tube types made by STC.....	11-6-19*
Water-cooled types.....	7-4-23@, 7-4-26@
2011 status	13-5-3
Western Union Telegraph Co., tubes used by	
7-1-10@, 15-3-16@	
Westinghouse	
Early power tubes.....	20-1-13
Pre-WD-11 developmental	6-2-2@, 6-3-2
Full 1922 receiving line	16-6-19@
Full 1926 power-tube line.....	20-1-13@
Instructions, WL-311 and -312 X-ray... ..	20-1-27*
"Winged-C" brand.....	5-6-17
Wireless Improvement Company, catalog. ..	21-6-84#
Wireless Specialty Apparatus, "Peartron" ..	15-2-15*
"WLS" tubes	1-3-3@, 1-5-14

WTIC, 1929 transmitter 13-5-17@
 Zenith (Italy), ad 14-3-FC
 Zenith (US), and Microtubes, Inc. 17-2-2@

**LITERATURE
 BOOKS**

70 Years of Radio Tubes and Valves, 2nd Ed.
 1-1-7, 5-6-1
 Japanese translation 9-3-1
 Aidade Do Elétron – 100 Anos de Progreso na
 Electronica 14-2-25
 ARRL's Vintage Radio 6-4-1
 British Radio Valves - The Classic Years: 1926-
 1946 11-4-2
 Brief History of Bendix Red Bank Tubes, A. . 9-6-1
 Camp Evans – The Untold Story 13-3-22*
 Cathode-Ray Tube, The - Technology, History,
 and Applications 1-2-1
 Collector's Vacuum Tube Handbook, The 3-4-8
 De Forest - Father of the Electronic Revolution 3-4-8*
 Der Österreichische Beitrag zur Technischen Ent-
 wicklung und Industriellen Produktion der
 Rundfunkröhre 16-4-1
 Early Valves – Char. Data for English and Europ-
 ean Radio Valves from the Early 1930s 1-4-5
 Electron Tube Design (O) 1-1-7
 Available on-line 8-6-1
 Electronic Essays 9-3-1
 Frank Conrad's Radio Patents - The Complete
 Texts 10-1-1
 Friends on the Front Line: The Story of Delbert
 and Ruth Replogle 16-1-27
 GEMA: Birthplace of German Radar and Sonar
 3-3-8*
 Golden Dreams - California in an Age of Abun-
 dance 16-5-3
 Hi-Fi Components Series - 4. Altec 19-3-7
 Historische Elektronen-Röhren für Telephonie
 und Radio 17-3-11*
 History of GEC and MOV Valves 1-1-2
 History of the Electric Lamp 15-6-1*
 Illustrated History of Philips Radio Valves, 1st ed.
 SP7-47
 Illustrated History of High-End Audio - Vol. 119-3-5
 Jackson Model 648 - Complete Tube Tester Manual
 1st ed. 6-2-10
 2nd ed. 7-5-5
 JBL Story - 60 Years of Audio Innovation. 19-3-6
 Lee de Forest – King of Radio, Television, and
 Film 14-1-18*
 Life and Work of Dr. Lee de Forest, The 11-4-238
 Living with Radiation: The First Hundred Years
 3-1-12*
 Make Your Own Tube Testers and Electronic
 Equipment 16-2-21*
 Making Silicon Valley - Innovation and the Growth
 of High Tech, 1930-1970 11-3-3
 Metres to Microwaves - British Development of
 Active Components for Radar Systems, 1937 to
 1944 1-2-2

National Bureau of Standards tube manuals
 7-5-10, 7-6-1
 Radio Patent Chronology, A 11-5-2
 Radio Rescue 10-5-1
 Radio Tubes and Boxes of the 1920s 1-4-6*
 Radio Valve Data: 1926-1946 11-5-1
 Radiola - The Golden Age of RCA, 1919-1929-5-3*
 12-4-1
 Rider PA Manual 8-4-15@
 Robert von Lieben - 100 Jahre Patent Kathoden-
 strahlenrelais 8-2-14*
 Röhrenhistorie - 100 Jahre Technikgeschichte und
 die Elektronröhre 10-4-1
 Schweizer Elektronenröhren 1917-2003 9-1-2
 Story of the CK722, The 5-1-5
 Ten Patents from Radio History 9-5-1
 Thermionic Age in Brazil - A Historical Overview
 on Valves and Kinescopes 21-3-2
 Tube Guys, The 10-4-6*
 Tube Testers and Classic Electronic Test Gear. 2-5-1
 Vacuum Tube Design (O) 1-1-7
 Available on-line 8-6-1
 Valve Box, The 7-5-5
 Where Discovery Sparks Imagination 11-4-1*

CATALOGS

Antique Electronic Supply 2001 2-6-1
 Electron Tube Enterprises 1999 1-5-1
 Electron Tube Enterprises 2000 2-5-1

OTHER

Ads, *QST* and *Radio News*, Web search engine 18-2-1
 Archives, Dowd-RCA and Perham-Eimac 7-6-10@
 "Battery Set Compendium" software. 9-4-1, 11-6-30
 Books, out-of-print, Web finder 1-4-4
 Complete Western Electric Data Library, The
 13-6-enclosure
Electronics Collector 2-3-2
 Electronic Valve Specifications for CV Valves
 (DVD-ROM) 11-2-21*, 11-3-2
 HB-3 Handbook, RCA 11-6-9*
 on DVD 11-6-10
 Oscillographs, '20s bibliography of SP5-21
 Power-tube manuals, RCA TT-1, TT-2 11-1-3
 "Radio Finder" tube-complement data base
 11-1-2, 11-6-30, 18-2-1
 "Saga of the Vacuum Tube," *Radio News* '40s
 version 1-6-10*
 TCA Data Cache 11-1-2, 11-2-2*, 13-4-2
 Tube-substitution literature 17-2-31@
 "Tube Tester" video 9-4-1
 Tubemaking Video 10-1-1
Vacuum Tube Valley, index available 9-6-1
 VTDATA vs. TUBEDATA (software) 2-3-17*
 WE (Western Electric), first cover 18-3-RC*

TCA

"Ace Authors"
 First six (Condon, Cross, Dowd, Stocks, Taylor,
 Vanicek) 5-5-4
 Next wave (Barbour, Magers) 6-5-1

Abel Santoro	7-5-14	Election announcement, 2016.....	18-5-1
Peter Keller	8-4-1	Email reflector	1-5-1, 1-6-2, 3-5-1, 21-6-3
Lane Upton	10-1-1	Fifth year	6-1-2
Cumulative list	7-6-1, 8-4-1, 8-6-1, 9-5-1, 10-6-1, 11-5-1, 17-6-1, 21-6-2	Financial results, FY2012-2013	16-1-1
Anniversary, 5th	6-1-1	Indexes to TCA pubs	
Anniversary, 10th	11-1-1	1999.....	1-6-24*
Auction, 2019, announcement	21-1-1, 21-2-1	Later years through 2015:.....	Each Feb. issue
AWA <i>Fact Sheet</i> , reprint of.....	6-1-2, SP7	IRS 501(c)(3) status received	5-2-1
AWA Roch. 2007, TCA member exhibits at 9-5-4*		Michigan "Extravaganza," TCA at.....	9-4-15
Awards program, rules	3-3-5*, 4-3-3*, 8-3-3*, 9-3-1*, 10-4-2*, 11-3-21*, 12-4-2*, 13-3-2*, 15-2-24*, 16-3-2*, 17-3-10*, 18-3-31, 19-3-4*, 20-3-3, 21-3-3*	Member meets, Beltsville, MD	
Award winners		2004.....	6-2-1, 6-3-1, 6-4-1
2001	3-5-3	2018.....	20-4-1*
2002	4-5-18	Member meets, Beltsville, MD. 2018.....	20-3-1
2003	5-5-2	Member meet, Charlotte, NC	12-3-2
2005	7-5-14	Member meet, Mountain View, CA 17-5-1, 17-6-1*	
Cumulative.....	6-5-1, 7-6-1, 8-6-1, 9-5-1, 10-6-1, 11-3-2, 13-3-2, 15-2-24, 15-5-24, 17-1-2, 17-5-2, 18-5-1, 20-3-3, 21-6-2	Member meets, Lansing, MI	
2013	15-4-2	2007.....	9-3-1, 9-4-14
2014.....	16-5-1	Photos.....	9-5-2
2015.....	17-5-2	2009.....	11-5-5*
2016.....	18-4-2	2010.....	11-5-4*
2019.....	21-5-3	2011.....	13-4-1
Back issues, availability	21-1-1, 21-1-1, 21-2-1, 21-3-1	2013.....	15-1-1, 15-3-2, 15-5-1
Board, meetings		Member meets, Kalamazoo, MI	
2001	3-5-2*	2015.....	17-2-1, 17-3-RC, 17-5-1, 19-5-1, 19-5-2*
2002	4-5-15*	2017	19-2-1, 19-3-1
2003	5-5-2*	Member meets, Gold Hill, OR	
2004	6-6-2*	2005.....	7-2-1, 7-3-1, 7-4 enclosure, 7-5-14*
2005	7-5-13*	2006.....	8-5 enclosure, 8-5-14*
2011	14-3-1	2008.....	10-6-2*
2014	16-6-2	2009.....	11-5-1
2017	19-4-1	2012.....	14-5-3
CC-AWA Charlotte, TCA at	7-2-1, 7-3-1, 12-1-1, 14-3-1, 16-1-1	2014.....	16-4-1, 16-5-1, 16-6-2*
CC-AWA Charlotte, 2017 tube meeting	19-3-3	Member meet, Rochester, NY	
CC-AWA Charlotte, 2018, announcement	20-1-2*	2001.....	3-4-2*, 3-5-3*
Directory (member directories for 1999-2003 and 2015-2016 were stand-alone booklets.)		2002.....	4-3-2*, 4-4-2*, 4-5-15@, 4-5-33
2004	6-3-26@	2003.....	5-2-2, 5-3-1, 5-4-3*, 5-5-3*
2005	7-3-38@	2004.....	6-3-1, 6-4-2*, 6-5-3
2006	8-3-26@	Tube drawing at	6-1-2
2007	9-3-26@	Member meet, Timonium, MD, 2006.....	18-1-1, 18-4-2, 19-1-1, 19-3-1
2008	10-3-27@	PayPal, TCA accepts.....	4-2-2
2009	11-3-36@	Special Publications, contents of.....	6-4-3*
2010	12-4-39@	Survey, members - results.....	1-2-4*
2011	13-3-27@	Tube conference, Gold Hill, OR, 2007	9-6-2*
2012	14-3-39@, 14-3-1	Web site, new tube data and search feature....	15-4-3
2013	15-3-20@	TESTING AND RESTORATION	
2014	16-3-38@	45, substitutes for	19-2-4@
2017	19-4-38@	6550s/KT88s, testing in McIntosh amp 17-5-12@, 18-1-31	
2018.....	20-4-Centerfold	Adapters, commercial and home-made....	9-3-13@
Dissolution plan	20-6-1, 21-6-3	Arcturus "Coronet," testing octal types.....	19-2-1
Election results, 2001	3-1-3	Bases, dissolving cement	17-3-22
Election results, 2008	10-4-1	Bases, tube, re-threading.....	20-2-5
		Bases, tube, tightening	
		With shellac	1-4-3
		With string and cement	11-4-3
		With muffler cement	2-4-4
		Buying & testing, guide	3-6-5*

Cleaning, inside the bulb.....	14-4-24	"A Simple Catechism" (RCA).....	21-1-33*
Curve tracers		Century Electronics self-service.....	21-3-35*
From Hytron.....	14-2-2*	Funke W19 (pic).....	8-5-25
From Tektronix 575C.....	2-3-2, 5-2-2	Jackson 648, book on.....	6-2-10, 7-5-5
From Tektronix 576.....	13-6-2@	"Latest" (Sylvania, 1932).....	19-3-25
Hagerman Vacu-Trace.....	3-3-1	New London 901.....	17-1-19 (pic), 21-2-23*
Radio Workshop (Minneapolis).....	15-4-14*	RD Instruments 1700.....	17-6-26@
Tektronix 576.....	15-6-5*, 15-6-11	Oscillation in.....	2-2-3, 13-6-31
Tektronix 577.....	15-6-3*	Radiotechnic visual (ad).....	9-1-RC*
Test console for semiconductor tracers.....	16-5-4@	RCA WT-100A.....	18-1-3@
Eye tubes, restoring brightness.....	15-1-6@	Self-service	
Fake tubes, basics for detecting.....	11-6-3	American Scientific.....	21-4-12
Frame grid, Sylvania "Framelok".....	14-4-25@	Calex.....	13-2-15*
Gassy tubes,		Westinghouse "DIY".....	21-3-35*
Curing.....	5-1-12*, 13-4-6 and 16-1-19 (not recommended), 14-5-16	Pros and cons.....	10-2-21@
Locating.....	21-1-27@	In supermarkets.....	4-1-20*
Reasons for.....	13-3-24*	Transmitting tubes, for.....	11-4-20*
Testing.....	12-1-8	VIS-U-ALL V-101.....	8-3-22
"Good" tube, what is a?.....	20-4-5*	WE J64001R.....	6-1-16; (pic) 5-4-26
Grid emission, tracking down.....	18-2-26@	WW I vintage.....	SP11-8*
Heaters, re-welding.....	12-1-8	Testing	
Heathkit emission testers, time-saver data.....	14-6-23*	"Every six months," poster promoting...11-4-RC	
Heathkit tube tester, use to test/salvage.....	14-6-18@	Fetrons.....	3-6-10
High-current tubes on TV-7 family.....	19-5-3*	Gas, test for.....	19-3-17
High-voltage processing of power tubes.....	18-3-12*	Inconsistent results between testers.....	10-6-24*
Intermittent heaters, finding.....	13-2-7	"Making it pay".....	21-2-20*
Label, old-time "Defective Tube".....	11-5-9	Power tubes, discrepancies in testing.....	19-3-16
Magic eyes, no way to restore.....	10-4-25*	Rectifiers, discrepancies in testing.....	19-3-17
Matched pairs, limits for.....	13-2-17	Special-purpose types.....	3-6-20*
Difficulties in.....	15-5-24	Testing philosophy.....	13-2-23@
Matching, for audio service.....	15-6-2@	Transistors, avoiding damage in testing	
Microphonic tubes, finding.....	13-2-7	17-1-13*, 20-6-26*	
Nixie leads, cleaning.....	14-5-21	WE, early, on Heathkit.....	1-4-7
"Old-time troubleshooting stories, two".....	21-6-5	"Whose face is red?" test errors.....	195-16*
Open filaments, barbecue sparker for finding.....	10-2-1	Tube IDs, reading faded.....	7-2-15*, 13-2-17
Open pins, megger for.....	7-1-2	TV, converting Philco to use 2 - 5U4Gs instead of	
Parameter limits, RCA.....	3-6-7*	3-5Y3GTs.....	21-3-29
Picture tubes, rebuilding.....	11-5-22@	WD-11, repair.....	20-6-25*
Picture tube, "short fixer".....	21-6-11		
Pirani Test for transmitting tubes.....	5-4-17*		
Power triodes, glass, RCA limits for.....	7-2-14	TECHNOLOGY AND	
Quality, RCA "dual standard" for.....	9-1-22	CONSTRUCTION	
Radio repair, "in the Depression".....	16-6-15*	"A," "B," "C"-Technique, Philips.....	9-1-11@
Reactivator, screws into light socket.....	21-6-10	Acorn, development.....	17-4-22
Rebuilding, Econco.....	2-5-8@	Additron, the.....	10-4-12*
Rebuilding, in Buenos Aires.....	5-5-19@	Alloy, oxide-coated.....	21-3-37*
Rejuvenation of tubes.....	13-2-13*	Alphecon.....	6-5-12
"Replace All Tubes" (1931 promotion).....	10-5-25	Amperex "Special Quality" line.....	9-4-11@
"Salvage schedules," RCA.....	21-6-4*	Anodyne, National Union.....	21-1-*
Shorts, clearing by knocking.....	18-5-24	Application notes, RCA	
Sodion tubes, cleaning.....	19-2-11	2A3, AN-29.....	19-6-26@
Spray-shield types, replacing.....	14-6-49	6L6 55-watt amp., AN-68.....	20-3-26@
Substitutions		6-volt receivers, AN-14@.....	21-2-14@
6.3-volt for 2.5-volt.....	12-1-8	42 and 2A5, triode use, AN-35.....	21-1-15@
For 80.....	12-1-8	Miniature-tube hearing aid, AN-107.....	19-5-31*
For BH.....	12-1-8	Arc oscillator, GE.....	12-6-34*
For Rogers types.....	8-5-20*	ARINC reliability study.....	16-5-15*
Within TV sets.....	21-6-35	Army-Navy "preferred," WW II.....	2-5-12*
Testers		Arnold mercury-arc repeater (pic).....	20-4-2
		Arrester, lightning, vacuum.....	5-1-3@,
			8-3-41, 11-1-12

Asbestos (lack thereof) in tubes...	11-1-3, 12-5-17*	IBM developmental.....	16-3-15@
Audion, first in Argentina.....	12-5-15*	Vacuum.....	7-6-24@
Ballast / res. lamps, making.....	5-6-19@, 6-3-14@	CRT deflection plates, numbering plan.....	4-4-30
Ballasts / line resistors, RMA standard....	13-2-18@	De Forest, lab notebook, 1912-14.....	19-2-21@
Barium azide process, Philips, for fils.	14-6-6@	Deflectron, Crosley.....	15-5-16*
Barratron.....	21-5-6*	Deflex.....	13-1-10@
Base pins, improved soldering.....	13-4-8	Dekatron.....	7-2-6@
Bases		Survey: types, makers, logos.....	12-4-4@
"Gnome" 11-pin.....	8-4-33@	Design changes, effects of.....	8-2-9*
"Interservice," British.....	15-2-21@	Developmental types	
Materials and constrictions.....	10-5-24*	Bendix RXB-103nnn.....	4-5-26*
"Mini-Loktal".....	10-3-3*	De Forest glass-arbor (pic).....	7-3-FC
Navy and UX.....	3-3-13@	QK-, Raytheon, early.....	2-6-5*
"National" 6-pin coil base.....	11-4-15	RCA, general.....	1-3-2, SP19@
Octal, original vs. production.....	8-3-15	RCA, nuvistors.....	4-1-18*
"Rimlock".....	9-1-13*, 15-1-2@	RCA 20-kW VHF tetrode.....	12-4-20*
More on.....	15-2-19*	Western Electric / Bell Labs	
Philips line, 1948.....	21-6-27@	Bell Labs '30s.....	1-2-8@
Base-branding machine (pic).....	9-4-FC	Bell Labs 1945.....	2-4-9@
Basing cement.....	2-1-8*	Bell Labs '40s-'60s.....	7-4-30@
Battery polarities and voltages, automobile.	14-6-2	WE "A"- "Z" (chart).....	SP9-14*
Beam-X.....	7-6-24	WW I.....	9-4-16@
Beam power triodes, very-high- μ	13-4-3@	Direct-coupled output triodes.....	3-4-15@,
Beryllia, "hysteria".....	20-2-148		10-6-11@, 11-1-2
Beryllia tube bodies, Eimac.....	14-5-15*	Edison-Effect lamp (pic).....	SP9-4
Bitermitron.....	SP26-46	Edison-Effect lamp, as radio detector.....	12-3-24*
Blue glow, reasons for.....	9-1-19*, 9-3-11*,	Edison triode, "speculative".....	13-2-2@
	14-1-10, 15-5-9, 17-3-33	Electron relay, Ruben.....	13-4-7*
"Bragatron," the.....	14-4-23*	ENIAC, tube failures in.....	12-3-29@
"Bremsfeld" tubes.....	SP22-18	Etch marking, RCA process for.....	8-2-11@
Bulbs, RCA nomenclature.....	7-5-20*	"Export" U. S. types.....	7-1-13@, 10-5-21
Bulbs, radio dial.....	21-4-8@	In Canada.....	12-2-FC, -2
Camera (iconoscopes / orthicons / vidicons / iso-		FCC-approved transmitting.....	3-4-10@
cons / saticons / nuvicons), first.....	SP1-44@	FCC, and required broadcast spares.....	8-6-19
Camera, early solid-state.....	SP1-60* & -104*	Filament, Hudson.....	SP6-5
Carcinotron, M-type.....	SP26@	Fetode (ad).....	6-2-RC*
Cathode coating, flaking of.....	8-3-20*, 9-1-17*	Fetrons.....	3-6-9@, SP11-18@, 17-6-33@
Cathode, cataphoretic.....	15-5-23*	Furay Gammatriode.....	11-1-11
Cathode, Sylvania "life-boost".....	13-6-39@	Gain, "mile" as unit of....	10-4-3, SP10-11, SP18-1
Cathodes, fast-heating/bombardment for micro-		Gammatrons	
wave tubes.....	21-6-22#	Diode-triodes acting as.....	5-4-18*
Cathodes, bombardment, for other uses....	21-6-24	Eimac developmental.....	6-4-22*
Catkin (Osram).....	18-3-FC, 18-3-28*	French '20s (pic).....	12-3-35
Ceramic triodes and magnetrons - early German ..	SP22	Heintz & Kaufman.....	6-2-20*, Spl. Pub. 20
Charactron.....	6-5-10*	Westinghouse tries.....	6-2-2
Chemical aspects of manufacture.....	14-2-28@	6AX5, as amp. / osc.....	6-2-18, 8-1-3*
Chronotron.....	4-5-24	6X4W, as amp.....	10-6-6@
Circuitron.....	19-5-10*	6X5GT, as amp./osc.....	8-1-3
Circuit modules, "Tinkertoy".....	13-5-1*	ZR400, RCA (pic).....	7-2-3*
Civilian "military" tubes.....	9-4-4	Gas tubes, fill gases.....	7-4-9
Clark, George C., tube.....	6-6-2@	GE hi-fi tubes, use as modulators.....	21-5-18*
Construction, at home.....	3-2-10, 5-4-12@, 10-5-2@, 17-1-6@	Getters	
Conservation, materials, Korea vintage	20-6-27@	At RCA.....	3-1-16@
Convectron.....	4-5-25	At WECo.....	3-3-17*
Coplanar-grid.....	13-1-18	Barex.....	19-1-6@
Copper-core anode material.....	20-2-12	Discussion on.....	3-2-3*
Counter tubes		Early (phosphorus, lime, magnesium) ..	13-6-33@
Cold-cathode.....	7-2-4@	Kemet.....	19-1-6@
Dekatron, survey.....	12-4-4@	Kemet 1947 Catalog.....	18-6-2@
		Ring, note on, at RCA.....	20-4-7

Zirconium..... 3-1-24
Glass, RCA standards for bulbs..... 3-2-16@
Glass, "suck-in" failure 5-3-19
"Gnome" types 8-4-22@
Graphecon 6-5-8*
Grids, Varian honeycomb 12-4-37*
Haban tube detector.....SP22-18
Hammond, GE relay tube for (pic)..... 14-6-41
Hazards, operating, large power tubes ... 14-4-20@
Heater-cathode hum 19-6-7*
Heater flash4-3-9*, 4-6-13*
Heater constructions4-3-10, 4-6-13*
Heater, "dark"
 RCA..... 5-1-15@, 5-3-2*, 5-4-10*, 20-2-28*
 Sylvania..... 5-5-27*
Heil cathodeSP22-1 and 23
"Helium" tubes.....20-2-16*
Holloway counter 7-6-32
Home-made: "Nick's triode" 14-4-5*
"Humless" '30s.....20-6-24*
Hybrid Integrated Networks, WE..... 3-5-5*,
 17-6-33@
"Hybrid" car-radio tubes 6-6-13@, 7-1-2,
 14-6-2@, 20-4-9@
Image dissector (pic) 2-1-RC*, 8-3-25
Inditron, National Union 12-6-22, 12-6-RC
"Innoval" format, Australia..... 16-1-8, 18-1-31
"Innoval" format, Philips 17-6-FC, 17-6-4@,
 17-6-8@, 17-6-RC, 18-1-31
Inverted cyclotron.....SP22-18
Inks for tube-marking 9-3-23*
JETEC type designations, "philosophy" . 21-2-24@
KenopliotronSP10-37*
Klystron..... 21-2-9@
 Early (Varian bros., Stanford, Sperry).. 21-3-10@
 Reflex amplifier..... 14-4-7@
 German WW II..... SP23
Lamp, concentrated-arc..... 12-6-39@
Lamp, incandescent, history 13-2-8*
Lamps, Edison and Swan..... 13-2-2*
Lamps, incandescent, as VHF oscillators . 13-4-13*
Lamps, radio 21-4-6@
Lenard-Ray tube, Westinghouse WL-785 . 19-6-7*
Lestron..... 10-6-22*
Lightning protection, neon, RCA 21-1-2
Klystron, invention of 6-6-20@
Krytron, EG&G 21-5-42
Layered plate material..... 21-5-18
LRS Relay 8-4-2@
 Siemens & Halske replica (pic). 14-5-FC, 14-5-1
Magic eyes, wide-angle operation of 10-4-26
Magnetrons
 '20s single-anode (pic)SP7-56
 Cavity, "what is a, anyway?" 21-4-25@
 EarlySP1-78*
 German, WW II, general..... SP22
 "Mini"21-4-14*
 Müller-RostasSP22-18
 Split-anode 8-1-10@
 Threat-emitter21-4-29*
 Magnets, experiments with 12-6-51
 Magnetrons, prewar dev. of German and Swiss
 17-2-13@
 Manufacture, current, at KR Audio Elec. 11-5-112
 Mason jar, tube in (pic).....14-5-1, 14-5-RC
 Mercury, old-time rules for use 2-2-24@
 Mercury, tubes containing 9-5-18*
 Mercury, "the new asbestos" 14-2-26*
 Mercury-arc rectifiers 17-1-20@, 19-3-20*
 Metal-glass tubes, Gold Seal 4-2-13*
 Metal tubes
 European 8-6-4
 First GE-RCA.....SP1-29@, 19-6-17@
 Production start-up 5-4-21@
 Metalizing, Cossor process 14-5-24*
 Metals, relative prices of 6-3-10, 21-6-8*
 Military specs, current updating 10-4-1
 "Milkotron," De Forest ... 4-6-1, 4-6-10@, 6-3-18*
 Miniature tubes, use of (RCA AN-106). 20-5-22@
 "Mini-loktal" base, Tungstram 10-3-3*
 Mnemetron 7-2-4
 Molybdenum, uses for..... 15-6-16
 Monode VHF oscillator 13-4-13*
 Monoscopes, general..... 6-5-10
 Monoscopes, early RCA, patterns..... 8-2-21@
 Multi-filament '20s 9-3-17*
 Multipactor, Farnsworth 10-6-17@
 Naval ships, tube quantities on each 14-1-19
 Nickel, high-purity 3-2-5@
 Nomotron 7-2-9*
 Nullodes, German..... SP22
 Nuvistaplug 12-6-36
 NuvistorsSP1-63*, 4-1-10*
 Painting of tubes at RCA 21-4-22*
 Patent notices, '20s 11-6-3
 Pentode, "possibilities of the" 15-6-23*
 Pentodes, early, GE / RCA 18-5-12*
 Pentodes, intro. of power in U. S. 19-2-12@
 Pin soldering, improved, for CRTs 13-4-8
 Pinouts, RCA standards for 10-5-29, 17-3-29
 Phasitron, replacing..... 14-3-3*
 PhotomultipliersSP1-73*
 Plastic materials, Bell Labs 1940 view .. 12-5-18@
 Phototubes, for optical proximity fuzes..... 8-6-43
 "Pinchless," Philips 9-1-11@
 Pins, "forbidden" 4-5-21*
 Pins, early numbering of 21-4-2*
 Planar triodes
 Eimac 7-6-2@
 "CD" types 16-6-3@
 GE line, ceramic 20-4-16*
 Sylvania "rocket"..... 5-3-9@, 5-4-1, 20-3-14@
 Plasmatron 4-5-24
 Power pentode, development in U. S. 19-2-12@
 PNPN diode 17-3-2@
 Popularity, relative, tubes in old-time radios
 11-2-15@
 Post Office controlled types, British, WW II
 18-3-29*
 Power tubes, '50s manufacturing process 14-1-4@

Proximity fuzes, tubes for photoelectric	8-6-43, 11-6-4@	T-Tubes	10-4-20
"Practical applications"	12-5-21@	Template, tube drafting	21-1-4
Preferred types		Terminology, RCA tube-construction.....	7-2-23*
RCA 1939 program.....	10-5-8@	Transmitting, FCC-approved.....	3-4-10@
Army-Navy, WW II	2-5-12*	Traveling-wave tubes	
"Play-through" in diode-triodes.....	5-4-18*	Early	SP1-82
Quadratron, the	20-3-5*	Early, in space	21-6-61@, 21-6-65
Radar, Aust. microwave, WW II... 5-6-9@, 6-2-21*		"Tree" of tube development, 1930 view .`	19-4-RC*
Radar, 1946 moon, Sylvania tubes in.....	14-5-22*	Trigatron	2-2-19@
Radechon, RCA	6-5-6*	Triodes, light bulbs as	16-4-29@
RCA developmentals, insights from	21-6-18#	Triodes, planar, development at Eimac.....	7-6-2@, 16-6-3@
Radial-beam commutator tubes, NU	12-6-20	Trochotron	7-6-24@
Radioactivity, in tubes.....	17-5-33	Troubles, tube, in TV receivers	11-5-26@
Receiving, popularity in old-time radios ..	11-2-15@	Troubles, tube, general.....	13-2-24
Rectifiers, mercury-arc.....	17-1-20@	"Tubes Other Than Receiving" series	
Rectifiers, full-wave, "new GE family" ..	21-1-11*	Introduction	SP7-42*
Reflex receiver, one-tube	11-5-30*, 12-1-2*	Cold-cathode devices	SP7-51
Register, numeric.....	7-2-8	Magnetron, single-anode	SP7-55
Regulator, Johnsonburg, tests	16-3-23@	Magnetron, split-anode	SP7-61
Reliability, tube	15-5-10@, 16-5-14@	Rectifiers (Cooper Hewitt, ignitron)	SP7-45
Increasing.....	17-4-32	Rectifiers (Tungar, thyratron).....	SP7-48*
Remtron.....	7-2-5	Tubeless radio, "what of it?" (1932 view) .	12-1-18
Resistance lamps, WE line.....	5-6-19, 6-3-16*	Tubesters.....	10-4-20@
Resistors, line-cord heater-dropping	14-5-19*	Tune-A-Lite / Flash-O-Graph / Tuneon....	6-1-11@
Rimlock, Philips	9-1-13@	11-1-4	
"Rocket" planar (Sylvania).....	5-3-9@, 5-4-1, 20-3-14@	Tungar - development	SP23-58*
Rogers Majestic, substitutes for.....	8-5-20*	Tungar - GE catalog	SP13
Ruben electron relay.....	13-4-7*	Tungsten, uses for	15-6-17
Ruggedized, 1948 Navy report on	21-4-31*	Turbator.....	3-2-8@
Screened grid valve, British, origin.....	16-3-3@	TV brighteners.....	21-4-23*
Sealex, at De Forest (pic).....	7-1-3*	Vacuum, retention during tip-off.....	1-2-2
Sealex, "scheduling the".....	7-2-2	Vapor-cooling	17-5-20@, 19-1-1
Seals, low-temperature bulb	16-5-21	Wafer-base octals	21-6-92
Secondary-emission tubes.....	15-6-19@	Washington-Honolulu radio trials, 1915 .	18-1-21@
Selectron, RCA.....	6-5-5*; 6-5-13*	Water-cooled, WE	7-4-23@, 7-4-26@
Semiconductors, electron-bombarded.....	21-6-36#	"Watts per Dollar" survey, '60s	11-3-23
"Self-shielded"	21-4-32	Welding, resistance	5-1-6@
Semiconductors, registered as tubes.....	6-6-9*	Whippany Effect.....	12-1-17*, 21-1-12
Service calls, radio, unusual	12-3-36*	Williams storage tube.....	6-5-5
Servicing, wartime, in New Zealand.....	12-5-25*	Wunderlich detector	8-6-33
Silica valves	5-4-4@, 5-6-18*	X-Ray.....	20-1-19@, 21-2-32@
"Single-tube" radios (i. e., one type used) .	13-1-15	6D5, one known use	21-1-22
Sockets, Western Electric		6-volt receivers, design (RCA AN-46) ..	21-1-14@
100A (pic).....	5-3-24	12-volt-B+ auto-radio types.....	6-6-13@
113A (pic).....	4-4-35	110-volt tubes, '20s report.....	11-5-3
WW I.....	9-4-23*		
Solder, tin on tube pins.....	1-1-6		
Solenoid tube, A-P (Moorhead). 194.FC*, 19.3.4@			
Special-purpose tubes, 1953 view	15-6-26*		
Sprytion, EG&G.....	21-5-42		
"Standard cable mile", as unit of gain	10-4-3, SP10-11, SP18-1		
"Stems and seeds" in tubes	21-5-38@		
Stenode crystal non-tube	19-6-9*		
Subminiature, Sylvania program	9-2-2@		
Survival, tubes, in storage	19-1-29@		
Sweep tubes, earliest TV sets	6-6-12*		
Sweep tubes, as RF power amps	8-2-15@		

TUBES, BY TYPE

U. S. / CANADIAN - DEVELOPMENTAL

A105 (RCA) (pic).....	4-6-24
A109 (RCA).....	12-3-37*
A472 (RCA).....	8-3-14
A2016, A2022 (RCA)	5-4-20
A4048C (RCA).....	7-6-12
A4248 (RCA)	7-6-11
A4444 (RCA)	10-3-11
A5550C (RCA).....	7-6-11
R-2061 (RCA)	20-4-25*
B (WE) (pic)	SP9-19
Burgess Radiovisor Bridge.....	14-2-23*

"Bullet," RCA line	8-3-14*	X1 (pic)	9-2-FC*
C761 (RCA)	7-6-10	X3 (pic)	SP11-FC*
CA4, shortened 6E5 (RCA)	5-4-15	X4 (pic)	7-2-FC
CA19 (RCA)	7-6-11	X7 (drawing)	7-6-13; (pic) 9-5-FC*
Carcinotrons, "all known" types	SP26-55	X8 (pic)	10-3-FC
Circuitron (Sylvania) (pic)	14-5-27	X34	6-4-22
Cooper Hewitt 4-anode arc rectifier (pic)	3-6-FC*	X159 (pic)	2-4-FC*
"CD" line (Eimac)	16-6-3@, 16-6-FC	X176 (pic)	2-4-RC*
DX336, DX366 (Amperex)	4-1-8*	X264, X265	6-4-22
Eimac dev., w/ VT-158 parts (pic)	3-3-RC*	X272 (pic)	6-4-FC*
Electrad Diode	16-3-7@	X282	6-4-22
ER (Moorhead) (pic)	SR25-4*	X389	7-1-19
Eye tubes, RCA developmental	5-4-16	X571F	5-1-13*
F (WE) (pic)	1-4-22*	X632G	2-6-15*
Hammond, John Hayes relay tube (GE) ..	18-2-8@	X751D	16-6-4
HI-PO 567 (Sheldon)	11-1-12	XM15 (pic)	4-2-FC*
HI-PO 6S78 (Sheldon)	10-5-6*	ZG-489 (GE? thyratron)	11-6-6
HK (Raytheon) (pic)	16-1-25	ZR400 (RCA gammatron) (pix)	7-2-3*
HY-numbered, Hytron	14-1-17*	2K51, 2K52, 2K53 klystrons	15-6-21*
"Hybrid" car-radio types	14-6-2@, 20-4-9@	5R4, RCA fixes the	18-5-14*
Image tubes, RCA '30s (pic)	7-5-15	12HN8 (RCA)	8-5-22*
Ken-Rad '20s-'30s line	13-3-3	15D (Eimac) (pic)	2-6-FC*
KGG (Johnsonburg)	16-3-23	20-kW tetrode, RCA VHF	12-4-24*
Klystrons, unidentified BTL (pic)	7-4-33	87 (?) (Arcturus)	12-4-51
K (WE) (pic)	8-2-26	102D, De Forest (pic)	7-5-23
L, M (WE) (pic)	SP9-19	304TL pre-prototype (Eimac)	7-6-FC*
Mason-jar triode	14-5-RC	567, Sheldon HI-PO	11-1-12
Multigrid triode, <u>W.</u> (pic)	SP7-48	1012, 1024 (Lestron)	10-6-22*
K1376 (DuMont)	20-2-3*	1037 (RCA)	4-2-11, 7-6-12
N03A, N11, N45, N52, N60, N65 ..	11-1-11, 11-1-25	1280CT (BTL) (pic)	7-4-30
Nuvistors, developmental and commercial ..	4-1-10@	1303CT (BTL) (pic)	7-4-31
Power tubes (5-, 10, 25-, 100-kW), <u>W.</u> ..	1922 16-6-23	1449XQ (BTL) (pic)	7-4-32
P4, 23 and P27 Photolytic (Arcturus) (pix)	16-1-25	7739, Du Mont	9-3-20
PJ-2, PJ-4, PJ-7, PJ-8 (GE)	17-3-17	U. S. / CANADIAN - PRODUCTION	
R3, R4, R81 (National Radio Tube Co.) ..	11-1-29	1 (RCA)	18-2-24*, 19-1-4*
RK-100 (Raytheon)	14-5-17*	1-A ballast (Amptrol)	21-6-90
RSL-9 (Radio Scientific Lab.) (pic)	14-3-28	1A Photocell (WE) (pic)	4-2-23
R1000 (Electrons Inc.) (pic)	14-3-28	1AE4 (RCA)	6-2-23@
Radiovisor Bridge	14-2-23*	1B3GT (RCA), "Engineering Challenge" ..	20-2-19@
Regulator (Johnsonburg), tests	16-3-23@	1B3GT, electrolysis in	21-1-8
SB-846B (Sylvania)	20-3-18	1B42 (Machlett) (pic)	8-6-47
SD-1065 (Sylvania), "saga of"	2-6-16	2A3, initial release	9-6-24@
SN-856-F (Sylvania?)	11-6-7@	2A3, "single-plate," mount diagram	11-4-FC
Selectron (RCA) (pic)	4-3-24	"2A3" (International Servicemaster)	3-3-2
TT-1, Haledy	14-3-18, 14-4-1	2A21 (WE) ballast	6-3-14A
TWT, Zenith miniature	9-4-3	2B6 (Johnsonburg / Triad)	3-4-15@, 11-1-2
UV-199, dual-ended prototype (pix)	3-3-25, 4-2-29, SP10-19	2B24, 2C27 (Raytheon)	11-6-5
UV-211, application manual	17-6-39@	2C37, 2C37 (Sylvania)	20-3-18
UV-212	3-5-26	2C39A (Eimac) (pic)	7-6-2
UX-225, UY-225 (pic)	6-3-RC*	2C40, 2C43 (GE)	5-3-10*
"UX"-225, not-in-Tyne version	SP10-23	2D29, (Sylvania?)	11-6-5
WD-11 (<u>W.</u>), development of	6-1-9, 16-6-20*	2E27 (GE, Raytheon)	7-3-Dir-12; 11-6-6
WD-24 (<u>W.</u>)	16-6-23	2E28 (Hytron?)	11-6-6
WL-112 (<u>W.</u>) (pic)	SP7-42	2E29 (Sylvania?)	11-6-6
WL-785 Lenard-ray (<u>W.</u>)	19-6-5*	2H21 (GE)	9-4-3
WT-22, WT-25 (<u>W.</u>)	16-6-23	2J35 (RCA)	12-3-38
WX-3074 (<u>W.</u>)	SP2-63*	2K25, construction drawing	19-2-FC*
"X" (Eimac)		2K31, 2K3x (Sperry)	21-3-21*
X0 (pic)	8-5-FC*	2K48 (WE) (pic)	9-4-26

2K51, 52, 53 (.W.).....	15-6-21*	6FA7, 6FH8 (RCA).....	4-4-29
2N21 transistor (WE).....	13-3-26	6HY8, 6KM8, 12FQ8 (RCA).....	4-4-30
2X3 (Rogers) (pic).....	17-2-40	6J4, RCA and Sylvania competing on	18-5-10*
3A ballast (WE).....	6-3-14A	6JB6A, made from 6JM6.....	10-1-21
3B24, early failures	7-4-17	6JD5, as high-mu output triode	13-4-4@
3C22 (GE) (pic).....	5-3-12	6JQ6 (RCA).....	19-3-9*
3K31, 3K3x (Sperry).....	21-3-21*	6L6, as preamp	11-2-RC
3Q4 vs. 3V4	1-4-8	6M-E5	5-4-15*
3W10000A (Eimac)	12-5-7	6P6 (AWV).....	7-5-19*
3X12500A3 (Eimac)	13-1-2	6Q5 (RAVAC).....	1-6-3
4-125A (Eimac).....	6-4-4@	6S78 (Sheldon)	10-5-6
4-125A (Amperex), dissected (pic).....	6-4-26*	6SN7, Meixing Ming Da spherical (pic) ...	13-2-31
4-250A (Eimac), early (pic)	6-4-7, 9-6-FC/RC	6SN7GTA (Sylvania).....	16-6-16*, 21-2-5*
4-250A, early internal notes.....	9-6-6@	"6SR5" (pic).....	12-4-2
4-400A (Eimac), notes on	10-2-11	6X4W, as Gammatron.....	10-6-6@
4-750A (Eimac).....	17-5-19*	6X6 (Rogers)	2-2-16, 13-3-11*
4A, 4B (WE) ballasts	6-3-14A	6SN7, "pointy-pinned" (Sylvania) ..	4-1-1, 4-1-14*
4B26-4B28.....	SP13-12B	6SN7/12SN7, the "do-all tube"	4-3-RC*
4B35, 4B36	SP13-12B	7A (WE) ballast.....	6-3-14A
4CV100,000C (Eimac).....	17-5-FC, 17-5-20@	7B7, "hol-e-y" (Philco)	19-2-9*, 20-3-2
4J50 (pic).....	17-2-FC*	7C22 (WE).....	10-2-16*; (pic) 7-4-16*, 10-2-FC
4W20000A (Eimac)	12-5-6@, 12-5-11@	8A (WE) ballast.....	6-3-14A
Pix (cut-open, early and later)	16-5-FC	8D21 (RCA), and TT-5A transmitter	5-5-14@,
4X20,000A.....	19-1-18*	17-3-37
Type 5 Gammatron, electrical parameters .SP20-26*		9A (WE) ballast.....	6-3-14A
5A, 5B (WE) ballasts	6-3-14A	9C21-22.....	3-1-4
5B21, 5B24	SP13-12B	9C32-45, renumbered as 55xx.....	4-1-3
5GH8, regenerative receiver using.....	6-5-16*	10 Special, data on	SP16
5K40 (Sperry)	21-3-21	12AP4 / 1803P4.....	12-6-25@
5R4GY, fixing production	18-5-14*	12B7 (GE) soldered-seal metal	SP23-57
"5TV4".....	10-6-21	12G8 (GE).....	6-6-18
5U4G, "1-½"	4-3-1	12SN7, unusual uses	4-3-RC
5U4G, Soviet-produced	16-1-4	12X5 (NU), "the other" (7-pin)	2-3-3
5Z4 (RCA) "birdcage"	5-4-17	12X825 (GE Tungar)	SP13-12*
6A, 6B (WE) ballasts	6-3-14A	15E (Eimac).....	SP2-49*
6AC5G (Triad), and "tube inflation"	14-4-18*	16X897 (GE Tungar)	SP13-14*
6AE4 / Z2061 (GE).....	4-1-FC*, 4-1-3	18 (RCA), end of	11-2-26
6AF4, GE version.....	14-6-45	19A-22A (WE), resistance lamps.....	6-1-16
6AJ5 (BTL et al.).....	10-6-25*, 12-2-10*	20X672 (GE Tungar)	SP13-13*
6AX5GT, as Gammatron.....	6-2-18*, 8-1-3@	22U (WE), thermocouple (pic).....	9-3-24
"6B4G" (VT-52?).....	3-1-2	30 Special (Triad).....	10-3-26*
6B5	3-4-15	35T (Eimac) (pic).....	SP2-67
6BF8.....	4-4-30	44 (Lestron) (pic).....	13-2-RC
6BG6G, RCA internal description	7-2-23*	45, "return of" (1933).....	10-3-25
6BQ5, construction graphic	19-1-FC*	45X674 (GE Tungar)	SP13-15*
6BQ6GT, RCA fixes quality	6-6-25*	45Z3	11-2-19
6BY4	12-4-36*	47, blue glow in	17-3-33
6BZ8 (X155).....	18-6-27	50B5 vs. 50C5	1-4-8
6C5, 6D5; made as tetrodes	5-4-19	50FY8 (CBS), and circuit	17-6-56*
6C5MG (pic)	13-2-30	53A (Eimac).....	SP2-49
6C21 (.W) (pix)	20-1-CD	55 Gammatron, electrical parameters	SP20-29
6C21, "scandal"	20-2-25*	69 (Syl.) (pic).....	9-4-27
6CB6 (RCA)	17-2-39*	76, tipped "S"-bulbed (pic)	2-2-1*
6D5, one known use	21-1-22	80B (Eimac) (pic).....	2-5-RC*
6DK3 (GE).....	9-6-31, 10-2-1	84 (National Union).....	16-1-18*
6E5M.....	5-4-15	84R (Philco).....	16-1-17*
6ES8 (Philco).....	19-3-22*	87, considered by Arcturus	18-5-5
6F5, made as tetrode.....	5-4-19	91 (RCA).....	10-2-24*
6FH6 (Sylvania "Framelok").....	14-4-27	99X44 (GE Tungar)	SP13-16*
6H5 Raytheon "eye".....	14-4-10	100T (Eimac).....	SP2-58

100T (Sheldon) (S-100TH).....	11-4-22	401 (Kellogg), ad for.....	13-2-27
101B (WE) (pic).....	12-3-FC	401, 402, 403 (Kellogg).....	SP7-41*
101F (WE), "S" bulbed (pic).....	8-2-25	401 (Cardon/Sparton).....	12-2-8
105-A (WE), amp using.....	SP18@	410, 4xx (Sperry).....	21-3-21*
111A-128A (WE), ballasts.....	6-3-14A	416-type (WE).....	5-3-11*
113-A (WE), amp using.....	SP18@	416C, production by Eimac.....	9-6-10@
117P7 vs. 117L/M7.....	1-4-8	439A (WE).....	7-2-13
119A (WE) ballast (pic).....	5-6-20	446 (GE).....	SP2-65
181-183, Cardon/Sparton.....	12-2-7	450TH (Eimac).....	SP2-54
201A, improvements in.....	SP7-24*	464 (GE).....	SP2-65
201/201A, 628 brands of.....	SP1-89@	482-486 (Cardon/Sparton).....	12-2-8
201A brands, early list.....	SP7-59	500 (De Forest).....	21-6-9
203A (RCA) (pic).....	20-1-CD	500, 504 (De Forest) (pic).....	7-1-FC
205D ("All Music") (pic).....	5-3-25	532A (De Forest) (pic).....	7-1-FC
205F FAST (WE).....	6-1-3, 20-4-3	527 (Eimac).....	SP2-56*, SP2-82*
(Foxboro) (pic).....	5-3-25	561, 575 (De Forest).....	19-3-21
Call for info.....	5-5-1	585-586 (Cardon/Sparton).....	12-2-8
206-207, data on.....	SP16	606 (Eimac "Umac").....	3-2-FC*, 3-2-14*
206 (GE?) (pic).....	20-1-CD	607 (Atwater Kent) (pic w/ box).....	6-3-19
207n (RCA) (selected nuvistor).....	4-1-16	703A (Arcturus) (pic).....	8-6-45
207-style triodes, unk. (.W.) (pix).....	20-1-CD	712A (WE).....	10-2-8@
210, poem on.....	10-4-29	801, data on.....	SP16
210s, w/ sawn-through bases.....	3-2-2	803 and 813, relationship between.....	7-2-19
211, tipped (.W. ?) (pic).....	20-1-CD	803 (.W.) (pic).....	20-1-CD
211D (WE), old-time ad.....	9-5-29	804 and 814, relationship between.....	7-2-19
211G (AmpereX) (pic).....	4-6-FC*	807 Jr. (Can. GE).....	5-3-8
212D (WE) base, in 113A socket (pic).....	4-4-35	813, defunct, cartoon.....	9-5-RC
212E (WE) and bare mount (pix).....	5-6-RC*	814 (GE) (opic).....	20-1-CD
214, 217-219, data on.....	SP16	825 "Haeff" tube (RCA).....	SP7-29*, SP7-32
214 (RCA Rectron) (pic).....	20-1-CD	831, data on.....	SP16
214 (.W.), less cooler (pic).....	20-1-CD	827 (.W.) (pic).....	20-1-CD
220B (WE).....	7-4-26	838 (.W.) (pic).....	20-1-CD
221A (WE).....	5-5-9@	839 (RCA) (pic and dwg.).....	7-5-FC*
224A (WE) (pic).....	1-3-9	843 844, 846 848, 850-851, 857-858, data on ..	SP16
224A (WE) (full details, application notes).....	SP5@	845 (.W.) (pic).....	21-1-CD
224C, flat face.....	11-1-1	849 (apparently GE) (pic).....	20-1-CD
227A (Eimac).....	SP2-53	850 (RCA) (pic).....	20-1-CD
233 (RCA) (pic).....	SP11-RC	851 (GE, .W.) (pix).....	21-1-CD
228A, 232A (WE).....	7-4-26	852 (.W.) (pic).....	20-1-CD
235, cone-grid (RCA).....	8-1-2	853 (.W.) (pic).....	20-1-CD
237A (WE).....	7-4-26	854 (.W.) (pic).....	20-1-CD
240A, 240B (WE).....	7-4-23, 7-4-28, 8-4-FC	855 (.W.) (pic).....	20-1-CD
243A (WE).....	7-4-24	860	
249-R (Taylor) (pic).....	16-3-36	(RCA) with Isolantite base.....	1-4-3
250R (Eimac).....	SP2-53	(RCA) application pamphlet.....	19-1-33@
274A (WE), "S"-bulbed (pic).....	8-5-24	(.W.) (pic).....	20-1-CD
281A (WE).....	13-1-18*	861-864, 866, data on.....	SP16
282A (WE), construction variants.....	1-4-5	861 (.W.) (pic).....	20-1-CD
288A, 289A (WE).....	SP13-12B	862 (GE-RCA-.W.).....	14-6-10@
291, 293, 295 (Cable / Speed).....	3-4-17, 19-4-15*	862s (GE), tip-up and -down (pix).....	20-1-CD
298A (WE).....	7-4-24, (pix) 5-3-RC*, 19-5-RC*	865 (.W.), early version in "S" bulb (pic).....	20-1-CD
299A (WE).....	7-4-28	866, home-made from light bulb.....	8-5-29
304TL (Eimac).....	SP2-55	869A-871, data on.....	SP16
306 (Star) (pic).....	SP7-26	872 (.W.), early version (pic).....	20-1-CD
320A (WE).....	7-4-24, (pic) 5-3-FC	891R / 892R (RCA) (pic).....	20-1-CD
327A (Eimac).....	SP2-53	898.....	14-6-10
327A (.W.) (pix).....	20-1-CD	913 (RCA), mount drawing.....	7-6-RC*
327S (WE).....	SP13-12B	932, 936 (RCA).....	8-6-43, 11-6-5
342A (Federal) (pic).....	7-4-28	933.....	11-6-5
343A (WE).....	7-4-28		

1000UHF (Eimac)	SP2-57*	8428 (Tung-Sol)	10-5-23*
1241 (Sylvania).....	1-4-5	8428 (Tung-Sol)	10-5-23*, 15-6-19
1630 / VT-122 (RCA)	SP2-24, 15-1-14@	8505 (Amperex).....	18-2-FC
1619 (RCA).....	19-1-24@	8755, 8757 (Eimac).....	7-6-4
1636 (RCA) (pic).....	SP2-38	8847, 8940-42 (Eimac)	7-6-4
1679, 1682, 1684 (RCA).....	1-4-1*	71266 (Cenco) "e/m" demonstrator.....	4-2-12@
1698, and pattern (RCA) (pic).....	6-2-28	76X13 (GE Tungar)	SP13-20*
1803P4 / 12AP4.....	12-6-25	99X45 (GE Tungar)	SP13-21*
1851 (RCA), end of.....	9-2-13*	189048 (GE Tungar)	SP13-17*
2000 (RCA).....	SP13-12B	189049 (GE Tungar)	SP13-18*
4037 (RCA) (pic).....	4-6-23	199698 (GE Tungar)	SP13-11*
5607 (Litton), cutaway photo	14-4-29	206501 (GE Tungar)	SP13-12*
5651, hyped.....	3-2-23*	217283 (GE Tungar)	SP13-19*
5671 (RCA).....	3-1-4@	289414, 415, 416 (.W. Rectigons)	SP13-12B
5731 (Federal).....	9-2-16*	766776 (.W. Rectigon).....	SP13-12B
5770 (RCA).....	3-1-4	859483 (.W. Rectigon).....	SP13-12B
5857 (NU).....	15-6-19	A, Magnavox	16-2-3, 16-2-8*
5842 (Amperex).....	17-2-29	A-11 (Amperex) (pic)	7-3-31
5886 (Victoreen).....	1-4-3	A660 (Amperex).....	5-3-8
5918 (Federal).....	14-1-4@	AC-100 (Armor).....	6-6-8*
5847 (Amperex)	17-2-29	AC373 (Cardon).....	12-2-9
5965 (EE).....	15-6-29	AF and AG, Arcturus.....	16-2-20
5988-5991 (H&K) (pic)	9-3-RC	AO-12 developmental (pic).....	16-2-32
6047 (Rogers-Majestic).....	9-5-20*	A-P (Atlantic-Pacific), whole line.....	5-2-17@
6080, RCA internal report on status.....	10-2-15*	ARGCO TV-L and TV-S disc-TV lamps ..	14-1-49
6090, 6091 (Nat'l Union)	6-3-3; (pic) 8-4-25	AR 300A (Rogers)	2-2-18
6094 (Bendix).....	4-5-22*	AT-30 (.W.) (pic)	20-1-CD
6167 (WE).....	7-2-13	AW-220 (.W.) (pic).....	20-1-CD
6170 (National Union)	6-3-3	Audion, De Forest	
6324 (Nationall Union)	6-3-3*	Key West	SP 6-2, (pic) SP9-10
6351 (EMI)	15-6-19	Made by McCandless.....	SP6
6370 (Philips).....	7-6-30	"Navy" (pic).....	SP9-11
6462 (National Union)	9-4-25*	Oxide-fil. (pic).....	3-3-24
6550 / KT88 (foreign brands), testing	17-5-12@	RJ-4 Audion control, operating instruc..	SP9-13*
6688 (Amperex).....	17-2-29	Spherical, in display case (pic).....	2-5-FC*
6700, 6701 (Burroughs)	7-6-25, 7-6-34	Spherical, 1- and 2-wing (pic).....	SP9-12
6710 (Philips).....	7-6-29	Suspected fake (pic).....	8-3-11
6762 (Sylvania).....	11-5-20*	Tubular, replica? (pic).....	1-6-RC*
6800A (pic).....	8-5-25	Tubular (pic).....	2-1-FC*, SP9-12
6922 (Amperex).....	17-2-29	Audion, WSA "golden".....	SP7-32
6829 (GE).....	19-3-8*	AudioTrons, survey of constructions	SP7-9
6973 (Resitron Labs) vacuum relay	10-4-14*	Ballast lamps, WE.....	5-6-19@, 6-3-14*
7077 (GE), in AN/ARC-52.....	20-4-24	B6 (Donle) (pic)	6-3-20
7135 (pic).....	9-4-27	"B" Tube (vibrator)	17-3-30@
7211 (Eimac)	7-6-2	BX-1000 (Burroughs)	7-6-25
7245, competing with 6J4.....	18-5-10	C10 / DC (Sylvania arc lamp)	12-6-49
7296 (GE) (pic).....	6-2-26	C-100A (Collins).....	17-4-44
7308 (Amperex).....	17-2-30	C-300, C-301, C-302, C-303, C-304.....	SP25
7311-7314 (Bendix Red Bank).....	12-2-20*	CE-201A, -212A, -221 (Continental)	SP13-12B
7548 (CBS), and circuit for.....	15-6-20	CE-225, -226, -235 (Continental)	SP13-12B
7581 (GE), use as modulator	21-5-18F	CF-185, 4-pin variant (pic)	SP7-50
7698 (Eimac)	7-6-2	CF-185, unbased (pic).....	7-3-FC
7737 (Amperex).....	17-2-30	CG-886 (pic).....	3-3-13
7739 (Du Mont).....	9-3-20*	CK511 (Raytheon)	9-4-2
8002R (GE).....	SP2-61	CK703 transistor (Raytheon).....	12-2-6*
8009 (pic).....	9-3-FC*	CK722 transistor (Raytheon).....	5-1-5*
8014A (RCA).....	SP2-63	CK1047 (Raytheon)	4-3-17
8404 (Sperry) (pic).....	3-3-FC*	CK1306A (Raytheon) (pic)	17-1-16
8404 (Sperry) (operating)	4-4-22@	CG-916, -1144A, -1162	4-6-8
8408 (Amperex).....	4-5-4	CG-1144.....	14-6-40

CK1301A mystery.....	21-6-92	Kathion (Magnavox).....	16-2-5*
CRTs, "new products" (1932).....	21-2-6	Kellogg AC types, unassembled.....	8-1-FC, RC
CW-931.....	4-6-8	KX-642 (.W.) (pic).....	16-2-32
CW-933, -1344.....	4-6-9	L4001C (Lansdale).....	11-3-34
CW-1162.....	9-4-22	Le Radion triode, "the other" (pic).....	10-2-28
CW-1818, -1819.....	4-6-8	L' Premiere triode (pic).....	10-2-28
CW-1818 vs. -1818A.....	4-6-9	Liberty Valve (pic).....	4-5-FC*
Compactrons, source "decoder".....	4-6-17*	M44, M54, M74 (Microtubes).....	17-2-8*
Computer, '50s-'60s.....	5-6-2@	Manhattan gas rectifier (pic).....	5-4-26
CW-1059 ballast (WE).....	6-3-14A	Margo detector diode.....	21-1-7*
D-76622 (WE), rectifier using.....	SP18@	Meggitt ballast.....	21-6-90
D-80777 ballast (WE).....	6-3-14A	Military types, obscure "modern".....	16-4-33*
D-85789 (WE), surge suppressor?.....	20-4-3	"Milkotron" (De Forest)..	4-6-1, 4-6-10@, 6-3-18*
D-86679 (WE), phototube (pic).....	7-2-26	Monoscope, iconoscope-style (RCA) (pic).....	2-1-22
D-87722, WE		Monotron triode (pic).....	8-2-27
Tipped unbased version (pic).....	6-1-16	Moorhead	
Tipless based version (pic).....	9-6-33	External-grid triode (pic).....	SP7-28
D-155023 (WE), phototube.....	11-6-5	Short triodes (pic).....	SP7-2, SP7-53
D-15764, WE (pic).....	14-4-28	Whole line.....	5-2-3@, SP25
D-161851 (WE), thyratron.....	11-6-6	Multi-Tron Lab. HV regulator.....	11-3-34
"D" (WE) (pic with De Forest RJ5).....	10-1-22	NA-1 (GE).....	2-5-3, 2-6-2
DC-112 (Magnatron).....	4-5-5*	NY64, -65, -67, -68 (National Union).....	12-6-18
Deflex.....	13-1-10@	NY-68 (National Union) (pic).....	19-2-16
Delco, part nos. for tubes.....	7-5-11	NB1 - NB8 ballasts (Raytheon).....	10-1-26
DOD-Onn.....	4-1-6*, 5-5-25, 5-6-1, 7-1-25, 8-5-17*	NL-274A (National) (pic).....	8-4-26
DV-2 and -3 (De Forest) (ad).....	18-1-RC*	Nutron Solodyne, WE tests.....	1-6-6@
DV-6A (De Forest) (pic).....	SP7-2	Nuvistors, dev. and comm'l.....	4-1-10@
DV-9 (De Forest).....	3-4-3*	OK-1A (pic).....	14-6-47
DFV460 (De Forest) (pic).....	6-1-14	Oscilaudion (Roome), data sheet.....	SP7-15@
DKI-668 (.W) (pic).....	20-1-CD	Oscilltron (pic).....	6-3-22
Duo-Deltatron.....	17-1-5*	Parametric-amplifier tube (Zenith).....	9-4-3
"E"-suffixed "export" types.....	7-1-13@, 10-5-21	Peartron, WSA.....	15-2-15@
Edlo rectifier (pic).....	17-3-36, 21-6-90	Pix Expander.....	21-6-91
Eimac, whole prewar line.....	15-3-6@	P-1 (CeCo), anti-space-charge pentode.....	SP7-53*
EF50 (Sylvania version).....	16-1-28*	P-5 (CeCo).....	19-2-12
EK-1000 (RCA).....	1-2-3, 1-3-1	P. S. 1n (Schickerling).....	44-4-17
EL(-) (Electrons Inc.) line.....	16-2-27*	P4 Photolytic cell (Arcturus).....	4-3-11*, 18-5-3
Electrad diode.....	14-1-3*, 15-3-2	Pic with box.....	7-5-22
Electrad diode (pic w/ socket).....	6-3-20	P23 and P27 Photolytic cells (Arcturus).....	18-5-4
Electron Audio, application sheet.....	SP7-10@	P-701, P-704 (Champion).....	19-2-13
Epom rectifier.....	19-1-20*	QK-types (Raytheon), early.....	2-6-5*
ER-210 (pic).....	8-5-2	QK-types (Raytheon) carcinotrons.....	SP26
"e / m".....	4-2-11*, (pic) 8-4-28	QRS gas rectifiers.....	12-2-23*
F-342A (Federal) (pic).....	7-4-28	Quinn refillable tube.....	18-1-25*
FH-11 (GE) magnetron.....	SP7-61	PR-1-C (GE) (RCA UX-240).....	SP7-37*
Fleming Valve (Br.) (pix).....	SP9-6	PZ (Arcturus).....	8-3-2
Fleming Valve (American Marconi), two types		"R" (Moorhead versions) (pix)	
6-3-4*; (pix) 4-6-25, SP9-9		Horizontal mount.....	3-3-14
HK-52, -55, -155, -255 (H&K)..	6-2-20, SP20-20*	Vertical mount.....	5-2-FC*
HY-117 (Hytron).....	12-3-23	R-6 developmental (pic).....	16-2-31
G-48, -49, -83 (Gordos).....	SP13-12B	Radio Products Co., triode and rectifier.	19-4-16@
GA-51984 transistor (WE).....	13-3-25	Rogers Majestic, substitutes for.....	8-5-20*
GL-434 (GE).....	SP2-60*	Red Top (QRS) (pic).....	9-4-27
GP-57-6 (EG&G) (pic).....	10-3-40	Relay tube, GE, for Hammond (pic).....	14-6-41
GY-2.....	See D-161851	Resistance lamps, WE.....	5-6-19@, 6-3-14@
HY67 (pic).....	7-2-27	RK, unk. tetrode (Ray) (pic).....	20-1-CD
H (CeCo).....	21-3-6@	RM-201 Permatron (pic) (Ray.).....	7-2-25
HY113 vs. HY123, HY115 vs. HY145, HY125		SAC, SAXn (Sperry).....	21-3-25
vs. HY155 (Hytron).....	4-4-28	RSC-850 (RCA).....	18-5-12
Jenkins four-cathode TV neon (pic).....	7-3-33	RSL-14 mercury rectifier.....	SP7-61

RW-100 / WC-100 (.W.) (pic).....	20-1-CD	VT-21 (pic)	7-3-FC
RXB-103nnn (Bendix).....	4-5-26*	VT-52, data on	2-6-3, 3-2-3
Snnnn, SXnnnn (Schickerling)	4-4-6@	VT-127/VT-127A	
S-10 (Donle) (pic w/ rcvr).....	SP7-35	All makes	6-3-11@
S-3000 rectifier (AMRAD).....	SP7-52	Eimac	SP2-51
SE-3119 (860), Navy spec for	9-2-24@	.W. (pic)	20-1-CD
SE-1444.....	(data) 4-6-9; (pic) 3-3-14, 18-3-5*, SP25-4	VT-155 rectifier assembly	4-3-16@
Sonatron, whole line.....	18-1-13@	VT-158 Zahl	SP2-1, -35*, -51*, Photos in production
Store lamp, neon (RCA)..	1-6-15*, 15-4-FC, 15-4-1	VX-86 (Victoreen)	1-4-3
Switch tube (Powertone).....	9-3-17*	X-ray, Coolidge, WW I.....	14-6-42
Ad for	14-6-1	Water-cooled, WE, all types.....	7-4-27*
T. V. T. xx (Schickerling).....	4-4-FC*, 4-4-3*	W (Wheelco).....	21-5-20*
T40, TZ40 (Canadian GE versions)	5-3-8	WB-800.....	6-2-3
TA-151 transistor (RCA), assembly pic	6-6-RC	WC-23	12-3-28
TB-1 (GE)	9-4-22, 14-6-40	WC-100 / RW-100 (.W.) (pic)	20-1-CD
TC-, TD-, TE-, TG- (Bendix)	4-5-27*	WD-11	1-4-13@
TE-18 / 6094 (Bendix)	4-5-22*	WD-11, early (pic)	6-2-cover
TK-, TM-, TN-, TT-, TWO- (Bendix)	4-5-29*	WL-196 (.W.) (pic).....	20-1-CD
T-10-S & T-30-S (Triad).....	2-3-4*, 10-5-22*, 18-5-8*	"WD-201A" (pic).....	3-3-16
Tune-A-Lite	6-1-11@	Weagant Valves (Am. Marc.)... 6-3-8*; (pic) SP9-9	
TV-L and TV-S disc-TV lamps.....	14-1-49	Westinghouse X-ray.....	20-1-CD
Type A (Bell Labs xstr)... 4-3-FC*, 4-3-13@, 9-5-15		WL-305, -311, -312, -327, -332	
Type D (Am. Marconi)	6-3-6*, (pic) SP9-22	WL-340, -341, -342, -349, -355	
Triodes		WL-374, -375, -377, -381, -384	
Universal Wireless xmtg. (pic).....	SP7-47	WL-390, -387, -388, -391, -392	
"Whatzit" (pic).....	3-2-RC*	WL-393, -395	
UH50-51 (Eimac)	SP2-67	WL-204A (.W.) (pic)	20-1-CD
Ultraudion, heterodyne use (De Forest)	21-1-23@	WL-455 (.W.) (pic)	20-1-CD
Unident. gas-discharge (?) tube (pic).....	7-5-24	WL-460 (.W.) (pic)	20-1-CD
UV-186 (RCA)	4-3-2	WL-461 (.W.)	20-2-18*
UV-196 (pic).....	4-6-24	(pic)	20-1-CD
UV-198, development	20-1-6*	WL-473 (?) (.W.) (pic).....	20-1-CD
UV-199, WE report on.....	1-6-9*	WL-478 (.W.) (pic)	20-1-CD
UV-201, 4-volt .W. type 6-2-6, (pic) 3-3-15, SP7-4		WL-530/VT-122 (.W.)	SP2-24
UV-213 (RCA)	4-1-4*	(pic)	20-1-CD
UV-876, -886 (RCA).....	SP10-30	WL-621 (.W.) (pic)	20-1-CD
UV-877 (RCA)	SP10-30	WL-627 (.W.) (pic).....	20-1-CD
UX-201A, with "De Forest Phonofilm" sticker (pic).....	8-6-45	WL-678 (.W.) (pic)	20-1-CD
UX-222 (RCA), with "stolen" marking	19-1-41	WL-706 (.W.) (pic)	20-1-CD
UX-874 (RCA)	SP10-29	WL-715 (.W.) (pic)	20-1-CD
VAC-M lightning protectors.....	5-1-3@ 5-1-FC*, 5-1-RC*, 8-3-41, 21-5-35*	WL-740 (.W.) steam generator.....	20-1-35
UX-240 (GE PR-1-C)	SP7-37*	WL-787 (.W.), data booklet.....	SP7-6@
VA-217 reflex amp. klystron (Varian)	14-4-7@	WL-5519 X-ray, -5520, -5522, -5523 (.W.)	20-1-CD
VA-888E (Varian) (pic).....	2-2-RC*	WL-5532 thru -5540 X-ray (.W.)	20-1-CD
VG-1 (Sparton) Viso-Glo	2-6-6*	WL-5599 thru -5602 X-ray (.W.).....	20-1-CD
VG-2, -24G, -54, -100 (H&K) (pic).....	9-3-RC	WL-5745, -5746 X-ray (.W.).....	20-1-CD
VT (Moorhead) (pic).....	3-3-15	WR-21 (.W.)	6-2-3
VTs, WW I, all	SP11-3@	WT-25 (.W.) (pic)	20-1-CD
VT-1, curves electronically traced	5-2-2	Wunderlich, A. B.....	8-6-33@
VT-1, base-to-pin jumper on GE.....	18-1-9	"WX-11" (pic)	3-3-16
VT-1 and VT-2, display panel showing parts (pix) SP9-20		"X"-numbered (WECo).....	1-3-2
VT-3, development of	10-4-3*	X155 (Philco) (6BZ8)	18-6-27
VT-4B, Signal Corps specification for.....	2-5-14@	XD-types (Du Mont - Fairchild)	17-2-38
VT-11	SP11-2	XD-6 (Central Sales).....	17-2-25*
VT-14, 16.....	14-6-38	XD-66W	8-4-27
		XR-36 thru -39	1-2-3
		XT-03, -41, -42, -49, -52	1-2-3
		"Y" (Eimac)	
		High-voltage-processed types	18-3-13

Y406 (pic).....	9-6-32	E88CC (pic).....	14-3-FC
Y169, Y210 (pic).....	10-3-39	ET51 (Mullard).....	7-6-25
Y739F, Y793.....	7-6-8	F. E. 1 (Marconi-Osram).....	16-2-11*
Y810-812, Y820.....	7-6-8	F. E. 2 (Marconi-Osram).....	16-2-11*
Y847, Y853.....	7-6-7	and receiver using it	11-5-30*, 12-1-2*, 16-2-12
YU113.....	7-6-8	F. E. 3 (Marconi-Osram).....	16-2-13*
YU132.....	7-6-7	Fleming Valves, Marconi line, catalog ...	17-2-RC*
YU181 (pic).....	6-2-26	"Four-in-One".....	13-3-13*
YU328, -338, -339.....	7-6-10	G10/240E, G10/241E (STC).....	7-2-9
Y-2264 (WE) (pic).....	12-3-FC	Heil types (STC).....	4-3-7
Z50 (Schickerling).....	4-4-14	M. T. 3, catalog page.....	SP7-RC*
Z80 (Schickerling).....	4-4-19	NT54 (pic).....	5-4-RC
Z2061 / 6AE4 (GE).....	4-1-FC, 4-1-3	NT57T (pic).....	5-4-FC*
1970, most popular types in.....	3-1-15*	NT90 (pic).....	5-4-RC
ARGENTINE / BRAZILIAN			
ASSA Ltd. transmitting types.....	9-6-17@	NT99.....	SP2-59*
Lumitron receiving line.....	3-6-2@, 4-1-9	Osglim TV lamp (pic).....	7-3-33
Standard Electric Argentina, transmitting and picture tubes.....	7-3-10	PenDD61.....	7-3-6*
Standard Electrica S. A. (Brazil), transmitting tubes.....	11-3-14@	P. O. No. 63.....	SP11-26
8357E, SESA.....	11-3-15	Q and QX valves.....	16-1-2@
AUSTRALIAN			
AV, full known line.....	7-4-2@	"R" valve (pic).....	3-3-14
AV15, AV16 (pix).....	6-2-21	"R" valve, Moorhead production (pic).....	SP25-5
AV16, AV20.....	5-6-11@	Silica valves.....	5-4-4@, SP11-26
AV21.....	5-6-14	S.625.....	16-3-4@
AV25.....	8-3-12	S. V. 2000.....	SP11-26*
AW43.....	3-5-3, 8-3-12	SP41.....	4-5-2
Radiotrons, 1946 line.....	7-2-16@	T.4, Admiralty (pic).....	1-6-1*
6AR7GT, 1950 ad for.....	7-2-RC, 16-1-13	T.30 (M-O) (pic).....	5-6-FC*
BRITISH			
2A3, Mullard US-made tubular (pic).....	7-3-29	Triode, unknown WE Ltd. (pic).....	6-2-27
2HF (Br. Loewe).....	4-2-18	UA55 (Sargrove).....	8-5-10@
3A/146J (STC).....	4-5-2	V.24.....	16-1-2@
3NF (Br. Loewe).....	4-2-15	Valve, Amplifying No. 1 (P. O.) (pic).....	6-5-FC*
220 OT (Cossor).....	4-5-3	VCR139A, Sylvania production (pic).....	9-3-3
3180 (Cossor).....	6-1-12	Vnnnx/xx (STC).....	4-3-7
4662 (Philips).....	6-1-12, 6-1-30	V1505 (pic).....	8-6-47
A15 (Hivac) "All Stage Valve".....	1-4-9@	V1515E (Ediswan) (pic).....	3-4-26
A891 (Post Office).....	4-5-2	VS10G (ETL).....	7-6-27
Audion, British Thomson-Houston.....	14-2-31	VT32 (pic).....	3-3-14
A. T. 50 (pic).....	SP7-61	Xx, Xxx (Hivac) (pic).....	4-6-RC*
"B." Moorhead production (pic).....	SP25-5	YL1130 (Mullard).....	4-5-3
"BVA" wartime types, equivalents.....	5-3-22	X303C (Mullard).....	7-2-5
CV35.....	5-6-15	Z504S (Mullard).....	7-2-6
CV53.....	4-5-2	EUROPEAN	
CV85, 100, 125.....	2-2-20	1Zh29B, 1Zh37B (Soviet).....	11-3-26@
CV228, 234, 485.....	4-3-7	2HF (Loewe).....	4-2-18
CV1481 (pic).....	5-6-10	2S49D (Soviet pencil triode).....	7-2-26
CV1698, 1699.....	4-5-2	3NF (Loewe).....	4-2-15
CV2189, 2190, 2221.....	4-3-7	3NFB, 3NFW (Loewe).....	4-2-18
C. W. 11 (Osram) (brochure).....	4-2-RC*	5C8S (Svetlana) (pic).....	7-1-20
D. E. 3 Multi Valve.....	9-3-17	5Y3GB (Mazda) (pic).....	17-1-17
D. E. 7 (Marconi-Osram).....	16-2-13*	6E12N, 6P37N (Soviet nuvistors).....	4-1-12
DET23 (M-OV).....	4-5-3	6SxxN (Soviet nuvistors).....	4-1-12
E1190 (pic).....	3-4-FC*	11-volt types (11A6, 11A8, etc.) (French).SP11-27	
EC56 (Mullard) (pic).....	5-3-14	12AX7, Telefunken, as seen by RCA.....	13-2-12
		110, Siemens.....	11-2-5
		1500-Series (Soviet).....	18-2-2@, 21-3-4*
		6170.....	See E1T
		RL12P35, Soviet-era transmitter using....	12-3-39*
		A410 (Philips).....	SP7-26
		Arcotron, Telefunken.....	18-5-18*

A520 (Ostar) (pic)	4-3-28
AD3 (Ericsson).....	7-6-24
B443 (Philips) (pix).....	19-2-13
Battery types, Soviet	11-3-24
BE, BF, Siemens.....	11-2-5
Ca (Siemens).....	11-2-7
Coherer (Slaby-Arco) (pic).....	4-6-25
Diode, WW I German (pic)	5-1-21
DBC25, DF25, DK25, DL25, DLL25.....	10-3-3@
E502S (Philips) (pic).....	18-1-FC
EAA171 (RFT) (pic).....	8-4-23
E88CC, Philips (pic)	14-4-FC
EC157 (Philips), pic	15-3-FC
ED2e Si diode (pic).....	SP22-1
ED704 Si diode (pic).....	SP22-1
EE50, EE51 (Philips)	15-6-19
EF174 (RFT) (pic).....	8-4-23, 8-4-24
EFP60 (Philips).....	15-6-20
EL84, construction graphic.....	19-1-FC*
Emission Labs product line.....	12-2-11@
EZ10 (Elesta).....	7-2-12
E1T (Philips).....	7-6-29, 15-6-FC*
F. I. V. R. E., prewar "RMA" types	13-3-20
GC10, GS10 (Ericsson).....	7-2-6
"Gnome" (RFT), whole line.....	8-4-22@
GR10A (Ericsson).....	7-2-8
HB 1401 (Pintsch Resotank) ..13-3-9*, SP22-27@	
HF29 (Loewe).....	4-2-19
Ideezet (Philips) (pic).....	7-2-26
Innoval, types per this design	17-6-8@
Lamps, sodium (Philips)	2-6-2
LD(n) klystrons and ceramic triodes.....	SP22
LD1 (Telefunken).....	4-2-4
LD2 (Telefunken).....	4-2-3
LD5 (Telefunken).....	4-2-8
LD7 (Telefunken) (pic).....	SP23-1
LS12 (Telefunken)	9-5-13
LD15 (Telefunken).....	4-2-6, 4-2-8
LG(nn) diodes and TR tubes.....	SP22
LG1 (Telefunken).....	4-2-4
LG71 (Telefunken).....	5-1-1, (pic) 8-6-46
LG75 (Telefunken).....	4-2-5, 4-2-7, SP22
LMS(n).....	SP22
LMA11	16-2-33
LRS Relay	8-4-2@; (pic) 5-5-FC*
LS1500 (Telefunken) (pic)	8-6-46
LV13 (Telefunken).....	4-2-6, 4-2-9
Metal types.....	8-6-41
OCK, Siemens	11-2-7
Papaleksy valve (pic)	15-2-33
Philips, transmitting, "classical"	12-4-25@
PL5 (Philips) (pic).....	16-1-26
PL802 solid-state replacement (Philips) (pic)	
	17-1-17
PR1 / RL1, Russian	11-3-25
PRn, PRnn (Condor)	4-6-6*
"R" valve, Walz replica (pic).....	1-5-22*
R, Siemens	11-2-5
RD2Mx, RD3Mx, RD4Mx	SP22
RD4Ma (pic).....	4-2-25, SP23-RC
RD12Tf (Lorenz).....	4-5-6, 4-5-8*
RE11 (Telefunken) (pic).....	4-2-22
Rectifier, full-wave neon (Telefunken) (pic).....	4-3-25
REN904 (Telefunken) (pic).....	4-4-32
Resotank (Pintsch).....	13-3-9*
REZ139 (Telefunken) (pic)	7-4-34
RG64 (Telefunken) (pic).....	9-4-26
RL12P35 (pic)	9-4-26
RM404(n), 41(nm)	SP22
RNF7 (Loewe).....	4-2-19
RS329 (Telefunken) (pic).....	4-3-27
RS391 (Telefunken) (pic).....	4-3-26
RS394 (Telefunken)	4-2-2, 4-2-9
RV12P2000 (Telefunken), "universal" tube . 13-1-15*	
S1/3, S1/6 (AEG)	4-5-9, 4-5-13
SA1(nn) diodes	SP22-18
SSIII (Siemens)	11-2-5
TBL6-4000 (Philips) (pic)	14-6-FC
TMC (Mazda).....	9-4-11
Triode, unk. French tapered-bulb (pic)	3-3-26
TSn (GEMA)	3-3-9
Turbator (Brown Boveri)	3-2-8
Triode, unk., Telefunken WW I (pic)	6-1-14
UAF41, drawing	9-1-14
Subminiature, Soviet	11-3-26@
Tverskaia, Russian	11-3-24
USSR, whole line	3-5-10*
Vacuum switch, German/Swiss.....	2-1-17*
Vatea, '20s-'30s types (pix).....	12-6-7@
VE, DeTeWe	11-2-10
VF14 (Telefunken) (pic).....	5-4-25
VS10G (Ericsson)	7-6-29
WE12 eye (pic).....	5-3-23
Z319 (EMD).....	15-6-19

JAPANESE AND CHINESE

4H4 (Nihon Musen) (pic)	5-3-26
6M-E5 eye tube	21-6-91
6SN7, tennis-ball (pic)	3-2-25
205D ("All Music") (pic)	5-3-25
274B (Sophia) (pic).....	4-3-28
Hitachi, 1961-62 line.....	7-3-26@
Japanese types, recoded to JIS code.....	7-2-22
JY-511B (pic)	7-3-30
P535 (pic).....	9-4-28
UX99 (pic).....	4-1-RC*
TEC unbased triode & carton (TEC) (pic) . 8-4-RC	
TA 1504	2-3-9
U233 (Nihon Musen)	2-3-9; (pic) 2-3-FC*
T311 (Tokio Comm.)	2-3-9, (pic) 7-1-20

CRTs - ALL COUNTRIES

09D and 09J (Cossor).....	1-4-3
1AP5 (KIP Electronics)	7-3-2@
2CP1 (KIP Electronics), req. for info	9-5-21
2DP() (Du Mont), request for info	9-5-21
6DP1 (Du Mont) (pic).....	14-4-23
22 (Du Mont) (pic)	13-4-15
24-XH (Du Mont) (pic).....	13-4-16
54-8-H5 (Du Mont) (pic)	13-4-17
913, mount drawing (RCA).....	7-6-RC*

SC-2795 (Sylvania) (pic)	9-3-7	Equipment, on first Navy transatlantic flight	18-3-2@, 18-4-3@
SC-3093 (Sylvania) (pic)	9-3-9	Fence charger, electric	11-4-27, 11-5-8
SC-4497 (Sylvania) (pic)	9-3-9	FuG25a IFF transponder	14-2-16*
Sylvania 3-gun (pic)	9-3-10	Gammatron oscillator and amplifier	6-2-18*
Aiken flat	6-1-6	Generators, noise	SP26-6, -17
"Banana"	6-1-7	Interferometer microwave freq. comparator	SP22-29
Bell Labs elongated picture tube	6-1-8	Jammers, radar, carcinotron-based	SP26
BG-75A (Hitachi) (pic)	2-6-RC*	Jamming, radar, counteracting	19-1-28*
Braun-tube replica (pic)	1-3-9	Loewe radios	4-2-19
Charactron (Convair)	6-1-9	Marconi Amplifier No. 55	16-1-5
Du Mont, early TV	6-1-4	Marconi Field Station Receiver Type 38	16-1-3
Early	SP1-74	Neon-tube-coupled amplifier, stabilized	19-6-4*
Iconoscope	10-3-6@	Murphy "electricity rectifier"	17-3-34
Image dissector	10-3-6	One-tube radio, "world's largest" (pic)	10-5-RC
Image dissector (pic)	2-1-RC*, 8-3-25	Oscilloscope, '20s version	SP5
Jonker bent-neck	6-1-5	Picture tubes, Philips '50s rectangular	11-1-13@
Law & Ramberg reversed-beam	6-1-5	Pilot 3" TV set, and RCA	21-6-72
Monoscope, RCA, prewar patterns	8-2-21@	Power amps, RF, with sweep tubes	8-2-15@
Von Ardenne (pic)	1-3-9	Proximity fuze	
Rauland special-use (pix)	2-1-10*	Early photoelectric	11-6-4@, 12-1-2*
'Scope (3") (pix)	1-3-13	Tubes in	15-4-11*
Self-converging, Tektronics	7-2-20	Public-address systems, early Western Electric	SP18@
Standard Electric Argentina pix tubes	7-3-11*	Radar, German WW II, development	17-3-12@, 17-4-45*
Sylvania special-purpose	9-3-3@		
Tektronix, whole line	8-3-5@, 8-4-9@, 8-5-2@, 9-1-3@, 9-5-5@	Radars	
Tunograph (STC)	3-6-8*, 4-1-1	AN/TPS-1D, tubes in	15-4-18
TV picture (5") (pix)	1-3-10	ASB, receiver front end	9-5-11*
Unknown, for Sequerra FM tuner (pic)	4-5-32	Hohentwiel	4-5-6@
Wamoscope (Sylvania 6762)	6-1-9	Lichtenstein	4-2-2@
		SC-1, -2	SP2-69
		SCR-series	SP2, pp. 5-48
		Telemobiloskop	6-3-1
		U. S. VHF, history	SP2@
		Würtzburg, front end	9-5-12*
		Radio, De Forest "Royale"	16-6-18
		Radio, pocket, submin. tubes	11-3-32
		Radio, one-tube, with Edison-effect lamp	12-3-24*
		Radios using Kellogg tubes	13-2-27
		Radios, car, with 12-volt "hybrid" tubes	14-6-2@
		RJ-4 Audion control, operating instruc.	SP9-13*
		Receiver, British Philco 444	7-1-18, 7-3-6*
		Receiver, using FE1 tetrode	11-5-30*
		Receiver, regenerative with "orphan" tube	6-5-16*
		Repeater, 1914 transcontinental (pic)	16-4-FC
		Receivers, radar anti-jam	SP26-13@
		RJ-4 Audion control ... SP15-2*; (instruct.) SP9-13*	
		Signal Corps, procurements, WW II	19-4-11@
		Solodyne, radio circuit	SP7-42
		Sonars, U. S., WW II, tubes in	18-2-13*
		Starter kit, Knight-Kit, "shockproof"	20-3-4*
		Stations, broadcast, using WE gear	6-4-13@
		Stereo sound system	11-1-7@
		Stromberg-Carlson 8-80 (ad)	19-2-17*
		"Super Ducon" battery eliminator	20-1-6@, 20-2-3*
		Swiss microwave development	3-2-8*
		Sylvania 4312 Phono, with selenium rect.	20-3-2
		Telemobiloskop	6-3-1
		"Train control" systems	17-3-17@, 17-4-1

TUBE-BASED EQUIPMENT

Aircraft locators, U. S. thermal	SP2-4*
Altec-Lansing TV set	19-2-18*
Amplifier, McIntosh MC-60, testing output tubes in	17-5-12@
Amplifiers, Telefunken, w/ LRS Relay	8-4-7*
Amplifiers, WE 8-A, 9-A, 10-A, 11-A	SP18@
Amplifiers, audio	
All-12SN7	4-3-RC*
CBS, unusual phono amp	17-6-56*
CW-776, WE (pic)	8-2-28
Direct-coupled, '20s	SP11-1
Federal Telegraph Co.	SP11-16@
Signal Corps / WECO, U. S., WW I	17-5-24@
AN/ALQ-F radar jammer	SP26-6
AN/ALQ- and AN/ALT-series radar jammers	
SP26-6@	
AN/ALT-27 radar jammer	SP26-8
Barkhausen UHF receiver	9-4-11*
CB linear amplifiers	6-5-20*
CB transceiver, Sylvania tubes in 460-MHz	14-3-RC
Comm. eqpt., old-time, tube complements	SP21
Computer, ENIAC, tubes in	5-3-3
Computer, "first digital devices"	5-6-2@
Computer, Johnniac	3-4-5*
Computers, "the savage art"	3-4-5@
Computers, RCA field report	8-4-21*
Detector, Marconi 91	11-5-30*, 12-1-2*
DR detector, Westinghouse	6-2-6

Transmitter, amateur, Soviet-era	12-3-39*
Transmitter, Gammatron AM	8-1-3@
Transmitters, WE 5-C, 12A, 71A	6-4-16*
Transmitter, WGY 100-kW	14-6-11
Transmitter, WLW 500-kW	14-6-13
Transmitter, WTIC 50-kW	13-5-17@
Transmitters, American broadcast, Evolution of	19-5-14*
Transmitters and receivers, using split-anode magnetrons	8-1-10@
TS-712/TCC-11 test set	13-3-25*
Tube demonstrator, AWV	8-3-12*
TV set, Altec	19-2-19*
TV set, Sentinel 7" (pic)	9-3-4
TV repair rackets, avoiding	20-4-3*
Vacuum gauge, using WE D-79510 (diagram)	15-4-49
VT-3, equipment planned to use	10-4-5
VTVMs, tubes in once-common	19-6-10
Wallace Valve Receiver	SP15-6@

AUTHOR INDEX

A. C. Radio Guide (via Norm Braithwaite) The 15-Volt Arcturus Tube (R)	2-1-7*
Almy, Bob Five Points on Tube Merchandising ... Sell Tubes in Kits	18-6-37@ 18-1-29*
Arcturus Arcturus Midget Types Announced	21-2-22
Auyer, Steve General Electric's CRT Production in Syracuse, NY	10-1-2@
So You Want a New Transceiver?	18-5-13
Bach, J. K. WD-11, The (R)	1-4-13@
Balaton, Attila Tube Manufacturing Companies in France	20-6-2@
Barber, C. C (and J. D. Tebo) Molding of Plastic Materials	12-5-18*
Barbour, Eric Computing Tubes - The First Digital Electronic Devices	5-6-2@
Computing with Tubes, the Savage Art	3-4-5@
Current Glass Receiving-Tube Manufacturers	5-3-15
Raytheon Date Codes	7-6-14*
Strange World of Memory Tubes, The ..	6-5-5@
Telefunken Date Codes (source for)	2-4-7*
Today's Tubemakers	13-5-3*
Batsel, Max Vacuum-Tube Amplifiers	17-5-24@
Baukat, Henry W. Talking Turkey About the Tube Renewal Market	19-3-18*

Beauvais, Georges A Barkhausen Receiver	9-4-11*
Becker, George Eimac Views Japanese Radar Tubes	2-3-9*
Bedrossian, Alvin B. The "B" Tube	17-3-30@
Berkowitz, Louis Increasing Tube Sales	9-1-16*
Selling More Tubes	10-3-12
Best, G. M. Improvements in the All-Purpose Tube (R) SP7-24*	
Blake, Alan Dating Philips Tubes After 1948	2-3-13@
European Standard Receiving-Tube Nomenclature	2-2-9@
The Sargrove UA55 All-Stage Tube	8-5-10@
Tube-Heater Flash - Some Retrospective Thoughts	4-3-9*
Bolack, Tommy Bigger Than Average	4-6-15
Bondy, M, and Bruce, W. A RCA Fixes 6BQ6 Quality	6-6-25*
Bown, Ralph War-Time Development of Vacuum Tubes (R)	SP11-32
Bramhall, F. B. (R) Electron Tubes in Western Union Service. 7-1-10@	
Brewster, Dick (Intro. To "From Dr. Zworykin's Note- book")	18-1-10
Brown, Douglas See Wadell, Peter	
Brown, R. E. (RCA) Note on Ring Getters, A	20-4-7
Buckingham, W. D. (reprint) Development of the Concentrated-Arc Lamp, The	12-6-40@
Burman, Rod Acorn Valves	17-4-22
German Magnetrons - The LMS11	16-2-33
Mini-Magnetrons	24-1-14
Burnap, Robert S. The Philosophy of JETEC Tube Type Designations	21-2-24@
Callite Products Co. Brief History of the Incandescent Lamp	13-2-8*
Campbell, A. G. Notes on the Problem of Flaking of Emission Coating in Vacuum Tubes	8-3-20@
Canning, James H. Tube Testers May Oscillate	13-6-31
Central Intelligence Agency The CIA Reports on Soviet Tubes, 1954 .	19-4-20@

CeCo
CeCo "H", The 21-3-5@

Chaney, Merle
Tube Troubles in TV Receivers..... 11-5-26@

Chase, Ray
Detailed Prices - Tubes [Estes auction, 9-03]5-5-7*
More Radar Artifacts for InfoAge at Camp Evans, New Jersey..... 15-4-15@
Radars - A Forest of Tubes 15-4-18
Results - Estes Auction (4-06)..... 8-3-10*
Rochester Tube Auction Results, 2006.. 8-5-17*
Triad Type 2B6 (source for) 3-4-18@
Stolen 222, The 19-1-41

Chevako, Bob
The PZ Story..... 8-3-2

Clark, George
Candid Autocamera Biography, A SP4-2@

Coleman, R. G. (R)
Curing Gassy Tubes..... 5-1-12*

Combs, Charles
Magnatron DC-112..... 4-5-5*
Sodium (?) Whatzit, A (source for)..... 2-5-3*
"Whatzit" Revealed, A (source for)..... 2-1-17*

Condict, P. K. (source: Attila Balaton)
International Standard Electric Corporation, The
11-6-20*

Condon, Bill
De Forest DV-9, The 3-4-3*
General Electric UV-213 Rectifier, The .. 4-1-4*
George C. Clark Tube, The..... 6-6-2@
Guide to Buying and Testing Early Tubes, A 3-6-5*
Moorhead and His Tubes 5-2-3@
Schickerling and the Triangle Plate Tubes 4-4-3@
Western Electric 221-A, The 5-5-9@
Westinghouse Tube Development Leading to
the WD-11 6-2-2@

Connery, Alder F.
Electronic Tubes in Wire Telegraphy..... 11-1-4*

Cook, Jim
Illuminating Your Tube Collection 10-2-13*

Corey, James
Tube Topics..... 16-1-29*

Craft, Dennis
WLS - The Station? (R) 1-3-3@

Crawford, G. W. (with Ludwell Sibley)
Some Metal-Tube History..... 5-4-21@

Crosley, Powel
Crosley Declares in Favor of Metal Tubes.. 12-3-22*

Cross, Jim
Armor AC-100 Tube, The..... 6-6-8*
Cross Finds Obscure Military Tubes
(source for)..... 16-4-33*
Deciphering Date Coding of Post - WW II GE
Tubes..... 12-6-2@

Early Raytheon QK-Types (source for) ... 2-6-5*
Friends on the Front Line: The Story of Delbert
and Ruth Replogle (review) 16-1-27
Gold Seal Metals: The Whole Line 4-2-13*
Hewlett-Packard Part Numbers for Tubes 15-4-7@
Hytron Mystery Solved 4-4-28
RCA and Cunningham Tubes to 1933 ... 1-5-6@
Raytheon Four-Pillar List..... 20-6-18*
Results - AWA 2004 Tube Auction 6-5-4*
Some Additional Information on Tubes Related
to the RCA Type 1..... 19-1-4*
Some Baird-Atomic Special Tubes 3-3-6*
Sylvania's Clifton Transmitting Tubes. 15-2-2@
Van Horne Revisited 21-6-51#
VT-155: Mystery Solved! 4-3-16@
WECO and Government Sales (source for)4-4-31*

Cunningham, E. T.
The Truth About Radio Tube Prices 8-4-19*

Cunningham, T. M.
Low-Voltage Receiving Tubes (R)

Cusack, F. H. (R)
Vacuum Tube Reliability 15-5-10@

Daniel, Larry (source for)
"Sound X/TRA" and "Sound Special" . 3-1-10@

Deckert, Janet
1B3GT - An Engineering Challenge.. 20-2-25@

Deuel, Bob
A Gammatron AM Transmitter 8-1-3@
The European Rimlock Tube 15-1-2@
12-Volt Anode Car-Radio Tubes (slides) 14-6-2@

De Forest, Lee (via Jerry Vanicek)
De Forest and Ions: He Wises Up 3-2-20*
De Forest Tries a Telephone Repeater... 3-3-18*

De Forest, Lee
From De Forest's Notebook 19-2-20@
Possibilities of the Pentode, The..... 15-6-23*
Practical Uses of the Radio Tube 12-5-21@

Dewing, Scott
The Technology Conundrum 13-2-6*

Diaz, Sam . . . Pumara (R)
Vacuum Tubes the Hard Way..... 5-4-12@

Dickow, Henry W.
The Klystron 21-2-9@

Dilley, Tom
The 4-400A - "Your Results May Vary" 10-2-11*

de Donisthorpe, H.
A Four-Element Tube and Circuit..... 11-5-30*

Douglas, Alan
Radio Products Company..... 19-4-16@
Vacuum-Tube Photography SP7-18@

Dowd, Bro. Patrick
Birth, Early History, and Development of the All-
Electronic TV-Camera Tube, The..... SP1-95@
Brands of 201s/201As SP1-89@

Dating the RCA (Cunningham) Composition-Base Radio Receiving Tubes from Mid-1924 thru 1941.....	17-1-25@	Brief History of Kinescope-Making in Brazil, A	17-5-3@
Early History and Development of the Orthicon and Image Orthicon	SP1-98@	From the Spark to the Chip.....	13-5-5*
Early History of the Versatile Vidicon..	SP1-101*	The Loewe Multiple Valve - An IC of the '20s	4-2-14*
Early Milestones in the Development of Solid-State TV Scanners and Image Sensors, 1964-84.....	SP1-104*	Thermionic Age in Brazil, The	
George M. Rose - A Man Ahead of His Time (R).....	SP1-92@	1920 to 1970.....	11-3-5@
History and Development of the All-Metal Radio Tube.....	12-3-3@	Conclusion.....	20-1-29@
Lost D'Agostino Collection, The (source, with Jerry Vanicek).....	2-4-11@	Continued 2.....	20-3-21@
Manhattan College Vacuum Tube Display - List of Displays.....	SP1-2@, SP1-101*	Fisher, Reed	
Metal Receiving Tube, The.....	19-6-17@	6AX5 Gammatron Amplifier/Oscillator, A..	6-2-18
Dowd, Bro. Patrick (with Howard Schrader)		Forth, Joseph (source for)	
201-A Brands.....	SP7-59	Most Popular Tubes in 1970, The	3-1-15*
Drieschman, Donald F.		Ford, G. T.	
Report on Eastern Trip - April 11 to April 22 [1949].....	15-5-18@	The 6AJ5.....	10-6-25*
Dupart, Edward		Free, Jerome J. et al.	
Rebuilding Picture Tubes (R).....	11-5-22@	Survival of Tubes in Storage	19-1-29@
Eaves, Bert		Frost, H. B.	
Report on Search for Electrical Equipment for Tungsten Manufacture.....	8-3-16@	1953 View of Special-Purpose Tubes..	15-6-26*
Eimac (via Mike Bach)		Fuller, Leonard F.	
UMAC 606.....	3-2-14@	Notes on the Use of the Ultraudion.....	21-1-23@
Ellis, Jon		Gardner, Ken	
ETL Dekatron Survey2009.....	12-4-4@	The PR-1-C (RCA UX-240).....	SP7-37*
IBM Counter Tube, The.....	16-3-15@	Garner, Louis Jr.	
IBMtronics		Using the Heath kit Tube Checker to Identify and "Salvage" Defective Tubes	14-6-18@
Tubes, Inc.(R).....	SP11-28@	Garside, J. W.	
Tube Testers Invade Supermarkets (R)	4-1-20*	Special Alloy Solves Oxide-Coated Filament Problems.....	21-3-37*
Elliott, A. M.		General Electric and RCA	
Vacuum Tubes in Telephone Work (R)....	SP8@	Transmitting Radiotron UX-860	19-1-33@
Elston, G. F.		General Electric Co.	
Fixing the 5R4.....	18-5-14*	Five-Star 6829s Help Guide Atlas ICBMs to Target 6,325 Miles Distant and into Earth-Circling Orbit!.....	19-3-8*
Ely, Ned		Gibbs, Leo	
Orphan Tube Meets Discarded Power Supply; Regeneration Occurs.....	6-5-16*	The WSA Audion.....	SP7-32
Ehmsen, Temple V.		Green, N. H.	
Portland Endorses Hytron (HY-69).....	20-2-27*	Design Details of the RCA Ruggedized 6AC7.....	9-3-14*
Espenschied, Lloyd		Gruber, Joe	
Early Vacuum Tubes - Production and the Distribution of Original De Forest Audions (via J. Vanicek).....	1-1-3@	Identification of the Radio Equipment Used on the NC-4 Plane.....	18-4-3@
Espenschied Writes to Round (via K. Thrower)	16-2-22@	John Hays Hammond Jr. Torpedo Relay Tube	18-2-8@
Fazano, Carlos		Vacuum Tubes Used in the First Trans-Atlantic Flight.....	18-3-2@
Altec - A Further Note on the Company's History.....	19-3-5@	Gruber, Joe (with Jerry Vanicek)	
		From the Research Lab to the Field - G. E.'s Vacuum-Tube Contributions During World War I, 1915-1918.....	17-6-15@ + 18-1-9
		Gruber, Joe (source)	
		Uncle Sam Buys Tubes, A Century Ago	20-6-21

Gnessin, David	
Picture Tube Failures (R).....	15-4-49@
Haimes, Joe	
Status of Type 6080WA.....	10-2-15*
Halloran, Arthur	
Farnsworth's Cold-Cathode Electron Multiplier Tube Uses Neither Grid Nor Filament	10-6-17@
Hamilton, Gordon	
#45 Tube Substitutes.....	19-2-4@
Hanscom, William W	
Tests on Solenoid Tubes.....	19-4-3@
Hart, Paul A.	
Deciphering Sylvania Date Codes, 1943-1988	21-6-73#
Testing High-Current Tubes on a TV-7 and Its Relatives.....	19-5-3*
Hatfield, P. E., and R. L. Moe	
Operating GE Hi-Fi Tubes as Modulators.	21-5-18*
Hathaway, K. A. (Sylvania)	
Sylvania - The Perfect Host!.....	19-5-5*
Huggins, William A.	
A Stabilized Neon-Tube Coupled Amplifier	19-6-4*
Jensby, Will (et al.)	
Gridless Gammatrons – Construction and History.....	SP20-2@
"JNA"	
Reminders From an Old Memory Drum	19-3-17
Johnson, Al	
Sylvania Special CRTs - A Technical History of the Industrial and Military Tube Department, Picture Tube Division, Seneca Falls, NY	9-3-3@
Johnson, H. S.	
History of Development of Vacuum Tubes and Vacuum Tube Sockets.....	9-4-16@
Jones, Al	
Bragatron, The.....	14-4-23*
Prez Sez, The . . .	3-1-3*
RCA's TT-5A TV Transmitter and 8D21 Tube.....	5-5-14@
Trigatron, The.....	2-2-19@
Jones, Ifor (and Henry Knutson)	
A Stereophonic Sound Transmission Sys- tem.....	11-1-7@
Jucker, Hans	
Early German Radar Transmitter Technology	4-5-6@
Early Swiss Contribution in Microwave R & D Work Before and During WW II.....	3-2-8*
Front Ends of Early Radar Receivers... 9-5-11@	
German FuG 25a "Erstling" IFF Transponder of WW II.....	14-2-16@
German FuG 202 and FuG 220 "Lichtenstein"	
Airborne Radar Sets.....	4-2-2@
Judkins, Phil	
Comments on the Waddell / Brown Magnetron Article.....	17-4-45*
Kalista, Stephen	
Tube Manufacturing at Tung-Sol in the 1950s.....	13-6-32
Katzdorn, Mike	
Harry Houck and the Electrad Diode ...	16-3-7@
Harry Houck and His "Super Ducon" .	20-1-6@, 20-2-2*
Keller, Peter	
Du Mont Cathode-Ray Tubes: 1932.42.	10.2.2@
Du Mont "House Numbered" Tubes ...	9-6-21@, 10-1-6@
From the Braun Tube to the Information Age, 1897-1997: The 100th Anniversary of the CRT (R).....	1-3-8@
Note on Dimming of "Magic Eyes".....	14-3-11
Odd Cathode-Ray Tubes.....	6-1-4@
Sylvania "House-Numbered" CRTs	
Part 1.....	11-5-17*
Part 2.....	12-1-4@
Tektronix CRT History	
Part 1. The Early Years.....	8-3-5@
Part 2. The First Tek CRTs.....	8-4-9@
Part 3. The Classics: 1955-59.....	8-5-22
Part 4. Innovations: 1959-1961.....	9-1-3@
Part 5. The Hybrid Years: 1961.1964. 9-5-5@	
Part 6: CRTs for Solid-State Instruments: 1964-1967.....	9-6-13@
The 1AP5, Offspring of the 913 ("sort of").	7-3-2@
Klase, Al	
The 6AJ5 Mystery.....	12-2-10*
Knight, C. R.	
Report of European Trip.....	21-6-25#
Knight, Joe	
The First RCA Experimental, Developmental, and Production Transistors.....	10-4-7@
Koch, D. G	
Increasing Tube Reliability in Industrial Cir- cuits.....	17-4-32@
Knutson, Henry (and Ifor Jones)	
A Stereophonic Sound Transmission System	11-1-7@
Kramer, Ron	
A Bit More on Garrett Lewis.....	12-1-15*
Krauter, "Rex"	
"Holier Than Thou" 7B7, A.....	19-2-9*
Kravig, Hal	
Brands of 201As – The Latest Word....	14-3-4@
Multi-Filament Tubes.....	9-3-17*
Kruse, Robert S.	
Epom Rectifier and Filter, The.....	19-1-20*

Kulpa, Daniel S. History of Early Magnavox Tubes, The. 16-2-3@ JRC Prototype KGG and Glow-Tube Regulator 16-3-23@	WE Hybrid Integrated Networks - A Review 3-5-5@
Laport, Edmund Technical Evolution of American Broadcast Transmitters 19-5-14*	Majestic, Richard Testing 6550 / KT88 Vacuum Tubes from England - Russia - China in a McIntosh MC- 60 Amplifier 17-5-12@
Laszlo, S. E. Can Radio Tubes Be Sold Abroad..... 11-2-23@	Marcott, Creighton M. "Reprocessed" Tube Racket, The 20-3-6@
Leal, Norman The Electrad Diode 14-1-3*	Matheson, Volney G. The Locked Door Tube Factories 18-4-16@
Lefkowitz, Louis Beware of the TV Repair Rackets (R).... 20-4-3*	Mayer, E. G. JAN Version of the 6CL6 17-4-26
Lescaboura, Austin (R) Survey of the Vacuum-Tube Industry, A. 16-1-@ Those A B C Grades of Tubes 12-2-2*	McCullough, Frederick S Helium Tubes 20-2-16* Thermionic Tubes (<i>Proc. IRE</i>) (R)... 16-6-19@
Lewis, George The Photolytic Cell 13-5-14	McCullough, Jack Eimac's Wartime Serial Numbers 10-3-10 History of Eimac, The 14-2-3@
Lindsay, Bob Still More on Rogers 2-3-5@ "Linear" (<i>Radio</i> , 1935) (R) Comments on Avoidable Tube Failures 17.1-10@	McKay, H., and Leo Sands The Need for Critical Tube Tests 13-2-23@
Loisch, Albert Heater-Cathode Hum 19-6-7*	Menzies, E. B. Wartime Servicing in New Zealand 12-5-25*
Love, Ken Autopsy of a Klystron 5-1-13*	Metcalf, Herbert E. The New Magnavox Tube (R) 16-2-8*
Luten, C. J. (Sylvania News) Sylvania Celebrates Five Decades of Prog- ress 16-6-8@	Michael, F. Robert Tube Failures in ENIAC 12-3-29@
Lutz, S. G. (R) Magnetrons for the Ultra-High Frequen- cies 8-1-10@	Mihran, T. G. The Tube That Jack Built 6-4-19*
Lyon, Ed Restoring of Brightness in 6E5/6U5 Eye Tubes (with Joe Sousa) 15-1-6@ The Triple Twin and Dynamic Coupling 10-6-11@	Millard, Robert Development of the Power Pentode in the U. S., The 19-2-12 Standard or UX Base, The 3-3-13@
Magars, Bernard Effects of Design Changes 8-2-9 Elusive WE 205FA, The 6-1-3 High-Purity Nickel - a 1950s Break-Through for WE Tubes 3-2-5@ More on Blue Glow 9-3-12* More on Getters 3-3-17* Last Word on the RCA "Dark" Heater, A 5-4-10* More on the "Dark" Heater 5-3-2* More on the Problem of Flaking of Emission Coating 9-1-17* More on Tube Flash and Heaters 4-6-13* Reviewing the Resistance Weld 5-1-6@ "Rocket" and Other Early Planar Tubes. 5-3-9@ Western Electric Water-Cooled Tubes. 7-4-23@ W. E. Ballast Lamps and More on Resistance Lamps 6-3-14@	Mohn, Stephen A Speculative Edison Triode 13-2-2@
	Molloy, G. P. The 1619 Scandal 19-1-24@
	Morris, Bob More on the RCA 825 Inductive-Output Amp- lifier SP7-32
	Murdock, Clay Eimac 4W20000A, The (likely author) ... 12-5-11@ Notes on Clay Murdock's Trip to the Winter Meeting of the I. R. E. in New York .. 6-4-5@
	Murphy, W. D. Horizontal Deflection Tubes as RF Power Am- plifiers (R) 8-2-15@
	Myers, Elman Elman Myers' Resumé 10-2-17@
	Navy, U. S. Procedures To Be Followed When Jamming Is Encountered 19-1-28*
	Nelson, E. L. (R) Bell Labs Controls Tubes 12-2-4*

O'Neal, James	
A Tale of Two Camera Tubes.....	10-3-6@
O'Neill, H. M.	
WTIC's New Rig.....	13-5-17@
Osborne, Charles	
The Additron: A Binary Full-Adder in a Tube.....	10-4-12*
The Du Mont K1376.....	20-2-3*
Peret, F. M. (Radio-Craft)	
Specialized A.F. Tubes.....	16-6-12*
Peterson, R. N.	
Fending Off Sylvania on the 6J4.....	18-5-10*
Philco Accessory Merchandiser	
Philco Tubes - Reliable, Dependable "Plus" Items.....	21-2-8
Philco Service-Businessman	
New Advance in Television, A - The 6ES8 R-F Amplifier.....	19-3-23*
Philco Serviceman	
Conversion of 50-T1600 Chassis to Use Two 5U4G Rectifier Tubes for Improved Performance.....	21-3-29
Locating Gassy Tubes.....	21-1-27@
Philco and Metal Tubes.....	9-2-12*, 20-4-8*
Philco Develops Transistorized Radio for Chrysler.....	20-6-33*
Pichler, Franz	
Glassblowing for Long-Distance Telephony.....	11-2-3@
Production of Radio-Tubes in Austria in the 1920s.....	17-4-2
The LRS-Relay.....	8-4-2@
Qvigstad, Just	
The LA9DL Collection.....	8-3-4*
Radio Engineering	
Transmitting Tubes.....	19-3-20
Radtke, Udo (with Heintz Trochelmann)	
About the HB 14 "Resotank" 2-GHz Oscillator.....	13-3-9*
Rainier, H.	
Counterfeit Tube Racket Exposed.....	15-2-21
Tube Counterfeiting.....	17-4-29
Raymer, Steve	
Another Curve Tracer!.....	15-4-13*
RCA	
Servicemen See, Hear Radio Circuits at RCA Meetings.....	21-3-41*
RCA Laboratories	
Conservation of Critical Materials.....	20-6-27@
Reidmuller, Bob	
An Audion Story.....	2-5-7*
Sodion Tubes - Don't Try This at Home.....	19-2-11
Richards, Bruce	
Why Grids Are Shaped the Way They Are.....	19-5-12*
Ritzenthaler, Jean	
Early AC Mains Receivers.....	2-2-22*
Robinson, W. H.	
Tube Computers - RCA Field Report.....	8-4-21*
Sales Report - 6C4 and 6F4.....	12-5-16
Roloson, Bruce	
The Haeff Tube.....	SP7-29*
Vacuum Tubes Other Than Receiving	
Introduction.....	SP7-42*
Cold-Cathode Devices.....	SP7-51
Rectifiers (Cooper Hewitt, Ignitron).....	SP7-45*
Rectifiers (Tungar, Thyatron).....	SP7-48*
The Magnetron - 1.....	SP7-55
The Magnetron - 2.....	SP7-61
Roar, C. L.	
Tubes vs. Transistors: 1952.....	9-5-14@
Saeger, Stan	
A Trip to Remember . . . ".....	12-4-3
Sands, Leo, and McKay, H.	
The Need for Critical Tube Tests.....	13-2-23@
Santoro, Abel	
A New Technique in Receiving-Tube Design	
tion.....	9-1-11@
A Tour of the S. A. I. R. A. Valve Factory.....	13-4-9@
A Visit to the "La Radiotechnique" Factory (translation).....	8-2-4@
Alesa Vaic Story, The.....	15-3-2@
Alesa Vaic Factory Tour, An.....	15-5-4@
American Electro Metal Co. and Philips Elmet Corporation.....	15-6-15@
Audion, First of the "Instituto de Fisica de la Plata," The.....	12-5-15*
Barex and Kemet - Two Historical Trademarks in Getters for Electron Tubes.....	19-1-6@
Barium Azide Process, The.....	14-6-6@
Classical Philips Transmitting Tubes.....	12-4-25@
Construction of a Vacuum Tube	
(translation).....	10-5-2@
Contemporary Tube Manufacture: KR Audio Electronics.....	11-5-11@
Contemporary Tube Manufacture: The Tenth Anniversary of "Emission Labs".....	12-2-11@
Early Getters in the Tube Industry.....	13-6-33@
"EAT," EuroAudioTeam.....	13-1-6@
European Metal Tubes.....	8-6-41*
F. I. V. R. E. - Fabbrica Italiana Valvole Radio-Elettriche.....	13-3-15@
History of Vatea Radio and Electrical Corp., The.....	12-6-7@
Homemade Tubes: Nick's Triode.....	14-4-5*
Homemade Tubes - the Work of Aleksander Zawada in Poland.....	16-2-19*
Home-Made Vacuum Tubes: The Work of Dr. Rüdiger Walz in Germany.....	11-6-11@
Importadora Electronica - An Argentine Com-	

pany with More Than Fifty Years Buying and Selling Electron Tubes..... 11-1-12@
Lancaster RCA Plant, The..... 14-3-12@
Lumitron - Another Independent Argentine Tube Factory 3-6-2@
Mr. Laughton Windus and the Art of Valve Reconstruction 9-6-17@
Omega S. C. A. and Tubelec S. A. - Ten Years Making Power Tubes in Buenos Aires 7-5-2*
Philips Argentina 11-4-4@
Rauland Corporation, The 14-5-5@
Standard Electric Argentina 7-3-8@
The Boom of CRT Manufacture in Argentina: "Transworld Electronics Argentina S. A." 12-1-9@
Tribute to Lee De Forest, A 15-4-37@
Tubes RCA Made in Chile 13-2-10*
Valves in the Argentine Market of the 20s. 7.6.17
Valve Manufacture in Australia - A Brief History 16-1-6@
Tubes RCA Made in Chile 13-2-10*
"VEC" - An Enterprise Repairing Ceramic Electron Tubes 12-3-25@
50 Years of Tube Repairing in Buenos Aires 5-5-19@

Sarnoff, David (via Jerry Vanicek)
Sarnoff Gets Ready for UV-201s 3-2-11*

Saslow, David
Safeguarding Tube Life and Reliability . 19-5-7@

Schmid, K
RD-Instruments Model 1700 - Hickok's Ultimate American Tube Analyzer 17-6-26@

Schmidt, Adolph
American Television Labs and National Video 2-1-16*
Work Activities (1941-88) at Rauland ... 2-1-13*

Schoo, Daniel
Matching Tubes for Audio Service 15-6-2@
RCA WT-100A Electron-Tube Micromhome-ter, The 18-1-3@
Study of a Tail-Light Triode, A - or - Are There Triodes in Your Toyota? 16-4-29@
Testing Vacuum Tubes with a Tektronix Model 576 Semiconductor Curve Tracer 13-6-2@
Vacuum Tube Test Console for Semiconductor Curve Tracers, A 16-5-4@
WC-23, The 12-3-28

Schor, F. W.
Promoting the 6CB6 17-2-39*

Schrader, Howard (with Bro. Patrick Dowd)
201-A Brands SP7-59

Schwartz, Adolph
A Letter from Adolph Schwartz 8-1-8*

Seefred, Lyndon F.
How to Get 50 Watts Out of a 5-Watt Tube

13-2-33*

Shaughnessy, R. F.

Excess Emission..... 14-1-10

Shepard, Steve

A New Way to Read Faded Tube IDs.. 7-2-15@

Shishkin, Leo

Soviet-Era Amateur Rig 12-3-39*

Sibley, Ludwell

6C21 Scandal, The..... 20-2-25*

Aerovox "Tinkertoy" Circuit Modules .. 13-5-1*

Alan Scott Douglas (obituary) 17-6-insert

Altec-Lansing TV Set, The 19-2-18*

Amperex 18-2-30@

Arcturus - The Star That Burned Out... 18-5-2@

Arcturus Coronet, The 18-4-25

Another "VAC-M" Arrester..... 8-3-41

Army-Navy "Preferred Lists," The 2-5-12*

Auction Results (TCA 2005 meet) 7-5-16*

Base Codes for Ken-Rad Metal tubes 13-3-8

Base Stampings on RCA Metal Tubes... 1-5-16*

Basing Cement - The "Full" Story..... 23-1-8*

Bell Labs Transistor Date Code..... 12-5-5

Bendix Red Bank Tubes..... 15-4-3@

Big Lee's Transistor 18-5-21@

Bit More on Rogers, A 2-2-24@

Boonton: "Selection-Crazy" 11-3-34*

Central Sales - Another Obscure Tube Maker 16-1-14@

Charles Eisler and the Eisler Engineering Company..... 15-2-9@

Chatty Crate Markings at RCA..... 1-3-20

Civilian "Military" Tubes..... 9-4-4

Collecting X-Ray Tubes..... 20-1-19@

Comments on the Waddell-Brown Paper 17-2-19@

Competitive Analysis, A - Eimac, 1947. 19-1-18*

Completing the JIS Code 7-2-21*

Concentrated-Arc Lamp, The - Introduction 12-6-39*

"Dark" Heater, RCA, Introduction to... 5-1-15@

Date Code for Bell Labs Tubes 7-3-22

Date Codes for RCA-Made Tubes 1-2-16@

Date Codes, Tung-Sol 1960-62 21-5-48

De Forest's Numeric Code 7-1-4@

"DOD" Tubes..... 4-1-6*

Dowd-RCA and Perham-Eimac Archives, The 7-6-10*

Dowd Archive, The 21-5-30@

Du Mont - The Man, the Tubes, the Sets, the Network 13-4-15@

Du Mont on Wikipedia..... 13-4-25@

Early Westinghouse Power Tubes..... 20-1-13@

EIA/RMA Tube Registrations by French Makers 20-6-10*

Eimac's "CD" Receiving Tubes 16.6.3@, 16.6.FC

Eimac's Magic Books	SP15@	Microtubes, Inc.	17-2-2@
Eimac's Radio Station	13-1-2@	Mighty 862, The	14-6-10@
Eimac and Gammatrons	6-4-22*	"Missing" Tubes - Ever Wonder?.....	4-1-2*
Electronic Enterprises, Inc.	15-6-29@	Moon-Radar Jive	21-5-21@
Electrons, Inc.	16-2-25@	More on Bombardment Cathodes.....	21-6-24
"Export" Tubes in Canada.....	12-2-FC, -2	More Back-Alley Brands	21-5-2*
FCC and Broadcast Tubes, The	8-6-19	More Notes on W. E. Water-Cooled Tubes.....	7-4-26@
Fetron, The	3-6-9@	More on GE Metal Tubes.....	12-4-34*
Fetrons and Hybrid Integrated Networks - "Silicon Valley Meets Merrimack Valley".	17-6-33@	More on Sparton Tubes.....	16-4-34*
First Board Meeting.....	3-5-2*	More on Tubes in VT Fuzes	15-4-11*
"Forbidden" Tube Pins	4-5-21*	More on the Long-Ignored Compactron	6-5-19@
Forgotten Electronic-Organ Tubes	4-4-29*	More on Rauland	14-5-*
Four Related California Tube Companies.....	11-1-18@	More Low-Down on Loewe.....	4-2-18@
"Four-in-One" Valve, The	13-3-13*	More on Schickerling	1-1-11@
"Fourth-Tier" Tube Brands	20-1-3@	More on Silica Valves	5-6-18*
From "Whatzit?" to "e / m" Tube	4-2-11*	National Union.....	12-6-17@
Gas Tubes - What's in 'Em?	7-4-9	New "DOD" Discoveries	5-5-25*
GE Ceramic Planar-Triode Line, The	20-4-16@	Non-Tubes from Eimac.....	19-6-2*
GE "Train Control" Tubes.....	17-3-17*	Norman Krim, RIP	14-1-20*
GE/RCA and Early Pentodes	18-4-12*	Notes on Magnavox.....	16-2-7*
GE Receiving Tubes of WW I: Were They All That Successful?	19-3-12*	Notes on "Moorhead and His Valve" ...	19-3-1@
"Gnome" Tube, The.....	8-4-22@	Notes on the De Forest Radio Company ..	21-6-@
H&K in the Gridded Era	SP20-31@	Numbering the Pins	21-4-2*
High-Voltage Processing of Big Power Tubes	18-3-12*	Nuvi-Story, The	4-1-10@
History of General Electronics, A	6-2-14@	Obscure Tube Companies: I C E	11-3-4*
How Do You Number the Pins?	1-6-4*	Odd One from Arcturus, An ("Photolytic" Cell)	4-3-11*
Hytron.....	14-1-11@	Penta Laboratories	14-3-9*
Incomplete Look at Russian / Soviet Tube History, An	11-3-24*	More on	15-5-7*
Index of RCA Developmental and Commercial Type Numbers	SP19@	Phototubes for Proximity Fuzes.....	8-6-43*
Index to RCA Application Notes.....	19-5-18@	RCA's Tubes, Plant-by-Plant	7-4-12*
Insights from RCA Developmentals	21-6-18#	RCA's Hidden Delta	9-3-21*
Invasion of the Schlockers	3-3-10*	Some Thoughts on Metal Tubes.....	12-3-18@
Japanese Receiving Tubes - The Code! ...	5-6-8*	Origin and Uses of the Eimac 4W20000A....	12-5-6
Jennings Radio Manufacturing Company	17-3-25@	Other "Saga of the Vacuum Tube," The	1-6-10*
JIS Code, The, for Power Tubes (with Makoto Takeuchi and Hisashi Ohtsuka)	8-2-19*	"Playthrough" and Gridless Triodes.....	5-4-18*
Johnsonburg Radio Corporation.	6-6-27@	Radioactivity in Tubes	17-5-33
Ken-Rad	13-3-3@	Robert Adler and Tubes	9-4-2*
Kuthe Electronics.....	18-6-34*	RCA Application Notes, Index to.....	19-5-18@
Later BTL Developmental Tubes	7-4-30@	RCA and the Pilot 3" TV Set.....	21-6-72
Lenkurt Tube Mystery, The	19-2-2*	RCA's "HB"s.....	11-6-9*
"Literature" of Tube Substitution, The	17-2-31@	RCA's Orphan 91.....	10-2-24*
Marathon Tubes and Their Telegraphic Codes	7-3-23	RCA and Private Brands	1-1-9*, SP11-12@
"Matched Pairs"	13-2-17	RCA and Raytheon on the 2A3 / Raytheon Introduces Its 2A3.....	21-4-15@
Member Meeting at Rochester.....	3-5-2*	RCA Factory Code – An Expansion	10-6-27*
Memorial to Jerry Vanicek, A	19-1-5	RCA Views Telefunken 12AX7s	13-2-12
Mercury: The New Asbestos	14-2-26*	Review: A Brief History of Bendix Red Bank Tubes	9-6-1
Mercury-Arc Rectifier, The	17-1-20@	Review: British Radio Valves - The Classic Years: 1926-1946.....	11-4-2
Metal Tubes for Eleven Volts?	SP11-27	Review: Camp Evans – The Untold Story	13-3-22*
		Review: De Forest - Father of the Electronic Revolution	3-4-8*
		Review: GEMA: Birthplace of German Radar and Sonar	3-3-8*

Review: Historische Elektronen-Röhren für Telephonie und Radio.....	17-3-11*	Tube Complements in Old-Time Communications Equipment	SP21@
Review: History of the Electric Lamp...	15-6-1*	Tube Coverage at Rochester (2000).....	2-5-4@
Review: Living with Radiation: The First Hundred Years	3-1-12*	Tube Inflation: Triad and the 6AC5G. 14-4-18*	
Review: Make Your Own Tube Testers and Electron Tube Equipment.....	16-2-21*	Tube Kits from RCA	1-2-6*
Review: Making Silicon Valley - Innovation and the Growth of High Tech, 1930-1970.11-3-3*		Tubes – A General Precept	14-3-21*
Review: Radio Tubes and Boxes of the 1920's 14-6*		Tubes and Transmitters by Forest	20-2-6@
Review: Radiola - The Golden Age of RCA, 1919-1939.....	9-5-3*	Tubes in Once-Common VTVMs	19-6-10
Review: Robert von Lieben - 100 Jahre Patent Kathodenstrahlenrelais	8-2-14*	"Tubes" at Rochester (1999).....	1-5-2*
Review: Story of the CK722, The	5-1-5*	"Tubes" at AWA-Rochester (2002).....	4-5-19*
Review: Ten Patents from Radio History .9-5-1		"Tubes" at AWA-Rochester (2003).....	5-5-12*
Review: The Complete Western Electric Data Library	13-6-insert	Tubes for Early Proximity Fuzes.....	11-6-4@
Review: Thermionic Age in Brazil - A Historical Overview on Valves and Kinescopes 21-3-2		Tube Testing – And You Want Consistency ?	10-6-24*
Review: Where Discovery Sparks Invention 11-4-1*		"Tubes" That Weren't	6-6-9*
Review: VTDATA vs. TUBEDATA Software	2-3-17*	Tubes with Quicksilver	9-5-18*
Revisiting the 6X6 Eye Tube	13-3-11*	Tung-Sol.....	13-6-22@
Rider's Tube-Audio Manual.....	8-4-15@	Tune-A-Lite Story, The.....	6-1-11@
Sample of RCA's "Bullet Tube," A	8-3-14*	TV Brighteners	21-4-23*
Secondary-Emission Tubes	15-6-19@	Two Unusual British Duotriodes.....	SP11-26@
"Seconds" in Tube Manufacture	3-2-21*	Type A Transistor, The, and the "First" Transistor Radio.....	4-3-13@
Sheldon Electric Co.	14-4-11@	U. S. Tubemakers (More or Less) Today.....	5-2-28@
Signal Corps Codes on Tubes	9-3-15*	"Underwriters Problem," The	1-4-8*
Production Figures for Signal Corps Gear, 1940-45	19-4-11@	"Undocumented Aliens" - Curse of the Restorer	4-3-20@
Signal Corps Tubes - A 1931 View.....	10-3-13*	Uncle Sam's Tube List.....	3-4-10@
Silica Valve, The	5-4-10@	VAC-M Lightning Arrester, The.....	5-1-3@
"Single-Tube" Radio, The.....	13-1-15*	VAC-M Protectors in Cuyama Valley .21-5-36*	
"Sonar Contact!" - With Tubes	18-2-13*	Vapor-Cooled Power Tubes.....	17-5-20@
Sperti, Inc.	17-1-14*	VT-127A, The.....	6-3-11@
Some Magic Eyes	5-4-13*	W. E. Broadcast Gear - from Turntables to Tubes	6-4-13@
Some Metal-Tube History (intro. to G. W. Crawford).....	5-4-19@	W. E. Developmental Tubes of the '30s (source: Jerry Vanicek)	1-2-8@
Some Tube Selections at RCA.....	2-1-18*	Warranty-Indicator Colors on GE Tubes 14-3-19*	
Sparton (Cardon) Tubes.....	12-2-7@	Was the VT-11 A Dud?.....	SP11-2*
Stenode Non-Tube, The	19-6-9*	Watson Collection, The.....	5-3-4@
Survey, A, of Tube Popularity in Oldie Radios	11-2-15@	"Weird Tube of the Month" series	
Sweep Tubes in "Really Early" TV Sets	6-6-12*	4-750A (Eimac)	17-5-18*
Sylvania "Rocket Tube, The	20-3-14@	A109 (RCA).....	12-3-37*
Taylor Tubes	13-5-7@	"5TV4"	10-6-21
Telegraphic Codes for Oldie Tubes.....	6-4-12*	6DK3	9-6-31
Test Limits for Glass Power Triodes.....	7-2-14	6JQ6 (RCA)	19-3-9*
TS-712/TCC-11, The: A Benign Boondoggle?	13-3-25*	7C22	10-2-16*
Those 12-Volt Car Tubes	6-6-13@	84R	16-1-*
Time-Saver Test Data for Heathkit Checkers.....	14-6-23*	273A (WE).....	20-6-11*
"Tube-F-O"	8-2-3	281A (WE).....	13-1-18*
Tube-Base Asbestos Racket, The	12-5-17*	1630 (RCA).....	15-1-14@
		5738	9-2-16*
		6047	9-5-20*
		6462	9-4-25*
		6762	11-5-20*
		6793	10-4-14*
		7311-7314, The Last Red Bank Gridded Types	12-2-20*

7739	9-3-20*
8428	10-5-23*
A4444	10-3-11*
Arc Oscillator, The	12-6-34*
Big Lee's Transistor	18-5-21
Circuitron, The	19-5-10*
Crosley Deflectron, The	15-5-16*
Duo-Deltatron, The	17-1-4*
Gallery of Odd Ones (Amptrol, CK1301A, Edlo, Meggit, Pix Expander, wafer-based octals, 6M-E5)	21-6-90#
Haledy TT-1, The	14-3-18*, 14-4-1
Quadrotron, The	20-3-5*
Raytheon RK-100, The	14-5-17
R-2061, RCA's	20-4-25*
RCA 20-kW VHF Tetrode	12-4-24*
RCA's Doomed Type 1	18-2-24*
NB1 - NB8 ballasts	10-1-16
Ruben Electron Relay, The	13-4-7*
Secondary-Emission Tubes	15-6-19@
Three Obscure Oldies	17-4-43
Wheelco "W"	21-5-20*
XD-6, The	17-2-37*
Western Electric Resistance Lamps	5-6-19@
Western Electric - "Silicon Valley in the Lehigh Valley"	19-1-14@
Westinghouse "DIY" Tester	21-3-35*
Westinghouse X-Ray Tubes	20-1-25@
"Why Do They Do It?" (saving duds)	8-3-37
William Shockley, the PNP Diode, and The Shockley Transistor Corporation	17-3-2@
Wunderlich Detector, The	8-6-33@
2B6, 6B5, and Their Cousins, The	3-4-15@
2E27, The - An Existence Proof!	7-3-12
6F6EG? 41E? 7J7E? Say What?	7-1-13@
6P6, The	7-5-19*
12AP4, The	12-6-25*
12HN8 - An Abandoned Record-Breaker	8-5-22*
100th Anniversary of Transcontinental-Telephony	16-4-2@
"813 is to 803 as 814 is to 804"	7-2-19@
1941 at Eimac, Introduction	15-3-6
5671, The	3-1-4@
6324, The	6-3-3*
Smith, N. R.	
Construction Trends in Vacuum Tubes	@2-6-19
Smith, W. W.	
Evolution of a Vacuum Tube, The	21-3-38@
Sousa, Joe (with Ed Lyon)	
Restoring of Brightness in 6E5/6U5 Eye Tubes	15-1-6@
Russian Subminiature Tubes	11-3-26@
SN-856-F, The	11-6-7@
Very-High- μ Power Beam Triodes	13-4-3@
Soyland, Ron	
How Small Can I Make It?	17-1-6@
Spencer, P. L.	
A Bit of Raytheon History	19-4-8*
Sparks, Steve	
Parameter Measurements on the HK5 and HK55	SP20-26@
Stansel, F. R.	
Early WECo Transistors - A Bell Labs Summary	19-1-12*
Stewart, Fin	
British Thomson-Houston Audion, A - Not in Tyne!	14-2-31
Captain Stanley R. Mullard and the "Interservice" Tube Base	15-2-21@
Condor Radio Valve, The, and a History of Goosens, Pope, and Company	4-6-2@
Radio Panel Lamps - Dial Bulbs	21-4-8@
Tribute to Howard Schrader, A	2-2-4@
Stocks, Danial	
AWV's Tube Demonstrator	8-3-12*
AV Tubes, The, So Far	7-4-2@
Bendix Red Bank Series External-Anode Receiving Tubes	19-1-3*
Could This Be the WE 712?	10-2-8@
Digital Glassware	
I: Cold-Cathode Gas-Filled Counter Tubes	7-2-4@
II: Vacuum-Type Counter Tubes	7-6-24@
Early Radar Developments in Australia	5-6-9@
Early Years of the Klystron, The - The Varian Brothers, Stanford and Sperry	21-3-10@
Electron-Bombarded Semiconductors	21-6-36#
Fast Heating / Bombardier Cathodes for Microwave Tubes	21-6-22#
FM Barrage Jamming - An Idea Before Its Time	21-1-13*
Further Investigations of the Rectifier-Gamma-tron - Tests on the 6X4W (Raytheon and Tung-Sol)	10-6-6@
Guide to Tubes of the USSR, A	3-5-10@
Heil Tubes	4-3-4*
Innoval. . . "the Most Advanced Tube in the World"	17-6-4@
M-Type Carcinotron, The	SP26
More Australian Radar Tubes	6-2-21*
National Union Anodyne ("Weird Tube of the Month")	21-1-9*
Notes on Sperry Microwave Tubes	3-3-12*
Pirani Test, The (source for)	5-4-17*
Reverse-Engineering the CS-8404 Klystron	4-4-22@
Secret Tubes for Radar Jamming, The - Cross-Field Noise-Generator Tubes	21-5-42
Soviet 1500-Series Tubes, The	18-2-2@
Updated	21-3-4*

Threat-Emitter Magnetrons.....	21-4-25
Tubes in the Modern Era: Space TWTs . . . The Final Frontier.....	21-6-51#
Type Codes: Varian Tubes.....	7-3-21*
VA-217 Reflex Klystron Amplifier, The..	14-4-7@
Vacuum Mechanics - Tubes and Related Vacuum Devices with Mechanical Moving Parts	8-6-3@
What Is a Cavity Magnetron Anyway? ..	21-4-25@
Weird Tube of the Month - Bendix Red Bank Series External Anode Receiving Tubes	19-1-3*
Sylvania Electric Products	
How Tube Counterfeiters Cost You Your Business.....	21-2-3*
Latest Model Tester	19-3-25
Sylvania 6SN7GTA Improved Duo-Triode, The	16-6-16*, 21-2-5*
Sylvania Graphite Anode Tubes Popular with Broadcasters	21-2-19
Sylvania News: Chronology of an Era..	21-6-6*
Sylvania Tubes Used in the Moon Radar..	21-5-27*
Tube Mysteries Explained.....	19-3-16*
Symonds, Gordon	
Sparton VG-1 "Viso-Glo" Tuning-Indicator Tube, The.....	2-5-6*
Taylor, Philip	
British Valve Nomenclature series	
Brimar.....	5-2-27*
Cossor.....	5-5-23*
Ever Ready.....	6-5-11*
Ferranti	6-5-15*
Hivac - A Small British Manufacturer	1-3-17@, 4-6-RC
Hivac A15, The.....	1-4-9@
More on Rimlocks	15-2-19*
Philco and the PenDD61	7-3-6*
Tunograph	3-6-8*
Some Historic British Valves.....	4-5-2@
Equivalent Among '30s British Tubes (source for).....	1-6-11*
"Undocumented Aliens" - A New Look..	7-1-7@
"Undocumented Aliens - The Sequel" ..	5-1-10@
Tabor, J. D. (and C. C. Barber)	
Molding of Plastic Materials.....	12-5-18*
Thomas, Bob	
"General is Coming," The	19-2-10*
Thrower, Keith	
Origin of the British Screened Grid Valve	16-3-3@
Marconi Q, QX, and V.24 Valves, The	16-1-2@
Marconi-Osram Four-Electrode Valves .	16-2-11@
Trochelmann, Heinz (with Udo Radtke)	
About the HB 14 "Resotank" 2-GHz Oscillator	13-3-9*
Another Weird Tube: The "Mini-Loktal"	10-3-3*
Turner, Rufus P. (R)	
The CK703 Crystal Triode.....	12-2-5*
Tyne, Gerald F. J.	
McCandless and the Audion	SP6
Original of the Vacuum Tube (talk on CD) ...	SP9
RJ4 Detector, The, and the Wallace Mystery	SP15@
Unidentified	
50-Year-Old Edison Lamp Used in Receiver	12-3-24*
A Monode VHF Oscillator	13-4-13*
Ballast Resistor Situation, The	13-2-18@
Chemical Highlights of Tube Manufacture	14-2-28@
Clarification of the Muddled Ballast Resistor Situation.....	13-2-18@
Electronic Tubes Help to Win Battles....	14-1-19
Gassy Tubes	13-3-24*
"Good" Tube, What is A? (<i>Radio Broadcast</i>)	20-4-5
Life-Boost Cathode Now Standard Equipment on 90 Sylvania Tube Types.....	13-6-39*
Manufacture of a High-Freq. Transmitting Tube	14-1-4@
New De Forest Set Announced During Chicago Visit (<i>Radio Industries</i>)	16-6-18*
New Metal-and-Ceramic "Micro-Miniature" Tubes (<i>National TV-Radio News</i>).....	20-4-23*
New Tube in Germany, A (Arcotron 3-1)	18-5-18
Radio Repair in the Depression	16-6-15*
Receiving Tubes Standardized.....	15-6-25
Self-Service Tube Testers	13-2-15*
Simplicity Extends Light-Control Possibilities	14-2-23*
Television Rental by Alert Service Dealer (<i>Photofact Servicer</i>).....	20-4-31
They're Darn Good - Ask the Gal Who Knows	12-4-49
Those Radio Tube "Seconds"	13-2-32
The Triad T-10S	18-5-8*
Two Who Made it Possible.....	18-5-16*
<i>TV Guide</i> Looks at Rebuilt Picture Tubes	15-1-17*
UHF-TV Microminiature Ceramic Tubes..	12-4-36*
Unusual Service Calls	12-3-36*
Varian Honeycomb Grids, The.....	12-4-37*
Upton, Lane	
Adapters for Vacuum-Tube Testing....	9-3-13@
Development of Planar Triodes at Eimac / Varian / Salt Lake City, 1966-1987	7-6-2@
Experiences with the 416C Tube at Eimac / Varian	9-6-10@
History of Eimac / Varian Facility in Salt Lake City, 1942 to 2006	8-6-20@
Life-Test Setup at SLC ("Readers Report")	8-3-2
Rejuvenation of Vacuum Tubes (R)	13-2-13*
Van Horne, John (report of talk)	
Speaks on Vacuum Tubes	15-6-32*

Vanicek, Jerry		
Auction Report - Thorn Estate	4-4-27*	4-6-10@
Auction Report - Estes Sale, Sept. 20	5-5-5@	6-5-13*
Further Notes on Howard Schrader	2-2-7*	
Lost D'Agostino Collection, The (source for, with Bro. Patrick Dowd).....	2-4-11@	
Milkotron, The - Another De Forest Invention?		
	More on the Selectron (source for)	
	Westinghouse Engineer	
	Reducing the "X" of X-Rays (R)	21-2-32*
	To the Moon by Radar	21-5-23*