

BELL SYSTEM PRACTICES
Toll Test Room Operation
Description and Operating Principles
of Systems and Equipment

SECTION E40.560.1
Issue 1, June, 1951
AT&TCo Standard

BELL SYSTEM PRACTICES
Radio Systems
General

SECTION R70.710.1
Issue 1, June, 1951
AT&TCo Standard

BELL SYSTEM PRACTICES
Central Office Maintenance
Apparatus Requirements
and Adjusting Procedures

SECTION A493.158
Issue 1, June, 1951
AT&TCo Standard

WESTERN ELECTRIC ELECTRON (VACUUM) TUBE TEST DATA

KS-15560 L1 HICKOK TUBE TESTER

1. GENERAL

1.01 Methods of making tests with a KS-15560 L1 Hickok tube tester are covered for the three series in the section numbered E40.560, R70.710, A702.658.

1.02 A new arrangement of the data is being tried with this issue namely to put these data into columns on an attached fan folded sheet which may be removed from the section and attached to the roll chart in the tester itself. Care should be exercised in the method of fastening this table to the existing chart since otherwise it may pull loose and cause trouble in the operation of the rolls. In order to reduce the amount of space and to provide a smooth surface at the junction, it is suggested that scotch tape be used on both the front and back of the joint between the new chart and the old. Since particles of the adhesive may cling to the surface of the scotch tape or may squeeze out around the edges and cause the tape to adhere to adjacent layers of paper when it is rolled, it is suggested that the surface of the scotch tape after it has been attached to the paper be well dusted with talcum powder or powdered chalk. Subsequently if there appears to be any tendency towards sticking, this powder should be used again.

1.03 To secure the greatest utility with the tester it is suggested that the attached table be removed from the section and inserted in the tester as indicated in the preceding paragraph.

1.04 Column headings, column spacings and symbols used in the attached data table are similar to those on the roll chart with the exception of three additional symbols which have been used as follows:

(T) has been used to indicate tentative data.

@ has been used in place of the words "cathode activity limit" in order to conserve space in the table.

** indicates that the cathode activity switch should be operated to the TEST position and the filament switch should be set at 7.5 volts. With this arrangement no cathode activity test is made. Care should be exercised in making this test as the tube may be damaged if the cathode activity switch is operated to NORMAL with the filament switch set at 7.5 volts (normal heater voltage is 6.3 volts).

Attached:
Table of Western Electric
Electron Tube Data

WESTERN ELECTRIC ELECTRON (VACUUM) TUBE TEST DATA
 KS-15560L1 HICKOK TUBE TESTER
 Section E40.560.1 (R70.710.1, A493158); Issue 1, June 1951

TUBE TYPE	FIL.	SELECTORS	BIAS VOLTS	MIC-SW SHUNT	PRESS	MIN. TRANS-COND.	NOTATIONS	TUBE TYPE	FIL.	SELECTORS	BIAS VOLTS	MIC-SW SHUNT	PRESS	MIN. TRANS-COND.	NOTATIONS
101D (D86326) (D92437))	4.3	JR3200-0	14	H1-3	P4	800 @25%	944WEB Adap.	348A	6.3	JR0347-5	3	Lo-6	P4	1400	Cap=G. @25%
101F, J, L, M	4.3	JR3200-0	14	H1-3	P4	850 @25%	944WEB Adap.	349A	6.3	JR5347-0	3.5	Lo-6	P4	3500	@25%
101FA	4.3	JR3200-0	13.5	H1-3	P4	1050 @25%	944WEB Adap.	350A	6.3	JR3024-0	6	H1-15	P4	4800	Cap=P. @25%
102D, E, G	2.0	JR3200-0	1	Lo-6	P4	350 @25%	944WEB Adap.	350B	6.3	JR5347-0	6	H1-15	P4	4800	@25%
102F, L	2.0	JR3200-0	1	Lo-6	P4	350 @20%	944WEB Adap.	351A)	6.3	JR0507-2	0	SH-70	P3	*	Plate No. 1
										JR0307-2	0	SH-70	P3	*	Plate No. 2
104D (D86327) 205D, E, F,) D156734)	4.3	JR3200-0	25	H1-3	P4	800 @25%	944WEB Adap.		10.0	JR0205-0	8	Lo-6	P4	500	Cap=G. @25%. Triode Sect.
	5.0	JR3200-0	2	H1-3	P4	1450 @15%	978WEB Adap.	352A)	10.0	JR0405-2	0	SH-21	P1	*	Diode No. 1
									10.0	JR0305-2	0	SH-21	P1	*	Diode No. 2
215A	1.1	JR3200-0	20	H1-3	P4	275 @25%	972 Adapter	367A	6.3	JV6147-0	4.5	Lo-15	P4	4500	@25%
231D	3.0	JR3200-0	10	H1-3	P4	400 @25%		373A	2.0	JR4760-3	3.1	Lo-6	P4	800	@25%
239A	1.1	JR3200-0	15	H1-3	P4	300 @25%		374A	3.0	JR4760-3	10	H1-6	P4	1800	@25%
								375A	20.0	JR5347-0	25	Lo-6	P4	1700	@20%
244A	2.0	JR3204-0	9	H1-3	P4	650 @25%									
245A)	2.0	JR0234-0	7.5	H1-3	P1, P4#	400	Cap=G. @25% # Hold down Pl & Press Pl	381A	6.3	HR0502-0	0	SH-55	P1	*	Diode Test
								383A	6.3	HR4602-0	4.4	Lo-6	P4	1800	@30%
247A	2.0	JR3204-0	6	H1-3	P4	530 @25%		385A	6.3	HR5032-8	2.7	Lo-6	P4	1500	Cap=P. @30%
257A	3.0	JR0200-0	10	H1-3	P4	400	Cap=G. @25%	387A	6.3	HR5032-8	2.9	Lo-6	P4	2000	Cap=P. @30%
259A, B)	2.0	JR0234-0	0.5	Lo-6	P1, P4#	840	Cap=G. @25% # Hold down Pl & Press Pl	2051/396A)	6.3	KR7608-2	0-0	Lo-6	P4	3400	Triode No. 1 @25% @240-ohm 5% Self Bias Res.
									6.3	KR3402-8	0-0	Lo-6	P4	3400	Triode No. 2 @25% @240-ohm 5% Self Bias Res.
262A, B	10.0	JR0203-0	6.5	Lo-6	P4	600	Cap=G. @25%								
264B, C	1.5	JR3200-0	17	H1-3	P4	375 @25%									
271A	5.0	JR3204-0	4.5	Lo-6	P4	2300 @25%		5603/398A	6.3	JR4760-3	10	Lo-6	P4	3750	@25%
272A	10.0	JR3204-0	15	H1-3	P4	570 @25%		399A	1.1	DX6210-0	0	Lo-6	P1, P4#	675	# Hold down Pl & Press Pl
274A)	5.0	JR0300-0	0	SH-50	P3	*	Plate No. 1	400A)	1.1	DX3216-5	8.5	H1-3	P4	400	G1. Test Short on 2 Observe for Min. Gm
	5.0	JR0200-0	0	SH-50	P3	*	Plate No. 2		1.1	DX6218-5	8.5	H1-3	P4	200	G3. Test Short on 2 Observe for Min. Gm
274B)	5.0	HR0600-0	0	SH-50	P3	*	Plate No. 1								
	5.0	HR0400-0	0	SH-50	P3	*	Plate No. 2	5590/401A)	6.3	JR3562-0	2.7	Lo-6	P1, P4#	1300	@30% # Hold down Pl & Press Pl
275A	5.0	JR3200-0	20	H1-3	P4	1750 @25%									
283A)	2.0	JR0234-0	0.5	Lo-6	P1, P4#	950	Cap=G. @25% # Hold down Pl & Press Pl	6AK5/403A)	6.3	JR3562-0	0-0	Lo-6	P4	3100	@25% @330-ohm 5% Self Bias Res.
285A	2.0	JR0234-0	10	H1-3	P4	700	Cap=G. @25%								
286A)	2.0	JR0235-4	0.5	Lo-6	P1, P4#	1000	Cap=G. @25% # Hold down Pl & Press Pl	5591/403B)	6.3	JR3562-0	0-0	Lo-6	P4	3100	@25% @310-ohm 5% Self Bias Res.
								404A	6.3	DZ1684-0	0-0	Lo-30	P4	8000	@25% @110-5-ohm Self Bias Res.
290A)	10.0	JR0235-4	0.5	Lo-6	P1, P4#	900	Cap=G. @25% # Hold down Pl & Press Pl	407A)	20	KV7608-2	0-0	Lo-6	P4	3400	Triode No. 1 @25% @240-ohm 5% Self Bias Res.
291A)	10.0	JR5436-2	15	H1-3	P4	280	@30% Oscillator Section								
	10.0	JR0236-5	9	H1-3	P4	900	Cap=G. Amplifier Section		20	BV3402-8	0-0	Lo-6	P4	3400	Triode No. 2 @25% @240-ohm 5% Self Bias Res.
	10.0	JR0205-0	8	Lo-6	P4	500	Cap=G. @25%. Triode Sect.								
292A)	10.0	JR0405-2	0	SH-21	P1	*	Diode No. 1	408A(T)	20	JR3562-0	0-0	Lo-6	P4	3000	@25% @330-ohm 5% Self Bias Res.
	10.0	JR0305-2	0	SH-21	P1	*	Diode No. 2								
293A	10.0	JR4235-0	10.5	H1-3	P4	900 @25%		6AS6/409A	6.3	JR3562-7	2.8	Lo-6	P4	2000	@25%
294A	10.0	JR0234-0	10.5	H1-3	P4	900	Cap=G. @25%								
300A, B	5.0	JR3200-0	15	H1-6	P4	2900 @25%		412A)	6.3	EV0907-3	0	SH-65	P3	*	Plate No. 1
	2.0	JR0205-0	8	Lo-6	P4	500	Cap=G. @25%. Triode Sect.	414A(6AJ5)	6.3	EV0103-7	0	SH-65	P3	*	Plate No. 2
303A	2.0	JR0405-2	0	SH-21	P1	*	Diode No. 1		6.3	JR3562-0	3.5	Lo-6	P1, P4#	1600	@25% # Hold down Pl & Press Pl
	2.0	JR0305-2	0	SH-21	P1	*	Diode No. 2	415A(6AS6)	6.3	JR3562-7	2.8	Lo-6	P4	2000	@25%
307A)	5.0	JR3020-4	7	H1-3	P4	2000	Cap=P. @30% G1. as Control Grid	417A(T)	6.3	DZ5106-1	0-0	Lo-30	P4	14500	@25% @62-ohm 1% Self Bias Res.
	5.0	JR4020-3	7	H1-3	P4	900	Cap=P. G3 as Control Grid Observe for Min. Gm	418A(T)	6.3	BW8254-0	0-0	Lo-30	P4	18000	@25% @27-ohm 1% Self Bias Res.
309A)	10.0	JR0234-0	0.5	Lo-6	P1, P4#	800	Cap=G. @25% # Hold down Pl & Press Pl	420A)	12.6	EV6807-3	0	Lo-6	P4	900	Triode No. 1 @25%
310A, B	10.0	JR0235-4	3	Lo-6	P4	1400	Cap=G. @25%	421A(T)	12.6	EV3102-6	0	Lo-6	P4	900	Triode No. 2 @25%
									**	JX4506-1	18	H1-15	P4	6250	Section 1
311A, B	10.0	JR0234-0	15	Lo-6	P4	2200	Cap=G. @20%		**	JX2103-5	18	H1-15	P4	6250	Section 2
328A	7.5	JR0235-4	3	Lo-6	P4	1400	Cap=G. @25%	422A)	5.	HR0600-0	0	SH-78	P3	*	Plate No. 1
329A	7.5	JR0234-0	15	Lo-6	P4	2200	Cap=G. @20%		5.	HR0400-0	0	SH-78	P3	*	Plate No. 2
336A	10.0	JR4235-0	3.5	Lo-6	P4	3500 @25%		429A(T)	20	BW8254-0	4	Lo-6	P4	3500	@25%
337A	10.0	JR0235-4	3.5	Lo-6	P4	1250	Cap=G. @25%	T3251)	50	JR5347-6	30	H1-3	P4	870	@25%. Pentode Section

291A	10.0	JR5436-2	15	H1-3	P4	280	330% Oscillator Section	407A	20	KV7808-2	0-0	Lo-6	P4	3400	025% #240-ohm 1% Self Bias Res. Triode No. 2 330% 0240-ohm 1% Self Bias Res.
	10.0	JR0236-5	9	H1-3	P4	900	Cap=G. Amplifier Section								
	10.0	JR0205-0	8	Lo-6	P4	500	Cap=G. 25% Triode Sect.								
292A	10.0	JR0405-2	0	SH-21	P1	*	Diode No. 1	408A(T)	20	JR3562-0	0-0	Lo-6	F4	3000	025% #330-ohm 1% Self Bias Res.
	10.0	JR0305-2	0	SH-21	P1	*	Diode No. 2								
293A	10.0	JR4235-0	10.5	H1-3	P4	900	025%	6AS6/409A	6.3	JR3562-7	2.8	Lo-6	P4	2000	025%
294A	10.0	JR0234-0	10.5	H1-3	P4	900	Cap=G. 25%								
300A, B	5.0	JR3200-0	15	H1-6	P4	2900	025%	412A	6.3	EV0907-3	0	SH-65	P3	*	Plate No. 1
	2.0	JR0205-0	8	Lo-6	P4	500	Cap=G. 25% Triode Sect.	414A(6AJ5)	6.3	EV0103-7	0	SH-65	P3	*	Plate No. 2
303A	2.0	JR0405-2	0	SH-21	P1	*	Diode No. 1		6.3	JR3562-0	3.5	Lo-6	P1, P4#	1600	# Hold down Pl & Press Pl
	2.0	JR0305-2	0	SH-21	P1	*	Diode No. 2	415A(6AS6)	6.3	JR3562-7	2.8	Lo-6	P4	2000	025%
307A	5.0	JR3020-4	7	H1-3	P4	2000	Cap=P. 30% Gl. as Control Grid	417A(T)	6.3	DZ5106-1	0-0	Lo-30	P4	14500	025% #27-ohm 1% Self Bias Res.
	5.0	JR4020-3	7	H1-3	P4	900	Cap=P. G3 as Control Grid Observe for Min. Gm	418A(T)	6.3	BW8254-0	0-0	Lo-30	P4	18000	025% #27-ohm 1% Self Bias Res.
309A	10.0	JR0234-0	0.5	Lo-6	P1, P4#	800	Cap=G. 25% # Hold down Pl & Press Pl	420A	12.6	EV6807-3	0	Lo-6	P4	900	Triode No.1 025%
310A, B	10.0	JR0235-4	3	Lo-6	P4	1400	Cap=G. 25%		12.6	EV3102-6	0	Lo-6	P4	900	Triode No.2 025%
311A, B	10.0	JR0234-0	15	Lo-6	P4	2200	Cap=G. 20%	421A(T)	**	JX4506-1	18	H1-15	P4	6250	Section 1
328A	7.5	JR0235-4	3	Lo-6	P4	1400	Cap=G. 25%		**	JX2103-5	18	H1-15	P4	6250	Section 2
329A	7.5	JR0234-0	15	Lo-6	P4	2200	Cap=G. 20%	422A	5.	HR0600-0	0	SH-78	P3	*	Plate No. 1
336A	10.0	JR4235-0	3.5	Lo-6	P4	3500	025%		5.	HR0400-0	0	SH-78	P3	*	Plate No. 2
337A	10.0	JR0235-4	3.5	Lo-6	P4	1250	Cap=G. 25%	429A(T)	20	BW8254-0	4	Lo-6	P4	3500	025%
								TS251	50	JR5347-6	30	H1-3	P4	870	025% Pentode Section
339A	5.0	JR3020-4	8	H1-6	P4	3000	Cap=P. 25%		50	JR0602-3	0	SH-80	P3	*	Rectifier Section
347A	6.3	JR0407-0	6	Lo-6	P4	760	Cap=G. 25%								

* A star or asterisk in the MIN TRANSCON. column indicates that the MICROMHOS switch should be set on SHUNT and tube should be tested with respect to RECTIFIERS & DIODES - OK index mark on meter scale.

This symbol in the PRESS column requires holding down the P1 button before and during the depressing of the P4 (GM switch) button for a reading.

(T) Tentative data.

@ This symbol stands for "cathode activity limit."

‡ This symbol in BIAS VOLTS column indicates BIAS VOLTS is initial-16 set at maximum on 50V range. Then operate P2 or P3 as specified and reduce BIAS VOLTS with BIAS ADJUST control until the tube strikes. Tube is OK if reading equals or exceeds RECTIFIERS & DIODES OK mark at BIAS VOLTS striking point specified under NOTATIONS.

Ø This symbol in BIAS VOLTS column with zero (0) BIAS VOLTS listed indicates a self bias resistor of the value given under NOTATIONS is required. Less tolerance in resistances is advantageous.

** Operate CATH. ACT. switch to TEST position and set FILAMENT switch at 7.5V. No cathode activity test is made.

STOP

STOP

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4CG7
6DR7