

CARRIER EQUIPMENT  
ACCEPTANCE TEST PLAN

1. GENERAL

1.01 This section lists the recommended acceptance procedures and methods for making acceptance tests in connection with the installation, rearrangement, or modification of all carrier equipment.

1.02 The general philosophy of acceptance test planning for central office and PBX equipment, is detailed in Section 200-002-010, should be understood before proceeding with this instruction.

1.03 The acceptance test procedures for the power complex are found in Section 200-002-711. The power complex must be tested prior to performing acceptance tests for carrier equipment.

2. FORMS FOR CARRIER EQUIPMENT ACCEPTANCE

2.01 The various forms necessary to control and document the acceptance testing of carrier equipment are listed in this part. Refer to Section 200-002-700 for details on completion of the designated forms. Form S 6156 Plant Inspection-Carrier Equipment, is included as Exhibit 1 of this section.

2.02 The following forms will be used when acceptance testing carrier equipment:

- (a) S 6140 Equipment Summary
- (b) S 6141 Plant Inspection – Superstructure (if required)
- (c) S 6147 Plant inspection – Cabling and Signal Wire (if required)
- (d) S 6156 Plant Inspection – Carrier Equipment
- (e) S 6151 Functional Test Record
- (f) S 6150 Formal Acceptance Summary

3. ADMINISTRATIVE PROCEDURES

3.01 Physical inspection and functional testing may be started at any time during the installation, provided that subsequent installation work will not change the test results.

3.02 An Equipment Summary, Form S 6140, will be prepared for each order, using the information provided by the Acceptance Test Coordinator/Project Engineer to complete the summary.

4. REFERENCE MATERIAL

4.01 Refer to Table 1 for routines that must be performed during acceptance testing of carrier equipment. Acceptance test routines for the equipment being installed, modified, or rearranged will be performed as part of the acceptance program. In Table 1, the table headings and subordinate information for each routine are contained in the Equipment and Test Routine Title column. The titles are arranged in alphabetical sequence for each type of test category. The Section Number column identifies the GTE Practice that includes the test procedures to be performed. The Unit of Equipment column identifies a unit of equipment that must be tested. For example, alignment tests and adjustments for GTE Lenkurt 45 BN1 are tested per Section 342-452-510, the Unit column abbreviation being 1/SYS or one routine per system.

4.02 Unless otherwise specified, all equipment will meet the requirements of Section 200-025-000, General Performance Requirements and Definitions, insofar as those requirements apply.

4.03 The detailed technical information required for performance of the acceptance tests will be found in the GTE Practices (GTEP's) assigned to the system being installed. Bell System Practices (BSP's) are provided in certain cases of joint usage equipment. On equipment types not covered by GTE Practices or BSP's, refer to the instruction manuals provided with the apparatus.

4.04 Technical documentation for carrier systems is found in the following:

- (a) Lenkurt Carrier Systems. Division 342 of GTE Practices.
- (b) Western Electric Carrier Systems. Type K, BSP Division 355; J, K, & | Multiplex Terms, BSP Division 356; Type L1, BSP Division 358; Type L3 & L4, BSP Division 359; Type N, O, & ON, BSP Division 362; Type P, BSP Division 363.
- (c) Miscellaneous Carrier Systems. Division 348 of GTE Practices or Manufacturer Instruction Manual.

4.05 With reference to the completion of Form S 6156, Plant inspection – Carrier Equipment, the persons inspecting-and accepting the equipment should refer to the example in Exhibit 1.

Table 1. Acceptance Test Routines, Carrier Equipment.

EQUIPMENT AND TEST ROUTINE TITLE	SECTION NUMBER	UNIT OF EQUIPMENT
GTE Lenkurt 45 BN1, Alignment, Tests & Adjustment!		
Transmitting Terminal	342-452-510	1 /SYS
Repeater	342-452-520	1 /SYS
Receiving Terminal	342-452-530	1 /SYS
System Alarm	343-452-540	1 /SYS
Line-up Instructions		1 /SYS
GTE Lenkurt 46A, Alignment		
28148 Line Equalizer Panel	342-461-505	<b>1 /SYS</b>
5181 A Line Equalizer Panel	342-461-506	1 /SYS
28149 Line Equipment Shelf	342-461-507	1 /SYS
27985 Line Equipment Shelf	342-461-508	1 /SYS
27991 Line Equipment Shelf	342-461-509	<b>1/SYS</b>
27992 Line Amplifier Shelf	342-461-510	<b>1/SYS</b>
41135 Line Equipment Shelf	342-461-511	1 /SYS
41160 Line Equipment Shelf	342-461-512	1 /SYS
41159 Line Equalizer Shelf	342-461-513	1 /SYS
41173 Line Equipment Shelf	342-461-514	1 /SYS
41174 Line Equipment Shelf	342-461-515	1 /SYS
41172 Line Equipment Shelf	342-461-516	1 /SYS
27951 Synchronizing Equipment Shelf	34246 I-520	1 /SYS
27900 Master Frequency Supply	34246 I-524	1 /SYS
27970 Master Frequency and Channel Carrier		
Supply	342461-525	1 /SYS
41112 Carrier Supply Shelf	342-46 I-526	1 /SYS
41104 Carrier Supply Shelf	342-461-527	1 /SYS
41037 Carrier Amplifier Shelf	342461-528	1 /SYS
41060,41070 Master Frequency Generator	342-461-529	1 /SYS
41047, 41057, 41067 Distribution Shelves	342-461-530	1 /SYS
27818 Signaling Supply Shelf	342-461-540	1 /SYS
26518 Channel Carrier Supply	342-461-548	1 /SYS
27814, 27815 Channel & Auxiliary Channel		
Carrier Supply	342-461-549	1 /SYS
27910 Group Carrier Supply	342-461-556	1 /SYS
27980 Group Carrier Supply	342-461-557	1 /SYS
41090 Group Carrier Supply	342-461-558	1 /SYS
28128 Pilot Supply	34246 I-564	1 /SYS
27930 Pilot Supply	342461-565	1 /SYS
27984 Pilot Supply	342461-566	1 /SYS
41186 Mastergroup Pilot Shelf	342-461-567	1 /SYS
27926 Supergroup Carrier Supply	342461-572	1 /SYS
41035, 41036,41150 Supergroup Carrier Supply	342461-573	1 /SYS
41041 Supergroup 1, Carrier Supply	342461-574	1 /SYS
41190 Mastergroup, Two Carrier Supply Shelf	342-461-576	1 /SYS
26517,27654 Channel Bank Transmit	342461-588	1 /SYS
41140 Channel Bank Transmit	342-461-590	1 /SYS
41147 Channel Bank Transmit	342-461-59 1	1 /SYS
26789,27657 Group Bank Transmit	342-461-604	1 /SYS
41109 Group Bank Transmit	342-461-605	1 /SYS
41127 Group Bank Transmit	342-461-606	1 /SYS
27919, 27917 Supergroup Equipment Transmit	342461-620	1 /SYS
27960 Supergroup Equipment Transmit	342-461-62 1	1 /SYS
41031,41033,41034 Supergroup Equipment		
Transmit	342-461-622	<b>1/SYS</b>

Table 1. Acceptance Test Routines, Carrier Equipment (Continued).

EQUIPMENT AND TEST ROUTINE TITLE	SECTION NUMBER	UNIT OF EQUIPMENT
41158 Supergroup Combiner Shelf	342461-623	1/SYS
41181 Mastergroup Transmit Shelf	342-461-625	1/SYS
41180 Mastergroup Receive Shelf	342-461-630	1/SYS
27919, 27917 Supergroup Equipment Receive	342461-636	1/SYS
27961 Supergroup Equipment Receive	342-461-637	1/SYS
41030,41032,41034 Supergroup Equipment Receive	342-461-638	1/SYS
41025 Supergroup Regulator Shelf	342-461-652	1/SYS
26789,27658 Group Bank Receive	342-461-660	1/SYS
41109 Group Bank Receive	342-461-661	1/SYS
41127 Group Bank Receive	342-461-662	1/SYS
41026 Group Regulator Shelf	342461-672	1/SYS
26517,27655 Channel Bank Receive	342-461-676	1/SYS
41140,41144 Channel Bank Receive	342-461-678	1/SYS
41147,41144 Channel Bank Receive	342-461-679	1/SYS
41176 Single Channel Shelf	342-461-680	1/SYS
41119 Group Pilot Alarm Shelf	342461-695	1/SYS
41087 Pilot By-Pass Shelf	342461-696	1/SYS
41022 Pilot Indicator Shelf	342461-697	1/SYS
41105 Pilot Standby Shelf	342461-698	1/SYS
<b>GTE Lenkurt 46B Alignment</b>		
General Information	342-462-500	
Test Equipment List	342-462-501	
Transmit Terminal Adjustments	342-462-510	1/SYS
Repeater Feed Current Adjustments	342-462-520	1/SYS
Receive Terminal Adjustments	342-462-530	1/SYS
55040, 55050 Alarm Shelves, Equipment Tests	342-471-550	1/SYS
<b>GTE Lenkurt 47A Alignment</b>		
55001 Cable Carrier Systems	342-471-500	1/SYS
Transmit Terminal & Power Adjustments	342-471-520	1/SYS
Repeaters	342-471-530	1/SYS
Receive Terminal Adjustments	342-471-540	1/SYS
55040,55050 Alarm Shelves, Alarm Equipment Tests	342-471-550	1/SYS
55002 Radio Multiplex System	342-471-600	1/SYS
55002 Radio Multiplex System 55031 Shelf Mounted	342-471-601	1/SYS
55002 Radio Multiplex System 55032 Shelf Mounted	342-471-602	1/SYS
55005 Data Voice Alternate Use Terminal	342-471-505	1/SYS
55001 Cable Carrier Systems, System Slope Verification	342-471-560	1/SYS
<b>GTE Lenkurt 81 A &amp; 81 A2</b>		
Simplified Maintenance Test Procedures	342-811-301	1/SYS
Installation & Maintenance Faults	342-811-302	1/SYS
System Failures During Operation	342-811-303	1/SYS
Detailed Maintenance Test Procedures	342-811-311	1/SYS
Transmission Path Failures	342-811-312	1/SYS
Signaling Equipment Faults	342-811-313	1/SYS
Power Equipment Faults	342-811-314	1/SYS
System Alarm Equipment Faults	342-811-315	1/SYS
Terminal Loop-Back Procedure	342-811-316	1/SYS
General Alignment Instructions	342-811-500	1/SYS

Table 1. Acceptance Test Routines, Carrier Equipment (Continued),

EQUIPMENT AND TEST ROUTINE TITLE	SECTION NUMBER	UNIT OF EQUIPMENT
GTE Lenkurt 82A Maintenance Instructions, Fault Location Procedures	342-821-300	1/CHAN
GTE Lenkurt 91A		
9101 A Repeatered Line, Tests with WECO Equipment, Installation	342-910-201	1/TERM
9101 B PCM Repeatered Line, Installation & Testing	342-910-202	1/TERM
9001A Channel Bank Assembly, Installation & Acceptance Test Procedures	342-911-200	1/TERM
9001B Channel Bank Assembly, Installation & Acceptance Test Procedures	342-911-201	1/TERM
PCM Cable Carrier System, Routine Maintenance & Troubleshooting	342-911-300	1/TERM
9001 B, 9101 B Equipment, Routine Maintenance & Troubleshooting	342-911-301	1/TERM
9001 A Channel Bank Assembly, Alignment, General Information	342-911-500	1/TERM
9001 B Channel Bank Assembly, Alignment, General Information	342-911-501	1/TERM
9001A Channel Bank Assembly, Periodic Routine Alignment	342-911-520	1/TERM
9001 B Channel Bank Assembly, Periodic Routine Alignment	342-911-521	1/TERM
9003A Data Terminal Assembly, Installation & Alignment	342-913-200	1/TERM
9005A Data Terminal Assembly, Installation & Alignment	342-915-200	1/TERM
GTE Lenkurt 927A In-Band Signaling Equipment		
Alignment		
Signaling Supply Equipment	342-927-510	1/SYS
28717 E&M Signaling Unit	342-927-520	1/SYS
41216 E&M Signaling Unit	342-927-521	1/SYS
41209 E&M Signaling Unit	342-927-522	1/SYS
32815 E&M Signaling Unit	342-927-523	1/SYS
41219 E&M Signaling Unit	342-927-524	1/SYS
32816 E&M Signaling Unit	342-927-525	1/SYS
41205,41206 Loop Dial Signaling Unit	342-927-540	1/SYS
41207,41208 Foreign Exchange Signaling Unit	342-927-560	1/SYS
41217,41218 Foreign Exchange Signaling Unit	342-927-561	1/SYS
K24		
Power Supply Adjustments	None	1/SYS
Common Equipment Tests	None	1/SYS
Repeater Requirements	None	1/SYS
Terminal Alarm Tests	None	1/SYS
Drop Levels	None	1/SYS
Pulsing	None	1/SYS
GTE Lenkurt LN1		
Line-up Instructions	342-500-501	1/TERM

Table 1. Acceptance Test Routines, Carrier Equipment (Continued).

EQUIPMENT AND TEST ROUTINE TITLE	SECTION NUMBER	UNIT OF EQUIPMENT
<b>GTE Lenkurt LN1 &amp; LN2</b>		
Line-up Instructions	342-700-500	1/TERM
Power Adjustments	342-700-510	1/TERM
Terminal Transmit Adjustments	342-700-520	1/TERM
Repeater, Alignment	342-700-530	1/TERM
Terminal Receive, Tests & Adjustments	342-700-540	1/TERM
Signaling & Alarm Equipment, Alignment	342-700-550	1/TERM
System Slope Verification	342-700-560	1/TERM
Line-up Instructions, Condensed Form	342-700-570	1/TERM
<b>GTE Lenkurt (Panhandle) X</b>		
Maintenance Procedure	342-100-300	1/TERM
Alignment Instructions		
General	342-100-500	1/TERM
Battery, Repeater Current & 4KHz Signal	342-100-505	1/TERM
Terminal & Repeater Carrier Levels	342-100-510	1/TERM
XL Carrier	342-100-515	1/TERM
System Alarm & VF Channels	342-100-520	1/CHAN
Condensed	342-100-530	1/TERM
<b>Lynch B310 PCM Cable</b>		
Pre-Installation Tests, Repeater Unit 3RU01 & 3RU02	348-131-201	1/RPTR
Maintenance & Tests	348-131-300	1/SYS
Line-up Procedure	348-131-500	1/SYS
<b>CARRIER EQUIPMENT, WESTERN ELECTRIC</b>		
<b>N1 Carrier</b>		
Heater Supply Voltage Adjustment	BSP 362-020-501	1/SYS
Blower Operation	BSP 161452-701	1/SYS
Compressor Tests & Adjustments	BSP 362-025-502	1/SYS
Channel Carrier Output (at M2 Jack)	BSP 362-025-501	1/SYS
Bridged Measurement of Transmitted Carrier	BSP 362-025-501	1/SYS
Measurement of Individual Channel Carrier at the R1 Jack	BSP 362-030-501	1/SYS
Expandor Output (with or without signaling)	BSP 362-305-501	1/SYS
Channel Noise Measurement (Except Impulse Noise)	BSP 362-305-510	1/SYS
Channel Net Gain & Expandor Output Check	BSP 362-305-501	1/SYS
Overall Pulsing Test (Dial Signaling Channels Only)	BSP 362-305-515	1/SYS
Electron Tube Cathode Activity Measurements	BSP 362-020-502	1/SYS
3700 Cycle Oscillator Output (Level, Frequency and Wave Shape)	BSP 362-035-501	1/SYS
Total Carrier Power Output (Transmit Group Unit)	BSP 362-035-502	1/SYS
Total Carrier Power Output (Receiving Group Unit)	BSP 362-035-501	1/SYS
Receiving Individual Carrier Output	BSP 362-040-502	1/SYS
<b>ON Carrier</b>		
Tube Tests	BSP 362-110-503	1/SYS
Filament Voltage	BSP 362-I 1 O-501	1/SYS
76-KC Level Control	BSP 362-I 30-503	1/SYS
Channel Units (Message Output Unit With & Without Signaling)	BSP 362-I 15-502	1/SYS

Table 1. Acceptance Test Routines, Carrier Equipment (Continued).

EQUIPMENT AND TEST ROUTINE TITLE	SECTION NUMBER	UNIT OF EQUIPMENT
Channel Units (Thru Channel Unit)	BSP 362-335-503	1/SYS
Channel Units (Special Service Unit Channel Unit Output)	BSP 362-315-501	1/SYS
Channel Units (Schedules C&D Program Unit 1000-Cycle T Potentiometer Adjustment)	BSP 362-320-501	1/SYS
Channel Units (Expandor Output Unit With & Without Signaling)	BSP 362-305-501	1/SYS
Channel Units (Expandor Output Schedules C&D Program Unit)	BSP 362-320-501	1/SYS
Channel Units (Channel Noise Except Impulse Noise)	BSP 362-305-510	1/SYS
Channel Units (Overall Pulsing Test Unit With Signaling Dial Signaling Channels Only)	BSP 362-305-515	1/SYS
<b>ON Carrier, Group &amp; Twin Channel Units</b>		
3700-Cycle Oscillator Output Level, Frequency & Waveform	BSP 362-130-501	1/SYS
Group Oscillator Output Level and Frequency	BSP 362-130-501	1/SYS
Group Transmitting Unit Output	BSP 362-130-502	1/SYS
Group Receiving Unit Output	BSP 362-135-501	1/SYS
Twin Channel Oscillator Output Level & Frequency	BSP 362-120-501	1/SYS
ON2 Failure Alarm Circuit	BSP 362-125-501	1/SYS
Tube Tests	BSP 362-110-503	1/SYS
Filament Voltage	BSP 362-100-502	1/SYS
Group Oscillator Output Level & Frequency (OW)	BSP 362-130-501	1/SYS
Group Oscillator Output Level & Frequency (CA)	BSP 362-130-501	1/SYS
Group Transmitting Unit Output (Open Wire & Cable)	BSP 362-I 40-501	1/SYS
Group Receiving Unit Outputs (Open Wire & Cable)	BSP 362-I 40-50 1	1/SYS
<b>N2 Carrier</b>		
Group Emitter Current	BSP 362-805-505	1/SYS
Group Total Carrier Power-Transmitting (Bridged)	BSP 362-805-501	1/SYS
Group Total Carrier Power-Receiving (Bridged)	BSP 362-805-503	1/SYS
Modem Transmitting Carrier Power	BSP 362-806-501	1/SYS
Comandor, Channel Net Loss	BSP 362-800-505	1/SYS
Channel Noise	BSP 362-800-506	1/SYS
Test Equipment N2 Switching Set Bridging Amplifier Gain	BSP 362-825-500	1/SYS
<b>N3 Carrier</b>		
Group Equipment Emitter Current	BSP 362-905-505	1/SYS
Group Equipment Total Carrier Power-Transmit (Bridged)	BSP 362-905-501	1/SYS
Group Equipment Total Carrier Power-Receive (Bridged)	BSP 362-905-503	1/SYS
Group Equipment Individual Carrier Power Output-Transmit (Bridged)	BSP 362-905-502	1/SYS
Group Equipment Individual Carrier Power Output-Receive (Bridged)	BSP 362-905-504	1/SYS
Modem Equipment Modulator Output	BSP 362-910-501	1/SYS
Modem Equipment Demodulator Input	BSP 362-910-501	1/SYS
Comandor Channel Net Loss	BSP 362-900-506	1/SYS
Comandor Channel Noise	BSP 362-900-506	1/SYS
Channel Group Modem Transmit Carrier Power	BSP 362-906-501	1/SYS

Table 1. Acceptance Test Routines, Carrier Equipment (Continued).

EQUIPMENT AND TEST ROUTINE TITLE	SECTION NUMBER	UNIT OF EQUIPMENT
Channel Group Modem Receive Carrier Power	<b>BSP 362906501</b>	1/SYS
Channel Group Modem Emitter Current	<b>BSP 362-906-501</b>	1/SYS
Frequency Correction Carrier Output	BSP 362-907-501	1/SYS
Frequency Correction Emitter Current	BSP 362-907-502	1/SYS
Double Channel Regulator Carrier Output	BSP 362-909-501	1/SYS
Double Channel Regulator Output	BSP 362-909-501	1/SYS
Double Channel Regulator Thermistor Bias	<b>BSP 362-909-501</b>	1/SYS
Test Equipment N3 Switching Set Bridging		
Amplifier Gain	BSP 103-483-501	1/SYS
Power Supply -21 Volt Supply	BSP 362-903-501	1/SYS
<b>N Type Carrier Repeaters, Electron Tube Repeater</b>		
Cathode Activity Test	BSP 362-410-502	1/SYS
Dc Supply Voltage on the Line	BSP 362-405-503	1/SYS
Heater & Regulator Tests	BSP 362-410-501	1/SYS
Total Carrier Output Power (Bridged)	BSP 362-415-501	1/SYS
<b>N Type Carrier Repeater, Transistorized Repeaters</b>		
Measurement of dc Supply Current	<b>BSP 362-410-515</b>	1/SYS
Transistor Emitter Current & Thermistor		
Heater Current	<b>BSP 362-410-516</b>	1/SYS
Total Carrier Power Output (Bridged)	BSP 362-415-501	1/SYS

**PLANT INSPECTION - CARRIER EQUIPMENT**

S 6156 (3/74)  
 GTEP 200-002-730

⑧ Item No.	⑨ ITEMS TO BE INSPECTED AND ACCEPTED	⑩		
		Completed	Inspected	Accepted
1	Installation Test Records on Site			
2	Maintenance Test Records Begun			
3	Fuse Distr. Properly Installed			
4	Spare Units Provided			
5	Drawings on Site			
6	Manuals on Site			
7	Sufficient A.C. Outlets			
8	Sufficient Lighting			
9	Frames Properly Grounded			
10	Connections Properly Made			
11	All Items Properly Designated			
12	Jumpers Properly Run			
13	H. F. Cables Properly Separated			
14	Repeater Housing Properly Installed			
15	Accessibility to Repeater Housing			
16	Proper Separation of Power Cables			
17	Aisle Pilots Installed			
18	Audible Alarms Installed			
19	Jackfields Properly Installed			
20	Relay Racks Properly Grounded			
21	Availability of Test Equipment			
22	Fusing Proper Size			
23	Fuse Alarms Functional			
24	Noise Measure of Fuse Panels			
25	Power Supplies Redundant			
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Exchange ①	Central Office ②
Work Order Number ③	Installation Supervisor ④
Accepted By ⑤	Date ⑥
Bay or Frame Number(s) ⑦	

Remarks (Refer to Item No.)  
 ⑪

**FORM COMPLETION INSTRUCTIONS**

CIRCLED NUMBERS ON THE EXHIBIT CORRESPOND TO THE NUMBERS BELOW.

- INDICATE THE NAME OF THE TELEPHONE EXCHANGE.
- RECORD THE LOCATION OF THE CENTRAL OFFICE.
- RECORD THE WORK ORDER NUMBER ASSIGNED BY THE LOCAL OPERATING COMPANY.
- INDICATE THE NAME OF THE INSTALLATION SUPERVISOR.
- INDICATE THE NAME OF THE PERSON ACCEPTING THE EQUIPMENT.
- RECORD THE DATE THE EQUIPMENT ACCEPTANCE WAS PERFORMED.
- LIST THE BAY OR FRAME NUMBER(S).
- COLUMN LISTING FOR ITEM NUMBERS (1-45).
- COLUMN LISTING OF ITEMS TO BE INSPECTED AND ACCEPTED.
- IN THE COMPLETED COLUMN, INDICATE BY X IF THAT ITEM IS TO BE INSPECTED. IN THE "INSPECTED" COLUMN, RECORD THE INITIALS OF THE PERSON INSPECTING THE EQUIPMENT. IN THE ACCEPTED COLUMN, RECORD THE INITIALS OF THE PERSON ACCEPTING THE EQUIPMENT.
- IN THE "REMARKS" COLUMN, LIST SPECIFIC ITEM NUMBERS, CORRECTIONS TO BE MADE, DATE OF CORRECTION, AND THE INITIALS OF THE PERSON INSPECTING THE CORRECTION.

Exhibit 1. Form S 6156, Typical.