

TYPE L3 CARRIER SYSTEM

TERMINALS, REPEATERS AND OVER-ALL SYSTEM

GENERAL

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1. GENERAL

1.01 This section describes the service maintenance instructions for the type L3 carrier system. Associated sections in this subdivision of information outline the initial tests, initial line-up procedures and service maintenance tests for transmitting and receiving terminal equipment, intermediate equipment and over-all system operation.

1.02 This section is reissued to show references to Plant Series section numbers in the associated sections.

1.03 Acceptance tests made by the installation forces on equipment before it is turned over to the telephone company are made in accordance with standard performance requirements and the equipment should be accepted on this basis. When arrangements can be made, it may be advantageous for the telephone company representative to cooperate with the installation forces in making acceptance tests so as to avoid making duplicate tests.

1.04 Initial tests include those tests which are made on coaxial cables, the terminal and repeater equipment, power supplies, carrier supplies and associated equipment to determine that all facilities will meet their individual requirements prior to line-up procedures.

1.05 The over-all tests and adjustments, as outlined in this section, should be made as soon as practicable after the initial power and pilot survey has been made.

1.06 Measuring and testing apparatus should be maintained, calibrated and operated in accordance with standard instructions as outlined in Bell System Practices.

1.07 The summary of tests included in associated sections in this subdivision of information are as follows:

359-010-301 Tests on Equipment Associated with the Type L3 Carrier System

359-010-303 Initial Tests — Terminal, Line Connecting, Line Switching and Television Equipment

359-010-304 Initial Line-up Procedures — Power, Pilot and Over-all Tests

359-010-306 Maintenance Tests — Power and Pilot Survey

359-010-307 Maintenance Tests — Terminal, Line Connecting, Line Switching and Television Equipment

359-010-308 Maintenance Tests — Over-all Tests of L3 System

2. GENERAL TEST CONSIDERATIONS

2.01 Tests which might interfere with facilities in service should be made on an "out of service basis." In most of the tests described in the maintenance sections, necessary service precautions are included.

2.02 All spare high-frequency lines and spare terminal, group or channel equipment assigned to an L section should be tested and maintained in such a manner as to be readily available for service. Before placing spare lines or equip-

ment in service a continuity and transmission check should be made to insure satisfactory operation.

2.03 With the extended application of nationwide dialing, emphasis has been placed upon the over-all circuit net loss between traffic circuit terminals and upon high-frequency line maintenance and operation. The widespread use of channels for sensitive services such as voice-frequency signaling, voice-frequency telegraph and telephotograph facilities also require stability and freedom from interruptions. It is, therefore, important that the maintenance tests and operating instructions covered in this section be closely followed without omitting any steps in order to avoid irregularities which are likely to result from use of abbreviated or unauthorized procedures.

3. AMPLIFIERS AND REGULATORS

3.01 The internal surfaces of elements in the amplifiers and regulators absorb water when exposed to atmosphere of relative high humidity. The seal plug which covers the GAIN ADJ control should be replaced as soon as practicable after making gain adjustments.

3.02 Amplifiers and regulators are marked "CAUTION: HANDLE CAREFULLY—DELICATE APPARATUS INSIDE." Care should be taken to minimize mechanical shock while handling or transporting. Despite the rugged appearance given by the die-cast case, shock will damage the delicate apparatus within the case such as electron tubes, crystals and transformers.

3.03 All amplifiers and regulators which are found defective when tested in service should be removed and tested at the maintenance centers in the test equipment provided for this purpose.

4. POWER

4.01 *Caution: Power Control Unit and Power Line-up.*

The AC line voltage on the L3 carrier system may be in excess of 3500 volts. All safety procedures and cautions, as outlined in the sections, should be followed when working on the coaxial cable conductors or power supply equipment.

4.02 Junction repeaters are connected to the power loops in both directions. One of the power loops furnishes power for the repeater equipment and the other is looped in the repeater equipment but does not furnish repeater power. When working on the power equipment or coaxial cable terminals the power must be removed from *both* power loops so as to prevent accidental contact with the line voltages.

5. OPERATING RESPONSIBILITY

5.01 Operating responsibility already defined for the type L1 carrier system should be applied to the operation of the type L3 carrier system. The L3 submastergroup equipment and the mastergroup equipment are included as part of the over-all L3 supergroup. The responsibility for the submastergroup and mastergroup should be assumed by the Supergroup Control Office.