TYPE N1 CARRIER TELEPHONE SYSTEM
GENERAL INFORMATION — OVER-ALL SYSTEM
INITIAL LINE-UP AND MAINTENANCE TESTS

1. GENERAL

1.01 This section covers the operating instructions for initial and maintenance tests on the terminal equipment and high-frequency line of the N1 carrier telephone system.

1.02 The information in this section is intended to be used after the terminal and repeater equipment has been installed and the equipment and line facilities are ready for the tests and adjustments preparatory to placing the carrier system in service. The information also applies to the operation and maintenance of the system while it is in service.

1.03 The extended application of direct distance dialing and the related signaling equipment emphasize the necessity for closely following operating procedures which reduce to a minimum the number of circuit interruptions and irregularities which affect the operation of the signaling equipment. The necessity of applying test and operating procedures without omitting any steps is important in order to avoid irregularities which are likely to result from the use of abbreviated or unauthorized procedures.

1.04 Where direct distance dialing is in operation on the trunks working over a system, it is necessary that precautions be taken to avoid false operation of switching equipment, cutoffs and wrong numbers. When a system or a channel is taken out of service, all trunks should be made busy to traffic at the secondary testboard or its equivalent at each end of the trunk.

Caution should be exercised to avoid causing hits on systems carrying SAGE, Data or Telegraph transmissions.

1.05 Testing and switching apparatus should be calibrated and maintained in accordance with standard instructions as outlined in Bell System Practices. The calibration of testing apparatus is important since the failure to meet test requirements may be due to errors caused by testing apparatus. Testing apparatus should be calibrated at such intervals as is necessary to insure accuracy of measurement.

2. INITIAL TESTS

2.01 Initial tests include those tests which are made on the cable facilities, testing apparatus, power supply, order wires, and alarm circuits to determine that all facilities will meet their individual requirements prior to the line-up procedure.

2.02 Details regarding initial tests are not included in this section but should be covered by instructions applying to the specific project and prepared by the Operating Company. Initial tests may include such items as follows:

(1) Cable Tests: Include tests of resistance, resistance unbalance, tests for conductor turnover, crosstalk, and high-frequency attenuation measurements, on the cable facilities.

(2) Testing Apparatus: Include tests and calibrations as recommended for the various test sets as covered in the Bell System Practices.

(3) Power Supply: Include tests of power supply at repeater power supply points.

(4) Order Wire and Alarm Circuits: After the order wire and alarm circuits at the terminals and repeaters have been connected to the line conductors and adjusted in accordance with circuit information, check the transmission and signaling features of the order wire. Check the operations associated with the alarm circuit to insure that the alarms are properly received at the station at which the receiving equipment is located.

2.03 The following initial steps should be taken to reduce delays in line-up procedures:

(1) Circuit layout or equivalent information should be available showing the following data:

(a) Cable pair assignments.

(b) Span pad and artificial line values.

(c) Resistor value at dc power supply points.

(d) Type of repeater, L-H or H-L.

(e) Slope settings.

(f) Design noise requirement if other than the standard requirement.

(2) Repeater mounting brackets should be in place and the span pads and artificial lines as required should be wired to the cable terminals.

(3) Check that the cable protector blocks are in place.

3. MAINTENANCE TESTS

3.01 Periodic tests are made on the terminal and high-frequency line to detect apparatus which has developed trouble or has aged to the point where, if it remained in service, it might cause impairment to service, as well as to indicate variations in the high-frequency line which need corrective measures. These tests are covered in the appropriate subdivisions in this division of practices.