PROCEDURE FOR MAKING CUTOVER PREPARATION TESTS DURING INSTALLATION LOAD TEST NO. 1 CROSSBAR OFFICES

1. GENERAL

1.01 This section is issued to describe a method whereby, at the option of the Telephone Company, a new No. 1 crossbar office can be placed in service immediately after turnover of the equipment by the Western Electric Company. This is accomplished by making certain tests such as office-to-office tests of subscriber lines and trunk tests during the load test period instead of performing these tests during a period after turnover of the equipment.

1.02 When the procedure outlined in this section is to be used, the Telephone Company Engineering Department should notify the Western Electric Company prior to the start of installation activities in order to permit the necessary job planning.

1.03 The administration of this method should preferably be accomplished through the local job committee. A detailed overlap test procedure should be developed with the installer at the start of a job to permit the installer to plan his job accordingly. Telephone Company and Western Electric Company tests should be coordinated throughout the load test period by the job committee to avoid test interference.

1.04 In order to make this plan effective it is necessary (1) to place and test line distributing frame and block relay cross-connections and place main distributing frame cross-connections before the start of load test, (2) to follow a definite sequence in making load test in order to provide for the progressive release of line link frames to the Telephone Company during the period of load test and (3) to minimize verification tests by the Telephone Company and to advance those which are to be performed, to the period of load tests. The Western Electric Company handbook sections are arranged to provide the installer with the necessary information.

1.05 The order in which the load tests appear in the handbooks permits the progressive release of line link frames to the Telephone Company. The Telephone Company can then place the line equipment off normal blocking tools and connect the subscriber jumpers as load test is completed on each line link frame. Office-to-office tests of subscriber lines can then be made on the released line link frames while load test continues on other frames.

1.06 All tests performed by the Telephone Company should be scheduled to avoid interference with load test. In general, any test which causes equipment alarms or uses circuit paths which may block load tests should be considered as interfering with load test.

1.07 The installer is responsible for making circuit operation tests on all miscellaneous circuits to insure the correct operation of all circuit features. The installer normally makes such operation tests near the end of the job, whenever possible, to reduce the possibility of the circuits being disturbed after the tests are made. It would be desirable for the job committee to review test methods, records and progress on miscellaneous circuits to provide assurance to the Telephone Company that the circuits will be in correct operating condition at the time of turnover to avoid the necessity for duplication of such tests after turnover.

1.08 In order to provide for an adequate operating test of miscellaneous circuits it is essential that cross-connecting information for these circuits be available sufficiently early to permit operating tests using the permanent cross-connections.

1.09 Joint operation tests by the installer and the Telephone Company on certain miscellaneous circuits may be desirable in some cases. This matter should be considered by the job committee.

2. SUBSCRIBER CROSS-CONNECTIONS

2.01 When the test procedure outlined in this section is used, the job schedule should be arranged to provide for completion of all line distributing frame and block relay cross-connection operations, including line verification and message register lead tests and the clearing of all found troubles prior to the start of load test, in order to permit office-to-office tests to begin when the first line link frame is turned over to the Telephone Company.

2.02 Subscriber cross-connection lists should be furnished sufficiently early to permit the installation and test of the cross-connections before the start of load test. The committee will furnish information as to the date on which the sheets are required.

2.03 During the performance of office-to-office tests, it would be desirable for the group responsible for clearing the found troubles to also assume the responsibility of caring for supplementary change notices on subscriber cross-connections in order to avoid the possible confusion of two groups working on the same line cross-connections.

2.04 Supplementary change notices on subscriber cross-connections should be issued at frequent intervals, preferably daily, in order to permit the installer to maintain the changes on a current basis for a short period before the start of load test. When the Telephone Company desires to assume cross-connection operations at the start of office-to-office tests, an agreement should be reached with the installer regarding a cutoff date, just prior to the start of load test, at which time the installer will accept no more changes in order to permit completion and test of any uncompleted change notices previously furnished to the installer. The Telephone Company would then care for all changes after the established cutoff date.

2.05 The final cycle of office-to-office test will be greatly facilitated if arrangements are made with the Commercial Department to reduce service order activity to a minimum for a few days prior to cutover. This arrangement will permit a complete test of all lines involved in the cutover with a minimum amount of interference and possible trouble reaction due to activity on the distributing frames.

2.06 The detailed method of procedure for handling cross-connection work should be established sufficiently early in the job to permit the necessary planning and coordination.

3. LOAD TEST PREPARATION

3.01 The Western Electric handbooks specify a definite sequence of tests in the load test sections. The tests are arranged in an order that should permit the progressive release of all line link frames during the first half of the load test period thus permitting the early completion of the first cycle of office-to-office test. Tests, which do not affect the release of line link frames, may be continued after all frames have been released to the Telephone Company.

3.02 The installer will normally plan the load test and prepare the necessary work sheets. It would be desirable for the Telephone Company to participate in the planning to provide the necessary coordination between load test and office-to-office and trunk testing.

3.03 It would be desirable for the Telephone Company to assist in the assignment of test lines for use by the installer during load test in order to provide a group of lines which will not be disturbed during the test period. The lines provided should be designated in the records in such a manner that all changes will be withheld until the assignment forces are notified that the tests have been completed.

3.04 Lines for originating load test: Usually three unassigned lines per line link frame are required for originating load test to permit the operations to continue after blocking tools have been placed in other lines. The exact number of lines necessary in each frame is governed by the D relay chain test. Where no spare line circuits are available in a line link frame, it would be desirable to arrange to leave the subscriber cable connection open on the required number of lines until after the completion of originating load test. The lines selected should be located in different horizontal groups and distributed as evenly as possible over all classes of service for use on the originating marker class of service test. It would be desirable to designate these line circuits by placing colored tape on the associated hold magnet armatures for the convenience of the test personnel.

3.05 Lines for terminating load test: Terminating load test requires the use of subscriber lines, with line distributing frame and block relay cross-connections in place, for completion of the test calls. The maximum requirement is usually five lines per line link frame for the combined originating and terminating traffic test. The installer will furnish the specific requirements as listed in the handbook. The lines provided may also be used for terminating marker routine tests if these

requirements are considered at the time the lines are selected. Supplementary changes on the lines selected for test on a line link frame should be withheld until the terminating load tests have been completed and the frame released to the Telephone Company.

4. LOAD TEST OPERATION

4.01 Originating and terminating load tests have been divided into groups in order to provide a sequence of tests that will permit the early release of line link frames to the Telephone Company. Performance of the tests in the correct sequence, as outlined in the handbook sections, will permit the turnover of the first line choice after the second day of the load test period and all frames can be turned over by the time half of the load test period has elapsed.

4.02 Originating load tests are divided into two groups as follows:

(a) This group consists of the line link horizontal group and secondary switch tests which use a large number of lines on each line link frame and must be completed early in the load test period to provide for the immediate turnover of the line link frames after completion of certain terminating tests.

(b) This group consists of all other originating tests. These tests can be made using lines unassigned for subscriber service which will remain available for load test use after blocking tools have been placed in other lines. The tests in this group do not interfere with the turnover of frames and therefore can be conducted at any time during the load test period.

Note: The D relay and LL relay chain tests use the same type test set used for the tests in group (a) and may be done at the same time for convenience.

4.03 Terminating load tests are divided into four groups as follows:

(a) This group consists of miscellaneous feature tests which involve the use of lines on various frames and should be completed before other terminating tests are made.

(b) This group consists of line choice tests and combined originating and terminating tests on line link frames. These tests are made in a progressive order on the line choices and the frames in a line choice can be turned over after completion of the tests.

(c) This group consists of tests that require termination of lines in any one line choice and the last full line choice should be used for this purpose to permit an earlier turnover of other line choices. The turnover of the last line choice is therefore delayed until after the completion of the group (c) tests.

(d) This group consists of tests which do not involve the use of lines and therefore these tests can be made at any time after the line link frames have been turned over.

4.04 On jobs where both originating and terminating load tests are to be made on the same shift, the following sequence of tests will usually permit the most rapid turnover of line link frames:

(a) Line link horizontal group and secondary switch originating tests.

(b) All terminating tests.

(c) All originating tests except the line link tests in (a).

The tests in (a) and (b) may be started simultaneously in order to expedite the turnover of frames.

4.05 In order to provide assurance that the equipment functions satisfactorily and to eliminate the necessity for repetition of any load tests by the Telephone Company, it would be desirable for representatives of the Telephone Company to be present while the load tests are being conducted.

5. OFFICE-TO-OFFICE TESTS

5.01 When load test is completed on a line link frame the Telephone Company can place line blocking tools in the line equipment off normal contacts and take the necessary steps to connect the subscriber lines to underground cable pairs. The first cycle of office-to-office tests can then be started on the frames on which load test has been completed.

5.02 If the method used for office-to-office test requires the use of terminating equipment, care must be exercised to avoid interference with load test. It may be desirable to perform this test on a shift other than that used for load test.

5.03 When conducting office-to-office tests, the usual precautions should be followed to prevent bell taps.

6. TRUNK TESTS

6.01 Interoffice trunks originating in the new office can be tested during the load test period if the necessary precautions are taken to avoid interference with the load tests. Trunk groups which are not assigned for load test can be closed permanently to terminating equipment. Trunk groups assigned for load test use must remain open until the completion of the tests to which they are assigned to avoid blocking of the test set.

6.02 Test activity on incoming trunks in the new office will interfere with load test and should be scheduled to avoid such interference.

6.03 It would be desirable for the Telephone Company to make the preliminary test of trunks as early as possible in the load test period to determine that the proper circuits and circuit options have been provided in the over-all associated equipment.

7. VERIFICATION OF EQUIPMENT

7.01 When the procedure outlined in this section is used, it may be desirable to arrange for the use of the equipment and test frames by the Telephone Company prior to the job completion date to provide assurance that the equipment functions satisfactorily and to permit training of the plant forces on the new equipment. In developing this arrangement, consideration should be given to such matters as the scheduling of tests to avoid interference with load test, joint use of test frames and other equipment, continuation of minimum frequency routines and the procedure to be followed in clearing troubles encountered during the tests.