BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G50.220.1
Issue 1, May, 1948
AT&T Co Standard

CABLE TESTING—GENERAL
DETECTING DEFECTIVE PAIRS—GENERAL

Contents **Page**

1. GENERAL

1.01 This section describes the types of defective pairs which may be found in cables and the locations and conditions under which tests should be made to identify defective pairs.

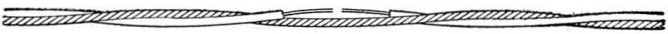
2. TYPES OF DEFECTS

2.01 The types of defective pairs which may be found in cables are as follows:

SHORT CIRCUITED PAIR

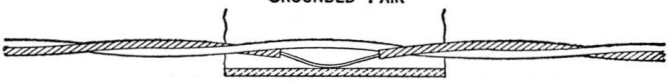
The two wires of a pair in contact with each other.

OPEN PAIR



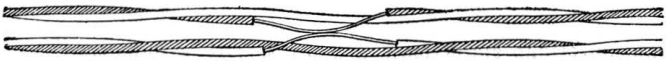
A break in one or both of the wires of a pair.

GROUNDED PAIR



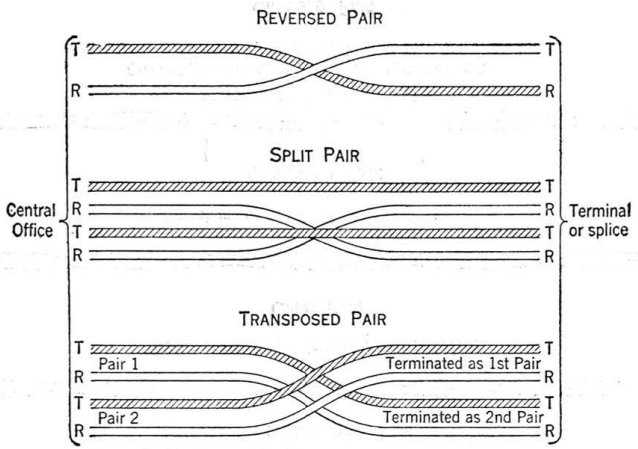
One or both wires of a pair in contact with the sheath of the cable or other grounded object.

CROSSED PAIR



Two wires, each of a different pair, in contact with each other.

2.02 The above faults may be found within a section of cable or at splices. Certain other faults due to mistakes in splicing are shown below:



3. TESTS IN NEW INSTALLATIONS

3.01 The number of sections to be spliced before making a defective pair test will depend upon whether the cable is new or recovered. When splicing new exchange cable, all the spliced conductors will be tested for defects at least once in every 8 or 10 sections. If a cable is known to contain an unusually large number of defective pairs, or if recovered cable is being spliced, and there is no record of the defective pairs in it, tests for defective pairs should be made more frequently.

3.02 The points at which defective pair tests are to be made in exchange cables will depend upon the locations of the sections in which defective pairs have been reported, and upon the points at which other tests will be made. For example, if near the end of the first 8 or 10 sections there are two sections (not necessarily adjacent sections) in which a number of defective pairs have been reported, the test for defective pairs should be made at one of the splices between these two sections. This will permit the most effective disposition of any defects found.

3.03 If near the end of the first 8 or 10 sections there is a splice at which it will be necessary to make a test for the purpose of identifying pairs, the test for defective pairs should preferably be made at that splice.

4. TESTS IN RECOVERED CABLE

4.01 Tests for defective pairs in recovered cable which is held in stock for reuse may be made whenever it is considered desirable to get a record of the defective pairs in any of the reels of recovered cable. This can be done by stripping the sheath off each end of the cable, without removing the cable from the reel, and making the usual tests for opens, shorts, crosses, and grounds. In making tests during rainy weather, protect the ends of the cable from moisture.

4.02 When a reel of recovered cable is tested record the following information.

(a) Number of reel.

(b) Number of pairs in cable and gauge of conductors.

(c) Length of cable on reel.

(d) Description of each defective pair.

4.03 Before sealing the ends of the cable on the reel, remove the insulation from the ends of each defective pair and attach the wires securely to a small linen tag showing the nature of the defect. This will help the splicer to pick out the defective pairs when the cable is used.

4.04 After the cable is sealed, the end of the sheath should be painted red for a distance of about 3 inches to indicate the presence of defective pairs.