

10E1 TELEGRAPH SINGLE LINE REPEATER TESTS AND ADJUSTMENTS

1. GENERAL

1.01 This section covers the methods of testing and operating the 10E1 telegraph single line repeater.

2. DESCRIPTION OF TESTS AND ADJUSTMENTS

(A) Telegraph Relays

2.01 The relays shall be tested and adjusted in accordance with the sections of Bell System Practices covering the relays and the relay test set.

(B) Adjustment of Loop Current

2.02 The loop currents on both sides of the repeater shall be adjusted to be as close as possible to the values given in Table 1. The adjustments are accomplished by varying resistances associated with Drops 1 and 2 of the TLT circuit in which the repeater is included. These resistances may be in the loop circuits of line telegraph repeaters or they may be battery tap resistances, depending on the circuit layout.

(C) Adjustment of Bias Current

2.03 The bias currents are adjusted at the time of installation in accordance with instructions given on the SD drawing to be as close as possible to the values given in Table 1.

TABLE 1

Total Voltage	Bias Current	Loop Current
250 V	.030 Amp.	.060 Amp.
260 V	.03125 "	.0625 "
270 V	.0325 "	.065 "

(D) Transmission Test Using 118-Type Transmission Measuring Set

2.04 Patch the west loop of the 10E1 repeater into a looping jack of a test TLT circuit having the proper resistance to give the loop current specified in Table 1 when the 10E1 repeater is included in the circuit. Patch the east loop of the repeater into a looping jack of another similar test TLT.

2.05 Patch a source of miscellaneous signals and a 118-type transmission measuring set in series with the west loop and note the reading of the 118-type set.

2.06 Now remove the source of signals from the west loop and connect it in series in the east loop of the repeater. The readings of the bias and total distortion meters should not differ by more than 3 per cent. from the values obtained in 2.05.

2.07 Repeat 2.05 and 2.06 with the measuring set patched into the east loop of the repeater and the source of signals patched first in series in the east loop and then in series in the west loop.

3. METHODS OF OPERATION

3.01 The following options in operating features may be obtained by making the appropriate strapping changes.

- (a) Neutral transmission only.
- (b) Effective polar transmission.
- (c) Use with a hit suppressor on the east loop.

The specific cross-connections on the terminal strip of the repeater to obtain these options are shown on the SD drawing.

4. PLACING THE REPEATER IN SERVICE

4.01 The repeater is placed in service as follows:

- (a) Operate the +BAT and -BAT keys to their ON positions. The ON positions are when the key markings are vertical.
- (b) Check the bias and total distortion through the repeater using a 118-type transmission measuring set if available, as described in Paragraphs 2.04 to 2.07, inclusive.
- (c) See that the subscriber loops with which the repeater is to be used are equipped with wave-shaping equipment if required, in accordance with the instructions in other sections of Bell System Practices.
- (d) Patch or cross-connect the repeater to the circuit with which it is to be used.
- (e) Adjust the loop current to the proper value.
- (f) The repeater should now be ready for service.