

## INCOMING PULSE CORRECTING REPEATER

## PULSING TESTS

## PER CENT BREAK METHOD

## STEP-BY-STEP OFFICES

## 1. GENERAL

**1.01** This section describes a per cent break method of testing the pulse repeating relays of incoming, loop-signaling, pulse-correcting repeaters.

**1.02** It is reissued to:

- Update the format to conform to Pacific Bell's standards.
- Include the appropriate legend on Page 1 in accordance with System Instruction (SI) 178.

*Note:* Marginal arrows used to denote changes are omitted.

**1.03** The methods specified in this section are for testing repeaters equipped with 6-spring test jacks. For repeaters not so equipped, use a modified test cord for connecting to outgoing tip and ring leads at the repeater shelf jack springs.

## 2. APPARATUS

**2.01** The following (or equivalent) apparatus is required:

- Pulsing Test Set — SD-31481-01 (J34717A).
- Pulse Repeating Test Set — SD-31667-01 (J34720A).
- No. 36B Test Set (Remote Control).
- 6P3A Cord (Two P3H cords equipped with two No. 310 plugs and one No. 240B plug).
- No. 477A "make busy" tool.

**2.02** If battery jacks are available:

- 2 — 3P15B Cords (P3K cord, 12 feet long, equipped with two No. 310 plugs).
- 1 — 2P9B Cord (P2J cord equipped with two No. 310 plugs).

**2.03** If battery jacks are not available:

- 2 — 2W12A Cords or equivalent (W2M cord equipped with one No. 310 plug and two No. 59 cord tips) equipped with No. 90 cord tips.
- 1 — 3P15B Cord (P3K cord, 12 feet long, equipped with two No. 310 plugs).

## 3. PREPARATION

**3.01** Connect 48-volt battery and ground to the BAT-G jacks of the pulsing test set and the pulse repeating test set. If battery supply jacks are provided, use a 2P9B cord for the pulsing test set and a 3P15B cord for the pulse repeating test set. If battery supply jacks are not available, use 2W12A or equivalent cords for both sets, connecting the No. 59 cord tip of the white (tip) conductor to a spare 48-volt battery fuse or to the equipment side of a battery fuse in service, and the red (sleeve) conductor to ground. In no case should the fuse selected exceed 5 amperes.

*Note:* To avoid possible grounding of the battery supply lead, connect the cord to the test set first and, when disconnecting, remove the cord from the test set last.

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## SECTION 226-600-903PT

**3.02** Connect the No. 36B remote control set to jacks A and B of the pulsing test set. The stay cord of the No. 289A plug should be to the bottom, or the ridged side of the No. 152 plug should be to the left.

**3.03** Insert the red and black plugs of a 6P3A cord into the R and B jacks respectively of the pulse repeating test set.

**3.04** Connect the TL jack of the pulsing test set to the INT jack of the pulse repeating test set using a 3P15B cord.

**3.05** Operate the PR and LKA keys of the pulsing test set. Momentarily depress the remote control LK key to give continuous pulsing.

**3.06** Operate the SL and 1600 keys of the pulse repeating test set.

**3.07** Short-circuit the tip and ring conductors of the cord connected to the B jack of the pulse repeating test set. Obtain a full scale deflection of the per cent break meter in the pulse repeating test set by means of the variable resistance R1. This adjustment is made while the pulsing test set is operating, in order to eliminate any possible effect of voltage drop due to the pulsing test set drain. Remove the short circuit.

**3.08** Check the adjustment of the A relay in the pulse repeating test set by operating and holding the ADJ key of this test set and noting the reading on the meter. The per cent break of the A relay pulsing contacts, as indicated on the meter, should be within the test limits of 58-63. If the per cent break reading is not within these limits, readjust the A relay to meet the readjustment requirements given on the circuit requirement table. Release the ADJ key.

*Note:* The adjustment should be rechecked occasionally, using the test limits, if a considerable amount of testing is to be done.

**3.09** Depress and hold the remote control RLS key until the pulsing test set stops. Restore the LKA key of the pulsing test set.

## 4. METHOD

**4.01** Before making any tests on the repeater the trunk should be made busy at the originating end. When these tests are performed during periods of light traffic the work can be expedited by having a number of trunks made busy at one time.

**4.02** Insert the No. 240B plug into the test jack of the repeater to be tested.

**4.03** Remove battery and ground from the associated incoming selector by blocking the shaft off normal and inserting a No. 477A make busy tool between springs 3 and 4 of the selector test jack.

*Note:* When testing repeaters per SD-31929-01, battery and ground shall be removed from the associated incoming selector by inserting an open plug into the "P" jack before pulsing started.

**4.04** Check that battery and ground have been removed from the selector by momentarily operating the TRK key and noting that no deflection is obtained on the meter.

**4.05** Momentarily operate the LK key of the remote control set.

**4.06** Operate the SC key of the pulse repeating test set and obtain a full scale deflection of the per cent break meter by means of the variable resistance R1. This adjustment is made while the pulsing test set is operating in order to eliminate any possible effect of voltage drop due to the pulsing test set drain.

*Note:* A check of this adjustment should be made prior to testing each repeater.

**4.07** Release the SC key. The reading obtained on the per cent break meter should be within the limits specified on the circuit requirements table. Operate and hold the RLS key of the remote control set until the pulsing stops.

**4.08** If the pulses are not within the required limits, readjust the relays in accordance with the Bell Service Practices.

**4.09** Remove the test cords and restore the selector to normal.

**4.10** Restore the trunk to service at the originating end. If any changes in adjustment were made, request the distant office to make an over-all pulsing test of the repeaters and associated incoming selector before restoring the trunk to service.

**5. REPORTS**

**5.01** Enter the required report of these tests on the proper form.