

PERFORMANCE REQUIREMENTS
T-1 CARRIER
OFFICE REPEATER BAY
GENERAL EQUIPMENT REQUIREMENTS
COMMON SYSTEMS

1. GENERAL

1.01 This section outlines the performance tests that are required after installation of repeater bay equipment in a central office. Since the bay is generally assembled, equipped, and wired by the installation department, the tests will consist of checking for proper location of the various panels and units in the bay, checking continuity in the wiring, measuring power at a number of locations, and checking alarm operations

1.02 Bay arrangements are dependent on the type of office and the requirements established to fulfill office needs. There are certain common panels, however, which are required at all times and these are located in the same positions in all bays. The remaining panels or units will vary in number, and their location will be specified on job drawings.

1.03 Part of the equipment required in the repeater bay is plug-in. A 201B repeater which is required for each span line has the power screw adjustments made at the time of installation. The correct control unit is provided to match the type of system (one cable or two cable) and proper strapping is installed to meet line power requirements.

1.04 Test Equipment

Meter for checking continuity and measuring voltages.

2. REQUIREMENTS

2.01 Wiring checks shall be made on the following equipment in a repeater bay:

(a) *Distributing Terminal Strip Assembly:*

This is generally furnished in larger installations and provides a terminus at the repeater bay for common sheath cables from the main distributing frame. The cabling from this panel to the span terminating assemblies on the repeater bay is run in by the installer to meet office requirements.

(b) *Fuse and Alarm Panel:* This panel is one of the common equipments and provides the power and alarm circuitry for the span terminating assemblies. A check shall be made that the correct fuse assignment has been provided in the wiring. A check shall be made that the wiring from the power distribution board to the fuse and alarm panel has terminations for the correct groups of fuses (two maximum).

(c) *Order-wire Panel:* This panel also is one of the common equipments, and there may be more than one type depending on the number of cables being used in the system. A performance check of this equipment should be made in accordance with 2.02 (c).

(d) *Telephone Set Panel:* This is used in conjunction with the order-wire panels and therefore is included in the check made in accordance with 2.02 (d).

(e) *Fault Locating Filter Panel:* This panel is classed as common equipment and is furnished where office repeaters are included in the fault locating plan. A check of the wiring will include connections to the jack field and the span terminating assemblies on the repeater bay and also connections to the main distributing frame. A check of the proper codes of the 598-type filters shall also be made.

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(f) **Span Terminating Assembly:** The wiring check of this unit has been included in the instructions in 2.01 (a), (b), and (e).

(g) **Bank Terminating Assembly:** A check shall be made that the correct pads or equalizers are mounted in the positions associated with the terminal bays in an office. Continuity wiring checks shall be made from the repeater bay and the terminal bays for these positions.

(h) **Jack Mounting Assembly:** The jacks located in this mounting provide access to the fault locating lines and order wires of the various cable circuits. Other jacks located here are the telephone set jacks and the -48V battery jacks for supplying power to the fault locating set and the error detecting set. A fuse alarm cutoff key and alarm lamp are also located on this mounting.

2.02 As part of the performance tests, it will be necessary to check that correct voltages are provided at the proper locations for powering the spans, for test purposes, and for operating alarm circuits. These checks shall be made as follows:

(a) **Fuse and Alarm Panel:** Check that -48V, -130V, and +130V batteries are connected to this panel and appear at the correct fuse positions. (In some offices a -130V battery may not be available.) Check that alarm circuits operate on the fuse panel when any fuse on that panel is blown. Operation of the alarm relays should bring in the alarm lamp on the fuse panel as well as the audible and other visual alarms in the office. Operation of the ACO key in the jack mounting in the repeater bay should cut off the office alarm and light the associated ACO lamp on the jack mounting. Replacement of a blown fuse by a good one should restore all equipment to normal.

(b) **Span Terminating Assemblies:** The voltages that are supplied from the fuse and alarm panels can be measured on the terminals of the connectors in the rear of each of the

span terminating assemblies or on terminal strip A. To check the alarm function of the control units insert a blown fuse into the fuse blocks on the front. If the circuit is functioning properly, the alarm circuit on the alarm panel will perform as described in (a) above. Check fuse failures in all control unit positions.

(c) **Order-wire Panel**

(1) Check that the -48V battery, the system order-wire pair, and the subscriber line circuit are connected to this panel at the correct terminals. To check the operation of the relays on the panel, connect a subscriber set or hand set to terminals 1 and 3 on terminal strip A. If the circuit is functioning properly, relays L1, L2, PR, and SR will operate and battery will be applied to the hand set.

(2) To check the lockout feature of the circuit, attach the subscriber set or hand set to terminals 1 and 3 on terminal strip A. Relays L1, L2, SR, and PR will operate. Apply a ground to terminal 1 on terminal strip A. Relays L2 and SR will release and relay CO will operate after a 2-second delay. Disconnect the ground. Relays L2 and SR will reoperate. Check that battery is still present on the subscriber set or hand set.

(d) **Telephone Set Panel:** Check that the -48V battery is connected to the correct terminals on the panel. To check the operation of this panel, patch between the TEL LINE and OW jacks in the jack mounting in the repeater bay, and plug in a 52-type head telephone set at the TEL SET jacks also located in the jack mounting. If the circuit is functioning correctly, conversation is possible with the telephone used in testing the order-wire panel in 2.02(c).

(e) **Jack Mounting Assembly:** Check for -48V battery in the jacks on this mounting. Operation of the ACO key should bring in the ACO lamp. Alarm circuit operation is covered in 2.02(a).