

BASEWEST

Operating & Calibration Instructions

Model TS-452 Test Set

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BASEWEST INC.

4240 116th Terrace N • Clearwater FL 33762

Tel: 727/573-2700 • Fax: 727/573-4307

E-mail: info@basewest.com

www.basewest.com

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1.0 GENERAL

This manual covers the operation and calibration of the Model TS-452 cross-talk tester for the Boeing 777 escape slide lighting system. The Model TS-452 Cross-Talk Tester is designed to test for shorts and/or electrical cross-talk in escape slide lighting circuits.

**2.0 THEORY OF OPERATION**

- 2.1 The Model TS-452 Cross-Talk Tester tests for designed open or closed circuit conditions in escape slide lighting electrical interface harnesses up to a resistance of 1.999 MΩ. Readings are registered by a digital LCD ohmmeter.
- 2.2 The test set is connected to the escape slide lighting system under test via the circular connector located on the head of the instrument.
- 2.3 Circuits are selected for test with a rotary switch. Circuits under test are numbered on the instrument panel.
- 2.4 Power is provided by a non-rechargeable 9V battery located in a compartment accessible from the bottom of the instrument case. The device is activated by an ON/OFF rocker switch on the instrument panel.

3.0 OPERATING INSTRUCTIONS

- 3.1 Connect the system to be tested via the 10-pin connector on the escape slide lighting system interface cable to the mating connector at the top of the instrument.
- 3.2 Turn the unit ON via the rocker switch on the instrument face; the LCD meter will activate.

- 3.3 Test each circuit as indicated on the test set's panel label, turning the indicator on the rotary switch to the desired circuit. Any of the following readings may be present for each circuit test:
- An LCD Meter reading of "1. - - -" indicates that the circuit under test is in an open circuit condition with a resistance in excess of 1.999 MΩ m.
 - An LCD Meter reading of ".000" indicates that there is an electrical short or closed circuit condition in the circuit under test.
 - An LCD Meter reading in the range of .001 to 1.999 indicates the resistance of the circuit under test in megohms (MΩ).
 - An LCD Meter reading of "Low Batt" indicates that the battery should be replaced before further testing is accomplished.
- 3.4 With the instrument properly connected to the escape slide lighting system, the following are acceptable readings for each circuit-pair test as indicated by the rotary switch position on instrument panel:
- Circuit 1-2: Meter reads ".500" or higher, to "1. - - -" (Open Circuit)
 - Circuit 1-3: Meter reads ".500" or higher, to "1. - - -" (Open Circuit)
 - Circuit 3-4: Meter reads ".500" or higher, to "1. - - -" (Open Circuit)
 - Circuit 2-4: Meter reads ".500" or higher, to "1. - - -" (Open Circuit)
 - Circuit 2-3: Meter reads ".000" (Closed Circuit)
 - Circuit 1-4: Meter reads ".000" (Closed Circuit)
- 3.5 When testing is complete, turn the rocker switch to OFF; the LCD meter will deactivate.

4.0 CALIBRATION INSTRUCTIONS

- 4.1 One at a time, place a short circuit across each of the contacts listed in Table 1 below, set the instrument rotary switch to the corresponding circuit test position, as indicated. Verify that the LCD meter reading stabilizes to "0.000" within several seconds.

Apply condition indicated to these TS-452 connector contacts	Set TS-452 Rotary Switch to this position
1 and 2	1 - 2
1 and 3	1 - 3
3 and 4	3 - 4
2 and 4	2 - 4
2 and 3	2 - 3
1 and 4	1 - 4

Table 1

- 4.2 With no cables or short circuits connected to the instrument's test connector, verify that the LCD meter reads "1. - - -" in all rotary switch positions indicated in Table 1.
- 4.3 Obtain a 510K (1% or better) resistor. Verify and record the resistor value using a calibrated DMM (ohmmeter mode).
- 4.4 One at a time, place the 510K resistor across each of the TS-452 test connector contacts indicated in Table 1, set the rotary switch to the corresponding position, as indicated. Verify that the instrument LCD meter reads the recorded value of the 510K resistor +/- 2K Ω in each position.
- 4.5 If the meter reading above is out of limits per the above step, open the instrument and adjust the trimpot on the back of the LCD meter until the reading is within +/- 2 K Ω of the previously recorded resistor value. Record LCD readings for each circuit on calibration record.