

## NO. 5 CROSSBAR OFFICES THROUGH BALANCE REQUIREMENTS

### 1. GENERAL

**1.01** Table A provides through balance measurement requirements of the various intertoll-to-intertoll connection paths in class 3 and higher crossbar tandem switching offices. Both the echo-return loss (ERL) and singing point or singing return loss (SP/SRL) requirements must be met.

**1.02** Measurement results are to be recorded on Form E-6003 or E-6004 as shown in Section 660-472-010. The form to be used is dependent on the type of test equipment used in obtaining the measurements. The available test equipment and specific methods for performing the measurements are covered in Section 660-472-504. The procedures for establishing the test conditions and making adjustments are covered in Section 660-472-501. General information on balance testing is covered in Section 660-472-100.

### 2. APPLICATIONS

**2.01** The requirements for through balance objectives are applied to an office on the basis of trunk type. The certification of an office as balanced is the responsibility of the transmission engineer. The requirements for certification are covered in Section 853-500-110. If all trunks requiring balance meet the requirements given in this section and/or Section 660-472-301, certification can generally be obtained.

**2.02** This means that 50 percent or more of all measurements for each class of trunk (primary intertoll, secondary intertoll) must be equal to or greater than the median requirement given in Table A. Similarly, not more than 2 percent of the measurements for each class of trunk may be below minimum. For example, the trunks listed in Table A for Tests 1 and 2 should be summarized together, and the trunks listed under Tests 3 and 4 should be summarized together. Tests 5 and 6 show additional connection paths that must meet through balance requirements.

**2.03** No trunks should have measurements equal to or below the turndown limits listed in Table A for that type of trunk. Trunks whose measurements are below minimum and above the turndown limit should be investigated and corrective action taken to improve balance. The turndown limit indicates balance irregularities severe enough that a trunk cannot be left in service and should be turned down for service until corrective action is taken.

**2.04** The plant maintenance personnel will record the measurements of balance testing to be summarized by the transmission engineer who will then determine whether the office can be certified.

**Note:** Trunks with more than one mode of operation will not be considered as balanced unless all modes meet requirements.

TABLE A

		CLASS 3 AND HIGHER RANKING NO. 5 CROSSBAR OFFICE — THROUGH BALANCE TEST CONDITIONS AND REQUIREMENTS				REQUIREMENTS: VALUES GIVEN ARE ACTUAL MEASUREMENTS MINUS TRANS-HYBRID LOSS. SEE SECTION 660-472-100.											
TEST NO.	TEST AND CIRCUIT CLASSIFICATIONS (TESTS 1 AND 2 APPLY TO PRIMARY IT TRUNKS. TESTS 3 AND 4 APPLY TO SECONDARY IT TRUNKS.)	ERL AND SP/SRL TEST CONDITIONS (BALANCE TEST CIRCUIT AND TEST EQUIPMENT ARE SPLCIFIED IN SECTION 660-472-504. PROCEDURES TO OBTAIN TEST CONDITIONS ARE SPECIFIED IN SECTION 660-472-501.)						ERL IN DB		SP/SRL IN DB		TURNDOWN LIMIT	TURNDOWN LIMIT	TURNDOWN LIMIT			
		MEDIAN	MINIMUM	TURNDOWN LIMIT	MEDIAN	MINIMUM	TURNDOWN LIMIT	MEDIAN	MINIMUM	TURNDOWN LIMIT							
1	INTERTOLL TRUNK TEST INCOMING TO MACHINE (INC IT)																
2	INTERTOLL TRUNK TEST OUTGOING FROM MACHINE (OG IT)																
3	INTERTOLL TRUNK TEST OUTGOING FROM SWITCHBOARD ACCESS (OG IT)																
4	A. OPERATOR ASSISTANCE TRUNK TEST INCOMING TO SWITCHBOARD, 121 TRUNKS ONLY (OPERATOR ASSISTANCE TRUNKS OTHER THAN 121 ARE TESTED AS PART OF TERMINAL BALANCE.) B. OPERATE JUNCTOR OUTGOING FROM SWITCHBOARD.							27	21	18	20	14	11				
5	PERFORMANCE VERIFICATION OF OPERATOR ASSISTANCE AND OPERATOR JUNCTOR CONNECTION. (COMPENSATED TRUNKS ARE REQUIRED)																
6	TOLL CONFERENCE SERVICE MULTIPOINT CONFERENCE BRIDGE TEST																

NOTE: PROCEDURES TO OBTAIN TEST CONDITIONS ARE SPECIFIED IN SECTION 332-435-500.