THROUGH AND TERMINAL BALANCE OFFICE CERTIFICATION FOR OPERATOR AND ATTENDANT SERVICES SYSTEMS

1. INTRODUCTION

1.01 This section describes the engineering consideration and responsibilities which are taken into account when certifying or decertifying an entity in the operator and attendant services systems. Automatic Call Distribution (ACD) Systems, Automatic Intercept Systems (AIS), Trunk Concentrators, Traffic Service Position Systems, and Remote Trunking Arrangements are considered separate entities for purposes of review, survey, certification and decertification.

1.02 When this section is reissued, the reason for reissue will be given in this paragraph.

2. RESPONSIBILITY

2.01 Balance certification is the responsibility of the transmission engineer, or similar titled person responsible for operator and attendant services trunk engineering and/or network performance in loss, noise, and echo. When more than one intercompany organization or department has an interest in a particular entity, an agreement must be reached as to who is responsible for certifying that the entity is balanced. However, generally the organization or department whose group has the responsibility for trunk maintenance should be responsible for certification.

2.02 Certification of an entity and its component in the TTMI is not a measurement of the transmission engineer, but is a process used by the system to assure that work being done meets certain standards with regard to impedance balancing.

3. INITIAL CERTIFICATION

3.01 Initial certification is required prior to the cutover of a new entity. Turn up without certification will receive zero credit on the balance component of the TTMI.

3.02 The basic requirements for initial certification are:

(a) All trunks will be tested and the results recorded on Form E600Z.

(b) Presence of complete and up-to-date records, as required in Section 660-4ZZ-010.

(c) Trunks designed according to standard design concepts, as specified in the associated engineering sections.

(d) In each trunk category all trunks will meet or exceed the appropriate requirements for echo return loss (ERL) and singing return loss (SRL) as specified in Section 660-YYY-301 for the entity under consideration.

(e) Trunks without measurements or without records are considered not meeting balance requirements.

3.03 Balance component of the TTMI is computed based on 100 percent office records (E600Z) in an initially certified entity.

3.04 The transmission engineer will send a report of the initial certification conditions to third level management in both the Engineering and Network Operations organizations.

4. SHORT SURVEY (20-40 TRUNK SAMPLE)

4.01 To maintain certification, an entity must be surveyed at least every other year (see Section 301-123-100). The survey will include an investigation of balance records, E600Z or equivalent. Balance measurements made in connection with a circuit order will promptly be transferred to the office balance record per Section 600-450-010. Any trunk for which current records are not available or accurate should be considered not meeting balance requirements for survey purposes. If an office is not certified as balanced, it will not be scheduled for survey, but entered into the TTMI as having no credit.

4.02 The balance short survey is the responsibility of the transmission engineer. They will select the trunk sample to be tested per Section 301-133-500 and will observe the testing done by operating company personnel. They will forward the test results to the organization responsible for the reporting data to the TTMI.

4.03 If the Short Survey falls into the unbalanced or gray area (Section 301-133-500), a complete review of 100 percent of the records will be made. Any trunk for which records are not available will be considered not meeting balance requirements. If conditions in paragraph 3.02 are not met, the entity will be decertified.

4.04 The transmission engineer will make a report to the third level management in both the Engineering and Network Operations organizations.

5. BALANCE QUALITY REVIEW

5.01 To maintain certification, a Balance Quality Review will be conducted by the transmission engineer at least every other year. It is the purpose of the review to determine whether or not the posted measurements accurately reflect the present balance of each trunk. The absence of complete and current office records or records found inaccurate will indicate that an office may not be currently balanced. If an office is not certified as balanced, it will not be scheduled for a Balance Quality Review.

(a) Balance test records (E600Z) per Section 600-YYY-010 are required.

(b) Circuit order test records (E2545) per Section 660-450-010 are a minimum. Addendum to Section 660-450-010 directs that balance test data be transcribed from E2545 to E600Z summary records.

5.02 Any changes, such as circuit order and traffic load balancing rearrangements which may affect balance, make it necessary for new balance measurements to be made and posted. In this category are:

(a) Any wiring changes between the 4WTS and switching network

(b) Any wiring changes between a fixed impedance point (impedance compensation, 2 dB pad, or channel bank hybrid)

(c) Any facility changes on 2-wire trunks

(d) Any wiring changes in the end office of an operator attendant trunk

(e) A change in the office NBO value

(f) Installation of Traffic Service Position System (TSPS) or Remote Trunking Arrangements (RTA)

(g) Removal of Toll Switchboards.

5.03 The transmission engineer should be sure that:

(a) Proper measurements are in fact being made using valid measurement techniques.

(b) These measurements are being compared against the appropriate published requirements.

5.04 A checklist (Form E6000, Fig. 1) will be used to conduct the review. It will enable the reviewer to determine the quality of performance in balance testing.

5.05 The quality review includes the testing of at least four trunks selected by the reviewer. They should be taken from the first 50 percent of a trunk group (looking for an older trunk) and again from the latest trunk additions (looking for current test activity).

5.06 There are various techniques that can be developed to get an indication of the quality of balance work being done in an office. Some of the things that should be noted are:

(a) Does the personnel in the office know where to obtain the balance testing requirements?

(b) Are the requirements current?

(c) Are they familiar with the test equipment and procedures for balance testing?

(d) What is the condition of the test equipment?

(e) Are the test lines properly built out?

(f) Are the NBO capacitors set to the same value where required?

(g) Are the DBO capacitors set at different values except possibly for trunks in the same trunk group?

5.07 If no records are available, or their accuracy of them is in question, the office has failed the quality review. A complete review of the records will be made as in paragraph 4.03. If conditions in paragraph 3.02 are not met, the entity will be decertified.

5.08 If the office has passed the Quality Review, the TTMI is not changed, and is based on the data previously reported.

5.09 The transmission engineers* will make a report to third level management in both Engineering and Network Operations organizations.

*The Balance Quality Review may also be conducted by an Auditing group per Section 010-301-001.

6. DECERTIFICATION AND RECERTIFICATION

6.01 As discussed, an entity is decertified if it fails the Balance Survey procedures. The transmission engineer is unable to ensure that the office meets all of the requirements listed in Part 3 above. Any old records of measurements are considered unreliable and should not be used for recertification.

6.02 The transmission engineer will report the decertification and recertification of the office to the appropriate third level management in both the Engineering and Network Operations organizations.

6.03 The transmission engineer will also report the decertification and recertification to:

Manager Transmission Engineering and Measurements
295 North Maple Avenue
Basking Ridge, NJ 07920

6.04 To be recertified, the office must pass the same tests placed on a new office being initially certified.

6.05 If an office is not recertified within 12 months, the Assistant Vice-President of that organization must approve action plans. The organization with an office with an early retirement ***may elect*** not to rectify and suffer the index consequences.

7. RECORD REVIEW

7.01 In offices which had been balanced but is currently not certified and has trunks reported to the TTMI measurement plan, a record review should be conducted periodically. This review is to determine if the balance measurements that are reported are accurate and reportable. Any changes discussed in paragraph 5.02 that have occurred would render the records not suitable for the TTMI balance component. This record review will not take the place of the process necessary to recertify the office (see paragraph 6.04).

8. REFERENCES

SECTION	TITLE
010-301-001	Quality Review Plan for Trunks and Toll Special Services
301-123-100	Trunk Transmission Maintenance Index, Balance Component—General Description
301-133-100	Balance Survey Methods Survey General Description
301-133-500	Balance Survey Methods Survey Procedures

SECTION	TITLE
660-461-XXX	No. 1 Trunk Concentrator Balance Sections
660-462-XXX	No. 23 ACD and Trunk Concentrator Balance Sections
660-463-XXX	TSPS and RTA Balance Sections
660-477-XXX	5 ACD phase 1 Balance Sections
660-478-XXX	5 ACD phase 2 Balance Sections
660-479-XXX	AIS Balance Sections
852-404-XXX	TSPS Transmission Engineering Sections
852-405-XXX	AIS Transmission Engineering Sections
852-406-XXX	ACD Transmission Engineering Sections
852-408-XXX	Trunk Concentrator Transmission Engineering Sections
853-500-100	Through and Terminal Balance, General Engineering Considerations

E-6000
(1-79)

BALANCE QUALITY REVIEW

Item	Action	Requirements	Yes	No	BSP	Alternate Action
1	Balance And Circuit Order Rcds.					
	1. E600X Form Or Local Equivalent	a) Requirements On Form			660-47X-XXX	
		b) Requirements From Latest BSP				
		c) Test Results Posted For Each Trunk				
		d) Are Records In Good Condition				
	2. E2545A Circuit Order Or Trunk Order Tests Form Or Local Circuit Order Work Sheet.	a) Requirements On Form				
		b) Requirements From Latest BSP			660-47X-XXX	
		c) All Action Information Posted				
		d) Are Records In Good Condition			660-450-010	
	3. Select XRL/COLR For The Following Type Trunks:	Trunk Designation			660-450-301	
	a) Newly Established OGT Trunk	a)				
	b) Newly Established Inc. Trunk	b)				
	c) Older OGT Trunk	c)				
	d) Older Inc. Trunk	d)				
		Balance Requirements ERL MED/MIN SRL MED/MIN				
	4. Obtain Requirements For Each Trunk Selected In #3	a)				
		b)				
		c)				
		d)				
		Recorded Values ERL SRL				
	5. Compare Test Results On E2545A Or Equivalent Form With Requirements In Step 4.	a)				
		b)				
		c)				
		d)				
		NBOC Value vs. XRL/COLR				
		NBOC / XRL/COLR				
	6. Compare NBOC Screw Settings On Equipment With Settings XR/COLR	a)				
		b)				
		c)				
		d)				
	7. Inspect Terminating Trunk NBOC Settings	a) Are They Similar By Trunk Group Facilities.				
	8. Inspect Through NBOC/DBOC	a) Are There DBOC's On Any Through Office Trunks				
		b) Are Through Office Settings The Same				

Fig. 1—Form E-6000—Balance Quality Review

Item	Action	Requirements	Yes	No	BSP	Alternate Action
II	Verifying Tests	Test Results ERL SRL				
	1. Have Craft Perform Balance Test On Trunks Selected In Action 3, Item 1.	a) b) c) d)				
	2. Compare Measured Results With Posted Results. (± 1dB Is Acceptable).	Posted ERL SRL a) b) c) d)				
	3. Check Calibration Of Test Equipment	a) Craft Can Calibrate b) Calibrate Record Available				
	4. Request Craft To Retrieve BSP 660-47X-010 660-47X-300 660-47X-301	a) Craft Retrieved b) Located In Or Near Test Center c) Latest Issue				
III	Maintenance Of Balance Rods.					
	1. Who Maintains	a) Transmission Engineer b) Circuit Order Group c) Test Board Group				
	2. Balance Survey	a) Done Yearly b) Done Every 2 Years c) Scientific Sampling Used d) Date Of Last Survey			301-133-100	
	3. Certification	a) Office Certified b) Date:			853-500-110	
	Summary: Reviewer _____ Date _____					

Fig. 1—Form E-6000—Balance Quality Review (Sheet 2 of 2)