FORMS FOR RECORDING RESULTS OF SINGING POINT AND OFFICE CABLING BALANCE TESTS

1. GENERAL

1.01 This section covers the description and use of forms used for recording the results and analysis of singing point tests and office cabling balance tests made in accordance with Section 332-015-300. The data recorded on these forms should provide an adequate record for supervision and analysis of singing point and office balance test results.

1.02 Form E-2545 Circuit Order Tests provides spaces for the initial posting of the over-all active and section singing points and drop balance. Form E-3893 Transmission History Card provides spaces for recording the required routine over-all active singing point measurements.

1.03 The forms available for recording all types of singing point and office balance information are listed in Table 1.

TABLE 1

FORM NO.	TITLE	USE OF FORM	
E-3893	Transmission History Card	Record of routine over-all active singing point tests.	660-402-010
E-2582	Singing Point Investigation Work Sheet	Work sheet for investigating low singing points in offices or line facilities.	This Section 332-010-011
E-3834	Stroke Record	A stroke record for determining office "B" factor and maintaining continuous record of office balance conditions.	660-430-010

2. FORM E-2582 (2-43), SINGING POINT INVESTIGATION — WORK SHEET

2.01 This form is provided for use as a work sheet in recording the results of singing point investigations on individual circuits when the requirements can not be met and it is desired to locate and clear line or equipment irregularities. When used as a work sheet, only such entries need be made as are required for local supervision. It may also be used in furnishing details of circuit layout in a repeater section together with test data when recommending changes in line facilities or a reduction in singing point requirements.

2.02 This form is an 8-1/2" x 11" sheet and is arranged to show details of circuit make-up together with computed singing point data and sectionalized singing point data. A facsimile of the form with typical entries is shown in Fig. 1.

2.03 ***Details of Circuit Layout:*** Spaces are provided for showing equipment and equipment losses on the circuit at the testing office and terminating office including the names of the respective offices. The sketch provides for showing the layout of the repeater section being tested and should include all known irregularities with the transmission loss shown from the testing office to the nearest irregularity and also the loss between irregularities.

2.04 The form is arranged for recording data covering open wire or cable facilities and when recording the line or cable assignments, the words not applying to the particular type of outside plant should be ruled out. Other items relating to the type of equipment or facilities involved and other pertinent details as to the results of over-all tests on the section are self-explanatory.

2.05 ***Sectionalized Singing Points:*** Space is provided for recording the results of sectionalized singing point tests which may be made on the office equipment or tests made on the line

versus network with terminations applied at points as may be indicated on the form.

2.06 ***Singing Point Computations:*** The singing point of the structural line, equipment, terminal and all intermediate irregularities may be obtained from the appropriate circuit layout, engineering or staff group assigned this responsibility. These data are entered in the column designated "S.P. at Irreg." opposite the respective headings.

2.07 Twice the sum of the line and equipment transmission losses between the testing repeater and each of the various irregularities should be determined from the circuit layout record card and entered in the column headed "2 X Loss" opposite their respective headings.

2.08 The entries in the column headed "S.P. at Irreg." should be added to those on the same lines of the column headed "2 X Loss" to obtain the corresponding values to be recorded in the column headed "S.P. at Reptr."

2.09 The first line in the "Combined S.P." column should record the same value as the first line in the "SP at Reptr." column. The second line should bear the resultant of the power ratio combination of the first value in the "Combined S.P." column with the second value in the "S.P. at Reptr." column. The third line should bear the resultant of the power ratio combination of the second value in the "Combined S.P." column with the third value in the "S.P. at Reptr." column. Succeeding lines are filled out with the resultant of the power ratio combination of the last preceding value in the column headed "Combined S.P." and the value on the same line as that being determined in the column headed "S.P. at Reptr." until all the singing points in the latter column have been combined with the last preceding combined singing point.

2.10 The last singing point entered in the "Combined S.P." column is then the computed singing point of the section being tested.

2.11 ***List of Known Irregularities:*** The entries of the respective lines should identify the known irregularities existing in the repeater section which were considered in the singing point computations.

2.12 ***Singing Points of Similar Circuits in Same Section:*** Space is provided for recording the singing points obtained on several circuits having the same layout in the same repeater section.

2.13 ***Remarks:*** This space is provided for recording any necessary explanatory notes or other pertinent information regarding the singing point under investigation.

3. FORM E-3893 TRANSMISSION HISTORY CARD

3.01 Space is provided on Form E-3893 for entering the over-all active singing point, and the instructions covering entries of specified and routine measurements are given in Section 660-402-010.

4. FORM E-3843 DISTRIBUTION CURVES

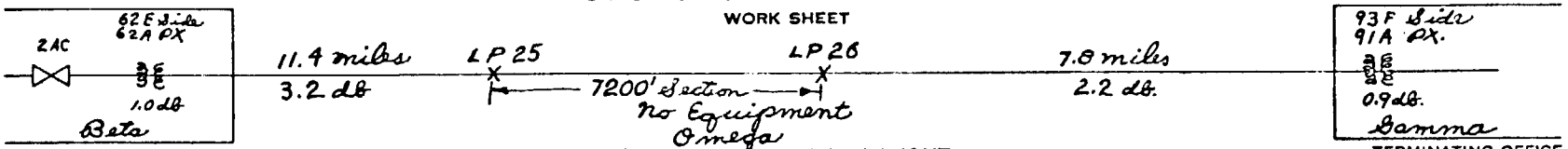
4.01 Section 332-016-010 recommends the use of statistical methods such as are applied to the analysis of bias and distribution grades in transmission maintenance for the purpose of determining the office "B" factor in newly balanced offices, and as a continuous indication of office balance conditions.

PRINTED IN U.S.A.

FORM E-2582 (2-43)

SINGING POINT INVESTIGATION

WORK SHEET



TESTING OFFICE

DETAILS OF CIRCUIT LAYOUT

TERMINATING OFFICE

CIRCUIT NO. 2 Alpha Gamma

PAIR ~~OR PIN~~ NOS. 39 40 CABLE OR LINE Beta - Omega A

CIRCUIT ORDER NO. 2253 ITEM NO.

GAUGE AND TYPE OF LOADING 19H63P

DATE TROUBLE APPEARED 2-25-53

DATE OF THIS REPORT 2-27-53 TESTER G.N.O.

REQUIRED SINGING POINT 20 db

MEASURED SINGING POINT 18 db

TYPE OF NETWORK 104 D

TYPE OF REPEATER 2AC GR

TERMINATION 600w

SINGING FREQUENCY 500 CYCLES

SECTIONALIZED SINGING POINTS		SINGING POINT COMPUTATIONS	S. P. AT IRREG.	2 X LOSS	S. P. AT REPTR	COMBINED S. P.
LINE EQUIPMENT VERSUS BALANCING EQUIPMENT	35 db	STRUCTURAL LINE	24	2.0	26	26 db
LINE VERSUS NETWORK (NETWORK TERMINATION)	db	EQUIPMENT IRREGULARITY	35		35	25.5 db
LINE VERSUS NETWORK (REPEATER TERMINATION)	db	TERMINAL IRREGULARITY	8	12.8	20.8	19.6 db
LINE VS. NET (600 OHMS TERMINATION) Gamma	17 db	INTERMEDIATE IRREGULARITY (1) *	16.7	8.4	25.1	18.5 db
LINE VS. NET (104 net + 3E TERM. AT Omega)	24 db	INTERMEDIATE IRREGULARITY (2) *				db
LINE VS. NET (TERM. AT)	db	INTERMEDIATE IRREGULARITY (3) *				db
LINE VS. NET (TERM. AT)	db	INTERMEDIATE IRREGULARITY (4) *				db

*LIST OF KNOWN IRREGULARITIES

(1) 0.2 excess Ld. Sect. at Omega (7200') *

(2)

(3)

(4)

SINGING POINTS OF SIMILAR CIRCUITS IN SAME SECTION

CIRCUIT NO. 1 Alpha - Gamma 18 db

CIRCUIT NO. 1 Delta - Gamma 18 db

CIRCUIT NO. db

CIRCUIT NO. db

REMARKS: * Assume 100' office cabling at Omega