TRUNK TRANSMISSION MAINTENANCE INDEX

NOISE COMPONENT

MANUAL SUMMARY PROCEDURES

CONTENTS PAGE

1. GENERAL

1.01 This section describes the procedures used to manually summarize routine trunk noise measurements and compute the noise component of the Trunk Transmission Maintenance Index (TTMI). Summary instructions and procedures are based on the use of Forms E-5441A, E-5441C, E-5441D, E-5441E, and E-5441F.

1.02 This section is reissued to add the noise summary procedures used to include the information on trunks reported by CAROT for the TTMI. The requirements for ***manually*** reporting noise measurements by mileage band has been removed. Arrows are used to denote changes.

1.03 A general description of the noise component is found in Section 301-122-100. Index tables are contained in Section 301-122-300. These tables are required to complete the summaries described in this section.

1.04 The sources of information are Forms E-593A, E-593B, and E-593D. These forms are prepared in accordance with the instructions in Section 660-403-010. The source of information for Automatic Transmission Measuring System (ATMS) data is Form E-5911 prepared in accordance with Section 660-403-011. ▶The source of information for CAROT data is Form E-6439 prepared in accordance with Section 010-410-300.◀

1.05 Testing intervals for message trunks are specified in Section 660-403-300. Maintenance limits are specified in Section 660-403-500. The requirements of these sections provide the basis for rating routine noise measurements for index purposes. ▶The intervals for CAROT, Type 9, measurements are the same as those for loss.◀

1.06 The procedures described in this section are the same as those used by the computer for those companies using the Trunk Transmission Maintenance Index Mechanized Summary Procedure. The mechanized procedure is covered in Sections 301-124-100, 301-124-110, and 660-403-011.

2. USE OF FORMS

2.01 Several forms are provided for recording, classifying, and summarizing noise measurements. The following is a list of these forms, the purpose of each, and the BSP in which the form is described:

FORM NO.	USED FOR	BSP
E-593A	Recording one-way noise measurements.	660-403-010
E-593B	Recording 2-way noise measurements	660-403-010
E-593D	Recording information on trunks with noise above the maintenance unit	660-403-010
E-5911	Recording ATMS register reading	660-403-011
E-5441A	Stroke sheet for routine manual noise measurements during a period	301-122-500
E-5441C	Summarizing office ATMS results	301-122-500
E-5441D	Computing the combined office level noise component index	301-122-500
E-5441E	Computing the noise component index for levels higher than office level	301-122-500
E-5441F	Providing a continuing report on uncleared noise troubles	301-122-500
▶E-5441A/F	Combined Forms E-5441A and E-5441F	301-122-500
E-5441G	Summarizing office CAROT results	301-122-500
E-6439	Summary of CAROT TTMI output report	010-410-300◀

2.02 Figure 1 indicates the flow of information for the manual summary procedures.

3. PREPARATION OF FORM E-5441A OR E-5441A/F—STROKE RECORD (Fig. 2)

3.01 Several Forms E-593A and E-593B may be summarized at once. Summaries may be made weekly or monthly and the summaries combined at the end of the quarter, if this is convenient.

3.02 ▶Summary of noise measurements by mileage bands and deviation ranges is no longer required when manually reporting noise measurements. Companies using the mechanized summary procedures (Section 660-403-011) must continue to report mileage however.

3.03 Form E-5441A can remain in use for summarizing the total number of measurements, measurements exceeding the maintenance limit, and trunks exceeding the immediate action limit as recorded on Forms E-593A and E-593B. A new combined Form E-5441A/F will be provided in the future (Fig. 2).

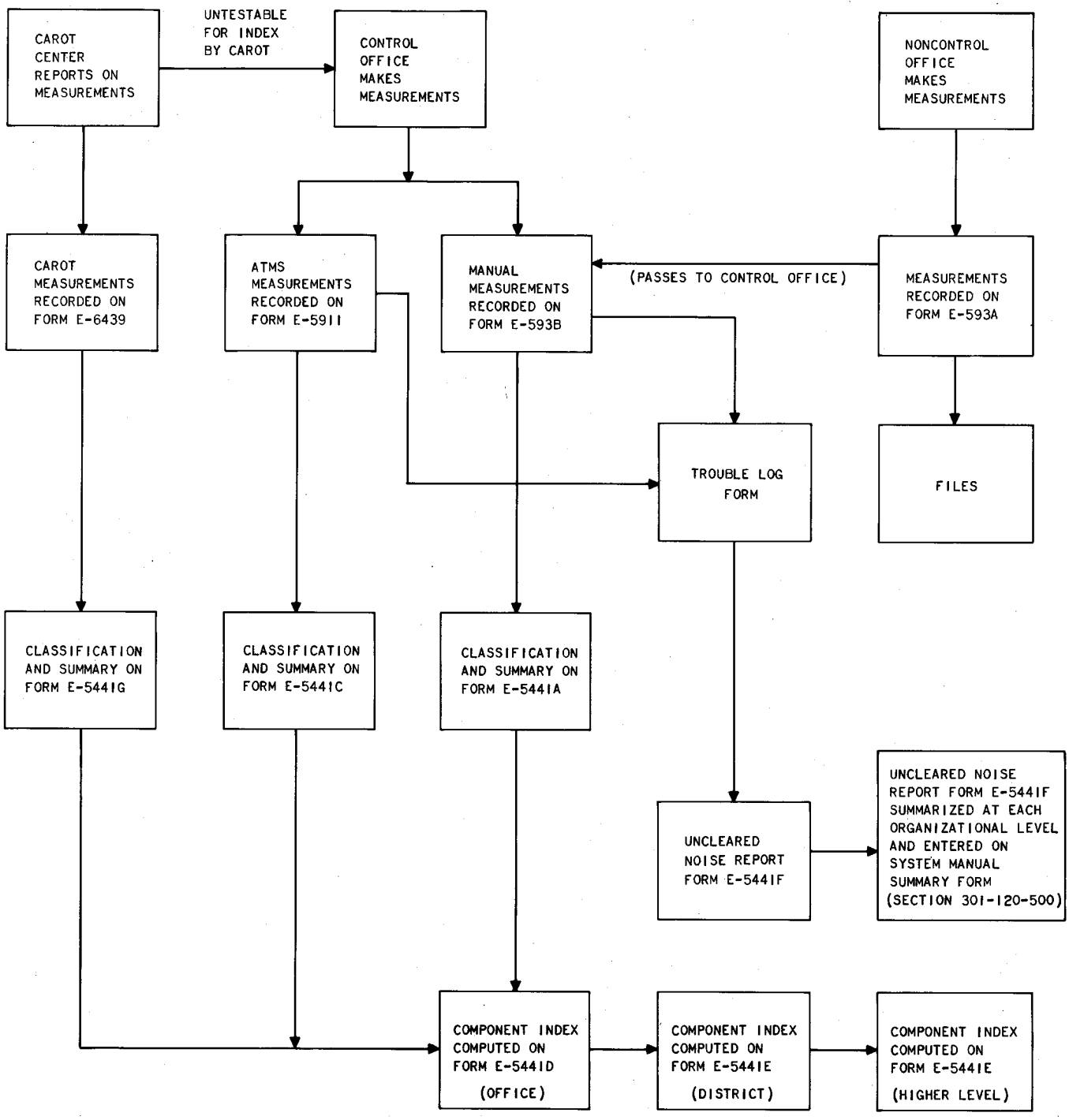

Fig. 1—Flow of Information (Manual Summary Procedure)

3.04 The values to be summarized are found in the DEV column of Form E-593A or the DEV column of E-593B. A check mark (✓) may be used in this column for all measurements below the maintenance limit. An X is used to identify all measurements above the maintenance limit. If the measurement exceeds the immediate action limit, the measurement is circled. To summarize these measurements, proceed as follows:

(a) Scan the DEV column for (X) and stroke in column F.

COMBINED NOISE SUMMARY

COMPANY _____ DISTRICT _____

AREA _____ OFFICE _____

DIVISION _____ PERIOD _____

E-5441 A/F

BSP 301-122-500
(1/75)

ROUTINE NOISE MEASUREMENTS – STROKE RECORD		
A	F	G *
NO. OF MEAS.	(X)	IMMED. ACTION

E5441 A

	SUMMARY OF ROUTINE MANUAL NOISE MEASUREMENTS – THIS PERIOD			
		TOTAL MEAS. – A	NUMBER ABOVE MAINTENANCE LIMIT – F	NUMBER ABOVE IMMEDIATE ACTION LIMIT – G *
11	This Period			
12	% of Total This Period			

E5441 F

* THESE MEASUREMENTS ARE INCLUDED IN COLUMN F

	END OF QUARTER DATA ON NUMBER OF CONTROLLED TRUNKS ABOVE THE MAINTENANCE LIMIT	
13	TRUNKS PRESENTLY ABOVE LIMIT	
14	ABOVE LIMITS OVER ONE YEAR	
15	ENG. ASSISTANCE REQUESTED – TOTAL PENDING THRU THIS QTR.	

E5441 F

Fig. 2—Combined Stroke Record and Summary of Routine Manual Noise Measurements—This Period

(b) Stroke all circled measurements in column G.

(c) Determine the total number of measurements made on the summarized forms and enter in column A.

3.05 An example of a completed Form E-5441A/F is provided in Fig. 7.

3.06 Office ATMS noise measurements are not recorded on Form E-5441A. The ATMS noise register readings are recorded on Form E-5911 in lines 21 through 27. Line 27 may be used as a total line when using the form for manual summaries. Form E-5911 is also an input form for the Trunk Transmission Maintenance Index Mechanized Summary Procedure. The form is presented and described in Section 660-403-011.

4. PREPARATION OF FORM E-5441C—OFFICE ATMS NOISE MEASUREMENTS SUMMARY

A. General

4.01 Form E-5441C is used to summarize ATMS noise measurements at the office level. It provides for calculation of weighted and combined ATMS noise subcomponent results which will be used on Form E-5441D for computation of the office noise component index. If an office has no provision for making automatic noise measurements, Form E-5441C is not required.

4.02 Sources of information for the preparation of Form E-5441C are Form E-5911, covered in Section 660-403-011, and local records showing trunks tested by ATMS, the type test line used, and the testing frequency.

4.03 The office and period must be identified for each E-5441C form completed. This is done on the lines provided at the top of the form.

4.04 The double asterisks (**) in columns 3D, 6D, 8D, and 10D indicate that these results will be used on Form E-5441D for computation of the office noise component index.

4.05 An example of a completed Form E-5441C is provided in Fig. 3.

OFFICE A
PERIOD 19 1970

E-5441C
BSP 301-122-500
(9-70)

OFFICE ATMS NOISE MEASUREMENTS SUMMARY

(THIS PERIOD ONLY)

LINE	ITEM SUMMARIZED		FREQUENCY OF MEASUREMENT			
			A	B	C	D
			WEEKLY	SEMI-MO.	MONTHLY	TOTAL OR EQUIV.
1	Number of Controlled Trunks Tested to 105 Type Test Line	Instruction	Record	Record	Record	Add Line 1
		Result	125	0	50	175
2	1/2 of the Number of Controlled Trunks Tested to 100 or 104 Type Test Lines	Instruction	Record	Record	Record	Add Line 2
		Result	47.5	50	0	97.5
3	Equivalent Number of Controlled Trunks Measured Automatically for Noise	Instruction	Add 1A + 2A	Add 1B + 2B	Add 1C + 2C	Add 1D + 2D
		Result	172.5	50	50	** 272.5
4	Number of Measurements Made This Period	Instruction	Record From E-5911 Cols. 33-36	Record From E-5911 Cols. 33-36	Record From E-5911 Cols. 33-36	
		Result	2070	300	150	
5	% of Measurements Made (Show 100 if ⩾ 100)	Instruction	$\frac{4A}{2X3A} \times 100$	$\frac{4B}{2X3B} \times 100$	$\frac{4C}{2X3C} \times 100$	$\frac{5Ax3A+5Bx3B+5Cx3C}{3D}$
		Result	100	100	100	100
6	Adjusted % of Measurements Made	Instruction				5D x Q*
		Result				** 25
7	Number of Measurements Above Maintenance Limit	Instruction	Record From E-5911 Cols. 30-32	Record From E-5911 Cols. 30-32	Record From E-5911 Cols. 30-32	
		Result	28	7	2	
8	% of Measurements Above Maintenance Limit	Instruction	$\frac{7A}{4A} \times 100$	$\frac{7B}{4B} \times 100$	$\frac{7C}{4C} \times 100$	$\frac{8Ax3Ax8Bx3Bx8Cx3C}{3D}$
		Result	1.4	2.3	1.3	** 1.5
9	Number of Measurements Above Immed. Action Limit	Instruction	Record From E-5911 Cols. 37-39	Record From E-5911 Cols. 37-39	Record From E-5911 Cols. 37-39	
		Result	5	0	2	
10	% of Measurements Above Immed. Action Limit	Instruction	$\frac{9A}{4A} \times 100$	$\frac{9B}{4B} \times 100$	$\frac{9C}{4C} \times 100$	$\frac{10Ax3A+10Bx3B+10Cx3C}{3D}$
		Result	0.2	0	1.3	** 0.3

* Q = 0.25 for the 1st Period, 0.50 for the 2nd Period, 0.75 for the 3rd Period and 1.00 for the 4th Period.

** These Results will be Used on Form E-5441D for Computation of the Office Noise Component Index.

Fig. 3—Office ATMS Noise Measurements Summary

B. Summary of Measurements (All computations are rounded to the nearest tenth.)

4.06 Form E-5441C is completed in accordance with the following instructions:

Line 1: Col. A. Record the number of controlled trunks tested weekly to a 105-type test line.

Col. B. Record the number of controlled trunks tested semimonthly to a 105-type test line.

Col. C. Record the number of controlled trunks tested monthly to a 105-type test line.

Col. D. Add the results in columns A, B, and C of line 1 and record.

Line 2: Col. A. Record 1/2 of the number of controlled trunks tested weekly to 100- or 104-type test lines.

Col. B. Record 1/2 of the number of controlled trunks tested semimonthly to 100- or 104-type test lines.

Col. C. Record 1/2 of the number of controlled trunks tested monthly to 100- or 104-type test lines.

Col. D. Add the results in columns A, B, and C of line 2 and record.

Line 3: Col. A. Add the results in column A of lines 1 and 2 and record.

Col. B. Add the results in column B of lines 1 and 2 and record.

Col. C. Add the results in column C of lines 1 and 2 and record.

Col. D. Add the results in column D of lines 1 and 2 and record.

Line 4: Col. A. Record the number of weekly ATMS noise measurements (FREQ 10) made this period from the proper Form(s) E-5911, columns 33 through 36.

Col. B. Record the number of semimonthly ATMS noise measurements (FREQ 20) made this period from the proper Form(s) E-5911, columns 33 through 36.

Col. C. Record the number of monthly ATMS noise measurements (FREQ 30) made this period from the proper Form(s) E-5911, columns 33 through 36.

Line 5: Col. A. Compute $\frac{\text{Ln4A}}{\text{2xLn3A}} \times 100$ and record unless this computation is greater than 100 in which case record 100.

Col. B. Compute $\frac{\text{Ln4B}}{\text{2xLn3B}} \times 100$ and record unless this computation is greater than 100 in which case record 100.

Col. C. Compute $\frac{\text{Ln4C}}{\text{2xLn3C}} \times 100$ and record unless this computation is greater than 100 in which case record 100.

Col. D. Compute and record:

$$\frac{\text{Ln5A x Ln3A + Ln5B x Ln3B + Ln5C x Ln3C}}{\text{Ln3D}}$$

Line 6: Col. D. Multiply the results in column D of line 5 by Q: where Q=:
0.25 for 1st Quarter Report
0.50 for 2nd Quarter Report
0.75 for 3rd Quarter Report
1.00 for 4th Quarter Report

Line 7: *Col. A.* Record the number of weekly ATMS noise measurements found above the maintenance limit from the proper Form(s) E-5911, columns 30 through 32.

Col. B. Record the number of semimonthly ATMS noise measurements found above the maintenance limit from the proper Form(s) E-5911, columns 30 through 32.

Col. C. Record the number of monthly ATMS noise measurements found above the maintenance limit from the proper Form(s) E-5911, columns 30 through 32.

Line 8: *Col. A.* Compute $\frac{\text{Ln7A}}{\text{Ln4A}} \times 100$ and record.

Col. B. Compute $\frac{\text{Ln7B}}{\text{Ln4B}} \times 100$ and record.

Col. C. Compute $\frac{\text{Ln7C}}{\text{Ln4C}} \times 100$ and record.

Col. D. Compute and record:

$$\frac{\text{Ln8A} \times \text{Ln3A} + \text{Ln8B} \times \text{Ln3B} + \text{Ln8C} \times \text{Ln3C}}{\text{Ln3D}}$$

Line 9: *Col. A.* Record the number of weekly ATMS noise measurements found above the immediate action limit from the proper Form(s) E-5911, columns 37 through 39.

Col. B. Record the number of semimonthly ATMS noise measurements found above the immediate action limit from the proper Form(s) E-5911, columns 37 through 39.

Col. C. Record the number of monthly ATMS noise measurements found above the immediate action limit from the proper Form(s) E-5911, columns 37 through 39.

Line 10: *Col. A.* Compute $\frac{\text{Ln9A}}{\text{Ln4A}} \times 100$ and record.

Col. B. Compute $\frac{\text{Ln9B}}{\text{Ln4B}} \times 100$ and record.

Col. C. Compute $\frac{\text{Ln9C}}{\text{Ln4C}} \times 100$ and record.

Col. D. Compute and record:

$$\frac{\text{Ln10A} \times \text{Ln3A} + \text{Ln10B} \times \text{Ln3B} + \text{Ln10C} \times \text{Ln3C}}{\text{Ln3D}}$$

This completes the computations required on Form **E-5441C.**

5. ▶PREPARATION OF FORM E-5441G—CAROT NOISE MEASUREMENTS SUMMARY

A. General

5.01 Form E-5441G is used to summarize noise measurements made by CAROT at the office level. It provides for calculation of weighted and combined CAROT noise subcomponent results which will be used on Form E-5441D for computation of the office noise component index. If an office has no Remote Office Test Line (ROTL) and receives no TTMI results from a CAROT Center, Form E-5441G is not required.

5.02 Source of information for the preparation of Form E-5441G is the CAROT TTMI Report or Form E-6439 described in Section 010-410-300.

5.03 The office and period must be identified for each E-5441G form completed. This is done on the lines provided at the top of the form.

5.04 The double asterisks (**) in columns 1E, 4E, 6E, and 8E indicate that these results

will be used on Form E-5441D for computation of the office noise component index.

5.05 An example of completed Forms E-6439 and E-5441G is provided as Fig. 4 and Fig. 5, respectively.

FORM E 6439 (3/75)

BSP 010-410-300
301-122-500

TRUNK TRANSMISSION MAINTENANCE INDEX
MANUAL SUMMARY – CAROT

Cullman, Alabama
Office Name

1/1/74 - 3/31/74
Start Date to End Date

Loss Deviations

Noise Deviations

Line	Number of Trunks	Type	Fac	Freq	.7	1.7	3.7	L Meas	Q1 N	Q2 N	N Meas	No. of Trunks Noise (Typ 9)
	A	B			C	D	E	F	G	H	I	N
1	50	9	05	20	2	1	0	600	4	1	600	50
2	200	9	05	30	5	0	0	1200	10	0	1200	200
3	200	9	10	10	515	5	0	5200	100	4	5200	200
4	100	9	10	20	106	21	0	1200	120	1	1200	100
Total	550							8200				550

Type	Fac	Freq	% Exceeding .7 C+D+E ÷ F x 100	% Exceeding 1.7 D+E ÷ F x 100	% Exceeding 3.7 E ÷ F x 100	% Measurements Made *
B			J	K	L	M

* % Measurements Made

Type	FAC	Freq.	Formula
8	05	30	(F ÷ 3A) x 100
8	05	10	(F ÷ 6A) x 100
8	05	20	
9	06	30	
9	10	30	
9	06	10	(F ÷ 12A) x 100
9	06	20	
9	10	10	
9	10	20	

Greater than 100% = 100%
BSP 301 121 500
301 122 500

Fig. 4—Trunk Transmission Maintenance Index—Manual Summary—CAROT

OFFICE Cullman, Ala.

PERIOD 1Q 74

E5441G
BSP 301-122-500
(1/75)

CAROT NOISE MEASUREMENT SUMMARY

ITEM	FACILITY & FREQUENCY					
	1010	1020	0620	0630	TOTAL	
	A	B	C	D	E	
1. # OF TRUNKS MEASURED FOR NOISE – TYPE 9 (CAROT TTMI REPORT E-6439, COL. N)	200	100	50	200	** 550	1E
2. # OF MEASUREMENTS (CAROT TTMI REPORT E-6439, COL. I)	5200	1200	600	1200		
3. % MEASUREMENTS MADE (100 if > 100)	$\frac{2A}{2x1A}$ x 100	$\frac{2B}{2x1B}$ x 100	$\frac{2C}{2x1C}$ x 100	$\frac{2D}{2x1D}$ x 100	$\frac{3A \times 1A + 3B \times 1B + .}{1E}$	
	100	100	100	100	100	3E
4. ADJUSTED % MEAS. MADE					3E x Q*	
					** 25	4E
5. NUMBER OF MEAS. ABOVE Q1 N (CAROT TTMI REPORT E-6439, COL. G)	100	120	4	10		
6. % MEAS. ABOVE Q1 N	$\frac{5A}{2A}$ x 100	$\frac{5B}{2B}$ x 100	$\frac{5C}{2C}$ x 100	$\frac{5D}{2D}$ x 100	$\frac{6A \times 1A + 6B \times 1B + .}{1E}$	
	1.9	10	6.7	.8	** 3.4	6E
7. NUMBER OF MEAS. ABOVE Q2 N (CAROT TTMI REPORT E-6439, COL. H)	4	1	1	0		
8. % MEAS. ABOVE Q2 N	$\frac{7A}{2A}$ x 100	$\frac{7B}{2B}$ x 100	$\frac{7C}{2C}$ x 100	$\frac{7D}{2D}$ x 100	$\frac{8A \times 1A + 8B \times 1B + .}{1E}$	
	.1	.1	.2	0	** .1	8E

*Q = 0.25 for the 1st period, 0.50 for the second period, 0.75 for the third period and 1.00 for the 4th period.

** These results will be used on Form E-5441D for computation of office noise component.

Fig. 5—Office CAROT Noise Measurements Summary

B. Summary of Measurements (All computations are rounded to the nearest tenth.)

5.06 Form E-5441G is completed in accordance with the following instructions:

Line 1:

Col. A. Record the number of controlled trunks on carrier and other repeater measured weekly to a 105-test line, 1010 — E-6439, column N.

Col. B. Record the number of controlled trunks on carrier and other repeater measured biweekly to a 105-test line, 1020 — E-6439, column N.

Col. C. Record the number of controlled trunks, E repeater and nongain measured biweekly to a 105-or combined 100-test line, 0520 — E-5439, column N.

Col. D. Record the number of controlled trunks on E repeater or nongain measured monthly to a 105-or combined 100-test line, 0530 — E-6439, column N.

Col. E. Add the results in columns A, B, C, and D of line 1 and record.

Line 2:

Col. A. Record number of measurements made in category 1010 — E-6439, column I.

Col. B. Record number of measurements made in category 1020 — E-6439, column I.

Col. C. Record number of measurements made in category 0520 — E-6439, column I.

Col. D. Record number of measurements made in category 0530 — E-6439, column I.

Line 3:

Col. A. Compute $\frac{\text{Ln 2A}}{2 \times 1A \times 100}$ and record unless this computation is greater than 100 in which case record 100.

Col. B. Compute $\frac{\text{Ln 2B}}{2 \times 1B \times 100}$ and record unless this computation is greater than 100 in which case record 100.

Col. C. Compute $\frac{\text{Ln 2C}}{2 \times 1C \times 100}$ and record unless this computation is greater than 100 in which case record 100.

Col. D. Compute $\frac{\text{Ln 2D}}{2 \times 1D \times 100}$ and record unless this computation is greater than 100 in which case record 100.

Col. E. Compute and record:

$$\frac{3Ax1A+3Bx1B+3Cx1B+3Dx1D}{1E}$$

Line 4:

Col. E. Multiply the results in column E of line 3 by Q : where
Q = :
0.25 for 1st Quarter Report
0.50 for 2nd Quarter Report
0.75 for 3rd Quarter Report
1.00 for 4th Quarter Report

Line 5:

Col. A. Record number of measurements exceeding maintenance limit, Q1N, in category 1010 — E-6439, column G.

Col. B. Record number of measurements exceeding maintenance limit, Q1N, in category 1020 — E-6439, column G.

Col. C. Record number of measurements exceeding maintenance limit, Q1N, in category 0520 — E-6439, column G.

Col. D. Record number of measurements exceeding maintenance limit, Q1N, in category 0530 — E-6439, column G.

Line 6:

Col. A. Compute $\frac{\text{Ln 5A}}{\text{Ln 2A}}$ x 100 and record.

Col. B. Compute $\frac{\text{Ln 5B}}{\text{Ln 2B}}$ x 100 and record.

Col. C. Compute $\frac{\text{Ln 5C}}{\text{Ln 2C}}$ x 100 and record.

Col. D. Compute $\frac{\text{Ln 5D}}{\text{Ln 2D}}$ x 100 and record.

Col. E. Compute and record:

$$\frac{6Ax1A+6Bx1B+6Cx1C+6Dx1D}{1E}$$

Line 7:

Col. A. Record number of measurements exceeding immediate action limit in category 1010 — E-6439, column H.

Col. B. Record number of measurements exceeding immediate action limit in category 1020 — E-6439, column H.

Col. C. Record number of measurements exceeding immediate action limit in category 0520 — E-6439, column H.

Col. D. Record number of measurements exceeding immediate action limit in category 0530 — E-6439, column H.

Line 8:

Col. A. Compute $\frac{\text{Ln 7A}}{\text{Ln 2A}}$ x 100 and record.

Col. B. Compute $\frac{\text{Ln 7B}}{\text{Ln 2B}}$ x 100 and record.

Col. C. Compute $\frac{\text{Ln 7C}}{\text{Ln 2C}}$ x 100 and record.

Col. D. Compute $\frac{\text{Ln 7D}}{\text{Ln 2D}}$ x 100 and record.

Col. E. Compute and record:

$$\frac{8Ax1A+8Bx1B+8Cx1C+8Dx1D}{1E}$$

This completes the computations required on Form E-5441 G.

6. PREPARATION OF FORM E-5441D—COMPUTATION OF OFFICE NOISE COMPONENT INDEX—MANUAL PROCEDURE

A. General

6.01 Form E-5441D is designed to compute the noise component index at the office level. It does this by weighting and combining ATMS and manual results recorded by an office.

6.02 The sources of information for the preparation of Form E-5441D are Forms E-5441A, E-5441A/F, E-5441C, E-5441G, and the E-5441D for the previous quarter of this year. If an office has no ATMS, Form E-5441C is not required. If an office has no CAROT associated ROTL, Form E-5441G is not required. When preparing Form E-5441D for the first quarter, the previous quarter's Form E-5441D is not required.

6.03 The office and period must be identified on each Form E-5441D completed. This is done on the lines provided at the top of the form.

6.04 The asterisk (*) on lines 3, 5, 7, 9, 10, 11, 12, and 13 indicates that these results are used when the individual office results are summarized for the next higher organizational level on Form E-5441E.

6.05 An example of a completed Form E-5441D is provided in Fig. 6.

OFFICE A
PERIOD 19 1970

E-5441D
BSP 301-122-500
(9-70)

COMPUTATION OF OFFICE NOISE COMPONENT INDEX – MANUAL PROCEDURE

LINE	ITEM SUMMARIZED	INSTRUCTION	RESULT
	MANUAL RESULTS (ACCUMULATED FOR THIS YEAR)		
1	Number of Manually Measured Controlled Trunks	Record	1200
2	1/2 of the Number of Controlled Trunks Tested to 100 or 104 Type Test Lines (With ATMS)	Record From Form E-5441C, Item 2D	97.5
3	Total Equivalent Number of Controlled Trunks Measured Manually for Noise	Add Line 1 + Line 2	* 1297.5
4	Number of Measurements Made This Year	Record From E-5441A for this Period + E-5441D for Last Period This Year, If Any	610
5	% Measurements Made This Year	$\frac{Ln4}{2XLn3} \times 100$	* 23.5
6	Number of Measurements Above Maintenance Limit This Year	Record From E-5441A for this Period + E-5441D for Last Period This Year, If Any	13
7	% Measurements Above Maintenance Limit – This Year	$\frac{Ln6}{Ln4} \times 100$	* 2.1
8	Number of Measurements Above Immediate Action Limit – This Year	Record From E-5441A for this Period and E-5441D for Last Period This Year, If Any	7
9	% Measurements Above Immediate Action Limit – This Year	$\frac{Ln8}{Ln4} \times 100$	* 1.1
	CAROT OR ATMS RESULTS (THIS PERIOD ONLY)		
10	Equivalent Number of Controlled Trunks Measured Automatically for Noise	Record From Form E-5441C Item D E-5441G Item 1E	* 272.5
11	Adjusted % Measurements Made – This Period	Record From Form E-5441C Item 6D E-5441G Item 4E	* 25
12	% Measurements Above Maintenance Limit – This Period	Record From Form E-5441C Item 8D E-5441G Item 6E	* 1.5
13	% Measurements Above Immediate Action Limit – This Period	Record From Form E-5441C Item 10D E-5441G Item 8E	* 0.3
	ATMS – MANUAL COMBINED RESULTS		
14	Total Controlled Trunks	Ln3 + Ln10	1570
15	% Measurements Made	$\frac{Ln5 \times Ln3 + Ln11 \times Ln10}{Ln14}$	23.8
16	% Measurements Above Maintenance Limit	$\frac{Ln7 \times Ln3 + Ln12 \times Ln10}{Ln14}$	2.0
17	% Measurements Above Immediate Action Limit	$\frac{Ln9 \times Ln3 + Ln13 \times Ln10}{Ln14}$	1.0
	OFFICE NOISE COMPONENT INDEX		
18	% Measurements Made – Component Points	Apply Index Table, Provided in Section 301-122-300 to Result of Ln15	9.5
19	% Measurements Above Maintenance Limit – Component Points	Apply Index Table, Provided in Section 301-122-300 to Result of Ln16	88.7
20	Office Noise Component Index	Ln18 + Ln19	98.2

* These Results are used on Form E-5441E

Fig. 6—Computation of Office Noise Component Index—Manual Procedure

B. Summary of Measurements (All computations are rounded to the nearest tenth.)

6.06 Form E-5441D is completed in accordance with the following instructions:

Manual Results (Accumulated for the year)

Line 1 — Record the number of manually measured controlled trunks from the appropriate records.

Line 2 — Record from Form E-5441C, line 2, column D.

Line 3 — Add lines 1 and 2 and record.

Line 4 — Record from this period's ♦Form E-5441A, line 10A or E-5441A/F, line 1A,♦ and Form E-5441D, line 4, for the previous period this year, if any.

Line 5 — Compute $\frac{Ln4}{Ln2 \times Ln3} \times 100$ and record.

♦*Line 6* — Record from this period's Form E-5441A, line 10F or E-5441A/F, line 11F, and Form E-5441D, line 6, for the previous period this year, if any.♦

Line 7 — Compute $\frac{Ln6}{Ln4} \times 100$ and record.

♦*Line 8* — Record from this period's Form E-5441A, line 10G or E-5441A/F, line 11G, and Form E-5441D, line 8, for the previous period this year, if any.♦

Line 9 — Compute $\frac{Ln8}{Ln4} \times 100$ and record.

♦*CAROT or ATMS Results (Accumulated for this period only)*

Line 10 — Record from Form E-5441C, line 3, column D, or E-5441G, line 1, column E.

Line 11 — Record from Form E-5441C, line 6, column D, or E-5441G, line 4, column E.

Line 12 — Record from Form E-5441C, line 8, column D, or E-5441G, line 6, column E.

Line 13 — Record from Form E-5441C, line 10, column D, or E-5441G, line 8, column E.

CAROT/ATMS Manual Combined Results♦

Line 14 — Add lines 3 and 10 and record.

Line 15 — Compute $\frac{Ln5 \times Ln3 + Ln11 \times Ln10}{Ln14}$ and record.

Line 16 — Compute $\frac{Ln7 \times Ln3 + Ln12 \times Ln10}{Ln14}$ and record.

Line 17 — Compute $\frac{Ln9 \times Ln3 + Ln13 \times Ln10}{Ln14}$ and record.

Office Noise Component Index

Line 18 — Apply the "% Required Measurements Completed" Index Table in Section 301-122-300 for the current quarter to the result of line 15 and record the component points indicated.

Line 19 — Apply the "% Trunk Noise Measurements Exceeding Maintenance Limit" Index Table provided in Section 301-122-300 to the result of line 16, and record the component points indicated.

Line 20 — Add the results of lines 18 and 19 and record. This is the noise component index for the office and completes computations required by Form E-5441D.

7. PREPARATION OF FORM E-5441E—COMBINED NOISE COMPONENT INDEX

A. General

7.01 Form E-5441E is designed to compute the noise component index for organizational levels higher than the office.

7.02 The sources of information for preparing Form E-5441E are the Forms E-5441D, if combining office results; the Forms E-5441D being summarized.

7.03 The organizational level being summarized and the period must be identified on each completed Form E-5441E. This is done on the lines provided at the top of the form.

7.04 The asterisk (*) in columns B, D, F, H, J, L, N, and Q on line 16 indicates that these results are used when this organization is included in a higher level summary on another Form E-5441E.

7.05 An example of a completed Form E-5441E is provided in Fig. 8.

B. Summary of Measurements (All computations are rounded to the nearest tenth.)

7.06 Form E-5441E is completed in accordance with the following instructions:

Line 1-15:

Col. A. Enter the name of each organizational entity being summarized.

Col. B. Record the equivalent number of controlled trunks measured manually for noise from Form E-5441D, line 3, or Form E-5441E, line 16, column B.

Col. C. Record the percent of manual measurements made from Form E-5441D, line 5, or Form E-5441E, line 16, column D.

Col. D. Compute $\frac{\text{Col. C x Col. B}}{\text{Col. 16B}}$ and record.

Col. E. Record the percent of manual measurements above the maintenance limit from Form E-5441D, line 7, or Form E-5441E, line 16, column F.

Col. F. Compute $\frac{\text{Col. E x Col. B}}{\text{Col. 16B}}$ and record.

Col. G. Record the percent of manual measurements above the immediate action limit from Form E-5441D, line 9, or Form E-5441E, line 16, column H.

Col. H. Compute $\frac{\text{Col. G x Col. B}}{\text{Col. 16B}}$ and record.

Col. J. Record the equivalent number of ATMS controlled trunks from Form E-5441D, line 16, column J.

Col. K. Record the adjusted % of ATMS measurements made from Form E-5441D, line 11, or Form E-5441E, line 16, column L.

Col. L. Compute $\frac{\text{Col. K x Col. J}}{\text{Col. 16J}}$ and record.

Col. M. Record the number of ATMS measurements above the maintenance limit from Form E-5441D, line 13, or Form E-5441E, line 16, column N.

Col. N. Compute $\frac{\text{Col. M x Col. J}}{\text{Col. 16J}}$ and record.

Col. P. Record the number of ATMS measurements above the immediate action limit from Form E-5441D, line 13, or Form E-5441E, line 16, column Q.

Col. Q. Compute $\frac{\text{Col. P x Col. J}}{\text{Col. 16J}}$ and record.

Line 16: Add the results in columns B, D, F, H, J, L, N, and Q on lines 1 through 15 and record on line 16.

Line 17: Compute

$$\frac{\text{Col.16BxCol.16D+Col.16JxCol.16L}}{\text{Col.16B+Col.16J}}$$

and record in column Q.

Line 18: Compute

$$\frac{\text{Col.16BxCol.16F+Col.16JxCol.16N}}{\text{Col.16B+Col.16J}}$$

and record in column Q.

Line 19: Apply the proper index table provided in Section 301-122-300 to the result in column 17Q and record the subcomponent index in column F and the component points for that index in column Q.

Line 20: Apply the proper index table provided in Section 301-122-300 to the result in column 18Q and record the subcomponent index in column F and the component points for that index in column Q.

Line 21: Add the results in line 18, column Q, and line 19, column Q, and record.

This completes computations required by Form E-5441E.

8. PREPARATION OF FORM E-5441F

A. General

8.01 ▶Form E-5441F is used to provide a continuing report on uncleared noise troubles. Summary of noise measurements by mileage bands and deviation ranges is no longer required when manually reporting noise measurements. Companies using mechanized summary procedures (Section 660-403-011) must continue to report mileage however.

8.02 Sources of information for preparing Form E-5441F are Forms E-5441A and E-593D. A new combined Form E-5441A/F will be provided in the future. (See Fig. 2.)

8.03 Form E-5441F or E-5441A/F may be used at any level of organization. When it is used for subdistrict or a higher level, it becomes a summary of the E-5441F or E-5441A/F for the subordinate levels being summarized. Form E-593D is prepared at the office level only. Form E-5441F is required to be prepared at the office level, and each level of the organization for which Form E-5441F is prepared.

8.04 An example of a completed Form E-5441A/F is provided in Fig. 7.

B. Summary of Data

8.05 The lower portion of Form E-5441A/F or E-5441F is completed in accordance with the following instructions:

Summary of Routine Manual Noise Measurements—This Period

Lines 1-10: Not required on Form E-5441F.

Line 11: Add the entries made in stroke record for total measurements, number of measurements exceeding maintenance, and number exceeding immediate action limits.

Line 12: Compute the percentage (rounded to the nearest tenth) that measurements exceeding maintenance limit and measurements exceeding immediate action limit are of total measurements, eg, E-5441A/F, $\frac{11F}{11A}$.◀

End of Quarter Data On Uncleared Noise Troubles

Line 13: Trunks Presently Above Limit — Record the number of trunks presently above the maintenance limit from Form E-593D or other trouble records. This is the total number of controlled trunks in the office which *still exceed the maintenance limit* at the end of the quarter.

Line 14: Above Limit Over One Year — Record the number of trunks which have been above the maintenance limit for over one year from Form E-593D or other. These trunks are included in line 13 and some may also be included in line 15.

Line 15: Engineering Assistance Requested — Record the total number of trunks pending through this quarter that are above the maintenance limit and have been referred to engineering for corrective action.

9. RESULTS REPORTS

9.01 Results may be summarized at any convenient interval, but all the work done each quarter must be summarized and reported at the end of the quarter for System summaries.

9.02 Quarterly noise component data must be reported by all companies using the Manual Trunk Transmission Maintenance Index summary procedures on the Manual Quarterly Data Report Form as explained in Section 301-120-500. These Manual Quarterly Data Reports are sent by the company to:

Plant Operations Manager—Statistics
American Telephone and Telegraph Company
195 Broadway
New York, New York 10007

They are required for preparation of System summaries and must be received in New York ***no later than the 25th of the month*** following the end of each quarter.

9.03 Reports shall consist of data for controlled trunks only. Measurements on noncontrolled trunks may be summarized for local analysis, but they are not to be included in area and company quarterly reports.

10. ORDERING INFORMATION FOR FORMS

10.01 Forms E-5441A, E-5441C, E-5441D, E-5441E, and E-5441F can be obtained from Western Electric Company in pads of 50, two pads per package. They may be requisitioned in multiples of 100 forms on orders worded as follows:

(Quantity)	Form E-5441A
(Quantity)	Form E-5441C
(Quantity)	Form E-5441D
(Quantity)	Form E-5441E
(Quantity)	Form E-5441F
(Quantity)	Form E-5441A/F

COMBINED NOISE SUMMARY

COMPANY SCB DISTRICT A

AREA ALA OFFICE MAIN

DIVISION North PERIOD 1Q 74

E-5441 A/F

BSP 301-122-500
(1/75)

ROUTINE NOISE MEASUREMENTS – STROKE RECORD		
A NO. OF MEAS.	F (X)	G * IMMED. ACTION
452	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 11 (37)	1 (1)
376	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 (30)	1 (1)
122	𝍸 𝍸 11 (12)	

E5441 A

	SUMMARY OF ROUTINE MANUAL NOISE MEASUREMENTS – THIS PERIOD			
		TOTAL MEAS. – A	NUMBER ABOVE MAINTENANCE LIMIT – F	NUMBER ABOVE IMMEDIATE ACTION LIMIT – G *
11	This Period	950	72	2
12	% of Total This Period	100 %	8 %	0 %

E5441 F

* THESE MEASUREMENTS ARE INCLUDED IN COLUMN F

	END OF QUARTER DATA ON NUMBER OF CONTROLLED TRUNKS ABOVE THE MAINTENANCE LIMIT	
13	TRUNKS PRESENTLY ABOVE LIMIT	15
14	ABOVE LIMITS OVER ONE YEAR	2
15	ENG. ASSISTANCE REQUESTED – TOTAL PENDING THRU THIS QTR.	12

E5441 F

Fig. 7—Combined Stroke Record and Summary of Routine Manual Noise Measurements—This Period

ORGANIZATIONAL LEVEL ALA AREA
PERIOD 1Q 1970

COMBINED NOISE COMPONENT INDEX

E-5441E
BSP 301-122-500

COL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
		MANUAL RESULTS (ACCUMULATED FOR THIS YEAR)							ATMS RESULTS (ACCUMULATED FOR THIS PERIOD)						
LINE ↓	NAME OF THE OFFICE, SUBDISTRICT, DISTRICT, DIVISION, OR AREA BEING SUMMARIZED	NUMBER OF CONTROLLED TRUNKS	% OF MEAS. MADE	% OF MEAS. MADE WEIGHTED	% OF MEAS. ABOVE MTCE. LIMIT	% OF MEAS. ABOVE MTCE. LIMIT WEIGHTED	% OF MEAS. ABOVE IMMED. ACTION	% OF MEAS. ABOVE IMMED. ACTION WEIGHTED	NUMBER OF CONTROLLED TRUNKS	ADJUSTED % OF MEAS. MADE	ADJUSTED % OF MEAS. MADE WEIGHTED	% OF MEAS. ABOVE MTCE. LIMIT	% OF MEAS. ABOVE MTCE. LIMIT WEIGHTED	% OF MEAS. ABOVE IMMED. ACTION	% OF MEAS. ABOVE IMMED. ACTION WEIGHTED
		E-5441D LN. 3 OR E-5441E COL. 16B	E-5441D LN. 5 OR E-5441E COL. 16D	COL. C X COL. B / COL. 16B TO NEAREST TENTH	E-5441D LN. 7 OR E-5441E COL. 16F	COL. E X COL. B / COL. 16B TO NEAREST TENTH	E-5441D LN. 9 OR E-5441E COL. 16H	COL. G X COL. B / COL. 16B TO NEAREST TENTH	E-5441D LN. 10 OR E-5441E COL. 16J	E-5441D LN. 11 OR E-5441E COL. 16L	COL. K X COL. J / COL. 16J TO NEAREST TENTH	E-5441D LN. 12 OR E-5441E COL. 16N	COL. M X COL. J / COL. 16J TO NEAREST TENTH	E-5441D LN. 13 OR E-5441E COL. 16Q	COL. P X COL. J / COL. 16J TO NEAREST TENTH
1	NORTH DIV	7200	24.2	7.2	1.8	0.5	1.0	0.3	1000	25	4.2	1.6	0.3	1.2	0.2
2	CENTRAL DIV	10400	23.8	10.3	2.2	0.9	1.0	0.4	5000	25	20.8	2.2	1.8	1.3	1.1
3	SOUTH DIV	6500	25.0	6.7	0.8	0.2	0.2	0.1	0						
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16	SUMMARY ADD COLS. →	* 24100		* 24.2		* 1.6		* 0.8	* 6000		* 25.0		* 2.1		* 1.3
17	ATMS – MANUAL COMBINED % MEASUREMENTS MADE					COMPUTE (COL. 16B X COL. 16D · COL. 16J X COL. 16L) / (COL. 16B · COL. 16J) TO NEAREST TENTH AND RECORD →										24.4
18	ATMS – MANUAL COMBINED % ABOVE MAINTENANCE LIMIT					COMPUTE (COL. 16B X COL. 16F · COL. 16J X COL. 16N) / (COL. 16B · COL. 16J) TO NEAREST TENTH AND RECORD →										1.7
19	COMPONENT INDEX FOR LN. 17 — APPLY INDEX TABLE PROVIDED IN BSP 301-122-300 AND RECORD →					98.0		COMPONENT POINTS FOR COL. 19F — RECORD FROM TABLE USED IN COL. 19F →							9.8
20	COMPONENT INDEX FOR LN. 18 — APPLY INDEX TABLE PROVIDED IN BSP 301-122-300 AND RECORD →					98.8		COMPONENT POINTS FOR COL. 20F — RECORD FROM TABLE USED IN COL. 20F →							88.9
21	COMBINED NOISE COMPONENT INDEX FOR THIS ORGANIZATIONAL LEVEL										ADD COL. 19Q · COL. 20Q AND RECORD →				98.7

* THESE RESULTS ARE USED FOR HIGHER SUMMARIES ON OTHER FORMS E-5441E

Fig. 8—Combined Noise Component Index