

CLASSIFYING AND RECORDING TROUBLE DATA STEP-BY-STEP OFFICES

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1. GENERAL

1.01 This section describes forms used to record, classify, analyze and summarize equipment trouble data in Step-by-Step Offices. These records are usually kept locally.

1.02 This section is reissued to show changes in the forms used and introduce new forms to be used by offices equipped for AMA or ANI. Since this is a general revision, arrows ordinarily used to show changes have been omitted.

1.03 This section covers dial equipment only. Record troubles found on associated manually operated switchboards as described in the

section entitled "Classifying and Recording Trouble Data, Local Manual Equipment." For the purpose of this section, the division between dial and manual equipment is the cable turning section of a manually operated board. Cord and position circuit apparatus of switchboard positions are considered manual equipment, even if located in the switchroom. If toll terminal equipment is involved, the division is at the distributing frame cable terminals which connect to the dial trunk equipment.

1.04 It is important to keep current, comprehensive records of all found and not found trouble for applying Qualitative Maintenance.

1.05 The trouble data recorded on these forms are obtained from the following sources which are described in other BSP sections.

FORM	TITLE
E-338	Routine Test and Inspection Record
E-4004	Step-by-Step Trouble Ticket
E-4278	Step-by-Step Routine Trouble Ticket
E-4086	Inspection and Routine of Central Office Equipment
E-4289	Step-by-Step Trouble Recorder Card

2. FORMS

FORM	TITLE	COLOR	SIZE	USE
E-3687	Stroke Record of Trouble Data — AMA/ANI Equipment	White	8-3/8" x 10-7/8"	To stroke found and not found trouble
E-4005	Stroke Record of Trouble Data — Step-by-Step Offices	White	16-7/8" x 10-7/8"	To stroke found and not found trouble
E-4279	Summary of Trouble Data — Step-by-Step Offices	White	8-3/8" x 10-7/8"	To show monthly trouble performance

2. FORMS (Cont)

FORM	TITLE	COLOR	SIZE	USE
E-4833	Summary of Trouble Data — AMA/ANI Equipment	White	8-3/8" x 10-7/8"	To show monthly trouble performance
E-4901	Miscellaneous Trouble Data — Step-by-Step Offices	White	16-7/8" x 10-7/8"	To show on a daily basis miscellaneous trouble data

3. PURPOSES OF FORMS AND EXPLANATION OF HEADINGS

E-4005 Stroke Record of Trouble Data —
Step-by-Step Offices and E-3687 Stroke Record of
Trouble Data — AMA/ANI Equipment

3.01 These forms provide a cumulative record of the types of found and not found troubles on apparatus by equipment groups. Figs. 1 and 2 show these forms.

Offices equipped with both ANI and CAMA will use two E-3687 forms—one to stroke ANI equipment troubles and one to stroke AMA equipment troubles. To differentiate in trouble coding, prefix the ANI equipment groups with the letter A (A-21, A-22, etc).

3.02 **"T", "R", and "I" Troubles:** Stroke troubles "T", "R", or "I" as covered below to show found and not found trouble.

(a) A "T" trouble in the central office equipment is the result of a *report* from a customer, an employee, another department or office, or a trouble indicated by any alarm signal which includes trouble recorder registrations.

(b) An "R" trouble in the central office equipment is the result of the performance of scheduled—insurance or productive—routine tests and inspections. The work involved may be mechanical, electrical or visual. Indications of trouble on tests of interoffice circuits should be recorded by the office in which the trouble is located, or appears to be located, regardless of who made the test. Troubles located externally to the heat coils (or their equivalent) of both offices are excluded from central office stroke records.

(c) An "I" trouble in the central office equipment includes all other trouble not classified as "T" or "R" which includes those disclosed by tests and inspections not scheduled.

3.03 The total of the "T" plus "R" troubles for any item shows its relative performance when compared with the office expectancy (Par. 3.08). The "I" items are a record of trouble disclosed as a result of nonperiodic tests and inspections.

3.04 Use Form E-3687 for stroking "T", "R", and "I" troubles in AMA or ANI equipment and Form E-4005 for stroking "T", "R", and "I" troubles in all other equipment.

3.05 Make a stroke for each *reported* trouble (Par. 3.19) in the "T" column of the equipment affected on a line corresponding to the item found. In the "R" column of the equipment affected, on a line corresponding to the item found, make a stroke for each trouble disclosed by *scheduled* routine tests and inspections. Make a stroke in the "I" column of the equipment involved, on a line corresponding to the item found, for each trouble resulting from sampling inspections, observations or tests not periodically scheduled.

Note: Where it is desired to identify troubles caused by plant operation (workman-caused troubles), differently colored pencil may be used.

COLUMN HEADINGS

3.06 **Code:** Abbreviations for trouble classifications are shown in this column. These abbreviations, together with the numbers indicating equipment groups (Par. 3.07), are used in the coding of trouble tickets.

3.07 **Equipment and Units in Service:** The columns shall be identified by number and abbreviations and will include equipment as defined below. In smaller offices, where all equipment groups are not applicable, one sheet can thus be used for several months. The numerical

designations facilitate the coding of trouble tickets; e.g., a dirty contact on the cutoff relay of a customer line circuit would be coded 1/CRD.

Form E-4005 Equipment Group Headings

Col.
No.

- 1 **Customer Line Circuit (L)**: This equipment group includes all apparatus and wiring particularly associated with a customer line circuit. The line and cutoff relays of primary line switches and of the line finder type are included. The message register on message rate lines is also included. Cabling to the MDF, IDF and line and cutoff relays, associated terminals and cross connections, as well as main frame protection, is included. The line switch, or line finder, multiple terminals are also included. Do not include cabling to or terminals at connector banks. (See equipment group 11).
- 2 **Line Finder (LF)**: Includes all apparatus and wiring (except that mentioned in 1 above) on the line finder frames.
- 3 **Line Switches (LS)**: Includes all apparatus and wiring (except that mentioned in 1 above) in primary and secondary line switches and their associated master switches.
- 4 **Selectors (1 SEL, 2 SEL, etc.)**: These equipment groups include all apparatus and wiring on the selector frames. Use one column for each type selector frame in large offices, or group under one column in smaller offices. Offices equipped with auxiliary selectors should include them under the associated selector groups.
- 9 **Service Code Selectors (SERV CD)**: Includes all apparatus and wiring associated with service code selectors. Auxiliary service code selectors, if provided, are also included.
- 10 **Selector Repeater (SEL REP)**: Includes all apparatus and wiring associated with bypass selectors in branch offices.
- 11 **Connector (C)**: Includes all apparatus and wiring associated with connector frames. Includes cabling to the IDF and associated soldered connections. IDF cross connections are included under 1 above.

Col.
No.

- 12 **Trunks (TRKS)**: Includes all apparatus and wiring associated with in, out and miscellaneous trunk circuits (except AMA and ANI). Cabling to MDF or TDF and soldered connections are included. Associated cross connections are included under MISC (group 15).
- 13 **Repeaters (REP)**: Includes all apparatus and wiring associated with in, out and two-way repeaters. Cabling to MDF or TDF and soldered connections are included. Associated cross connections are included under MISC (group 15).
- 14 **Rotary Out Trunk Switch (ROTS)**: Includes all apparatus and wiring associated with 3- or 4-wire rotary out trunk switches arranged for preselection. Cabling to MDF or TDF and soldered connections are included. Associated cross connections are included under MISC (group 15).
- 15 **Miscellaneous (MISC)**: Includes all equipment (other than AMA or ANI) for which no classification has been given. Cabling between dissimilar frames is included in this classification but cabling between like frames is chargeable to its particular frame classification. Miscellaneous desks and test equipment and their associated wiring are also included. MDF and TDF cross connections, except those included in group 1, are also included.
- 16 **Vacant Columns**: May be used for any equipment group for which specific data are desired.

Form E-3687 Equipment Group Headings — AMA

Col.
No.

- 21 **Recorder (RCDR)**: Includes all apparatus and wiring in the recorder circuits and the associated call identity indexers and perforators.
- 22 **Transverter (TV)**: Includes all apparatus and wiring on the transverter frames.
- 23 **AMA Connector (AMA-C)**: Includes all apparatus and wiring on the sender transverter connector, sender connector, sender trunk connector, identifier trunk connector, recorder connector and code connector bays.

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Col.
No.

- 24 **Identifier (ID):** Includes all apparatus and wiring on the identifier frames (including route relay bay), thousands number frames and common number and class frames.
- 25 **Master Timer (MT):** Includes all apparatus and wiring on the master timer frame.
- 26 **AMA Trunk (TRK):** Includes all apparatus and wiring on the AMA outgoing trunk frames and associated trunk finder frame.
- 27 **Sender (SDR):** Includes all apparatus and wiring on the sender frames. Includes only that portion which comprises the sender itself. The associated connector bay is chargeable under group 23.
- 28 **Miscellaneous (MISC):** Includes all AMA apparatus and wiring for which no classification has been given. It includes the trouble recorder frame and associated connector, automatic trunk test frame and sender-identifier-transverter test frame.

Troubles in cable wiring between the cable butt and the apparatus terminals on the frame shall be classified as part of the frame with which they are associated.

Form E-3687 Equipment Group Headings — ANI

Col.
No.

- 21 **Outpulser (OPLSR):** Includes all apparatus and wiring in the outpulser circuits.
- 22 **Identifier (ID):** Includes all apparatus and wiring on the identifier frame.
- 23 **ANI Connector (ANI-C):** Includes all apparatus and wiring associated with outpulser connectors. Includes trunk connector units mounted on trunk frames, outpulser connector units and outpulser busy units mounted on miscellaneous relay racks.
- 24 **Number Network (NN):** Includes all apparatus and wiring on the number network frames.
- 25 **ANI Outgoing Trunks (ANI-OGT):** Includes all apparatus and wiring associated with the ANI outgoing trunks.

Col.
No.

- 26 **Vacant Columns:** May be used for any equipment groups for which special data are required.
- 27
- 28 **Miscellaneous (MISC):** Includes all ANI apparatus and wiring for which no classification has been designated. Includes outpulser-identifier-trunk test equipment.

Troubles in cable wiring between the cable butt and the apparatus terminals on the frame shall be classified as part of the frame with which they are associated.

Form E-3687 Equipment Group Headings — CAMA

Col.
No.

- 21 **Recorder (RCDR):** Includes all apparatus and wiring in the CAMA recorders (except connector portion — see 23) and associated perforators and call identity indexers.
- 22 **Transverter (TV):** Includes all apparatus and wiring on the transverter frames.
- 23 **AMA Connector (AMA-C):** Includes all apparatus and wiring on the transverter connector frames, decoder connector frames, and recorder connector circuits.
- 24 **Incoming Register (IR):** Includes all apparatus and wiring in the incoming register circuits and incoming register link frames.
- 25 **Master Timer and Decoder (MT-DR):** Includes all apparatus and wiring on the master timer and decoder frames.
- 26 **Sender (SDR):** Includes all apparatus and wiring in the MF senders and associated trunk finders.
- 27 **Position Link (PL):** Includes all apparatus and wiring on the position link frames. CAMA positions and associated relay circuits are switchboard equipment and **are not** included in CAMA stroke data.
- 28 **Miscellaneous (MISC):** Includes all CAMA apparatus and wiring for which no classification has been designated.

Troubles in cable wiring between the cable butt and the apparatus terminals on the frame shall be classified as part of the frame with which they are associated.

In the equipment group brackets, record the number of units in service on the first day of the month for which the form is prepared. It is not necessary to show units in the miscellaneous column.

3.08 Office Expectancy (EXP): This is the anticipated number of troubles per month on a particular item of equipment when that item is giving *satisfactory service*. Expectancies cannot be regarded as true indicators without considering the quality of service being given. Until the time that an office is giving satisfactory service, as measured by other operating indexes, expectancies are only a history of past trouble performance.

Develop expectancies in items for which there are normally enough troubles to make the figure a useful guide. The figure should be an average of the "T" plus "R" troubles found on the item for the previous year. Express as whole numbers. Subsequent additions of equipment will alter office expectancies.

3.09 Total: These columns are provided as an aid in adding strokes for the monthly summary report form.

LINE HEADINGS

3.10 There are five main groups (contacts, adjustment, defects, wiring, and no trouble found) which classify the general nature of the trouble data. In recording "T", "R", and "I" troubles, make only one stroke for each found or not found trouble. Charge the trouble against the classification that is the primary cause of the trouble.

3.11 Contacts: Contact troubles are classified under four main subheadings.

(a) **Dirt:** Classify as "dirt" all troubles caused by failure of contacts to complete a circuit when the reason for the failure is the presence of a nonconducting material between the contacts. Include all trouble where cleaning the contacts completes the circuit, regardless of the fact that there may be very little contact follow and subsequent adjustment is made. Contacts cleaned by compressed air should not be classified.

(b) **Lock:** Classify as "lock" those troubles caused by a failure of contacts to open a circuit after a relay or switch has operated

or released. This may be caused by build-ups, cavities, or welded, frozen or burned contacts. Also include cases where a filament of conducting material is drawn out between the contact members.

(c) **Other:** Classify as "other" those troubles caused by failure of contacts to complete a circuit for reason other than dirt. Include troubles such as missing or eroded contacts.

(d) **Contact Other Than Relay:** Covers all troubles caused by contact failure after operation or release of a commutator wiper, bank wiper, vertical off normal, cam springs, switch jack springs, etc. Include all trouble where cleaning the contacts completes the circuit, regardless of the fact that there may be very little contact follow and subsequent adjustment is made.

3.12 Adjustment: Classify as "adjustment" those troubles caused by faulty electrical or mechanical adjustment of apparatus or by foreign substances which affect the *mechanical* operation of the equipment. Do not include adjustments made on apparatus coincident with clearing a "T", "R", or "I" trouble of another classification; e.g., any necessary electrical or mechanical adjustment on the apparatus, after the contacts have been cleaned or dressed, would not be recorded as a trouble stroke.

3.13 Defects: Classify as "defects" all cases where it is necessary to replace the apparatus (except contacts). Include spring assemblies crossed or grounded in the spring pile-up due to filings, defective insulators, etc. (internal defects), whether the apparatus is replaced or not. Do not include circuit crosses and grounds due to solder splashes or wire clippings. Include these under "wiring" trouble.

3.14 Wiring:

(a) **Other:** Classify as "wiring-other" troubles such as loose connections, opens, crosses or low insulation resistance, either in the wiring or between wiring terminals. Also include all cases where foreign matter crosses or grounds an *electrical* circuit (not mechanical trouble); e.g., a piece of wire or solder which causes a short circuit. Do not include cross-connection troubles.

(b) **Cross Connection:** Under this heading, stroke troubles caused by missing or incorrectly wired cross connections on distributing frames or other equipment. Include troubles caused by cross connections which are open, crossed, grounded, transposed, or which should have been removed.

3.15 No Trouble Found (NTF): Classify as "NTF" all not found trouble under a particular equipment group or under miscellaneous if the equipment group cannot be determined.

(a) **Alarm:** Under this heading make a stroke for those tickets where an investigation has been made due to an alarm when no trouble could be found. Stuck sender investigations resulting in no trouble found are stroked on this line.

(b) **Other:** Classify as "NTFO" those tickets where an investigation has been made due to a reported trouble, a routine, or an inspection, where no trouble could be found.

This record is of value to the person making the trouble analysis and for evaluating the effectiveness of routines.

Form E-4901 Miscellaneous Trouble Data — Step-by-Step Offices

3.16 This form is used to record data from plant and traffic registers. Trouble reports and the number of found troubles are totaled for each day and recorded by classes. The date column has been left blank for other than calendar month reporting. This form provides a concise picture of trouble rate performance and is useful in applying Qualitative Maintenance. It may be prepared as a daily or as a cumulative record, or both. Fig. 3 shows this form.

Traffic Data

3.17 In offices where registers are read daily by the Traffic Department the total usage figures required should be obtained from them. If daily readings are not taken by the Traffic Department the registers may be read by the maintenance force. Total figures for less frequent intervals than daily, as may be supplied by the Traffic Department, can be used. Consult local Traffic Department to determine source of traffic data. Enter the total usage figures in appropriate columns.

(a) **Total Originating Usage:** A weighted figure computed by the Traffic Department from line finder peg count registrations.

(b) **AMA or ANI Usage:** Total transverter usage peg count registrations for AMA. Total outpulser usage peg count less the identifier test peg count registrations for ANI.

Trouble Registration and Troubles by Class of Report

3.18 Plant registers provide the necessary trouble registration information and should be read at the same time each day. Use Form E-4744 for recording register readings.

Note: Registrations on plant registers caused by testing the registers or associated equipment *made busy* to service may be considered test calls. Read the register before and after tests are made and count the difference as allowable deductions. No other discounts are allowed.

3.19 Serially numbered trouble tickets should be issued on all cases of trouble. To identify their origin, reports are given an alphabetical classification. As a guide to the various conditions for which a trouble ticket will be issued, the following will apply.

TROUBLE CLASS	WHEN ISSUED
A	For every report from the Plant Service Center on a customer line involving suspected central office trouble.
B	For every trouble on <i>dial</i> equipment reported by the traffic forces. <i>Note:</i> Do not include tickets issued to cover permanent signal traces, coin supervisory traces, etc. They are considered only as memoranda unless central office trouble is found.
C	For every stuck sender on which a trace is initiated.
D	For every alarm on which an actual investigation is made to determine its cause.
H	For each case where an investigation is made to determine the cause of a trouble record (card or ticket) or series of trouble records from the AMA or ANI equipment.

TROUBLE CLASS	WHEN ISSUED
I	For trouble disclosed as the result of sampling inspections, observations or tests not periodically scheduled, or received as the result of such testing at another office.
J	For each trouble reported by another office (except those classified "R" or "I") or any source not otherwise covered.
R	For every failure disclosed by scheduled—insurance or productive—routine tests and inspections, or received as the result of such testing at another office.

Troubles found external to the central office should not be counted. If it is desired to keep a record of these troubles to determine the effectiveness of the routine effort, the miscellaneous column may be used.

Trouble classes A,B,C,D,H, and J are all considered *reported* (T) trouble.

3.20 Tickets Issued and Troubles Found:

Enter the totals of tickets issued and troubles found in each trouble class. Customer reports are further divided to show central office trouble location in reference to Plant Service Center coding.

Miscellaneous

3.21 May be used for recording additional trouble information as directed locally.

Remarks

3.22 Record any unusual occurrences or weather conditions that cause wide variations from normal daily readings.

E-4279 Summary of Trouble Data — Step-by-Step Offices and E-4833 Summary of Trouble Data — AMA/ANI Equipment

3.23 These forms are used to summarize central office performance on a monthly basis. They may be prepared to show: (1) "T", "R", and "I" troubles and miscellaneous information for a four-month period; (2) "T", "R", or "I" troubles individually by sheet and miscel-

laneous information for a twelve-month period; (3) troubles by group class (equipment) for either period as described above. Figs. 4 and 5 show these forms.

3.24 **Equipment:** Enter the name of the equipment group or "Total for Office" as determined locally.

3.25 **Units in Service:** Enter the same figure used on Forms E-4005 or E-3687 for the various equipment groups.

3.26 **Period/Item:** Enter the abbreviation for the month(s) covered by the report or identify the columns as "T", "R", and "I" as determined locally.

3.27 **Office Expectancy (OFF. EXP.):** This is the anticipated number of troubles by type. (See Par. 3.08.)

3.28 **Found and Not Found Troubles:** Enter the totals of the types of troubles as computed on stroke record Form E-870 or E-3687.

Miscellaneous Trouble Data

3.29 This is a summary of trouble rate performance. The figures are obtained from the totals of similarly designated columns on Form E-4901.

(a) Form E-4279:

(1) **Total Originating Usages (10,000):** Divide the total usages by 10,000. Enter the result expressed to one decimal place.

(2) **Line Codes:** Enter the totals from Form E-4901.

(b) Form E-4833:

(1) **Total AMA/ANI Usages (10,000):** Divide the total from Form E-4901 by 10,000. Enter the result expressed to one decimal place.

(2) **TV/OP Tbl. Reg. per 10,000 AMA/ANI Usages:** This figure is the total (1st & 2nd) Transverter (AMA) or outputer (ANI) trouble registrations from Form E-4901 less the test call record, if not deducted from daily readings, divided by the figure obtained in (1). Enter this figure.

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(3) *RCDR/ID Tbl. Reg. per 10,000 AMA/ANI Usages:* Compute by method described in (2).

(4) *M.T. Tbl. Reg. per 10,000 AMA Usages:* Compute by method described in (2).

(5) *BBF per 10,000 AMA Usages:* Compute by method described in (2).

(6) *Stuck Senders per 10,000 AMA Usages:* Compute by method described in (2).

3.30 Remarks: Explain any major change from previous month's levels or trends.

4. ORDERING INFORMATION

4.01 These forms are packaged as shown below:

FORM	FORMS PER PACKAGE
E-3687	50
E-4005	50
E-4279	50
E-4833	50
E-4901	50

Order in multiples of the packaging units.
Word requisitions like this:

(Quantity) Form E-()

STROKE RECORD OF TROUBLE DATA STEP-BY-STEP OFFICES

CITY		OFFICE												PERIOD COVERED												TOTAL		
EQUIPMENT & UNITS IN SERVICE		CODE		A			B			C			D			E			F			G			H			
		DIRT	LOCK	T	R	I	T	R	I	T	R	I	T	R	I	T	R	I	T	R	I	T	R	I	T	R	I	
FOUND TROUBLES	CONTACTS	DIRT	CRL																									
	RELAY	LOCK	CRL																									
	OTHER	OTHER	CRO																									
	BANK & WIPER	BANK & WIPER	CBW																									
	OTHER SP. ASSY	OTHER SP. ASSY	COSA																									
	RELAY	RELAY	AR																									
	BANK & WIPER	BANK & WIPER	ABW																									
	OTHER SP. ASSY	OTHER SP. ASSY	AOSA																									
	SWITCH MECH.	SWITCH MECH.	ASM																									
	OTHER	OTHER	AO																									
	RELAY	RELAY	DR																									
	BANK & WIPER	BANK & WIPER	DBW																									
OTHER SP. ASSY	OTHER SP. ASSY	DOSA																										
SWITCH MECH.	SWITCH MECH.	DSM																										
OTHER	OTHER	DO																										
OTHER	OTHER	WO																										
CROSS CONNECTION	CROSS CONNECTION	WX																										
TOTAL FOUND																												
NTF	ALARM	NTFA																										
NTF	OTHER	NTFO																										
TOTAL NOT FOUND																												

EQUIPMENT & UNITS IN SERVICE		CODE		A			B			C			D			E			F			G			TOTAL			
		DIRT	LOCK	T	R	I	T	R	I	T	R	I	T	R	I	T	R	I	T	R	I	T	R	I	T	R	I	
FOUND TROUBLES	CONTACTS	DIRT	CRL																									
	RELAY	LOCK	CRL																									
	OTHER	OTHER	CRO																									
	BANK & WIPER	BANK & WIPER	CBW																									
	OTHER SP. ASSY	OTHER SP. ASSY	COSA																									
	RELAY	RELAY	AR																									
	BANK & WIPER	BANK & WIPER	ABW																									
	OTHER SP. ASSY	OTHER SP. ASSY	AOSA																									
	SWITCH MECH.	SWITCH MECH.	ASM																									
	OTHER	OTHER	AO																									
	RELAY	RELAY	DR																									
	BANK & WIPER	BANK & WIPER	DBW																									
OTHER SP. ASSY	OTHER SP. ASSY	DOSA																										
SWITCH MECH.	SWITCH MECH.	DSM																										
OTHER	OTHER	DO																										
OTHER	OTHER	WO																										
CROSS CONNECTION	CROSS CONNECTION	WX																										
TOTAL FOUND																												
NTF	ALARM	NTFA																										
NTF	OTHER	NTFO																										
TOTAL NOT FOUND																												

Fig. 1 - Stroke Record of Trouble Data - Step-by-Step Offices

- | | | | |
|-------------|---|-------------|--|
| NOTE | EXPLANATION | NOTE | EXPLANATION |
| A | Space for numerical designation of equipment group(s) | F | Not found troubles |
| B | Space for abbreviated designation of equipment groups | G | Office expectancy |
| C | Brackets for indicating "Units in Service" | H | Column for stroking "T" Tbls. |
| D | Trouble code abbreviation | I | Column for stroking "R" Tbls. |
| E | Found troubles | J | Column for stroking "I" Tbls. |
| | | K | Columns for totalizing strokes for monthly summary |

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SUMMARY OF TROUBLE DATA STEP-BY-STEP OFFICES

FORM E-4279
(10-61)

CITY _____		OFFICE _____		PERIOD COVERED _____					
EQUIPMENT →		OFF. EXP. C	A				UNITS IN SERVICE		
PERIOD/ITEM →								B	TOTAL
FOUND TROUBLES	CONTACTS	RELAY	DIRT						
			LOCK						
			OTHER						
		BANK & WIPER							
		OTHER SP. ASSY							
	ADJUSTMENT	RELAY							
		BANK & WIPER							
		OTHER SP. ASSY							
		SWITCH MECH.							
		OTHER							
	DEFECT	RELAY							
		BANK & WIPER							
		OTHER SP. ASSY							
		SWITCH MECH.							
		OTHER							
WIRING	OTHER								
	CROSS CONN.								
TOTAL FOUND									
NTF	ALARM								
	OTHER								
TOTAL NOT FOUND									
TOTAL ORIG. USAGES (10,000)									
LINE CODES	CODE - 5								
	CODE - 8								
REMARKS:									

Fig. 4 - Summary of Trouble Data - Step-by-Step Offices

- | | |
|-------------|---|
| NOTE | EXPLANATION |
| A | Identity of equipment group(s) covered by summary or "Total for Office" |
| B | Total(s) of similar column(s) on Form E-4005 |
| C | Expectancy for equipment group(s) or total for office from Form E-4005 |
| D | Reporting months or "T", "R", and "I" as required by type of summary |
| E | Found trouble summary |
| F | Not found trouble summary |
| G | Usage and customer line code data from Form E-4901 |

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**SUMMARY OF TROUBLE DATA
AMA/ANI EQUIPMENT**

FORM E-4833
(10-61)

CITY _____ OFFICE _____ PERIOD COVERED _____

EQUIPMENT →	C OFF EXP	A												UNITS IN SERVICE		
		D												B		TOTAL
PERIOD/ITEM →																
E FOUND TROUBLES	CONTACTS	DIRT														
		LOCK														
		OTHER														
	ADJUSTMENT	RELAY														
		SWITCH														
		OTHER														
	DEFECTS	RELAY														
		SWITCH														
		TUBE														
	WIRING	OTHER														
		CROSS CONN.														
	TOTAL FOUND															
F NTF	ALARM															
	OTHER															
	TOTAL NOT FOUND															

MISCELLANEOUS

TOTAL AMA/ANI USAGES (10,000)		
PER 10,000 AMA/ANI USAGES	TV/OP TBL. REG.	
	RCDR/ID TBL. REG.	
PER 10,000 AMA USAGES	M.T. TBL. REG.	
	TRANSV. BBF	
	S X S STUCK SNDRS.	

REMARKS

Fig. 5 – Summary of Trouble Data — AMA/ANI Equipment

NOTE

EXPLANATION

- A Identity of equipment group(s) covered by summary or "Total for Office"
- B Total(s) of similar column(s) on Form E-3687
- C Expectancy for equipment group(s) or total for office from Form E-3687
- D Reporting months or "T", "R", and "I" as required by type of summary
- E Found trouble summary
- F Not found trouble summary
- G Usage and trouble data computed from Form E-4901