REPLACING PAGE ADDENDUM
Filing Instructions:

1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.
2. INSERT THE ATTACHED PAGES INTO THE SECTION IN THEIR PLACE.
3. PLACE THIS PINK SHEET AHEAD OF PAGE 1 OF THE SECTION.

ADDENDUM 216-901-302
Issue 1, November 1966
AT&TCo Standard

AUTOMATIC NUMBER IDENTIFICATION

ANALYSIS OF TROUBLE TICKETS

NO. 1 CROSSBAR OFFICES

1. INTRODUCTION

1.001 This addendum supplements Section 216-901-302, Issue 3. The attached pages must be inserted in the section in accordance with the filing instructions above.

1.002 The addendum is issued to indicate changes in Table A.

Attached:

Page 1 dated November 1966, reissued
Page 2 dated November 1966, revised

AUTOMATIC NUMBER IDENTIFICATION

ANALYSIS OF TROUBLE TICKETS

NO. 1 CROSSBAR OFFICES

CONTENTS PAGE

1. GENERAL

1.01 This section describes procedures involved in analyzing trouble tickets from service calls printed by the ANI trouble ticketer circuit. For tests of the trouble ticketer, refer to Section 216-903-501.

1.02 This section is reissued to revise Table A to include character position designations of automatic identified outward dialing (AIOD) calls. Analysis of an AIOD call digit failure is added in 4.14.

1.03 The AIOD features of the ANI-type B trouble ticketer are required when ANI calls originate at PBX groups which are arranged for AIOD service.

2. TROUBLE TICKET

2.01 *Description:* A trouble ticket is a slip of yellow paper approximately 5 inches long and 2-1/2 inches wide with a row of 40 numbers, dashes, and asterisks printed along the top. The remainder of the ticket is blank to provide space for the comments of the maintenance personnel.

2.02 *Trouble Ticket Data:* Each of the possible 12 characters dash (—), asterisk (*), and number (0-9), printed under the 40 character positions on the ticket has a meaning as shown in information notes of trouble ticketer circuit SD-95816-01.

3. PROCEDURE FOR TROUBLE TICKET ANALYSIS

3.01 *General:* Character positions are numbered from left to right, 1 through 40. Notations used in this section, such as 26-4, indicates character position 26 and the numeral 4 printed in that position on the ticket.

3.02 *Information Areas:* To speed analysis of trouble tickets, certain character positions or groups of positions provide specific pieces of information (Table A). For available characters, see SD-95816-01, Note 301. For meaning of zero and nine in a particular character position, see Tables B and C.

→ **TABLE A — FUNCTION OF CHARACTER POSITIONS**

FUNCTION		CHARACTER POSITIONS
Margin		1, 2
Type of call		3
ANI trunk number	Trunk subgp tens	4
	Trunk subgp units	5
	Trunk units	6
Outpulser		7
Ident and trial		8
Ident group		9
AIOD translator or cross office ident		10
Calling office or AIOD office index		11
Calling line directory No. or PBX station No.	Thousands	12
	Hundreds	13
	Tens	14
	Units	15
Party information		16
→ Trunk tens *		17
Index mark		18
Spacer		19

FUNCTION		CHARACTER POSITIONS
Outpulser progress		20
Identifier progress	Office steering	21
	First attempt	22
	Second attempt	23
Spacer		24
Outpulser progress, outpulser steering		25, 26
AIOD progress		27
Spacer		28
Information digit		29
Calling numerals digits checked		30, 31
Outpulser	Misc relays	32
	Timers	33
Spacer		34
Time of day	Hours tens	35
	Hour units	36
	Minute tens	37
	Minute units	38
Margin		39, 40

→ *Character position 17 provides trunk tens information only when more than 48 subgroups
→ of trunks in any identifier group are furnished.

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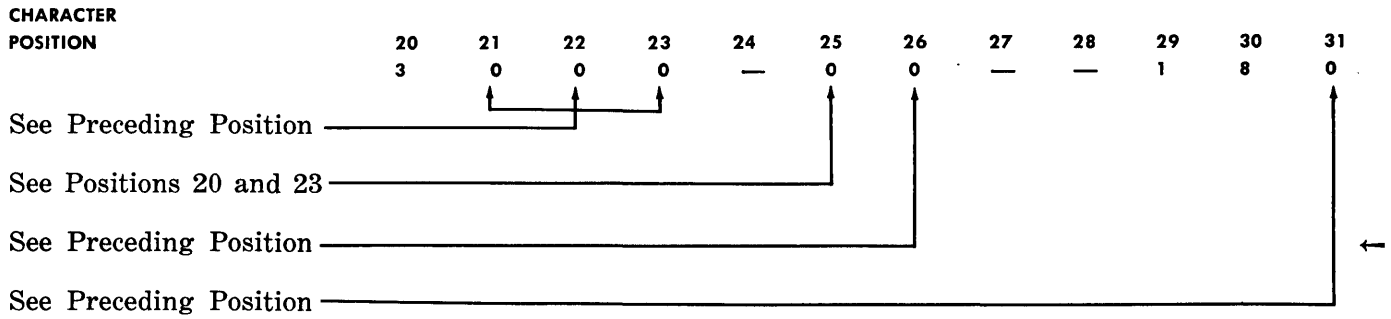
Type of call		3
ANI trunk number	Trunk subgp tens	4
	Trunk subgp units	5
	Trunk units	6
Outpulser		7
Ident and trial		8
Ident group		9
AIOD translator or cross office ident		10
Calling office or AIOD office index		11
Calling line directory No. or PBX station No.	Thousands	12
	Hundreds	13
	Tens	14
	Units	15
Party information		16
Spacer		17
Index mark		18
Spacer		19
Outpulser progress		20
Identifier progress	Office steering	21
	First attempt	22
	Second attempt	23
Spacer		24
Outpulser progress, outpulser steering		25, 26
AIOD progress		27
Spacer		28
Information digit		29
Calling numerals digits checked		30, 31
Outpulser	Misc relays	32
	Timers	33
Spacer		34
Time of day	Hour tens	35
	Hour units	36
	Minute tens	37
	Minute units	38
Margin		39, 40

TABLE B — MEANING OF ZERO IN PARTICULAR CHARACTER POSITIONS

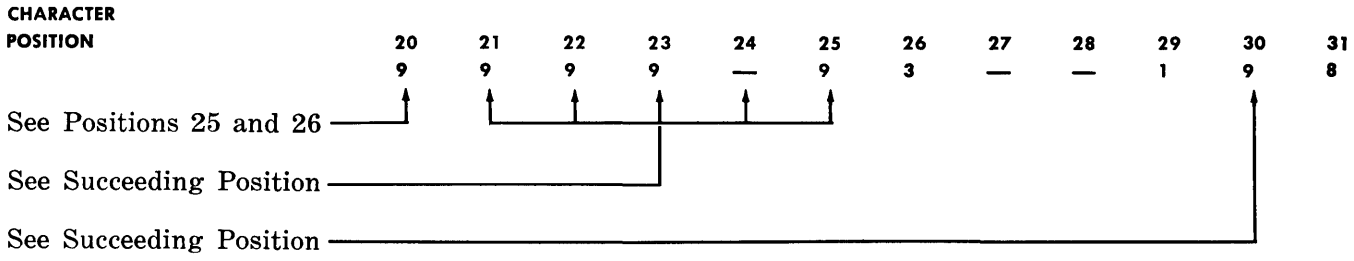
Note: Positions 21, 22, 23, 25, 26, and 31 use zero (0) as an indication to look back to a preceding position.



The zero in position 31 indicates that position 30 should be examined for information and the other zeros indicate, by progressive steps, that position 20 should be examined for information. See zeros in typical trouble tickets in Part 4.

TABLE C — MEANING OF NINE IN PARTICULAR CHARACTER POSITIONS

Note: Positions 20, 21, 22, 23, 25, and 30 use nine (9) as an indication to look forward to a succeeding position.



The nine in position 21 indicates that position 22 should be examined and the other nines indicate, by progressive steps, position 26 should be examined. Position 20 indicates positions 25 and 26 should be examined. The nine in position 30 indicates position 31 should be examined.

Many trouble tickets require only a glance at one particular portion, the calling number or the outpulser number, to tell the maintenance man what he wants to know.

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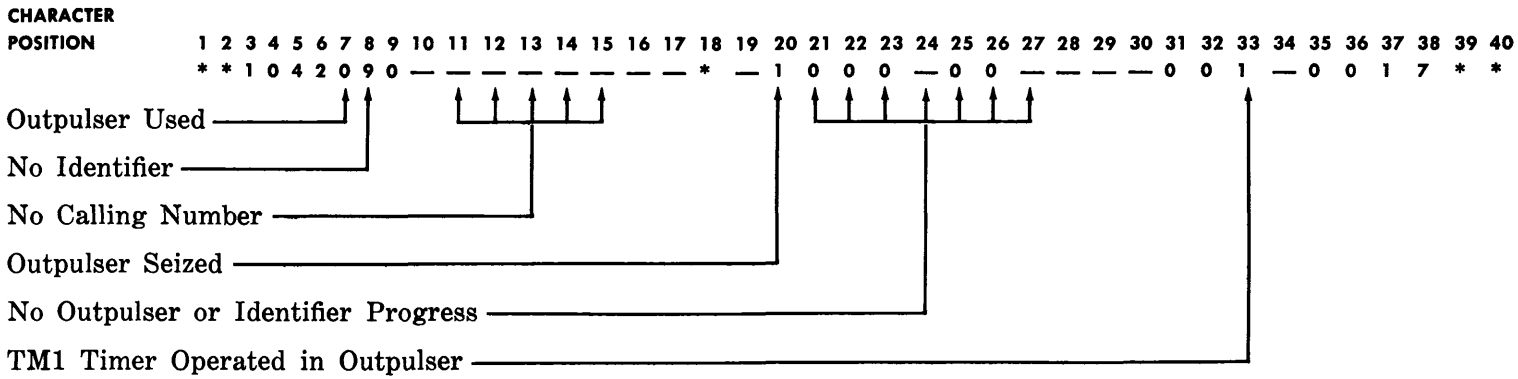
4. ANALYSIS OF TYPICAL TROUBLES

4.01 ***General:*** The following examples of trouble tickets are not intended as a list of the most probable troubles, but are used merely as examples to illustrate analysis. Each type of trouble would not necessarily produce a ticket identical to the examples shown here in a particular office because of variations in the operating or releasing of individual relays, circuits, and timing devices.

4.02 ***Analysis:*** The analysis under each ticket will cover the most important areas of information in a brief manner. No attempt will be made to interpret each position because much of the information is repetitive or unnecessary in analyzing a particular trouble.

4.03 ***Causes:*** The Causes following Analysis will mention only the more obvious conditions that might be responsible and will not attempt to cover all the possible causes of a particular type of trouble indication.

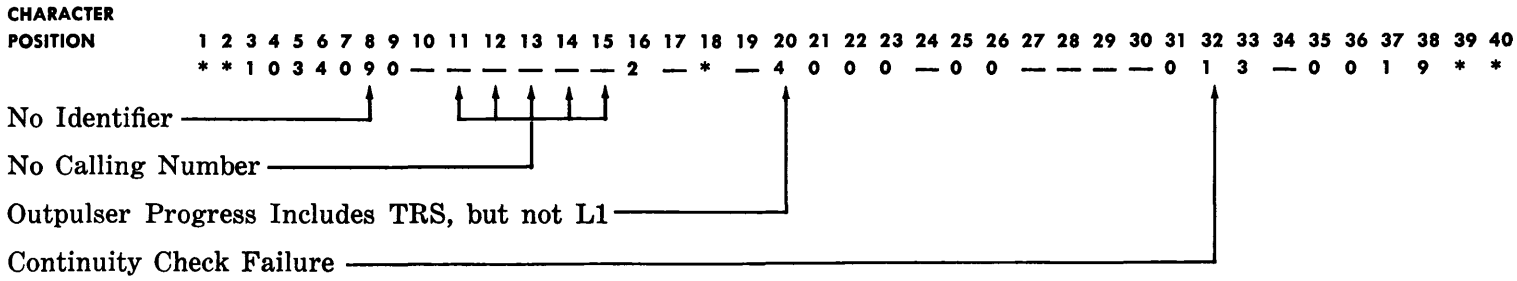
4.04 ***False Seizure of the Outpulser***



Analysis: This ticket shows a complete identification failure (positions 11 through 15) and no identifier or outpulser progress except for 20-1. The 20-1 indicates that the outpulser was seized, 7-0 indicates outpulser zero was used, and 33-1 shows that the TM1 timer of the outpulser operated. Positions 3, 4, and 5 show the trunk concerned in the seizure of the outpulser. Positions 21 through 27 show no progress and 8-9 shows no identifier was connected. The complete lack of progress after seizing the outpulser indicates a false seizure of the outpulser.

Causes: This trouble usually results from any false starts by a trunk or outpulser connector.

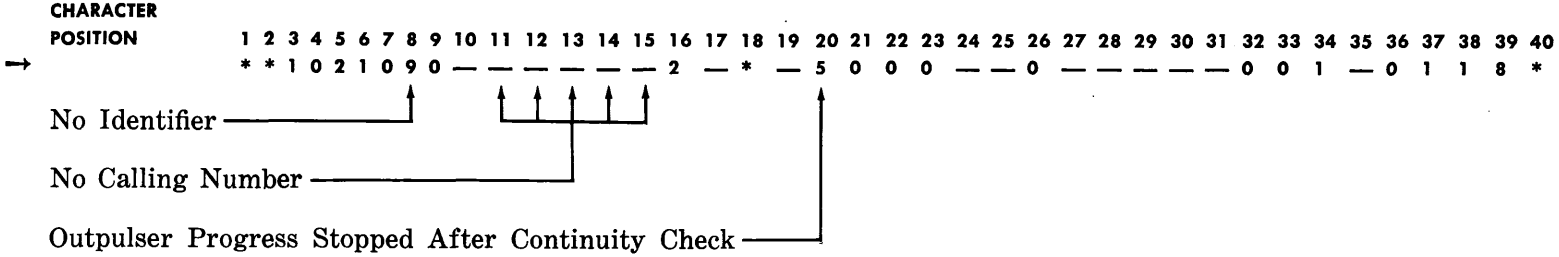
4.05 ***Continuity Check Failure***



Analysis: Positions 11 through 15 show no calling number. Positions 32-1 and 20-4 both indicate continuity check failure.

Causes: Any lack of continuity in the tip and ring between the outpulser and the originating subscriber results in a continuity check failure.

4.06 *No Identifier Available (Not Plugged Busy)*

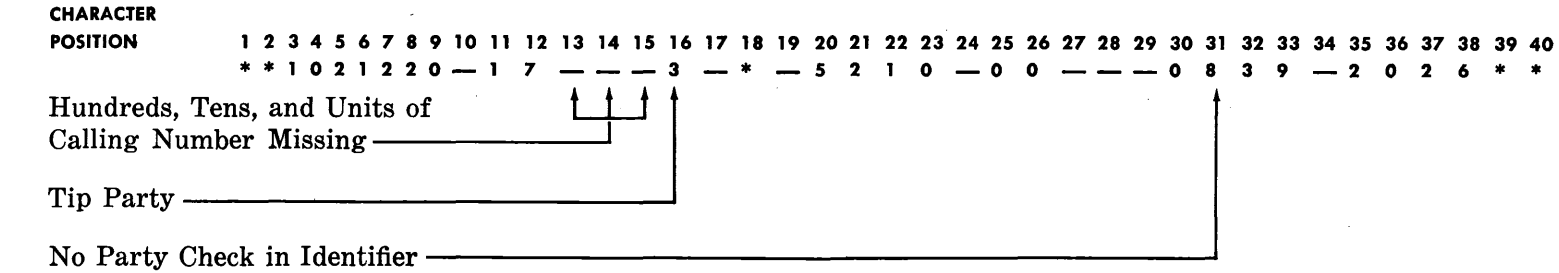


Analysis: The complete lack of a calling number (positions 11 through 15) and outpulser progress arrested after continuity check reinforce the no-identifier indication shown by 8-9.

Causes: The trouble is most likely in the identifier preference or identifier connector features of the outpulser circuit.

> ***Note:*** No-identifier may also be indicated by 8-4 or 8-8. In these cases, the outpulser has seized an identifier on previous trials before encountering trouble and is able to designate the particular identifier trial involved.

4.07 *Identifier Party Check Failure*



Analysis: The 8 in position 31 indicates the NPK relay (no party check) of the identifier operated. The 16-3 indicates the calling number was in the tip field.

Causes: Any TP- relay failing to operate in the secondary network is the most likely cause of this ticket.

4.08 *Crossed Office Identification*

CHARACTER POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	*	*	1	0	2	4	2	2	0	*	0	3	—	—	—	2	—	*	—	5	5	1	0	—	0	0	—	—	—	0	0	3	9	—	2	2	5	8	*	*

Crossed Office

→ ***Analysis:*** The (*) in position 10 indicates that the identifier detected a signal in two different offices. A 3 in posi-
→ tion 10 indicates an AIOD translator start lead cross.

Causes: A crossed sleeve, trouble in the primary or secondary networks, or identifier trouble could result in this ticket.

4.09 *Identifier Steering Failure*

CHARACTER POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	*	*	1	0	2	4	2	0	0	—	0	3	4	—	—	2	—	*	—	5	2	2	0	—	0	0	—	—	—	9	1	3	1	—	1	8	1	7	*	*

No Tens Digit

No Units Digit

HS Relay Operated in Identifier

HK Relay Operated in Outpulser

Analysis: The missing tens digit in position 14 and the 2 in position 22 indicate that identifier HS (hundreds steering) was accomplished but TS (tens steering) was not. Trouble is likely to be in the identifier circuit.

Causes: The failure of the tens steering (TS) relay in the identifier is probably due to a trouble in the operating path of this relay.

4.10 *Complete Identification Failure*

CHARACTER POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	*	*	1	0	1	3	2	2	0	—	—	—	—	—	—	2	—	*	—	5	8	2	0	—	0	0	—	—	—	—	0	3	9	—	2	2	3	2	*	*

No Calling Number

Analysis: The dashes in positions 11 through 15 show a complete identification failure and 20-5, 21-8, and 32-3 indicate the identifier-outpulser progress as approximately normal up to the time the ticket was taken.

Causes: Many conditions could result in such a ticket. An open sleeve or trouble in the ANI primary network or outgoing trunk are possibilities.

Note: Progress will vary. The numbers shown are a possibility.

4.11 *Particular Digit Failure (No Tens Digit)*

CHARACTER POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	*	*	1	0	1	1	0	3	0	—	0	3	4	*	1	2	—	*	—	5	9	9	5	—	0	0	—	—	—	6	0	3	9	—	1	0	1	8	*	*

No Tens Digit

Indicates Tens Check Failure

Analysis: The asterisk in position 14 indicates a failure to operate two out of the five tens register relays in the outpulser. This could mean only one, three, or more tens register relays were operated. The 30-6 shows that the check relays for thousands, hundreds, and units of the calling number were operated, but not the tens check relay.

Causes: The trouble could be in any ANI circuit from the primary network to the outpulser.

4.12 *Trunk Test Failure*

CHARACTER POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	*	*	1	1	2	4	1	9	0	—	0	3	3	0	0	2	—	*	—	9	0	0	0	—	3	0	—	—	—	8	0	0	1	—	0	9	2	7	*	*

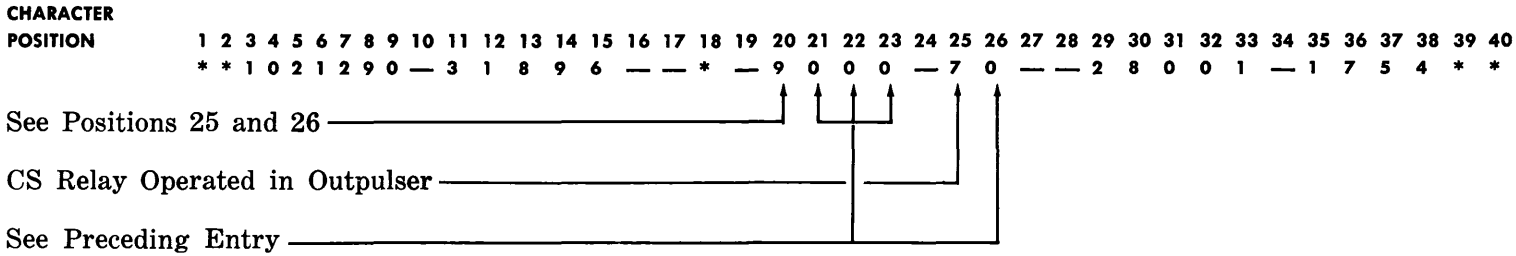
Indicates — See Positions 25 and 26

KP Relay Operated, but not SP Relay in Outpulser

Analysis: The 20-9 indicates positions 25 and 26 should be examined and the 25-3 indicates the outpulser progress stopped just before operation of the IDS relay. Very few relays intervene between the MF and IDS relays. One of these is the TT (trunk test) relay and is the only one whose operation can be affected by other circuits.

Causes: The TT relay can fail because of outpulser trouble or trouble in the tip and ring looking toward the tandem office.

4.13 *Outpulser Steering Failure*



Analysis: Call reads normal up to 25-7. This indicates that the CS steering relay of the outpulser is operated. The 26-0 shows that the THS steering relay did not operate. Since the THS relay operates as a result of the CS relay operating, the trouble is the failure of the THS steering relay.

Causes: This trouble is fairly well pinpointed as some malfunction in the operate path of the THS relay.

4.14 *AIOD Call Digit Failure (PBX Station Number Units Digit Missing)*