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PRELIMINARY

Bell System Voice Communications
TECHNICAL REFERENCE

Recorded Magnetic Tape Formats for Station Message Detail Recording Features on Dimension PBXs

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PRELIMINARY

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PRELIMINARY

RECORDED MAGNETIC TAPE DATA FORMATS FOR STATION MESSAGE DETAIL RECORDING FEATURE ON DIMENSION® PBXs

1. INTRODUCTION

1.1 Scope

The purpose of this document is to provide a description of the call detail data formats recorded on magnetic tape to provide the Station Message Detail Recording function in the Bell System Dimension family of customer switching systems. The call detail data can be processed by non-Bell System firms to produce periodic reports for Dimension subscribers of their telephone usage. This document is based upon the best data and engineering judgment available at this time and is subject to change when circuit or software improvements are introduced.

1.2 System Description

The Station Message Detail Recording feature produces a record for customer use of many types of incoming and outgoing calls handled by the associated Dimension PBX. The feature is implemented by an auxiliary processor that receives call information from the Dimension PBX via a data channel. The processor assembles the call information and provides it as output on one of several optional peripherals. The output device associated with the data format described in this technical reference is a nine-track magnetic tape recorder. Alternative peripherals are a printer and paper tape punch. Tapes are loaded on and unloaded from the equipment by the customer. It is expected that about one tape per month will be generated by most customers, including those with a large amount of telephone traffic.

The specific list of call types to be monitored is under control of the PBX attendant and may be modified by the attendant at any time. A trunk access code or attendant identification code, which is part of the record for each call, identifies the type of circuit used for the call. Since these codes are flexible and may differ from one installation to another, the customer should be contacted for detailed code information. If the record processing is to include estimates of the charges for the calls, rate information, if desired, must be obtained from the Telephone Company. Note, however, that because the Station Message Detail Recording feature cannot exclude unanswered or busy calls, the output is not a billing record.

1.3 Organization

The remainder of this document is divided into two major sections. Section 2 provides information on the physical characteristics of the recorded magnetic tape. Section 3 provides detailed information on the various data formats. Section 4 describes the various responsibilities of those involved with the SMDR feature. Section 5 describes the requirements regarding maintenance of service.

2. PHYSICAL CHARACTERISTICS OF MAGNETIC TAPE

2.1 Recording Format

The magnetic tape used is an industry-standard, ½-inch wide, 9-track tape, which is recorded at a speed of 25 inches per second in a standard 1600 bit per inch phase-encoded format. The maximum reel size is 8½ inches in diameter. The PBX subscriber may furnish his own magnetic tapes or may elect to obtain them from the Telephone Company.

2.2 Tape Drive Specifications

The call detail data is recorded on a Kennedy Model 9800 tape drive or approved equivalent with read-after-write capability.

2.3 Tape Header Format

At the beginning of the magnetic tape, the standard set of phase-encoded format characters is recorded. This includes an identification burst (bytes with all ones in parity, track 4, and zeros elsewhere) located 1.7 inches before the load point and extending at least 0.5 inches beyond the load point. In addition, a tape gap of at least 3 inches precedes the initial data record written on the tape.

2.4 Format at End of Tape

Following the final data record on the tape is an interrecord gap followed by the end-of-file mark block. It is important to note that the final data record is likely to be only partially filled with new call data. In particular, the remainder is not all zeros, for example, but is simply a repeat of the corresponding call data of the data block appearing two data blocks before. During data processing therefore, any repeated call data found in the final data record should be discarded.

If the magnetic tape is not replaced before the tape reaches the end-of-tape mark, no end-of-file mark is written; instead, the tape is automatically rewound to load point, which is at the head of the tape. However, so long as the tape is not replaced, new call detail data will be written over the previously recorded data, which is obviously lost.

3. DATA FORMATS

3.1 Data Record

As illustrated in Figure 1, a call data record consists of:

a. A preamble of 40 all-zeros, eight-bit bytes (plus parity) followed by an all-ones byte.

b. A data block of 1024, eight-bit bytes with odd vertical parity.

c. A postamble of an all-ones, eight-bit bytes (plus parity) followed by 40 all-zeros bytes.

d. An interrecord gap of 0.6 inches (nominal); however, the gap may vary between 0.5 inches (minimum) and 25 feet (maximum).

3.2 Data Block

A data block consists of 31 call records plus one index record. A call record consists of 32, eight-bit bytes plus parity as does an index record. Therefore as stated above, a data block consists of a total of 1024, eight-bit bytes with odd vertical parity. Up to approximately 330,000 call records may be contained on one magnetic tape.

3.3 Call Record

The elements of a call record are illustrated in Figure 2. The call record provides all of the detailed information about the call. Examples of the various data items are shown in Table 1. All of the entries are recorded in binary-coded decimal format, except for the items otherwise noted below:

a. The entries for hour and minute time-of-day for the end of a call are each two-digit items.

b. The operation code characters (part of bytes 02, 04, 06, 08, 10, 12, 14, 16, 18, 20, 22 and 24) are four-bit characters used for hardware control and on-line error checking. These characters are not used in call data compilation.

c. The call duration entries comprise a total of four digits, representing hour, minutes and tenths of minutes.

d. The condition code is a single hexadecimal digit which categorizes the information represented in the call record. The following codes have been assigned:

Condition Code	Description
1	Attendant handled call.
2	Following an attendant-initiated change of the list of trunk access codes or attendant identification codes for which call details are to be recorded, a call record with this condition code is produced. This call record lists the trunk access codes or attendant identification codes which are then being monitored. The list includes any newly initiated codes as well as all those previously active codes which have not been canceled.

Condition Code	Description
3	Following an attendant-initiated change of the list of trunk access codes or attendant identification codes for which call details are to be recorded, a call record with this condition code is also produced. This call record lists the trunk access codes or attendant identification codes which are not being monitored. The list includes any newly canceled codes as well as all previously canceled codes which have not been reactivated.
4	A call record is produced for a call with a duration of 10 hours and continuing. On such an extremely long call, a standard call record, but with maximum duration entry and with this condition code, is produced after the first 10-hour period; a similar call record with this condition code is produced after each succeeding 10-hour period. When the call does terminate, a final call record is produced.
5	System maintenance check. This call record should be ignored in call data compilation.
6	System maintenance check. This call record should be ignored in call data compilation.
7	This condition code is used to identify calls served by the Automatic Route Selection (ARS) feature.
8	This condition code is used to identify calls which have been served on a delayed basis via the Outgoing Trunk Queuing feature.
9	Incoming call.
A	Outgoing Call.
C	Six-way conference call. A separate call record with this condition code is produced for each outgoing call portion of a conference connection.

e. Two 3-digit access codes are provided. These access code entries are used only on outgoing calls; therefore, access code entries for an incoming call contain blank characters, which are each represented by the character $(1010)_2$. On an outgoing call, the first access code entry contains the access code number which the user dialed. The second access code entry contains the code of the trunk actually used for the call if different from the user-dialed access code; else the entry contains blank characters. The second code, therefore, identifies if route advance has taken place on the call. Access code entries are right-justified: i.e., blank characters, $(1010)_2$, are inserted, as needed.

f. The dialed number can contain up to 15 digits total. The dialed number is right-justified. The character $(1010)_2$ is recorded for a blank character.

g. The calling number entry contains the station number on outgoing calls, the attendant identification code on incoming calls that use one-way incoming trunks, and the trunk access code on incoming calls that use two-way trunks. The calling number entry contains up to four digits, which are left-justified, with any blanks represented by the character $(1010)_2$.

h. The account code entry contains an optional, user-dialed number, which further identifies the specific call. The account code entry consists of from one to five digits, which are right-justified, with any blanks represented by the character $(1010)_2$.

i. The remainder of byte 25 plus bytes 26 through 31 in the call record are unused.

3.4 Annotated Examples of Call Records

In order to further clarify the format of the various data items within a call record, a series of specific call record examples has been provided (Figure 3 through 11). These examples illustrate a variety of different call situations along with the call detail data as it would be recorded.

Figure 12 provides a summary listing of the example call details.

Whenever a change is made to the list of trunk group access codes or attendant identification codes for which call details are being recorded, a pair of call records are produced which document the new status: one call record (Condition Code = 2) lists those codes now being monitored, and the second call record (Condition Code = 3) lists those codes not being monitored. Figure 13 illustrates the format for listing access codes in a call record. A call record can accommodate up to eight trunk group access codes or attendant identification codes; if more codes need to be listed, additional call records are used.

Figures 14 and 15 provide specific examples of call records produced after an attendant-initiated change of the list of codes to be monitored.

3.5 Index Record

The elements of an index record are illustrated in Figure 16. The index record provides data on the date and time at which the associated data block of 31 call records was recorded. Date and time are recorded in binary-coded decimal format. In addition, a sequence number for the data block is recorded in hexadecimal format. Finally, there are a number of fill words in the record, as shown.

Examples of the various data items are provided in Table 2. The month, day, hour and minute entries are each two-digit items. The index, or sequence, number provides consecutive numbering of the data records on the tape; the index number is a four-digit number in hexadecimal format, which occupies two bytes. Index number values begin with $(0000)_{16}$ and may increase up to $(3FFF)_{16}$.

During either of the following two unusual circumstances, consecutive numbering of the data records on the tape by index number may not take place:

a. Following a system power failure, the circuitry which generates the index number is likely to assume an out-of-sequence logical state. However, consecutive numbering of data records from this point forward would occur in the normal manner. If the index number ever reaches its maximum value of $(3FFF)_{16}$, the next number in sequence would be $(0000)_{16}$, from which point consecutive numbering would continue.

b. If automatic, read-after-write, system maintenance checks detect a problem while writing a data record onto the magnetic tape, the tape is automatically rewound to the beginning of this data record and a second attempt at writing the data record is made; however, the index number, which is written as part of the data record, has been incremented by one, and thereby indicates a retry. In case the second attempt at writing the data record is also unsuccessful, that portion of the magnetic tape in question is left in an indeterminate state, and a third and final attempt at writing the call record is made at the next record position. In this case, however, the index number is incremented a second time.

4. SERVICE RESPONSIBILITIES

4.1 Responsibility of the Software Supplier

The supplier of data processing software or periodic customer output reports based on this software is responsible for the following:

a. Reaching an agreement with the customer on the format of periodic reports to be provided by the supplier based on magnetic tapes provided by the customer.

b. Providing operating instructions to the customer if software is supplied directly to the customer for use by the customer in generating his own reports.

c. Maintaining a record of and proper labeling of magnetic tapes being handled for a customer to insure accurate reporting of each customer's telephone activity.

d. Advising the customer on spare magnetic tapes required based on the turnaround time for data processing required by the supplier.

e. All liabilities arising out of the use, offering and distribution of periodic telephone activity reports by supplier.

4.2 Responsibility of the Customer

The customer is responsible for the following:

a. Supplying all information used for the generation of telephone activity reports such as trunk access codes and billing rates to be used.

b. Obtaining desired information for supplier's use from the Telephone Company.

c. Changing magnetic tape on at least a monthly basis to insure that tape overflow does not occur. Periodic visual inspections of magnetic tape unit will allow the customer to gauge remaining tape on reel.

d. Informing Telephone Company of any failures associated with the Station Message Detail Recording feature.

e. Obtaining spare magnetic tape from the Telephone Company or some other supplier of magnetic tape which is compatible with the Kennedy Model 9800 tape drive or approved equivalent.

f. Clear labeling of each magnetic tape sent to the supplier with the customer's name, date and any other information as agreed upon between the supplier and the customer.

g. Periodic cleaning of tape drive head mechanism following instructions from the Telephone Company.

4.3 Responsibility of Telephone Company

a. Provide information to customer upon request such as Trunk Access Code assignments and billing rates which are reasonable to release in the judgment of the Telephone Company.

b. Maintain and repair all equipment which has been provided by the Telephone Company to provide the Station Message Detail Recording feature.

c. Provide instructions to the customer concerning periodic cleaning of the equipment and handling of the magnetic tape.

5. MAINTENANCE OF SERVICE

Except for periodic cleaning as described in 4.2 g., all maintenance of all equipment supplied by the Telephone Company shall be done only by the Telephone Company.

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APPENDIX A

GLOSSARY

Attendant The telephone subscriber employee who is responsible for operation of the PBX console.

Attendant Identification Code A one-, two-, or three-digit number used by the Dimension PBX to identify a trunk group which is dial-accessible by the attendant but not by the PBX stations.

Automatic Route Selection A feature of the Dimension PBX which provides automatic routing of outgoing calls over alternative facilities based on the dialed number.

Dimension PBXs A family of Bell System private branch exchanges which employ time-division switching under stored program control.

Outgoing Trunk Queuing A feature of the Dimension PBX which permits a station user to dial a busy outgoing trunk group, be automatically placed in a queue, and be called back when a trunk in the group is available.

Route Advance A feature of the Dimension PBX which permits a call to be handled via an alternate trunk group if the trunk group associated with the dialed trunk access code were found with no idle circuits.

Trunk Access Code A one-, two-, or three-digit number dialed by PBX station users to gain access to a group of outgoing trunks.

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APPENDIX B

REFERENCES

1. Model 9800 Synchronous Digital Magnetic Tape Recorder, Operation and Maintenance Manual, Kennedy Company, 540 West Woodbury Road, Altadena, CA 91001

2. Model 9217 Formatter, Operation and Maintenance Manual, Kennedy Company, 540 West Woodbury Road, Altadena, CA 91001

*3. AT&T Technical Reference PUB 42706, Direct Output Data Formats for Station Message Detail Recording Feature on Dimension PBXs

* This reference can be purchased by writing:

American Telephone and Telegraph Company
Supervisor - Information Distribution Center
60 Kingsbridge Road
Piscataway, New Jersey - 08854

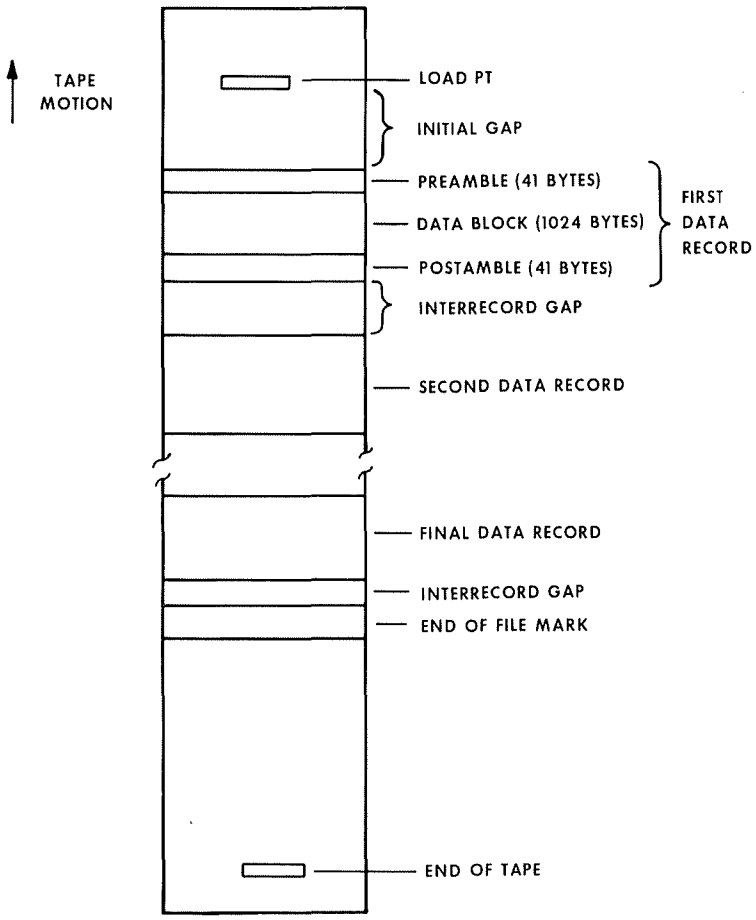

FIGURE 1. Tape Format

		BIT 0 3	4 7
BYTE	00	TIME-HOURS TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	DURATION-HOUR
	03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
	04	OPERATION CODE	DURATION-MINUTE TENTHS
TAPE MOTION ↑	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	DIALED NUMBER -1
	10	OPERATION CODE	DIALED NUMBER -2
	11	DIALED NUMBER -3	DIALED NUMBER -4
	12	OPERATION CODE	DIALED NUMBER -5
	13	DIALED NUMBER -6	DIALED NUMBER -7
	14	OPERATION CODE	DIALED NUMBER -8
	15	DIALED NUMBER -9	DIALED NUMBER -10
	16	OPERATION CODE	DIALED NUMBER -11
	17	DIALED NUMBER -12	DIALED NUMBER -13
	18	OPERATION CODE	DIALED NUMBER -14
	19	DIALED NUMBER -15	CALLING NUMBER -1
	20	OPERATION CODE	CALLING NUMBER -2
	21	CALLING NUMBER -3	CALLING NUMBER -4
	22	OPERATION CODE	ACCOUNT CODE -1
	23	ACCOUNT CODE -2	ACCOUNT CODE -3
	24	OPERATION CODE	ACCOUNT CODE -4
	25	ACCOUNT CODE -5	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

FIGURE 2. Call Record

BYTE		BIT 0 3	BIT 4 7
	00	TIME-HOURS TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	DURATION-HOUR
	03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
	04	OPERATION CODE	DURATION-MINUTE TENTHS
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	DIALED NUMBER -1
	10	OPERATION CODE	DIALED NUMBER -2
	11	DIALED NUMBER -3	DIALED NUMBER -4
	12	OPERATION CODE	DIALED NUMBER -5
	13	DIALED NUMBER -6	DIALED NUMBER -7
	14	OPERATION CODE	DIALED NUMBER -8
	15	DIALED NUMBER -9	DIALED NUMBER -10
	16	OPERATION CODE	DIALED NUMBER -11
	17	DIALED NUMBER -12	DIALED NUMBER -13
	18	OPERATION CODE	DIALED NUMBER -14
	19	DIALED NUMBER -15	CALLING NUMBER -1
	20	OPERATION CODE	CALLING NUMBER -2
	21	CALLING NUMBER -3	CALLING NUMBER -4
	22	OPERATION CODE	ACCOUNT CODE -1
	23	ACCOUNT CODE -2	ACCOUNT CODE -3
	24	OPERATION CODE	ACCOUNT CODE -4
	25	ACCOUNT CODE -5	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

TAPE MOTION ↑

CALL RECORD FORMAT

BYTE		BIT 0 3	BIT 4 7
	00	0 0 0 1	0 0 0 0
	01	0 1 0 0	0 0 1 1
	02	– – – –	0 0 0 0
	03	0 0 0 0	1 0 0 1
	04	– – – –	1 0 0 1
	05	1 0 1 0	1 0 1 0
	06	– – – –	1 0 1 0
	07	1 0 0 1	1 0 1 0
	08	– – – –	1 0 1 0
	09	1 0 1 0	1 0 1 0
	10	– – – –	1 0 1 0
	11	1 0 1 0	1 0 1 0
	12	– – – –	0 0 0 1
	13	0 0 1 1	0 0 0 1
	14	– – – –	0 1 1 1
	15	0 0 1 0	0 1 1 0
	16	– – – –	0 1 0 1
	17	0 1 1 1	1 0 0 0
	18	– – – –	1 0 0 1
	19	0 1 0 0	0 1 1 0
	20	– – – –	0 0 0 1
	21	0 0 0 1	0 0 1 1
	22	– – – –	1 0 1 0
	23	1 0 1 0	1 0 1 0
	24	– – – –	1 0 1 0
	25	1 0 1 0	– – – –
	26	– – – –	– – – –
	27	– – – –	– – – –
	28	– – – –	– – – –
	29	– – – –	– – – –
	30	– – – –	– – – –
	31	– – – –	– – – –

Call Type: Outgoing Station-to-station Call

Time of Day: 10:43 a.m.

Call Duration: 9.9 Minutes

Condition Code: A

Trunk Group Access Code: 9 (No Route Advance)

Dialed Number: 1-317-265-7894

Calling Station Number: 6113

Account Code: None

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FIGURE 3. Call Record Example of Outgoing Station-to-Station Call

BYTE		BIT 0 3	BIT 4 7
	00	TIME-HOURS TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	DURATION-HOUR
	03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
	04	OPERATION CODE	DURATION-MINUTE TENTHS
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	DIALED NUMBER -1
	10	OPERATION CODE	DIALED NUMBER -2
	11	DIALED NUMBER -3	DIALED NUMBER -4
	12	OPERATION CODE	DIALED NUMBER -5
	13	DIALED NUMBER -6	DIALED NUMBER -7
	14	OPERATION CODE	DIALED NUMBER -8
	15	DIALED NUMBER -9	DIALED NUMBER -10
	16	OPERATION CODE	DIALED NUMBER -11
	17	DIALED NUMBER -12	DIALED NUMBER -13
	18	OPERATION CODE	DIALED NUMBER -14
	19	DIALED NUMBER -15	CALLING NUMBER -1
	20	OPERATION CODE	CALLING NUMBER -2
	21	CALLING NUMBER -3	CALLING NUMBER -4
	22	OPERATION CODE	ACCOUNT CODE -1
	23	ACCOUNT CODE -2	ACCOUNT CODE -3
	24	OPERATION CODE	ACCOUNT CODE -4
	25	ACCOUNT CODE -5	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

TAPE MOTION ↑

CALL RECORD FORMAT

BYTE		BIT 0 3	BIT 4 7
	00	0 0 0 1	0 0 0 0
	01	0 1 0 0	0 1 0 0
	02	– – – –	0 0 0 0
	03	0 0 0 0	0 1 0 1
	04	– – – –	0 0 0 1
	05	1 0 1 0	1 0 1 0
	06	– – – –	1 0 0 0
	07	0 0 0 1	1 0 1 0
	08	– – – –	1 0 0 0
	09	0 0 1 0	1 0 1 0
	10	– – – –	1 0 1 0
	11	1 0 1 0	1 0 1 0
	12	– – – –	0 0 0 1
	13	0 0 1 1	0 0 0 1
	14	– – – –	0 1 1 1
	15	0 0 1 1	0 1 0 1
	16	– – – –	0 1 1 1
	17	0 1 1 1	0 0 0 1
	18	– – – –	1 0 0 1
	19	0 0 1 0	0 1 1 0
	20	– – – –	0 0 0 1
	21	1 0 0 0	0 0 0 1
	22	– – – –	1 0 1 0
	23	1 0 1 0	1 0 1 0
	24	– – – –	1 0 1 0
	25	1 0 1 0	– – – –
	26	– – – –	– – – –
	27	– – – –	– – – –
	28	– – – –	– – – –
	29	– – – –	– – – –
	30	– – – –	– – – –
	31	– – – –	– – – –

Call Type: Outgoing Station-To-Station Call With Route Advance

Time Of Day: 10:44 a.m.

Call Duration: 5.1 Minutes

Condition Code: A

Trunk Group Access Code: 81

Route Advance To Trunk Group Access Code: 82

Dialed Number : 1-317-357-7192

Station Number: 6181

Account Code: None

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FIGURE 4. Call Record Example Of Outgoing Station-To-Station Call With Route Advance

BYTE		BIT 0 – 3	BIT 4 – 7
	00	TIME-HOURS TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	DURATION-HOUR
	03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
	04	OPERATION CODE	DURATION-MINUTE TENTHS
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	DIALED NUMBER -1
	10	OPERATION CODE	DIALED NUMBER -2
	11	DIALED NUMBER -3	DIALED NUMBER -4
	12	OPERATION CODE	DIALED NUMBER -5
	13	DIALED NUMBER -6	DIALED NUMBER -7
	14	OPERATION CODE	DIALED NUMBER -8
	15	DIALED NUMBER -9	DIALED NUMBER -10
	16	OPERATION CODE	DIALED NUMBER -11
	17	DIALED NUMBER -12	DIALED NUMBER -13
	18	OPERATION CODE	DIALED NUMBER -14
	19	DIALED NUMBER -15	CALLING NUMBER -1
	20	OPERATION CODE	CALLING NUMBER -2
	21	CALLING NUMBER -3	CALLING NUMBER -4
	22	OPERATION CODE	ACCOUNT CODE -1
	23	ACCOUNT CODE -2	ACCOUNT CODE -3
	24	OPERATION CODE	ACCOUNT CODE -4
	25	ACCOUNT CODE -5	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

TAPE MOTION ↑

CALL RECORD FORMAT

BYTE		BIT 0 – 3	BIT 4 – 7
	00	0 0 0 1	0 0 0 0
	01	0 1 0 0	0 1 0 0
	02	– – – –	0 0 0 0
	03	0 0 0 1	0 0 0 1
	04	– – – –	0 1 0 1
	05	0 0 0 1	1 0 1 0
	06	– – – –	1 0 0 0
	07	0 0 1 0	1 0 1 0
	08	– – – –	1 0 1 0
	09	1 0 1 0	1 0 1 0
	10	– – – –	1 0 1 0
	11	1 0 1 0	1 0 1 0
	12	– – – –	1 0 1 0
	13	0 0 1 1	0 0 0 0
	14	– – – –	0 0 1 1
	15	0 1 0 0	0 1 0 1
	16	– – – –	0 0 0 1
	17	0 0 0 1	1 0 0 0
	18	– – – –	0 1 0 1
	19	0 1 1 1	0 1 1 0
	20	– – – –	0 0 1 1
	21	0 1 1 1	0 1 0 0
	22	– – – –	0 0 0 1
	23	0 1 1 0	0 0 0 1
	24	– – – –	0 0 0 1
	25	0 0 1 1	– – – –
	26	– – – –	– – – –
	27	– – – –	– – – –
	28	– – – –	– – – –
	29	– – – –	– – – –
	30	– – – –	– – – –
	31	– – – –	– – – –

Call Type: Outgoing Call Placed By Attendant And Charged To Account Code

Time Of Day: 10:44 a.m.

Call Duration: 11.5 Minutes

Condition Code: 1

Trunk Group Access Code: 82 (No Route Advance)

Dialed Number: 303-451-1857

Calling Station Number: 6374

Account Code: 16113

PRELIMINARY

FIGURE 5. Call Record Example Of Outgoing Call Placed By Attendant And Charged To Account Code

		BIT 0 3	BIT 4 7
BYTE	00	TIME-HOURS TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	DURATION-HOUR
	03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
	04	OPERATION CODE	DURATION-MINUTE TENTHS
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	DIALED NUMBER -1
	10	OPERATION CODE	DIALED NUMBER -2
	11	DIALED NUMBER -3	DIALED NUMBER -4
	12	OPERATION CODE	DIALED NUMBER -5
	13	DIALED NUMBER -6	DIALED NUMBER -7
	14	OPERATION CODE	DIALED NUMBER -8
	15	DIALED NUMBER -9	DIALED NUMBER -10
	16	OPERATION CODE	DIALED NUMBER -11
	17	DIALED NUMBER -12	DIALED NUMBER -13
	18	OPERATION CODE	DIALED NUMBER -14
	19	DIALED NUMBER -15	CALLING NUMBER -1
	20	OPERATION CODE	CALLING NUMBER -2
	21	CALLING NUMBER -3	CALLING NUMBER -4
	22	OPERATION CODE	ACCOUNT CODE -1
	23	ACCOUNT CODE -2	ACCOUNT CODE -3
	24	OPERATION CODE	ACCOUNT CODE -4
	25	ACCOUNT CODE -5	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

TAPE MOTION ↑

CALL RECORD FORMAT

		BIT 0 3	BIT 4 7
BYTE	00	0 0 0 1	0 0 0 0
	01	0 1 0 1	0 1 0 0
	02	– – – –	0 0 0 0
	03	0 0 0 1	0 1 0 1
	04	– – – –	0 1 1 0
	05	1 0 1 0	1 0 1 0
	06	– – – –	1 0 1 0
	07	1 0 0 1	1 0 1 0
	08	– – – –	1 0 1 0
	09	1 0 1 0	1 0 1 0
	10	– – – –	1 0 1 0
	11	1 0 1 0	1 0 1 0
	12	– – – –	1 0 1 0
	13	1 0 1 0	1 0 1 0
	14	– – – –	1 0 1 0
	15	1 0 1 0	0 1 1 1
	16	– – – –	0 1 1 0
	17	0 1 0 1	0 1 1 1
	18	– – – –	0 1 0 1
	19	0 0 0 1	0 0 1 1
	20	– – – –	0 1 1 1
	21	0 0 0 1	0 0 0 1
	22	– – – –	1 0 1 0
	23	1 0 1 0	1 0 1 0
	24	– – – –	1 0 1 0
	25	1 0 1 0	– – – –
	26	– – – –	– – – –
	27	– – – –	– – – –
	28	– – – –	– – – –
	29	– – – –	– – – –
	30	– – – –	– – – –
	31	– – – –	– – – –

Call Type: Local Outgoing Station-to-station Call

Time of Day: 10:54 a.m.

Call Duration: 15.6 Minutes

Condition Code: A

Trunk Group Access Code: 9 (No Route Advance)

Dialed Number: 765-5751

Calling Station Number: 3711

Account Code: None

PRELIMINARY

FIGURE 6. Call Record Example of Local Outgoing Station-to-station Call

BYTE		BIT 0–3	BIT 4–7
	00	TIME-HOURS TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	DURATION-HOUR
	03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
	04	OPERATION CODE	DURATION-MINUTE TENTHS
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	DIALED NUMBER -1
	10	OPERATION CODE	DIALED NUMBER -2
	11	DIALED NUMBER -3	DIALED NUMBER -4
	12	OPERATION CODE	DIALED NUMBER -5
	13	DIALED NUMBER -6	DIALED NUMBER -7
	14	OPERATION CODE	DIALED NUMBER -8
	15	DIALED NUMBER -9	DIALED NUMBER -10
	16	OPERATION CODE	DIALED NUMBER -11
	17	DIALED NUMBER -12	DIALED NUMBER -13
	18	OPERATION CODE	DIALED NUMBER -14
	19	DIALED NUMBER -15	CALLING NUMBER -1
	20	OPERATION CODE	CALLING NUMBER -2
	21	CALLING NUMBER -3	CALLING NUMBER -4
	22	OPERATION CODE	ACCOUNT CODE -1
	23	ACCOUNT CODE -2	ACCOUNT CODE -3
	24	OPERATION CODE	ACCOUNT CODE -4
	25	ACCOUNT CODE -5	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

TAPE MOTION ↑

CALL RECORD FORMAT

BYTE		BIT 0–3	BIT 4–7
	00	0001	0000
	01	0101	1000
	02	----	0000
	03	0000	0101
	04	----	0011
	05	1010	1010
	06	----	1010
	07	0011	1010
	08	----	1010
	09	1010	1010
	10	----	1010
	11	1010	1010
	12	----	1010
	13	1010	1010
	14	----	1010
	15	1010	1010
	16	----	1010
	17	1010	0011
	18	----	0001
	19	1001	0110
	20	----	0001
	21	0001	0011
	22	----	1010
	23	1010	1010
	24	----	1010
	25	1010	----
	26	----	----
	27	----	----
	28	----	----
	29	----	----
	30	----	----
	31	----	----

Call Type: Outgoing Tie Trunk Call Requiring 3-Digit Dialing of Station at Distant End

Time of Day: 10:58 a.m.

Call Duration: 5.3 Minutes

Condition Code: A

Trunk Group Access Code: 83 (No route advance)

Dialed Number: 319

Calling Station Number: 6113

Account Code: None

PRELIMINARY

FIGURE 7. Call Record Example of Outgoing Tie Trunk Call

BYTE		BIT 0 3	BIT 4 7
	00	TIME-HOURS TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	DURATION-HOUR
	03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
	04	OPERATION CODE	DURATION-MINUTE TENTHS
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	DIALED NUMBER -1
	10	OPERATION CODE	DIALED NUMBER -2
	11	DIALED NUMBER -3	DIALED NUMBER -4
	12	OPERATION CODE	DIALED NUMBER -5
	13	DIALED NUMBER -6	DIALED NUMBER -7
	14	OPERATION CODE	DIALED NUMBER -8
	15	DIALED NUMBER -9	DIALED NUMBER -10
	16	OPERATION CODE	DIALED NUMBER -11
	17	DIALED NUMBER -12	DIALED NUMBER -13
	18	OPERATION CODE	DIALED NUMBER -14
	19	DIALED NUMBER -15	CALLING NUMBER -1
	20	OPERATION CODE	CALLING NUMBER -2
	21	CALLING NUMBER -3	CALLING NUMBER -4
	22	OPERATION CODE	ACCOUNT CODE -1
	23	ACCOUNT CODE -2	ACCOUNT CODE -3
	24	OPERATION CODE	ACCOUNT CODE -4
	25	ACCOUNT CODE -5	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

TAPE MOTION ↑

CALL RECORD FORMAT

BYTE		BIT 0 3	BIT 4 7
	00	0 0 0 1	0 0 0 1
	01	0 0 0 0	0 1 0 1
	02	– – – –	0 0 0 0
	03	0 0 0 0	0 0 1 0
	04	– – – –	0 1 0 0
	05	1 0 0 1	1 0 1 0
	06	– – – –	1 0 1 0
	07	1 0 1 0	1 0 1 0
	08	– – – –	1 0 1 0
	09	1 0 1 0	1 0 1 0
	10	– – – –	1 0 1 0
	11	1 0 1 0	1 0 1 0
	12	– – – –	1 0 1 0
	13	1 0 1 0	1 0 1 0
	14	– – – –	1 0 1 0
	15	1 0 1 0	1 0 1 0
	16	– – – –	1 0 1 0
	17	0 1 0 0	0 0 1 0
	18	– – – –	0 1 0 1
	19	1 0 0 1	0 1 1 1
	20	– – – –	1 0 1 0
	21	1 0 1 0	1 0 1 0
	22	– – – –	1 0 1 0
	23	1 0 1 0	1 0 1 0
	24	– – – –	1 0 1 0
	25	1 0 1 0	– – – –
	26	– – – –	– – – –
	27	– – – –	– – – –
	28	– – – –	– – – –
	29	– – – –	– – – –
	30	– – – –	– – – –
	31	– – – –	– – – –

Call Type: Incoming Call Completed To Station

TimeOf Day: 11:05 a.m.

Call Duration : 2.4 Minutes

Condition Code: 9

Trunk Group Access Codes: None

Dialed Number: 4259

Attendant Identification Code: 7

Account Code: None

PRELIMINARY

FIGURE 8. Call Record Example Of Incoming Call Completed To Station

TAPE MOTION

BYTE	BIT 0 3	BIT 4 7
00	TIME-HOURS TENS	TIME-HOUR UNITS
01	TIME-MINUTE TENS	TIME-MINUTE UNITS
02	OPERATION CODE	DURATION-HOUR
03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
04	OPERATION CODE	DURATION-MINUTE TENTHS
05	CONDITION CODE	ACCESS CODE #1 -1
06	OPERATION CODE	ACCESS CODE #1 -2
07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
08	OPERATION CODE	ACCESS CODE #2 -2
09	ACCESS CODE #2 -3	DIALED NUMBER -1
10	OPERATION CODE	DIALED NUMBER -2
11	DIALED NUMBER -3	DIALED NUMBER -4
12	OPERATION CODE	DIALED NUMBER -5
13	DIALED NUMBER -6	DIALED NUMBER -7
14	OPERATION CODE	DIALED NUMBER -8
15	DIALED NUMBER -9	DIALED NUMBER -10
16	OPERATION CODE	DIALED NUMBER -11
17	DIALED NUMBER -12	DIALED NUMBER -13
18	OPERATION CODE	DIALED NUMBER -14
19	DIALED NUMBER -15	CALLING NUMBER -1
20	OPERATION CODE	CALLING NUMBER -2
21	CALLING NUMBER -3	CALLING NUMBER -4
22	OPERATION CODE	ACCOUNT CODE -1
23	ACCOUNT CODE -2	ACCOUNT CODE -3
24	OPERATION CODE	ACCOUNT CODE -4
25	ACCOUNT CODE -5	UNUSED
26	UNUSED	UNUSED
27	UNUSED	UNUSED
28	UNUSED	UNUSED
29	UNUSED	UNUSED
30	UNUSED	UNUSED
31	UNUSED	UNUSED

CALL RECORD FORMAT

BYTE	BIT 0 3	BIT 4 7
00	0 0 0 1	0 0 0 1
01	0 0 0 1	0 1 0 1
02	– – – –	0 0 0 0
03	0 0 0 1	0 1 0 0
04	– – – –	0 1 1 1
05	1 0 0 1	1 0 1 0
06	– – – –	1 0 0 0
07	0 0 1 1	1 0 1 0
08	– – – –	1 0 1 0
09	1 0 1 0	1 0 1 0
10	– – – –	1 0 1 0
11	1 0 1 0	1 0 1 0
12	– – – –	0 0 0 1
13	0 0 1 1	0 0 0 1
14	– – – –	0 1 1 1
15	0 0 1 1	0 1 0 1
16	– – – –	0 1 1 1
17	0 1 1 1	0 0 0 1
18	– – – –	1 0 0 1
19	0 0 1 0	0 1 1 1
20	– – – –	1 0 1 0
21	1 0 1 0	1 0 1 0
22	– – – –	1 0 1 0
23	1 0 1 0	1 0 1 0
24	– – – –	1 0 1 0
25	1 0 1 0	– – – –
26	– – – –	– – – –
27	– – – –	– – – –
28	– – – –	– – – –
29	– – – –	– – – –
30	– – – –	– – – –
31	– – – –	– – – –

Call Type: Incoming Call Completed To Outgoing Trunk

Time Of Day: 11:15 a. m.

Call Duration: 14.7 Minutes

Condition Code: 9

Trunk Group Access Code: 83 (No Route Advance)

Dialed Number: 1-317-357-7192

Attendant Identification Code: 7

Account Code: None

PRELIMINARY

FIGURE 9. Call Record Example Of Incoming Call Completed To Outgoing Trunk

TAPE MOTION

BYTE		BIT 0 3	BIT 4 7
	00	TIME-HOURS TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	DURATION-HOUR
	03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
	04	OPERATION CODE	DURATION-MINUTE TENTHS
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	DIALED NUMBER -1
	10	OPERATION CODE	DIALED NUMBER -2
	11	DIALED NUMBER -3	DIALED NUMBER -4
	12	OPERATION CODE	DIALED NUMBER -5
	13	DIALED NUMBER -6	DIALED NUMBER -7
	14	OPERATION CODE	DIALED NUMBER -8
	15	DIALED NUMBER -9	DIALED NUMBER -10
	16	OPERATION CODE	DIALED NUMBER -11
	17	DIALED NUMBER -12	DIALED NUMBER -13
	18	OPERATION CODE	DIALED NUMBER -14
	19	DIALED NUMBER -15	CALLING NUMBER -1
	20	OPERATION CODE	CALLING NUMBER -2
	21	CALLING NUMBER -3	CALLING NUMBER -4
	22	OPERATION CODE	ACCOUNT CODE -1
	23	ACCOUNT CODE -2	ACCOUNT CODE -3
	24	OPERATION CODE	ACCOUNT CODE -4
	25	ACCOUNT CODE -5	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

CALL RECORD FORMAT

BYTE		BIT 0 3	BIT 4 7
	00	0 0 0 1	0 0 0 1
	01	0 0 1 1	0 0 0 0
	02	– – – –	0 0 0 0
	03	0 0 0 0	0 1 1 0
	04	– – – –	0 1 0 1
	05	1 0 0 0	1 0 1 0
	06	– – – –	1 0 1 0
	07	1 0 0 1	1 0 1 0
	08	– – – –	1 0 1 0
	09	1 0 1 0	1 0 1 0
	10	– – – –	1 0 1 0
	11	1 0 1 0	1 0 1 0
	12	– – – –	0 0 0 1
	13	0 0 1 0	0 0 0 1
	14	– – – –	0 0 1 1
	15	0 0 1 1	0 1 0 1
	16	– – – –	0 1 1 1
	17	0 0 0 1	0 0 1 0
	18	– – – –	0 0 0 1
	19	0 0 1 0	0 1 0 0
	20	– – – –	0 1 0 0
	21	0 1 0 1	0 1 1 0
	22	– – – –	1 0 1 0
	23	1 0 1 0	1 0 1 0
	24	– – – –	1 0 1 0
	25	1 0 1 0	– – – –
	26	– – – –	– – – –
	27	– – – –	– – – –
	28	– – – –	– – – –
	29	– – – –	– – – –
	30	– – – –	– – – –
	31	– – – –	– – – –

Call Type: Outgoing Station-to-station Call

Time of Day: 11:30 a.m.

Call Duration: 6.5 Minutes

Condition Code: 8 (Outgoing Trunk Queueing)

Trunk Group Access Code: 9 (No Route Advance)

Dialed Number: 1-213-357-1212

Calling Station Number: 4456

Account Code: None

PRELIMINARY

FIGURE 10. Call Record Example of Outgoing Call Served by Outgoing Trunk Queueing Feature

TAPE MOTION ↑

BYTE		BIT 0 3	BIT 4 7
	00	TIME-HOURS TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	DURATION-HOUR
	03	DURATION-MINUTE TENS	DURATION-MINUTE UNITS
	04	OPERATION CODE	DURATION-MINUTE TENTHS
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	DIALED NUMBER -1
	10	OPERATION CODE	DIALED NUMBER -2
	11	DIALED NUMBER -3	DIALED NUMBER -4
	12	OPERATION CODE	DIALED NUMBER -5
	13	DIALED NUMBER -6	DIALED NUMBER -7
	14	OPERATION CODE	DIALED NUMBER -8
	15	DIALED NUMBER -9	DIALED NUMBER -10
	16	OPERATION CODE	DIALED NUMBER -11
	17	DIALED NUMBER -12	DIALED NUMBER -13
	18	OPERATION CODE	DIALED NUMBER -14
	19	DIALED NUMBER -15	CALLING NUMBER -1
	20	OPERATION CODE	CALLING NUMBER -2
	21	CALLING NUMBER -3	CALLING NUMBER -4
	22	OPERATION CODE	ACCOUNT CODE -1
	23	ACCOUNT CODE -2	ACCOUNT CODE -3
	24	OPERATION CODE	ACCOUNT CODE -4
	25	ACCOUNT CODE -5	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

CALL RECORD FORMAT

BYTE		BIT 0 3	BIT 4 7
	00	0 0 0 1	0 0 1 0
	01	0 0 0 1	0 0 0 1
	02	– – – –	1 0 0 1
	03	0 1 0 1	1 0 0 1
	04	– – – –	1 0 0 1
	05	0 1 0 0	1 0 1 0
	06	– – – –	1 0 1 0
	07	1 0 0 1	1 0 1 0
	08	– – – –	1 0 1 0
	09	1 0 1 0	1 0 1 0
	10	– – – –	1 0 1 0
	11	1 0 1 0	1 0 1 0
	12	– – – –	0 0 0 1
	13	0 0 1 1	0 0 0 0
	14	– – – –	0 0 1 1
	15	0 1 0 0	0 1 0 1
	16	– – – –	0 0 1 0
	17	0 0 1 1	0 0 0 0
	18	– – – –	0 1 0 1
	19	0 1 1 1	0 0 1 1
	20	– – – –	0 1 0 1
	21	0 1 1 0	1 0 1 0
	22	– – – –	1 0 1 0
	23	1 0 1 0	0 0 0 1
	24	– – – –	0 1 0 1
	25	0 0 1 0	– – – –
	26	– – – –	– – – –
	27	– – – –	– – – –
	28	– – – –	– – – –
	29	– – – –	– – – –
	30	– – – –	– – – –
	31	– – – –	– – – –

Call Type: Long Duration Outgoing Station-To-Station Call

Time Of Day: 12:11 p.m.

Call Duration: 9 Hours, 59.9 Minutes And Continuing

Condition Code: 4

Trunk Group Access Code: 9 (No Route Advance)

Dialed Number: 1-303-452-3057

Calling Station Number: 356

Account Code: 152

PRELIMINARY

FIGURE 11. Call Record Example Of Continuing, Long-Duration Call

DATE 10 03

TIME OF DAY	DURATION	COND CODE	TRUNK GROUP DIALED	ROUTE ADVANCE TO TRUNK GROUP	DIALED NUMBER	CALLING NUMBER	ACCOUNT CODE	NOTES
10:43	0:09 . 9	A	9		1-317-265-7894	6113		Outgoing Station-to-station Call
10:44	0:05 . 1	A	81	82	1-317-357-7192	6181		Outgoing Station-to-station Call with Route Advance
10:44	0:11 . 5	1	82		303-451-1857	6374	16113	Outgoing Call Placed by Attendant and Charged to Account Code
10:54	0:15 . 6	A	9		765-5751	3711		Local Outgoing Station-to-station Call
10:58	0:05 . 3	A	83		319	6113		Outgoing Tie Trunk Call Requiring 3-Digit Dialing of Station at Distant End
11:05	0:02 . 4	9			4259	7		Incoming Call Completed to Station
11:15	0:14 . 7	9	83		1-317-357-7192	7		Incoming Call Completed to Outgoing Trunk
11:30	0:06 . 5	8	9		1-213-357-1212	4456		Outgoing Call Served by Outgoing Trunk Queueing Feature
12:11	9:59 . 9	4	9		1-303-452-3057	356	152	Long Duration Outgoing Station -to-Station Call
15:09		2	81	83	7			Begin or Continue, Monitoring of These Trunk Groups
15:09		3	9	41	43 57 58 59	73	74	Discontinue Monitoring of These Trunk Groups

FIGURE 12. Summary Listing of Annotated Examples

PRELIMINARY

BYTE		BIT 0 3	BIT 4 7
	00	TIME-HOUR TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	UNUSED
	03	UNUSED	UNUSED
	04	UNUSED	UNUSED
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	UNUSED
	10	OPERATION CODE	UNUSED
	11	ACCESS CODE #3 -1	ACCESS CODE #3 -2
	12	OPERATION CODE	ACCESS CODE #3 -3
	13	ACCESS CODE #4 -1	ACCESS CODE #4 -2
	14	OPERATION CODE	ACCESS CODE #4 -3
	15	ACCESS CODE #5 -1	ACCESS CODE #5 -2
	16	OPERATION CODE	ACCESS CODE #5 -3
	17	UNUSED	ACCESS CODE #6 -1
	18	OPERATION CODE	ACCESS CODE #6 -2
	19	ACCESS CODE #6 -3	UNUSED
	20	OPERATION CODE	ACCESS CODE #7 -1
	21	ACCESS CODE #7 -2	ACCESS CODE #7 -3
	22	OPERATION CODE	UNUSED
	23	UNUSED	ACCESS CODE #8 -1
	24	OPERATION CODE	ACCESS CODE #8 -2
	25	ACCESS CODE #8 -3	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

FIGURE 13. Monitor Code Call Record

PRELIMINARY

BYTE		BIT 0 – 3	BIT 4 – 7
	00	TIME-HOUR TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	UNUSED
	03	UNUSED	UNUSED
	04	UNUSED	UNUSED
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	UNUSED
	10	OPERATION CODE	UNUSED
	11	ACCESS CODE #3 -1	ACCESS CODE #3 -2
	12	OPERATION CODE	ACCESS CODE #3 -3
	13	ACCESS CODE #4 -1	ACCESS CODE #4 -2
	14	OPERATION CODE	ACCESS CODE #4 -3
	15	ACCESS CODE #5 -1	ACCESS CODE #5 -2
	16	OPERATION CODE	ACCESS CODE #5 -3
	17	UNUSED	ACCESS CODE #6 -1
	18	OPERATION CODE	ACCESS CODE #6 -2
	19	ACCESS CODE #6 -3	UNUSED
	20	OPERATION CODE	ACCESS CODE #7 -1
	21	ACCESS CODE #7 -2	ACCESS CODE #7 -3
	22	OPERATION CODE	UNUSED
	23	UNUSED	ACCESS CODE #8 -1
	24	OPERATION CODE	ACCESS CODE #8 -2
	25	ACCESS CODE #8 -3	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

MONITOR CODE CALL RECORD FORMAT

BYTE		BIT 0 3	BIT 4 7
	00	0 0 0 1	0 1 0 1
	01	0 0 0 0	1 0 0 1
	02	– – – –	1 0 1 0
	03	1 0 1 0	1 0 1 0
	04	– – – –	1 0 1 0
	05	0 0 1 0	1 0 1 0
	06	– – – –	1 0 0 0
	07	0 0 0 1	1 0 1 0
	08	– – – –	1 0 0 0
	09	0 0 1 1	– – – –
	10	– – – –	– – – –
	11	1 0 1 0	1 0 1 0
	12	– – – –	0 1 1 1
	13	1 0 1 0	1 0 1 0
	14	– – – –	1 0 1 0
	15	1 0 1 0	1 0 1 0
	16	– – – –	1 0 1 0
	17	– – – –	1 0 1 0
	18	– – – –	1 0 1 0
	19	1 0 1 0	1 0 1 0
	20	– – – –	1 0 1 0
	21	1 0 1 0	– – – –
	22	– – – –	– – – –
	23	– – – –	1 0 1 0
	24	– – – –	1 0 1 0
	25	1 0 1 0	– – – –
	26	– – – –	– – – –
	27	– – – –	– – – –
	28	– – – –	– – – –
	29	– – – –	– – – –
	30	– – – –	– – – –
	31	– – – –	– – – –

Situation: Begin Or Continue Monitoring Specified Trunk Group

Time Of Day: 15:09 p.m.

Condition Code: 2

Begun Or Continued Monitoring On Trunk Group Access Codes Or Attendant Identification Codes: 81, 83, 7

PRELIMINARY

FIGURE 14. Call Record Example Of List Of Specific Trunk Groups To Be Monitored

BYTE		BIT 0 3	BIT 4 7
	00	TIME-HOUR TENS	TIME-HOUR UNITS
	01	TIME-MINUTE TENS	TIME-MINUTE UNITS
	02	OPERATION CODE	UNUSED
	03	UNUSED	UNUSED
	04	UNUSED	UNUSED
	05	CONDITION CODE	ACCESS CODE #1 -1
	06	OPERATION CODE	ACCESS CODE #1 -2
	07	ACCESS CODE #1 -3	ACCESS CODE #2 -1
	08	OPERATION CODE	ACCESS CODE #2 -2
	09	ACCESS CODE #2 -3	UNUSED
	10	OPERATION CODE	UNUSED
	11	ACCESS CODE #3 -1	ACCESS CODE #3 -2
	12	OPERATION CODE	ACCESS CODE #3 -3
	13	ACCESS CODE #4 -1	ACCESS CODE #4 -2
	14	OPERATION CODE	ACCESS CODE #4 -3
	15	ACCESS CODE #5 -1	ACCESS CODE #5 -2
	16	OPERATION CODE	ACCESS CODE #5 -3
	17	UNUSED	ACCESS CODE #6 -1
	18	OPERATION CODE	ACCESS CODE #6 -2
	19	ACCESS CODE #6 -3	UNUSED
	20	OPERATION CODE	ACCESS CODE #7 -1
	21	ACCESS CODE #7 -2	ACCESS CODE #7 -3
	22	OPERATION CODE	UNUSED
	23	UNUSED	ACCESS CODE #8 -1
	24	OPERATION CODE	ACCESS CODE #8 -2
	25	ACCESS CODE #8 -3	UNUSED
	26	UNUSED	UNUSED
	27	UNUSED	UNUSED
	28	UNUSED	UNUSED
	29	UNUSED	UNUSED
	30	UNUSED	UNUSED
	31	UNUSED	UNUSED

MONITOR CODE CALL RECORD FORMAT

BYTE		BIT 0 3	BIT 4 7
	00	0001	0101
	01	0000	1001
	02	----	1010
	03	1010	1010
	04	----	1010
	05	0011	1010
	06	----	1010
	07	1001	1010
	08	----	0100
	09	0001	----
	10	----	----
	11	1010	0100
	12	----	0011
	13	1010	0101
	14	----	0111
	15	1010	0101
	16	----	1000
	17	----	1010
	18	----	0101
	19	1001	1010
	20	----	0111
	21	0011	----
	22	----	----
	23	----	1010
	24	----	0111
	25	0100	----
	26	----	----
	27	----	----
	28	----	----
	29	----	----
	30	----	----
	31	----	----

Situation: Discontinue Monitoring Specified Trunk Groups

Time of Day: 15:09P.M.

Condition Code: 3

Discontinued Monitoring on Trunk Group Access Codes or Attendant Identification Codes: 9, 41, 43, 57, 58, 59, 73, 74

PRELIMINARY

FIGURE 15. Call Record Example of List of Specific Trunk Groups No Longer Monitored

		BIT 0 3	4 7
BYTE	00	0 1 0 0	0 0 0 1
	01	MONTH TENS	MONTH UNITS
	02	DAY TENS	DAY UNITS
	03	0 1 0 0	0 1 1 1
TAPE	04	0 1 0 0	0 1 1 1
MOTION	05	TIME-HOUR TENS	TIME-HOUR UNITS
	06	TIME-MINUTE TENS	TIME-MINUTE UNITS
	07	0 1 0 0	0 1 1 1
	08	0 1 0 0	0 1 1 1
	09	INDEX NUMBER -1	INDEX NUMBER -2
	10	INDEX NUMBER -3	INDEX NUMBER -4
	11	0 1 0 0	0 0 0 1
	12	0 1 0 0	0 1 1 1
	13	0 1 0 0	0 1 1 1
	14	0 1 0 0	0 1 1 1
	15	0 1 0 0	0 1 1 1
	16	0 1 0 0	0 1 1 1
	17	0 1 0 0	0 1 1 1
	18	0 1 0 0	0 1 1 1
	19	0 1 0 0	0 1 1 1
	20	0 1 0 0	0 1 1 1
	21	0 1 0 0	0 1 1 1
	22	0 1 0 0	0 1 1 1
	23	0 1 0 0	0 1 1 1
	24	0 1 0 0	0 1 1 1
	25	0 1 0 0	0 1 1 1
	26	0 1 0 0	0 1 1 1
	27	0 1 0 0	0 1 1 1
	28	0 1 0 0	0 1 1 1
	29	0 1 0 0	0 1 1 1
	30	0 1 0 0	0 1 1 1
	31	0 1 0 0	0 1 1 1

FIGURE 16. Index Record

	BYTE	USE	EXAMPLE	BIT 0 3	BIT 4 7
	00	Time-Hour (2 digits, 24-hour clock)	14	0001	0100
	01	Time-Minute (2 digits)	43	0100	0011
p/o	02	Duration-Hour (1 digit)	4	----	0100
	03	Duration-Minutes (2 digits)	14	0001	0100
p/o	04	Duration-Tenths (1 digit)	5	----	0101
p/o	05	Condition Code (1 digit)	A	1010	----
p/o	05	Access Code #1 (3 digits)	9	----	1010
p/o	06			----	1010
p/o	07			1001	----
p/o	07	Access Code #2 (3 digits)	23	----	1010
p/o	08			----	0010
p/o	09			0011	----
p/o	09	Dialed Number (15 digits)	503-456-1212	----	1010
p/o	10			----	1010
	11			1010	1010
p/o	12			----	1010
	13			0101	0000
p/o	14			----	0011
	15			0100	0101
p/o	16			----	0110
	17			0001	0010
p/o	18			----	0001
p/o	19			0010	----
p/o	19	Calling Number (4 digits)	356	----	0011
p/o	20			----	0101
	21			0110	1010
p/o	22	Account Code (5 digits)	98	----	1001
	23			1000	1010
p/o	24			----	1010
p/o	25			1010	----
p/o	25	Unused		----	----
26 thru	31			----	----

TABLE 1. Call Record Data Items

BYTE	USE	EXAMPLE	BIT 0 3	BIT 4 7
01	Month (2 digits)	July (07)	0000	0111
02	Day (2 digits)	25	0010	0101
05	Time-Hour (2 digits, 24-hour clock)	14	0001	0100
06	Time-Minute (2 digits)	59	0101	1001
09	Index, or Sequence, Number (4-digits, 14 bits)	3E15	0011	1110
10			0001	0101
00,11	Fill words	41	0100	0001
03,04,07, 08, 12 thru 31	Fill words	47	0100	0111

TABLE 2. Index Record Data Items