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"I'm a great believer in luck, and I find that the harder I work, the more I have of it."
– Thomas Jefferson (1743 – 1826)

"Thinking is the hardest work there is, which is probably why so few engage in it."
– Henry Ford (1863 – 1947)

"I dried it in a toaster oven and hid it from your mother. I put in a Ziplock bag and sold it to your brother."
– Beastie Boys, *Car Thief* Demo

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Nortel DMS−100 Log Report Information

Understanding Log Reports

A log report is a message. The DMS−100 switch generates a log report when an important event occurs in the switch or one of its peripherals. Log reports include the following information:

- State and activity reports.
- Reports on hardware or software errors.
- Test results.
- Changes in state.
- Other events or conditions that affect the performance of the switch.

A log report appears in response to either a system or a manual action.

Controlling Output from the Log System

Log output includes storage, distribution, prioritization, suppression, and thresholds. There are two forms of log output control. First, each office changes the appropriate *Customer Data* tables to customize the output from the log system to meet local requirements. Second, Log Utility (LOGUTIL) commands can be executed in the LOGUTIL level of the MAP display. The use of LOGUTIL commands can temporarily override parameters set in the *Customer Data* tables. For example, commands can override parameters to turn log reports off, or to route output temporarily to a different device.

In most conditions, a restart will reset any temporary change made through LOGUTIL commands. A restart is a reinitialization of the DMS−100 operating system and user processes. Refer to the temporary Routing Commands section of the "Output Control Software" chapter of the *Input/Output System Reference Manual*.

Log Buffers

Each log buffer holds several hours of subsystem reports at peak output rates. The value of the office parameter LOG_CENTRAL_BUFFER_SIZE in table OFCVAR determines the number of reports the log buffers held. Refer to the OFCVAR parameters section in the *Office Parameters Reference Manual*.

Log buffers store the output reports in the order that they are generated. A Central Message Controller (CMC) report that generates at 16:04:39 appears in the log buffer before a report that generates at 16:08:33. When a subsystem buffer is full, the next report that generates displaces the oldest report. Unless the displaced log report is routed to some type of external storage device, the log report is lost. The user cannot retrieve the log report.

The Critical Message Prioritization feature provides an additional method to define the order log reports are output to a specified log device. This office parameter LOG_PRIORITIZATION in table OFCENG activates or deactivates the feature. Refer to the OFCENG parameters section in the *Office Parameters Reference Manual*.

Active log report alarm levels categorize log reports. The log report alarm levels are *Critical*, *Major*, *Minor*, *No Alarm*. The reports are output to specified devices in order of most critical to least critical alarm. The log buffer stores reports of the same alarm category in order.

Routing Log Reports

In addition to storing the reports, the output reporting system can route the reports to devices which the operating company defines. Devices which the operating company defines include MTD, DDU, Data Link, Printer, and VDU.

Each device has a buffer area, which under normal conditions can handle a large number of log reports. If devices lose reports that the system indicates, increase the size of the log buffer. To increase the size of the log buffer, change the office parameter LOG_DEVICE_BUFFER_SIZE in table OFCVAR. Refer to the OFCVAR parameters section in the *Office Parameters Reference Manual*.

Routing and Reporting Subsystems

The routing and reporting subsystem routes reports from the log system buffers to an I/O device. The I/O device prints, displays, or stores the reports. Data tables LOGCLASS and LGDEV control the subsystem and provide basic permanent routing.

To route a log report to a device, the following units of information must be available to the DMS−100 switch. Table LOGCLASS defines the *class* number of the report to be routed. Table LOGDEV defines the *device(s)* that are to receive the class number of log reports.

The following table displays the assignment of class numbers to the CMC log reports. When the CMC subsystem generates a log report, the routing and reporting subsystem references table LOGCLASS. The routing and reporting subsystem discovers the log report is class 4. When the class number is available, table LOGDEV searches for the device(s) which table LOGDEV defines to receive class 4 reports. In this example, the device is PRT1. The routing and reporting subsystem transmits the report through the log device buffer for PRT1 to the accurate device.

	REPORTS	CLASS	DEVICE
GROUP 1	NET 121	24	PRT1
GROUP 2	NET 115	24	PRT2
GROUP 3	PM 105	24	PRT3
GROUP 4	CMC 105	4	PRT1
GROUP 5	LINE 108	24	PRT2
GROUP 6	TRK 151	24	PRT3

LOGUTIL Commands

The LOGUTIL commands allow the user to perform the following functions:

- Obtain information that concerns log reports, I/O devices, and thresholds.
- Start and stop devices from receiving log reports.
- Browse through log subsystem buffers.
- Erase reports to clear log subsystem buffers.
- Establish temporary routing commands that override the permanent routing entries in tables LOGCLASS and LOGDEV. The permanent entries in these tables do not change and remain available to reverse conversion back to permanent routing.

An example of temporary routing is an I/O device which malfunctions. The I/O device and the associated log reports must be routed to another device. Operating company personnel require temporary routing to route log reports to a Video Display Unit (VDU) for troubleshooting purposes.

Tables

The following tables appear in this document. The tables list log header descriptions, log subsystems, event types, information−only logs, trouble codes, reason codes, equipment states, and call types. The tables also list other information. Spelling and capitalization of the table information are as they appear on the MAP terminal.

- **Table A:** Standard (STD) Header Format.
- **Table B:** Switching Control Center 2 (SCC2) Header Format.
- **Table C:** Software Subsystems Which Generate Log Reports. (*Table C* identifies log reports associated with critical and major alarms, and does not list reports associated with minor alarms)
- **Table D:** Event Types. (Event types that appear in the field after the header)
- **Table E:** Equipment States. (Equipment states define possible states for any component part of the DMS−100 switch)
- **Table F:** Line and Trunk Information Text. (Character strings that appear in the LINE and TRK *Information* field)
- **Table G:** Line and Trunk Trouble Codes. (Character strings that appear in the LINE and TRK *Trouble Code* field)
- **Table H:** Standard Definitions and Equipment Identification. (Descriptions and equipment identification for directory numbers, line equipment codes, and trunk IDs)
- **Table I:** Call Treatments.
- **Table J:** Trunk Diagnostic Results. (Character strings that appear in ATT and TRK log reports which generate as a result of automatic or manual diagnostic testing of trunks)
- **Table K:** AMA Entry Codes and Call Types. (Two−digit code that defines call types)

Option of Normal Log or Short Log Formats

The system displays log reports in the normal (long) format, or a short format. The normal format is the default, and provides all the report information described above. The system generates a short format if you request the short format through the LOGUTIL level of the MAP display. The short format displays only the first line of the log report. The short format allows you to view log reports at MAP levels where the viewing area is limited.

Log Report Formats

The first line of every log report contains the following elements:

- **Header** − A string for which the data entry in the *Customer Data* schema determine the components.
- **Event Type** − An abbreviation that indicates the event or condition that the log report indicates. Examples of the abbreviation are SYSB and TBL.
- **Event Description** − A string that contains one or more of the following fields:
- **Event Identification** − This is constant for every log report of the same name and number. For example, the event identification for a LINE101 log report is always LINE_DIAG.
- **Equipment Identification** − This variable identifies hardware or software. For example, a peripheral and its location, line equipment and an associated Directory Number (DN), or a Common Channel Signaling Service No. 7 (CCS7) route identification.
- **Reason Codes** − The reason codes, depend on the application. The *Event Description* field can be left blank.

The lines of the log report that remain, contain additional information about the event that the log report indicates.

The following sections examine each element of the log report in detail.

There are three formats for the header section of a log:

- Northern Telecom (NT) Standard header format (STD).
- NT header format for offices with multiple log generating nodes, for example, Enhanced Core (ECORE) offices.
- Switch Control Center 2 header format (SCC2). This format is available in offices that perform downstream processing of logs from a minimum of one switch.

A comparison of each of the three header formats follows:

Logs in NT Standard Header Format (STD)

The format of the first line of a STD log is as follows:

```
-----------------------------------------------------------------------------------------
officeid  alarm  threshold  reportid  mmmdd  hh:mm:ss  ssdd  event_type  event_id
-----------------------------------------------------------------------------------------
```

Refer to *Table A* for a description of the header fields. The second and following lines of the log report contain additional information about the event that the log report indicates. An example of a LINE101 log report that uses the STD header format follows:

```
-----------------------------------------------------------------------------------------
COMS_0 * LINE101 OCT31 12:00:00 2112 FAIL LN_DIAG
         LEN HOST 03 0 14 24 DN 7811999
         DIAGNOSTIC RESULT No Response from Peripheral
         ACTION REQUIRED Chk Periphls
         CARD TYPE 2X17AB
-----------------------------------------------------------------------------------------
```

This example indicates that the name or *office identification* of the switch that generated the log is COMS, side 0. The switch generated the log on October 31 at 12:00 P.M. The switch generated the log 21 times earlier, and generated for the 12th time at the device that displays this log. The event type and description indicates a failed line diagnostic. The variable message area provides more data about the defective line, and indicates the action required.

Logs in NT ECORE Office Header Format

The office identification for an ECORE office depends on the value of the ECORE_FORMAT parameter. If an ECORE office, with an `ECORE_FORMAT = TRUE` value outputs the previous LINE101 log, it appears as follows:

```
-----------------------------------------------------------------------------------------
COMS_0 CM * LINE101 OCT31 12:00:00 2112 FAIL LN_DIAG
            LEN HOST 03 0 14 24 DN 7811999
            DIAGNOSTIC RESULT No Response from Peripheral
            ACTION REQUIRED Chk Periphls
            CARD TYPE 2X17AB
-----------------------------------------------------------------------------------------
```

The office identification includes an eight−character *node name* and one trailing space that follows the office name. The same LINE101 log that an ECORE office, with `ECORE_FORMAT = FALSE` value generates, would appear as follows:

```
-----------------------------------------------------------------------------------------
COMS_0 * LINE101 OCT31 12:00:00 2112 FAIL LN_DIAG
         LEN HOST 03 0 14 24 DN 7811999
         DIAGNOSTIC RESULT No Response from Peripheral
         ACTION REQUIRED Chk Periphls
         CARD TYPE 2X17AB
-----------------------------------------------------------------------------------------
```

The log report does not display the node with the standard office identification. *Table A* lists and explains the standard (STD) headers that log reports include.

Table A: DMS-100 Standard Header Format (STD)

Field	Value	Description
office identification	string	Identifies the switch that generates the log. This field is optional and does not normally appear in the examples of log reports in this manual. The maximum length of this field is 12 characters. Office parameter LOG_OFFICE_ID in table OFCVAR sets the length of this field.
alarm	***, **, *, or blank	Indicates the alarm type of the log report. *** = critical alarm, ** = major alarm, * = minor alarm, blank = no alarm.
threshold	+, or blank	Indicates if a threshold is set for the log report. If + (plus sign), a threshold is set. If blank, the threshold is not set.
report identification	AAAAnnn	Identifies the log subsystem that generates the report of the log report in this subsystem. Two to four alphabetical characters and a number between 100-999 identify the log report. Refer to *Table C* of this document for a list of log subsystems.
mmmmdd	JANUARY-DEC 01-31	Identifies the month and day the report generates.
hh:mm:ss	00-23 00-59 00-59	Identifies the hour, the minute, and the second the report generates.
ssdd	0000-9999	Defines the sequence number for each log report generated. An ss increases each time a report appears, and is reset to 00 after the ss reaches 99. The dd increases each time a report shows at a device, and is reset to 00 after the dd reaches 99.

-End-

Logs in Switch Control Center 2 Header Format (SCC2)

The format of the first line of a SCC2 log is as follows:

```
alarm  mm  reportid  threshold  ssdd  event_type  event_id
```

There are two main differences between the STD header format and the SCC2 header format. The SCC2 header uses two spaces instead of three to display the alarm class. A critical alarm shows as `*C` instead of `***`. Instead of a time and date stamp, the SCC2 header format provides only the minutes (mm) after the hour. The header provides the time because the SCC2 processor time stamps each log it receives.

Refer to *Table B* for a detailed description of the SCC2 header fields.

The format of the following lines of the log report is the same as the format for offices with Standard or ECORE headers.

An example of LINE101 log report that uses the SCC2 header follows:

```
* 27 LINE 101 2112 FAIL LN_DIAG
     LEN HOST 03 0 14 24 DN 7811999
     DIAGNOSTIC RESULT No Response from Peripheral
     ACTION REQUIRED Chk Periphls
     CARD TYPE 2X17AB
```

Table B lists and explains the headers that log reports in SCC2 format include.

Table B: DMS–100 SCC2 Header Format

Field	Value	Description
alarm	*C, **, *, or blank	Indicates the report alarm type. *C is critical, ** is major, * is minor, blank is no alarm.
mm	00–59	Identifies the number of minutes after the hour that the report generates.
report identification	AAAA nnn	Identifies the log subsystem that generates the report. This field uses two to four alphabetical characters and the number (100–999) of the log report in this subsystem. Note the subsystem name and the log number in this format. Refer to *Table C* for a list of log subsystems.
threshold	+, or blank	Indicates if a threshold is set for the log report. If + (plus sign), a threshold is set. If blank, the threshold is not set.
ssdd	0000–9999	Defines the sequence number for each log report generated. An ss increases each time a report appears, and is reset to 00 after the ss reaches 99. The dd increases each time a report shows at a device, and is reset to 00 after the dd reaches 99.

–End–

Event Type and Identification

The *Event Type* and *Event Identification* follows the header.

The event type is a one–word, general description of the occurrence that caused the switch to generate the log report. Some examples of events are FLT, INFO, and SYSB. Refer to *Table D* for a list of event types and their meanings.

The event Identification is a string that provides additional information about the event. Normally the string is abbreviated. The event identification can be omitted when the event type and the text in the variable message/data area supply enough information.

Variable Message / Data Area

Lines of variable text and data fields normally follow the event type and identification. These fields provide additional information about one or more of the following:

- DMS−100 Responses
- Equipment Status
- Hardware Identification
- Problem Isolation
- Problem Resolution
- Software Identification

Log reports have a variable message / data area. If the log report does not have a variable message data / area, the event type and identification provide information to determine the action required.

Structure of a Log Report Description

This section details the log reports that the DMS−100 outputs. The following headings describe each log report, in detail:

- Report Format
- Example
- Explanation
- Explanation Table
- Action Taken
- Associated OM Registers

Log report descriptions can include the following:

- Tables exact to the log report.
- One or more *Additional Information* sections.
- A table that explains a hexadecimal data dump.

Report Format

The report format section is the first part of a log report description. The report format description provides a general model of the log report, and identifies constant and variable text. Refer to *Log Report Formats* in this document for additional information about the format fields.

Example

The example section is the second part of a log report description. It contains an example of the log report as it comes from the DMS−100 switch.

Explanation

The explanation section is the third part of the log report description. It contains a short description of the conditions that generate the report.

Explanation Table

The explanation table describes each field (logical part) of the log report in detail, under the columns: *field*, *value*, and *description*.

Field Column

The field column contains the following types of entry:

- The event identification when present.
- Constant fields, where the value does not change (normally written in uppercase).
- Variable fields, where more than one possible value or a range of values (written in lowercase).
- Mixed fields, that consist of a constant and an associated variable (written in a group of uppercase and lowercase letters).

Variables Represented

A small number of text variables, known to the reader, are represented by their abbreviations. For example: DN (Directory Number), LEN (Line Equipment Number), CLLI (Common Language Location Identifier), TRKID (Trunk Identifier). For a complete list, refer to *Table H*.

Other text variables are represented by the suffix `nm` if they are names. For example, `modnm` for *module name*. The suffix `txt` represents any other sort of character string. For example, `stattxt` for *state text*, `fltxt` for *fault text* (a character string that represents a fault).

Decimal numbers are represented by `n` (where `n` is zero to nine, unless specified). Hexadecimal numbers are represented by `h` (where `h` is zero to F, unless specified).

Value Column

Five types of values are in the value column:

- Separate values.
- Numeric ranges.
- Symbolic text, indicating a range of values as described in the description column.
- Constant, indicating only one value for the field.

Description Column

The description may include the following information:

- The meaning of the field.
- The meaning of exact values.
- Why the system displays a value.
- The relationship between this and other fields.
- References to tables that list and describe a set of values.
- References to the *Customer Data* schema tables that define the range of values for an office.

The general *Action to be Taken* section of this document gives the action for exact field values. The system includes the action for exact field values in cases not covered in the document.

Action Taken

The *Action to be Taken* section explains what action should be taken by operating company personnel when the log report occurs.

Associated OM Registers

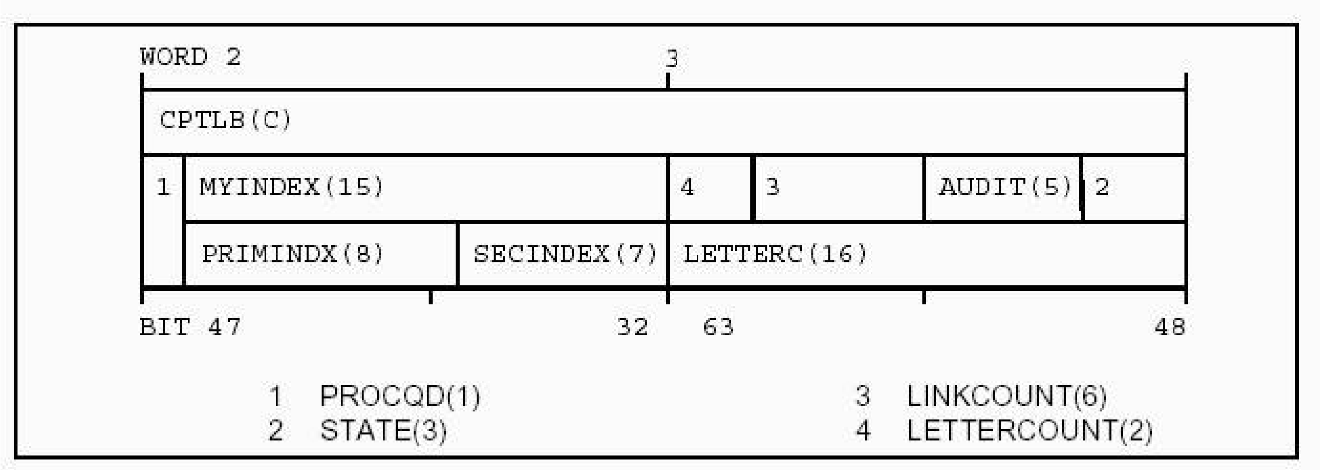
This section of the log report description lists Operational Measurements (OM) that associate with an exact log.

How to Understand Hex Tables in AUD and AUDT Log Reports

Most audit log reports (AUD and AUDT) output hex data blocks. This section contains the information to understand the hex values.

The documentation that explains hex data blocks has two parts. In the first part of the documentation, a diagram of the data fields contains the name of each field. The diagram of the data fields contains the size of the field, and its location in the data blocks. In the second part of the documentation, each page of the diagram has text that explains the purpose of the fields.

The following example is from a standard hex data diagram. Notice that there are two 16−bit words in each row (in this occurrence, WORD 2 and 3). WORD 2 contains bits 32 through 47 of the hex data blocks. WORD 3 has bits 48 through 63. The least significant bit in each word is on the right−hand side.



The field CPTLB extends across WORDS 2 and WORDS 3. Under CPTLB are two rows of field names, one beginning with field MYINDEX and the other with field PRIMINDX. Next to these names are numbers in brackets that identify the size of the fields in bits.

The size of the field is in brackets around the first word of a field. A C for continuation replaces the size in any additional words used by the field. For example, CPTLB begins in a word preceding WORD 2.

The diagram identifies some fields by number. The names of the fields are too large for the space allotted in the diagram. The numbers identify the numbered field names under the diagram.

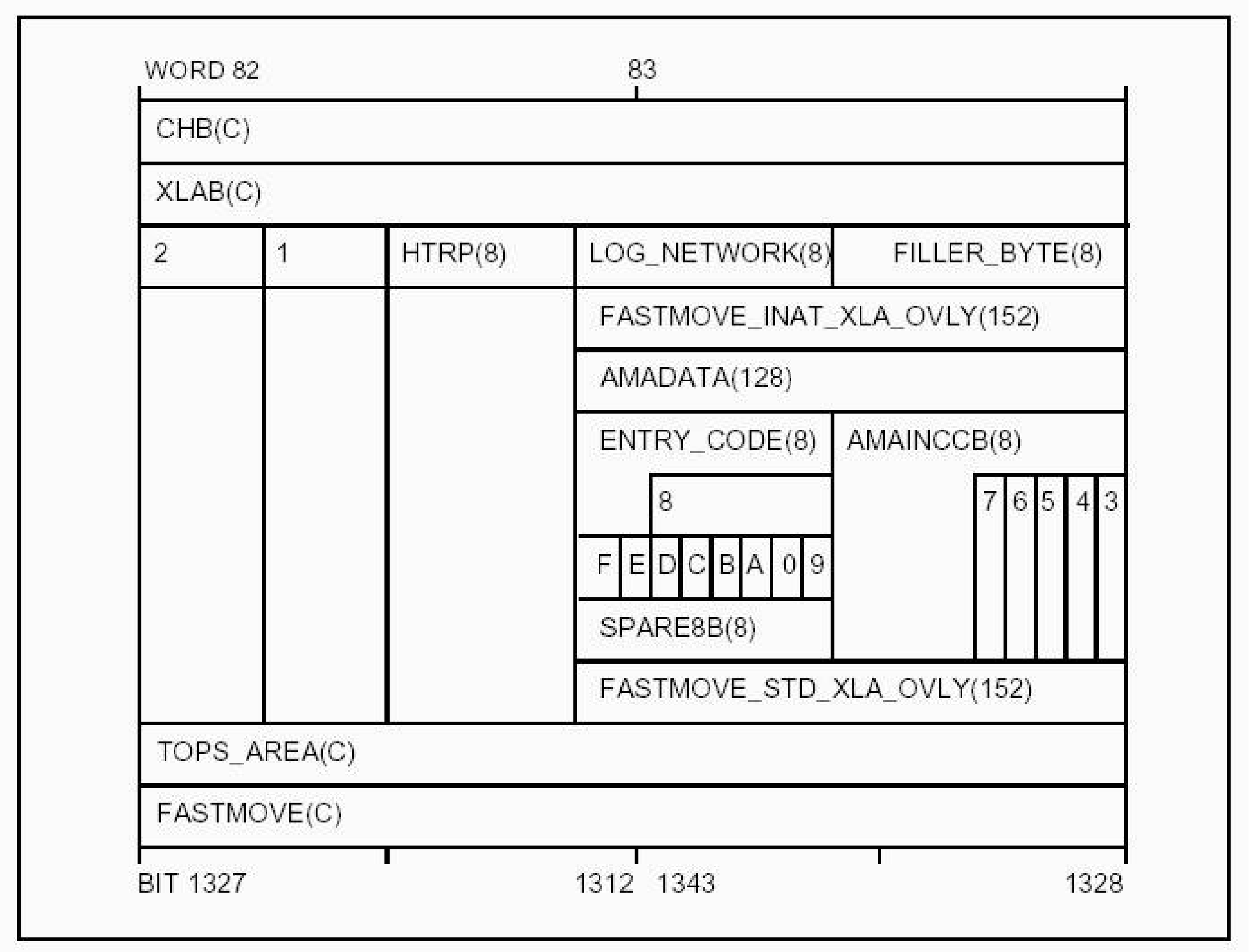
In the preceding example, the diagram shows three rows of field names stacked on top of each other. There are two possible relationships between these rows. One possibility is that each row can represent a separate overlay. This possibility means one or another displays, depending on the conditions software module, using a specified hexadecimal data structure. The other possibility is that one row comprises subfields of the previous row.

The diagram alone does not specify which relationship exists. An overlay chart defines which fields are overlays. Where nested overlays are present, the overlay chart shows the link between them. Fields that do not appear in the chart are subfields.

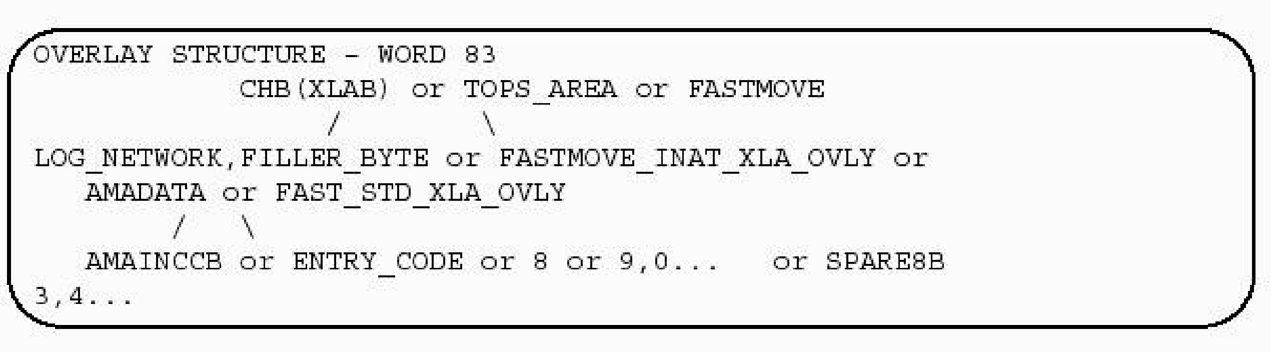
The overlay chart that accompanies WORD 3 in the previous example appears here. The fields on either side of the word or can occupy WORD 3 but not at the same time.

```
OVERLAY STRUCTURE   WORD 3
   2,AUDIT,3,4 or LETTERC
```

The following figure provides a more detailed example.



The corresponding overlay chart for *WORD 83* is:



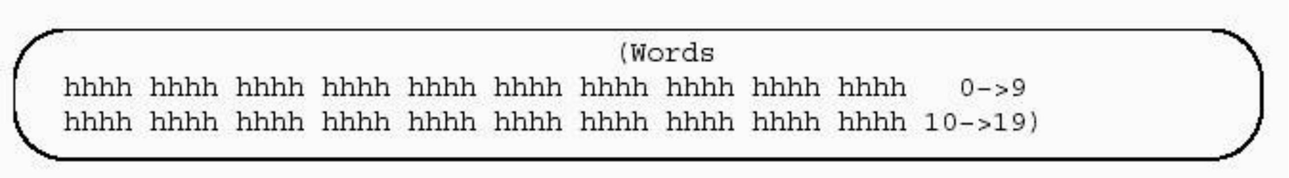
```
OVERLAY STRUCTURE - WORD 83
            CHB(XLAB) or TOPS_AREA or FASTMOVE
                 /        \
LOG_NETWORK,FILLER_BYTE or FASTMOVE_INAT_XLA_OVLY or
   AMADATA or FAST_STD_XLA_OVLY
        /   \
   AMAINCCB or ENTRY_CODE or 8 or 9,0...   or SPARE8B
3,4...
```

In this example, the first set of overlay choices, includes subfield XLAB of the CHB field, TOPS_AREA, and FASTMOVE.

These overlays are present in both WORDS 82 and 83.

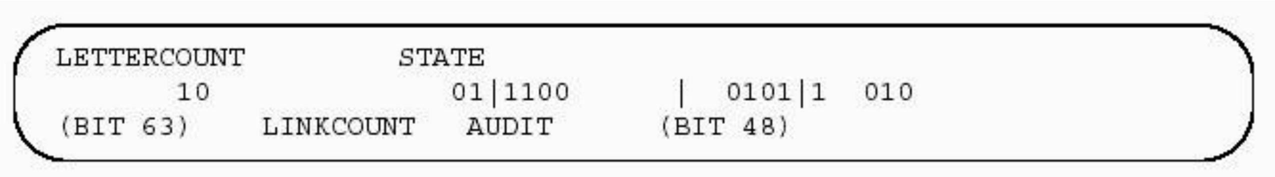
If you select XLAB, there are four new overlay choices in WORD 83, like LOG NETWORK, FILLER_BYTE. If you select AMADATA, AMAINCCB and fields 3 through 7 are the overlay choices in bits 1328 through 1332. The ENTRY_CODE, field 8, fields 9 through F, and SPARE8B are the overlay choices in bits 1336 through 1343.

Hexadecimal words in a diagram are numbered continuously from the beginning to the end of the hexadecimal data block. Word 0 corresponds to the top left word in the top row of the accurate log output.



```
                                        (Words
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh    0->9
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh 10->19)
```

The following example shows how actual hexadecimal output relates to the model of hexadecimal output in the diagram. For WORD 3 in the previous example, a dumped value of 9C5A is in the diagram as:



```
LETTERCOUNT          STATE
        10              01|1100       |  0101|1  010
(BIT 63)     LINKCOUNT   AUDIT       (BIT 48)
```

Unless stated, all numeric values that appear in the document audit log report descriptions are decimal. Only the example of an accurate log report contains data in hexadecimal values.

Field descriptions for Boolean names are described as *true* or *false*. A name is *true* (1) if the condition the field name defines exists. The name is *false* (0) if the condition the field name defines does not exist.

Information Only Logs

The switch generates these *information only* logs to alert maintenance personnel of the following conditions:

- A transient event occurred.
- A switch state like *Manual Busy* occurred.
- The system correctly tested a resource or service.
- The system detected software data that was not expected.

This log type normally does not require maintenance personnel to take any action. This log type does not affect service. It is possible that this document does not include detailed log report descriptions for these information only logs.

Nortel DMS–100 Log Report Information

Table C

Table C lists and explains the subsystems of the DMS–100 switch software that generate log reports.

Name	Critical	Major	Description
ACCS	–	–	The Automatic Calling Card Services (ACCS) subsystem provides the capabilities to obtain information related to calling card services.
ACD	–	–	The Automatic Call Distribution (ACD) subsystem provides equal distribution of calls to set answering positions. When all the positions are busy, the system queues the calls in the order of their arrival, according to call priority. The ACD performs audits to check for errors in each ACD group.
ACMS	–	–	The Automatic Call Distribution (ACD) subsystem provides equal distribution of calls to set answering positions. when the positions are all busy, calls are prompted in the order of their arrival, taking into account call priority. The ACD performs audits to check for errors in each ACD group.
ACNS	–	–	The Attendant Console Night Service (ACNS) subsystem controls the digits dialed to access night services provided by customers connected to MDC.
ACT	–	–	The Activity (ACT) subsystem checks Central Control Complex (CCC) for transient mismatches between the active and inactive sides.
ALRM	–	–	The Alarm (ALRM) subsystem checks the accuracy of connections to the Emergency Service Bureau (ESB). The Alarm subsystem sends indications of alarm conditions over a trunk to a remote operator position.
ALT	–	–	The Automatic Line Testing (ALT) subsystem provides automatic testing for large groups of lines during low traffic periods. The ALT performs on all line equipment. This includes peripherals, circuit cards, facilities, and connected telephones.
AMA	–	–	The Automatic Message Accounting (AMA) subsystem gathers and records all necessary data for subscriber-dialed calls that can be billed.
AMAB	–	–	The Automatic Message Accounting Buffer (AMAB) subsystem establishes and controls the AMA buffer. This buffer is where the AMA subsystem records data for subscriber-dialed calls that can be billed.
AOSS	–	–	The Auxiliary Operator Services System (AOSS) subsystem allows operators to provide subscribers with services as directory help (local and long distance) and call intercept.

APS	-	-	The Attendant Pay Station (APS) subsystem allows all lines in a service hall to route call information to an exact output device.
ARN	-	-	The Automatic Recall with Name (ARN) subsystem uses the service node to provide an audible name announcement identifying the last caller to the two-level AR announcement.
ASR	-	-	The Automatic Set Relocation (ASR) subsystem allows the user to move Integrated Voice and Data (IVD) sets from one location to another without technician interruption.
ATB	-	-	The All Trunks Busy (ATB) subsystem checks for busy conditions on trunks that terminate to a single location.
ATME	-	201, 204	The Automatic Transmission Measuring Equipment (ATME) subsystem controls equipment that makes transmission measurements ons circuits terminating at long distance switching centers. For example, international gateways.
ATT	-	-	The Automatic Trunk Testing (ATT) subsystem provides automatic testing for outgoing trunks and outgoing parts of two-way trunks.
AUD	-	-	The Audit (AUD) subsystem checks the accuracy of Central Control (CC) software and attempts to correct detected errors.
AUDT	-	-	The Audit (AUDT) subsystem checks the accuracy of Peripheral Module (PM) software and attempts to correct detected errors.
BERT	-	-	The Bit Error Rate Test (BERT) subsystem reports conditions concerning applications using Integrated Bit Error Rate Testers (IBERT).
BMS	-	-	The Buffer Management System (BMS) subsystem reports conditions concerning the allocation and deallocation of buffer space to applications using BMS.
CC	107, 128	102, 104 112, 113, 114, 120	The Central Control (CC) subsystem controls the data processing functions of a DMS-100 along with its associated Data Store (DS) and Program Store (PS).
CCI	-	-	The Computer Consoles, Inc. (CCI) subsystem reports on messaging errors between a DMS-100 switch and a CCI (DAS/C) system. This subsystem also provides information on the error and indicates the call should be operator-handled.
CCIS	-	104, 108, 120, 122, 130, 131	The Common Channel Interoffice Signaling (CCIS) subsystem controls information exchange between processor-equipped switching systems over a network of switching links.
CCS	209, 210, 213, 214, 215, 218, 219	175, 231	The Common Channel Signaling (CCS) subsystem logs report on CCS7 link-set and routeset management functions. These functions include the maintenance of signaling link-sets and the restoration of signaling to a link in the event of link failure or other interruption in service.
CDC	-	-	The Customer Data Change (CDC) subsystem allows end office subscribers to change data through service orders from their premises.

CDIV	-	-	The Call Diversion (CDIV) subsystem provides information concerning the Call Diversion feature.
CDRC	-	-	The Call Detail Recording Call Entry (CDRC) subsystem controls data collection, recording, and storage for each call processed by the DMS-300 Gateway.
CDRE	100	101	The Call Detail Recording Extension Blocks (CDRE) subsystem accesses the recording unit required to record CDR data on a call processed by the DMS-300 Gateway.
CDRS	-	-	The Call Detail Recording Call Processing (CDRS) subsystem determines if CDR is activated or not activated for calls processed by the DMS-300 Gateway.
CFW	-	-	The Call Forwarding (CFW) subsystem controls a service-related feature that permits a station to redirect incoming calls to another station.
CM	105, 109, 111, 116	104, 112, 122, 125, 133, 137, 158	The Computing Module (CM) subsystem controls the maintenance and call processing capabilities of a DMS-100E Enhanced Core switch.
CMC	-	101, 102, 110, 111	The Central Message Controller (CMC) subsystem controls a hardware entity in the Central Control Complex (CCC). The CMC provides an interface between the Central Control (CC) and the Network Message Controllers (NMC), or the Input/Output Controllers (IOC).
CP	-	-	The Call Processing (CP) subsystem controls processes involved in the set up of connections through the DMS-100 network between the calling and called parties.
CPM	-	-	The Core Package Modules (CPM) subsystem connect to the DMS-100. The CPM provide information on the link and node maintenance for the Data Package Network (DPN).
CRMG	-	-	The Call Reference Manager (CRMG) subsystem controls the allocation and recording of call reference numbers on a switch.
CRT	-	-	The Call Redirect (CRT) subsystem provides residential subscribers with the ability to transfer calls to a pre-defined routing directory number.
CSC	-	-	The Customer Service Change (CSC) subsystem provides information concerning data changes to subscriber lines.
CTID	-	-	The Clone Terminal Identifier (CTID) log reports notify operating company personnel about requests for the allocation of a clone virtual Terminal Identifier (TID).
C6TU	-	-	The Channel 6 Test Utility (C6TU) subsystem provides unit testing of Common Channel Interoffice Signaling (CCIS) features.
C7TD	-	-	The Common Channel Signaling (CCS7) Test Driver (C7TD) subsystem implements test procedures prescribed by the technician to analyze a CCS7 system network.
C7TU	-	-	The Common Channel Signaling (CCS7) Test Utility (C7TU) subsystem records the messages or message attempts to and from the C7TU. Do not generate these logs in a office.

C7UP	-	-	The Common Channel Signaling (CCS7) ISDN User Part (ISUP) (C7UP) subsystem controls circuit group blocking and circuit group not blocking messages. The subsystem controls the circuit groups as part of ISUP trunk maintenance.
DAS	-	-	The Directory Assistance Service (DAS) subsystem enhances the Traffic Operator Position System (TOPS) by using DAS for servicing Directory Assistance (DA) and Intercept (INT) calls.
DCR	-	-	The Dynamically Controlled Routing (DCR) subsystem determines other toll call destinations and enhances the quality of a toll network.
DDIS	-	-	The Data Distributor (DDIS) subsystem monitors the DMS-100 database and collects line data changes for the Business Network Management (BNM) database.
DDM	-	-	The Distributed Data Manager (DDM) subsystem updates the data of many DMS-100 nodes at the same time.
DISK	-	-	The Disk subsystem manages files and volumes on disk drives of the System Load module (SLM).
DDU	-	204	The Disk Drive Unit (DDU) subsystem controls the disk drive and associated power-converter card installed in an Input/Output (I/O) equipment frame.
DFIL	-	-	The Datafill (DFIL) subsystem reports on call interruptions during call processing or debugging operations. The reports indicate entry errors. These errors can include specifying more than the maximum number of digits for one stage of outpulsing.
DIRP	-	-	The Device Independent Recording Package (DIRP) subsystem directs data automatically from the different administrative and maintenance facilities to the correct recording devices.
DLC	-	-	The Digital Link Control (DLC) subsystem provides a means of passing data to and from an IBM and a DMS-100 switch. Technicians and testers use this tool to load files or data, and is not generally available to the field.
DNC	-	-	The Directory Number Check (DNC) subsystem is a test run by Faultsman digits test. It provides a mechanism for checking the Directory Number (DN) associated with the line. When you dial a DN, the switch checks the number. If the number is wrong, a DNC100 generates.
DNPC	-	-	The Directory Number Primary inter-LATA Carrier (DNPC) subsystem allows an operating company to provide operator services. The operator services are for inter-LATA calls from equal access or not-equal access end offices.
DPNS	-	-	The Digital Private Network Signaling (DPNS) subsystem is a Common Channel Signaling System used between Private Branch Exchanges (PBX). The DPNS logs reports on the state and events of DPNS links.
DPP	100	100, 101	The Distributed Processing Peripheral (DPP) subsystem provides the DMS-100 with Automatic Message Accounting (AMA) recording and data transmission capabilities. The AMA capabilities comply with the Bellcore specification for Automatic Message Accounting Transmission Systems (ATMAPS).

DRT	-	-	The Digit Reception Test (DRT) is a test run by the Faultsman digit test. The test is to verify that the dialed digits are correctly received by the switch. Digits are dialed according to a preset order. Log DRT100 produces if the switch detects an error.
DTSR	-	-	The Dial-Tone Speed Recording (DTSR) subsystem provides information on the activation/deactivation of the dialtone speed recorder.
DVI	100	101	The Data and Voice DS30 Interface (DVI) subsystem handles maintenance, state changes, and requests of the DVI node.
EAD	-	-	The Engineering and Administration (EAD) subsystem provides an interface between the EAD Acquisition System (EADAS) and the DMS-100. Requested messages or transmission problem reports are sent to EAD.
EATS	-	-	The Equal Access Traffic Separation (EATS) subsystem pegs traffic sent to default registers in the Traffic Separation Measurement System (TSMS).
ECO	-	-	The Emergency Cutoff Interruption (ECO) subsystem provides the company with a mechanism for preventing calls that are not necessary during an emergency.
EKTS	-	-	The Electronic-Key Telephone Service (EKTS) subsystem is a collection of voice band features from a base at central office. The features provide customers with key system capabilities. The EKTS allows call appearances of a single DN on a number of terminals.
EICTS	-	-	The Enhanced Network Integrity Check Traffic Simulator (EICTS) subsystem tests the performance of the call paths or fabric of the network.
ENCP	-	-	The Enhanced Network Call Processing (ENCP) subsystem controls processes in setting connections between calling and called parties in a DMS-100 Enhanced Network (ENET).
ENDB	-	-	The Enhanced Network Data Base (ENDB) subsystem is a database audit system for the Enhanced Network (ENET).
ENET	-	-	The Enhanced Network (ENET) subsystem provides information about computing module enhanced network maintenance.
ESA	-	-	The Emergency Stand-Alone (ESA) subsystem permits local calling within a Remote Line Module (RLM) or Remote Line Concentrating Module (RLCM). The ESA permits these calls in the event of loss of communication with the host office.
ESG	-	-	The Emergency Service Group (ESG) subsystem provides information on terminating hunt group options intended for use by emergency services.
EXT	103, 108	102, 107	The External Alarms (EXT) subsystem controls and tests the office alarm unit.
E911	-	-	The Enhanced 911 (E911) subsystem provides a central emergency service by routing calls to correct Public-Safety Answering Points (PSAP).

FCO	-	-	The FiberCenter OM Acquisition (FCO) process collects a set of specified OMs from the DMS-100 OM system. The FCO process sends the specified OMs to a client process on the FiberCenter Operational Controller (OPC).
FM	-	-	The Focused Maintenance (FM) subsystem provides alarm information when failure counts for line and trunk problems exceed established thresholds.
FMT	100	101	The Fiber Multiplex Terminal (FMT) subsystem reports status changes of a FMT.
FRB	-	-	The Faultsman Ringback (FRB) subsystem is a maintenance feature used by a field engineer to test continuity of a line. The field engineer can also make other adjustments on the premises of the subscribers.
FPRT	-	-	The DMS-Core Footprint (FPRT) subsystem provides the ability to record the status and events that make the system start again.
FTR	-	-	The Feature (FTR) subsystem provides information about the application of a treatment tone, announcement, or audio to an agent.
FTU	-	-	The File Transfer System (FTU) subsystem provides information on the downloading of files to a remote DMS-100.
GWSA	-	-	The Gateway Service Analysis (GWSA) subsystem controls class name of users authorized to access the input/output system of the DMS-300 Gateway. The authorized user obtains information concerning quality of call completion activities.
HEAP	-	-	The HEAP subsystem is a memory control utility for use by call processing and other Support Operating System (SOS) processes. The HEAP logs inform users of the allocation and deallocation of memory at run time.
IBM	-	-	International Business Machines (IBM) subsystem controls communication between a DMS-100 and the IBM Directory Assistance System (DAS). This communication provides support for the DMS-100 Auxiliary Operator Services System (AOSS). Refer to the explanation of the AOSS log subsystem in this table.
IBN	-	-	The Integrated Business Network (IBN) subsystem controls a business services package that uses DMS-100 data-handling capabilities to provide a central telephone exchange service.
ICMO	-	101, 102	The Incoming Message Overload (ICMO) subsystem measures incoming messages from the peripherals to the Central Control (CC). The ICMO subsystem measures the incoming messages over the two Central Message Controller (CMC) ports.
ICTS	-	-	The Integrity Check Traffic Simulator (ICTS) subsystem identifies and corrects network accuracy problems in the absence of traffic. The ICTS sets up a large number of network connections. The peripherals associated with a connection monitor the accuracy and parity values transmitted over the connection. Defective hardware has the integrity counts incremented against the path data, as the system retains the connection on the specified plane. Access these counts through the NET INTEG level of the MAP terminal.
IDCHGGAT	-	-	The International Digital Communication Charge Database Procedure Gate (IDCHGGAT) subsystem implements charge rate databases.

IDPL	-	-	Identifier Pools (IDPL) manage the use of Transaction Application Part (TCAP) identifiers.
INIT	-	-	The Initialization (INIT) subsystem provides information concerning the completion or failure of data initialization after a system starts again.
INTP	-	-	The Interrupt (INTP) subsystem controls the message counter for messages processed by the CMC. The INTP allows quality measurements of CMC performance and message traffic flow.
IPGW	-	-	The Internet Protocol Gateway subsystem provides maintenance access for the Gateway node.
IOAU	-	-	The Input/Output Audit (IOAU) subsystem checks the accuracy of routes and devices. The system uses these routes and devices to achieve a bi-directional data exchange between I/O devices and the Central Control (CC).
IOD	-	103, 104	The Input/Output Device (IOD) subsystem controls the hardware associated with devices used to achieve a bi-directional data exchange.
IOGA	-	-	The Input/Output Gate (IOGA) subsystem retrieves the node number or name for the I/O device.
ISA	-	-	The International Service Analysis (ISA) subsystem controls class identification of users authorized to access the input/output system. Authorized users obtain information concerning quality of call completion activities on international switches.
ISDN	112	111, 113 114	The Integrated Services Digital Network (ISDN) subsystem controls communications of ISDN DMS-100 switches.
ISF	-	-	The International Subscriber Feature (ISF) subsystem monitors the feature data updated by a subscriber.
ISP	-	-	The ISDN Service Provisioning (ISP) subsystem provides information on the errors that occur while ISDN services perform.
ISUP	-	-	The ISDN User Part (ISUP) subsystem provides information on the performance of ISUP trunks. The ISUP monitors performance in relation to known message volume, attempts not completed, and circuit availability.
ITN	-	-	The Inter Network (ITN) subsystem operates the Transmission Control Protocol (TCP) for communication between SuperNode and third-party host computers by the Ethernet Interface Units (EIU).
ITOP	-	106	The International Traffic Operator Position (ITOP) subsystem controls the international toll operator position consisting of a video display, keyboard, and headset. The ITOP monitors call details and enters routes and bills information.
KTRK	-	-	The Killer Trunk Reporting (KTRK) subsystem reports trunks that exhibit at least one killer trunk property. These properties include killer trunk, slow release, always busy, or always idle.

LINE	-	-	The Line Maintenance (LINE) subsystem controls the hardware and software entities associated with line equipment. These entities include, peripherals, circuit cards, facilities, and connected telephones.
LLC	100	-	The Line Load Control (LLC) subsystem selectively denies call origination capabilities to specified subscriber lines. The LLC denies the origination when excessive demands for service are offered to the switching center.
LMAN	-	-	The Load Management (LMAN) subsystem records each load command entered by the senior supervisor in an Automatic Call Distribution (ACD) setup.
LOST	-	-	The Lost Message (LOST) documents incoming and outgoing messages, and messages that bounce back and are lost. The record includes the lost messages.
MCT	-	-	The Malicious Call Trace (MCT) subsystem uses NTLS09 signaling between the DMS-100 switch and the local switching offices. The MCT gathers data for reports on malicious calls.
MDN	-	-	The Multiple-Appearance Directory Number (MDN) subsystem provides information on software testing. Do not generate these log reports in an office.
MIS	-	-	The Management Information System (MIS) subsystem provides a downstream processor with the ability to request Automatic Call Distribution (ACD) information from the DMS-100. This information is for old reports and real-time statistics.
MISC	-	-	The Miscellaneous (MISC) subsystem provides information that allows debugging of trouble encountered in another subsystem.
MISM	-	-	When a Mismatch (MISM) interrupt occurs, the mismatch logs are sent to the ACTSYS buffer. A mismatch log is not sent to any device printing logs at the time it occurs. The CC102 and CC105 logs print under normal conditions.
MM	-	113	The Mismatch (MM) subsystem reports on mismatch and transient mismatch faults in a DMS-100E Enhanced Core switch.
MOD	-	-	The Module (MOD) subsystem checks for software processing errors during call processing.
MPC	-	-	The Multi-Protocol Controller (MPC) subsystem allows data communication between the DMS-100 and another computer. For example, a central office billing computer or another switch, through the use of any data communication protocol.
MS	-	101, 103, 263	The Message Switch (MS) subsystem performs the routing of messages within the DMS-100E Enhanced Core switch.
MSRT	-	-	The Message Routing (MSRT) subsystem provides information on primary rate access networking failures and rejections.
MTCB	-	-	The Maintenance Base (MTCB) subsystem provides general support for maintenance software to implement a compatible method for PM software associated with different peripheral types.
MTD	-	103	The Magnetic Tape Device (MTD) subsystem controls the magnetic tape loading device.

MTR	-	116, 118, 123	The Metering (MTR) subsystem provides a method for billing subscribers for use of telephone network facilities during a call.
MTS	-	-	The Message Transfer System (MTS) subsystem provides notification of messaging failures.
MTXT	-	-	The Mobile Telephone Exchange Text (MTXT) log reports provide information about cellular phone services that the operating company provides to subscribers.
NCS	-	-	The Network Control System (NCS) system connects with the DMS-100. The connection provides capabilities for operation and maintenance of services for the Packet Handler (PH) by the DMS-100.
NCAS	-	-	The Non-Call Associated Signaling (NCAS) subsystem provides for signaling connections on Nortel Networks National ISDN Primary Rate Interface (NTNI PRI) links between Class 2 customer premise equipment and a DMS-100 switch.
NET	-	-	The Network (NET) subsystem controls a group of circuits and terminals where transmission facilities interconnect subscriber stations directly or not directly. For example, as in line-to-line connections or as in line-to-trunk, or trunk-to-line connections.
NETM	-	104, 116 128	The Network Maintenance (NETM) subsystem controls the status of the network and its links. This subsystem also provides information on the results of diagnostic tests.
NOP	103	-	The Network Operations Protocol (NOP) subsystem provides information concerning problems in file transfer. The NOP provides information concerning problems in transaction and pass through DMS MAP areas of the DMS-NOS (Network Operations System).
NO6	-	104	The Number 6 Signaling (NO6) checks Common Channel Signaling System (CCSS) integrity within the DMS-100. The CCSS uses an independent signaling network for transmission of telephony messages related to groups of speech circuits.
NPAC	-	212	The Nortel Networks X.25 Controller (NPAC) subsystem reports details concerning X.25 protocol.
NSC	-	-	The Number Services Code (NSC) subsystem reports on invalid data received by a Service Switching Point (SSP) for Enhanced 800 Service.
NSS	-	-	The Network Services Software (NSS) subsystem provides a wide range of capabilities and functions associated with network services.
NWM	-	-	The Network Management (NWM) subsystem controls a set of facilities that operate the DMS-100 Family network. The NWM objective is to make the best use of available resources during an overload or a facility failure.
N6	113, 131, 140	111, 112, 114, 115, 123, 124, 130, 134	The Number 6 Signaling (N6) subsystem checks the accuracy of the CCSS as it interacts outside the DMS-100 with other switches.

N6TU	-	-	The Number 6 Signaling Test Unit (N6TU) subsystem checks accuracy of test equipment used to verify the CCSS is operating correctly.
OAIN	-	-	The Operator Advanced Intelligent Network (OAIN) subsystem is part of call processing and maintenance for Operator Services System Advanced Intelligent Network (OSSAIN). OSSAIN provides an interface between a DMS-100 TOPS switch and external service nodes.
OCCP	-	-	The Occupancy Peak (OCCP) subsystem determines when the Central Control (CC) is operating under a high load percentage.
OCS	-	-	The Overload Control System (OCS) subsystem provides information concerning problems related to the load on the central controller, caused by peak call processing demands.
OHBT	-	-	The Off-Hook Balance Test (OHBT) optimizes the balance network for loaded subscriber loops. The OHBT determines the pad values necessary for the subscriber line to meet trans-hybrid loss requirements.
OMAP	-	-	Operational Measurement Application Part (OMAP) logs document the results of Message Routing Verification Tests (MRVT).
OMPR	-	-	The Operational Measurement Problem Reports (OMPR) document occurrences of problems encountered when attempting to accumulate statistics for OMRS subsystem log reports.
OMRS	-	-	The Operational Measurement Reporting System (OMRS) provides OM periodic reports according to a known schedule.
OM2	-	-	The Operational Measurement 2 (OM2) checks accuracy of gathered statistics.
OOC	-	-	The Overseas Operator Center (OOC) subsystem provides gateway operator services and rate and route information.
OSTR	-	-	The Operator Services Trouble Report (OSTR) subsystem provides information on conference circuits in use by an Automatic Call Distribution (ACD) operator services platform.
PCH	-	-	The Patch (PCH) subsystem reports conditions concerning the use of the DMS-100 patcher facility.
PEND	-	-	The Pending Order System (PEND) provides facilities for storing data modification orders (service orders). These facilities also retrieve the service orders at the time specified for execution.
PES	-	-	The Power and Environment System (PES) provides the means of controlling and monitoring the Outside Plant Module (OPM) cabinet service orders. The ESP provides the means for retrieving the OPM at the time specified for execution.
PM	170, 102	235, 105	The Peripheral Module (PM) controls all hardware and software systems that provide interfaces with external line, trunk, or service facilities.

PMC	-	-	The Printed Meter Check (PMC) subsystem sends a log to a printer for answered outgoing calls made on lines with the PMC option.
PRFM	-	-	The Performance (PRFM) logs indicate the load on a PM and its performance under this load.
PRSM	-	-	Post-Release Software Manager (PRSM) logs indicate conditions related to the use of PRSM.
QMIS	-	-	The Queue Management System (QMIS) provides information about the transmission of a QMS buffer.
REPL	-	-	The system generates the Report log (REPL) when updates are attempted during call processing and no journal file is available.
RLT	-	-	The Network Attendant Service (NAS) Release Link Trunk (RLT) subsystem allows for decreasing the number of required trunk facilities. This decrease occurs when the attendant services are consolidated at one or more nodes in the network.
RMAN	-	-	The Remote Load Management (RMAN) subsystem provides a downstream processor with the ability to issue Automatic Call Distribution (ACD) load management commands at a distance.
RMSG	-	-	Rapid Messaging (RMSG) logs indicate conditions related to the use of ISDN Basic Rate Interface (BRI) Rapid Messaging.
RO	-	-	The Remote Operation (RO) subsystem provides a general remote operation interface between applications in DMS-100 and external systems.
RONI	-	-	The Remote-Operator Number Identification (RONI) subsystem checks for problems encountered during remote Central Automatic Message Accounting (CAMA) call attempts.
SA	-	-	The Service Analysis (SA) subsystem controls class identification of users authorized to access the input/output system. The authorized user obtains information concerning quality of call completion activities.
SALN	-	-	The Station Administration Line (SALN) subsystem reports on Line Equipment Number (LEN) data discrepancies. The SALN reports on LEN data discrepancies between the DMS-100 database and the Business Network Management (BNM) database. The SALN reports the discrepancies on a Digital Network Controller (DNC).
SCAI	-	-	The Switch Computer Application Interface (SCAI) subsystem is a signaling interface provided by the DMS-100 to a host computer. The SCAI supports many different applications that require switch-host communication.
SCP	-	-	The Service Control Point (SCP) subsystem reports results or SCP local subsystem management audits.
SCR	-	-	The Selective Charge Recording (SCR) subsystem allows the charges for the current call quoted to the subscriber at the completion of a call. Only subscribers which have this feature can use the SCR subsystem

SCSS	-	-	Special Connection Special Services (SCSS) subsystem provides for nailed-up hairpin and side door connections between special-service lines and DS-1 channels. The SCSS provides the connections through a Subscriber Module Urban (SMU).
SDMB	355	355	SuperNode Data Manager Billing (SDMB) logs indicate conditions related to the use of the SDMB subsystem.
SDS	-	-	Special Delivery Service (SDS) logs indicate conditions related to SDS processing.
SEAS	-	-	The Signaling Engineering Administration System (SEAS) provides operating company Signaling Engineering and Administration Center (SEAC) personnel with mechanized support capabilities. With the mechanized support capabilities, SEAC personnel can provision, engineer, and administer networks of Signal Transfer Points (STP) and signaling links.
SECU	-	-	The Security (SECU) subsystem controls login and logout procedures, input commands, passwords, and priority login procedures for classified users.
SLE	-	-	The Screening List Editing (SLE) subsystem provides the interface to screen out incoming calls for special treatment.
SLM	-	200, 202, 206, 208, 403	The System Load Module (SLM) subsystem offers a reliable and good loading capability for DMS-100E Enhanced Core switches.
SLNK	107, 108	-	The SL-100 Link (SLNK) ACD feature distributes a large number of incoming calls among a number of telephone (ACD) positions. The SLNK logs provide a hard-copy history of the activities that occur on each data link.
SLNW	-	-	The SL-100 Network Control (SLNW) logs report on data communication applications between the Subregional Control Facility (SRCF) and the SL-100. The system generates the logs when the SL-100 fails to: * Establish a network connection. * Receive a message from the network connection. * Receive an acknowledgment from the remote application. * Send the message to the network connection.
SMDI	108	103	The Simplified Message Desk Interface (SMDI) subsystem provides communication between the DMS-100 and a message desk. A message desk serves as an answering service for stations that have their calls forwarded.
SME	-	-	The Signaling Management Environment (SME) subsystem contains software that implements operating ISDN Basic Rate Access (BRA) basic calling.
SNAC	-	103	The Switching Network Analysis Center (SNAC) subsystem is a method by which operators at a TOPS position can report trouble. The operator enters a 2-digit trouble code that causes the SNAC subsystem to generate a log report detailing the trouble.
SOS	100, 101, 110	-	The Support Operating System (SOS) reports that certain operations have occurred. These operations include a dump, or use (or attempted use) of priority or privileged commands.

SPC	-	-	The Semi-Permanent Connection (SPC) subsystem reports on the state of semi-permanent connections. These connections include line-to-line, trunk-to-trunk, or line-to-trunk which may be set up or taken down by administrative personnel through table control.
SRC	-	-	The System Recovery Controller (SRC) system.
SS	-	-	The Special Services (SS) substation includes telecommunications services other than Plain Ordinary Telephone Service (POTS), coin, and simple business services.
STOR	-	-	The Store Allocator (STOR) subsystem maintains a set of critical data structures that it modifies each time an application allocates or deallocates store.
SWCT	-	103	The Switch in Activity (SWCT) subsystem provides information that concerns the completion or failure of each SWCT step attempted.
SWER	-	-	The Software Error (SWER) subsystem provides information that concerns software errors found during code execution that include the code location where trouble was encountered. The SWER also provides the code location where the system generates a log report when the LOGTRACE utility is turned on.
SWNR	-	-	The Switch of Activity/Node (SWNR) subsystem provides information on the state of different nodes in response to a warm SWCT, a transfer of control to the backup CC with no loss of service.
SYNC	-	-	The Synchronous Clock (SYNC) subsystem controls the DMS-100 clocks so the clocks run in sync and follow industry time standards.
TABL	-	-	The Table (TABL) subsystem indicates a user has accessed or attempted to access a *Customer Data* table in read or write mode.
TCAP	-	-	The Transaction Capabilities Application Part (TCAP) subsystem provides a common protocol for remote operations across the CCS7 network.
TCCI	-	-	The TOPS CCI (TCCI) subsystem provides support for messaging protocol between the DMS-100 TOPS voice response and the Computer Consoles Inc. Directory Assistance System (CCI DAS/C) database.
TEOL	-	-	The TOPS subsystem generates TOPS End-of-Life (TEOL) messages that list all functionality areas used in the previous week that are scheduled for removal from the TOPS software load at a future date.
TFAN	-	-	The Traffic Analysis (TFAN) subsystem controls the flow of traffic data to the default OM registers.
TH	-	-	The Testhead (TH) subsystem provides support to test and maintain Test Access Controller (TAC) cards in the TAC peripheral.
TKCV	-	-	The Trunk Conversion (TKCV) subsystem provides a method to convert Per-Trunk Signaling (PTS) trunks to ISDN User Part (ISUP) trunks to make use of the SS7 signaling protocol.

TME	-	-	The Terminal Management Environment (TME) subsystem integrates applications. This provides greater functionality in available services.
TOPS	304	504	The TOPS controls the Toll Operator Position. The toll operator position consists of a video display and keyboard for monitoring call details and entering routing and billing information.
TPS	-	-	The Transaction Processing System (TPS) indicates problems. These problems include errors found by the TPS input handler on receipt of TPS messages. These problems also include errors found while auditing SCB letters.
TRAP	-	-	The Software Trap (TRAP) subsystem provides information concerning software errors found during code execution. This information includes the code location where the system encountered the problem.
TRK	103	-	The Trunk Maintenance (TRK) subsystem controls the hardware and software associated with trunk equipment. This hardware and software includes peripherals, circuit cards, and facilities.
UTR	-	-	The Universal Tone Receiver (UTR) subsystem provides information when the UTR fails to receive OM from an International Digital Trunk Controller (IDTC).
VIP	-	-	The Very Important Person (VIP) subsystem provides a method of restructuring traffic to any number of specified Local Exchange Codes (LEC).
VMX	-	-	The Voice Message Exchange (VMX) checks the Message Waiting Indicator (MWI) of a subscriber for activation, deactivation, and failure of activation/deactivation.
VSN	-	-	The Voice Services Node (VSN) subsystem communicates with the DMS-100 through an application protocol to provide voice recognition and play announcements for the subscribers.
WHC	-	-	The Who's Calling (WHC) subsystem intercepts incoming calls received with the directory number blocked (private) or not available (unavailable) for delivery. The subsystem requests, records, and delivers the caller's name to the residential subscriber. The subscriber receives multiple options to handle the intercepted call.
XIP	-	-	The XPM Internet Protocol (XIP) is used for communications between the CM and an Ethernet enabled SX05 XPM.
XSM	-	-	The Extended System Monitor (XSM) subsystem represents a microprocessor-based circuit pack (NT8D22AC) located in an Intelligent Peripheral Equipment (IPE) pedestal. The XSM monitors IPE power supplies, ring generators, column thermal state, blower unit operation, available Uninterruptable Power Supply (UPS), units, and available Battery Power Distribution Units (BPDU).

-End-

Nortel DMS–100 Log Report Information

Table D & E & F

Table D lists and explains the event types that log reports include.

Table D: DMS–100 Event Types

Event	**Description**
CBSY	Central-Side Busy. The equipment is not available on the side nearest the CCC.
EXC	Exception. The system encountered either software or hardware trouble during normal call processing operation.
FAIL	The system detected a hardware-related defect during diagnostic testing of the equipment.
FLT	Refer to Fault. The system encountered a software defect, probably on a block-read or block-write.
INFO	Refer to Information. The system produced information, important to the operation of the DMS–100 switch, that does not reflect a service-affecting event.
INIT	Refer to Initialization. The system had either a warm, cold, or Initial Program Load (IPL) restart.
LO	Refer to Lockout. The equipment is either placed on or removed from the Lockout (LO) list.
MANB	Manual Busy. A technician removed the equipment from service. The technician removes the equipment by operation of a panel control, or by a command entered at the MAP terminal.
OFFL	Off-Line. The equipment is not available for normal operation, but the connectivity information is defined for the equipment.
PASS	The system did NOT detect a hardware-related defect during diagnostic testing of the equipment.
PBSY	Peripheral-Side Busy. The equipment is not available on the side nearest the peripheral.
RTS	The equipment is now in-service after being in a busy state.
SUMM	A user or the system requests a summary report is requested according to a pre-established schedule.
SYS	The system software requested a report of this action.
SYSB	The system displays this event message when the DMS–100 removes equipment from service because an error occurred. The DMS–100 can also remove the trunk circuits that fail tests performed by DMS–100 Automatic Trunk Testing (ATT) facilities. The DMS–100 can add these circuits to a list of SYSB trunks. Operating company maintenance personnel can access these trunks.
TBL	The system detected an error that either is not hardware-related or is *not* linked to a hardware-related defect.

TRAN	A diagnostic test begun as a result of a hardware-related defect passes, and the transient threshold is not exceeded.
TRAP	The CC detected a software or hardware defect.
UNEQ	Unequipped. The equipment was not added to the system, and the connection information is not defined.

-End-

Table E lists and explains the equipment states the log reports include.

Table E: DMS-100 Equipment States

Event	**Description**
CSB	Central-Side Busy. The equipment is not available on the side nearest the CCC.
InSv	In-Service. The equipment is available for call processing.
ISTb	In-Service Trouble. The equipment is in service and available for call processing, but is not operating normally.
MANB	Manual Busy. A technician removed the equipment from service. The technician removes the equipment by operation of a panel control, or by a command entered at the MAP terminal.
MBSY	Manual Busy. A technician removed the equipment from service. The technician removes the equipment by operation of a panel control, or by a command entered at the MAP terminal.
OFFL	Off-Line. The equipment is not available for normal operation, but the connectivity information is defined for the equipment.
OK	OK. The equipment is in an in-service, idle state.
PBSY	Peripheral-Side Busy. The equipment is not available on the side nearest the peripheral.
SYSB/SBSY	The system displays this event message when the DMS-100 removes equipment from service because an error occurred. The DMS-100 can also remove the trunk circuits that fail tests performed by DMS-100 Automatic Trunk Testing (ATT) facilities. The DMS-100 can add these circuits to a list of SYSB trunks. Operating company maintenance personnel can access these trunks.
UNEQ	Unequipped. The equipment was not added to the system, and the connection information is not defined.

-End-

Table F lists and describes the line and trunk information that log reports include.

Table F: DMS-100 Line and Trunk Information Text

Information Text	**Description**
BABBLING_LINE_INFO	The system detected babbling over the line.
BUFFER_FULL_INFO	Peripheral message buffer is full.

```
-------------------------------------------------------------------------------------
BVTONE CIRCUIT          Indicates that BVL (Busy Verify Line) was used to barge into a
                        conversation, but the system did not have an available BV circuit.
                        As a result, the system did not receive a warning tone to the
                        customer before the barge in occurred.  The system produces a
                        TRK111 for the operating company when this condition occurs.
-------------------------------------------------------------------------------------
INVALID SIEZE           Indicates that seize occurred on outgoing trunk.
-------------------------------------------------------------------------------------
NIL                     There is no additional information required for problem isolation.
-------------------------------------------------------------------------------------
-End-
```

Note: If the information text is not stated here, use the associated LINE101 message to solve the problem.

Nortel DMS–100 Log Report Information

Table G

Table G lists and describes the line and trunk trouble codes that log reports include.

Table G: DMS–100 Line and Trunk Trouble Codes

Trouble Code	Description
ANNOUNCEMENT_MACH_TRBL	The Digital Recorded Announcement Machine (DRAM) failed to provide the required treatment to the line or trunk.
ANI_NUMBER_FAILURE	The Automatic Number Identification (ANI) failed to identify the originating station on an outgoing toll call.
ANI_OFFICE_FAILURE	The automatic number identification failed to identify the originating office on an incoming toll call.
ANI_TEST_FAILED	The originating line card failed to identify the directory number. This indicates a defective ringing generator.
ANI_TIME_OUT	The automatic number identification information was not received from the far-end office before the system timed out. The system generates this trouble code when Feature Group B (FGB) calls that encounter a trunk failure to the FGB carrier. This failure occurs because an off-hook did not return in five seconds after outpulsing was complete. The DMS-100 makes an attempt on a second trunk. The DMS-100 removes the call. The system generates this problem code only for FGB carriers that expect ANI spill.
BAD_CP_IOMSG	Central control received a call processing message that was invalid.
BAD_KEYSET_MSG	The system received a message from an add-on or extension not entered in user data table KSETINV. The system received a key stroke that was invalid.
BSS_SIC_INCOMPATIBLE	The BSS SIC is not compatible with the service required.
BIPOLAR_VIOLATION	The system detected a transmission error on a DS-1, DS-2, or DS-3 link. A waveform that is bipolar can break the bipolar rule. A 1 pulse that has the same sign as the preceding 1 pulse breaks this rule. **Note:** The system can use a violation deliberately to carry information outside the binary stream.
CAMA_POSITION_FAULT	The system detected a Central Automatic Message Accounting (CAMA) position error during call processing.
CAMA_POSITION_TROUBLE	The user reported the CAMA error manually with a 7-digit code.

CARRIER_OFFHK_TIMEOUT	A trunk failure to a Feature Group B (FGB) carrier occurred. This failure occurred because an off-hook did not return in five seconds after outpulsing was complete. The DMS-100 switch attempts a second trunk. The DMS-100 removes the call. This trouble code only occurs on trunks to FGB carriers that do not expect ANI spill. For FGB carriers that expect ANI spill, trouble code ANI_TIME_OUT is sent.
COIN_COLLECT_FL	Coins were not collected when the system processed a call that originated at a pay station. This event normally indicates a stuck coin or the ringing generator failed to send the correct voltage.
COIN_PRESENT_FL	The correct number of coins were not collected when the system processed a call that originated at a pay station. This event normally indicates either a stuck coin or the ringing generator failed to send the correct voltage.
COIN_RETURN_FL	The correct number of coins was not returned when the system processed a call that originated at a pay station. This event normally indicates either a stuck coin or the ringing generator failed to send the correct voltage.
CP_IOMSG_LOST	Central control did not receive an expected call processing message.
DIG_RCVR_NOISE_HIGH	The system detected a high level of noise on a digital multifrequency receiver.
DIG_RCVR_NOISE_MARGINAL	The system detected some noise on a digital multifrequency receiver.
DP_RCVR_NOT_RDY	The incoming dial-pulse trunk received pulses before the system prepared the trunk for digit collection.
DU_SYNC_LOST	Data unit sync was lost as a result of slippage on the facility.
EAOSS_HOLD_TIMEOUT	This code indicates problems with the line that is out of service. This code can indicate the timeout value specified in the office parameter. The EA_OSS_HOLD_TIMEOUT_MINS is not long enough.
EARLY_DP_DGT_DET	The system detected a problem during dial-pulse reception for an incoming call over a trunk. As a result, the system did not determine the call destination.
EMERGENCY_ANN	The system applied emergency announcement to the facility.
EXCESS_DIGITS	The system received more digits than expected.
EXPECTED_STOP_TIME_OUT	The system received expected stop-dial or timeout for call processing or diagnostics.
EXTRA_PULSE	The system received eleventh pulse for a single digit.
FALSE_KP	The system received second Key Pulse (KP) digit.
FALSE_START	The system received second Signaling Terminal (ST) digit.
GL_TIMEOUT	The system did not complete Multifrequency-Compelled (MFC) protocol global timeout in the specified timeout. The MFC protocol global timeout is a full compel cycle.
GRND_LOOP_FAIL	The system detected loop failure on termination to ground start.

HIT_DETECTED

The system detected a state change that did not last long enough to represent a valid signal on the signaling facility.

IDDD_MISSING_TERMIND

The system received international direct distance dialing digits. The system did not receive a terminating digit before the system timed out.

INTEGRITY_LOST

Incoming messages to the central control indicate both planes of the line or trunk equipment lost integrity. A hardware problem can occur in the circuit card or in the facility. A hardware problem can occur in the links between the peripheral and the network.

INTEGRITY_FAILURE

The system did not receive off-hook trailing edge in the transmitter timeout period for delay dial trunks.

INVALID_ANI_REQUEST

The system requested automatic number identification. The system did not require ANI.

INVALID_DIGIT_RECEIVED

This code indicates a Digitone receiver or a Universal Tone Receiver received one of the four digits that were not expected. These digits come from a digital multi-tone frequency telephone.

INVALID_RP_DIGIT

The system received invalid or incomplete routing information from the routing table.

INWATS_BAND_CHECK

The system received a call from outside the acceptable INWATS zone.

LARGE_TWIST

A digital multifrequency receiver detected a deviation from the expected frequency.

LINE_CARD_FAULT

The Line Concentrating Module (LCM) detected a line card fault during call processing.

LINE_DATA_ERROR

Sent from the International Line Group Controller (ILGC).

LINE_FORMAT_ERROR

Sent from the ILGC.

LINE_RESOURCE_FAILURE

Sent from the ILGC.

LINE_SIGNALLING_FAILURE

Sent from the ILGC.

MAN_UNREC_STRING

The system did not recognize a required string.

MFC_TONE_OFF

The originating trunk sends a tone before this trunk receives an acknowledge from the incoming trunk. The originating trunk sets the tone off.

MISDIRECTED_CAMA

The system received the prefix digit 1+ or 011+ for a call that does not require the prefix digit. The system routed the call to a misdirect CAMA treatment.

MISSING_CLC

The CLC is not present.

MISSING_STRINGS

The message does not contain required strings.

MISSING_TERMIND

The system received digits. The system did not receive a terminating digit during timing out.

MORE_THAN_TWO_FREQS

The digital multifrequency receiver received more than two frequencies.

MUTILATED_DIGIT The digital multifrequency receiver received either less than two frequencies, more than two frequencies, or frequencies that were not correct. A bad analog-to-digital or digital-to-analog converter in the trunk module that houses the receiver can cause defective digits.

MUTILATED_PULSE The system received an elongated pulse between 80 ms and 200 ms.

NIL_TRB_CODE The system detected a problem that is not defined during call.

NO_CIRCUIT_AVAILABLE There was no circuit available to complete the call. The system routed the call to an *All Trunks Busy* treatment. This code indicates a busy verify tone circuit was not available at the time of a call barge in.

NO_INTERDIGIT_PAUSE The digital multifrequency receiver did not detect a pause between digits received.

NO_START_DIAL The system did not receive off-hook trailing edge in the transmitter timeout period for delay dial trunks. This code can indicate the system did not receive a valid wink in the transmitter timeout period for on-wink trunks.

NO_UTR_AVAILABLE The XPM ran out of UTR channels and cannot service the request.

NO5_SIGNALLING_VIOLATION The system detected a problem in the CCITT No. 5 compelled signaling sequence.

OPT_UNREC_STRING The system does not recognize an optional string.

OUTPULSE_TIME_OUT The system did not receive compelled tone for outgoing trunk in the specified timeout period.

OVERALL_RP_TIMEOUT The remote peripheral timed out and did not receive digits or signals.

PARSER_SYNTAX_ERROR The system detected a syntax error in the message.

PARTIALDIAL The receiver did not receive enough digits before the receiver timed out. The receiver received a minimum of one digit.

PERMANENT_SIGNAL The system detected permanent signal on the line equipment. The system did not collect any digits. This code normally indicates a hardware problem with either the line card or facility.

PRE_ROUTE_ABANDON The system abandons an incoming call before the system receives all digits and determines a route. Pre-route abandon normally occurs when the system detects an on-hook during outpulsing.

PSTN_BARRED The originator is barred from connection to the PSTN.

PULSE_ON A tone considered to be a pulse continues longer than the time specified. The log report provides the pulse MFC_signal.

REVERSED_TRUNK The system detected either a polarity that is not correct or a continuity failure for a loop signaling trunk.

RINGING_FAILED The system detected a problem that is not expected with the ringing generator. The system did not ring the line.

SIC_INCOMPATIBLE The received SIC was not compatible with the service required.

SWAP_REJECT The system rejected the swap message.

```
-----------------------------------------------------------------------------------
TELLTALE                  The system abandoned an incoming call over a trunk from a remote
                          peripheral.
-----------------------------------------------------------------------------------
TONE_ON                   For an outgoing trunk, the compelled signal persists even when the
                          trunk does not send the compelling signal any longer.  For an incoming
                          trunk, the compelling signal persists even when the compelled signal
                          starts.  The log message provides the received MFC signal.
-----------------------------------------------------------------------------------
TRUNK_RESET               The system reset the trunk during call processing.
-----------------------------------------------------------------------------------
TRUNK_RESET_FAILED        The system did not reset the trunk after the system released the call.
-----------------------------------------------------------------------------------
UNAUTHORIZED_CODE         Number dialed was not valid for the line or trunk class.  The system
                          routed the call to the unauthorized code treatment.
-----------------------------------------------------------------------------------
UNDEFINED_MFC_SIG         The system received a Multifrequency-Compelled (MFC) signal that
                          does not have description.  Table MFCACT did not define this signal.
-----------------------------------------------------------------------------------
UNDETERMINED_RP_ERROR     The system detected problems in the remote peripheral that are not
                          known.
-----------------------------------------------------------------------------------
UNEXPECTED_MFC_SIG        The system received an MFC signal that the system does not expect
                          in the current context.
-----------------------------------------------------------------------------------
UNEXPECTED_MSG            The system recognized a message.  The system received this message
                          during a phase of the call that is not correct.
-----------------------------------------------------------------------------------
UNEXPECTED_STOP_DIAL      The system displays this message for one of three reasons:

                           * Any off-hook (stop-dial) during outpulsing for Multifrequency
                             (MF) trunks.

                           * A stop-dial did not meet the acceptable stop-go expected for
                             Dial-Pulse (DP) trunks.

                           * A stop-dial was received before outpulsing began for dial-pulse
                             immediate dial trunks.
-----------------------------------------------------------------------------------
UNRECOGNIZED_MSG          The system did not understand a message.
-----------------------------------------------------------------------------------
UTR_HI_NOISE              The Universal Tone Receiver (UTR) is detecting excessive noise on
                          the trunk and cannot continue detecting Multifrequency-Compelled
                          (MFC) tones accurately.
-----------------------------------------------------------------------------------
UTR_LARGE_TWIST           Twist occurs when the power of one frequency in the signal is greater
                          than the power of the second frequency.  The difference in frequency
                          is normally caused by characteristics of the trunk.  If this
                          difference is greater than a preset level, normally 9 dB, this is
                          considered an error.
-----------------------------------------------------------------------------------
UTR_MUTIL_DIGIT           The UTR received less than, or more than, two frequencies.
                          This indicates possible hardware problems.
-----------------------------------------------------------------------------------
VACANTCODE                The system could not determine the destination from the digits
                          received, and the system routed the call to a vacant code treatment.
-----------------------------------------------------------------------------------
VALID_CALLING_NUMBER      The automatic number identification failed, but the Operator
                          Number Identification (ONI) succeeded.
-----------------------------------------------------------------------------------
```

WRONG_ANI_REQUEST	An FGB carrier encountered a trunk failure because the system received a wink instead of the expected off-hook after completing outpulsing. The DMS-100 switch takes down the call. This trouble code only occurs on trunks to FGB carriers that expect an ANI spill.
WRONG_SUPERVISORY_SIGNAL	An FGB carrier encountered a trunk failure because the system received a wink instead of the expected off-hook after completing outpulsing. The DMS-100 switch takes down the call. This trouble code only occurs on trunks to FGB carriers that do not expect an ANI spill.
XPM_TRAP	Sent by the International Line Group Controller (ILGC).

-End-

Nortel DMS–100 Log Report Information

Table H

Table H lists the standard definitions and equipment identifiers that log reports include.

Field	Value	Description
CALLID	0-FFFFF	Provides number uniquely identifying the call. When a demand COT test fails on an SS7 trunk, the system displays the NIL value -32768.
CKTID	CLLI nnnn	Identifies the circuit. If the circuit is a trunk, the Common Language Location Identifier (CLLI) and circuit number are given. Refer to 'TRKID' explanation in this table for more information.
	LEN dn	If the circuit is a line, the LEN and DN are given.
DN		In the United Kingdom, the DN or National Subscriber Number (NSN) varies from 6-9 digits. The NSN must be formatted again to imitate the 10-digit, fixed-length DMS-100 format. The NSN comprises three parts, the National Number Group (NNG), the Local Exchange Code (LEC), and the Local Number, which correspond to the three parts of the DMS-100 DN: * The Service Numbering Plan Area (SNPA). * The central office code (NXX). * The extension number (XXXX). A subscriber living in a director (large city) area has an NSN with a 2-digit NNG followed by a 3-digit LEC and a 4-digit local number. * NNG + LEC + Local Number * 2 digits + 3 digits + 4 digits A subscriber living in a non-director area has an NSN with a 3-digit NNG followed by a variable-length LEC and local number. * NNG + LEC + Local Number * 3 digits + 0-2 digits + 4 digits
LEN	SITE ff b/m dd cc	Identifies Line Equipment Number (LEN) for lines connected to Line Module (LM) or Line Concentrating Module (LCM): * SITE - frame location if remote LM or LCM (RLM or RLCM) are present. Otherwise, SITE = HOST. Refer to *Customer Data* table SITE for site names. * ff - LM or LCM frame (00-99). * b/m - LM bay or LCM module (0 or 1). * dd - LM drawer or LCM subgroup (00-31). * cc - line card (00-31). LM and LCM test packs are located at SITE ff b/m 00 00.

LINKID	CLLI nn	Identifies a CCS7 link: * CLLI - Common Language Location Identifier for the linkset datafilled in *Customer Data* table C7LKSET. * n - link number (0-15).
Numbering Plan		The whole string of digits that may be dialed to reach a local, national, or international destination. The general format of all numbering plans is: Access Code + Prefix + Country Code + Area/Routing Code + Local Number
	Access Code	Allows access to another network, an attendant, or a feature. If a feature or a carrier access code is dialed, the digits that follow may not correspond to the numbering plan. A network access code (10XX or 10XXX) is required when dialing into a network other than the primary inter-LATA carrier. The PIC network available is the default.
	Prefix	One to three digits, provides information about the type of call being dialed. For example, the international prefix for calls that originate in North America on the network, "011" (international station-to-station unassisted calls) or "01" (international customer-dialed and operator-assisted calls). Other examples of a prefix (in North America) are "0" to get operator intercept and "1" to indicate long distance. The default is to not dial the prefix, which normally implies a local, non-assisted call.
	Country Code	One to three digits, indicating the country. Not normally used for calls that originate and terminate in North America.
	Area Code	Also called NPA, or Numbering Plan Area. Used in North America and near neighbors ("World Zone 1") to identify an area of the country. Consists of three digits of the form NPX, where N represents a digit between 2 and 9, P is either 0 or 1, and X represents a digit between 0 and 9.
	Routing Code	Used outside North America to identify a location. 2-5 digits.
	Local Number	In North America, this consists of: * The central office code-three digits of the form NXX, indicating the exchange within the area. * The station number is normally four digits of the form XXXX, which identify the station to terminate.
	Local Number	Outside North America the local number is 2-9 digits, depending on the country or part of the country.
PEC	nXnn	Identifies Product Engineering Code (PEC) for a circuit pack. PEC consists of an integer, followed by an "X," followed by two integers (2-9).

PMID	TYPE loctxt	Identifies a Peripheral Module (PM). For a description of the DMS-100 Family PMs, refer to the *Peripheral Modules Maintenance Reference Manual*. The value of "loctxt" for most PMs is the node number (0-2047). This number is associated with the PM through datafill in the local office. A few PMs, including LMs, LCMs, DLMs, RCCs, RSCs, provide more detailed information about their location. OPMs will also appear in this format. In these occurrences, the value of "loctxt" is "SITE ff b" where: * SITE - If the remote option is present, site is the location name, consisting of four characters, the first of which must be alphabetical, the rest of which are alphanumeric. Refer to *Customer Data* table SITE for site names. If the remote option is not present, the site is blank. * ff - frame (00-99). * b/m - bay or module (0 or 1). **Note:** Because the LM is a two-bay frame, the value of ff refers to both bays, and the value of b/m identifies which of the two bays is involved. With the other PMs of this type, the value of ff refers to the functional bay, and the value of b/m refers to the top (1) or bottom (0) module. If the LCM is in an RLCM or an OPM, the value of m can only be 0.
RECID	aaaaaannnn	Provides receiver identification. * aaaaaa - Six-character Automatic Identification of Outward Dialing (AIOD) group name. * nnnn - Four-character number that provides identification for members of the AIOD group.
ROUTEID	CLLI n	Identifies a CCS7 route. * CLLI - Common Language Location Identifier for the routeset datafilled in *Customer Data* table C7RTESET. * n - route number (1-3).
TASKID	hhhhhhhh tasknm	Identifies call processing task or procedure. * hh - process identification (0-FFFFFFFF). * tasknm - procedure name (character string).
TRKID	CLLI nnnn	Identifies trunk equipment. * CLLI - Common Language Location Identifier for trunk group datafilled in *Customer Data* table CLLI. List CLLI from CI MAP level for office CLLI. * nnnn - Circuit number for trunk in CLLI group (0-9999).

-End-

Nortel DMS–100 Log Report Information

Table I

Table I lists the call treatment codes that log reports include.

Table I: DMS–100 Call Treatments

Code	Treatment
ADBF	ANI_DATABASE_FAILURE
AIFL	AIOD_FAILURE
ANBB	ANI_FGB_BLOCK
ANCT	MACHINE_INTERCEPT
ANIA	ANI_ACCOUNT_STATUS_NOT_ALLOWED
ANTO	ANSWER_TIMEOUT
ATBS	ATTENDANT_BUSY
ATDT	ATD_TIMEOUT
BLDN	BLANK_DIR_NUMBER
BLPR	BLOCKED_PRECEDENCE_CALL
BUSY	BUSY_LINE
CACE	CARR_ACC_CODE_ERROR
CCNA	CALLING_CARD_NOT_ALLOWED
CCNV	CALLING_CARD_INVALID
CCTO	CALLING_CARD_TIMEOUT
CFWV	CFW_VERIFICATION
CGRO	CUSTOMER_GROUP_RESOURCE_OVERFLOW
CNDT	COIN_DENIED_TERM
CNOT	COIN_OVERTIME_TRTMT
CONF	CONFIRM_TONE
CONP	CONNECTION_NOT_POSSIBLE
CQOV	CAMA_QUEUE_OVFL
DACD	DIAL_ACCESS_CODE
DCFC	DISALLOWED_COIN_FREE_CALL
DISC	DISCONNECT_TIMEOUT_TRTMT
DNTR	DENIED_TERMINATION
DODT	DENY_ORIG_DATA_TERMINAL
D950	DIAL_950
EMR1	EMERGENCY_1
EMR2	EMERGENCY_2
EMR3	EMERGENCY_3
EMR4	EMERGENCY_4
EMR5	EMERGENCY_5
EMR6	EMERGENCY_6
ERDS	TRUNK_PERM_GROUND
FDER	FEATURE_DATA_ERROR
DFNZ	FIRST_DIGIT_NOT_ZERO
FECG	FAR_END_CONG
FNAL	FEATURE_NOT_ALLOWED
GNCT	GENERALIZED_NO_CIRCUIT
HNPI	HNPA_CODE_INTERCEPT
INAC	INVALID_ACCOUNT_CODE
INAU	INVALID_AUTHORIZATION_CODE
INCC	INVALID_CITYCODE
INOC	INVALID_OIC_CODE
IVCC	INVALID_CORRIDOR_CALL
LCAB	LOCAL_CALL_AREA_BARRED
MANL	MANUAL_LINE
MHLD	MUSIC_ON_HOLD

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MSCA          MISDIRECTED_CAMA_CALL
MSLC          MISDIRECTED_LOCAL
NACD          NO_DIAL_ACCESS_CODE
NACK          FEATURE_ACTION_NACK
NBLH          NETWORK_BLK_HVY_TRAFFIC
NBLN          NETWORK_BLK_NML_TRAFFIC
NCFL          NCS_COMMUNICATION_FAILURE
NCII          NCS_INVALID_ID_CODE
NCIX          NCS_INCOMING_EXCLUSION
NCRT          NO_CRKT
NCTF          NCS_TRANSLATION_FAILURE
NCUN          NCS_UNEXPECTED_ERROR
NECG          NEAR_END_CONG
NINT          CHANGED_NUM_INTERCEPT
NMZN          NO_METERING_ZONE
NOCN          NO_COIN
NONT          NOT_ON_NETWORK
NOSC          NO_SERVICE_CRKT
NOSR          NO_SOFTWARE_RESOURCE
N950          NO_DIAL_950
OLRS          INTER_LATA_RES
OPRT          REGULAR_INTERCEPT
ORAC          ORIG_REV_CODED
ORAF          ORIG_REV_FREQ
ORMC          ORIG_REV_MULTI_CODED
ORMF          ORIG_REV_MULTI_FREQ
ORSS          ORIG_SUSP_SERV
PDIL          PARTIAL_DIAL
PGTO          MOBILE_PAGE_TIMEOUT
PMPT          PREEMPT_TONE
PNOH          PERM_SIGN_NO_ROH
PRSC          PRIORITY_SCREEN_FAIL
PSIG          PERM_SIGNAL
PTOF          PREMATURE_TRUNK_OFFERING
RODR          REORDER
RRPA          REV_RING_PFXA
RSDT          RESTRICTED_DATE_TIME
SORD          STORAGE_OVERFLOW_REORDER
SRRR          SINGLE_REV_RING
SSTO          START_SIGNAL_TIME_OUT
STOB          SIGNAL_TIME_OUT_BOC
STOC          SIGNAL_TIME_OUT_IC_INC
SYFL          SYSTEM_FAILURE
TDBR          TESTDESK_BRIDGED
TDND          TOLL_DENIED
TESS          TERM_SUSP_SERV
TINV          TEMPORARILY_INVALID
TOVD          TOLL_OVERLOAD
TRBL          TROUBLE_INTERCEPT
TRRF          TERM_REV_FREQ
UMOB          UNREGISTERED_MOBILE
UNCA          UNAUTHORIZED_CAMA_CODE
UNDN          UNASSIGNED_NUMBER
UDNT          UNDEFINED_TRTMT
UNIN          UNAUTHORIZED_INWATS
UNOW          UNAUTHORIZED_OUTWATS
UNPR          UNAUTHORIZED_PRECEDENCE
VACS          VACANT_SPEED_NUMBER
VACT          VACANT_CODE
VCCT          VACANT_COUNTRY_CODE
-----------------------------------------------------------------------------------------
-End-
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Nortel DMS–100 Log Report Information

Table J

Table J lists and explains the trunk diagnostic results that log reports include.

Table J: DMS–100 Trunk Diagnostic Results

Diagnostic Results	**Description**
ACTIVE TABLE FULL	Indicates the system called more trunk tests to execute at the same time than the current setting in *Customer Data* table ATTSCHED permits. *Action:* Change number of simultaneous tests from ATT MAP level.
BUSY TONE	Indicates the far-end office returned a busy tone. *Action:* Retry test.
CALL FAILURE MESSAGE RCVD	Call Failure Message received during testing. *Action:* If the call failure message continues, coordinate analysis of signaling with far-end office.
CARD FAULT	Indicates a hardware error in the circuit pack. *Action:* Replace circuit pack.
CONFUSION MESSAGE RCVD	Confusion message received during testing. *Action:* Coordinate analysis of signaling with far-end office if the confusion message persists.
CONNECTION FAILURE	Indicates a connection failure between trunk and test equipment. *Action:* Diagnose trunk test equipment.
COULDN'T OPEN ATTOPTNS	Indicates a software bug blocked opening of access to *Customer Data* table ATTOPTNS. *Action:* Retry test.
COULDN'T READ ATTOPTNS	Indicates required entry in *Customer Data* table ATTOPTNS is not present for specified test class. *Action:* Check trunk and test parameters and options. Retry test.
CSC MTCE IN PROGRESS	Indicates an attempt made to perform a cellular trunk test during maintenance of cell site controller. *Action:* Retry test.
DATA FAULT	Indicates problem with received test result data. *Action:* Retry test.

DIAGNOSTIC NOT ALLOWED

Indicates system initiated the test on a circuit that was not equipped for the test type.

Action: Check trunk and test parameters and options.

DIAL TONE

Indicates far-end office returned dial tone.

Action: Retry test.

FACILITY FAULT

Indicates defect in transmission facilities.

Action: Diagnose trunk and test equipment.

FAILED TO OPEN TTT

Indicates failure to open test trunk for tone generation after selection of correct trunk test equipment to connect to.

Action: Make sure in-service trunk test equipment that functions correctly is available.

FAILED TO RUN DIAGNOSTIC

Indicates test equipment was not available or did not operate.

Action: Diagnose trunk and test equipment.

FAILED TO RUN TESTLINE

Indicates test failed to run as a result of a software bug during initial setup. Normally indicates processes are not available.

Action: Retry test.

GROUP CURRENTLY UNDER TEST

Indicates trunk group executed a trunk test. The trunk group ignores the second test request.

Action: There is no action required.

GROUP MANUAL ABORT

Indicates the user performed one of the following to abort a test manually from the ATT MAP level:

* Stopped group test.
* Reduced the number of simultaneous tests ATT can execute.
* Used the HaltATT command to stop all ATT tests.

Action: There is no action required.

GROUP SYSTEM ABORT:
REFERENCE TRUNK FAILURE

Indicates five consecutive failures. The system retested the reference trunk. The reference trunk failed the second test. The system aborts the group.

Action: Diagnose trunk testing equipment and reference trunks.

GROUP SYSTEM ABORT:
REFERENCE TRUNK UNAVAILABLE

Indicates five consecutive failures. The system retested the reference trunk. The reference trunk failed the second test. The system aborts the group.

Action: Diagnose trunk testing equipment and reference trunks.

GROUP SYSTEM ABORT:
CONSECUTIVE FAILURES

This diagnostic indicates five consecutive failures during search for a group reference trunk.

Action: Diagnose trunk test equipment.

HARDWARE FAILURE

This diagnostic indicates a hardware error detected in the trunk circuit.

Action: Diagnose trunk under test for a hardware defect.

HIGH-DRY

Indicates far-end office did not send an off-hook signal after a burst of audible ringing tone.

Action: Diagnose trunk under test. If diagnostics pass, error is in far-end or transmission facility.

HIGH TONE

Indicates far-end office returned a high frequency tone.

Action: Retry test.

HIT RECEIVED

This diagnostic indicates the detection of a transient interruption to the trunk.

Action: Retry test.

INTEGRITY LOST MESSAGE RCVD

Integrity lost message received during testing.

Action: High occurrences can indicate a problem with the network. Check for correctly functioning hardware.

INVALID REPLY

Indicates far-end office returned an invalid signal when the DMS-100 tried to outpulse digits.

Action: Diagnose trunk under test. If diagnostics pass, fault is in far-end or transmission facility.

LOCKOUT MESSAGE RCVD

Lockout message received during testing.

Action: If lockout message continues, coordinate analysis into signaling with far end office.

LOOP SIG FAULT

Indicates a fault in the loop bridge or receiving equipment causes signaling failure.

Action: Diagnose test equipment.

LOOP SIG FAULT NOSET

Indicates a fault in the software or loop generating equipment causes a signaling failure.

Action: Check trunk and test parameters and options. Diagnose test equipment.

LTA CANCELLED

Indicates Local Trunk Alarm (LTA) was not cancelled correctly.

Action: Diagnose test equipment. Retry test.

LTU FAULT

Indicates detection of fault in Line Test Unit (LTU).

Action: Diagnose LTU.

MILLIWATT

Indicates far-end office returned a milliwatt tone.

Action: Retry test.

NO/BAD CSC RESPONSE

Indicates an attempt was made to perform a cellular trunk test. The Cell Site Controller (CSC) did not send a response, or sent a response that was not expected.

Action: Diagnose CSC.

NO/BAD RCU RESPONSE

Indicates an attempt was made to perform a cellular trunk test. The cellular Remote Carrier Unit (RCU) did not send a response or sent a response that was not expected.

Action: Diagnose RCU.

NO/BAD TAU RESPOSE

Indicates an attempt was made to perform a cellular trunk test. The cellular Test and Alarm Unit (TAU) did not send a response, or sent a response that was not expected.

Action: Diagnose TAU.

NO CARD IN SHELF

Indicates circuit pack missing.

Action: Check installation for trunk circuit equipment.

NO FAR END TEST EQUIPMENT

Indicates far-end test equipment was not available or is not present.

Action: Diagnose trunk under test. If diagnostics pass, fault is in far-end or transmission facility.

NO LOGICAL MB

Indicates software bug prevented allocation of no logical Message Buffer (MB).

Action: Retry test.

NO START DIAL SIGNAL

Indicates far-end office did not respond after trunk was seized.

Action: Retry test.

NO TEST EQUIPMENT

Indicates test equipment was not available.

Action: Check trunk and test parameters and options.

NO TESTLINE NUMBER

Indicates a software bug prevented the trunk circuit from detection.

Action: Check trunk and test parameters and options.
Retry test.

NO TONE

Indicates far-end office failed to return the correct tone.

Action: Retry test.

NO TRUNKS IN GROUP

Indicates a software bug prevented detection of trunks in group.

Action: Check trunk and test parameters and options.
Retry test.

NOT OG OR 2W TRUNK GROUP

Indicates the test attempted transmission or lost tests on a trunk that is not an outgoing or two-wire trunk.

Action: Check trunk and test parameters and options.

OUTPULSING TROUBLE

Indicates trouble encountered while outpulsing digits.

Action: Diagnose trunk under test. If diagnostics pass, fault is in far-end or transmission facility.

OVERFLOW TONE

This diagnostic indicates far-end office returned an overflow tone.

Action: Retry test.

PARAMETER FAULT

Indicates parameters were wrong or not compatible for test type.

Action: Check trunk and test parameters and options.

PERIODIC SIGNAL

Indicates far-end office returned a periodic or not continuous signal.

Action: Retry test.

PM FAULT

Indicates fault in the Peripheral Module (PM).

Action: Diagnose PM.

PREMATURE RELEASE REQUEST

A clear forward was received before the test was completed.

Action: If premature release request continues, coordinate analysis into signaling with far end office.

RECORDED ANNOUNCEMENT

Indicates far-end office returned a recorded announcement.

Action: Retry test.

RELEASE CALL MESSAGE RCVD

Release call message received during testing.

Action: Determine if office personnel released the trunk by force from a MAP. Determine if the trunk functions correctly.

REORDER TONE

Indicates far-end office returned a reorder tone.

Action: Retry test.

RINGING

Indicates far-end office did not respond to ringing.

Action: Diagnose trunk under test. If diagnostics pass, fault is in far-end or transmission facility.

STOP DIAL SIGNAL RECEIVED

Indicates far-end office returned a congestion signal during outpulsing of digits.

Action: Retry test.

TAU NOT AVAILABLE

Indicates an attempt to perform a cellular trunk test. The test and alarm unit was in use or not available.

Action: Retry test.

TEST EQUIPMENT FAIL

This diagnostic indicates fault detected in the test equipment.

Action: Diagnose trunk test equipment.

TEST EQUIPMENT FAULT

Indicates fault was detected in test equipment.

Action: Diagnose trunk test equipment.

TEST EQUIPMENT UNAVAILABLE

Indicates test equipment was not available for test. The system generates this report every ten minutes until the test equipment is available.

Action: No required action.

TEST NOT ALLOWED

Indicates test is not allowed on circuit.

Action: Check trunk and test parameters and options.

TEST PROCESS TROUBLE

Indicates trouble with test process.

Action: Retry test.

TEST PROTOCOL TROUBLE

Indicates a software bug or the far-end office sent a response that was not expected.

Action: Retry test.

TESTLINE NOT AVAILABLE

Indicates the test is not available in current load.

Action: Check trunk and test parameters and options.

TONE DETECTION FAILED

Indicates failure to detect correct tone.

Action: Diagnose trunk test equipment.

TPT TONE

Indicates far-end office unexpectedly returned a Test Progress Tone (TPT).

Action: Retry test.

TRUNK GROUP TIMEOUT

Indicates time expired waiting for each trunk in the trunk group to become available for testing. The *Customer Data* table ATTSCHED shows the allowed time to wait for trunks to become available.

Action: Check WAIT_TIME in customer data table ATTSCHED. Retry test.

TRUNK NOT TESTED CFL

Indicates trunk circuit was not tested because it was carrier-failed.

Action: Contact the next level of maintenance.

TRUNK NOT TESTED CPD

Indicates trunk circuit was not tested because it was call processing deloaded.

Action: Retry test when trunk state returns to IDLE,

TRUNK NOT TESTED CPB

Indicates trunk circuit was not tested because it was call processing busy.

Action: Retry test when trunk state returns IDLE.

TRUNK NOT TESTED DEL

Indicates the deloaded trunk circuit is not tested.

Action: Return trunk to service. Retry test.

TRUNK NOT TESTED IMB

Indicates trunk circuit was not tested because it was offline.

Action: Return trunk to service. Retry test.

TRUNK NOT TESTED INI

Indicates the trunk circuit is not tested because of initialization.

Action: Return trunk to service. Retry test.

TRUNK NOT TESTED LO

Indicates the trunk circuit is not tested because it is locked out.

Action: Contact the next level of maintenance.

TRUNK NOT TESTED MB

Indicates trunk circuit was not tested because it was manually busy.

Action: Return trunk to service. Retry test.

TRUNK NOT TESTED NEQ

Indicates the trunk circuit was not tested because it was not equipped.

Action: Return trunk to service. Retry test.

TRUNK NOT TESTED NMB

Indicates trunk circuit was not tested because it was network management busy.

Action: Retry test when the trunk state returns to IDLE.

TRUNK NOT TESTED PMB

Indicates trunk circuit was not tested because it was peripheral module busy.

Action: Contact the next level of maintenance.

TRUNK NOT TESTED RES

This diagnostic indicates trunk circuit in restricted idle was not tested.

Action: When trunk state returns IDLE, retry test.

TRUNK NOT TESTED RMB

This diagnostic indicates trunk circuit was not tested because it was previously seized.

Action: Contact the next level of maintenance.

TRUNK NOT TESTED SB

Indicates trunk circuit was not tested because it was system busy.

Action: Contact the next level of maintenance.

TRUNK NOT TESTED SZD

Indicates trunk circuit was not tested because it was previously seized.

Action: Retry test when trunk state returns IDLE.

TRUNK TIMEOUT

Indicates time spent waiting for each trunk to become available for testing. The *Customer Data* table ATTSCHED sets the time allowed to wait for available trunks.

Action: Check WAIT_TIME in customer data table ATTSCHED. Retry test.

TST EQUIPMNT NOT REQUIRED	Indicates differences in the requested test. The requested test called for equipment that is not necessary. *Action:* Check trunk and test parameters and options.
TTT EQUIPMENT FAILURE	Indicates that the trunk test equipment sent a tone that was not expected, or did not send a tone. *Action:* Make sure the trunk test equipment concerned functions correctly.
TTU FAULT	Indicates a fault found in the Transmission Test Unit (TTU). *Action:* Diagnose TTU.
UNEXPECTED TONE	Indicates far-end office returned a tone that was not expected or not known.
UNKNOWN ATT MESSAGE	Indicates a software bug. A Software Error Report (SWER) follows with the message "Garbled ATT Message". *Action:* Contact the next level of maintenance.
UNKNOWN MESSAGE RCVD	Reception of a message that was not expected. *Action:* If the message continues, coordinate analysis into signaling with far-end office.
WAIT ON MAILBOX FAILED	Failure to wait on a mailbox for the next message to come in.
WRONG CARD IN SHELF	Indicates wrong circuit pack installed in the shelf. *Action:* Check trunk circuit equipment installation.
120 IPM TONE	Indicates far-end office returned a signal at 120 impulses per minute. *Action:* Retry test.
30 IPM TONE	Indicates far-end office returned a signal at 30 impulses per minute. *Action:* Retry test.

-End-

Note: Spelling and capitalization appear as the words appear on the MAP terminal.

Nortel DMS–100 Log Report Information

Table K

Table K lists the entry codes and call types that Automatic Message Accounting (AMA) log reports include.

Entry Code	Call type	
00	Station Paid DDD	
01	Station Paid LCDR	
02-07	Reserved for Special Features	
08	TWX	
09	Data	
10-15	Reserved for special features	
16	Message Rate - Timed	
17	Message Rate - Not Timed	
18	Detailed Message Rate	
19	Conference Trunk Use	
20	Station Paid Operator Assisted	
21	Station Collect	
22	Station Special Calling	
23	Person Paid	
24	Person Collect	
25	Person Special Calling	
26	Auto Collect	
27	Station Special Called	
28	Person Special Called	
29	Person Call Back (PCB)	
30	PCB Special Billing	
31-39	Not Used	
40	Station Paid DDO	(see Note 1)
41-55	Reserved for Special Features	
56	Not Used	
57	Not Used	
58-59	Reserved for Possible Future Use	
60	Station Paid Operator Assisted	(see Note 1)
61	Station Collect	(see Note 1)
62	Station Special Calling	(see Note 1)
63	Person Paid	(see Note 1)
64	Person Collect	(see Note 1)
65	Person Special Calling	(see Note 1)
66	Not Used	(see Note 1)
67	Station Special Called	(see Note 1)
68	Person Special Called	(see Note 1)
69	Person Call Back (PCB)	(see Note 1)
70	PCB Special Billing	(see Note 1)
71-79	Not Used	
80	INWATS - Measured Time	
81-83	Reserved for Possible Future Use	
84-89	Not Used	
90	Used by LAMA First Extension Entry	
91-95	Not Used	
96	Not Shown (default)	
97	Canceled Call (domestic)	
98	Canceled Call (overseas)	
99	AMA Test Call	

-End-

Note 1: Indicates international dialing always used for calls that ACSS handled.

Note 2: The operating company can modify codes 00−99 for DMS−100 and DMS−200. Refer to table TOLLENTC in the *Data Schema Reference Manual*.

Note 3: For DMS−200 TOPS, codes 00−19 are the option of the operating company. Codes 20−99 are hard−coded.

Note 4: Codes 00−39 and 80−99 apply to Local Automatic Message Accounting (LAMA).

Note 4: For all loads, codes 40−79 appear in log report AMAB101 as `DDO=Y`.

SECU101

Explanation

The Security (SECU) subsystem generates SECU101. The subsystem generates SECU101 when a valid user uses normal login/logoff procedures to log on or off of a terminal.

Format

The log report format for SECU101 is as follows:

```
SECU101 mmmdd hh:mm:ss ssdd INFO
   User: <user> logtxt <term>.
```

Example

An example of log report SECU101 follows:

```
SECU101 APR01 12:00:00 2112 INFO
   User: JANET logged OUT from MAP.
```

Field Descriptions

The following table describes each field in the log report:

Field	Value	Description
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies user that logged on or off of a specified terminal. Use the CI command SHOWUSERS for a list of users defined to the system.
logtxt	logged IN to	Identifies user that logged on the terminal.
	logged OUT from	Identifies user that logged off of the terminal.
<term>	*descriptive text*	Identifies the terminal where the user logged on or off. List TERMDEV from CI MAP level for list of terminals.

-End-

Action: Save the report for security personnel. (*all SECU reports*)

Associated OM Registers: There are no associated Operational Measurement (OM) registers. (*all SECU reports*)

Additional Information: There is no additional information. (*all SECU reports*)

SECU102

Explanation

The Security (SECU) subsystem generates SECU102. The subsystem generates SECU102 when a user uses an invalid identification or password to attempt to login on a terminal.

Format

The log report format for SECU102 is as follows:

```
SECU102 mmmdd hh:mm:ss ssdd INFO
   Invalid LOGIN attempt on <term>. USERID: <user>. reastxt.
```

Example

An example of log report SECU102 follows:

```
SECU102 APR01 12:00:00 2112 INFO
   Invalid LOGIN attempt on MAP. USERID: JANET. Bad password.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
Invalid LOGIN attempt on	*symbolic text*	Identifies the terminal on which the user attempted to login. List TERMDEV from CI MAP level for list of terminals.
USERID	*bad userid*	Indicates use of invalid user identification to attempt login on terminal.
	0000-FFFF	Provides valid identification for a user that attempts to login the terminal. Use the CI command SHOWUSERS for a list of users defined to the system.
reastxt	Bad password	Indicates the user attempted to login the terminal with an invalid password.
	Password expired	Indicates the user attempted to login the terminal with an expired password.
	Bad userid	Indicates the user attempted to login the terminal with an invalid user identification.

-End-

SECU103

Explanation

The Security (SECU) subsystem generates SECU103 when one user forces another user off the terminal. Both users are logged on this terminal.

Format

The log report format for SECU103 is as follows:

```
SECU103 mmmdd hh:mm:ss ssdd INFO
   User: <user> forced out from <term>.
   By Command from user <usernm> on <termnm>.
```

Example

An example of log report SECU103 follows:

```
SECU103 APR01 12:00:00 2112 INFO
   User: JANET forced out from MAP.
   By Command from user OPERATOR on MAP.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies the user forced off the terminal. Use the CI command SHOWUSERS for a list of users defined to the system.
forced out from	*symbolic text*	Identifies terminal that one user forced the other user off. List TERMDEV from CI MAP level for list of terminals.
By Command from user	*constant*	Identifies the user forcing the other user off the terminal. Use the CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies the terminal used to force the user off. Use the CI command SHOWUSERS for a list of users defined to the system.

-End-

SECU104

Explanation

The Security (SECU) subsystem generates SECU104 when a user changes one of the following:

- The commandset class for a privileged command.
- The automatic logging of command use/abuse in *Customer Data* table CMDS.

Note: Line three (old commandset), line five (old use log/alarm) and line seven (old abuse log/alarm) can appear. The system displays these lines if the command was present in CMDS and the user changed the tuple for that command.

Format

The log report format for SECU104 is as follows:

```
SECU104 mmmdd hh:mm:ss ssdd INFO
   User: <user> from <term>. CMDS changed to <cmdnm>.
   old commandset: n,n,n,n,n.
   new commandset: n,n,n,n,n.
   old use log/alarm: B/alrmtxt
   new use log/alarm: B/alrmtxt
   old abuse log/alarm: B/alrmtxt
   new abuse log/alarm: B/alrmtxt
```

Example

An example of log report SECU104 follows:

```
SECU104 APR01 12:00:00 2112 INFO
   User: JANET from MAP. CMDS changed to RESTART.
   old commandset: 1,3,4,5,6.
   new commandset: 3,4,5,6.
   old use log/alarm: NO/NO_ALARM
   new use log/alarm: YES/MINOR
   old abuse log/alarm: NO/MAJOR
   new abuse log/alarm: YES/CRITICAL
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
<user>	*descriptive text*	Identifies the user that changes the commandset or the automatic logging of command use/abuse in table CMDS. Use the CI command SHOWUSERS for a list of users defined to the system.

-continued-

Field	**Value**	**Description** (continued)
from	*symbolic text*	Identifies the terminal from which the user made the change(s). List TERMDEV from CI MAP level for list of terminals.
CMDS changed to	*symbolic text*	Identifies the changed command in CMDS. List CMDS from CI MAP level for privileged commands. Refer to *Customer Data* table TERMDEV.
old commandset	0-30	Identifies the commandset class previously able to execute the command.
	ALL	Indicates all commandset classes were necessary in order to execute the command.
	NONE	Indicates that commandset classes were not necessary to execute the command. All users were able to execute the command.
new commandset	0-30	Identifies commandset class now able to execute the command.
	ALL	Indicates the system requires all commandset classes to execute the command.
	NONE	Indicates commandset classes are not required to execute the command. All users are now able to execute the command.
old use log/alarm	NO/NO_ALARM	Indicates that automatic logging of use was not in effect. Use of the command did not raise an alarm.
	YES/NO_ALARM	Indicates that automatic logging of use was in effect. Use of the command did not raise an alarm.
	NO/MINOR	Indicates that automatic logging of use was not in effect. Use of the command raised a minor alarm.
	YES/MINOR	Indicates that automatic logging of use was in effect. Use of the command raised a minor alarm.
	NO/MAJOR	Indicates that automatic logging of use was not in effect. Use of the command raised a major effect.
	YES/MAJOR	Indicates that automatic logging of use was in effect. Use of the command raised a major alarm.
	NO/CRITICAL	Indicates that automatic logging of use was not in effect. Use of the command raised a critical alarm.

-continued-

Field	Value	Description (continued)
	YES/CRITICAL	Indicates that automatic logging of use was in effect. Use of the command raised a critical alarm.
new use log/alarm	NO/NO_ALARM	Indicates that automatic logging of use is not in effect. Use of the command did not raise an alarm.
	YES/NO_ALARM	Indicates that automatic logging of use is in effect. Use of the command did not raise an alarm.
	NO/MINOR	Indicates that automatic logging of use is not in effect. Use of the command raised a minor alarm.
	YES/MINOR	Indicates that automatic logging of use is in effect. Use of the command raised a minor alarm.
	NO/MAJOR	Indicates that automatic logging of use is not in effect. Use of the command raised a major alarm.
	YES/MAJOR	Indicates that automatic logging of use is in effect. Use of the command raised a major alarm.
	NO/CRITICAL	Indicates that automatic logging of use is not in effect. Use of the command raised a critical alarm.
	YES/CRITICAL	Indicates that automatic logging of use is in effect. Use of the command raised a critical alarm.
old abuse log/alarm	NO/NO_ALARM	Indicates that automatic logging of abuse was not in effect. Abuse of the command did not raise an alarm.
	YES/NO_ALARM	Indicates that automatic logging of abuse was in effect. Abuse of the command did not raise an alarm.
	NO/MINOR	Indicates that automatic logging of abuse was not in effect. Abuse of the command raised a minor alarm.
	YES/MINOR	Indicates that automatic logging of abuse was in effect. Abuse of the command raised a minor alarm.
	NO/MAJOR	Indicates that automatic logging of abuse is not in effect. Abuse of the command raised a major alarm.
	YES/MAJOR	Indicates that automatic logging of abuse was in effect. Abuse of the command raised a major alarm.

-continued-

Field	Value	Description (continted)
	NO/CRITICAL	Indicates that automatic logging of abuse was not in effect. Abuse of the command raised a critical alarm.
	YES/CRITICAL	Indicates that automatic logging of abuse was in effect. Abuse of the command raised a critical alarm.
new abuse log/alarm	NO/NO_ALARM	Indicates that automatic logging of abuse is not in effect. Abuse of the command did not raise an alarm.
	YES/NO_ALARM	Indicates that automatic logging of abuse is in effect. Abuse of the command did not raise an alarm.
	NO/MINOR	Indicates that automatic logging of abuse is not in effect. Abuse of the command raised a minor alarm.
	YES/MINOR	Indicates that automatic logging of abuse is in effect. Abuse of the command raised a minor alarm.
	NO/MAJOR	Indicates that automatic logging of abuse is not in effect. Abuse of the command raised a major alarm.
	YES/MAJOR	Indicates that automatic logging of abuse is in effect. Abuse of the command raised a major alarm.
	NO/CRITICAL	Indicates that automatic logging of abuse is not in effect. Abuse of the command raised a critical alarm.
	YES/CRITICAL	Indicates that automatic logging of abuse is in effect. Abuse of the command raised a critical alarm.

-End-

SECU105

Explanation

The Security (SECU) subsystem generates SECU105 when one user changes the password for another user.

Format

The log report format for SECU105 is as follows:

```
SECU105 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. Password has been changed for <usernm>.
```

Example

An example of log report SECU105 follows:

```
SECU105 APR01 12:00:00 2112 INFO
   User: JANET on MAP. Password has been changed for OPERATOR.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies the user that changes the password. Use the CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies the terminal where the user changed the password. List TERMDEV from CI MAP level for list of terminals.
Password has been changed for	*symbolic text*	Identifies the user that had password changed. Use the CI command SHOWUSERS for a list of users defined to the system.

-End-

SECU106

Explanation

The Security (SECU) subsystem generates SECI106 when a user with the proper command class set issues a command. The command is entered in *Customer Data* table CMDS. The system executes the command.

Format

The log report format for SECU106 is as follows:

```
SECU106 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. Valid use of command <cmdnm>.
```

Example

An example of log report SECU106 follows:

```
SECU106 APR01 12:00:00 2112 INFO
   User: JANET on MAP. Valid use of command RESTART.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies the user that issues the command. Use the CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies the terminal where the user issued the command. List TERMDEV from CI MAP level for list of terminals.
Valid use of command	*symbolic text*	Identifies the command that a user with the correct commandset issues. List CMDS from CI MAP level for privileged commands.

-End-

SECU107

Explanation

The Security (SECU) subsystem generates SECU107 when a user without the correct command class set issues a command. The command is entered in *Customer Data* table CMDS. The system does not execute the command.

Format

The log report format for SECU107 is as follows:

```
SECU107 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. *UNABLE* to use command: cmdnm.
   User's effective commandset: n,n,n,n.
   Command's commandset: n,n,n,n.
```

Example

An example of log report SECU107 follows:

```
SECU107 APR01 12:00:00 2112 INFO
   User: JANET on MAP. *UNABLE* to use command: RESTART.
   User's effective commandset: 3,2,3,4.
   Command's commandset: 3,2,3,4,8.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies the invalid user that issues the command. Use the CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies the terminal where the invalid user issued the command. List TERMDEV from CI MAP level for list of terminals.
UNABLE to use command	*symbolic text*	Identifies the privileged command issued by the invalid user. List CMDS from CI MAP level for privileged commands.
User's effective commandset	0–30	Provides the command class set for the user that issues the command.

-continued-

Field	Value	Description (continuted)
	ALL	Indicates the user is authorized to execute all commands.
	NONE	Indicates the user does not have a command class set.
Command's commandset	0-30	Provides command class set for the command.
	ALL	Indicates the system requires all command classes to execute the command.
	NONE	Indicates the system does not require command classes to execute the command.

-End-

SECU108

Explanation

The Security (SECU) subsystem generates SECU108. The subsystem generates SECU108 when a user without the correct command class set attempts to access a table. The user does not access the table.

Format

The log report format for SECU108 is as follows:

```
SECU108 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. *UNABLE* to access table: <tbl>.
   User's effective commandset: n,n,n,n.
   table's commandset: n.
```

Example

An example of log report SECU108 follows:

```
SECU108 APR01 12:00:00 2112 INFO
   User: JANET on MAP. *UNABLE* to access table: TERMDEV.
   User's effective commandset: 3,2,3,4.
   table's commandset: 8.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies the invalid user that attempts to access the table. Use CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies the terminal where an invalid user attempted to access a table. List TERMDEV from CI MAP level for list of terminals.
UNABLE to access table	*symbolic text*	Identifies *Customer Data* table the user attempted to access. Refer to *Customer Data Schema*, 297-1001-451, for index to *Customer Data* tables.
User's commandset	0-30	Provides command class set for the user that attempts to access the table.

-continued-

Field	Value	Description (continued)
	NONE	Indicates the user does not have a command class set.
	ALL	Indicates the user is authorized to access all tables.
table's commandset	0-30	Provides the command class set required to access the table.
	NONE	Indicates the user does not require command classes to access the table.
	ALL	Indicates a user with a full-privilege command class set can access the table.

-End-

SECU109

Explanation

The Security (SECU) subsystem generates SECU109 when a valid user logs on a terminal using Priority Login (PLOGIN) procedures.

Format

The log report format for SECU109 is as follows:

```
SECU109 mmmdd hh:mm:ss ssdd INFO
   User: <user> PLOGINing on <term>.
```

Example

An example of log report SECU109 follows:

```
SECU109 APR01 12:00:00 2112 INFO
   User: JANET PLOGINing on MAP.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies the user that logged on the terminal with PLOGIN procedures. Use CI command SHOWUSERS for a list of users defined to the system.
PLOGINing on	*symbolic text*	Identifies the terminal user logged on with PLOGIN procedures. List TERMDEV from CI MAP level for list of terminals.

-End-

SECU110

Explanation

The Security (SECU) subsystem generates SECU110. The subsystem generates SECU110 when a user attempts a Priority Login (PLOGIN) on a terminal with an invalid identification or password.

Format

The log report format for SECU110 is as follows:

```
SECU110 mmmdd hh:mm:ss ssdd INFO
   Invalid PLOGIN attempt on: <term>. USERID: <user>. reastxt.
```

Example

An example of log report SECU110 follows:

```
SECU110 APR01 12:00:00 2112 INFO
   Invalid PLOGIN attempt on: MAP. USERID: JANET. Bad Password.
```

Field Descriptions

The following table describes each field in the log report:

Field	Value	Description
INFO	*constant*	Indicates information about the SECU subsystem.
Invalid PLOGIN attempt on	*symbolic text*	Identifies the terminal where user attempted to PLOGIN. List TERMDEV from CI MAP level for list of terminals.
USERID	*bad userid*	Indicates use of invalid user identification to attempt PLOGIN on the terminal. The field reastxt is blank.
	symbolic text	Identifies the valid user that attempted PLOGIN on terminal. Use CI command SHOWUSERS for a list of users defined to the system.
reastxt	Bad password	Indicates the user attempted to PLOGIN on the terminal with an invalid password.
	Bad userid	Indicates the user attempted to PLOGIN on the terminal with an invalid user identification. (USERID = Bad user)

-End-

SECU111

Explanation

The Security (SECU) subsystem generates SECU111 when a user changes the command class set for a terminal. *Customer Data* table TERMDEV defines the command class set for a terminal.

Format

The log report format for SECU111 is as follows:

```
SECU111 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. TERMDEV COMCLASS changed for <term>.
   Old commandset: n,n,n,n,n.
   New commandset: n.
```

Example

An example of log report SECU111 follows:

```
SECU111 APR01 12:00:00 2112 INFO
   User: JANET on MAP. TERMDEV COMCLASS changed for MAP1.
   Old commandset: 3,4,5,6.
   New commandset: 8.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies the user that changed the command set for a terminal that TERMDEV defines. Use CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies the terminal where the user changed another terminal commandset. List TERMDEV from CI MAP level for list of terminals.
TERMDEV COMCLASS changed for	*symbolic text*	Identifies the terminal that the user changed the command set in TERMDEV. List TERMDEV from CI MAP level for list of terminals.
Old commandset	0–30	Identifies the command class set the user earlier assigned to terminal.

-continued-

Field	Value	Description (continued)
	ALL	Indicates the user assigned all command classes to the terminal.
	NONE	Indicates the user did not assign command classes to the terminal.
New commandset	0-30	Identifies the command class set now assigned to the terminal.
	ALL	Indicates the user assigned all command classes to the terminal.
	NONE	Indicates the user did not assign command classes to the terminal.

-End-

SECU112

Explanation

The Security (SECU) subsystem generates SECU112 when one user adds or changes the security profile for another user.

Format

The log report format for SECU112 is as follows:

```
SECU112 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. <type> user <usernm>.
   Old Stack nnnn
   Old Priority nnnn
   Old Language <lang>
   Old Commandset n,n,n,n.
   New Stack nnnn
   New Priority nnnn
   New Language <lang>
   New Commandset n,n,n,n.
```

Example

An example of log report SECU112 follows:

```
SECU112 APR01 12:00:00 2112 INFO
   User: JANET on MAP. CHANGE user LISA
   Old Stack 4000
   Old Priority 3
   Old Language English
   Old Commandset 1,2,3,4.
   New Stack 5000
   New Priority 4
   New Language Spanish
   New Commandset 1,2,3,4.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies the user that adds or changes the security profile of another user. Use CI command SHOWUSERS for a list of users defined to the system.

-continued-

Field	**Value**	**Description** (continued)
<term>	*symbolic text*	Identifies the terminal where the user added or changed the security profile of another user. List TERMDEV from CI MAP level for list of terminals.
<type>	ADD	Indicates addition of a new user.
	CHANGED	Indicates the current user has had attributes changed.
<usernm>	0000-FFFF	Identifies the user with the changed security profile. Use CI command SHOWUSERS for a list of users defined to the system.
Old Stack	1500-8000	Identifies number of words for old user process. This field appears when <type> = CHANGED.
Old Priority	1-4	Identifies priority of old user process. This field appears when <type> = CHANGED.
Old Language	English, French, German, Spanish, Turkish	Identifies the user interface language for user.
Old Commandset	0-30	Identifies command class set earlier assigned to user. This field displayed when <type> = CHANGED.
	ALL	Indicates that the user assigned the other user to all command classes. This field appears when <type> = CHANGED.
	NONE	Indicates that the user did not assign the other user to any command classes. This field appears when <type> = CHANGED.
New Stack	1500-8000	Identifies the number of words for the new user process.
New Priority	1-4	Identifies priority of new user process.
New Language	English, French, German, Spanish, Turkish	Identifies user interface language for user.
New Commandset	0-30	Identifies command class set assigned to user.
	ALL	Indicates the user assigned the other user to all command classes.
	NONE	Indicates the user did not assign the other user to any command classes.

-End-

SECU113

Explanation

The Security (SECU) subsystem generates SECU113. The system generates SECU113 when a user makes an attempt to login on a terminal that is not enabled.

Format

The log report format for SECU113 is as follows:

```
SECU113 mmmdd hh:mm:ss ssdd INFO
   Attempt to login on disabled console: <term>.
```

Example

An example of log report SECU113 follows:

```
SECU113 APR01 12:00:00 2112 INFO
   Attempt to LOGIN on disabled console: DIALUP.
```

Field Descriptions

The following table describes each field in the log report:

Field	Value	Description
INFO	*constant*	Indicates information about the SECU subsystem.
Attempt to LOGIN on disabled console	*symbolic text*	Identifies the terminal where the user made the attempt to login. List TERMDEV from CI MAP level for list of terminals.

-End-

SECU114

Explanation

The Security (SECU) subsystem generates SECU114 when a console is manually enabled or disabled.

Format

The log report format for SECU114 is as follows:

```
SECU114 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. Manually <able>: <term>.
```

Example

An example of log report SECU114 follows:

```
SECU114 APR01 12:00:00 2112 INFO
   User: JANET on MAP. Manually ENABLE: DIALUP.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies the user that enabled or disabled the terminal. Use CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies the terminal that the user used to enable or disable another terminal. List TERMDEV from CI MAP level for list of terminals. Refer to *Customer Data* table TERMDEV.
Manually	DISABLE	Indicates the user manually disabled the terminal.
	ENABLE	Indicates the user manually enabled the terminal.
<term>	*symbolic text*	Identifies the user manually enabled or disabled the terminal. List TERMDEV from CI MAP level for list of terminals.

-End-

SECU115

Explanation

The Security (SECU) subsystem generates SECU115. The subsystem generates SECU115 when the user exceeds the maximum login time that LOGINCONTROL command specifies. The system disables the terminal.

Format

The log report format for SECU115 is as follows:

```
SECU115 mmmdd hh:mm:ss ssdd INFO
   User took too long to LOGIN on: <term>. opttxt.
```

Example

An example of log report SECU115 follows:

```
SECU115 APR01 12:00:00 2112 INFO
   User took too long to LOGIN on: DIALUP. Console was disabled.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
User took too long to LOGIN on	*symbolic text*	Indicates the user exceeded the maximum login time during login attempt. List TERMDEV from CI MAP level for list of terminals.
opttxt	Console was disabled	Indicates the system disables the enabled terminal that waits for login.
	blank	Indicates the the system does not disable the enabled terminal that waits for login.

-End-

SECU116

Explanation

The Security (SECU) subsystem generates SECU116. The system generates SECU116 when the user exceeds the maximum number of invalid login attempts that the LOGINCONTROL command specifies. The system disables the console.

Format

The log report format for SECU116 is as follows:

```
SECU116 mmmdd hh:mm:ss ssdd INFO
   Too many invalid LOGINs on: <term>. opttxt.
```

Example

An example of log report SECU116 follows:

```
SECU116 APR01 12:00:00 2112 INFO
   Too many invalid LOGINs on: DIALUP. Console was disabled.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
Too many invalid LOGINs on	*symbolic text*	Indicates the user made the maximum number of invalid login attempts. List TERMDEV from CI MAP level for list of terminals.
opttxt	Console was disabled	Indicates the system disabled the enabled terminal that waits for login.
	blank	Indicates the system disabled the enabled terminal that waits for login.

-End-

SECU117

Explanation

The Security (SECU) subsystem generates SECU117 when the system enables a terminal as the LOGINCONTROL command specifies.

Format

The log report format for SECU117 is as follows:

```
SECU117 mmmdd hh:mm:ss ssdd INFO
   Console: <term> has been automatically enabled.
   reastxt.
```

Example

An example of log report SECU117 follows:

```
SECU117 APR01 12:00:00 2112 INFO
   Console: DIALUP has been automatically enabled.
   End of disable time.
```

Field Descriptions

The following table describes each field in the log report:

Field	Value	Description
INFO	*constant*	Indicates information about the SECU subsystem.
Console: <term> has been automatically enabled.	*symbolic text*	Indicates the system enabled the terminal. List TERMDEV from CI MAP level for list of terminals.
reastxt	End of disable time	Indicates the system enabled the terminal when disable time was exceeded.
	To prevent system lockout	Indicates the system enables a terminal to prevent being placed on the lockout list. The disable time specified by the LOGINCONTROL command normally equals the default, FOREVER.

-End-

SECU118

Explanation

The Security (SECU) subsystem generates SECU118 when a user is idle for a long period of time. The system also generates SECU118 when the system detects an open line condition. The system logs the user off the terminal. The terminal security profile defined in table TERMDEV and table LOGINCONTROL determines if the system can disconnect the terminal.

Format

The log report format for SECU118 is as follows:

```
SECU118 mmmdd hh:mm:ss ssdd INFO
   reastxt: <user> on <term> forced out by system.
   opttxt.
```

Example

An example of log report SECU118 follows:

```
SECU118 APR01 12:00:00 2112 INFO
   Idle User: JANET on MAP forced out by system.
   Console was disabled.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
reastxt	Idle User	Indicates user logs on specified terminal does not press the <Enter> key during the timeout period set for the terminal.
	Line open	Indicates that the system detects a line open condition.
<user>	*descriptive text*	Identifies idle user which the system logs out. Use CI command SHOWUSERS for a list of users defined to the system.
on <term> forced out by system	*symbolic text*	Identifies terminal, that the system can disconnected. The system logs an idle user off of that terminal. List TERMDEV from CI MAP level for list of terminals.

-continued-

Field	**Value**	**Description** (continued)
opttxt	Console was disabled	Indicates system logs idle user off terminal. Indicates system disables specified terminal.
	blank	Indicates system logs idle user off terminal. Indicates system does not disconnects terminal.

-End-

SECU119

Explanation

The Security (SECU) subsystem generates SECU119 when the system disables a terminal after the user logs out. The subsystem also generates SECU119 when the terminal is busied out.

Format

The log report format for SECU119 is as follows:

```
SECU119 mmmdd hh:mm:ss ssdd INFO
   reastxt. Console: <term> disabled.
```

Example

An example of log report SECU119 follows:

```
SECU119 APR01 12:00:00 2112 INFO
   User logout. Console: DIALUP disabled.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
reastxt	Console BSY	Indicates console is busied out.
	User logout	Indicates user logs out of system.
Console: <term> disabled	*symbolic text*	Indicates the system automatically disables the terminal when the user logs out. List TERMDEV from CI MAP level for list of terminals.

-End-

SECU120

Explanation

The Security (SECU) subsystem generates SECU120 when a user attempts to log on a dial–up terminal with an invalid identification or password.

Format

The log report format for SECU120 is as follows:

```
SECU120 mmmdd hh:mm:ss ssdd INFO
   <term>. DIALBACK login failed with id <id>.
   Reason: reastxt.
```

Example

An example of log report SECU120 follows:

```
SECU120 APR01 12:00:00 2112 INFO
   DIALUP. Dialback login failed with id DBID123.
   Reason: Incorrect dialback password.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<term>	*symbolic text*	Identifies terminal on which the user attempts to login. List TERMDEV from CI MAP level for list of terminals.
DIALBACK login failed with id	Bad userid	Indicates the user uses invalid user identification to log on the terminal (reastxt = Invalid dialback id).
	symbolic text	Provides correct identification for user attempt to log on the terminal. List DIALBACK from CI MAP level for list of users. See *Customer Data* table DIALBACK.
	blank	Indicates LOGIN timeout occurs.
Reason	Bad return code	Indicates user attempts to log on the terminal and a system error occurs.
	Incorrect dialback password	Indicates user attempts to log on the terminal with an invalid password.

-continued-

Field	Value	Description (continued)
	Invalid dialback id	Indicates user attempts to log on the terminal with an invalid dialback identifier.
	LOGIN timeout	Indicates user attempt to log on the terminal, and fails to complete login procedures in the specified time.

-End-

SECU121

Explanation

The Security (SECU) subsystem generates SECU121 when a valid user logs on a dial–up terminal. The user uses normal login procedures to log on the terminal.

Format

The log report format for SECU121 is as follows:

```
SECU121 mmmdd hh:mm:ss ssdd INFO
   <term>. Dialback login with id <id>.
```

Example

An example of log report SECU121 follows:

```
SECU121 APR01 12:00:00 2112 INFO
   DIALUP. Dialback login with id DNID123.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<term>	*symbolic text*	Identifies terminal the user logs on. List TERMDEV from CI MAP level for list of terminals.
Dialback login with id	*symbolic text*	Identifies user that logs on specified terminal. List DIALBACK from CI MAP level for list of users. See *Customer Data* table DIALBACK.

-End-

SECU122

Explanation

The Security (SECU) subsystem generates SECU122 when an attempt to log on a dial–up terminal fails.

Format

The log report format for SECU122 is as follows:

```
SECU122 mmmdd hh:mm:ss ssdd INFO
   <term>. DIALBACK call failed.
   Dialback id: <id>. Number: <dn>.
   Reason: reastxt.
```

Example

An example of log report SECU122 follows:

```
SECU122 APR01 12:00:00 2112 INFO
   DIALUP. DIALBACK call failed.
   Dialback id: DBID123. Number: 7811999.
   Reason: Modem unstable.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<term>	*symbolic text*	Identifies terminal on which user tried to log into. Refer to *Customer Data* table TERMDEV from CI MAP level for list of terminals.
DIALBACK call failed	*constant*	Indicates attempt to perform dialback failed.
Dialback id	*symbolic text*	Identifies user which attempted dialback. List DIALBACK from CI MAP level for list of users. Refer to *Customer Data* table DIALBACK.
Number	*integers*	Provides directory number for terminal that the user cannot access. The user cannot access the terminal when dialback does not complete.
Reason	Bad file system request	Indicates file system receives a command that the system cannot execute.

-continued-

Field	**Value**	**Description** (continued)
	Bad return code	Indicates system received an error code that the system cannot understand.
	Call aborted by system	Indicates system aborts the dialback call. For example, the modem equipment is not available for use.
	Call connected	Indicates modem dials out.
	Could not initiate login	Indicates system cannot complete login sequence. For example, the file system fails to output data through the modem.
	Error in file system	Indicates error occurs in file system. For example, a corrupted file reference number.
	Invalid directory number	Indicates dialback directory number that is not correct.
	Line was busy	Indicates modem discovers the line was busy when the modem makes the dialback call.
	Modem unstable	Indicates modem does not work correctly.
	No answer	Indicates modem is not available, or the called party can not answer when the modem placed the dialback call.
	No modem available for dialback	Indicates modem is not available to make dialback call.
	Unable to detect carrier	Indicates modem is not able to detect carrier.
	Unable to detect dialtone	Indicates modem is not able to detect dial tone.

-End-

SECU123

Explanation

The Security (SECU) subsystem generates SECU123. The subsystem generates SECU123 when attempts to log on a dial–up terminal succeed, dialback call is successful, and login is complete.

Format

The log report format for SECU123 is as follows:

```
SECU123 mmmdd hh:mm:ss ssdd INFO
   <term>. DIALBACK call connected.
   Dialback id: <id>. Number: <dn>.
   New <term>.
```

Example

An example of log report SECU123 follows:

```
SECU123 APR01 12:00:00 2112 INFO
   DIALUP. DIALBACK call connected.
   Dialback id: DBID123. Number: 7811999.
   New DIALUP1.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<term>	*symbolic text*	Identifies first terminal where user attempts to logon. See *Customer Data* table TERMDEV from CI MAP level for list of terminals.
DIALBACK call connected	*constant*	Indicates attempt to perform dialback is successful.
Dialback id	*symbolic text*	Identifies user attempted dialbacks. List DIALBACK from CI MAP level for list of users. See *Customer Data* table DIALBACK.
Number	*integers*	Provides directory number for terminal to complete dialback call.
New	*symbolic text*	Identifies terminal used in dialback connection. List table TERMDEV from CI MAP level.

-End-

SECU124

Explanation

The Security (SECU) subsystem generates log report SECU124 when a user changes the dialback password for a user.

Format

The log report format for SECU124 is as follows:

```
SECU124 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. DIALBACK password changed for id <id>.
```

Example

An example of log report SECU124 follows:

```
SECU124 APR01 12:00:00 2112 INFO
   User: JANET on DIALUP. DIALBACK password changed for id DBID123.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies user that changes dial-up password. Use CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies terminal where user makes the change to the dial-up password. List *Customer Data* table TERMDEV from CI MAP level for list of terminals.
DIALBACK password changed for id	*symbolic text*	Identifies user for which the user changes dialback password. List DIALBACK from CI MAP level for a list of users. See *Customer Data* table DIALBACK.

-End-

SECU125

Explanation

The Security (SECU) subsystem generates log report SECU125 when a user enables dialback for a dial–up terminal.

Format

The log report format for SECU125 is as follows:

```
SECU125 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. DIALBACK enabled for <term>.
```

Example

An example of log report SECU125 follows:

```
SECU125 APR01 12:00:00 2112 INFO
   User: JANET on DIALUP. DIALBACK enabled for DBID123.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies user that enables dial-up terminal. Use CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies terminal on which the user enables the dial-up terminal. List *Customer Data* table TERMDEV from CI MAP level for list of terminals.
DIALBACK enabled for	*symbolic text*	Identifies dial-up terminal that the user enables. See *Customer Data* table TERMDEV.

-End-

SECU126

Explanation

The Security (SECU) subsystem generates log report SECU126 when a user disables dialback for a dial–up terminal.

Format

The log report format for SECU126 is as follows:

```
SECU126 mmmdd hh:mm:ss ssdd INFO
   User: <user> on <term>. DIALBACK disabled for <term>.
```

Example

An example of log report SECU126 follows:

```
SECU126 APR01 12:00:00 2112 INFO
   User: JANET on DIALUP. DIALBACK disabled for DBID123.
```

Field Descriptions

The following table describes each field in the log report:

Field	**Value**	**Description**
INFO	*constant*	Indicates information about the SECU subsystem.
<user>	*descriptive text*	Identifies user that disables the dial-up terminal. Use CI command SHOWUSERS for a list of users defined to the system.
on	*symbolic text*	Identifies terminal on which the user disables the dial-up terminal. List *Customer Data* table TERMDEV from CI MAP level for list of terminals.
DIALBACK disabled for	*symbolic text*	Identifies dial-up terminal that the user disables. See *Customer Data* table TERMDEV.

-End-

Nortel DMS–100 Table DNINV

Table Name

Directory Number Inventory.

Functional Description of Table DNINV

Table DNINV is a read–only table. This table replaces table DN. Table DNINV contains data for all assigned Directory Numbers (DN). The data includes DNs from table DNROUTE.

Table DNINV automatically gathers information when the operating company:

- Assigns DNs.
- Uses DNs from tables other than table DNINV, such as table LENLINES or table IBNLINES.

There is no input form for this table.

Attention – Operating Company Personnel: Do not change any of the line data tables through table control because you may corrupt the internal database. Use the Service Order System (SERVORD) to update subscriber line data.

The following table describes different selectors for table DNINV.

DNINV Features

DN Selector	**Use**
A	Integrated Business Network (IBN) data network address
ACDTK	Automatic Call Distribution (ACD) trunk directory number
C	No longer used
D	Treatment selector
FEAT	Virtual DN
H	POTS line that is part of a hunt group
HC	Hunt group member with call forward option
IHC	Hunt group member IBN line with call forward option
ILC	IBN line with call forward option
IMC	IBN Multiple Directory Number (MDN) line with call forward option
L	Simple POTS line
M	Attendant console
LC	Simple POTS line with call forward option
MDN	Multiple Directory Number (MDN)
MM	Meet–Me conference (datafill table MMCONF)
P	Multi–party POTS line
SC	Series Completion
SCM	Series Completion for the primary of an MDN group
SDN	Secondary Directory Number

-End-

ISDN Shared DNs

Different Logical Terminal Identifiers (LTID) can share DNs on ISDN Basic Rate Interface (BRI) lines. When this relationship occurs, the DNRESULT field of table DNINV of the shared DN shows one LTID only. The following rules determine the LTID that appears:

- The Voice–band Information (VI) can share a DN between either the Circuit–Mode Data (CMD) or Packet–Mode Data (PMD) call types. When this relationship occurs, the VI appearance of the LTID shows in field DNRESULT.

- The CMD can share a DN with the PMD call types. When this relationship occurs, the CMD appearance of the LTID appears in field DNRESULT.

- All three call types (Call VI, CMD, and PMD) can share a DN. When these relationships occur, only the VI appearance of the LTID displays in field DNRESULT.

Datafill Sequence

There is no requirement to datafill other tables before table DNINV.

Table Size

As determined by the ACTIVE_DN_SYSTEM parameter, computation of the store requirement depends on the use of the DN systems that follow:

- North American
- Universal
- Enhanced North American

For the *North American* DN system, table DNINV holds up to 1,000,000 DNs.

For the *Universal* and *Enhanced North American* DN systems, when many area code and office code combinations are datafilled on the switch, table DNINV holds up to 1,000,000 DNs.

The maximum tuple for table DNINV depends on the criteria that follows:

- The number of area codes and office codes used.
- The number of digits used for the station code.

North American DN System

The North American DN system is the best system to use when:

- A local switch holds all the numbers used in a given office code.
- The system uses all thousand groups to near capacity.

When Local Number Portability (LNP) and multiple service providers use this system, the system uses a lot of memory.

A TOFCNO (the index for table TOFCNAME or TOFCNAME entry) is a valid area and office code combination from table TOFCNAME. Calculate the store required for each TOFCNO (in bytes) with the formula that follows:

```
(100 + 4,000) * (number of thousand groups)
```

The maximum store requirement for each TOFCNAME is forty 100−bytes. The maximum store requirement for a thousand group in a TOFCNAME is 4,000−bytes, with a 100−byte overhead for the TOFCNAME.

The North American DN system is the best when the DN structure is tight because it allocates DNs by blocks of 1,000.

Universal DN System

The Universal DN system uses more store when the system allocates all the possible station codes. If DNs move across many area codes and office codes, table DNINV uses more memory store.

Note: The Enhanced North American DN system is like the Universal DN system, except that Enhanced North American uses the 3−3−4 format. Only the APC load uses the Enhanced North American system.

Calculate the store required (in bytes) for each TOFCNO with the formula that follows:

```
6 * ([tuple count of DNINV] - [tuple count of DNROUTE]) + 44 * (1 + [number of 1-digit
prefixes] + [number of 2-digit prefixes] + [number of 3-digit prefixes] + [number of
4-digit prefixes] + [...]) + 6
```

Note: In this formula, the tuple count of DNINV is the tuple count of DNINV for the TOFCNAME. The tuple count of DNROUTE is the tuple count of DNROUTE for the TOFCNAME.

This formula applies to more than the North American industry (for example, more than a 3−digit prefix or 4−digit station code). Use this formula for station codes of any length.

The maximum store requirement for each TOFCNAME is one hundred eight 890−bytes. The maximum store requirement for a thousand group in a TOFCNAME is ten 884−bytes. This requirement includes a 50−byte overhead for the TOFCNAME.

Datafill Example for Table DNINV

The following table is an example of datafill for DNINV for the Universal DN system. The example datafill is for the TOFCNO `709 333`. TOFCNO `709 333` contains all station codes with the `102x`, `104x` format, and a half of the `171x` range, These codes are datafilled against lines.

```
------------------------------------------------------------------------------------------
Example of a MAP display:

AREACODE  OFCCODE  STNCODE   DNRESULT
______________________________________________
709       333      1020      L HOST 02 0 05 03
709       333      1021      L HOST 02 0 05 04
709       333      1022      L HOST 02 0 13 06
709       333      1023      L HOST 02 0 13 07
709       333      1024      L REM3 03 0 00 01
709       333      1025      L REM3 03 0 00 10
709       333      1026      L REM3 03 0 01 11 (etc.)
709       333      1040      L REM3 03 0 16 15
709       333      1041      L REM3 03 0 13 26
709       333      1042      L REM3 03 0 13 05 (etc.)
______________________________________________
```

In total, the TOFCNO holds 25 DNs (not any of which are in table DNROUTE). The number of prefixes follows:

- The number of 1–digit prefixes (1xxx) is 1.
- The number of 2–digit prefixes (10xx, 17xx) is 2.
- The number of 3–digit prefixes (102x, 104x, 171x) is 3.

Calculate the memory impact for the TOFCNAME as follows:

6 * 25 + 44 * (1 + **1** + **2** + **3**) + 6 = 464-bytes

In the North American DN system, these DNs exist in the same thousand group (1xxx). The memory impact for the TOFCNAME is:

(100 + 4,000) * 1 = 4,100-bytes

The following datafill example for table DNINV shows:

- DNs with Multiple Appearance Directory Number (MADN) Call Appearance Call Handling (CACH).
- The group size.
- Call Appearance (CA) fields.
- The VI and CMD call types share the VI appearance of a DN.

```
-----------------------------------------------------------------------------------------
Example of a MAP display:

AREACODE  OFCCODE  STNCODE   DNRESULT
______________________________________________
613       621      5962      MDN SCA 2 0
613       621      5963      MDN SCA 3 0
613       621      5964      MDN CACH 55 1
613       621      5965      MDN CACH 10 1
613       621      5966      L EKTS 1
613       621      5966      L EKTS 1
613       621      5966      L EKTS 1
613       621      5966      L EKTS 1
613       621      5967      L ISDN 19          (etc.)
______________________________________________
```

Nortel DMS–100 Table TOFCNAME

Table Name

Terminating Office Name.

Functional Description of Table TOFCNAME

Table TOFCNAME stores the area code and office code for the switch. A Terminating Office Number (TOFCNO) consists of both an area code and an office code. Table HNPACONT or table SNPANAME must define the area code.

Table TOFCNAME replaces table THOUGRP. Table DNROUTE stores all routing information originally stored in table THOUGRP.

Software Optionality Control (SOC) options NPE00001 and NPE00002 implement duplicate office code and table TOFCNAME expansion capabilities. When NPE00001 is active, you can datafill one office code against more than one area code in table TOFCNAME. When NPE00002 is active, you can datafill table TOFCNAME with up to 8,151 entries.

Office parameter ACTIVE_DN_SYSTEM in table OFCENG controls the Directory Number (DN) system in use on the switch. You can set this parameter to the following:

- NORTH_AMERICAN – In this occurrence, table TOFCNAME can store up to 100 entries (tuples)
- UNIVERSAL – In this case, the following occurs:
    - ♦ If the state of SOC option NPE00002 is IDLE, table TOFCNAME can store up to 1,024 entries
    - ♦ If the state of SOC option NPE00002 is ON, table TOFCNAME can store up to 8,151 entries

Note: Unless SOC option NPE00001 is active, the DMS–100 switch does not allow two area codes to share the same office code.

Note: When the capacity of table TOFCNAME increases, the capacity of tables DNINV and DNROUTE decreases (from 1,000,000 to 300,000).

Local Number Portability

For Local Number Portability (LNP), it is preferable for the switch to use the Universal DN system with the North American dialing plan.

The DN is "ported–in" if you move the DN from a donor switch to a recipient switch. Option NONNATIVE in field OPTIONS is assigned to area code and office code entries for ported–in DNs.

Note: In North American applications, if table HOMELRN uses the resident area code and office code, you cannot change the resident area code and office code to nonresident.

Datafill Sequence

Datafill one or the other of the following tables before table TOFCNAME:

- HNPACONT (List of Home NPA Code Subtables Table)
- SNPANAME (Serving Numbering Plan Area Name Table)

Table Size

The size of table TOFCNAME depends on:

- The value of office parameter ACTIVE_DN_SYSTEM in table OFCENG.
- If SOC option NPE00002 is active.

The following table shows sizes for table TOFCNAME.

TOFCNAME Size

Value of ACTIVE_DN_SYSTEM	Maximum size of TOFCNAME
NORTH_AMERICAN	100 tuples
UNIVERSAL	1,024 tuples if NPE00002 is not active 8,151 tuples if NPE00002 is active

Datafill

The following table lists datafill for table TOFCNAME.

Field Descriptions for Table TOFCNAME

Field or Subfield	Entry	Explanation
AREACODE	0 to 9999999 (vector of up to 7 digits)	*Area Code* Enter the area code. The area code (NPA) identifies a geographical area served by the switch. This field can contain one to seven digits. In an office that uses the North American numbering plan, the area code must be three digits. Enter an area code defined in table SNPANAME.
OFCCODE	0 to 9999999 (vector of up to 7 digits) or $	*Office Code* Enter the office code. The area code region consists of a number of areas. The office code identifies the area served by the office. An office code can have from zero to seven digits. For an office that uses the North American numbering plan, the office code must contain three digits. Enter a number that is not used as an area code. For example, if the area code is 613, the office code cannot be 613.

-continued-

Field or Subfield	Entry	Explanation (continued)
		Note: Service interruption can occur if you enter an office code that is an area code. The switch can route calls to the wrong location because the switch cannot determine the termination point of the call. A tuple (AREACODE plus OFCCODE entry) cannot be an expansion or reduction of another entry. For example, if 200 34 (area code 200 plus office code 34) is a tuple, you cannot add the following tuples to the table: 20 03, 2003 45, or 20 034.
OPTIONS	NONNATIVE	*Ported-In DN* Enter NONNATIVE to identify a ported-in DN. End the tuple with a $ (dollar sign). **Note:** Translations ports in only DNs with nonnative NPA-NXX that reside on the switch.
	CODEHLDR	Enter CODEHLDR to indicate that an NPA-NXX is LERG assigned even though 1,000 blocks may be pooled out to other switches. To assign the CODEHLDR option to a tuple the NPE00005 SOC option must be active. **Note:** The CODEHLDR option cannot be present with the NONNATIVE TOFCNAME option and vice versa.

-End-

Datafill Example

The following example shows typical datafill for table TOFCNAME *without* ported–in DNs datafilled.

Example of a MAP display:

```
AREACODE  OFCCODE                      OPTIONS
______________________________________________

200       234                                $
784       324                                $
201       786                                $
613       621                                $
245       879                                $
______________________________________________
```

The following MAP display example shows typical datafill for table TOFCNAME *with* datafilled ported−in DNs.

```
------------------------------------------------------------------------------------------
Example of a MAP display:

AREACODE  OFCCODE                   OPTIONS
_______________________________________________
613       621                             $
819       725                   NONNATIVE $
_______________________________________________
```

In this example, all DNs for:

- 613 621 are local to the switch.
- 819 725 are not local to the switch (ported−in).

Supplementary Information

The following explains error messages that can occur when you attempt to datafill table TOFCNAME.

Error Message: `This tuple will create an ambiguity with NPA NXX.`

Explanation: The area code and office code of the tuple being added is a superset of the area code and office code of a tuple already in table TOFCNAME.

User Action: Enter the tuple again, using a different area code, office code, or both.

Error Message: `ERROR: This entry creates an ambiguity with a more precise entry and is not allowed.`

Explanation: The area code and office code of the added tuple is a subset of the area code and office code of a tuple already in table TOFCNAME.

User Action: Enter the tuple again, using a different area code, office code, or both.

Error Message: `ERROR: Duplicate office codes are not allowed while NPE00001 is idle.`

Explanation: The office code of the tuple being added is equal to or a superset of the office code of a tuple already in table TOFCNAME.

User Action: Activate NPE00001. Enter the tuple again.

Error Message: `ERROR: This entry creates a duplicate office code with a more precise entry. Duplicate office codes are not allowed while NPE00001 is idle.`

Explanation: The office code of the tuple being added is a subset of the office code of a tuple already in table TOFCNAME. Activate NPE00001.

User Action: Enter the tuple again.

MANHOLE COVERS

REMOVING AND REPLACING

CONTENTS PAGE

1. GENERAL

1.01 This section describes the procedures to be followed when removing and replacing manhole covers.

1.02 This section is revised to:

- Add Table A
- Add information on manhole cover identification
- Add information on manhole cover removal tools
- Add information on locking manhole covers
- Add illustrations.

Revision arrows are used to indicate the more significant changes.

1.03 The wide variety of manhole covers still in service precludes illustrating every type of cover. This section deals only with the more commonly encountered covers. Observation of the safety principles included in the section should promote safe removal and replacement, regardless of the type of cover involved.

1.04 One person equipped with a B manhole cover hook can safely remove and replace most round covers. ♦The B or C manhole cover lifters and the PTS-49 manhole cover lifter provide the craftsperson with a mechanical means to aid in cover removal.♦ Use of the C manhole cover lifter permits one person to remove even the heaviest standard round cover from a relatively level frame.

2. PRECAUTIONS

2.01 Before removing a manhole cover, place warning and guarding devices in accordance with the procedures covered in Section 620-135-010. Upon completion of the work in a manhole, be sure the cover is properly replaced before removing the warning and guarding devices.

2.02 If snow, ice, or other surface conditions make the footing around the manhole opening insecure, clear the working area with a shovel or broom. If this is impractical, scatter sand or other suitable material around the opening to ensure firm footing.

2.03 Do not use an open flame or salt to thaw ice around or over a cover. An open flame is hazardous because of the possibility of an explosion in the event combustible gases are present in the manhole. Salt solution seeping into the manhole may contribute to cable and hardware corrosion. To remove ice from a cover or lifter pocket, use a hardened cold chisel.

2.04 Manhole covers are heavy and should be handled with care to avoid injury. When removing or replacing a cover, keep the feet solidly placed and positioned so they will be clear of the cover in the event it should drop.

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When lifting, bend the knees slightly and keep the back straight so the work will be done with the arm and leg muscles and not the back muscles.

2.05 Two-person handling of manhole covers should be avoided wherever possible. Two-person operations are awkward and present more of a possibility of muscle strain or of the second person being struck if a manhole hook should slip. Two-person operation is desirable only when removing or replacing type A covers.

2.06 When a cover cannot readily be lifted, make certain that it is not secured by a locking device. Place a block of wood on the cover near the rim and strike the block with a heavy hammer. Do this at several points around the circumference until the cover can be pried loose, using the manhole hook or a cover lifter.

➧***Note:*** When a gasket is used on a G or H cover, the additional leverage provided by a B or C manhole cover lifter may be required to unseat and remove the cover.⬅

2.07 When moving covers, always use a B manhole cover hook or a cover lifter. ***Never place the hands under a manhole cover.***

2.08 Ordinarily the cover should be left near the manhole opening. If the cover is a hazard to craftspersons, pedestrians, or vehicles, move the cover to a safe location within the protected work area.

2.09 In locations where the manhole frame and cover are set substantially off level (ie, 10 degrees or more) or where there is an inadequate working area for use of the tools described in this section, a special manhole cover lifting device such as a derrick or truck-mounted winch may be required to remove the cover.

3. ➧MANHOLE COVER IDENTIFICATION

3.01 The standard covers listed in Table A are shown in Fig. 1. Any of the tools listed in Table A may be used to remove the type cover indicated. Type A manhole frames have an inner cover below the surface cover (Fig. 2).

TABLE A

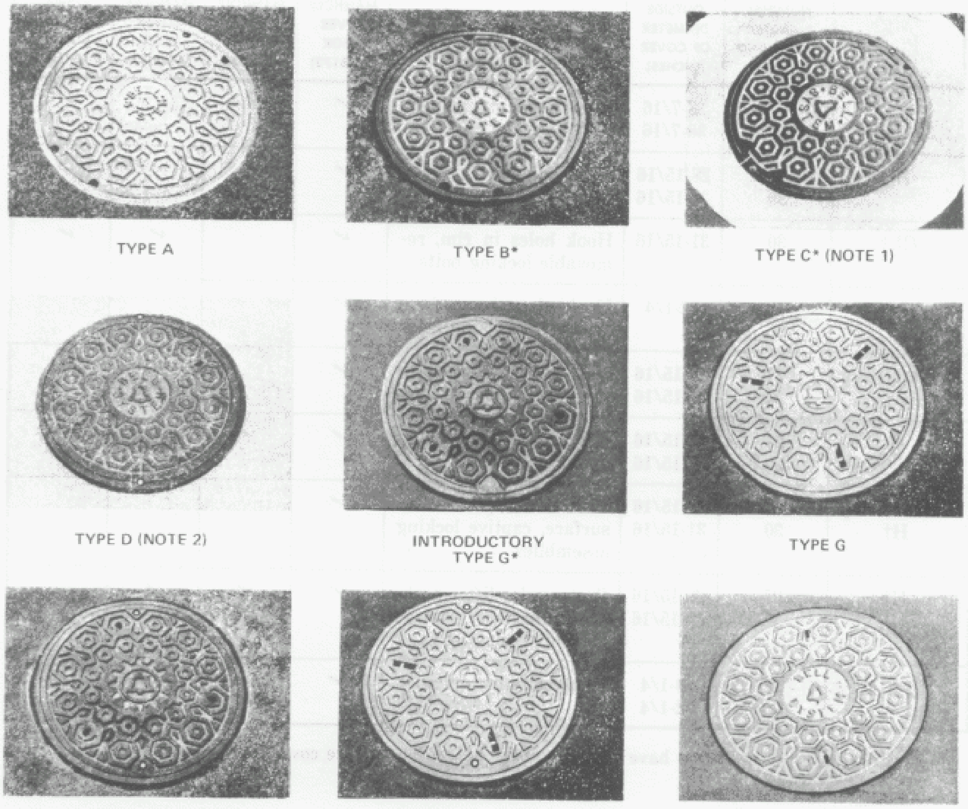
MANHOLE COVER IDENTIFICATION

TYPE	SIZE NOMINAL DIAMETER OF OPENING (INCHES)	OUTSIDE DIAMETER OF COVER (INCHES)	COVER IDENTIFICATION	B MANHOLE COVER HOOK (AT-8172)	B MANHOLE COVER LIFTER (AT-8967)	C MANHOLE COVER LIFTER (AT-8967)	PTS-49 MANHOLE COVER LIFTER
A*	27 30	33-7/16 36-7/16	Hook holes in rim	✓		✓	✓
B†	27 30	28-15/16 31-15/16	Hook holes in rim	✓		✓	✓
C†,‡	30	31-15/16	Hook holes in rim, removable locking bolts	✓		✓	✓
D‡	30	32-1/4	Hook slots in surface, removable locking bolts	✓			
Introductory G†	27 30	28-15/16 31-15/16	Oval lifter pockets in surface	✓			
G	27 30	28-15/16 31-15/16	Rectangular lifter pockets in surface	✓	✓	✓	
Introductory H†	27 30	28-15/16 31-15/16	Oval lifter pockets in surface, captive locking assemblies	✓			
H‡	27 30	28-15/16 31-15/16	Rectangular lifter pockets in surface, captive locking assemblies	✓	✓	✓	
R	27 30	29-1/4 32-1/4	Hook slots in surface	✓			

* The frames for these covers have an inner cover below the surface cover.

† Manufacture discontinued.

‡ Locking Covers — A B-manhole wrench (AT-8454) must also be used to unlock these covers.



TYPE A

TYPE B*

TYPE C* (NOTE 1)

TYPE D (NOTE 2)

INTRODUCTORY
TYPE G*

TYPE G

INTRODUCTORY
TYPE H*

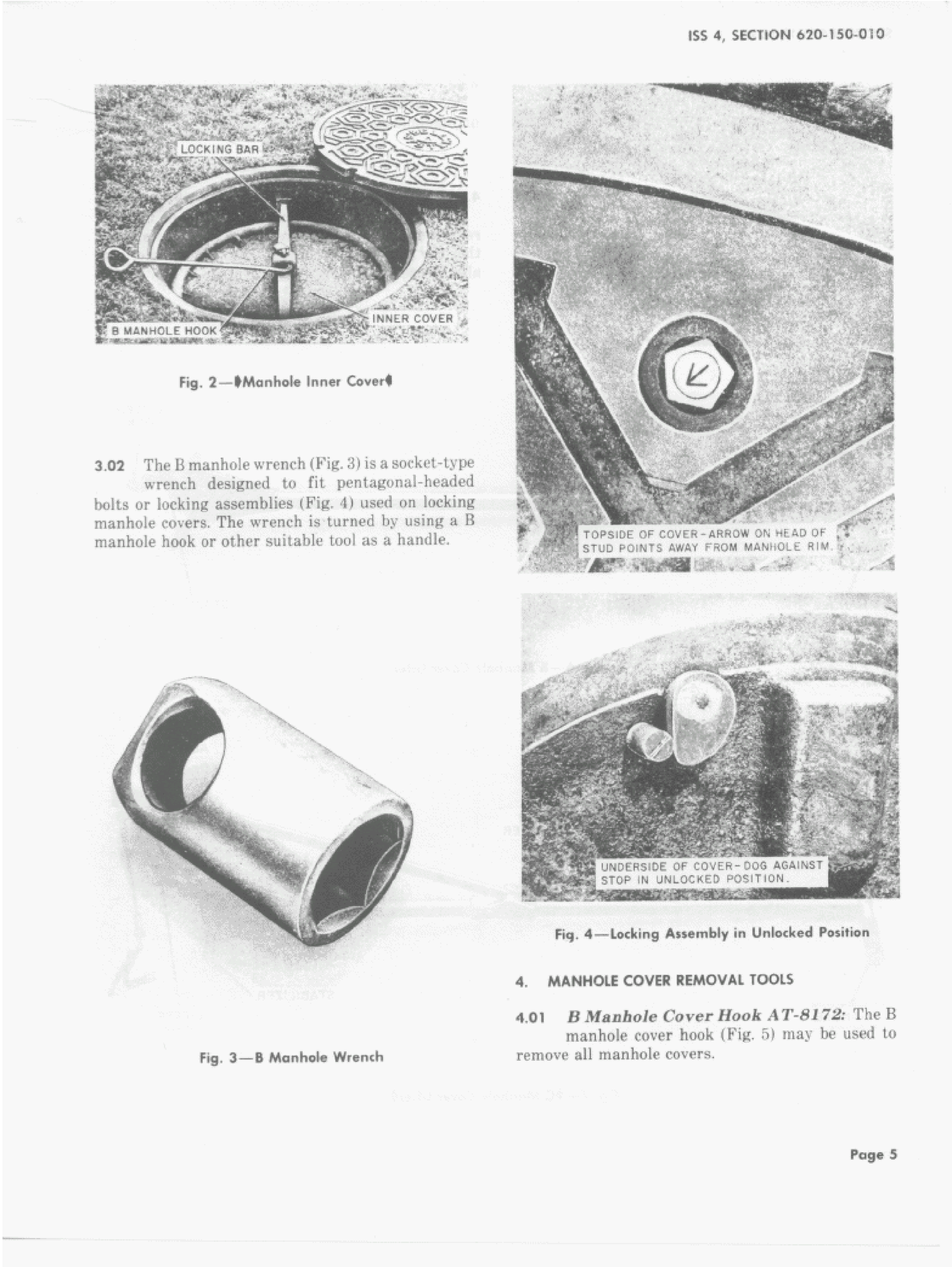
TYPE H (NOTE 3)

TYPE R

*MANUFACTURE DISCONTINUED

NOTES:
1. TYPE C COVER IS A LOCKING 30-INCH B COVER WITH TWO LOCKING BOLTS.
2. TYPE D COVER IS A LOCKING 30-INCH R COVER WITH TWO LOCKING BOLTS.
3. TYPE H COVER IS A G COVER WITH TWO LOCKING ASSEMBLIES.

Fig. 1—◆Manhole Covers◆



LOCKING BAR
INNER COVER
B MANHOLE HOOK

Fig. 2—Manhole Inner Cover

3.02 The B manhole wrench (Fig. 3) is a socket-type wrench designed to fit pentagonal-headed bolts or locking assemblies (Fig. 4) used on locking manhole covers. The wrench is turned by using a B manhole hook or other suitable tool as a handle.

Fig. 3—B Manhole Wrench

TOPSIDE OF COVER-ARROW ON HEAD OF STUD POINTS AWAY FROM MANHOLE RIM.
UNDERSIDE OF COVER-DOG AGAINST STOP IN UNLOCKED POSITION.

Fig. 4—Locking Assembly in Unlocked Position

4. MANHOLE COVER REMOVAL TOOLS

4.01 ***B Manhole Cover Hook AT-8172:*** The B manhole cover hook (Fig. 5) may be used to remove all manhole covers.

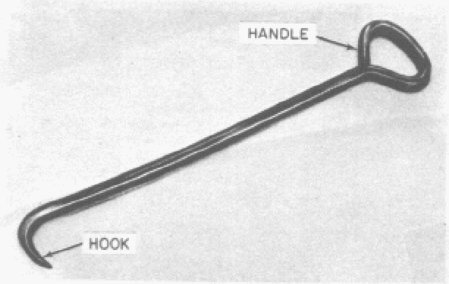


Fig. 5—Manhole Cover Hook

4.02 ***B Manhole Cover Lifter AT-8967:*** The B manhole cover lifter (Fig. 6) can only be used on manhole covers with lifter pockets.

4.03 ***C Manhole Cover Lifter AT-8967:*** The C manhole cover lifter (Fig. 7) can be used to remove round manhole covers with hook holes in either the rim or lifter pockets. The C cover lifter can also be used to remove inner covers.

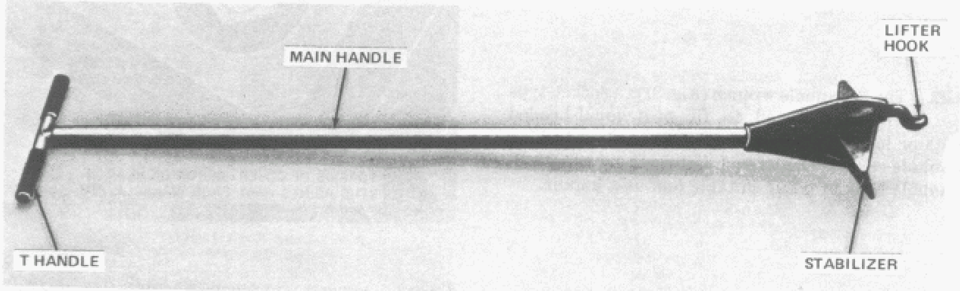


Fig. 6—B Manhole Cover Lifter

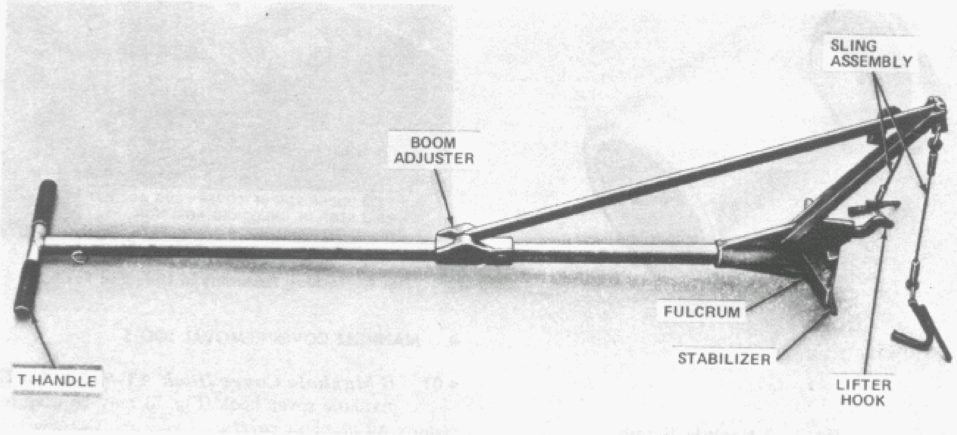


Fig. 7—◆C Manhole Cover Lifter◆

4.04 ***PTS-49 Manhole Cover Lifter:*** The PTS-49 manhole cover lifter is shown in Fig. 8. The open end of the hook can be locked in a safe, covered position for storage.◀

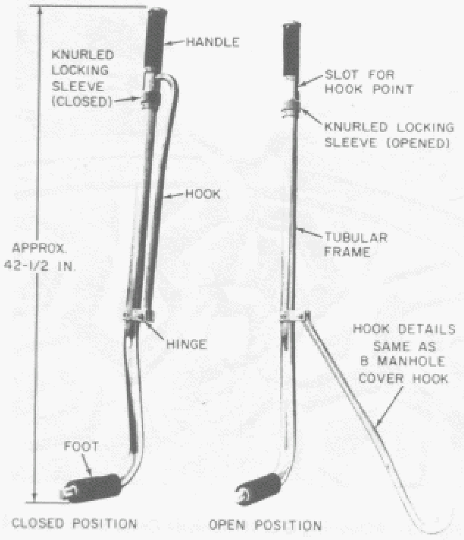

HANDLE
KNURLED LOCKING SLEEVE (CLOSED)
SLOT FOR HOOK POINT
KNURLED LOCKING SLEEVE (OPENED)
HOOK
TUBULAR FRAME
APPROX. 42-1/2 IN.
HOOK DETAILS SAME AS B MANHOLE COVER HOOK
HINGE
FOOT
CLOSED POSITION
OPEN POSITION

Fig. 8—PTS-49 Manhole Cover Lifter

5. REMOVING MANHOLE COVERS

▶***Always make sure the area around the cover to be removed is clear of tools or other work obstructions before removing the cover from the frame.***◀

5.01 After properly guarding the work area (Section 620-135-010), the manhole cover may be safely removed by working as described in the following paragraphs. Use one of the hook holes or cover lifter pockets in the cover on the side away from moving traffic, if practicable. Otherwise, move the cover in line with the direction in which traffic is moving. The object in removing the cover in this manner is that, in the event of tool slippage, any tendency to fall will be away from traffic rather than toward it. It also affords better observation of oncoming traffic while in the act of removing the cover.

5.02 ▶If the cover is secured to the frame by a locking device, see Part 7 for unlocking procedures.◀

One-Person Method—Using B Manhole Cover Hook

5.03 To remove round manhole covers that have hook holes in the rim, proceed as follows:

(1) Insert the manhole hook into one of the hook holes as shown in Fig. 9.

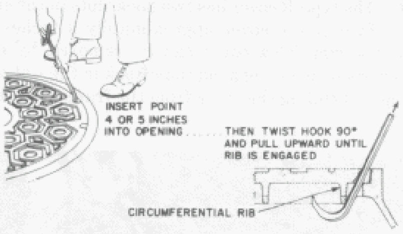

INSERT POINT 4 OR 5 INCHES INTO OPENING
THEN TWIST HOOK 90° AND PULL UPWARD UNTIL RIB IS ENGAGED
CIRCUMFERENTIAL RIB

Fig. 9—Inserting Manhole Hook Into Hook Hole

(2) The cover should then be unseated approximately 4 inches as shown in Fig. 10.

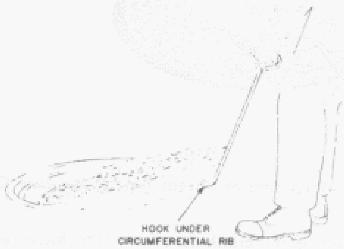


Fig. 10—Unseating the Cover

(3) Slide the cover clear of the frame (Fig. 11).

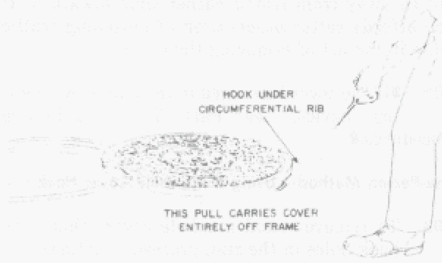

HOOK UNDER CIRCUMFERENTIAL RIB
THIS PULL CARRIES COVER ENTIRELY OFF FRAME

Fig. 11—Sliding Cover Clear of Frame

5.04 The type-R cover has two hook slots in the surface of the cover approximately 4 inches in from the rim. This cover can be removed by one craftsperson inserting a manhole hook in the slot and lifting and sliding the cover from the frame (Fig. 12).

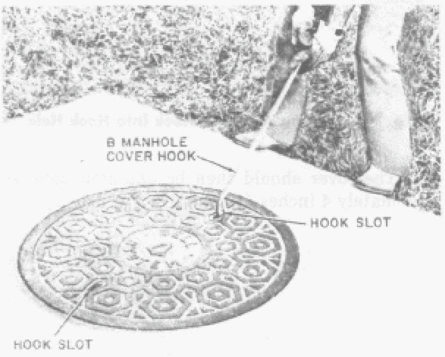


Fig. 12—♦Preparing to Unseat Type R Manhole Cover♦

5.05 To remove manhole covers that have rectangular slotted lifter pockets in the surface of the cover (AT-8453 G and H covers), proceed as follows:

(1) ♦Locate one of the lifter pockets in the cover surface and remove any dirt in the pocket with a screwdriver or suitable tool. This is accomplished by a simple jab-and-pry technique, flipping the debris toward the center of the cover (Fig. 13). To remove hardened material from the pocket, use a hardened cold chisel.♦

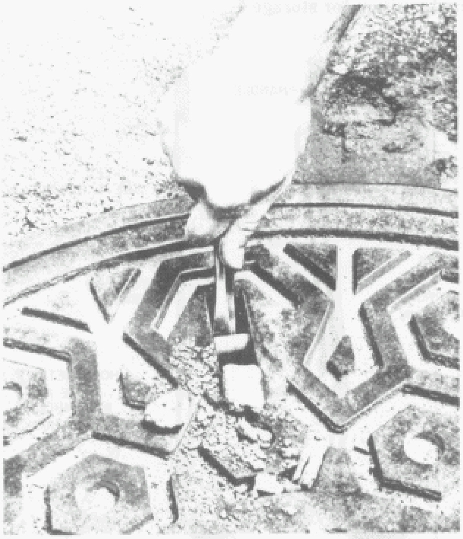


Fig. 13—♦Cleaning G or H Manhole Cover Lifter Pocket♦

(2) Insert the manhole hook into the pocket as shown in Fig. 14, making certain the hook engages the horizontal rod in the lifter pocket.

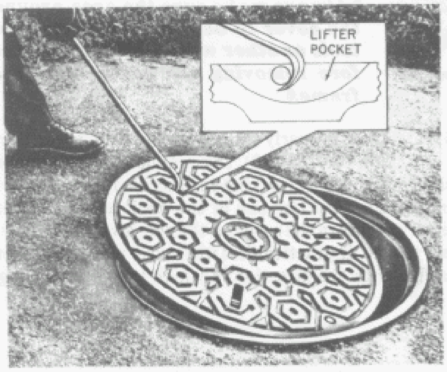


Fig. 14—♦Unseating G or H Covers With Rectangular Lifter Pockets♦

(3) The cover should be unseated approximately 4 inches (Fig. 14) by pulling with the manhole hook.

(4) Slide the cover clear of the frame (Fig. 15).

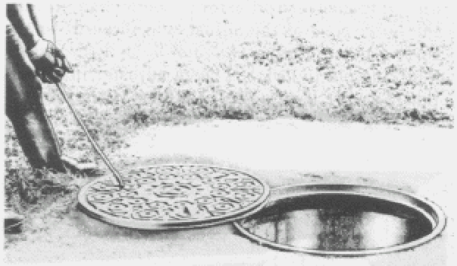


Fig. 15—▶Sliding G or H Cover Clear of Frame◀

5.06 ▶To remove manhole covers that have oval-shaped lifter pockets in the surface of the cover (introductory G and H covers), proceed as follows:

(1) Locate two of the lifter pockets in the cover surface and remove any dirt in the pocket with a screwdriver or suitable tool. This is accomplished by a simple jab-and-pry technique, flipping the debris toward the center of the cover. To remove hardened material from the pocket, use a hardened cold chisel.

(2) Insert the manhole hook into one of the pockets as shown in Fig. 16, with the point of the hook toward the rim. ***Make certain*** that the hook tip engages the grooves as shown in Fig. 16.

(3) To unseat the cover, pry up on the handle of the B manhole hook, using the knees as a fulcrum or rest for the forearms. When the near edge of the cover is clear of the frame approximately 4 inches, rock backward on the feet and allow the far side of the cover to drop into the frame.

Note: Bosses on the undersurface of the cover will hang up on the frame.

(4) Slowly pull the cover off the frame ***until*** the bosses contact the frame.

(5) Set the cover down and move the B hook to an adjacent lifter pocket.

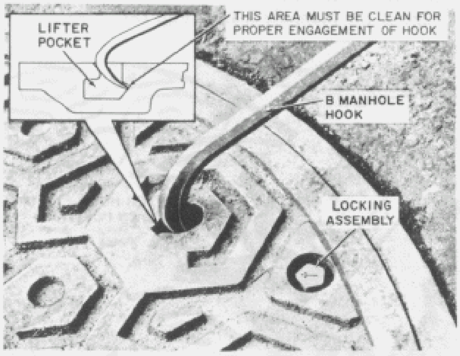


Fig. 16—▶Inserting B Manhole Hook Into Oval Lifter Pocket (G or H Introductory Cover)◀

(6) Lift the cover edge high enough for the boss to clear the frame, and pivot the cover off and clear of the frame.◀

One-Person Method—Using B or C Manhole Cover Lifter

In resurfaced roadways where the frame and cover are recessed in the pavement, a shim of sufficient thickness to raise the tool fulcrum to the new pavement level may be placed between the frame and tool fulcrum to provide an adequate pivoting surface. In soft unpaved areas, it may be necessary to place a block of wood or other firm material under the tool fulcrum.

5.07 To remove covers that have lifter pockets, using the B or C cover lifter, proceed as follows:

(1) ▶Clean the lifter pocket as described in paragraph 5.05 (1).◀

(2) Rotate the lifter hook to its down position (Fig. 17). Hold the lifter in a vertical position and insert the hook into the lifter pocket. Lower the lifter handle so the fulcrum rests on the top edge of the manhole frame (Fig. 18).

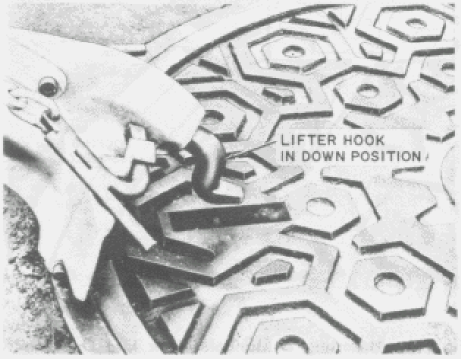


Fig. 17—♦Lifter Hook Ready to Insert in Lifter Pocket♦

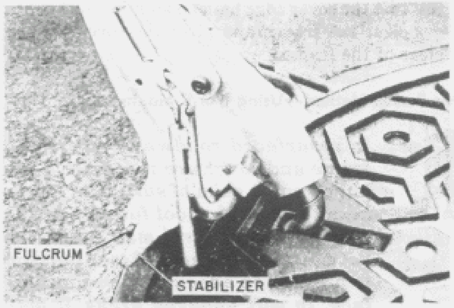


Fig. 18—Manhole Cover Lifter in Positon to Lift Cover

(3) Apply downward pressure to the tool handle to raise the near edge of the cover and bring the cover into contact with the stabilizers.

(4) Continue downward pressure to raise the cover clear of the frame. Maintain downward pressure and walk sideways to pivot the tool on its fulcrum and rotate the cover clear of the opening.

(5) ♦Set the cover down by relaxing downward pressure on the handle. Remove the tool and place it out of the way.♦

5.08 To remove round manhole covers that have hook holes in the rim, using the C cover lifter, proceed as follows:

(1) Release the strap to free the slings and allow the boom adjuster to slide down the tool handle. Slide the boom adjuster down the handle until the lower edge of the adjuster is adjacent to the cover size (stamped on handle) to be lifted. Insert a locking pin to lock the boom adjuster into position (Fig. 19). Rotate the lifter hook to the up position (Fig. 20).

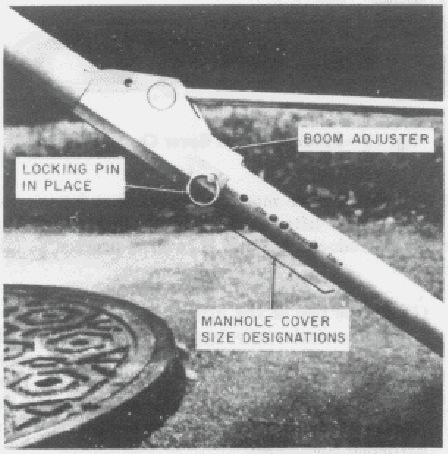


Fig. 19—Boom Adjuster Locked in Position to Remove Manhole Cover by Hook Holes

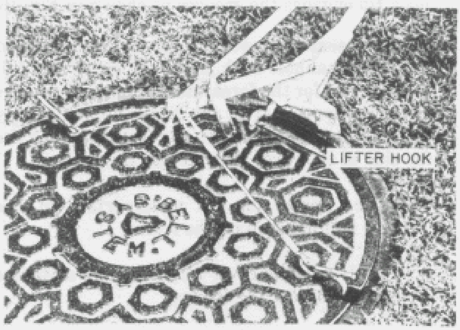


Fig. 20—♦Lifter Hook Rotated to Up Position♦

(2) Select one of the two tool positions in Fig. 21 and insert sling hooks into hook holes indicated. Place the tool fulcrum on the frame and center between the two hook holes (Fig. 21).

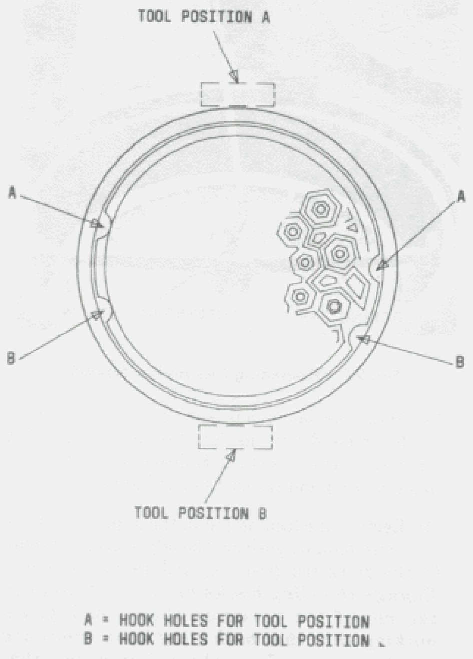

TOOL POSITION A
A
A
B
B
TOOL POSITION B
A = HOOK HOLES FOR TOOL POSITION
B = HOOK HOLES FOR TOOL POSITION

Fig. 21—Selection of Tool Position and Appropriate Hook Holes

(3) Apply downward pressure to the tool handle to raise the near edge of the cover and bring the cover into contact with the stabilizers.

Note: If additional leverage is required to lift the cover, remove the locking pin in the upper end of the tool handle, extend the T handle, and replace the pin (Fig. 22).

(4) Continue the downward pressure to raise the cover clear of the frame (Fig. 23). Maintain downward pressure and walk sideways to pivot the tool on its fulcrum and rotate the cover clear of the opening (Fig. 24).

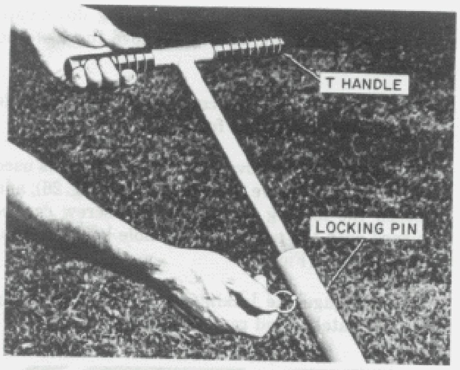


Fig. 22—◆Extending T Handle◆

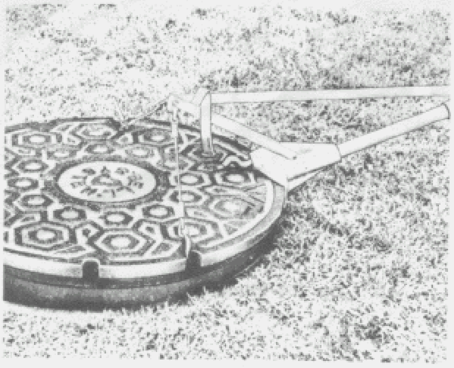


Fig. 23—◆Raising Cover Clear of Frame◆

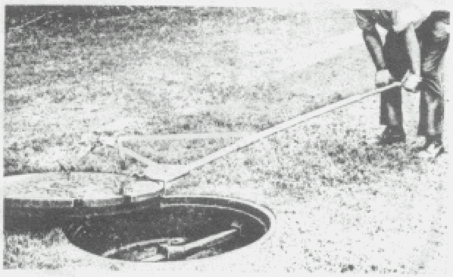


Fig. 24—◆Rotating Cover Clear of Frame◆

(5) ♦Set the cover down by relaxing downward pressure on the handle. Remove the tool and place it out of the way.♦

5.09 To remove the inner covers of A-type manhole frames, proceed as follows:

(1) Unlock and remove the padlock, if one is used (Fig. 25); remove the saddle plate (Fig. 26); and loosen the locking bar screw. The screw can be turned with the point of a manhole hook or other suitable tool (Fig. 27).

(2) Disengage the locking bar from the locking bar catches and remove it.

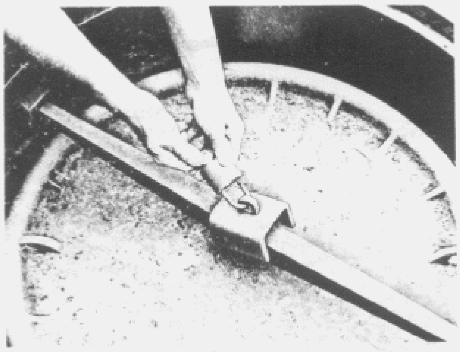


Fig. 25—♦Unlocking Padlock♦

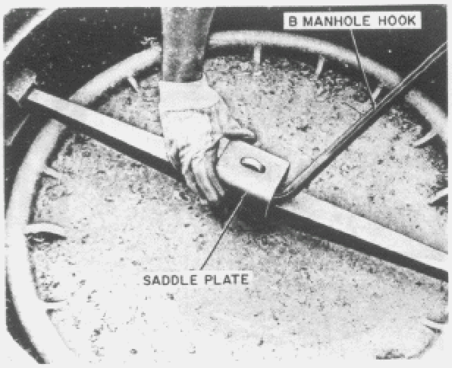


Fig. 26—♦Removing Saddle Plate♦

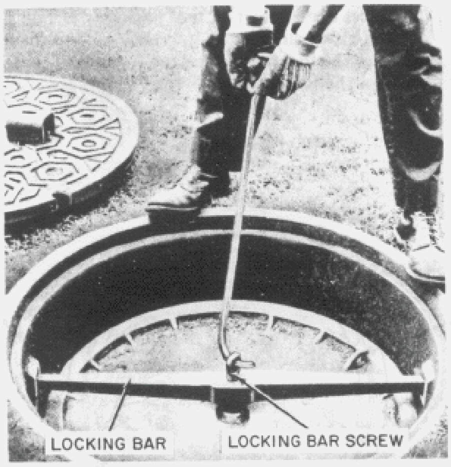


Fig. 27—♦Loosening Locking Bar Screw♦

(3) Slide the boom adjuster down the C cover lifter handle to the 30B designation (for 30A inner covers) or to the 27B designation (for 27A inner covers) and insert the locking pin.

(4) Remove the locking pin in the upper end of the main handle, position the adjustable T handle to the retracted position, and replace the pin. ***Engage the sling hooks in the hook holes in the rib of the cover as shown in Fig. 28, making sure that both sling hook spurs are pointing away from the fulcrum and that they engage the cover edge.***

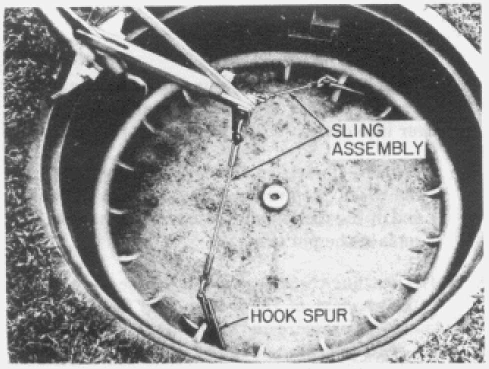


Fig. 28—♦Engaging Sling Hooks on Inner Cover♦

(5) Position the tool fulcrum on the top edge of the manhole frame. Apply downward pressure to the tool handle to lift the inner cover clear of the frame. Maintain downward pressure and walk sideways to pivot the inner cover clear of the manhole opening.

♦(6) Set the cover down by relaxing downward pressure on the handle. Remove the tool and place it out of the way.♦

One-Person Method—Using PTS-49 Manhole Cover Lifter

5.10 To remove B-type manhole covers that have hook holes in the rim, proceed as follows:

(1) Release the hook by turning the knurled sleeve. Insert the hook tip into one of the hook holes in the cover as shown in Fig. 29, making certain to insert the hook deep enough to clear the rib on the underside of the cover.

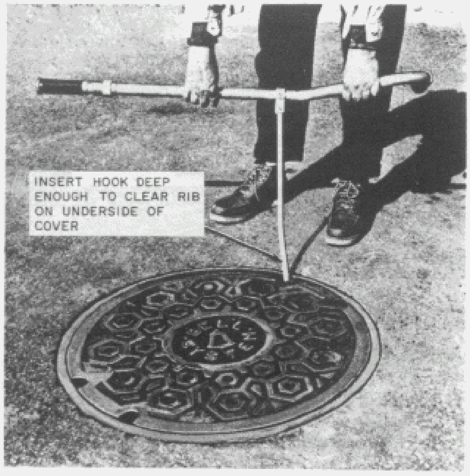


Fig. 29—Inserting PTS-49 Manhole Cover Lifter Hook Into Hook Hole

(2) Turn the hook 90 degrees, set the foot of the tool on the ground about 12 inches from the cover, take a working position as shown in Fig. 30, and unseat the cover by pulling on the handle.

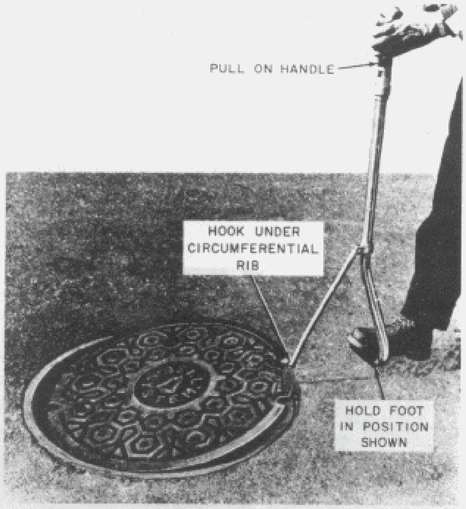


Fig. 30—Unseating Cover With PTS-49 Manhole Cover Lifter

(3) Reposition the foot of the tool and make additional pulls of the handle until the cover is clear of the frame and will not interfere with the work operation or be a hazard to vehicular or pedestrian traffic.

5.11 With an A-type manhole frame and cover having an inner cover, a different procedure is necessary in order to avoid having the rib on the underside of the cover become fouled with the locking bar screw and saddle as the cover is being pulled across the frame. Proceed as follows:

(1) Insert the hook, set the foot of the tool as described in paragraph 5.10 (1) and (2), and unseat the cover sufficiently to permit sliding a B manhole cover hook under the cover and against

the frame as shown in Fig. 31. Remove the manhole cover lifter and lock its hook in the closed position. Then slide the foot of the lifter under the cover, adjacent to the B manhole cover hook as shown in Fig. 32, and raise the cover by pushing down on the handle sufficiently to reposition the hook so it lies across the locking bar and against the manhole frame. (Note the position of the hook in Fig. 33.)

(2) Remove the manhole cover lifter, reposition it on the cover opposite the hook as shown in Fig. 33, and pull the cover clear of the hook and locking bar.

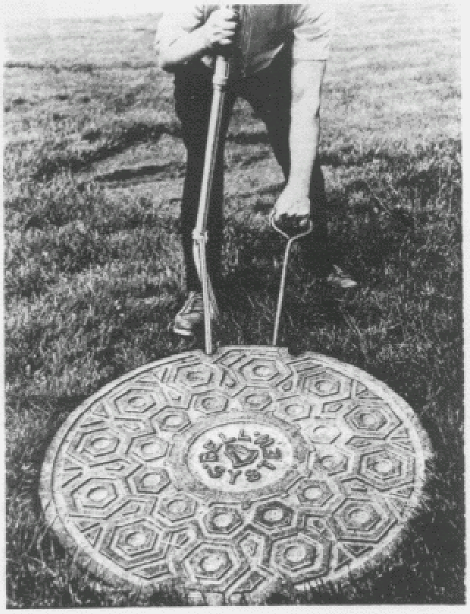


Fig. 31—Inserting B Manhole Cover Hook for Positioning on Locking Bar

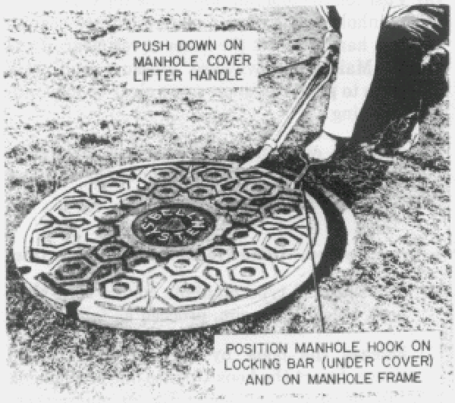


Fig. 32—Positioning Manhole Cover Hook on Locking Bar and Manhole Frame

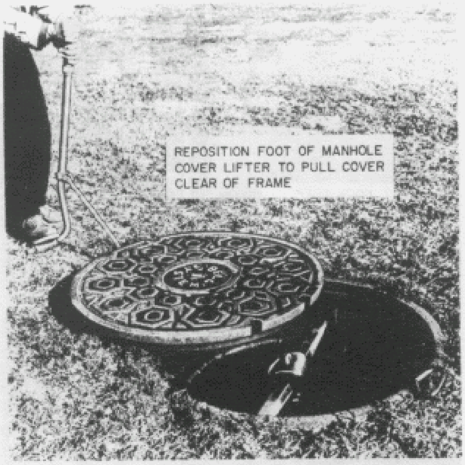


Fig. 33—Pulling Cover Clear of Frame

(3) Reposition the foot of the tool and make additional pulls of the handle until the cover is clear of the frame.

(4) ▶The inner cover of the manhole frame can now be removed as described in paragraph 5.13.◀

Two-Person Method—Using B Manhole Cover Hooks

5.12 To remove A-type manhole covers, proceed as follows:

(1) Insert each manhole hook into adjacent holes in the rim as shown in Fig. 9. The hook can then be turned and raised to engage the rib (Fig. 34).

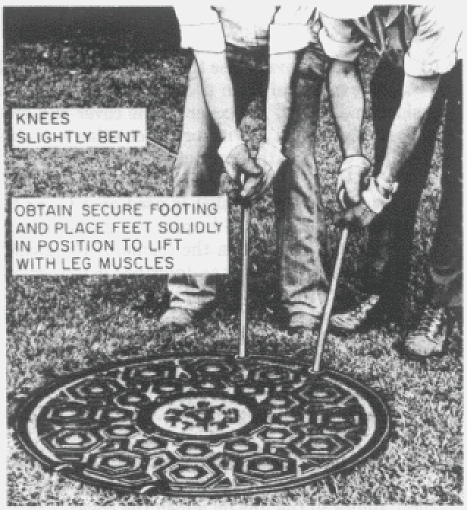


Fig. 34—▶Preparing to Unseat Cover—Two-Person Method◀

(2) Unseat the cover as shown in Fig. 35.

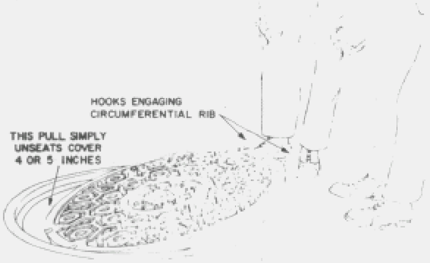


Fig. 35—Unseating Cover—Two-Person Method

(3) While one craftsperson holds the cover in the position shown in Fig. 35, the other craftsperson releases the manhole hook, moves around to the opposite side, and (while facing the first person) engages the hook under the rim of the cover as shown in Fig. 36.

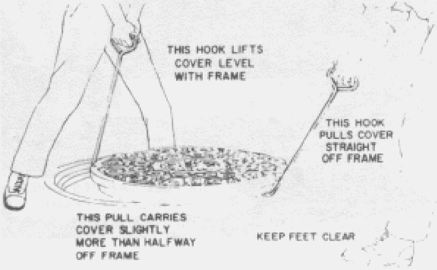


Fig. 36—Sliding Cover Partially Clear of Frame—Two-Person Method

(4) The person in the original position now pulls while the other lifts the side of the cover level with the rim of the frame and also assists in pulling to the extent permitted by the position of the person. The pull should be directly off the frame. Any attempt to swing the cover by other than a

direct pull may cause the manhole hooks to slip. It is not necessary that this pull carry the cover completely clear of the frame; only that less than half its weight be left overhanging the opening at the completion of the pull.

(5) While the person on the pulling side still has the manhole hook engaged, the other craftsperson moves around and engages the hook under the circumferential rib. The craftspersons then assume positions so that the cover can be pulled clear of the frame (Fig. 37).

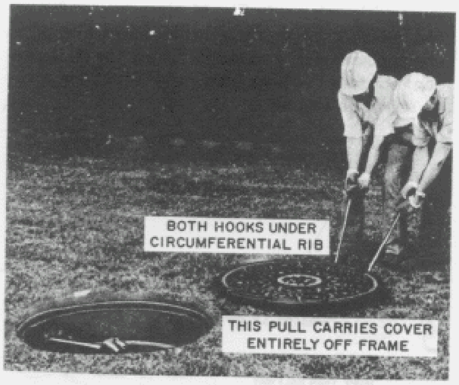


Fig. 37—♦Sliding Cover Clear of Frame—Two-Person Method♦

5.13 The inner covers of A-type manhole frames are removed by unlocking and removing the padlock from the locking bar screw (if one is used), removing the saddle plate, and loosening the locking bar screw. The screw can be turned with the point of the manhole cover hook or any suitable tool. When the locking bar is free, disengage it from the locking bar catches and remove it. ♦The inner cover can then be lifted out, using two manhole hooks to engage either the handles or the hook holes provided in the ribs of the cover (Fig. 38).♦

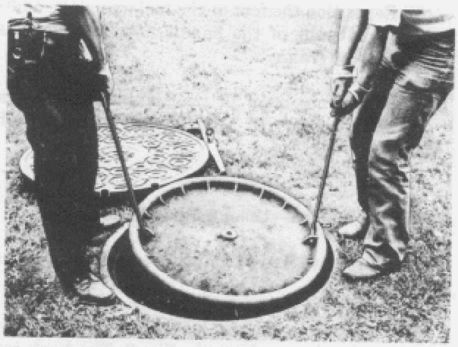


Fig. 38—♦Removing Inner Cover—Two-Person Method♦

6. REPLACING MANHOLE COVERS

6.01 ♦With the cover close to the frame, remove all loose material from the frame seat and from the sides and seat of the cover so the cover will rest evenly in the frame. A wire brush or other suitable tool can be used for this purpose.

> *Note:* Where a gasket is used on a G- or H-type cover, clean and inspect the gasket before replacing the cover in the frame. If the gasket is damaged, replace it as described in paragraph 6.07.♦

One-Person Method—Using B Manhole Cover Hook

6.02 Proceed as follows:

(1) With feet spread well apart, stand slightly over the cover while facing approximately at right angles to the line on which the cover is to be moved.

(2) Place the point of the manhole hook under the rim of the cover, lift slightly, and swing the cover toward the manhole while the cover pivots on its opposite edge (Fig. 39).

> ♦*Note:* When moving a G- or H-type cover in the manner shown in Fig 39, the hook must be placed under the rim directly opposite a lifter

pocket. This will allow the cover to pivot on the boss under the pocket.♦

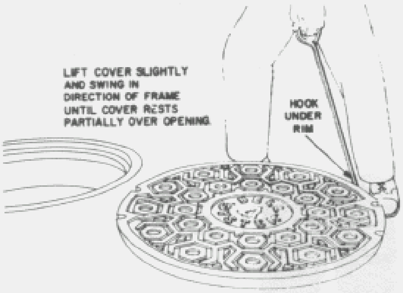

LIFT COVER SLIGHTLY AND SWING IN DIRECTION OF FRAME UNTIL COVER RESTS PARTIALLY OVER OPENING
HOOK UNDER RIM

Fig. 39—Sliding Cover to Manhole Frame

(3) Change to the opposite side and repeat steps (1) and (2) until the cover rests partially over the opening of the manhole.

(4) Place the hook under the rim of the cover at the point farthest from the opening and lift until the cover slides onto its seat (Fig. 40).

> *Note:* When replacing the outer "A" cover, do not allow the cover to strike the locking bar screw when sliding the cover into the opening. A heavy blow may bend or break the screw. The forward edge of the cover should be guided with a hook, if necessary, until it has cleared the screw.

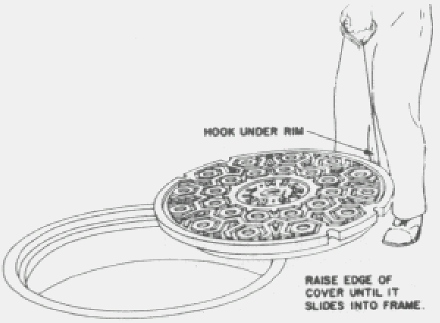


Fig. 40—Preparing to Slide Cover Onto Seat

6.03 To replace inner "A" covers, first inspect the cover to see that the rubber gasket, if present, is clean and properly held by the retaining lug (27- or 30-inch B manhole cover gaskets for "A" inner covers are available as replacement items). Remove loose material from the inner cover lip and set the cover in place. Place the locking bar into the catches on either side of the frame and turn down the locking bar screw until the inner cover is firmly seated and the locking bar is secure in the catch at each end. Place the saddle plate over the screw and snap the padlock on the eye of the screw, if the cover is locked in this manner.

One-Person Method—Using B or C Manhole Cover Lifter

6.04 To replace covers with lifter pockets, rotate the lifter hook to its down position and insert the lifter hook into the lifter pocket closest to the manhole frame. Press downward on the tool handle until the cover is clear of the ground and, while maintaining pressure on the handle, walk sideways, rotating the cover toward the manhole frame.

> *Note:* The above procedure must be repeated, changing tool positions, until the cover can be placed on the frame.

6.05 To replace covers with hook holes in the rim, rotate the lifter hook to the up position and engage the sling hooks into the hook holes (Fig. 20) with the tool positioned nearest the manhole frame. Position the boom adjuster as described in paragraph 5.08 (1). Press downward on the tool handle until the cover is clear of the ground and, while maintaining pressure on the handle, walk sideways, rotating the cover toward the manhole frame.

> *Note:* The above procedure must be repeated, changing tool positions, until the cover can be placed on the frame.

6.06 To replace inner "A" covers, engage the sling hooks into the hook holes in the ribs of the cover as shown in Fig. 28 and ***ensure that both sling hook spurs are pointing away from the fulcrum and that they engage the cover edge.*** Position the boom adjuster as described in paragraph 5.09 (3). Press downward on the tool handle until the cover clears the ground and, while maintaining pressure on the handle, walk sideways, rotating the cover toward the manhole frame. Repeat this procedure, alternating tool positions, until the cover can be replaced in the frame. Inspect and secure the cover as described in paragraph 6.03.

> *Note:* In soft unpaved areas it may be necessary to place a block of wood or other firm material under the tool fulcrum.

6.07 To replace a damaged C-type gasket on the G- or H-type covers, proceed as follows·

◆***Unclean rims or improperly installed gaskets will not allow the cover to seat properly.***◆

(1) Clean mating surfaces of the cover and the frame.

(2) Fit the gasket into the groove in the manhole cover rim with the gasket sealing flanges pointed outward and toward top of cover (Fig. 41).

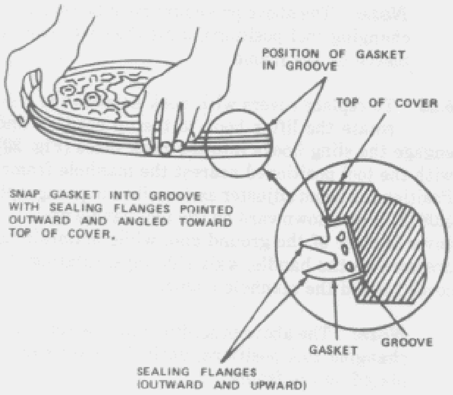

POSITION OF GASKET IN GROOVE
TOP OF COVER
SNAP GASKET INTO GROOVE WITH SEALING FLANGES POINTED OUTWARD AND ANGLED TOWARD TOP OF COVER.
GROOVE
GASKET
SEALING FLANGES (OUTWARD AND UPWARD)

Fig. 41—Replacing C-Type Gasket

(3) Apply lubricant around the vertical surface of the manhole frame and replace the manhole cover.

> *Note:* The C manhole cover gasket kit (AT-8572) includes a gasket, lubricant, and a lubricant applicator, as well as gasket installation instructions.

One-Person Method—Using PTS-49 Cover Lifter

6.08 Engage the manhole cover lifter hook under the rim of the cover and raise the foot of the lifter until the end of the handle rests on top of the cover as shown in Fig. 42. Then, holding the lifter foot, raise the cover slightly and swing it toward the manhole frame while pivoting it on the cover edge directly under the lifter handle.

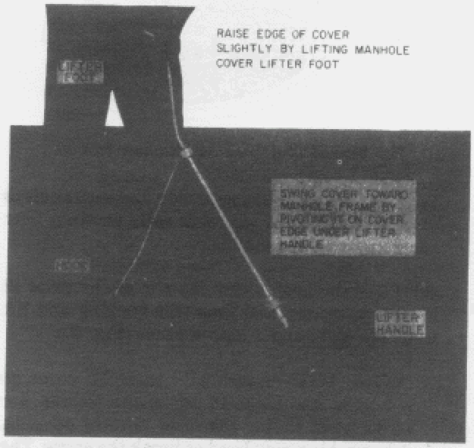

RAISE EDGE OF COVER SLIGHTLY BY LIFTING MANHOLE COVER LIFTER FOOT
LIFTER FOOT
COVER
SWING COVER TOWARD MANHOLE FRAME BY PIVOTING IT ON COVER EDGE UNDER LIFTER HANDLE
LIFTER HANDLE

Fig. 42—Moving Cover to Manhole Frame

7. ◆LOCKING COVERS

Covers With Locking Bolts (C and D Type)

7.01 These covers have two pentagonal-headed bolts set 180 degrees apart at the cover circumference as shown in Fig. 1 (types C and D).

7.02 Before attempting to unseat the cover, the two locking bolts must be removed, using a B manhole wrench (Fig. 3). Unscrew the bolts by turning the wrench counterclockwise, using a B manhole cover hook or other suitable tool as a handle. If the bolts are difficult to turn, apply penetrating oil to aid in the removal. With the bolts removed, the cover can then be removed by the procedure described in Part 5.◆

7.03 The replacement procedure for the cover is the same as described in Part 6 except that when the locking cover is seated, the alignment marks on the cover and frame must register to permit replacing the locking bolts (Fig. 43). It is advisable to apply a small amount of grease to the threads of the bolts before replacing them to help prevent difficult removal in the future.

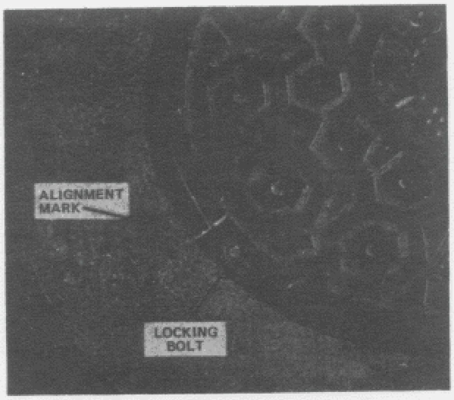


Fig. 43—♦Alignment Marks and Locking Bolt♦

7.04 Always replace ***both*** locking bolts. Start the bolts carefully to avoid cross-threading and then, using the B manhole wrench, tighten only until snug. Do not overtighten as this can make removal difficult. When using the B manhole cover hook as a wrench handle, light hand pressure on the manhole cover hook is sufficient to adequately tighten the locking bolts.

> ♦***Note:*** In the locked position, neither bolt should protrude above the top surface of the cover.

Covers with Captive Locking Assemblies (H Type)

7.05 These covers have two pentagonal-headed studs with a directional indicator on the top of each stud. The two locking assemblies are located in the cover surface 180 degrees apart, positioned from the Bell System logo as shown in Fig. 1 (type H).

7.06 Before attempting to remove the cover, ensure that both studs are positioned with the indicator pointing toward the center of the cover (unlocked position). This is accomplished by turning each stud counterclockwise (about 140 degrees) with a B manhole wrench until hitting the stop (Fig. 4). The cover can then be removed by using the procedure described in Part 5.♦ The procedure for replacing the cover is the same as described in Part 6. The cover does not require special alignment; however, be sure the locking assemblies are in the unlocked position before replacing the cover. With the manhole cover properly replaced in the frame, turn the locking assemblies clockwise to the locked position, using the B manhole wrench. When in the locked position, the directional indicator on the head of the locking assembly bolt will point away from the cover center and toward the manhole frame.

RESCUE OF EMPLOYEE FROM MANHOLE

1. GENERAL

1.01 This practice describes emergency procedures to be followed in rescuing an employee from a manhole. Work at a manhole is to be performed in accordance with Bell System Practices. Work performed in this manner will provide for maximum safety for employees and will drastically reduce the possibility of injury.

1.02 Employees expected to work in a manhole shall be completely familiar with and follow the procedures set forth in Sections 620-140-501—Testing and Ventilating Manholes, 081-700-100 through 081-700-107—Testing and Use of Specific Gas Indicators, 081-700-120 or 081-700-122—Description and Use of the B or C Gas Test Kit, and 620-135-010 and 620-135-100—Work Area Protection.

1.03 ***Warning: A rescuer shall not enter a manhole unless it has been tested for the presence of combustible gas, purged, and continuously ventilated by using a power blower in the prescribed manner.*** Subsequent fatalities have occurred in the public utility industry when a rescuer went to the aid of a victim in a manhole before testing for the presence of a combustible gas or properly ventilating the manhole.

1.04 While testing for the presence of combustible gas, the rescuer must continuously observe the face of the meter from the first squeeze of the aspirator bulb. A high concentration of combustible gas could cause the meter pointer to rapidly move to a full scale deflection and then return to some point on the scale, or to zero or below, and could possibly burn out a filament. Unless the rescuer observes the extremely rapidly moving needle, subsequent bulb aspirations could lead the rescuer to the erroneous assumption that the atmosphere being tested is safe, when actually a very dangerous condition exists.

1.05 An employee could need to be rescued from a manhole for many different reasons: illness, rendered unconscious as a result of a physical blow,heart attack, asphyxiation or oxygen deficiency from an improperly ventilated manhole, etc.

1.06 In all cases where an employee must be rescued, another employee or nonemployee should be directed to call the appropriate emergency unit (rescue squad, fire department, police, etc). The person placing this call should be directed to dial the 911 emergency number (if in use) or 0 for emergency assistance. The specific location where the emergency assistance is required should be clearly identified. Rescue efforts shall proceed and appropriate first aid techniques applied until assistance arrives.

1.07 A rescuer going to the aid of an employee must determine the extent of assistance required by the victim and whether it is imperative that the employee be immediately removed from the manhole. Emergency first aid, if required, should be administered in the manhole. ***Whenever the life of the victim is not jeopardized by remaining in the manhole, leave the victim in the manhole until an appropriate emergency unit is available to lift the employee out of the manhole. First aid measures should continue to be administered in the manhole while awaiting the emergency assistance.***

1.08 When it is decided that the employee must be removed, rescue efforts shall proceed without delay as outlined in Parts 3 and 4.

1.09 In administering first aid to a victim, follow the techniques described in the American Red Cross First Aid textbook as taught in the Bell System first aid and personal safety course.

1.10 This practice and the Red Cross First Aid textbook should be reviewed at intervals so that if an employee requires assistance, a rescue will be handled effectively. It is essential that each employee be prepared to cope with emergency situations and be able to provide lifesaving aid to a victim. A difference between life and death, in many cases, depends upon the knowledge, skill, and judgment exercised by the rescuer.

2. PLANNING THE RESCUE

Seeking Assistance

2.01 The employee who first observes that a fellow worker in a manhole is disabled or in need of assistance shall call out to other employees or a passerby for assistance. The aid of a nonemployee could be sought in this emergency situation. One rescuer shall act as a leader and direct the rescue operation as outlined in the following paragraphs.

Making Manhole Safe for Entry

2.02 ***The importance of evaluating the conditions at the manhole site cannot be overemphasized. Unless all precautions are followed, a rescuer attempting to assist an employee in a manhole could also become a casualty.***

2.03 A rescuer, finding an employee in an unconscious state, shall assume that the worker has been overcome by gas or lack of oxygen. The rescuer must determine if a power ventilator is operating properly, without any restriction in the airflow to the manhole. If a blower had not been in operation, continuous ventilation must be provided before proceeding.

2.04 With continuous ventilation in progress, the atmosphere of the manhole must be tested for combustible gas. The manhole can be entered only if the gas indicator reading is less than 10 percent of a full-scale range of the meter.

2.05 If an unsatisfactory gas concentration is found, the ventilator is to be checked for any restriction in the airflow, such as, obstruction at the air intake of the ventilator, any unnecessary bends in the ventilating hose, manhole tent restrictions, etc. Another sampling of the manhole atmosphere should be taken if a restriction in the airflow was detected and corrected. If the test indicates a safe atmosphere, rescue efforts can proceed.

2.06 Blowers with sufficient capacity for the volume of the manhole being ventilated will provide an exchange of air so that the atmosphere in the manhole affords a safe work environment. However, if the ventilator is operating properly, without any air restrictions, and after subsequent test an unsatisfactory atmosphere is still detected, the manhole should not be entered for a rescue attempt. Contact the appropriate company supervisor, the gas company, and the local emergency unit for assistance. If available, a second ventilator unit can be put to use in an attempt to clear the unsatisfactory atmosphere.

Equipment Needed

2.07 A rescue rope (1/2-inch minimum) in good condition should be used to lift the victim from the manhole. A hand line, aerial platform guy rope, or aerial hand line in good order can be used for this purpose.

2.08 If available, a job vehicle with a lifting mechanism (derrick, aerial lift) could be moved to the manhole and used to aid in removing the victim. See Part 4.

3. MANHOLE RESCUE—MANUAL

3.01 When it is decided that a victim is to be removed from a manhole, proceed in the following manner:

(1) Place a rescue rope around the victim, making one complete turn around the victim's body high up at the armpits, keeping the line high up under the armpits so it will not have to be raised later.

(2) Tie three half hitches at the back of the victim's head in line with the spine (see Fig. 1).

> ***Note:*** If the aerial platform guy rope is used, make one complete turn around the victim's body and snap onto the pulling end or the line.

(3) Free the blower hose in the manhole so it can be pulled out from the grade level.

(4) Ascend the manhole ladder.

(5) Pull the ventilating hose out of the manhole.

(6) Remove the manhole shield.

(7) Pull the manhole ladder out of the manhole (if a portable ladder).

(8) The rescuers shall assume a position on opposite sides of the rescue rope at the grade level at the manhole opening (see Fig. 1).

3.02 Obviously, the effort required to rescue a person from a manhole by hand necessitates quite a sustained level of physical strength. To minimize the strain placed on the rescuers, they must coordinate their combined efforts very closely or else their work will be substantially dissipated and could result in further injury to the victim or themselves. An effective rescue will require that one of the participants in the rescue direct the overall effort and audibly signal the pulling cycle of the operation. Success will be achieved when the two rescuers coordinate their grip and maintain a continuous strain on the rope together.

3.03 The hands of the rescuers shall be positioned to form a locking hold on the rope. The rescuer on the right of the rope should have the right hand forward, while the rescuer on the left will have the left hand forward and between both hands of the rescuer on the opposite side of the rope.

3.04 The rescuers shall exert a steady pull on the rescue rope. This is accomplished by lifting and continuously changing the position of the hand furthest back on the rescue rope to the most forward position (see Fig. 2).

> ***Reminder:*** The total weight lifted by each rescuer is halved when this is accomplished. However, at any given moment, if one rescuer slacks off in an uncoordinated fashion, the other rescuer is burdened with the extra weight.

4. MANHOLE RESCUE—MECHANICAL

4.01 When an aerial lift device is available, follow the same procedures as outlined in 3.01 (1) through (7).

4.02 Position the aerial lift device over the hole. Fasten the rope previously attached to the victim to the lifting mechanism. As one rescuer operates the mechanical lifting device, the other rescuer will guide the victim safely through the manhole chimney.

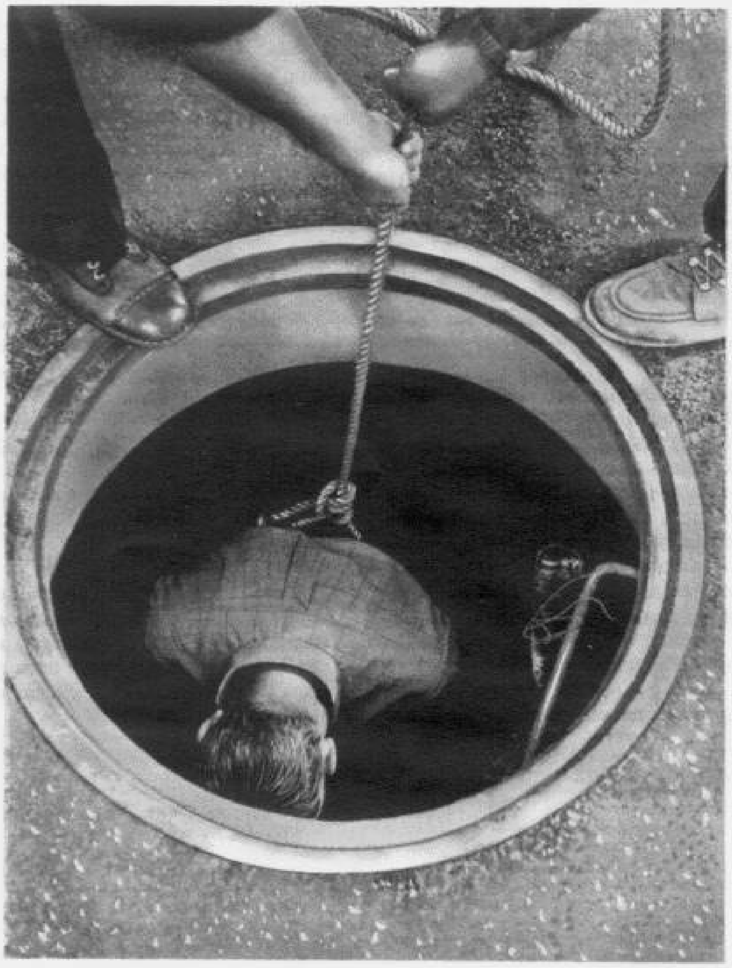
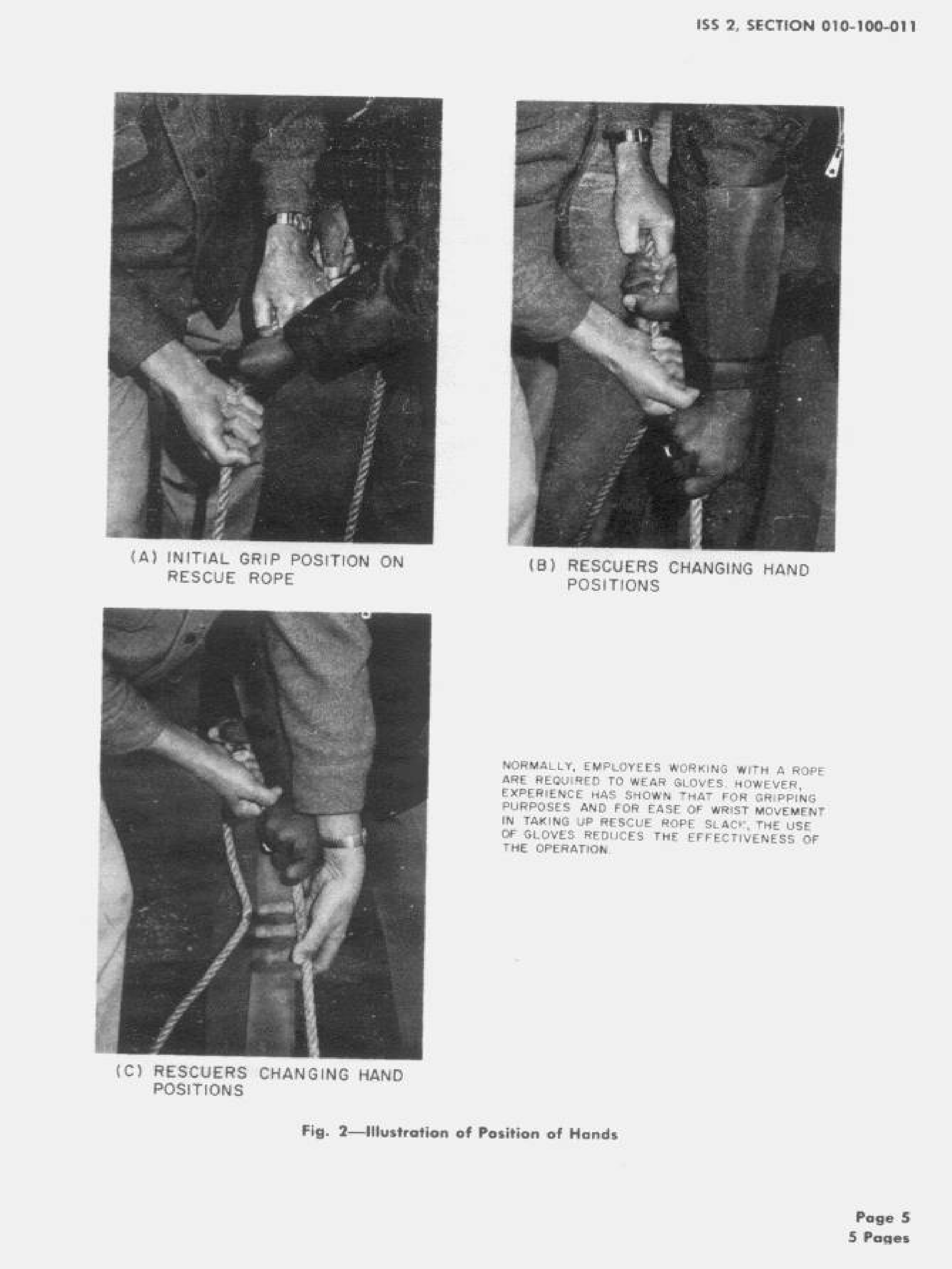


Fig. 1—Rescuer's Position at the Manhole



(A) INITIAL GRIP POSITION ON RESCUE ROPE

(B) RESCUERS CHANGING HAND POSITIONS

NORMALLY, EMPLOYEES WORKING WITH A ROPE ARE REQUIRED TO WEAR GLOVES. HOWEVER, EXPERIENCE HAS SHOWN THAT FOR GRIPPING PURPOSES AND FOR EASE OF WRIST MOVEMENT IN TAKING UP RESCUE ROPE SLACK, THE USE OF GLOVES REDUCES THE EFFECTIVENESS OF THE OPERATION.

(C) RESCUERS CHANGING HAND POSITIONS

Fig. 2—Illustration of Position of Hands

Mosque Time−Lapse Surveillance Camera

Overview

This is a simple add−on hack to turn a Vivitar Vivicam 3350B digital camera (available at Wal−Mart for $20) into a time−lapse surveillance camera. This is useful for staking out Mosques, $2600 meetings, the Canadian embassy, Euro−savage embassies, and other people who have yet to prove they should be allowed to live.

The operation is quite simple. A 555−timer is used to "pulse" the camera's shutter button once every 20 seconds or so. The reason this is done in 20 second intervals is that the camera has an internal "shutdown" timer that is set for 30 seconds, and I don't think it is possible to disable this timer. The camera is capable of two resolution modes: 640 x 480 pixel mode (VGA) and 320 x 240 pixel mode (QVGA). The camera is capable of holding approximately 54 pictures in VGA mode and 250 in QVGA mode. The capacity is limited by the camera's internal 8 MB SRAM chip. Increasing the memory size is *technically* possible, but probably not worthwhile. For surveillance applications, the *Low Quality* mode (QVGA) will be chosen for an approximate time−lapse of 80 minutes. Real−world times will differ, as the 555−timer's pulse times vary with temperature and component tolerance. To be on the safe side, return to the camera and download the pictures once every 60 minutes. **Note!** Download the pictures from the camera *before* removing the camera's battery power, otherwise the pictures may be lost. There is an internal battery backup, but I wouldn't trust it.

Math

The 555−timer circuitry is quite simple. Refer to the resistors **`R1`** and **`R2`**, and capacitor **`C1`** in the schematic. The math to determine the 555's approximate pulse widths (time) is as follows:

```
-----------------------------------------------------------------------------------------
Output of Pin 3 of the 555 Timer

HIGH Time = 0.69 * (R1 + R2) * C1
LOW Time  = 0.69 * (R2 * C1)

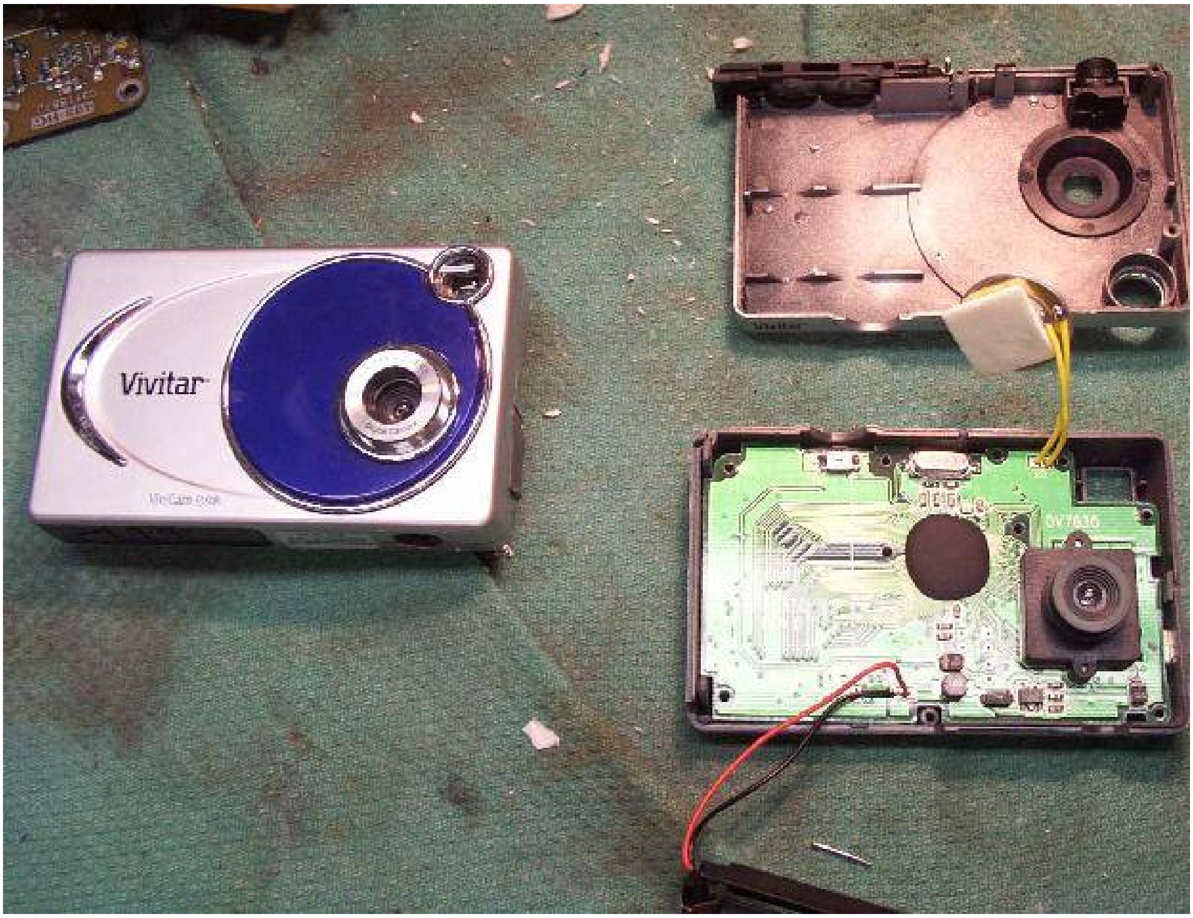
Example:

R1 = 470k (470,000 Ohms)
R2 = 47k (47,000 Ohms)
C1 = 47 µF (0.000047 Farads)

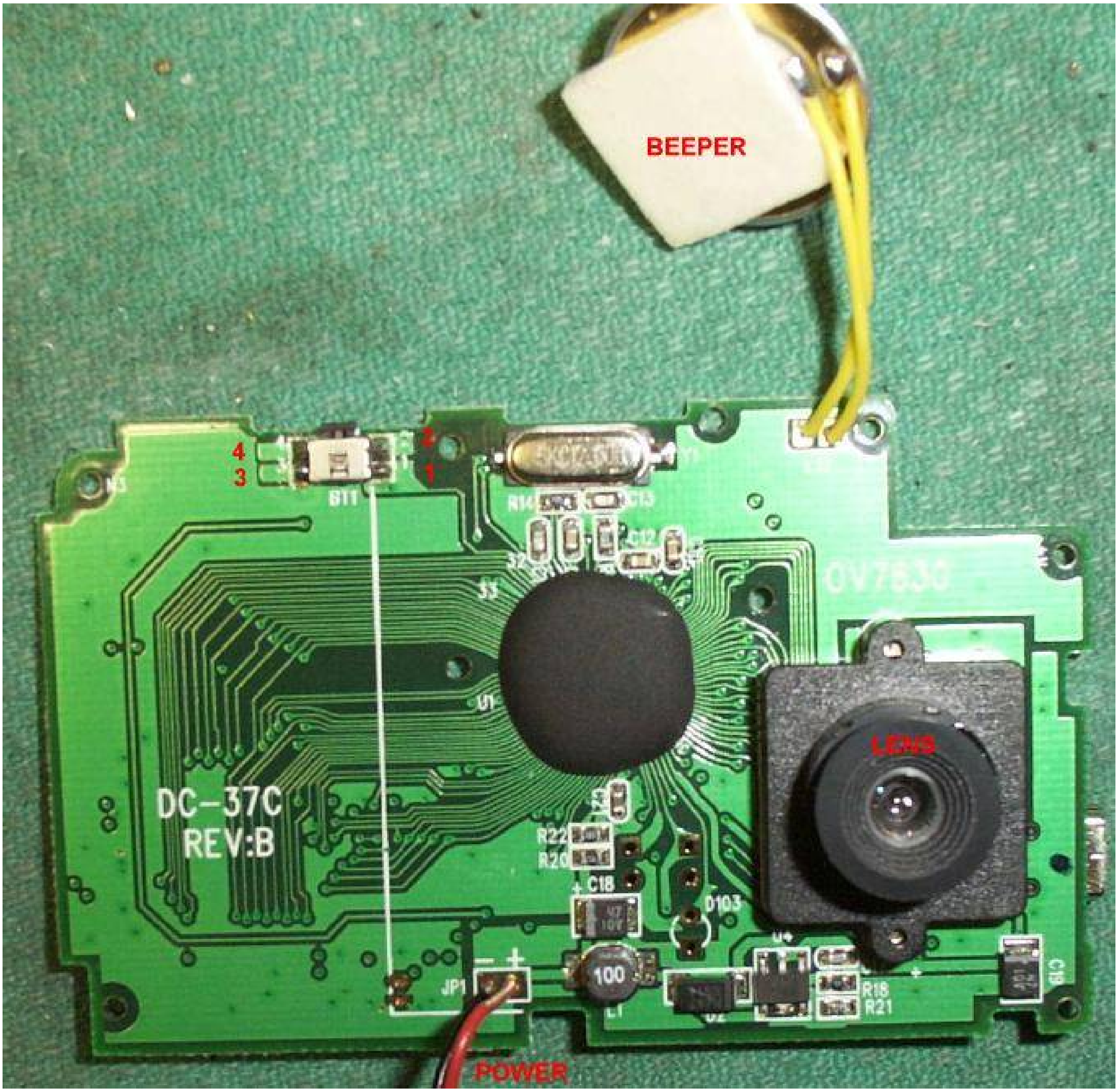
HIGH Time = 0.69 * (R1 + R2) * C1 = 0.69 * (470,000 + 47,000) * 0.000047 = 16.76 seconds
LOW Time  = 0.69 * (R2 * C1) = 0.69 * (47,000 * 0.000047) = 1.52 seconds
-----------------------------------------------------------------------------------------
```

A single 2N3904 transistor level shifter is used to convert the 555's *low* pulse into a *high* pulse, which in turn, activates the camera's shutter button via another 2N3904 transistor. (The camera waits 17 seconds then "pulses" the shutter button for 1.5 seconds, simulating pressing the button). Feel free to experiment with the 555−timer's timing component values. The use of precision tolerance (1%) resistors and capacitors will allow you to extend the shutter control pulses closer to the maximum of 30 seconds. You could even reduce the pulse times for a quicker time−lapse.

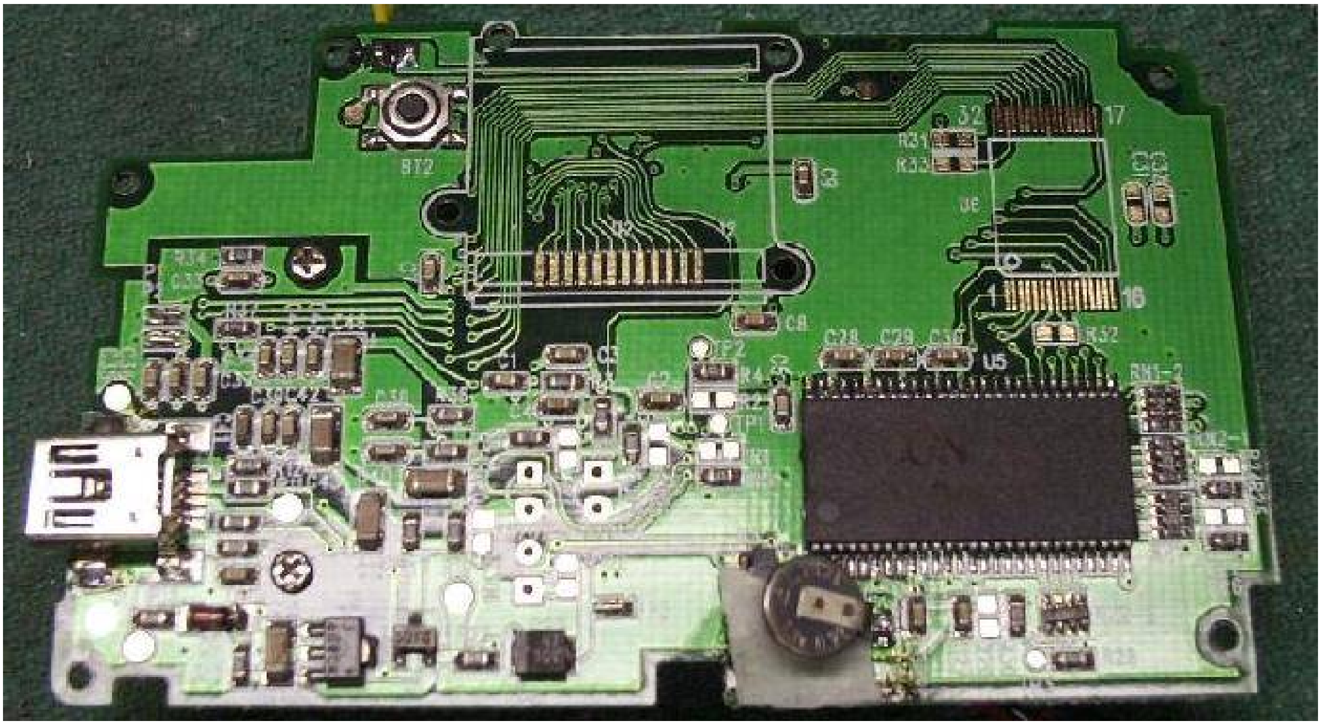
The timer should be powered off an external, *isolated* 6V battery pack. It is best to make the 6V battery pack out of four "C" or "D" cell batteries. Plastic four−cell battery holders are available from Radio Shack (Part Numbers 270−390 [4 "C"] & 270−389 [4 "D"]). Use the 6V output to power the timer and any external infrared LED lighting. You should also make an (optional) similar battery pack using two "C" or "D" cell batteries to power the camera. This new 3V battery pack will be used in place of the camera's two internal "AAA" batteries. The camera's DC power is fed by the internal red (positive '+') and black (ground '−') wires, which are clearly seen and labeled inside the camera. This new battery will allow the camera to operate for a significantly longer time, especially if you use "D" cell batteries. For reduced space applications (i.e. covert), you can even use a series of flat, 3V lithium battery cells. The timer's ground and the camera ground ***can not*** be connected. I'm not sure why this is needed, but that was the only way I could get the circuit to work. To avoid this, use separate battery grounds or use a relay to connect pins 1 & 2 on the shutter button instead of a transistor.



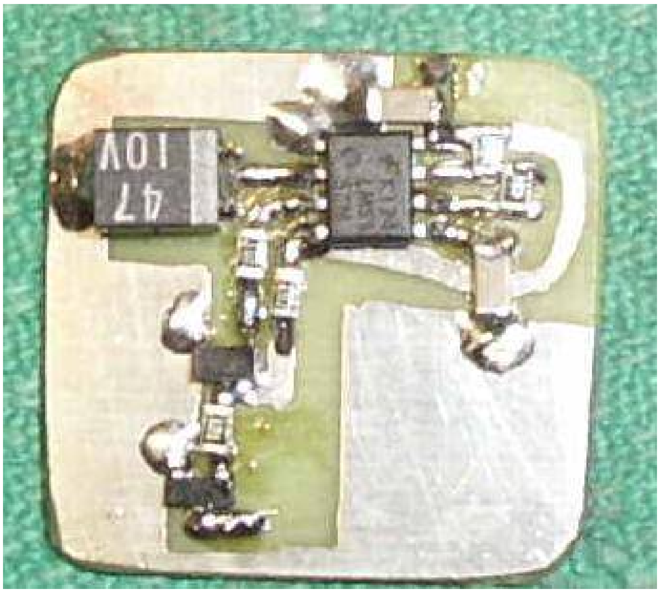
Internal view of the Vivitar Vivicam 3350B digital camera. There are screws along the bottom and sides that need to be taken out in order to open the camera. The large black "blob" is the camera's microcontroller potted in epoxy. The round disk with the two yellow wires is the beeper. Remove this (cut both wires) to disable the beeper and make the camera operation more "covert" (no damn beeping). The black thing with the plastic lens is the camera lens, duh. The actual CMOS imager is underneath this lens. To get at it, remove the two screws on the board's backside.



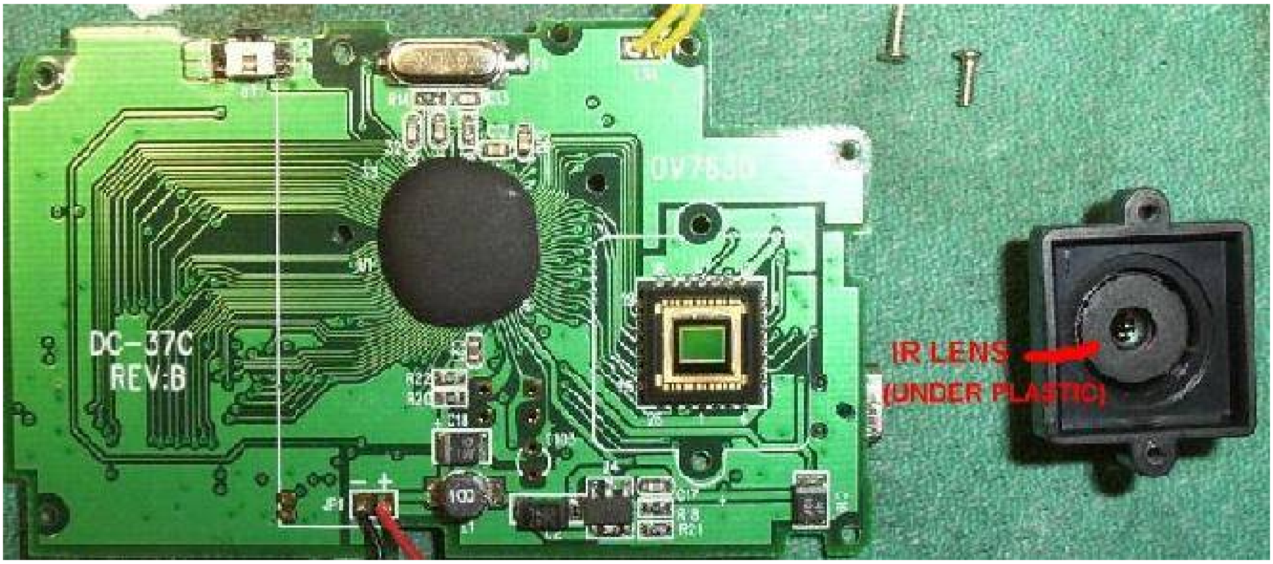
Close up picture of the camera's front PC board. The shutter button is on the upper left. The switch's pins are labeled 1, 2, 3, and 4. You'll only need to connect wires to pins 1 & 2 to activate the shutter. The camera's DC power input (from the "AAA" battery pack in this picture) is on the bottom.



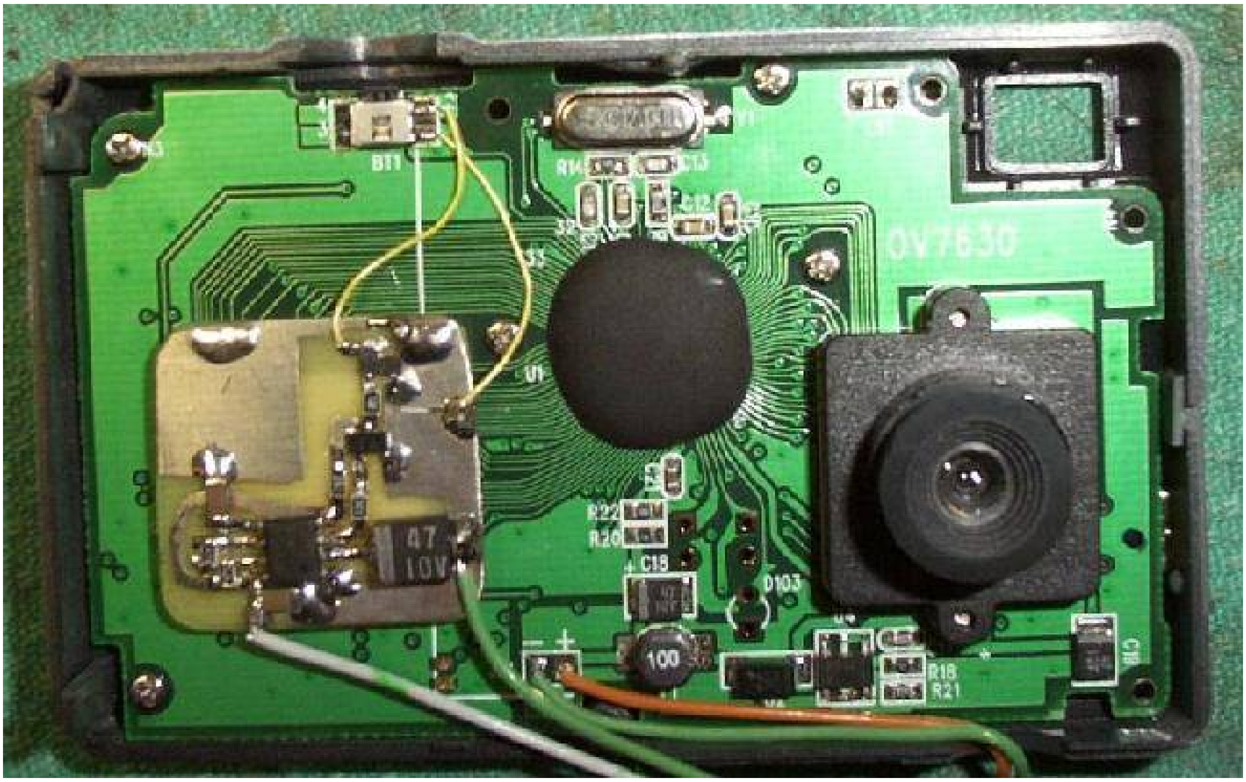
Close up picture of the camera's back PC board. The select/power button is on the upper left (PCB mount). The two screws on the left hold the plastic lens assembly to the PC board. The exposed pads shown in the middle of the picture are for the camera's LCD screen. Be *very* careful removing this, as they tend to never work right after removing them. The LCD screen is not needed for the camera's operation, and can be discarded. The large black IC is the camera's main memory. Note the small 3V lithium cell for memory backup. The input connector on the left is for the computer transfer cable.



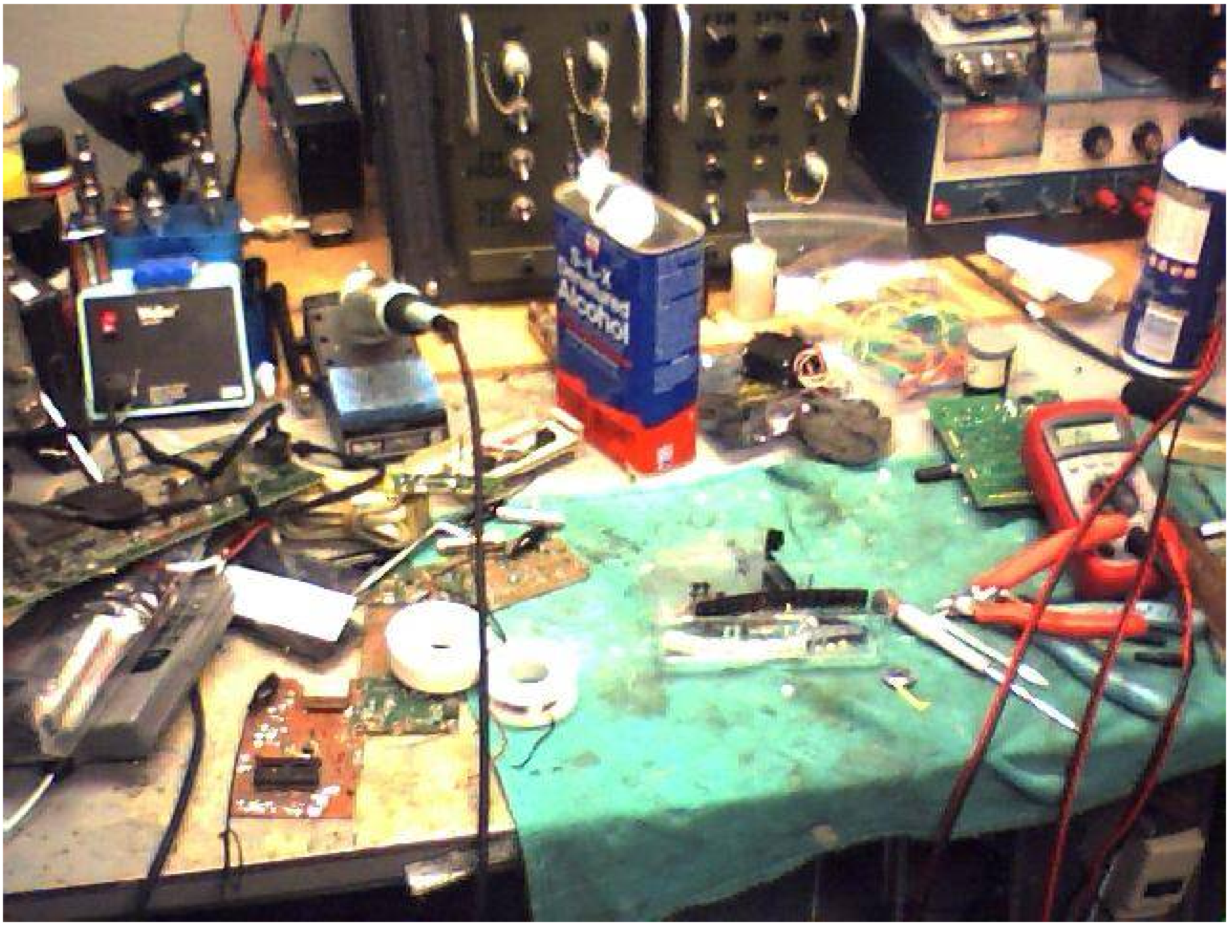
555−based shutter button control using all surface mount components. This allows the timer to mounted inside the camera. DC power is from the top (near the 555's pin−8). The output from the bottom 2N3904 goes to shutter button pin−2. Ground goes to the separate 6V power supply and shutter button pin−1.



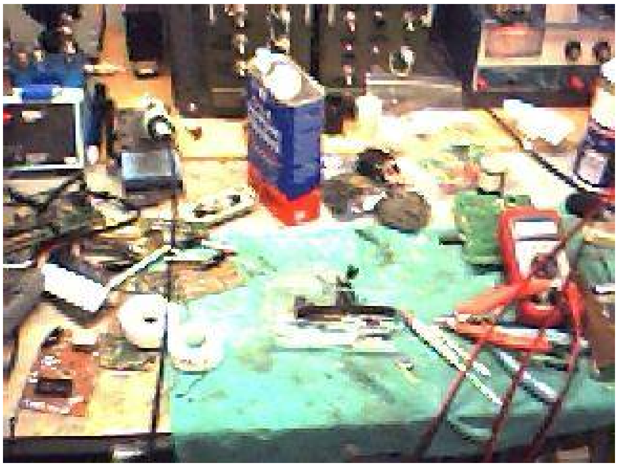
Close up picture of the camera's front PC board with the plastic lens assembly removed. Be sure to not get any dust on the CMOS imager's window.



Internal picture with everything hooked up. The beeper, eyepiece, and internal battery pack have been removed. The wires going out the bottom are for the separate DC power supplies. The yellow wires connect the shutter button to the control timer.



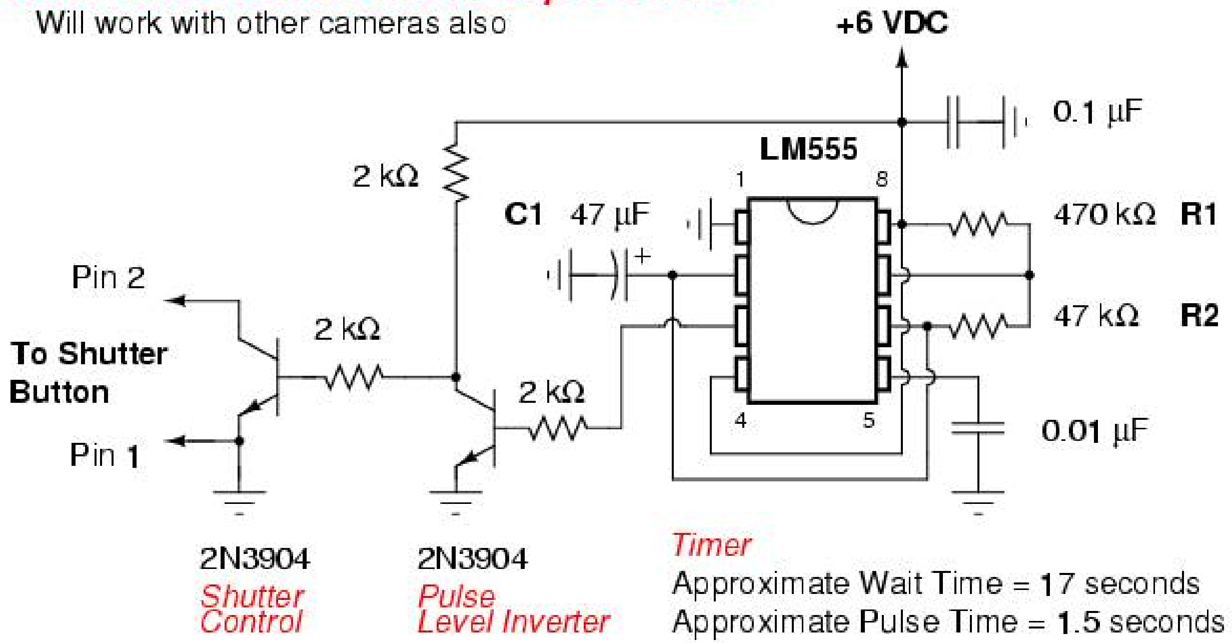
Example photo from the Vivitar Vivicam 3350B digital camera in *High Quality* (VGA) resolution mode.



Example photo from the Vivitar Vivicam 3350B digital camera in *Low Quality* (QVGA) resolution mode.

Vivitar Vivicam 3350B Time-Lapse Control

Will work with other cameras also



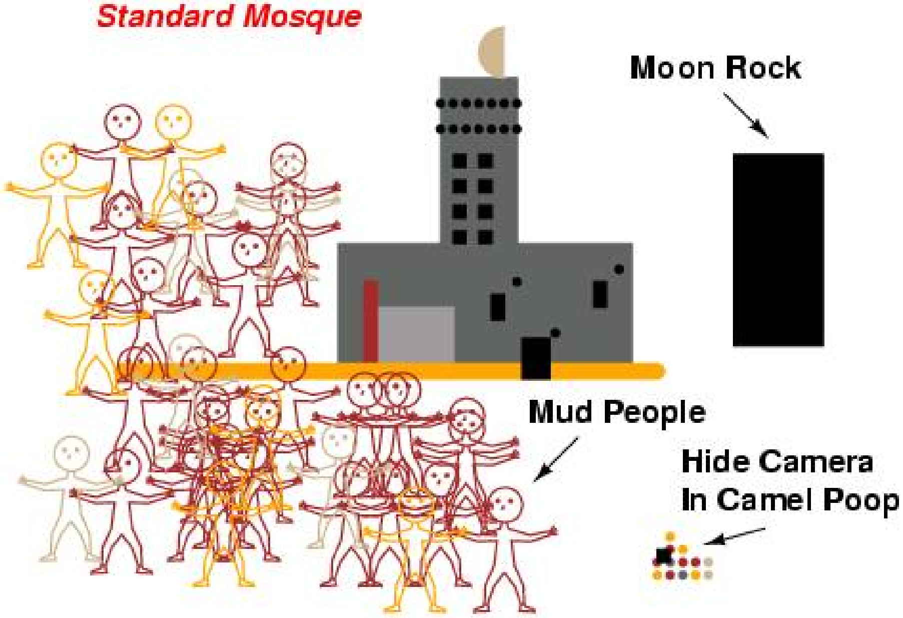
Timer

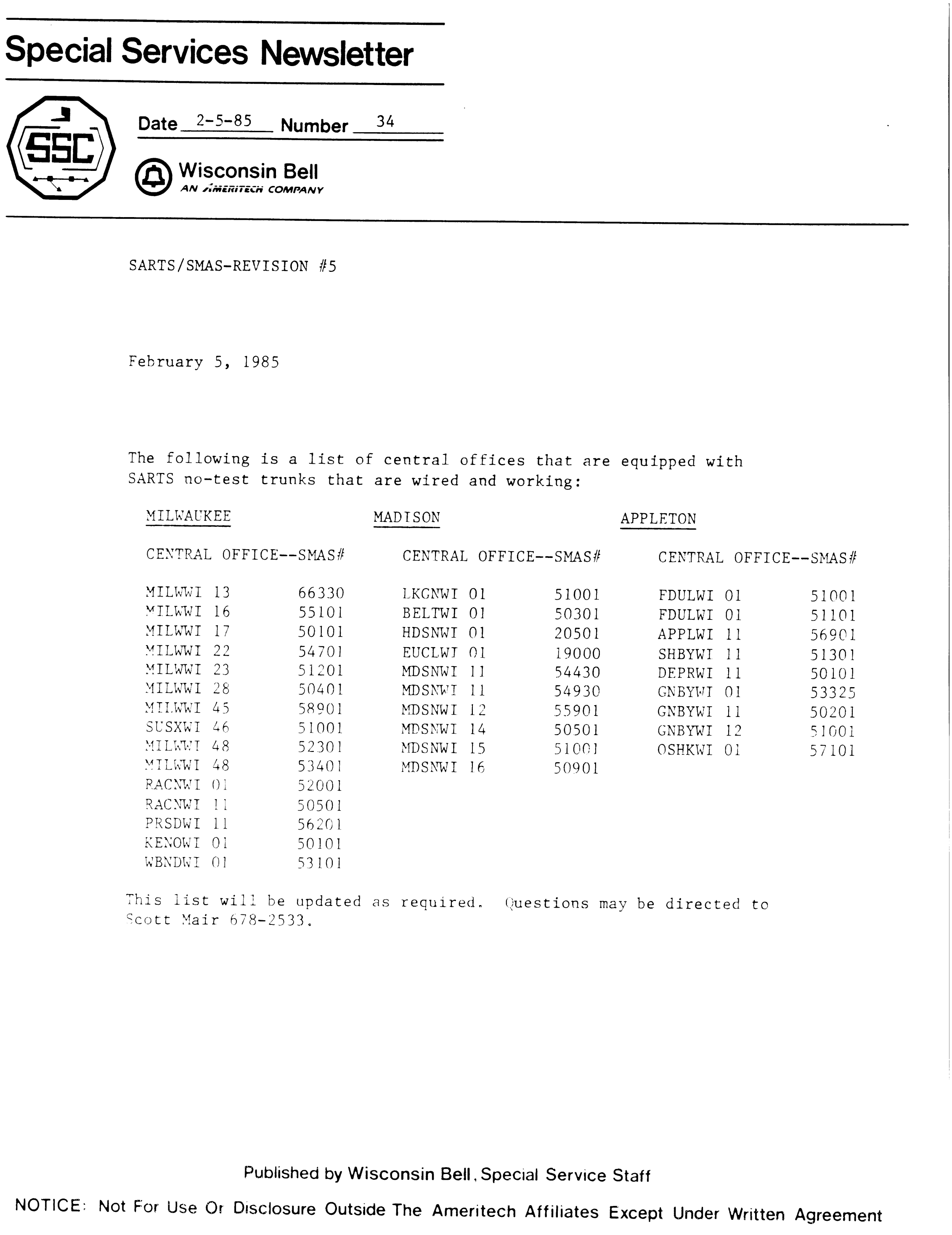
Approximate Wait Time = 17 seconds

Approximate Pulse Time = 1.5 seconds

Isolate the timer's ground from the camera's DC input ground.

Standard Mosque





Special Services Newsletter

Date 2-5-85 Number 34

Wisconsin Bell
AN AMERITECH COMPANY

SARTS/SMAS-REVISION #5

February 5, 1985

The following is a list of central offices that are equipped with SARTS no-test trunks that are wired and working:

MILWAUKEE		MADISON		APPLETON	
CENTRAL OFFICE--SMAS#		CENTRAL OFFICE--SMAS#		CENTRAL OFFICE--SMAS#	
MILWWI 13	66330	LKGNWI 01	51001	FDULWI 01	51001
MILWWI 16	55101	BELTWI 01	50301	FDULWI 01	51101
MILWWI 17	50101	HDSNWI 01	20501	APPLWI 11	56901
MILWWI 22	54701	EUCLWI 01	19000	SHBYWI 11	51301
MILWWI 23	51201	MDSNWI 11	54430	DEPRWI 11	50101
MILWWI 28	50401	MDSNWI 11	54930	GNBYWI 01	53325
MILWWI 45	58901	MDSNWI 12	55901	GNBYWI 11	50201
SUSXWI 46	51001	MDSNWI 14	50501	GNBYWI 12	51001
MILWWI 48	52301	MDSNWI 15	51001	OSHKWI 01	57101
MILWWI 48	53401	MDSNWI 16	50901		
RACNWI 01	52001				
RACNWI 11	50501				
PRSDWI 11	56201				
KENOWI 01	50101				
WBNDWI 01	53101				

This list will be updated as required. Questions may be directed to Scott Mair 678-2533.

Published by Wisconsin Bell, Special Service Staff

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End of Issue #12

Any Questions?

Editorial and Rants

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Re:What types of phones? (Score:4, Informative)
by isometrick (817436) on Wednesday January 12, @08:23AM (#11333812)
(Last Journal: Thursday December 16, @01:08AM)

The RF phase modulator is tuned at a slightly different phase angle in GSM based
handsets, resulting in wavelengths that have more difficulty penetrating the epidermis.

Duh!
```

If you ever post on Slashdot, please kill yourself.

If you ever mod *up* this crap on Slashdot, please kill yourself.

Below is a message I found on the ***IIRG Computer Security Group*** *Yahoo mailing list: (http://groups.yahoo.com/group/iirgsecurity). It's quite interesting and accurate.*

```
Date:  Thu Jul 22, 2004  3:04 am
Subject:  Connecticut 2600 or lack there of....


First and foremost, the IIRG considers it of the upmost
importantance to keep on learning and educating yourself at all
times.

2600 magazine no longer fosters a sense of community and censors
what they will and will not publish. It is impossible for anyone to
learn or educate themselves with their current standards.
```

Personally, I will not have any affiliation wirh 2600 Magazine anymore because of Corley's socialist attitutes.

Over 50% of IIRG members are veterans who have been thru the system and have a sense of community that the IIRG provides. I have spoken at length with our membership and they will NOT support anything that is affiliated with 2600 magazine or Eric Corley.

The IIRG has gone above and beyond the call of duty for 2600 in the past. One of our members spoke at the first HOPE conference. One of our members organized one of the first 2600 meetings. I personally organized the original Meriden 2600 meetings. They republished one of our Tech Journals and conveniently left out any mention of us.

This is but a small list of grievances relating to 2600 that we have. If an underground meeting was organized that was not affiliated with 2600, the IIRG would offer technical support at any time.

I would suggest something like this,

Are you Sick of BULLSHIT?

Do you like the concept of 2600 Magazine, but aren't a communist sympathizer?

Do you like the idea of actually learning something and not just being a script kiddie?

Then come to the first meeting of C.H.A.T.

The Connecticut Hackers and Technicians will meet at XXXX on XXXX

We will be chatting about hacking, phreaking, modding, wireless ,and cellular among other things.

This is just an made up example of something that individuals with some iniative could accomplish. Make up a name and run with it. Eric Corley is NOT the supreme leader of the computer hacker community. Be an original, not a copy-cat. You don't have to to affiliate yourself with 2600 anymore to have a succesful meeting.

If and when a meeting starts with this criteria, the IIRG will offer our support. Until that time we will keep our activities restricted to our own interests and projects.

Mercenary/IIRG

ERROR!

There was a error on page 8 of *GBPPR 'Zine*, Issue #8. The correct TSTLCONT.TLNOS table is shown below:

Field	**Entry**	**Explanation**
TESTLINE	alphanumeric (4 characters)	*Test Line Name* Enter the standard DMS test line name. Use the Command Interpreter (CI) command RANGE to obtain the standard DMS test line codes. See the table "Test Lines" in section "Functional Description" for a description of the test lines.
TLNUMBER	0 to 9, B to F (up to 12 characters)	*Test Line Number* If the switching unit is other than a DMS-300, enter the digits of the test line number that are to be outpulsed (not including the prefix digits from table CLLIMTCE). If the switching unit is a DMS-300, with a signaling system other than CCIS7, enter KP (Key Pulse), the digits of the test line number (maximum 12) that are to be outpulsed, and ST (Signaling Terminal). KP1 is represented by entry D; KP2 is represented by entry E; ST is represented by entry F. The first digit position in the test line number following KP, for No. 6 signaling trunks, is the Calling Party's Category Indicator (CPCI) with the following values: **Entry** — **Decimal Value** 1 to 9 — 1 to 9 0 — 10 B — 11 C — 12 D — 13 E — 14 F — 15 If the switching unit is a DMS-300, and CCITT7 signaling system, the recommended value for a T100 test line is 64. **Note:** The test line number entered in this field applies to the test name entered in field TESTLINE as well as all subset test names associated with the test name as listed in a table, section "Standard DMS Test Names". For example, if T105 is entered as the test line name in field TESTLINE, the test line number entered in field TLNUMBER will apply to the T105 test as well as all its subset tests (such as T164 and TERL).
TL_MFC_OG_SIG	N	*Test Line Multifrequency Compelled Signal* This field is used to test for Multifrequency Compelled (MFC) trunks. Enter N.

-End-