TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF TABLES

SECTION I

INSTALLATION

1.1 INTRODUCTION

The main system installation must be performed as outlined in the System Manual. These installation procedures deal only with ensuring the tape machines are assigned to the correct addresses. Ensure system power is off when making these connections.

1.2 TAPE MACHINE ASSIGNMENT

The system has provisions for eight machines. Input connections between the machines and the EDM-1 system are as outlined in TABLE 1-1. Note that one machine must be allocated to record, per TABLE 1-2.

MACHINE NUMBER	MACHINE CONTROL TO VIDEO SWITCHER CONTROL ASSEMBLY	VIDEO INPUT TO VIDEO SWITCHER	AUDIO INPUT TO VIDEO SWITCHER CONTROL ASSEMBLY
1	J204	J102	J202-2, J202-18
2	J205	J103	J202-3, J202-19
3	J206	J104	J202-4, J202-20
4	J207	J105	J202-5, J202-21
5	J208	J106	J202-6, J202-22
6	J209	J107	J202-7, J202-23
7	J210	J108	J202-8, J202-24
8	J211	J109	J202-9, J202-25
Spare		J110	J202-10, J202-26

TABLE 1-1 Machine Assignments

1.3 RECORD MACHINE

The record machine is connected to the EDM-1 system as outlined in TABLE 1-2. Note that the record machine is selected from one of machines 1-8 of TABLE 1-1.

MACHINE NUMBER	MACHINE CONTROL TO VIDEO SWITCHER CONTROL ASSEMBLY	VIDEO FROM EDM-1	AUDIO FROM EDM-1
1-8	J204-J211	J146-1 of Video Switcher or J133 of Title Keyer (optional assy)	J203-1, J203-17

TABLE 1-2   Record Machine

SECTION II

SYSTEM START-UP

2.1 INTRODUCTION

This is a start-up procedure for an existing system. It is assumed that the system has been installed previously and is operational.

2.2 MACHINE CONNECTIONS

With the power off, make the machine connections per SECTION I, if required.

2.3 PRELIMINARY CHECKS

Visually check cable connections, machine connections, and AC power cable connections.

2.4 POWER

a) Turn the power on with the DATA Display CRT brightness control.

b) At the computer console set the power key switch to POWER.

c) Ensure the Floppy Disc is on.

d) If a Teletypewriter is available, set the LINE/OFF/LOCAL switch to LOCAL. Type a few keys, then press the RETURN key to verify that the typewriter is working and that the carriage returns to the left margin. Set the LINE/OFF/LOCAL switch to LINE.

e) If a High-Speed Printer is available, set the POWER switch to ON. Select 300 on the BAUD RATE buttons, and place the LINE/LOC switch to LOC. Type a few keys, then press the RETURN key to verify that the typewriter is working and that the carriage returns to the left margin. Set the LINE/LOC switch to LINE.

f)　If a Paper Tape Reader/Punch is available, ensure the unit is on. The power switch is located at the rear of the unit. Operate READER FEED to ensure the reader drive sprocket operates (have tape depression fork lowered). Operate PUNCH FEED to ensure the punch works (tape will be fed through).

g)　Turn on the video tape machine interfaces.

h)　Power up the video tape machines. Operate the machines from the machine control panels to ensure the machines are operational. Switch all machines to remote.

2.5　LOADING SYSTEM PROGRAM

With the system powered-up, the system program must be in the memory of the computer before the system can be used. If the program has not been entered into memory previously, or if diagnostics have been entered, the system program must be reloaded from diskette.

To determine if the system program is in memory:

a)　Set the ENABLE/HALT switch to HALT.

b)　Set 000050 (0/000/000/000/101/000) on the switch register.

c)　Press LOAD ADRS.

d)　Set the ENABLE/HALT switch to ENABLE.

e)　Press START.

If the system program is in memory, the Data CRT will have a display All information in memory is retained.

If the system program is in memory and it is desired to clear data entered previously, repeat the above procedure with the switch register set to 000040 (0/000/000/000/100/000)in step b.

If the system program is not in memory, it must be entered from diskette as follows:

a)　Open the front cover of drive 0 of the disc system (left drive). The door is spring-loaded and is released by pressing the pushbutton.

b) Insert the program diskette, with the label up.

c) Close the front cover by pushing down on the bar until the cover locks into position.

d) Repeat the procedure of a) through e) above with the switch register set to 140000 (1/100/000/000/000/ 000) in step b.

At this time the system program should be loaded. Set the computer power key switch to PANEL LOCK. Adjust the BRIGHTNESS control on the Monitor Panel for best viewing of the Data CRT.

2.6 MACHINE ASSIGNMENTS

Position the cursor at the upper left-hand corner of the CRT using the cursor controls and enter a three-character reel number. Tab right to the next data field using the tab right control and enter the machine assignment (1-8). This procedure is unnecessary if the initial values are satisfactory.

2.7 PRELIMINARY SYSTEM TEST

This is a simple procedure to check that the machines respond and to check the audio and video paths of the system.

a) Using the TRANS CONTROL ASSIGN group on the Control Panel select Pl. In the TRANS CONTROL group select PLAY. Playback machine one must run.

b) On the Monitor Panel select MAN for audio and video. Use the rotary knobs to select playback machine one (the one selected in step a). The video monitor must display the video from the machine. Select PL on the PL/PGM switch on the Monitor Panel and adjust the AUD MON control until the audio is heard on the speaker (if audio is connected). A reading will also be available on the VU meter.

c) Press STOP in the TRANS CONTROL group.

d) Repeat steps a) through c) for the other two playback machines, using P2 and P3 in the TRANS CONTROL ASSIGN group.

e) Check the operation of the record machine by selecting REC in the TRANS CONTROL ASSIGN group and REC in the TRANS CONTROL group. Press STOP in the TRANS CONTROL group.

f)   Start one playback machine as described above.

g)   On the video switcher controls of the Control Panel:

Select the appropriate crosspoint on the VID bus (corresponding to the machine running).

Select DIR and AUD B.

h)   On the Monitor Panel select PGM OUT for video and audio, using the rotary knobs.   The video must be displayed on the video monitor and the audio must be heard on the speaker (if audio is present).

i)   Stop all machines.

j)   Ensure the correct tapes are loaded on the machines and that the tapes have valid time code.

The system is now operational and ready for editing purposes.   Refer to SECTION III.

SECTION III

DATA ENTRY

3.1   INTRODUCTION

This section provides the procedures for entering data into the system.
The Data CRT displays all data entered and data is always entered at
the current cursor position. A separate description of the Data CRT
is provided in SECTION IX.

Prior to attempting to enter data the system must be started-up and the
system programs loaded per SECTION II. If the system is started up and
the programs loaded from diskette only the top part of the display will
be present as shown in FIGURE 3-1. The cursor will be located at the
first character position of the first reel number field. If the system is
started up with the programs already in memory, other parts of the dis-
play may also be filled, as shown in FIGURE 3-2.

3.2   DATA ENTRY FROM KEYBOARD

3.2.1   Machine Assignments

a) Position the cursor at the highest and farthest left position using
    the cursor controls and enter a three-character reel number.

b) Tab right to the next data field and enter the machine assignment
    (1-8). If slaving is to be done, enter a comma followed by the
    slave assignment.

c) Repeat steps a) and b) for P1, P2 and P3.

    If the machines are switched on and tape is loaded and in remote,
    the current time codes are displayed between the reel numbers and
    the machine assignments. One of these addresses is updated every
    frame. The addresses indicate the time code.

```
                        DONE TGO               BbVVVbO        EDM-1
RC      111             1                                      V 1.Ø
Pl      222             2                                     NTSC-3Ø
P2      333             3                                     FULL
P3      444             4

SCNT RLN M PLYBK-ENTRY PLAYBK-EXIT RECRD-ENTRY TR/EFF RECORD EXIT COMMNT



000/CORE FILE
```

Figure 3-1
Data CRT Without Records

TIME-TO-GO REGISTER
8 GENERAL PURPOSE REGISTERS (A-H)
SOFTWARE VERSION
TELEVISION STANDARD
TIME CODE MODE

E ASSIGNMENT
EGISTER
E ADDRESS
UMBER
STATUS
E STATUS
ES IN USE

SCRATCH LINE
3 LINE

T SCENE
5 (BEING EDITED)

JUS RECORDS

LINE
INE
CRATCH LINE

WING RECORDS

LINE
) LINE

```
                PREV    ØØ:ØØ:5Ø;ØØ DONE TGO ØØ:Ø9:1Ø:ØØ      B VVV O      EDM-1
            RC* STP Ø4Ø ØØ:1Ø:ØØ:ØØ 1,6   A ØØ:ØØ:Ø1:Ø1   E Ø1;13;17;21    V 1.Ø
            P1* PLY Ø63 18:22:36:27 3      B Ø1:38:21:15   F               NTSC-3Ø
            P2  QED Ø94 1Ø:31:18:13 4      C               G 13:29:16:15   FULL
            P3  OFF Ø64             7      D               H ØØ:ØØ:31:26

            CALC A+B=C,D
            SCNT RLN M PLYBK-ENTRY  PLAYBK-EXIT RECRD-ENTRY TR/EFF RECORD EXIT COMMNT
            Ø54= Ø63 V 18:21:ØØ:ØØ  18:21:18:ØØ ØØ:1Ø:ØØ:ØØ   Dl:Ø8/DISS TO REEL 63
            Ø55+ Ø94 V 1Ø:3Ø:Ø5:ØØ                         K     /KEYED INSERT
            Ø56+ Ø63 A 18:21:1Ø:ØØ  18:21:36:ØØ ØØ:1Ø:1Ø:ØØ
            Ø57= Ø64 A 15:23:22:18

            123= Ø94 C 11:Ø5·ØØ:ØØ              ØØ:58·ØØ;ØØ      DØ:ØØ:Ø5:2Ø
            156= Ø63 C 16:21:3Ø:ØØ  16:22:3Ø;ØØ ØØ:58:Ø5:2Ø
            124= Ø94 C 11:Ø5:2Ø:ØØ  DØ:ØØ:3Ø;ØØ ØØ:59:Ø5:2Ø

            125= Ø63 V 19:25:3Ø:15  19:25:35:1Ø ØØ:59:55:ØØ

            126= Ø94 A ØØ:3Ø:ØØ:ØØ  Ø6:3Ø:5Ø:ØØ Ø1:2Ø;ØØ:ØØ
            157/ COMMENT RECORD UP TO 44 CHARACTERS---HERE
            127= Ø63     19:25:3Ø:15 19:25:35:1Ø Ø1:2Ø:5Ø:ØØ
            128+ Ø64     ØØ:ØØ:45:ØØ ØØ:Ø1:ØØ:ØØ              /SEPARATE AUDIO TD

            DE 130-135
```

Figure 3-2
Data CRT With Records

mode (colon for full, semi-colon for drop.). It is now possible to select and control any or all of the assigned machines using the transport control keys.

3.2.2 Machine Status Indicators

Several machine status indicators are provided at the top of the Data CRT. These indicators are more related to machine control and are described in detail in SECTION IV, MACHINE CONTROL. However, the DONE and TGO fields and stores A-H can be set from the Control Panel.

a) DONE and TGO (Time-to-Go) Fields - Can be set initially from the keyboard and they then display dynamically the position of the RECord machine. These locations are updated every frame from RECord machine time code. The DONE field displays the distance to the current position from the entered point, and the TGO field displays the distance to the initial value entered in TGO.

b) Utility Stores

These eight stores (A-H) are accessed directly only through special keys A-H of the Control Panel. They can contain time code or duration and can be enabled for mark in and out via the STMK button. In this mode, for example mark entry for REC time code would go to A and mark exit time code would go to E. When they are not enabled, they are dimmed from the display.

3.2.3 File Structure

Each file consists of a maximum of 200 records. The computer memory holds one file at any one time; an additional 16 files can be stored on a diskette. The order of records in the file is independant of time-code data in the records. However, the order in which records appear in the file determines the order of their execution in a continuous or auto assembly. Each record is identified by a three-digit reference number (scene number) originated sequentially (1-999) each time the CREA key is pressed.

Certain records can be tied together ensuring that the switcher and machine control programs process all data in the tied records as one event.

3.2.4   Records

The system processes the following record types (See SECTION VIII for details):

a) Scene Record - Technical information defining one scene or part of a scene. Scene records may be master scenes, tied scenes, alternates or inserts.

b) Plain-Language Comments - Comments or operational notes.

c) Switcher Set-Up - Instructions to preset audio and video switcher functions.

d) Reel Assignment - Reassign tape reel numbers and physical machine numbers.

e) Learn (Option) - Used to set up more complicated transitions and effects.

3.2.4.1   Scene Records

Each scene record contains switcher and machine information for the entry and exit points for one video, audio or combined source as indicated in the title line. It gives the type of edit (video, audio, or combined), the program source(reel number or crosspoint number), the playback entry and exit addresses, the record entry and exit addresses, any associated switcher transition and transition duration or effect and optionally, the scene duration. Specification of many of these pieces of data is optional.

When more than one video source is required in a given scene (split screen or key effects) a record describing the key source or second video source has to be tied to the main record describing the background video.

The procedure for creating a scene record is:

a) Press CREA to obtain a new record on line 16 with a duplicate on the scratch line. The cursor will be on the type (T) field on the scratch line. Also, if enough information is available in the previous record, the RECRD-ENTRY field wil be filled in automatically.

b) Key in the record type character from one of the three below:

"+" a tied scene record (up to two records can be tied).
"I" insert (audio or video only).
"A" an alternate scene which is not executed during machine editing. (Note: The record was created with an "=" indicating a main scene record.)

c) Move the cursor to the first position of the RLN field. Enter a three-character code identifying the reel for the source material, or a switcher crosspoint.

d) Move the cursor to the M (Mode) field and enter the appropriate mode. Combined (C) is initially supplied. Enter "V" for video only or "A" for audio only. The "A" and "V" are entered using the A and V keys of the edit mode cluster.

e) Move the cursor to the PLYBK-ENTRY field. Enter the playback entry time code address using the number pad. Colons or semi-colons are provided automatically by the system before every third digit selected. The DROP/FULL indicator is used to determine which time code mode is used. Colons indicate full frame addresses or tape time durations and semi-colons indicate drop frame. It is not necessary to enter all eight time code digits, however, it is necessary to enter the leading zero of a group (a group is hours, minutes, seconds and frames). Times can also be entered as a number of frames by first depressing the FRMS key.

```
00:00:01:23   is valid
      01:23   is valid
      12:3    is not valid
      '123    is valid
```

f) Move the cursor to the PLAYBK-EXIT field and enter the address as in e) above.

g) Move the cursor to the RECRD-ENTRY field and enter the address as in e) above.

h) Move the cursor to the TR/EFF field and enter switcher information, if applicable, from the following:

  Transition - D Dissolve
        W Wipe

  Effects - S Split Screen
      M Matt Key
      K External Key

  Transition Duration - Maximum of 9 seconds, 29 frames.

  If no transition is set, this field is ignored.

  KDO:27 is valid
  W2:14 is valid
  K   is valid

i) Move the cursor to the RECORD EXIT field and enter the address as in e) above. If this field is not entered, the space can be used for comments by preceding the comment with a "/" in the first character position of the field.

  02:00:10:00 is valid
     01:23 is valid
  /COMMENT START is valid

j) If a COMMENT is required it can be entered by moving the cursor to the COMMNT field and entering the information, preceded by "/".

k) The information in the scratch line is now complete and should be checked. Any corrections are made by the following methods:

 i) Pressing the RUB OUT key, erasing the character preceding the cursor. When erasing time code erase 1 or 2 characters.

 ii) Positioning the cursor at an existing character and overwriting that character by pressing the key for another character.

When the data is correct, it can be placed in the permanent record line by pressing the LOAD key after the cursor has been positioned on the type field using the HOME key.

NOTE

An individual field within a scene record may be set
up in the scratch area and entered into the edit line
record by depressing LOAD when the cursor is in that
field or at the end of it. In this way other infor-
mation in the record is not affected. If LOAD is
depressed when the scratch line is blank, and the
cursor at the type (T) field, the record in the edit
line will be space-filled except for the record number.

3.2.4.2 Comment Records

Comments can be dispersed throughout the file and are of two types;
comments and notes. Comments are ignored by the machine control pro-
grams. Notes suspend an automatic assembly and flashes NOTES on the
Data CRT. These are used to inform the operator that some manual
operation is required, such as changing a tape reel, adjusting the
switcher, etc., before continuing the automatic assembly. In the file,
a comment is denoted by a "/" and a note is denoted by an "N" in the
record type (T) field. After this identifying character, the information
is free format.

To create a comment or note record:

a) Press CREA to obtain a new record line. The cursor will appear at
    the T (type) field on the scratch line.

b) Using the alpha-numeric keyboard select
    "/" for comment.
    "N" for note.

c) Up to 36 characters can be typed into one comment line.

d) Check the data and make any changes required.

e) Return the cursor to the type field using HOME and press LOAD.

3.2.4.3 Switcher Set-Up Record

To be specified at a later date.

3.2.4.4 Reel Assignment Record

To be specified at a later date.

3.2.4.5 Learn Record

To be specified at a later date.

3.3   DATA ENTRY FROM DISKETTE OR PAPER TAPE

Records can also be entered from a diskette or prepunched paper tape. Detailed procedures for these operations are included in SECTION V, INPUT/OUTPUT OPERATIONS.

3.4   MANIPULATING DATA IN EXISTING RECORDS

Data in records resident in the computer memory can be changed at any time. In addition, the order of the records can be changed, records can be repeated, deleted or moved, and RECord-entry and RECord-exit times changed automatically.

3.4.1   Changing Data in a Record

To modify an existing record that is in computer memory:

a)   Position the record on the current edit line using the scroll keys or the FEtch command.

b)   Data can be changed by positioning the cursor at the appropriate field on the serrated line using tab keys (or cursor control), entering the data, and then pressing LOAD.

3.4.2   Trimming Addresses

To trim an address:

a)   Position the record at the edit line using the scroll keys or the FEtch command.

b)   Position the cursor at the appropriate field using the field keys (or cursor controls).

c)   Enter the amount of trim required.

d)   Press "+" or "-" as required.

3.4.3   Deleting a Record

a)   Position the record to be deleted at the current edit line (see 3.4.4).

b)   Press the "DEL" key. The record will be deleted from the core file and the display will be updated.

3-12

3.4.4 Accessing a Record

A record may be accessed for change when it is on the current edit line. To position a required record at the current line.

To position a required record at the current edit line use either of the following:

a) the scroll keys (2 upward arrows followed by OR followed by 2 downward arrows) until the record has a blank line above and below it

b) the FE command to move the record to the current edit line according to its record number, this record in time or a comment in the record exit field (see page 7.2)

3.4.5 Copying a Record

One or more records may be copied from one area of the core file to another. Use the COpy command as described on page 7.2. At the new position in the file the copied records will have been assigned new record numbers.

3.4.6 Moving a Record

One or more records may be moved from one area of the core file to another. Use the MOve command as described on page 7.2. The records retain their original record numbers. Change the existing 3.4.3 command to 3.4.7 command.

3.4.7   Commands

Several commands permit the record order to be changed, records to be deleted, etc.   All commands are described in SECTION VII, COMMANDS.

To use a command:

a)   Access the command line by operating the CMD key.

b)   Enter the command with any parameters required.

c)   Press the CR key to activate the command.

3.5   LOADING ON-THE-FLY

For loading on-the-fly tape on the appropriate machines must be moving Detailed procedures for controlling the machines using the transport control keys are given in SECTION IV, MACHINE CONTROL.

Time code addresses can be loaded on-the-fly into the current edit lir or utility stores from a moving tape while the material in the tape is being monitored. The address loaded is the address which is present on the tape at the instant the MARK ENTRY or MARK EXIT key is pressed.

3.5.1   Loading Stores A-H

a)   Press the STMK key.

b)   Pressing MARK ENTRY or MARK EXIT will cause time codes to be loaded horizontally, determined by the machines that are rolling. (i.e., if the RECord machine is in PLAY, MARK ENTRY and MARK EXIT will move time codes into stores A and E respectively.

3.5.2   Loading Edit Line

a)   If the record machine is in PLAY, MARK ENTRY, and MARK EXIT will enter the RECord-in and RECord-out times respectively into the current edit line if a scene record is in that line.

b) If one machine other than the RECord machine is in PLAY, MARK ENTRY and EXIT will enter the playback in and out times respectively into, the current edit line. Use of either MARK ENTRY or MARK EXIT will also pick up the reel number from the system area on the display and enter it into the current edit line.

c) If more than one playback machine is in PLAY and the reel numbers match those of the scene records at the current edit line and above, then MARK ENTRY or MARK EXIT will load the playback in and out times for up to three records simultaneously. If the RECord machine is also in PLAY, its times will be loaded into the current edit line as in (a) above.

3.6   CALCULATOR

A calculator is available for performing time code calculations on the registers displayed.

a) The calculator is turned on by pressing the CALC key. CALC appears at the left of the upper scratch line, and displays any previous expression.

b) If a new expression is required, enter it on the scratch line. If the same expression is required, pressing LOAD will perform the calculation.

NOTE

If a previous expression is present, then the first new keystroke (except LOAD) erases it.

c) The function is executed by pressing the LOAD key. When the function is executed, the calculator is turned off and the expression is erased, permitting the resumption of normal operation. The calculator can be turned off without executing the function by depressing the CALC key again or by pressing the HOME or CMD keys.

The syntax of a CALC expression is:

$$C + D + F = A,B,\ldots.$$

The left-hand side is a simple arithmetic expression with up to four addition or subtraction operators which are executed left to right. The right-hand side indicates the destination(s) for the result. The number of destinations is limited only by the length of the line. The left-hand side of the expression may be register pointers, time-code addresses/durations, or a mixture.

SECTION IV

MACHINE CONTROL

4.1   INTRODUCTION

This section describes the procedures for operating machine control
functions of the system. For descriptions of all controls on the Control
Panel, refer to SECTION X, CONTROL PANEL/MONITOR PANEL.

From the Control Panel, the operator has complete remote manual control
of all machines interfaced to the system and enabled at the control
panel of the machine. This is true even to the extent of doing manual
recordings. The system software follows the manual selections and sends
the information to the machines. Manual operations imply preview
switcher actions performed automatically by the system. The switcher
and preview monitor systems can be controlled independently of the
EDM-1 system although the system has to have power.

With sufficient data entered, the system is capable of performing single
machine or whole edit sequence preview in B/V/B, V/B/V, or V/V/V modes
at the entry and/or exit points. It is capable of automatic assembly
in the record mode, and has a review facility. Cueing and
synchronization are performed automatically. During all of these oper-
ations the system automatically switches the preview switcher, although
at any time, manual control may override automatic selections.

The system reacts to two different methods of control via the Control
Panel. The first is by performing a function as a result of a special
purpose key being pressed. The second is by performing a function when
a command is typed into the system.

4.2   MACHINE CONTROL

The sequence of operations for the machines is given by the scene records in the file. The records give the entry and exit points for each machine on each edit. From this information the system automatically computes the cue address, synchronization address, and real-time starting and stopping addresses.

Cue addresses are referenced to the response times of the associated machines. Cue times are determined automatically by the system (using data received from the machines).

4.2.1   Manual Control of Machines

Any four machines, RC, P1, P2 and P3, of a maximum of eight, can be controlled manually at any time after machine assignments have been made.

The keys in the TRANS CONTROL ASSIGN cluster are used to select the desired machines. A selection is indicated by an asterisk (*) appearing on the Data CRT beside RC, P1, P2 and P3 as applicable. More than one machine can be selected at any given time.

The TRANS CONTROL keys are used to generate commands for the machines. Controls are REC, STOP, PLAY, PLAY V, WIND, EE and a speed control. When more than one machine is to be controlled at any given time, select the command for the machines on the TRANS CONTROL cluster. The control is terminated by pressing the TRANS CONTROL ASSIGN keys again.

When it is necessary to control a machine in a manner different from those already being controlled, the controlled machines must first be freed by depressing their TRANS CONTROL ASSIGN keys. The other machine can then be selected and controlled.

NOTE

Changing the TRANS CONTROL ASSIGN does not stop a machine.

4.3 STATUS INDICATORS

4.3.1 Machine Accessed

The RECord and playback machines are shown at the top-left of the DATA CRT (RC, P1, P2, P3). An asterisk (*) appears beside each mahhine that is presently being controlled in the manual mode.

4.3.2 Machine Status

The status of each machine (three characters) is given beside RC, P1, P2 and P3. Status can be:

STP - Stop
PLO - Play Override
WND - Wind
P:V - Play Variable
REC - Manual Record
QNG - Cueing

QED - Cued
SYG - Syncing
SYD - Synced
A/ - Audio Edit Period
A/V - Audio/Video Edit Period
/V - Video Edit Period

4.3.3 System Status

The current status of the system is shown at the top of the Data CRT. Status can be:

PREV (preview)
REVW (review)
RECD (record)
BVB (black-video-black)
VBV (video-black-video
VVV (video-video-video)
ENTR (entry)
EXIT
BOTH

4.4 A/V MANUAL SELECTION AND EDITING

4.4.1 Editing Functions Summary

a) Manual Editing - Allows the operator to control the editing sequence manually, using the controls on the Control Panel. Manual operations override any automatic sequences.

b) Auto (Continuous RECord) - An editing session is completed auto-matically, using the times and switcher information in the records which the most recent edit command specified. The monitor shows RECord input.

c) Single RECord - This type of edit is used to RECord single scenes. If there is a transition from a previous scene then the transition is recorded in the same pass. The process stops at the completion of the second scene. The RECord input is displayed on the preview monitor.

d) Single Preview - This mode is similar to single RECord, except that the actual recording is inhibited.

e) Review - This mode allows the operator to view the last scene recorded, even if an auto assembly has just stopped.

For all of these functions the system will automatically control the preview switcher to show:

a) Switcher output in preview and RECord modes.

b) RECord output in review mode.

c) Black/off with machines stopped.

At all times the monitor selections can be overridden, but selection of the AUTO keys return the monitor to system control.

For all of these functions the system will automatically control the preview switcher.

4.5   PREVIEWING PROCEDURE

Previewing is used to allow the operator to preview information before it is recorded. Previewing can be performed on a single scene group or on edit entry or exit points only.

The controls in the PV MODE cluster permit selection of the preview mode. Note that BVB, VBV and VVV are switcher related only and that all machines are left on VVV. When the system starts up it defaults to VVV, BOTH. If either of these modes is changed they will retain the the new mode until changed again. One of BVB, VBV, or VVV and one of ENTRY, BOTH or EXIT will appear in the upper part of the Data CRT at all times.

4.5.1 Single Scene Preview Procedure

This mode is used to preview single scenes. If there is a transition from a preceding scene, then it is also previewed.

a) The scene to be previewed, (or one of its tied records) must be at the current edit line.

b) If the preview mode is to be modified, select the appropriate mode on the PV MODE cluster.

c) Press the PREV key and PREVIEW will appear at the top of the Data CRT. The scene group at the edit line is transferred to the machine control scene area, preceeded by the previous scene group which may be required for the entry transition.

d) The sequence can be stopped by:

    i) Letting the scene preview complete. PREV will be removed from the Data CRT.

    ii) Pressing MSTOP to stop the sequence immediately.

4.5.2 Previewing Edit Entry and Exit Points of a Single Machine

The procedure for previewing edit entry and exit points is basically the same as explained for the preview sequence given above, except that the mode is modified using the PV MODE keys, as required.

a) Preview Entry - All transitions are included.

b) Preview Exit - A three-second preroll and postroll is provided.

c) Preview Both - Previews the whole scene including entry transitions.

4.6   RECORDING PROCEDURE

Recording can be done on a single scene or on several records. Up to three scene records can be tied together to form a scene group. The records to be recorded are specified before the recording is started or can be terminated by the operator.

4.6.1   Single Scene Recording Procedure

This mode is used to record a single scene. If a transition from a previous scene is present, the transition is also recorded. Recording will stop at the end of the scene being recorded.

a) The scene to be recorded or one of its tied scenes must be at the current edit line.

b) Press the MREC key and, while holding it depressed, press the REVW key. An edit command must not have been entered or an automatic record takes place. The scene at the edit line is transferred to the current scene area, see 4.5.1 (c). Recording takes place and REC appears at the top of the Data CRT.

c) The sequence can be stopped by:

   i)   Letting the sequence terminate. REC will be removed from the Data CRT.

   ii)   Pressing the MREC key to stop the record process immediately and leave the machines running. REC will be removed from the Data CRT.

   iii)   Pressing the MSTOP to stop the recording process immediately and leave the machines running until the editor has cycled off. REC will be removed from the Data CRT.

4.6.2   Automatic Recording Procedure

This method is used for recording on an automatic or continuous basis.

a) Access the command line using the CMD key. Enter the EDIT command with the required parameter.

b)   Press the CR key. AUTO appears at the top of the Data CRT.

c)   Press any EDIT MODE key, if required.

d)   Press the MREC key and hold depressed while pressing the PREV key.
     The system will automatically put the first four records in the
     current scene area of the Data CRT and AUTO REC will appear and
     flash at the top of the Data CRT. The system is now in the auto-
     matic record sequence.

e)   The sequence can be stopped by:

     i)   Letting the sequence terminate as specified in the EDit command.
           AUTO REC will be removed from the Data CRT.

     ii)   Pressing the MREC key to stop the process immediately. AUTO
           REC on the Data CRT will be on steady.

     iii) Pressing the MSTOP key to stop the process immediately. AUTO
           REC on the Data CRT will be on steady. The process can be
           resumed by pressing the MREC and PREV keys.

     iv)   Entering the HALT EDit command on the command line and press-
           ing the CR key. The sequence will stop at the end of the
           current scene, the automatic recording task will be termin-
           ated, and AUTO REC will be removed from the Data CRT.

4.7   REVIEW PROCEDURE

The purpose of this procedure is to allow the operator to review the
last scene that was recorded. The record machine is recued to a short
cue with the audio and video displayed from that point through the
edit(s) to approximately three seconds beyond the last exit point.

a)   Press the EXIT key in the PV MODE cluster.

b)   Press the REVW key in the SYSTEM CONTROL cluster. The last scene
     recorded will be placed on the monitors and PREV will appear and
     flash at the top of the Data CRT.

c) The sequence can be stopped by:

   i)   Letting the sequence run out. PREV will be removed from the
        the Data CRT.

   ii) Pressing the MSTOP key to stop the process immediately. PREV
        will be removed from the Data CRT.

TIME-TO-GO REGISTER
8 GENERAL PURPOSE REGISTERS (A-H)
SOFTWARE VERSION
TELEVISION STANDARD
TIME CODE MODE

NE ASSIGNMENT
REGISTER
NE ADDRESS
NUMBER
M STATUS
NE STATUS
NES IN USE

```
          PREV     ØØ:ØØ;5Ø;ØØ DONE TGO ØØ:Ø9:1Ø:ØØ     B VVV O      EDM-1
RC*  STP Ø4Ø ØØ:1Ø:ØØ:ØØ 1,6    A ØØ:ØØ:Ø1:Ø1    E Ø1;13;17;21   V 1.Ø
P1*  PLY Ø63 18:22:36:27 3       B Ø1:38:21:15   F              NTSC-3Ø
P2   QED Ø94 1Ø:31:18:13 4       C               G 13:29:16:15  FULL
P3   OFF Ø64             7       D               H ØØ:ØØ:31:26
CALC  A+B=C,D
```

SCRATCH LINE
NG LINE

```
SCNT RLN M PLYBK-ENTRY PLAYBK-EXIT RECRD-ENTRY TR/EFF RECORD EXIT COMMNT
Ø54= Ø63 V 18:21:ØØ:ØØ 18:21:18:ØØ ØØ:1Ø:ØØ:ØØ   D1:Ø8/DISS TO REEL 63
Ø55+ Ø94 V 1Ø:3Ø:Ø5:ØØ                          K     /KEYED INSERT
Ø56+ Ø63 A 18:21:1Ø:ØØ 18:21:36:ØØ ØØ:1Ø:1Ø:ØØ
Ø57= Ø64 A 15:23:22:18
```

NT SCENE
DS (BEING EDITED)

IOUS RECORDS
K)

```
123= Ø94 C 11:Ø5:ØØ:ØØ             ØØ:58:ØØ;ØØ        DØ:ØØ:Ø5:2Ø
156= Ø63 C 16:21:3Ø:ØØ 16:22:3Ø;ØØ ØØ:58:Ø5:2Ø
124= Ø94 C 11:Ø5:2Ø:ØØ DØ:ØØ:3Ø;ØØ ØØ:59:Ø5:2Ø
```

LINE
LINE
SCRATCH LINE

```
125= Ø63 V 19:25:3Ø:15 19:25:35:1Ø ØØ:59:55:ØØ
```

LOWING RECORDS
K)

```
126= Ø94 A ØØ:3Ø:ØØ:ØØ Ø6:3Ø:5Ø:ØØ Ø1:2Ø;ØØ:ØØ
157/ COMMENT RECORD UP TC 44 CHARACTERS---HERE
127= Ø63    19:25:3Ø:15 19:25:35:1Ø Ø1:2Ø:5Ø:ØØ
128+ Ø64    ØØ:ØØ:45:ØØ ØØ:Ø1:ØØ:ØØ              /SEPARATE AUDIO TD
```

LINE
ND LINE

```
DE 130-135
```

Figure 4-1
Data CRT

Figure 4-2
Editing Controls

Figure 4-3

VIDEO SEL

VTR1
ALT.
PGM OUT

VTR B
PGM OUT

AUDIO SEL

VTR1
OUT.

VTRB
PGM OUT

REC OUT
REC IN
P1 OUT
P2 OUT
P3 OUT
BLACK
AUTO
MAN

SPEAKER

VU METER

AUD MON   PL PGM   BRIGHTNESS

DATA CRT
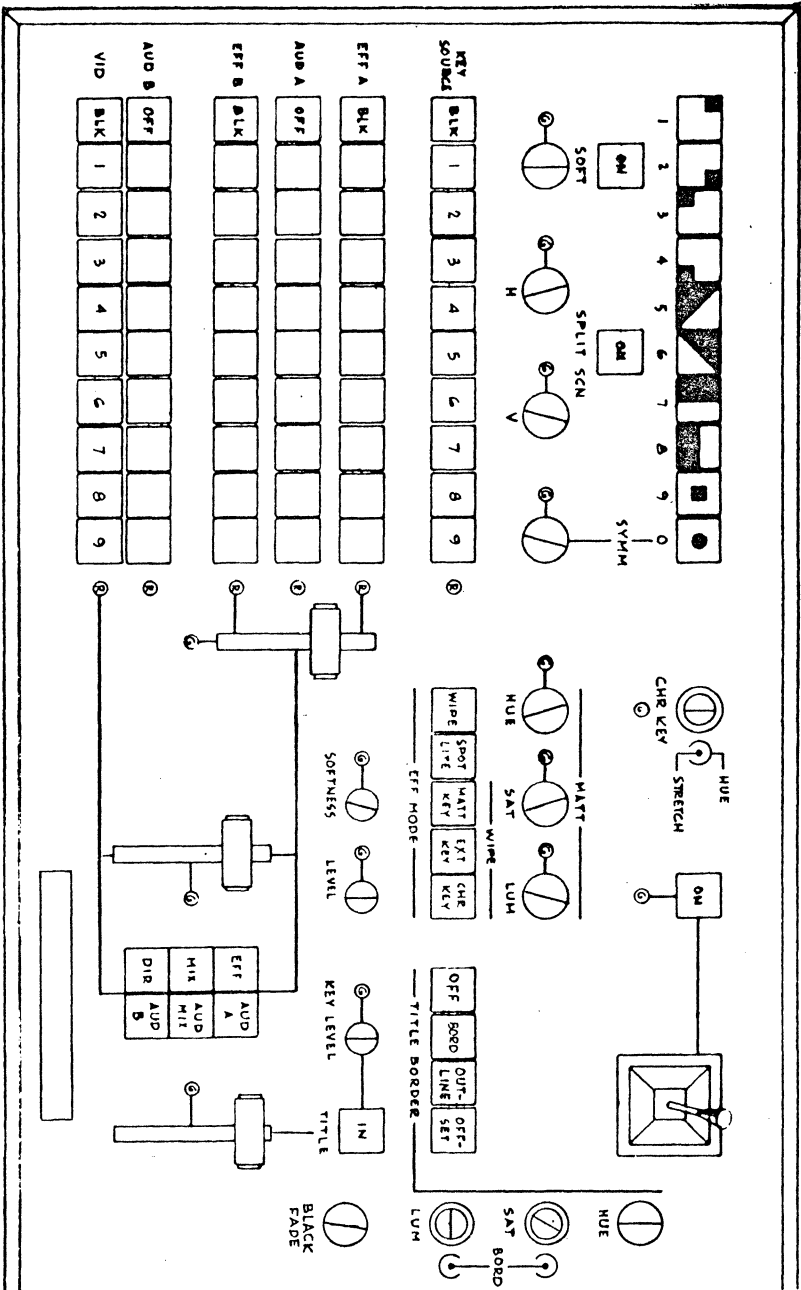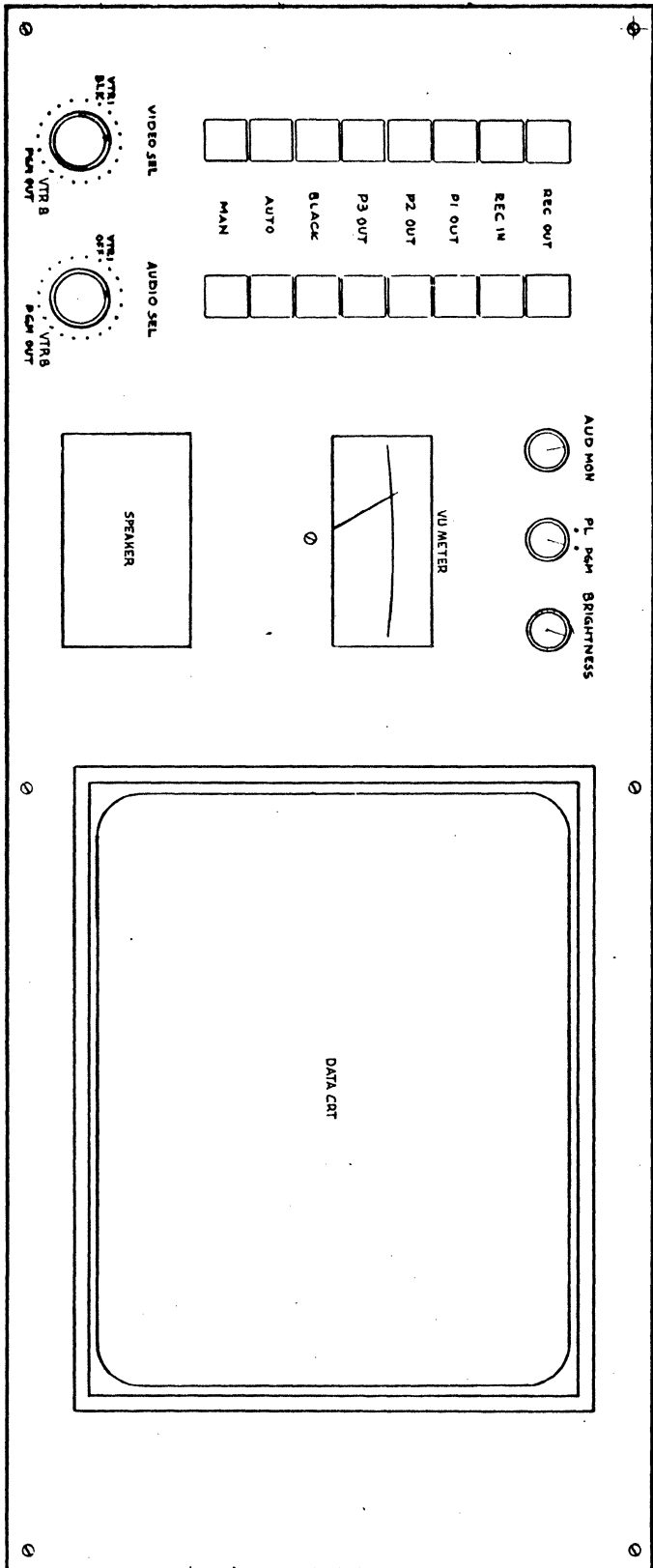
Figure 4-4

SECTION V

INPUT/OUTPUT OPERATIONS

5.1   INTRODUCTION

The input-output operations described in this section are:

a)   Printing data on the High-Speed Printer or Teletypewriter.

b)   Transferring data to diskette.

c)   Transferring data from diskette.

Note that this section gives the procedures only. Detailed descriptions of the input/output devices, commands, error messages, etc., are provided in other sections of the manual.

5.2   SAVING RECORDS

Records which are in computer memory can be saved on diskette, or can be printed. Each file on diskette can contain up to 200 records and each diskette can hold 16 files. Transferring to/from diskette is by complete file only (no partial file transfer).

5.2.1   Saving Records on Diskette

a)   Place the diskette in the drive, with the label up.

b)   Close the drive front cover (do not re-open the cover when the drive is operating).

c) Press the CMD key to access the command line.

d) Enter the TO command.

e) Press the CR key. The complete file is transferred and a message displayed indicating the transfer is complete.

5.2.2 Printing Records (High-Speed Printer)

a) Ensure that there is an adequate supply of paper in the printer.

b) Set the printer LINE/LOCAL switch to LINE.

c) Access the command line by pressing the CMD key and enter the PRint command.

d) Press the CR key. The records are printed.

NOTE

Printing can be stopped at any time by entering the HA PR command and pressing the CR key.

5.2.3 Printing Records (Teletypewriter)

a) Ensure there is an adequate supply of paper in the Teletypewriter.

b) Set the Teletypewriter LOCAL/OFF/LINE switch LINE.

c) Access the command line by pressing the CMD key and enter the TYpe command.

d) Press the CR key. The records are printed.

NOTE

Printing can be stopped at any time by entering the HA TY command and pressing the CR key.

5.3 READING RECORDS

5.3.1 Reading from Diskette

a) Place the diskette in the drive, with the label up.

b) Close the drive front cover (do not re-open the cover when the drive is operating).

c) Access the command line by pressing the CMD key.

d) Use the DElete command to clear the area of memory the records are to be read into or save the records on another media if required.

e) Access the command line by pressing the CMD key.

f) Enter the FRom command.

g) Press the CR key. The complete file is transferred. If memory is full, reading is stopped and a warning message is given.

SECTION VI

ERROR MESSAGES

6.1   INTRODUCTION

The following error messages may appear. Error essages on the Data
CRT appear on the upper scratch line and on the command line (Tables
6-1 and 6-2).

MESSAGE	MEANING	REQUIRED
A1	Unrecognized command.	Retype required command.
A2	Incorrect delimiter.	Correct command syntax.
A3	Command impossible to obey (usually record numbers not in correct order)	Enter correct command information.
A4	Not enough parameters.	Add the required additional information.
A5	Too many record groups.	
A6	Bad sequop.	
A7	This type of command already in progress. Cannot enter a second until it is complete.	Wait or do another command type.
AR1		
B1	150 records created (warning).	Dump to diskette or continue creating records.
B2	200 records. (No more room in core file.)	Dump to diskette.
B3	Required record not found (record number in command does not exist in required file).	Enter correct record number.
B4	File in command line not found on diskette.	Try a different diskette or correct the command.

TABLE 6-1 Error Messages on Command Line

ERROR MESSAGE	MEANING	ACTION REQUIRED
B5	No more record numbers to use because 999 already reached	Dump file to diskette or sequence the file and continue.
B6	Invlaid scene number in the command.	Correct the scene number and re-enter the command.
B7	In a TO command, there is no room on the diskette for this file.	Put a new formatted diskette in drive Ø and try command again.
B8	Core file' already being used when a FRom command entered. Not allowed.	Either put core file onto a diskette file or delete all records and repeat command.
D1	Diskette transfer error while trying to read or write.	Use a new diskette.
D2	To command trying to put records onto a file which is already on diskette and is full.	Use a new file name or delete the exisiting file and then repeat the command.
D3	Not enough room on diskette for another file.	Use another diskette.
D4	Records already in core.	
H1	Invalid operand for a HAlt command.	Correct the command.
H2	Missing separator in a HAlt command.	Correct the command.

TABLE 6-1 Error Messages on Command Line

MESSAGE	MEANING	ACTION REQUIRED
M/C Error No file	An attempt was made to perform a single preview or single record but the core file contains no records at all.	Create some scene records then do the single record or single preview again.
M/C Error No scene	An attempt was made to perform a single preview or single record but the core file contains no = or I records before the current edit line.	Create an appropriate = or I record and do the single record or single preview again.
M/C Error Asynchronous	A scene group transition between two scene groups specifies that one machine must simultaneously cue to two different tape times.	Respecify one of the two scenes entry times and perform the record or preview again.
M/C Error Inaccessible Scene Record	An automatic record is unable to obtain some records specified by an edit command.	The automatic edit is terminated; the records may be unavailable because of I/Ø errors on the diskette or because the user specified non-existent scene records.
M/C Error Records out of order	Records within a scene group are in the wrong order.	Re-arrange the records and do the preview or record again. A scene group consists of up to eight scene records of which only the first must be present. The scenes must be in the following order within a group: I or = background video (may have audio) + foreground effects video + audio (if no audio in I or = record)

TABLE 6-2 Error Messages on Upper Scratch Line

MESSAGE	MEANING	REQUIRED
M/C Error Bad aud/vid or trans/eff	A scene group specifies inconsistent audio/video or transitions and effects.	Edit the records which are invalid, and do the preview or record again.
M/C Error Bad Time codes	The main scene record (type = or I) does not contain a record entry time or a playback entry time but must contain at least one of these before a preview or record can be performed.	Fill in at least one of these times and try the record or preview again.
M/C Error Invalid reel ID.	A scene record contains a reel ID which is not specified in the assignment area of the screen and is not bne of X00, X01,...X09, or BLK.	Alter the scene record or the assignment area on the screen and do the preview or record again.
M/C Error Missing roll times	One of: A) Tied audio scene record or a tied video (key source) scene record does not contain a playback entry time, but the scene record is not a crosspoint (i.e. is a VTR) and so requires a playback entry. B) The main scene (type I or =) does not have a record entry time but there are tied (type +) scenes present; it is necessary to have a record machine if there are tied scenes. C) There is not enough information specified in a scene group to determine the playback exit time of the lead-in tied audio. D) On a single preview or single record the main scene (type = or I) previous to the scene group being previewed or recorded does not specify a playback entry time but this is required because the current scene group has a transition from the previous scene group.	The system stops previewing or recording of the current and any subsequent scene groups; the user should specify the required time codes and do the record or preview again.

6-5

TABLE 6-2 Error Messages on Upper Scratch Line

ERROR MESSAGE	MEANING	ACTION REQUIRED
M/C Error Communication Error	Bad data was received from a VTR.	If any preview or record is in progress it is stopped immediately, exactly as if the master stop button was pressed.
M/C Error Machine no longer assigned	A record or preview uses a machine which has had its assignment to a physical VTR removed.	Reassign the machine and perform the record or preview again.
M/C Error Can't see machine nn	Machine nn which is assigned in the assignment area on the screen did not respond to a message which was sent to it.	Remove the assignment if the machine doesn't exist; if it does exist then determine why it isn't answering the messages.
Error (flashing)	Information being entered in a "CALC" is invalid.	Correct the "CALC".

TABLE 6-2   Error Messages on Upper Scratch Line

SECTION VII

COMMANDS AND COMMAND BUTTONS

7.1   INTRODUCTION

The commands are divided into two groups:

a)   File editing commands.

b)   Input/Output commands.

The commands are entered on the command line of the Data CRT.   To use a command:

a)   Access the command line by operating the CMD key.

b)   Type in the command, followed by a space, then any parameter required.

c)   Operate the CR key to activate the command.

Note that for some commands, such as create, delete, etc., separate keys are provided on the Control Panel which can be used in lieu of typing in the command.

MNEMONIC	PARAMETERS	FUNCTION
FEtch	mm Time Code/ Comment	Parameter mm is record num- ber. If time code is specified a search is conducted for the record-in address matching the time code specified. If the time code is not exact, the next highest record-in address is selected. For comment fetch enter/and up to 5 characters.
SEquence		The file in memory will have new scene numbers provided so that the scene numbers are in ascending order.
COpy	mm-nn,pp	Copies scenes nn-mm putting them after scene pp. This leaves mm-nn in their original positions and the new records will be provided with new scene numbers. The display will only change if the area in dis- play is affected.
DElete	mm-nn	Deletes scenes mm-nn from the memory file.
MOve	mm-nn,pp	Does the same as COpy except that the original records are deleted. The new records re- tain their original scene num- bers.

TABLE 7-1 Commands

MNEMONIC	PARAMETERS	FUNCTION
SHift	mm-nn or ALL, TIME	If mm-nn is supplied only the records between these limits will be affected. If ALL is supplied all records from the current position to the end of the file will be affected, including those with inviolate indicators. The time will be used as the new record entry for the first affected record. The difference between the old and new record time is calculated and used to adjust all following records to be changed.
RIpple	mm-nn or ALL	Adjusts record-in and record-out times of all records specified starting at mm. If ALL is specified, the starting point is the current position.
HAlt	TY	Aborts teletypewriter output.
HAlt	PR	Aborts printer output.
HAlt	ED	Aborts automatic edit at end of current scene
PRint	filename(mm-nn)	Prints edit files on the printer with mm-nn being scene numbers indicating the start and stop points. Special character B and E can be used to indicate the beginning of the first scene and end of the last scene. If no parameter is specified, scenes on lines 12-21 currently displayed are transferred.
TYpe	filename(mm-nn)	Prints edit files on the Teletypewriter See description for PRint command.

TABLE 7-1 Commands

MNEMONIC	PARAMETER	FUNCTION
TO	filename	Copies current memory file onto diskette to a file called filename. The file remains in memory. A read-after-write check is performed on the diskette data. The complete file is transferred. The filename must begin with an alpha character and must not exceed two characters.
FRom	filename	Checks that memory is empty (cleared by DElete). If empty, the file is copied into memory.
ERase	filename	Deletes the file from diskette.
LIst		The name, track and sector for each file is displayed on the Data CRT. To return the core file to the display, type the FE command and carriage return.
EDit	filename (mm-nn), filename (mm-nn), filename, etc.	Initiates a continuous assembly process from diskette. If no filename is specified, the memory file is used. If mm-nn is not specified, the entire file is used.

TABLE 7-1 Commands

SECTION VIII

DEFINITIONS

See Section 10 of training manual.

SECTION IX

DATA CRT

9.1 DATA ENTRY

Data is entered into the system at the currect cursor position via the
Control Panel keyboard and is displayed by the system on the Data CRT.
The Data CRT is illustrated in FIGURE 9-1.

9.2 DATA CRT DISPLAY DESCRIPTION

The data display is an alphanumeric CRT terminal having a format of 24
lines each of 74 characters. The display is capable of generating all
64 characters contained in the ASCII upper-case subset. The fields are
as follows:

9.2.1 Operational Status

First line of the display indicates the current status of the
system. Up to column 11 is used to indicate if currently in
PREVIEW, REVIEW, or RECORD and if AUTO or single. From column
4-6 PREVIEW modes, LEARN mode, etc., are indicated. The DONE
and TGO time codes indicate how far from the beginning and how
far from the end of an editing session the current record is.

9.2.2 Machine Assignment and Status

Columns 2-26 of lines 1-4 show if machines port is currently under control
(*), its status (stop or play etc.), time code and the physical
machines assigned to each of REC, P1, P2, P3 respectively.

9.2.3   Utility Stores

These eight stores (A-H) are acessed directly only through the special keys A-H of the Control Panel. They can contain time code or duration and can be enabled for mark entry and exit via the STMK button. In this mode, for example, mark entry for REC time code would go to A and mark exit time code would go to E. When they are not enabled, they are dimmed from the display.

9.2.4   System Identification

Columns 65-71 of lines 0-2 indicate the system and version number and the time code mode.

9.2.5   CALC Line

Line 5 is used for a number of purposes:

a)   When the CALC key is pressed, the current CALC appears or disappears. When it is displayed, data can be entered for the CALC function to use.

b)   This is the scratch line used for entry of time code data into stores A-H and into the DONE and TGO fields.

c)   This is the line on which error messages will be displayed when the system is performing edits, or if an error is made on entering data for CALC.

9.2.6   Title Line

Line 6 contains a set of headings describing the fields of scene records below, when an editing session is in progress. If no editing is taking place, this line is moved to line 11 where it describes the records of the core file.

Its fields are:

SCN   Scene Number - Consisting of three digits with a range of 000-999.

T   Record Type - Character indicating record type (tied, switcher, etc.).

RLN   Playback Machine Number - Playback machine number (or switcher crosspoint). This is an alphanumeric identification for tape reel or other source.

M	Edit Type - Displays the type of edit to be performed from conbined (C or space), video only (V), or audio only (A).
PLBK-ENTRY	Playback Entry Address - The playback entry address defining the edit in-point is displayed as an 8-digit number with colons or semicolons between fields.
PLYBK-EXIT	Playback Exit - The edit out-point is displayed in the same format as the PLYBK-ENTRY.
RECRD-ENTRY	Record Entry - The record edit-in address is in the same format as the PLYBK-ENTRY.
TR/EFF	Transition/Effects - Contains alphanumeric information defining the video/audio effect, transition and rate. Rate is displayed as a 3-digit number, seconds and frames in the form S:FF.
RECORD-EXIT	Record Exit - A record-out address field is provided but is not always filled. When not used for addresses, the field can be filled with the scene duration, or can be part of the COMMENT field for plain-language comments.
COMMNT	6 character field to allow '/' and 5 characters to be entered.

9.2.7 Current Scene Display

Lines 7-10 of the display are used to display the current operational scene during a record/preview/review process. Up to four records are displayed.

9.2.8 Title Line

Line 11 is displayed only when no preview, record or review is in progress. It is of the same format as title line (9.2.6) above.

9.2.9 Core File Display

Lines 12-21 are devoted to displaying the file. Scenes displayed here can be selected from the keyboard on a sequential, event number, record entry address or comment basis.

9.2.10   Edit Line

Line 16 is for the record being edited. Data for this line is entered from the Edit Scratch Line, or directly from the VTR, using the mark-in and mark-out keys.

9.2.11   Edit Scratch Line

Line 17 of the display serves as a scratch line for the entry of new information into the current edit line or for the editing of existing information. Information is transferred by the load + or - controls to the appropriate areas of the current edit line as indicated by the error position.

9.2.12   Command Line

The command line is accessed from the CMD pushbutton. Commands are typed from the keyboard into this line. Typically the input/output commands or the file edit commands are entered here. Commands are processed only after the CR key is pressed.
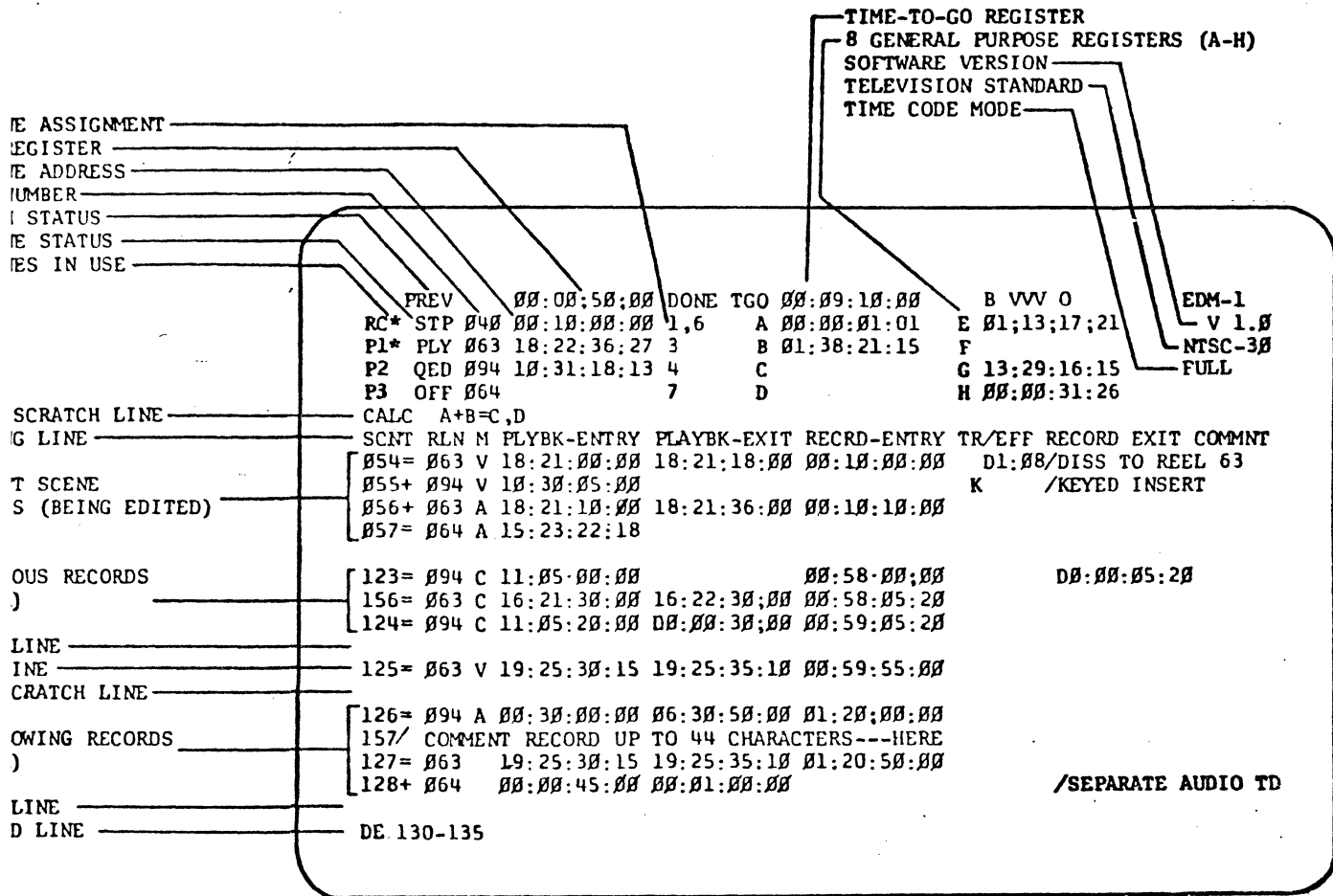
TIME-TO-GO REGISTER
8 GENERAL PURPOSE REGISTERS (A-H)
SOFTWARE VERSION
TELEVISION STANDARD
TIME CODE MODE

IE ASSIGNMENT
EGISTER
IE ADDRESS
IUMBER
I STATUS
IE STATUS
IES IN USE

```
        PREV    ØØ:ØØ;5Ø;ØØ DONE TGO ØØ:Ø9:1Ø:ØØ      B VVV Ø      EDM-1
    RC* STP Ø4Ø ØØ:1Ø:ØØ:ØØ 1,6   A ØØ:ØØ:Ø1:Ø1   E Ø1;13;17;21    V 1.Ø
    Pl* PLY Ø63 18:22:36:27 3     B Ø1:38:21:15   F               NTSC-3Ø
    P2  QED Ø94 1Ø:31:18:13 4     C               G 13:29:16:15    FULL
    P3  OFF Ø64             7     D               H ØØ:ØØ:31:26
```

SCRATCH LINE
IG LINE

T SCENE
S (BEING EDITED)

```
    CALC   A+B=C,D
    SCNT RLN M PLYBK-ENTRY PLAYBK-EXIT RECRD-ENTRY TR/EFF RECORD EXIT COMMNT
   ⌈Ø54= Ø63 V 18:21:ØØ:ØØ 18:21:18:ØØ ØØ:1Ø:ØØ:ØØ    D1:Ø8/DISS TO REEL 63
    Ø55+ Ø94 V 1Ø:3Ø:Ø5:ØØ                              K      /KEYED INSERT
    Ø56+ Ø63 A 18:21:1Ø:ØØ 18:21:36:ØØ ØØ:1Ø:1Ø:ØØ
   ⌊Ø57= Ø64 A 15:23:22:18
```

OUS RECORDS
)

```
   ⌈123= Ø94 C 11:Ø5·ØØ:ØØ             ØØ:58·ØØ;ØØ      DØ:ØØ:Ø5:2Ø
    156= Ø63 C 16:21:3Ø:ØØ 16:22:3Ø;ØØ ØØ:58:Ø5:2Ø
   ⌊124= Ø94 C 11:Ø5:2Ø:ØØ DØ:ØØ:3Ø;ØØ ØØ:59:Ø5:2Ø
```

LINE
INE
CRATCH LINE

```
    125= Ø63 V 19:25:3Ø:15 19:25:35:1Ø ØØ:59:55:ØØ
```

OWING RECORDS
)

```
   ⌈126= Ø94 A ØØ:3Ø:ØØ:ØØ Ø6:3Ø:5Ø:ØØ Ø1:2Ø;ØØ:ØØ
    157/ COMMENT RECORD UP TO 44 CHARACTERS---HERE
    127= Ø63    19:25:3Ø:15 19:25:35:1Ø Ø1:2Ø:5Ø:ØØ
   ⌊128+ Ø64    ØØ:ØØ:45:ØØ ØØ:Ø1:ØØ:ØØ                    /SEPARATE AUDIO TD
```

LINE
D LINE

```
    DE 130-135
```

Figure 9-1
Data CRT

SECTION X

CONTROL PANEL/MONITOR PANEL

10.1 INTRODUCTION

This section provides a key-by-key description of the Control Panel and Monitor Panel. Detailed operating procedures are provided in other sections of the manual.

10.2 EDITOR CONTROLS

10.2.1 Manual Control of Machines

Each of the four machines, REC, P1, P2 and P3, can be controlled manually at any time after machine assignments have been made.

The keys in the TRANS CONTROL ASSIGN cluster are used to select the desired machines. A selection is indicated by an asterisk (*) appearing on the data CRT beside RC, P1, P2, and P3 as applicable. More than one machine can be selected at any given time.

The TRANS CONTROL keys are used to generate commands for the machines. Controls are REC, STOP, PLAY, PLAY V, WIND, EE and a speed control.

When it is required to control a machine in a manner different from those already being controlled, the controlled machines must first be freed by depressing their TRANS CONTROL ASSIGN keys. The other machine can then be selected and controlled.

10.2.2 CONTROL PANEL KEYS

10.2.2.1 Switcher Set-Up Cluster

The DISS, WIPE, KEY, etc. allow direct entry of a one character iden-
tification into the TR/EFF field of the current screen record. The D
or K will be placed into the appropriate position in the actual current
edit line and will not have to be entered via the scratch line.

10.2.2.2 Time Code Entry Direct Access Cluster

The keys in this cluster allow the cursor to be positioned in the
scratch field of the appropriate store to enable data entry such as time
code for loading or trimming of a time code store such as playback entry,
DONE or one of the eight utility stores.

In addition, included in this cluster, are keys to position the
cursor in the record type field of the edit line (HOME), and a
key to select the utility stores for loading on-the-fly operations.

10.2.2.3 Cursor Control Cluster

These enable positioning of the cursor, moving it horizontally left
or right one position at a time or vertically one line at a time.
It also enables the cursor to be positioned on the first character
of a particular field (tab's) to right or left of current position.

Two keys in this cluster allow the file currently being displayed
to be scrolled up "↑↑" or down "↓↓" for record access.

The center key in the cluster positions the cursor at the first char-
acter position of the command line.

If any key in this cluster is held down, the function will be repeatedly
performed until the key is released.

10.2.2.4 Alphanumeric Keyboard

Enables the entry of real language information into the system, for comment
purpose or for the entry of commands into the command line.

10.2.2.5 Numeric Keypad

Allows easy numerical entry for those used to a keypad of this format. The non-numeric functions in this cluster are:

a) CLEAR - To clear the information sitting in the current scratch area.

b) FRMS - Is depressed to indicate to the system that following numerical data entry is to be treated as a number of frames.

c) DURN - Is depressed to indicate to the system that the following data entered is a duration and not a time code address. A "D" will appear in the hours tens character position of the field.

10.2.2.6 The Trim/Calc Cluster

These keys are used to indicate a "+" or "-" trim to form part of the equation in the CALC mode and to perform mark-entry and mark-exit functions.

10.2.2.7 Command Keys

Allows use of a single key to perform a function.

a) CREATE - Will create a new record at the current edit line, after the record currently on that line. Any data partly set up on the edit scratch line will be lost. (Used in conjunction with the repeat key will create a number of new records).

b) Delete - Will delete the record on the current edit line (any information on the scratch line being lost). Used in conjunction with the repeat key will continue to delete records until it runs out of records or until the key is released.

c) GET - Will reproduce the current edit line onto the scratch line and position the cursor at the record type position on the scratch line. This is to enable changes to be made to non-scene type records.

d) CALC - Puts the system into "calc" mode and displays the word CALC followed by the last equation set up (if any) and the cursor positioned, ready for data entry.

e) LEARN - Causes the system to be put into LEARN mode when it scans the switcher for changes and stores the information in a file, the name of which is in the LEARN record associated with the current scene.

10.2.2.8 Tape Machine Control

Control of the recorders is available at all times (after establishment of assignments) from these controls. The controls are in two groups.

a) Control Assignment

Five alternate action pushbuttons select the transport(s) desired for control. Readout of the selections made is available on the CRT display. Note: More than one transport may be selected at a given time.

b) Control Selectors

These controls serve to generate commands for the transport. Controls are available for:

i) REC -, Toggles the selected transport(s) in the RECORD mode if maintained while REVW is operated.

ii) STOP - Places the selected transport(s) in the STOP mode.

iii) PLAY - Places the transport(s) in the PLAY mode. In this mode the SPEED control is enabled to allow variable override of capstan speed for manual synchronization of the machine with other devices.

iv) PLAY V - Places the selected transport(s) in the SLOW MOTION mode of operation. Velocity of the tape is controlled from the SPEED control at this position. STOP MOTION is obtained when the SPEED control is parked on the center detent.

v) WIND - Places the selected transport(s) in the WIND mode with velocity and direction controlled from the SPEED control.

vi) EE - An alternate action pushbutton places the machine in TAPE or EE mode during WIND.

vii) SPEED Control - This lever control, with a detent at the center position, is used to control capstan speed and tape direction in a variety of ways. For definitions see (iii) through (v) above.

10-4

10.2.2.9   Edit Controls

These controls are enabled in the editing portion of the program to provide input relative to the simulation, rehearsal and recording of the segments.

a)   EDIT Mode Direct Machine Controls

    i)   The OFF Control

        Depressing this control causes the system to send a message to all record machines to turn the editors off. Playback machine editors are always selected to the OFF state when assigned.

    ii)   The INS Control

        Depressing this control causes the system to send a message to record machines, placing the editors in the INSERT mode. Time code is not recorded in this mode.

    iii)   The ASSM Control

        Depressing this control causes the system to send a message to the record machines, placing the editors in the ASSEMBLE mode. In this mode "add-on" recording is implemented and time-code is slaved and recorded whenever VIDEO or AUDIO RECORD is active.

    iv)   The VIDEO Control

        Selects video only.

    v)   The AUDIO Control

        Selects audio only.

    vi)   The COMB Control

        Selects audio and video (combined).

b)   PREVIEW Mode Controls

    There are six switches in this cluster; BVB, VBV, VVV, ENTRY, BOTH, and EXIT. They permit modification to the general PREVIEW mode of operation. It should be noted that BVB, VBV and VVV are switcher-related and that all tape machines will be left on internal VVV mode. When the system is started up it defaults to VVV,

BOTH. If either of these modes are changed they will retain the new value until changed again. One of the three BVB, VBV and VVV, and one of the three ENTRY, BOTH and EXIT will appear in the upper-left-hand corner of the Data CRT at all times except during an AUTOMATIC PREVIEW or an AUTOMATIC RECORD sequence.

i) The BVB Control

This control causes all single machine PREVIEW sequences to be shown in black-video-black order on the video monitor. If more than one machine is being previewed simultaneously then a default is temporarily made to VVV order.

ii) The VBV Control

This control causes all single machine PREVIEW sequences to be shown in video-black-video order on the video monitor. If more than one machine is being previewed simultaneously then a default is temporarily made to VVV order.

iii) The VVV Control

This control causes all PREVIEW sequences to be shown in video-video-video order in the video monitor.

iv) The ENTRY Control

This control causes previewing of entry points only. A three-second preroll and post-roll will be allowed before and after the edit entry point. All transitions will be included.

v) The BOTH Control

This control previewing of both the edit entry and the edit exit points. A three-second preroll and post-roll will be allowed before the entry and after the edit exit point. All transitions will be included.

vi) The EXIT Control

This control causes previewing of the edit exit point. A three-second post-roll will be allowed after the edit exit point. All transitions will be included.

10.2.2.10 System Control Group

These controls are used to initiate and terminate editing functions. Detailed instructions for the use of these controls are contained in SECTION IV, MACHINE CONTROL.

a) REVW Control

Commands the system to reproduce the last scene recorded. Is also slaved to the MREC control to prevent inadvertent recording on the master tape (see SECTION IV).

b) PREV Control

Commands the system to preview a single scene or on a continuous basis.

c) MREC Control

Commands the system to record a scene. It is also slaved to the REVW control (see SECTION IV).

d) MSTOP Control

Commands the system to stop all machines and return the system to the idle state.

10.3   VIDEO SWITCHER CONTROLS

All controls of the Video Switcher are described in TABLE 10-1.

10.4   MONITOR PANEL CONTROLS

All controls of the Monitor Panel are described in TABLE 10-2.

CONTROL OR INDICATOR	FUNCTION
Green LED (When moving fader by hand, light is lit)	The green LED's located beside the fades and some controls are illuminated when the editor has control of the functions or when the physical position of a fader does not match the electrical position. When the control is moved to match the electrical position the green LED will extinguish and the function can be controlled manually.
10 Pattern Selectors	Selects 1 of 10 wipe patterns, some of which can be used for mask keying. The patterns provide four corners, 2 diagonal splits, vertical and horizontal splits, box and circle. Circle symmetry is adjusted using the SYMM control.
SOFT	Illuminating momentary action pushbutton enables the potentiometer which adjusts the softness on wipe patterns.
SPLIT SCN Controls	Illuminating momentary action pushbutton enables the split screen function. The H and V controls regulate horizontal and vertical components during the split screen operation.
KEY SOURCE Selectors and red LED	10 illuminating momentary action pushbuttons which select the primary source to the Key Processor. The red LED at the end of the row is illuminated when the bus contributes to the output signal.
EFF A and EFF B Selectors and red LED's	Select the primary sources to inputs A and B of the Effects Amplifier.
AUD A and AUD B Selectors and red LED's.	Select the primary sources to inputs A and B of the Effects Amplifier.

TABLE 10-1 Audio/Video Switcher Controls

CONTROL OR INDICATOR	FUNCTION
VID Selectors	Select the primary source for the direct video bus.
CHR KEY Control	Selects color (hue) that is to be used as a keying source when an external chroma keyer is used.
POSITIONER Controls	Illuminating momentary action pushbutton enables the joystick which can move center of selected pattern to any point in the active picture area.
MATT Controls HUE, SAT, LUM	Adjusts hue, saturation and luminance of matted inputs.
EFF MODE Controls	Illuminating momentary action pushbuttons which select WIPE, SPOT LITE, MATT KEY, EXT KEY and CHR KEY mode of operation.
SOFTNESS	Adjusts softness of keyed insert.
LEVEL	Adjusts threshold level of selected keying signal.
Effects Fader	Controls wipe transitions between A and B sources to Effects Amplifier.
Mix Fader	Controls mix and fade transitions between the Effects Amplifier output and the source selected on the VID bus.
EFF/MIX/DIR	Illuminating momentary action pushbuttons which determine the output to the Downstream Keyer. They determine the video program output.
AUD A/AUD MIX/AUD B	Illuminating momentary action pushbuttons which control the Audio Dissolver (audio out).

TABLE 10-1   Audio/Video Switcher Controls

CONTROL OR INDICATOR	FUNCTION
TITLE BORDER Controls	Selects normal border, outline only of offset (shadow) bordering.
TITLE IN	Illuminating momentary action pushbutton which enables the Title Keyer to insert a title over the video output.
KEY LEVEL	Adjusts threshold level of keying source during a title operation.
Title Fader	Fades title in or out.
Border and Black Fader	Permits a program fade-to-black.
Border SAT/LUM	Adjusts saturation and luminance of the border.

TABLE 10-1 Audio/Video Switcher Controls

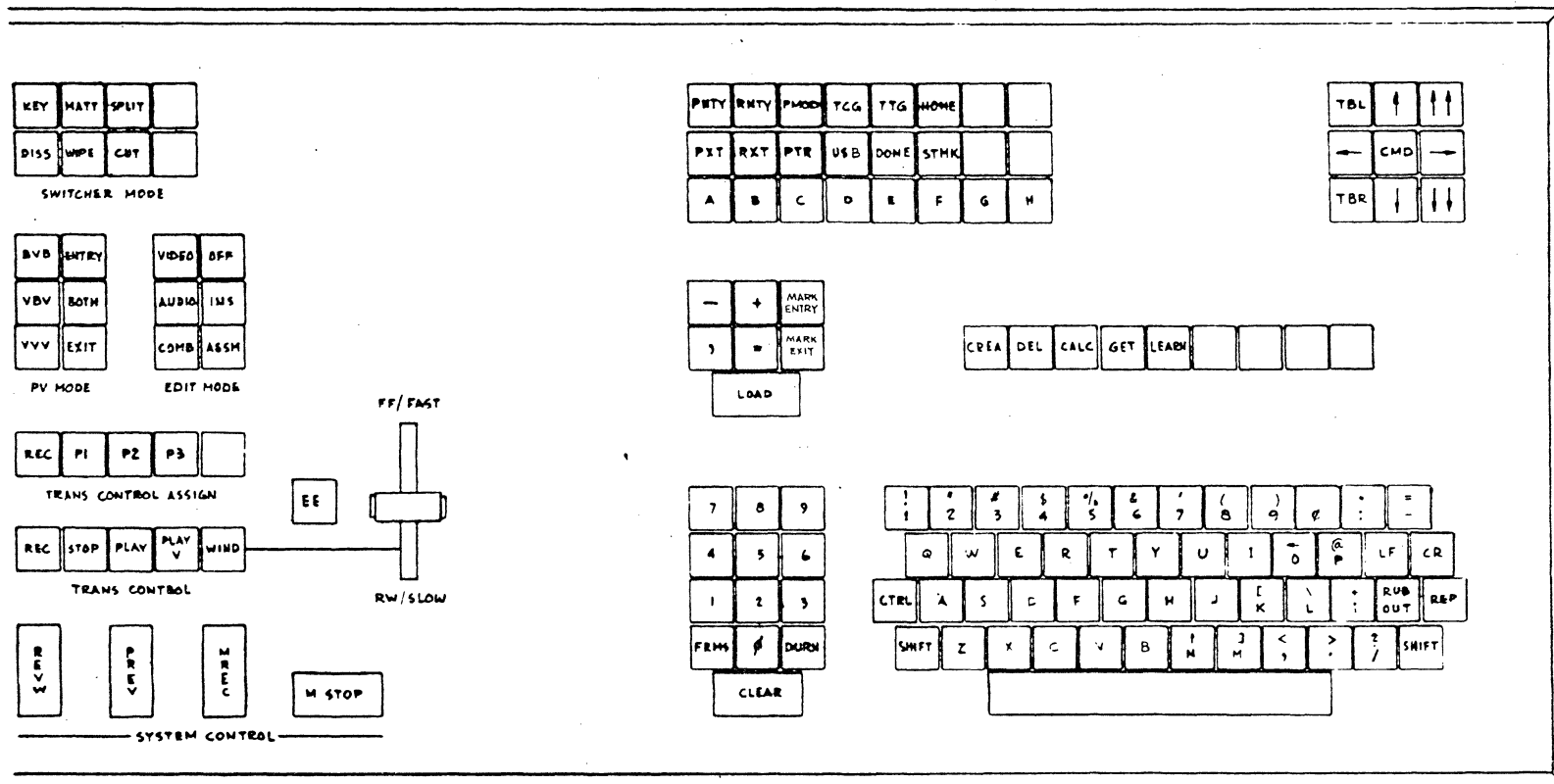| MONITOR PANEL	FUNCTION
REC OUT, REC IN, P1 OUT, P2 OUT, P3 OUT, BLACK	Illuminating momentary action pushbuttons. Illuminating automatically to indicate machine being monitored during a sequence.
MAN	Illuminating momentary action pushbutton which allows monitor selections to be made manually using VIDEO SEL and AUDIO SEL switches, thus overriding an auto sequence.
AUTO	Reverts monitor back to automatic selection
VIDEO SEL, AUDIO SEL	Dials, which allows selection to input to monitor when MAN pushbutton is illuminated.
AUD MON	Controls audio volume.
PL/PGM	Selects input to VU meter.
BRIGHTNESS	Controls brightness of data monitor.
VU Meter	Indicates preview or program levels, as selected with PL/PGM switch.

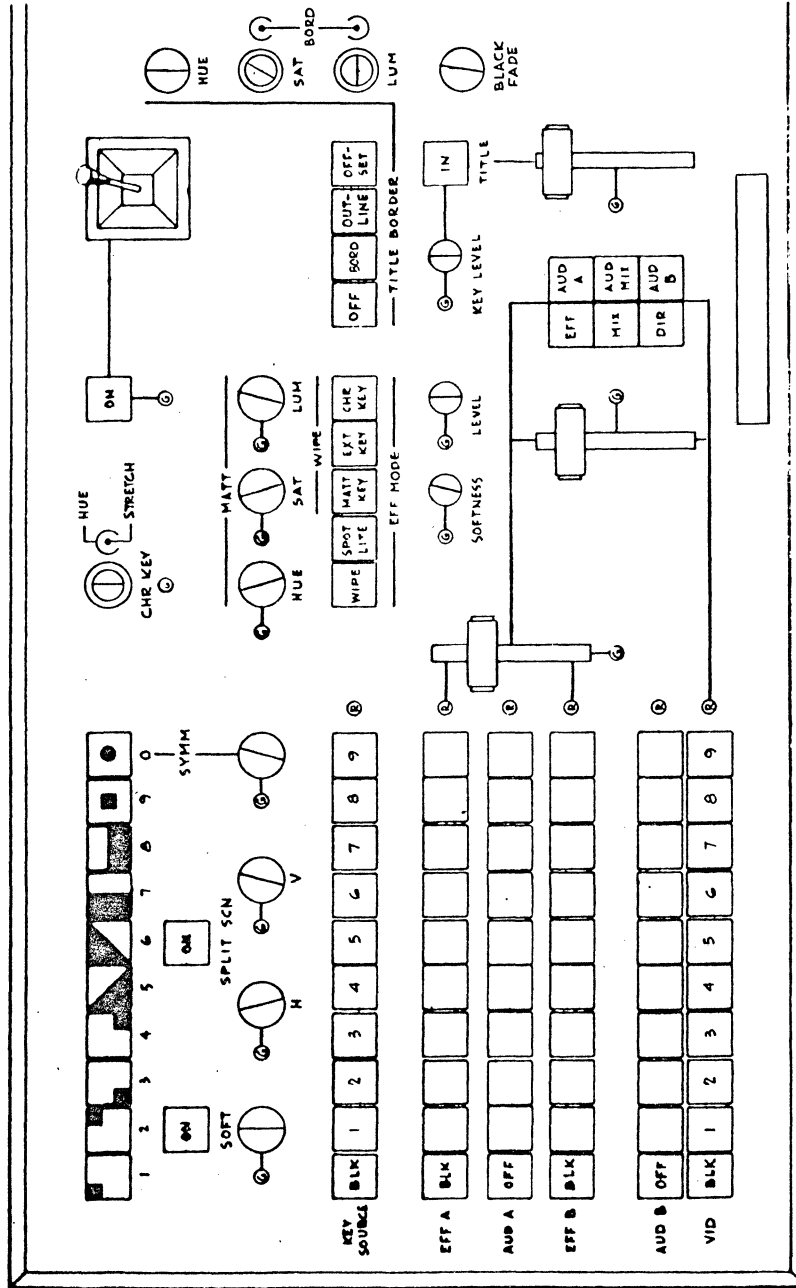TABLE 10-2   Monitor Panel Controls

Figure 10-1
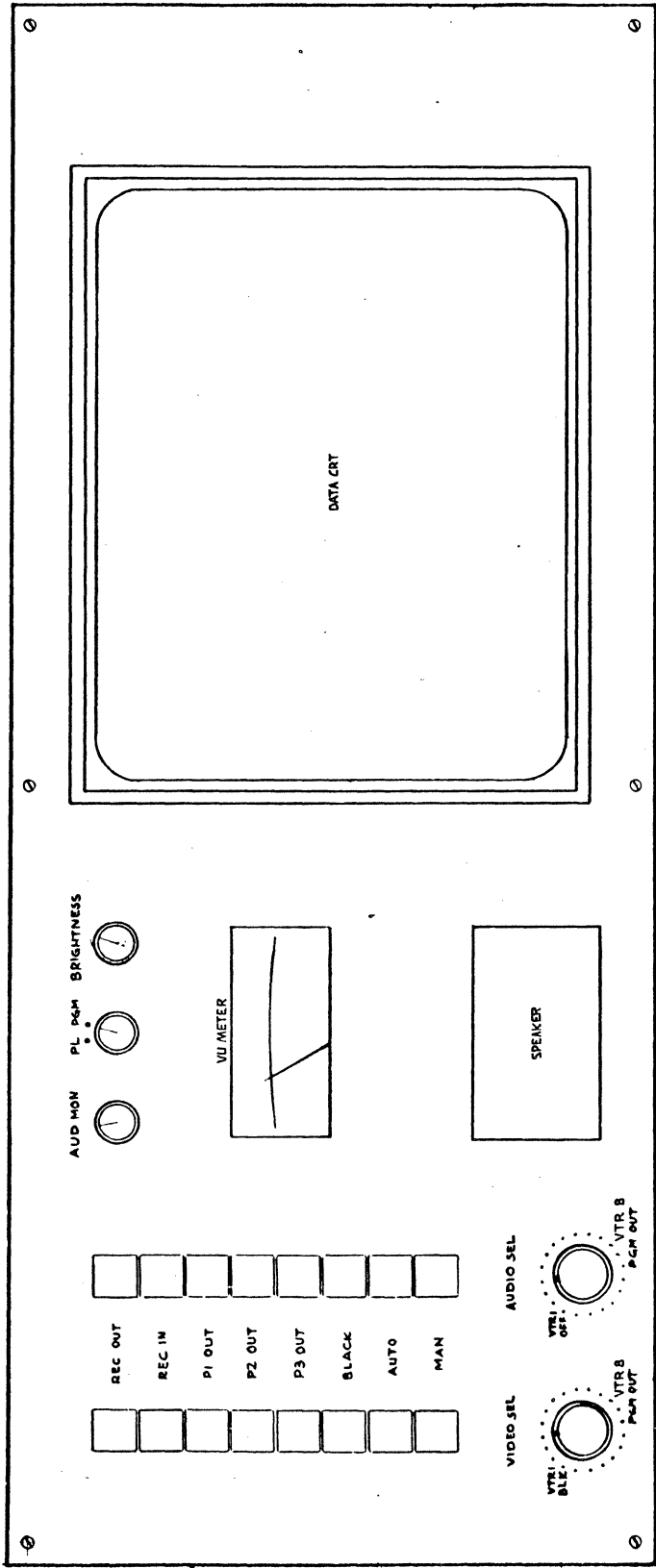Editor Controls

Figure 10-2
Video Switcher Controls

10-13

DATA CRT

AUD MON   PL PGM BRIGHTNESS

VU METER

SPEAKER

REC OUT
REC IN
P1 OUT
P2 OUT
P3 OUT
BLACK
AUTO
MAN

VIDEO SEL

AUDIO SEL

VTR1 BLK.

VTR B PGM OUT

VTR1 OFF.

VTR B PGM OUT

Figure 10-3
Monitor Panel

10-14

SECTION XI

11/05 COMPUTER CONSOLE

11.1   INTRODUCTION

Manual operation of the computer is controlled by switches located on the console of the computer. Visual displays indicate processor operation and contents of register and memory addresses.

This section only describes the console to the extent required by the operator. More detailed information is available in the computer manuals supplied with the system.
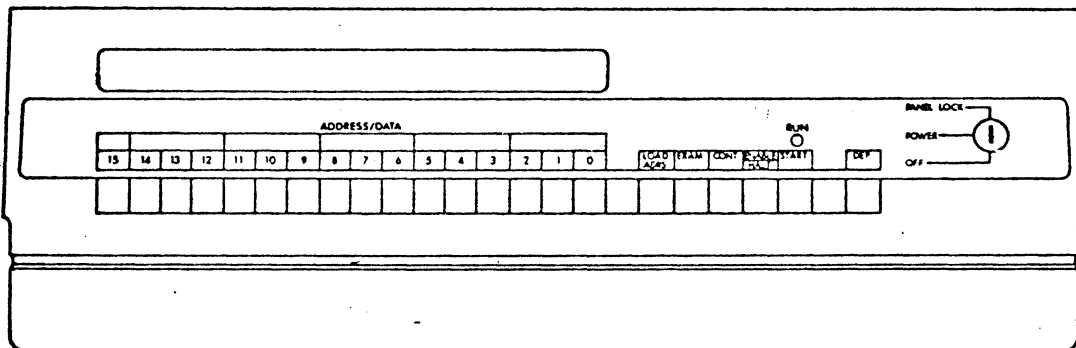
11.2   CONSOLE CONTROLS AND INDICATORS

11.2.1   Power Key Switch

The console power key switch has three positions:

a) OFF   Fully counterclockwise
b) POWER   90° clockwise from OFF
c) PANEL LOCK   180° clockwise from OFF

In the OFF position, AC power is removed from the primary of the computer power supply. In the POWER position, AC power is applied to the computer power supply; the computer is fully operative. In the PANEL LOCK position, the computer is fully powered as in the POWER position. However, the console function switches are disabled, thus protecting the computer against mischievous tampering during unattended program execution.

11.2.2 Function Switches

Listed below in the order of their position (left to right) are the six switches on the right hand side of the console.

a) LOAD ADRS (load address)
b) EXAM (examine)
c) CONT (continue)
d) ENABLE/HALT
e) START
f) DEP (deposit)

Function switches a, b, c and e (above) are spring-loaded and return to their rest state when released; they are actuated by being depressed. The DEP switch is also spring loaded, but is actuated by being lifted. The ENABLE/HALT switch is a two-position switch.

11.2.2.1 Load Address Switch

Depressing the LOAD ADRS switch when the computer is halted causes the contents of the Switch Register to be stored in a temporary register within the computer. This data is also displayed in the ADDRESS/DATA lights for verification. The load address operation performs the following functions:

a) Selects an address for a subsequent examine operation.
b) Selects an address for a subsequent deposit operation.
c) Selects the starting address of a program.

11.2.2.2 Examine Switch

The EXAM switch permits the display of the contents of a selected address in the ADDRESS/DATA lights. Select the appropriate address in the Switch Register and depress the LOAD ADRS switch. Then depress and release the EXAM switch. The contents of the selected address will then be displayed in the ADDRESS/DATA lights. This switch is not normally used by the operator.

11.2.2.3 Continue Switch

The CONT switch is used to continue a program. To continue a halted program, depress and release the CONT switch. The program is resumed when the CONT switch is released.

11.2.2.4 ENABLE/HALT Switch

Placing this switch in the HALT position causes the computer to halt at the end of the current instruction providing the key switch is not in the PANEL LOCK position. When in the ENABLE position, programs can be executed by pressing the START switch or by pressing the CONT switch if a program had been halted.

11.2.2.5 START Switch

To start a program from the console:

a) Set the starting address of the program in the Switch Register
b) Depress the LOAD ADRS switch.
c) Position the ENABLE/HALT switch in the ENABLE position.
d) Depress and release the START switch.

To load the system program from diskette the starting address is 140000 (1/100/000/000/000/000). (See SECTION II).

11.2.2.6 DEP Switch

Permits the contents of the Switch Register to be deposited in a Unibuss address. This switch is not normally used by the operator.

11.2.3 RUN Indicator

When lit, indicates that a program is being executed.

11.2.4 ADDRESS/DATA Switches

The 16 ADDRESS/DATA switches are to the left of the function switches. These two-position switches represent a manually set flip-flop register with the up position representing a logical 1 and the down position a logical 0. The ADDRESS/DATA switches may be used in conjunction with the function switches or in conjunction with a program stored in the computer's memory. The ADDRESS/DATA switches are often referred to as the Switch Register.

11.2.5   ADDRESS/DATA Indicators

The contents of the 16 ADDRESS/DATA lights either represent a 16-bit address, or the contents of a register or memory address. Note that the state of the ADDRESS/DATA lights is defined only when the computer RUN light is not illuminated.

All register switches and displays are ordered from right to left. The order corresponds to. the exponential powers of two, i.e., $2^{15}....2^2, 2^1, 2^0$. Therefore, the most significant bit (MSB) is at the left of each specific register or display, the least significant bit (LSB) is at the right. Whenever an indicator is on, it denotes the presence of a binary 1 in the particular bit position. The alternate color coding on the console identifies the different functions or segments of the binary word in octal format.

SECTION XII

FLOPPY DISC SYSTEM

12.1   INTRODUCTION

The Floppy Disc System has two disc drives. Viewed from the front,
drive 0 is the left drive and drive 1 is the right drive. Each drive
has a latching spring-loaded front cover.

The Floopy Disc System has a separate power cord for connection to an
AC power source. The AC input is fused by a fuse located on the rear
of the frame. The power switch is also at the rear.

Data is stored on flexible diskettes. The diskettes have an oxide-on-
mylar surface encased in a plastic envelope with a hole for the read/
write head, a hole for the drive spindle hub, and a hole for the hard
index marker. The envelope is lined with a fiber material that cleans
the diskette surface.

12.2   LOADING DISKETTES

To load a diskette:

a)   Press the pushbutton on the drive front cover to open the spring-
     loaded cover.

b)   Insert or remove the diskette, with the label up.

c)   To close the front cover, push the bar down until the cover is locked
     into position.

CAUTION

The drive(s) should not be opened while they are
being accessed because data may be incorrectly
recorded, resulting in a error when the
sector is read.

12.3   DISKETTE HANDLING

To prolong the diskette life and prevent errors when recording or reading reasonable care should be taken when handling the diskettes. The following handling recommendations should be followed to prevent unnecessary loss of data or interruptions of system operation.

a) Do not write on the envelope containing the diskette. Write any information on a label prior to affixing it to the diskette.

b) Paper clips should not be used on the diskette.

c) Do not use writing insturments that leave flakes, such as lead or grease pencils, on the jacket of the media.

d) Do not touch the diskette surface exposed in the diskette slot or index hole.

e) Do not clean the diskette in any manner.

f) Keep the diskette away from magnets or tools that may have become magnetized. Any diskette exposed to a magnetic field may lose information.

g) Do not expose the diskette to a heat source or sunlight.

h) Always return the diskette to the envelope supplied with it to protect it from dust and dirt. Diskettes not being used should be stored in the file box if possible.

i) When the diskette is in use, protect the empty envelope from liquids, dust, and metallic materials.

j) Do not place heavy items on the diskette.

k) Do not store diskettes on top of computer cabinets or in places where dirt can be blown by fans into the diskette interior.

l) If a diskette has been exposed to temperatures outside of the operating range, allow five minutes for thermal stabilization before use. The diskette should be removed from its packaging during this time.

12.4   DISKETTE STORAGE

12.4.1 Short Term

a) Store diskettes in their envelopes.

b) Store horizontally, in piles of ten or less. If vertical storage
is necessary, the diskettes should be supported so that they do not
lean or sag, but should not be subjected to compressive forces.
Permanent deformation may result from improper storage.

c) Store within the operating environmental range.

12.4.2 Long Term

When diskettes do not need to be available for immediate use, they should
be stored in their original shipping containers within the nonoperating
range of the media.

12.4.3 Shipping Diskettes

Data recorded on disks may be degraded by exposure to any sort of small
magnet brought into close contact with the disk surface. If diskettes
are to be shipped in the cargo hold of an aircraft, take precautions
against possible exposure to magnetic sources. Because physical sep-
aration from the magnetic source is the best protection against acciden-
tal erasure of a diskette, diskettes should be packed at least three inches
within the outer box. This separation should be adequate to prtect
against any magnetic sources likely to be encountered during transpor-
tation, making it generally unnecessary to ship diskettes in specially
shielded boxes.

When shipping, be sure to label the package:

DO NOT EXPOSE TO PROLONGED HEAT OR SUNLIGHT

When received, the carton should be examined for damage. Deformation of
the carton should alert the receiver to possible damage of the diskette.
The carton should be retained, if it is intact, for storage of the
diskette or for future shipping.

12.4.4 Temperature, Relative Humidity

The operating ambient temperature range of the diskette is 59°F to 90°F (15°C to 32°C) with a maximum temperature gradient of 20°F/hr (6.7°C/hr).

Diskette storage is -30°F to 125°F (-34.4°C to 51.6°C). Ensure the diskette has stabilized within its operating temperature range before use.

The system operates efficiently within a relative humidity range of 20 to 80 percent, with a maximum wet bulb temperature of 77°F (25°C) and a maximum dew point of 36°F (2°C).

SECTION XIII

HIGH-SPEED PRINTER

13.1 INTRODUCTION

The High-Speed Printer is an input/output device which can be used to obtain hard-copy printouts from the system. When in the local mode, the unit is disconnected from the system and can be used for local operations.

The unit can handle multi-form paper from 3 to 14-7/8 inches wide. Forms can be positioned for the best line positioning by using a vernier paper advance adjustment. Single-part paper can be 15 lb paper maximum. Multi-part paper can have thickness of 0.020 inch maximum.

The ribbon should last for 12 to 16 hours of actual printing. The ribbon is a Digital Equipment Corporation ribbon (part number 36-10558). The spool assembly is 0.5 inch wide by 40 yards long.

A separate power cord is provided for connection to an AC power source. Two fuses are located below the printer. The left fuse is the AC input fuse and the right fuse is for the servo motor.

13.2 CONTROLS AND INDICATORS

a) LINE/LOC Switch - The LINE/LOC switch is a two-position operator control switch. When in the LINE position, the printer is enabled to receive data. When in the LOCAL mode, the printer receive line is disabled and only local operation can be performed.

b) BAUD RATE Switches - The BAUD RATE switches select the rate at which characters are received over the communication line. Normally set to 300.

Switch	Character Rate
110	10 (characters/second)
300	30 (characters/second)
110 & 300	15 (characters/second)

c) <u>PAPER OUT Indicator</u> - The PAPER OUT indicator when illuminated, gives a visual indication that the printer is out of paper. Printing stops when the out of paper condition is detected.

d) <u>POWER ON/OFF Switch</u> - The POWER switch connects and disconnects the line voltage to the printer. The POWER switch should be in the ON position for normal unit operation. When changing paper, ribbon, or adjusting the print head, the switch should be turned OFF.

e) <u>HEAD OF FORM Switch</u> - This switch is operational only when the Top of Form option is installed. Its function is to advance the paper to the head of the form.

f) <u>BELL</u> - The bell indicates that a bell code was received.

g) <u>Carriage Adjustment Lever</u> - This lever, located just to the right of the print head, controls the print head gap for single-part or multi-part forms.

h) <u>Paper Advance Knob</u> - This knob, located at the left of the printer carriage, is pushed in to disengage the line feed gear train allowing fine vertical adjustment of the paper position.

i) <u>Tractor Adjust Knobs</u> - These knobs are located at the outside of each tractor and allow fine horizontal adjustment of forms.

The above mentioned indicators and controls are the main ones associated with the printer. All other controls and indicators are described in the LA36/LA35 DECwriter User's Manual supplied with the system.

13.3   <u>LOADING NEW PAPER</u>

13.3.1   <u>Paper Positioning</u>

a) Set the POWER switch to OFF.

b) Lift the cover.

c) Place the tractor-feed paper on the floor between the legs of the printer. (The term tractor-feed refers to the holes on either side of the paper).

NOTE

Ensure that the leading edge of the forms is directly below the parallel to the feed slot.

d) Open the left tractor cover so that the tractor pins are exposed.

e) Move the Carriage Adjustment lever to the highest number (toward operator).

f) Feed the paper through the load channel under the terminal and align the left paper margin holes over the left tractor pins.

g) Close the left tractor cover.

h) Loosen the Tractor Adjustment knob on the right tractor about 1/2 turn.

i) Open the right tractor cover and slide the tractor to a position where the holes on the right paper margin align directly over the tractor pins.

j) Close the tractor cover.

NOTE

Ensure that the paper does not pull against the tractor pins or bow in the middle.

k) Tighten the tractor adjustment.

13.3.2 Impression Adjustment

NOTE

The Carriage Adjustment lever is normally set forward (to notch number 1) for single thickness paper. The following procedure is applicable only to multi-part forms.

a) Set the POWER switch to OFF.

b) Set the Carriage Adjustment lever to the number corresponding to the number of parts in the form.

c) Turn the Paper Advance knob counterclockwise while moving the Carriage Adjustment lever forward one notch at a time until the paper smudges; then move the lever back one notch at a time until the paper no longer smudges.

d) Set the POWER switch to ON and resume operation.

NOTE

If the impression is unsatisfactory due to a worn ribbon, perform the ribbon installation procedure. An indication of a worn ribbon is that the first copy in a multi-part copy is poor but the remaining copies are good.

13.3.3 Horizontal Positioning

The horizontal positioning adjustment enables the paper to be shifted left or right (1/2 in. max.). Shifting the paper provides a simple means of sligning the type within the appropriate columns on the paper.

a) Set the POWER switch to OFF.

b) Lift the cover and loosen both Tractor Adjustment knobs about 1/2 turn.

c) Move the tractors the desired amount (1/2 in. max.) to have characters type in the appropriate columns.

d) Tighten the Tractor Adjustment knobs.

NOTE

Ensure that the paper does not pull against the tractor pins or bow in the middle.

13.3.4 Vertical Positioning

For fine vertical positioning, press in and turn the Paper Advance Knob.

13.4 RELOADING PAPER

a) Set the POWER switch to OFF.

b) Left the cover.

c) Place the tractor-feed paper on the floor between the legs of the printer.

d) Open both tractor covers so that the tractor pins are exposed.

NOTE

Ensure that the leading edge of the forms is directly below and parallel to the feed slot.

e) Feed the paper through the load channel under the terminal and align the paper holes over the tractor pins.

13.5 RIBBON INSTALLATION

The printer ribbon should last for 8 to 12 hours of actual printing at 30 characters/second (about 1 million characters). After 12 hours, or when the print density becomes too light, remove both ribbon spools from from their drive spindles and turn the whole assembly over so that the previous lower edge of the ribbon is now on top. After rethreading the ribbon, another 4 hours (approx.) of printing time is possible before the ink is completely used. At that time, the ribbon must be replaced by removing both spools and unthreading the ribbon. Replace with a new spool and ribbon assembly and an empty spool. (One of the old spools may be used if desired.)

a) Set the POWER switch to OFF and lift the cover.

b) Record the setting of the Carriage Adjust lever. Move the Carriage Adjust lever to the highest number.

c) Remove the ribbon spools and ribbon. Save one spool to be used with the new ribbon.

d) Connect the hook on the end of the ribbon to the empty spool.

e) Wind 10 turns of ribbon on the empty spool.

f) Place the full spool on the left spindle and turn clockwise until it drops into position.

g) Thread the ribbon as shown in the following illustration.

h) Turn the spool clockwise until it drops into position.

i) Take up the slack in the ribbon by turning the free moving spool.

j) Return the Carriage Adjust lever to its original setting.

NOTE

The rivet located on the ribbon must be on the spool and the Direction Changing guide.

Ribbon can be threaded in the opposite direction.

CARRIAGE LEVER ADJUSTMENT   RIVET
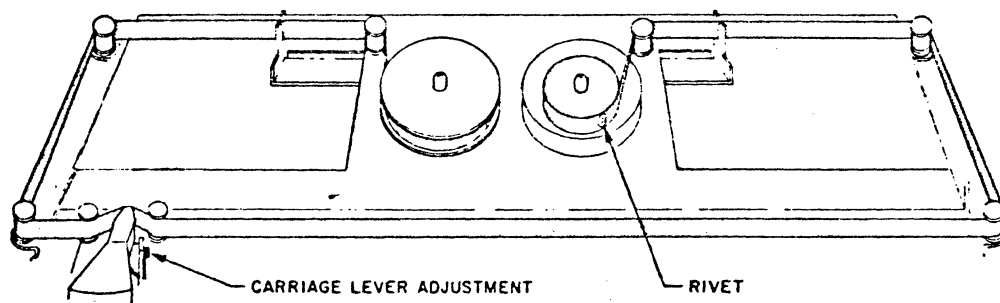
SECTION XIV

TELETYPEWRITER

14.1 INTRODUCTION

The Teletypewriter is a low-speed (110 baud) input/output device which can be used to obtain hard-copy printouts from the system. When in the local mode, the unit is disconnected from the system and can be used for local operations.

The paper tape punch/reader of the Teletypewriter allows reading paper tapes into the system and putting system information onto paper tape.

The Teletypewriter is a free-standing unit equipped with a power cord for connection to an AC power source.

14.2 LINE/OFF/LOCAL CONTROL

This is a three-position knob located at the front-right of the unit. When in the LINE position the unit is connected to the system. When in the LOCAL position the unit is disconnected from the system and can be used for local operations. When in the OFF position, power is removed from the unit.

14.3 PAPER TAPE READER

The paper-tape reader is located on the left side of the unit and has a three-position switch. The START position allows the reader to be started manually and the STOP position allows the reader to be stopped manually. The FREE position allows the tape to be removed manually, for repositioning.

### 14.3.1 Loading Paper Tape

To load a paper tape into the reader:

a) Move the lid handle to the right to open the spring-loaded tape lid.

b) Place the tape on the reader, between the two locating pins. The tape feeds from the rear of the reader to the front.

c) Close the spring-loaded tape cover.

14.4   PAPER TAPE PUNCH

The paper tape punch is located on the left side of the unit, immediately behind the reader. It is equipped with four buttons.

a) ON Button - Turns the punch on.

b) OFF Button - Turns the punch off.

c) B.SP. Button - This is for backspacing one space.

d) REL (Release) Button - Frees the tape so it can be pulled out.

14.5   RIBBON INSTALLATION

(Front View)

14-2
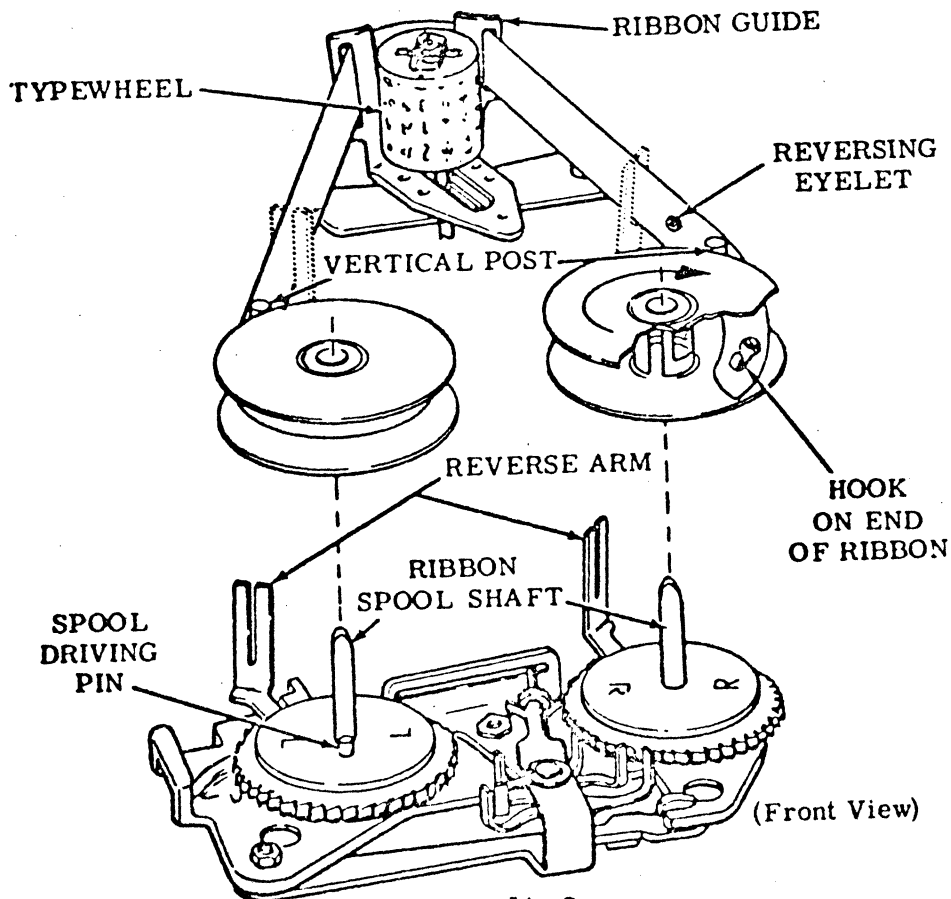
a) Raise the cover lid. Pull both spools off the friction spindles.

b) Engage the hook at the end of the ribbon in the hub of the empty spool; if there is no hook, pierce the end of the ribbon over the point of the arrow in the hub of the empty spool. Wind a few turns of ribbon onto the empty spool in the direction indicated by the arrow, and make sure that the reversing eyelet has been wound upon the spool.

c) Place the spools on the shafts in such a manner that the ribbon feeds to the rear from the right side of the right spool and from the left side of the left spool. Turn each spool slightly until the spool driving pin engages the hole in the spool. Guide the ribbon around the right vertical post and through the slot in the reverse arm. Place the ribbon guide behind the typewheel. Guide the ribbon through the left side of the reverse arm and around the vertical post. Rotate the spool to take up any slack.

14.6   PAPER INSTALLATION

(Right Side View)
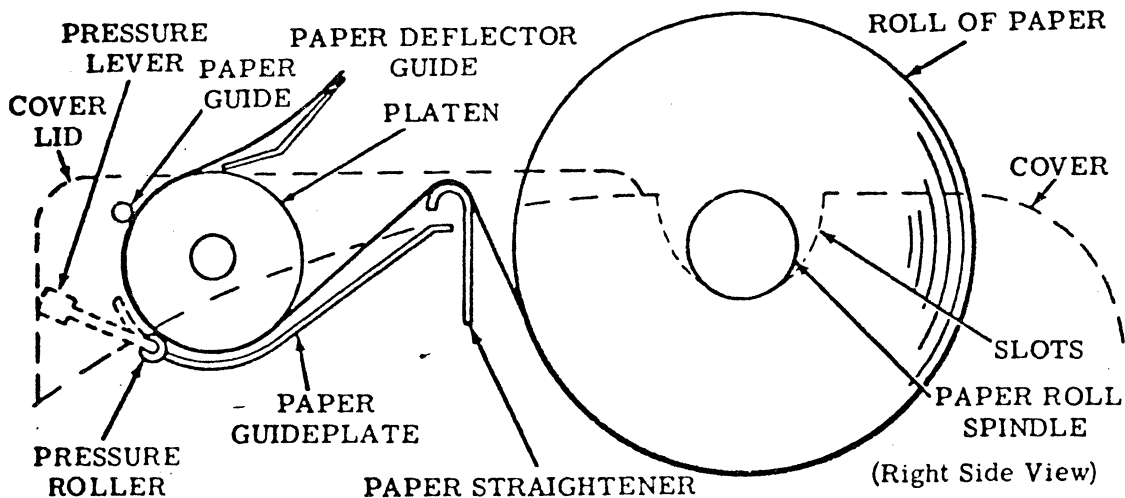
a) A friction Teletypewriter set accomodates a standard roll of paper 8-1/2 inches wide and 5 inches in diameter.

b) Insert the paper roll spindle into the roll of paper so that an equal length of spindle is exposed at either end of the roll. Place roll into the cover recess with the ends of the spindle resting in the slots so that the paper will unroll from the bottom.

c) Raise the cover lid. Release pressure roller tension by moving the pressure lever forward. Prepare a smooth leading edge of paper. Pass paper over paper straightener, under platen, and under paper guide. Straighten paper and reapply the pressure roller tension. Close the cover lid.

NOTE

When typing units are stored or out of service for an extended period of time, release the pressure roller tension.

SECTION XV

PAPER TAPE READER/PUNCH

15.1   INTRODUCTION

The   reader mechanism contains an electromechanical tape-feed system, with associated current drivers, and a nine-channel photoelectric tape-read head, including photocell amplifiers. Information is read from 8-level, 1-inch perforated tape, at a maximum rate of 300 characters per second or, at a single character rate of 20 characters per second.

The tape punch has an electomechanical tape feed and punch system cap-able of punching five-, seven-,or eight-level tape. The AC power is switched to the punch when a command to punch is received.

The unit has a separate power cord for connection to an AC source and a power-on switch and AC-input fuse are located at the rear of the unit.

15.2   FRONT PANEL CONTROLS

a)   PUNCH ON/OFF - Applies power to punch motor.

b)   PUNCH FEED- Punches leader tape.

c)   READER ON-LINE/OFF-LINE - Allows or disallows reading of tape
                                        (on-line).

d)   READER FEED - Manually feeds tape through read station.

e)   Tape Depressor Fork - Depresses tape onto sprocket teeth.

f)   Tape Depressor Knob - Turning the knob clockwise raises the tape
                                  depressor fork.

15.3   LOADING TAPE TO BE READ

a) Raise the tape depressor and load the tape into the right-hand bin.
    Thread the tape under the tape hold-down bracket.

b) Place the tape on the sprocket teeth and lower the tape depressor
    fork. Press the READER FEED switch. Run the tape leader into the
    left-hand bin and dress the tape folds.

15.4   LOADING BLANK TAPE

a) Pull the unit straight out of the rack on its drawer slides, then
    flex the tape-feed bracket and remove and discard the exhausted
    tape supply carton.

b) Press the PUNCH FEED switch until the stub end of tape stops moving
    out of the machine.

c) Pull the stub out of the exit slot.

d) Install a carton of tape in the tape will provided on the rear of
    the tape punch chassis.

NOTE

Under certain conditions, such as low humidity, chad
tends to build-up in the plastic punch cover and sub-
sequently the punch assembly. This condition can be
avoided by dipping the plastic punch cover in an anti-
static solution.

e) Feed the new tape out of the carton, with the printing face down.
    Route the tape through the two rollers, over the out-of-tape switch
    and guide plate, directly into the punch block.

f) Guide the tape over the sprocket and down through the feed-chute
    tray.

g) Press and hold the PUNCH FEED switch until several folds of tape
    are present in the bin. It is necessary to stack the first few
    folds by hand to guarantee proper stacking.

h) It is good practice to empty the chad box whenever a new box of tape
    is loaded.

i) The punch should be oiled monthly by running a box of oiled tape
    thorugh it while punching all 1's.