

# Honeywell

## DELTA 21 CASSETTE TAPE LOADER (15735140-001) OPERATOR'S MANUAL

DELTA 21

SOFTWARE

Warning: This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

## GENERAL

The Cassette Tape Loader (15735140-001) is used to dump, load, and verify the data file of a DELTA 21 System. The data file can be entered into the system on-site via the Video Display Terminal (see DELTA 21 Programmer's Manual, Form No. 85-0097). It may be easier, however, to load the data file with the Cassette Tape Loader (tape loader) after having programmed it at the branch.

For its three operations, the tape loader is connected to the I/O board of the Energy Control Unit (ECU). An operator at the Video Display Terminal (VDT) penetrates a series of menus to arrive at the Cassette Operations menu. From this menu, a Level 3 operator can select dump, load, or verify operations.

Tape loader software controls all tape loader functions except Initialize.

## CONNECTIONS

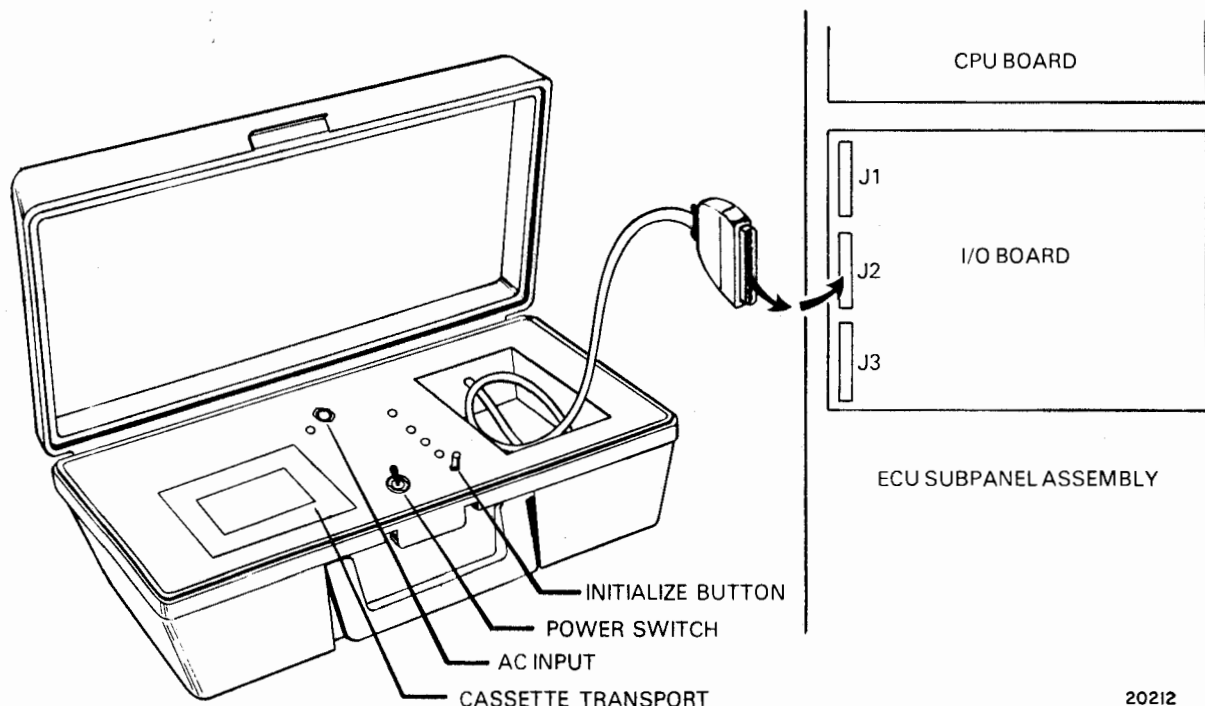
### TO CONNECT

NOTE: Prior to connecting the tape loader, the DELTA 21 System must have undergone start-up as described in DELTA 21 Master Product Data, Form No. 85-0117.

1. Unlock and open ECU cabinet.
2. Connect tape loader's RS232C connector to J2 on I/O board (Fig. 1).
3. Connect provided ac transformer to the AC INPUT port on the tape loader and to a 120V ac outlet.
4. Push POWER switch to on, that is, towards the back of the tape loader. The READY light will turn on.

### TO DISCONNECT

1. Remove cassette tape.
2. Push POWER switch to off; towards front of the tape loader.
3. Disconnect the RS232C connector from the I/O board in the ECU.
4. Remove ac power connector from AC INPUT port.
5. Disconnect transformer from the 120V ac outlet



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Fig. 1. Cassette Tape Loader Connection to ECU.


# OPERATIONS



1. Place Cassette Tape (15735138-001) in the tape transport.

NOTE: To write-protect copies of the data file, rotate plastic tab on the top edge of the cassette to expose opening.

2. Press the INITIALIZE switch on the tape loader and wait for the tape to rewind.

3. Dump, load, and verify operations are selected through menu penetration (Fig. 2).

4. Press  on the VDT keyboard (Fig. 3) to select the Building Management Packages menu (Fig. 4).

5. Press  followed by  to select the Initial Set-Up menu (Fig. 5).

6. Press   and  to select CASSETTE OPERATIONS (Fig. 6) from the Initial Set-Up menu.

7. Turn to DUMP, LOAD, or VERIFY sections to continue the desired operation.

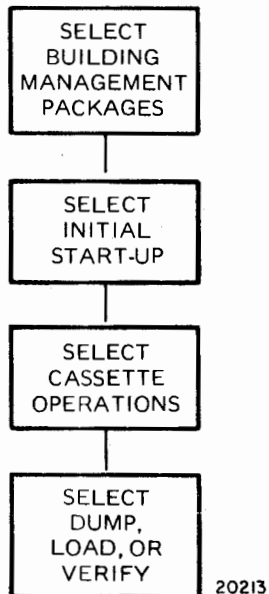


Fig. 2. Menu Penetration for Cassette Operations.

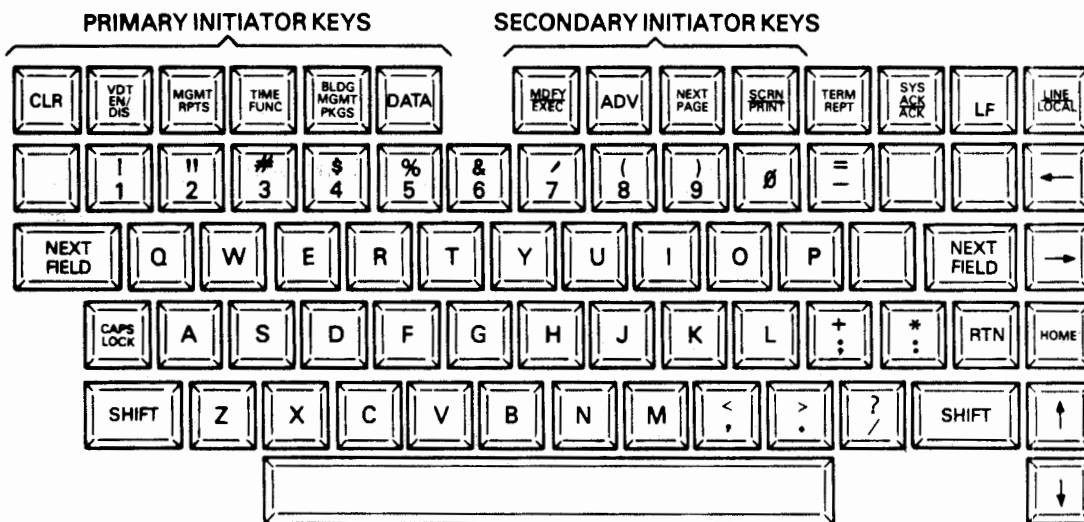


Fig. 3. Video Display Terminal Keyboard.

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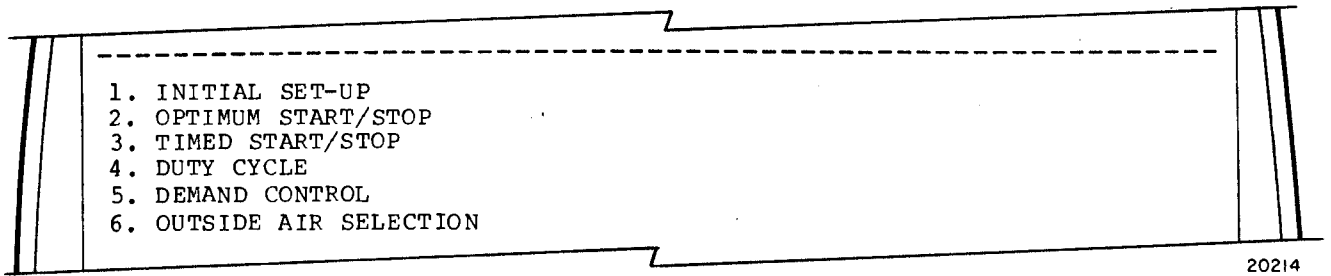


Fig. 4. Building Management Packages Menu.

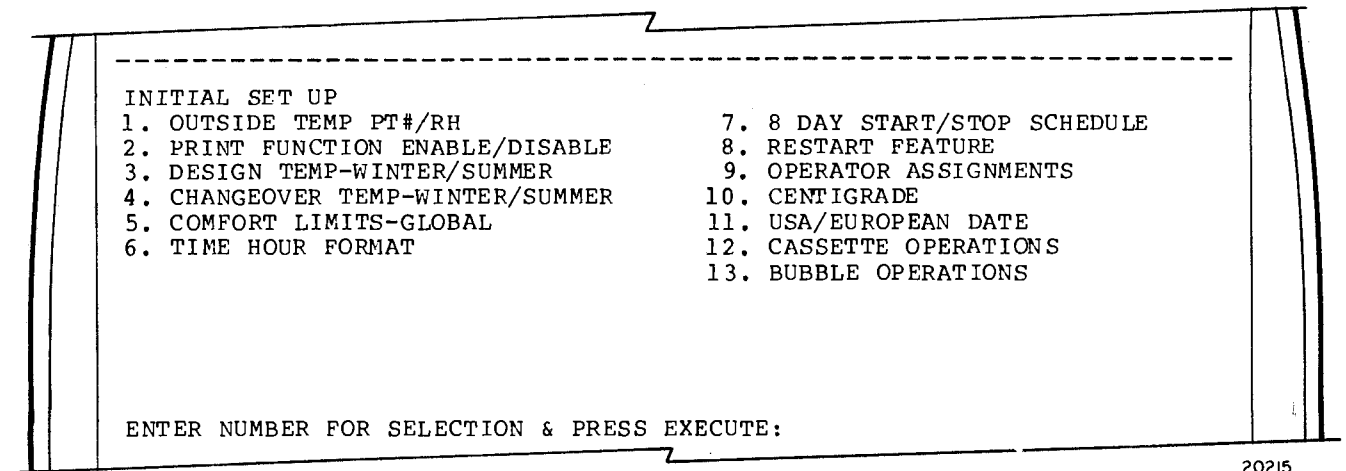


Fig. 5. Initial Set-Up Menu.

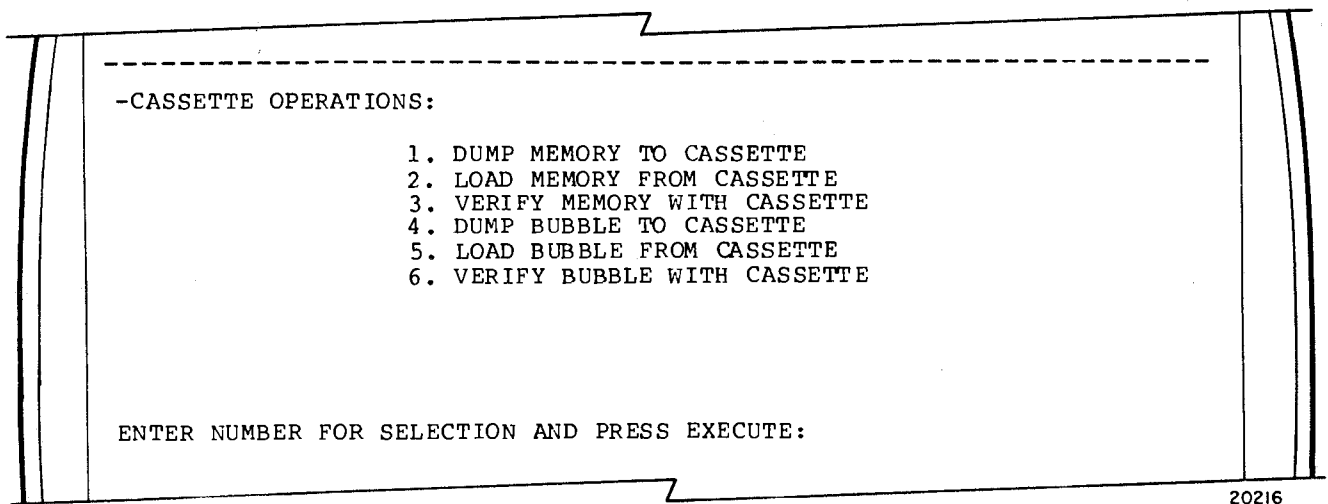







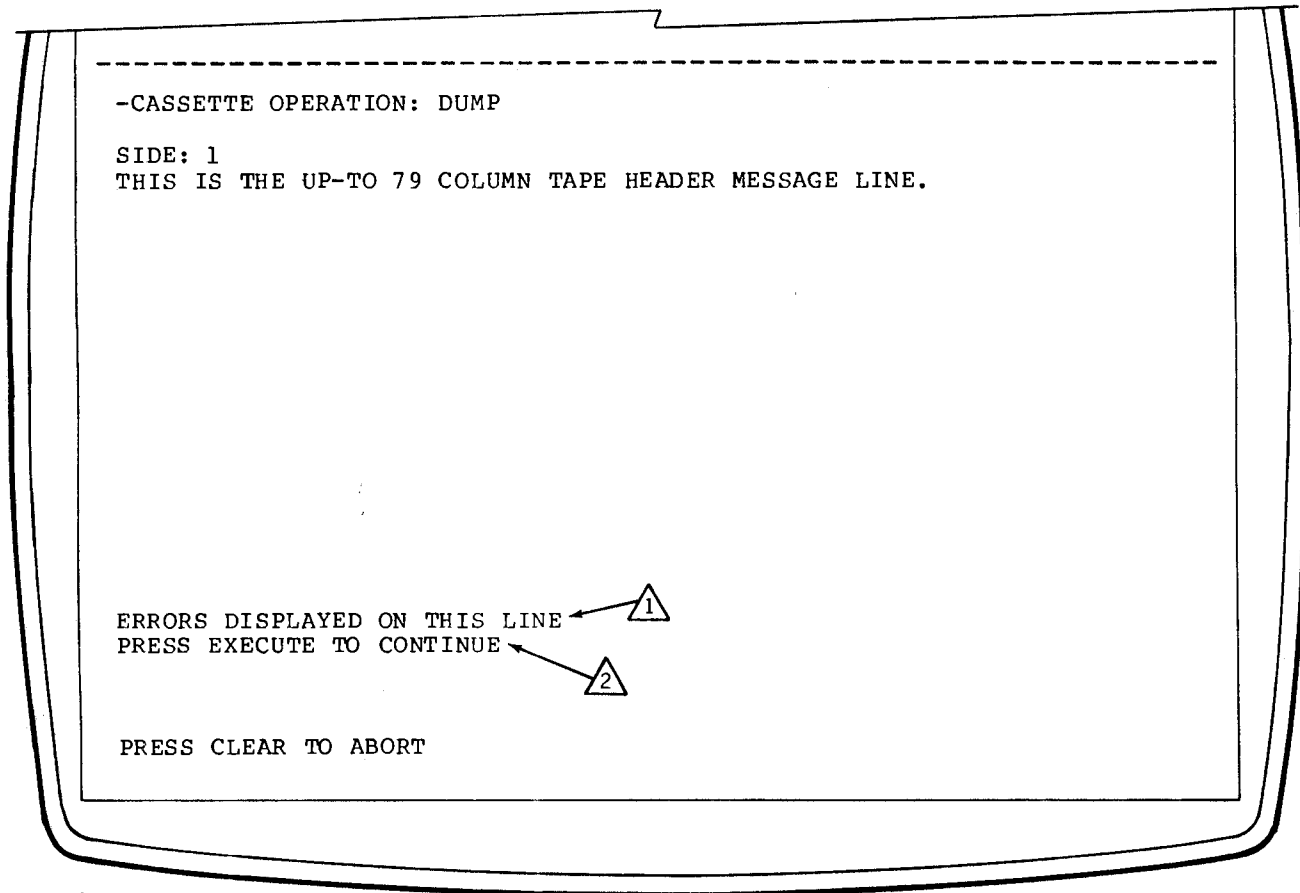
Fig. 6. Cassette Operations Menu.


# DUMP

Press either  or  followed by  to select a dump operation from the Cassette Operations menu. When ENTER TAPE HEADER (UP TO 79 CHARACTERS) & PRESS EXECUTE: is displayed, enter a tape heading and press .

- If either **\*\*ERROR - INPUT INCORRECT** or **\*\*ERROR - ILLEGAL KEY SEQUENCE** is displayed, reenter heading and press .
- If **CASSETTE OPERATION FAILURE** is displayed, check cable connections and verify that the tape loader is powered.
- If this is the first cassette operation, there will be a 92-second wait for the DELTA 21 System to become quiescent. Any Primary Initiator Key (Fig. 3) pressed at this time will be honored after the wait.

The display in Figure 7 indicates that the ECU data file is being dumped to the cassette. The tape loader's RECEIVE DATA and READY lights are flickering and the FORWARD light is on continuously. If any errors occur, tape loader software will attempt to recover from them.














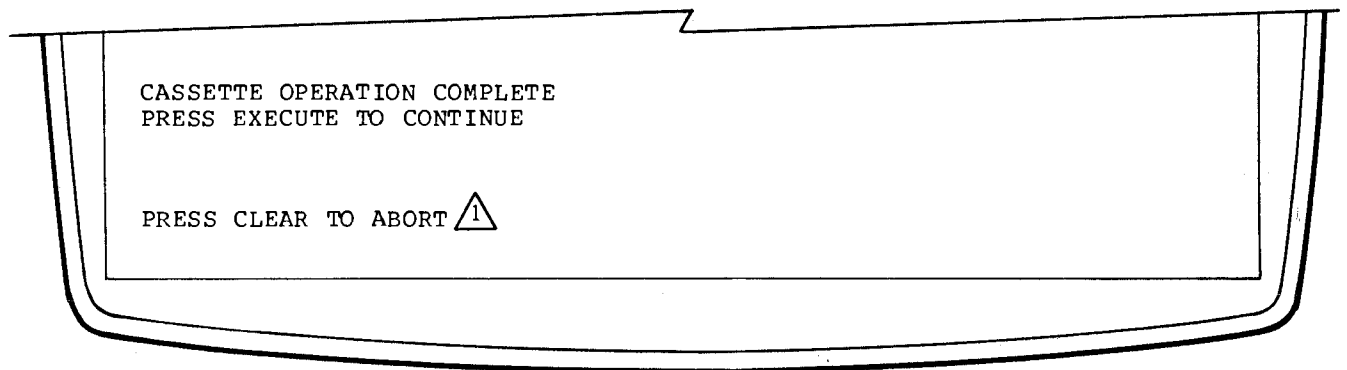
-  **\*\*CASSETTE REWIND FAILURE**  
**\*\*DATA FILE ERROR**  
**\*\*BUBBLE FILE ERROR**  
**\*\*WRITE ERROR**  
PLEASE INSERT NEW TAPE SIDE


-  THIS PROMPT APPEARS ONLY IF AN ERROR IS DISPLAYED ON THE LINE ABOVE IT.

20217

Fig. 7. Data File Being Dumped to Cassette.

- If an unrecoverable error occurs:
  - Either  or  returns control to the Cassette Operations menu.
  - Any PIK (Primary Initiator Key) except  leaves cassette operations and goes to the selected menu.
- If no error or a recoverable error occurs:
  - The  aborts the dump operation and returns control to the Cassette Operations menu.
  - Any PIK except  aborts the dump operation, leaves cassette operations, and goes to the selected menu.
- If prompt PLEASE INSERT NEW TAPE SIDE occurs:
  - Turn tape over or insert a new tape, press INITIALIZE switch on the tape loader, and press  to continue the dump operation.
  - The  aborts the dump operation and returns control to the Cassette Operations menu.
  - Any PIK except  aborts the dump operation, leaves cassette operations, and goes to the selected menu.
- If the dump operation is successful, the display in Fig. 8 appears.
  - Either  or  returns control to the Cassette Operations menu.
  - Any PIK except  leaves cassette operations and goes to the selected menu.






 SINCE THE OPERATION IS COMPLETE THIS MESSAGE IS NO LONGER VALID.


20218

Fig. 8. Completed Dump Operation.

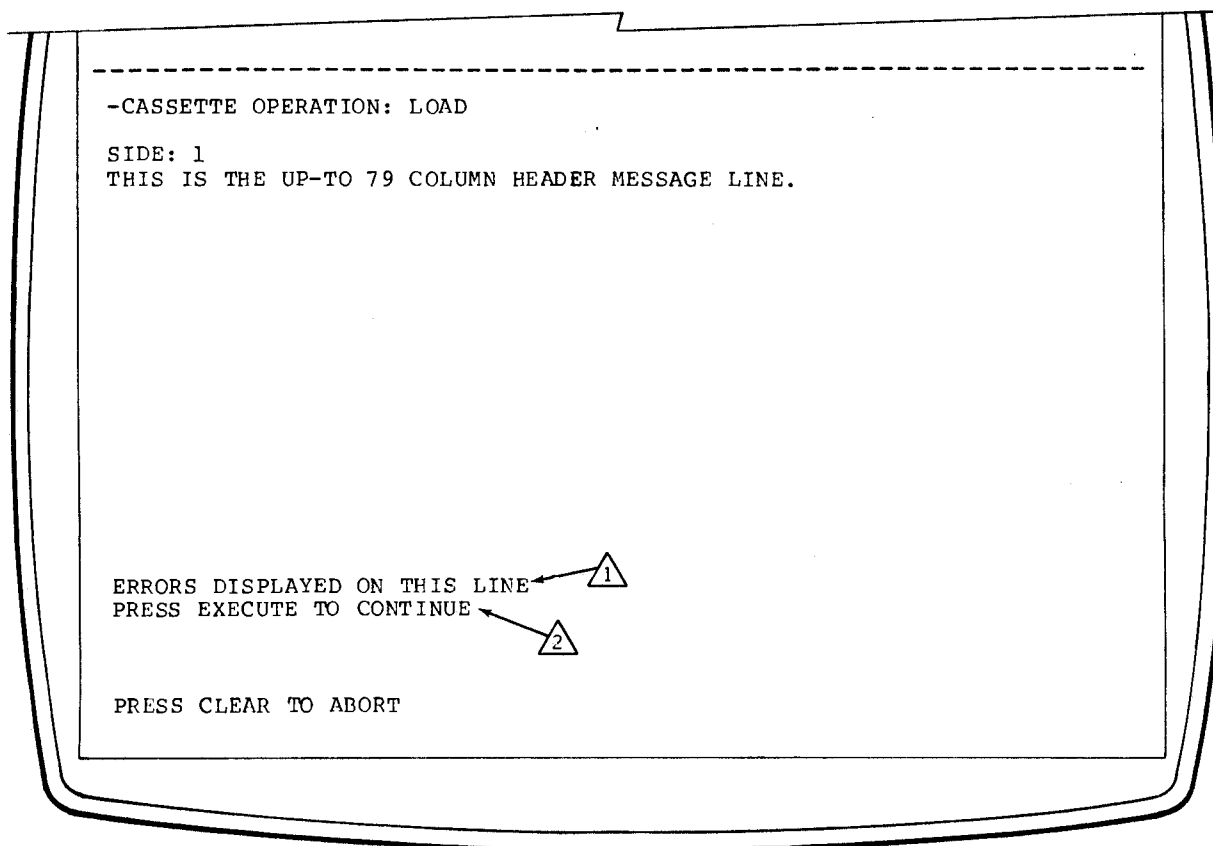
## LOAD

NOTE: During load operation, the last tape side loaded must be the last side that was dumped.

Press either  or  followed by  to select a load operation from the Cassette Operations menu.

- If either **\*\*ERROR - INPUT INCORRECT** or **\*\*ERROR - ILLEGAL KEY SEQUENCE** is displayed, reenter heading and press .
- If **CASSETTE OPERATION FAILURE** is displayed, check cable connections and verify that the tape loader is powered.
- If this is the first cassette operation, there will be a 92-second wait for the DELTA 21 System to become quiescent. Any Primary Initiator Key (Fig. 3) pressed at this time will be honored after the wait.

The display in Figure 9 indicates that the contents of the cassette are being loaded into either RAM or bubble memory. The TRANSMIT DATA and READY lights are flickering and the FORWARD light is on continuously.



1 \*\*CASSETTE REWIND FAILURE  
 \*\*DATA FILE ERROR  
 \*\*BUBBLE FILE ERROR  
 \*\*FATAL READ ERROR  
 \*\*THIS DUMP WAS ABORTED  
 PLEASE INSERT NEW TAPE SIDE

2 THIS PROMPT APPEARS ONLY IF AN ERROR IS DISPLAYED ON THE LINE ABOVE.

20219

Fig. 9. Loading RAM or Bubble Memory.

Error messages may also be printed on the SARA 11 Printer. These are, READ ERROR ENCOUNTERED, INSERTION ERROR, and BAD TAPE FILE ENCOUNTERED. Tape loader software will attempt to recover from these errors.

— If an unrecoverable error occurs:

Either  or  returns control to the Cassette Operations menu.

Any PIK except  leaves cassette operations and goes to the selected menu.

— If no error or a recoverable error occurs:

The  aborts the load operation and returns control to the Cassette Operations menu.

Any PIK except  aborts the load operation, leaves cassette operations, and goes to the selected menu.

— If prompt PLEASE INSERT NEW TAPE SIDE occurs:

Insert new tape side, press INITIALIZE switch on the tape loader, and press  to continue the load operation.

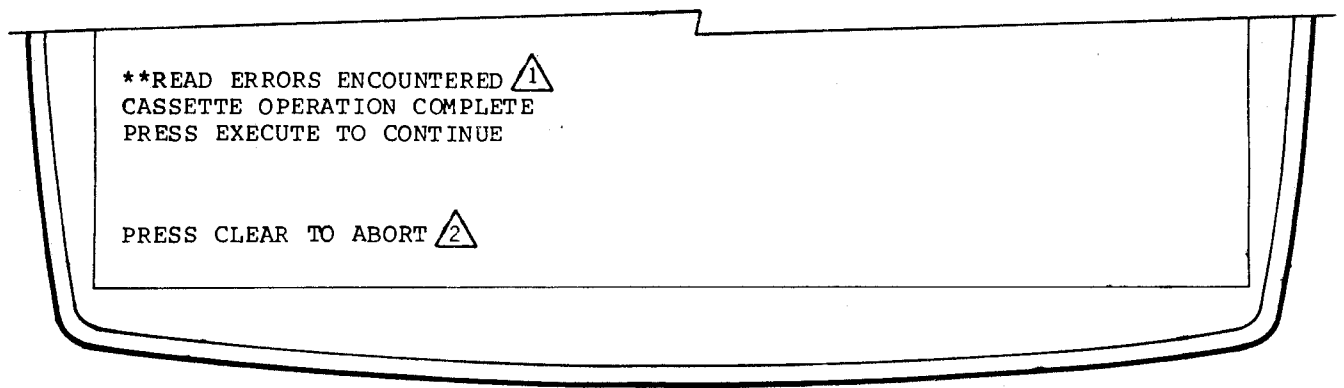
The  aborts the load operation and returns control to the Cassette Operations menu.

Any PIK except  aborts the load operation, leaves cassette operations, and goes to the selected menu.

— If the load operation is successful, the display in Fig. 10 appears.

Either  or  returns control to the Cassette Operations menu.

Any PIK except  leaves cassette operations and goes to the selected menu.



△ THIS MESSAGE IS DISPLAYED ONLY IF RECOVERABLE READ ERRORS OCCURED.




△ SINCE THE OPERATION IS COMPLETE THIS MESSAGE IS NO LONGER VALID.


20220

Fig. 10. Completed Load Operation.

## VERIFY












NOTE: Be sure tapes are inserted in the tape transport in the order that the data file was dumped.

Press either  or  followed by  to select a verify operation from the Cassette Operations menu.

- If either **\*\*ERROR - INPUT INCORRECT** or **\*\*ERROR - ILLEGAL KEY SEQUENCE** is displayed, reenter selection and press .
- If **CASSETTE OPERATION FAILURE** is displayed, check cable connections and verify that the tape loader is powered.
- If this is the first cassette operation, there will be a 92-second wait for the DELTA 21 System to become quiescent. Any Primary Initiator Key (Fig 3) pressed at this time will be honored after the wait.

The display in Figure 11 indicates that the data file in RAM or bubble memory is now being verified with the contents of the cassette. The TRANSMIT DATA, RECEIVE DATA, and READY lights are flickering and the FORWARD light is on continuously.

Some error messages may be printed on the SARA 11 Printer; **READ ERROR ENCOUNTERED** and **BAD TAPE FILE ENCOUNTERED**. Tape loader software will attempt to recover from these errors.

- If an unrecoverable error occurs:
  - Either  or  returns control to the Cassette Operations menu.
  - Any PIK except  leaves cassette operations and goes to the selected menu.
- If no error or a recoverable error occurs:
  - The  aborts the load operation and returns control to the Cassette Operations menu.
  - Any PIK except  aborts the load operation, leaves cassette operations, and goes to the selected menu.
- If either **PLEASE INSERT NEW TAPE SIDE** or **WRONG SIDE. PLEASE INSERT SIDE nn** is displayed:
  - Insert new (or correct) tape side, press INITIALIZE switch on the tape loader, and then press  to continue the verify operation.
  - The  aborts the verify operation and returns control to the Cassette Operations menu.
  - Any PIK except  aborts the verify operation, leaves cassette operations, and goes to the selected menu.
- If the verify operation is successful, the display in Figure 12 appears. Either  or  returns control to the Cassette Operations menu.
  - Any PIK except  leaves cassette operations and goes to the selected menu.



-CASSETTE OPERATION: VERIFY

SIDE: 1

THIS IS THE UP-TO 79 COLUMN TAPE HEADER MESSAGE LINE.

ERRORS DISPLAYED ON THIS LINE  
PRESS EXECUTE TO CONINUE

1

2

PRESS CLEAR TO ABORT

1 \*\*CASSETTE REWIND FAILURE  
\*\*DATA FILE EMPTY  
\*\*DATA FILE ERROR  
\*\*BUBBLE FILE ERROR  
\*\*BUBBLE FILE EMPTY  
\*\*FATAL READ ERROR  
PLEASE INSERT NEW TAPE SIDE  
\*\*WRONG SIDE. PLEASE INSERT SIDE nn

2 THIS PROMPT APPEARS ONLY IF AN ERROR IS DISPLAYED ON THE LINE ABOVE IT.

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Fig. 11. Verification of Cassette with Memory.

\*\*READ ERRORS ENCOUNTERED 1  
CASSETTE OPERATION COMPLETE  
PRESS EXECUTE TO CONTINUE

TAPE VERIFIED AND VALID 2

PRESS CLEAR TO ABORT

1 THIS MESSAGE IS DISPLAYED ONLY IF RECOVERABLE READ ERRORS OCCURED.

2 IF MISMATCHES OCCURED DURING VERIFICATION, THIS LINE WILL READ  
"TAPE VERIFICATION ERROR".

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Fig. 12. Completed Verify Operation.

## PRINTER MESSAGES

**\*\*BUBBLE FILE ERROR**—The Bubble File Manager indicated that an error occurred when trying to access the next record of information. This error is unrecoverable.

**CASSETTE OPERATION COMPLETE**—The specified operation is completed.

**\*\*CASSETTE OPERATION FAILURE**—The specified operation could not be started. This error is fatal. Tape loader may not be powered or connected correctly.

**\*\*CASSETTE REWIND FAILURE**—The tape loader did not respond to a command to rewind the tape or it responded with an error. The tape loader may not be connected correctly or there may not be any tape in it.

**\*\*DATA FILE EMPTY**—The verify operation was selected when there is nothing in the data file.

**\*\*DATA FILE ERROR**—The Data File Manager (RAM manager) indicated that an error occurred when trying to access the next record of information. This error is unrecoverable.

**\*\*ERROR IN TAPE FORMAT**—While reading the tape, the format did not seem right. An extraneous character may have been read or a character may be missing. Tape loader software will skip to a point in the tape where it can try again.

**\*\*FATAL TAPE READ ERROR**—An unrecoverable error occurred while reading the tape. The tape loader might not be connected correctly or the tape may be damaged.

**\*\*INSERTION ERROR**—The Data File Manager (RAM manager) or Bubble File Manager indicated an error when tape loader software attempted to insert the record it loaded off the tape. Loading will continue by reading the next record from the tape.

**\*\*INVALID FILE TYPE ENCOUNTERED**—An invalid data file type was read from the tape. This indicates a bad tape; possibly worn out or damaged.

**SIDE: n**

**THIS IS A TAPE HEADER ....**—During an operation the side number and tape header are displayed. The tape header was entered by the operator when the tape was dumped.

**\*\*TAPE READ ERROR**—A recoverable error occurred when reading the tape. A record was read with a bad checksum. The record will be skipped, and the next record sought.

**TAPE VERIFICATION ERROR**—After a verify operation, the results indicated that the contents of the tape did not match the content of the (RAM or bubble) memory.

**TAPE VERIFIED AND VALID**—After a verify operation, the results indicated that the contents of the tape matched the contents of the (RAM or bubble) memory.

**\*\*TAPE WRITE ERROR**—An unrecoverable error occurred when writing to the tape. The tape loader may not be connected correctly or the cassette may not be in the tape transport.

**\*\*THIS DUMP WAS ABORTED**—The tape being loaded or verified was not a completed dump of the (RAM or bubble) memory because the operator aborted the dump operation. When loading, the data files in RAM and bubble will be cleared.

FILE: \_\_\_\_\_ KEY: \_\_\_\_\_ MISSING TAPE RECORD—When verifying, the data file contained the record specified by FILE and KEY, but the tape did not. The next record will be sought.

FILE: \_\_\_\_\_ KEY: \_\_\_\_\_ MISSING DATA FILE RECORD—When verifying, the tape contained a record that the data file did not. The next record will be sought.

FILE: \_\_\_\_\_ KEY: \_\_\_\_\_ \*\*MISMATCH—When verifying, the content of the specified record was not the same on the tape as it is in the data file. The next record will be sought.

FILE: \_\_\_\_\_ KEY: \_\_\_\_\_ MATCH—When verifying, the specified record on the tape matched that of the data file.

LOADING FILE: \_\_\_\_\_ KEY: \_\_\_\_\_ —The specified record is being loaded from the tape to the (RAM or bubble) memory.

DUMPING FILE: \_\_\_\_\_ KEY: \_\_\_\_\_ —The specified record is being dumped from (RAM or bubble) memory to the tape.

\*\*READ ERRORS ENCOUNTERED—This is a reminder, after a load or verify, that recoverable read errors were encountered.

## MAINTENANCE

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The Cassette Tape Loader requires little maintenance. The head should be cleaned with isopropyl alcohol using a lint free cotton swab as needed. If the unit is used every day, the heads should be cleaned once a week. Normally, if data becomes questionable, cleaning the head or changing the tape solves the problem.

If the tape loader will not be used for more than an hour, the tape should be rewound. Tape cassettes should be rewound prior to being removed from the transport and they should be stored rewound.

CAUTION

Never add lubrication to shafts or bearings.

# Honeywell

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