CENTRAL UNIT

OPERATING PROCEDURES

AUTOMATED TROUBLE REPORTING SYSTEM (ATRS)

1. GENERAL

1.01 This section provides operating procedures for the ATRS Central Unit (CU) peripheral equipment. It also describes loading of system

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programs, backup procedure, and system crash procedures.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 *Lettered Steps:* A letter a, b, c, etc, added to a step number in Part 2 or 3 of this section indicates a procedure which may or may not be required, depending on local conditions. The condition under which a lettered step, or a series of lettered steps, should be made is given in the PROCEDURE column, and all steps governed by the same condition are designated by the same letter within a procedure. Where a condition does not apply, all steps designated by that letter should be omitted.

2. OPERATING PROCEDURES

A. TC11 DECtape Unit

2.01 The TC11 DECtape unit is shown in Figure 1. Controls and indicators are listed in Table A. Associated with each control or indicator is a description of its function.

B. LA36 DECwriter II

2.02 The controls used for operation of the LA36 DECwriter II, (Fig. 2) (with the exception of the keyboard) are listed in Table B.

2.03 The following procedures describe the method for loading paper and changing the ribbon in the LA36 DECwriter II. When initially loading paper in the LA36 DECwriter II or when adjustments need to be made (paper positioning, impression adjustment, horizontal positioning, and fine vertical positioning), perform the loading paper procedure. When simply reloading paper and no adjustments are required, perform the reloading paper procedure.

STEP	PROCEDURE

LOADING PAPER

Paper Positioning

1   Operate POWER switch to OFF.

2   Open DECwriter cover.

3   Place the tractor-feed paper on the floor between the legs of the DECwriter.

 Note: The term tractor-feed refers to the holes on either side of the paper.

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

5   Open the left tractor cover (Fig. 3) so that the tractor pins are exposed.

6   Move the carriage adjustment lever (Fig. 3) to the highest number.

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

8   Close the left tractor cover.

9   Loosen the tractor adjustment knob (Fig. 3) on the right tractor about 1/2 turn.

10   Open the right tractor cover (Fig. 3) and slide the tractor to a position where the holes on the right paper margin align directly over the tractor pins.

11   Close the tractor cover.

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

12   Tighten the tractor adjustment knob.

Impression Adjustment

 Note: The carriage adjustment lever (Fig. 3) is normally set forward (to number 1) for single thickness paper. The following procedure (Steps 13 and 14) is applicable only for multipart forms.

13   Set the carriage adjustment lever to the number corresponding to the number of parts in the form.

14   Turn the paper advance knob (Fig. 3) counterclockwise while moving the carriage adjustment lever forward one notch at a time until the paper smudges. Move the lever back one notch at a time until the paper no longer smudges.

STEP	PROCEDURE

Note: If the impression is unsatisfactory due to a worn ribbon, perform the changing ribbon procedure. An indication of a worn ribbon is that the first copy in a multipart copy is poor, but the remaining copies are good.

Horizontal Positioning Adjustment

Note: The horizontal positioning adjustment enables the paper to be shifted left or right (1/2 inch maximum). Shifting the paper provides a simple means of aligning the type within the appropriate columns on the paper.

15   Loosen both tractor adjustment knobs (Fig. 3) about 1/2 turn.

16   Move the tractors the desired amount (1/2 inch maximum) to have the characters type in the appropriate columns.

17   Tighten the tractor adjustment knobs.

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

Fine Vertical Positioning

18   For fine vertical positioning, press in and turn the paper advance knob (Fig. 3) to the desired position.

19   Close DECwriter cover.

20   Operate POWER switch to ON.

Reloading Paper

21   Operate POWER switch to OFF.

22   Open DECwriter cover.

23   Place the tractor-feed paper on the floor between the legs of the DECwriter.

Note: The term tractor-feed refers to the holes on either side of the paper.

24   Open both tractor covers (Fig. 3) so that the tractor pins are exposed.

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

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

27   Close the tractor covers.

28a   If any adjustments need to be made, refer to the procedure on loading paper.

STEP	PROCEDURE
29	Close the DECwriter cover.
30	Operate POWER switch to ON.

Changing Ribbon

Note: The ribbon should last from 8 to 12 hours of actual printing at 30 characters per second. After 12 hours or when the print density becomes too light, the ribbon can be replaced or turned over and the lower half of the ribbon can be used. After rethreading the same ribbon, another 4 hours (approximately) of printing time is possible before the ink is completely used. At this time, the ribbon *must* be replaced.

31	Wait until reel is completely emptied and ready to reverse.
32	Operate POWER switch to OFF.
33	Open DECwriter cover.
34	Record the setting of the carriage adjust lever (Fig. 3).
35	Move the carriage adjust lever to the highest number.
36b	If the ribbon is to be replaced, remove the ribbon spools and ribbon. Save one spool to be used with the new ribbon.
37b	Connect the hook on the end of the ribbon to the empty spool.
38b	Wind 10 turns of ribbon on the empty spool. Ensure that direction reversing rivet on the ribbon is wound on the empty spool.

Caution: If the direction reversing rivet is not wound on the empty spool beyond the direction sensing guide, the ribbon will not reverse.

39c	If the lower half of the ribbon is to be used, remove both spools and unthread the ribbon.
40c	Ensure that the direction reversing rivet on the ribbon is wound on the take-up spool.

Caution: If the direction reversing rivet is not wound on the take-up spool beyond the direction sensing guide, the ribbon will not reverse.

41	Place the full spool on the left spindle (Fig. 4) and turn clockwise until it drops into position.
42	Guide the ribbon and idler spool A (Fig. 4) through direction sensing guide B, and around the outside of idler spool C through E.
43	Guide the ribbon around the front of head F and idler spools G through I.
44	Guide the ribbon through direction sensing guide J and around idler spool K.

STEP	PROCEDURE
45	Place the spool on the right spindle and turn clockwise until it drops into position.
46	Take up the slack in the ribbon by turning the free-moving spool.
47	Return the carriage adjust lever to its original setting.
48	Close the DECwriter cover.
49	Operate POWER switch to ON.

C. Loading Format MKTP Program

2.04 The program MKTP is used for formatting all virgin tapes to be used with the ATRS System. The DECtapes will not work on ATRS unless they have been formatted using this program. It also writes a loader program on the virgin tapes which reads or loads programs into the computer memory from DECtape. The format program cannot be loaded into the computer at the same time as the cold ATRS program.

2.05 The following procedure describes the method for loading the format MKTP program.

STEP	PROCEDURE
1	At processor console, operate the OFF/POWER/LOCK switch to POWER.
2	Operate the ENABLE/HALT switch to HALT.
3	Set the processor console switches (starting left to right) to 773000 (111 111 011 000 000 000), with 1 being up and 0 being down.
4	Operate the LOAD ADRS switch.
	Note: The address lamps corresponding to the raised switches in the switch register should be lighted. If the wrong lamps are lighted, depress the START switch and proceed from Step 4. If the wrong lamps are still lighted, check the position of the OFF/POWER/LOCK switch. If it was not set to POWER, proceed from Step 1; otherwise, the processor may be malfunctioning. If only one or two of the lights are extinguished, the bulbs could be burned out. Have computer maintenance personnel check the bulbs after the procedure is completed.
5	Mount the program tape reel on the left spindle of either tape drive, feed the tape over the head, and wind exactly three turns of tape onto the take-up reel.
6	On tape drive that has program tape, operate the WRITE switch to WRITE LOCK, the REMOTE/LOCAL switch to REMOTE, and the thumbwheel to 0.
7	At the processor console, operate the ENABLE/HALT switch to ENABLE, and depress the START switch.

STEP	PROCEDURE
8	The program loader is now in command and should print the '=' character at the system console.
9a	If there is an error in loading the tape, the following message will be printed: **TAPE ERROR—MOUNT NEW TAPE AND TRY AGAIN BY PRESSING CONTINUE.**
10	At the system console, type **MKTP** followed by a carriage return. The MKTP will now be read into memory and started automatically.

D. Formatting DECtapes

2.06 All virgin tapes must be formatted to add timing marks on the tape so that data can be written on them. Since the format program and the cold ATRS program cannot be loaded at the same time, the tapes must be formatted before the cold program is loaded.

2.07 The following procedure describes the method for formatting the DECtapes:

STEP	PROCEDURE
1	Mount the tape to be formatted on the tape drive unit with the thumbwheel set to 0, feed the tape over the head, and wind exactly four turns of tape onto the take-up reel.
2	Locate the WRITE ALL and WRITE T&M switches behind the cover of the tape controller.
3	Operate the WRITE ALL and WRITE T&M switches to ENABLE.
4	On tape drive unit 0, operate the WRITE switch to WRITE and the REMOTE/LOCAL switch to REMOTE.
5	At the processor console, momentarily depress the CONT switch. The tape will spin and the computer will reply with the following message when the tape formatting is finished: **FORMAT COMPLETE—MOUNT NEXT TAPE AND PRESS CONTINUE**
6a	If there is an error in formatting, the tape format program prints the following message: **TAPE ERROR—MOUNT NEW TAPE AND TRY AGAIN BY PRESSING CONTINUE** *Note:* When the tape error message is printed, repeat from Step 1. If the message is printed a second time, either the tape is defective or the computer system is malfunctioning. Try formatting a different tape; if the new tape formats without an error, the previous tape is defective.

STEP	PROCEDURE
7	After the last tape is formatted, operate the WRITE ALL and WRITE T&M switches to DISABLE.

E. Loading Cold Program and Configuring the System

2.08 The cold ATRS generic program is supplied on one DECtape. This tape must be loaded into the ATRS computer after the format program has been loaded. After the cold generic has been loaded, the system must be configured to add the parameters unique to the ATRS installation. The procedures for loading the cold generic and configuring the system are as follows:

STEP	PROCEDURE
1	At the processor console, operate the OFF/POWER/LOCK switch to POWER.
2	Operate the ENABLE/HALT switch to HALT.
3	Set the processor console switches (starting left to right) to 773000 (111 111 011 000 000 000), with 1 being up and 0 being down.
4	Operate the LOAD ADRS switch.

Note: The address lamps corresponding to the raised switches in the switch register should be lighted. If the wrong lamps are lighted, depress the START switch and proceed from Step 4. If the wrong lamps are still lighted, check the position of the OFF/POWER/LOCK switch. If it was not set to POWER, proceed from Step 1; otherwise, the processor may be malfunctioning. If only one or two of the lamps are extinguished, the bulbs could be burned out. Have computer maintenance personnel check the bulbs after the procedure is completed.

5	Mount the program tape reel on the left spindle of either tape drive, feed the tape over the head, and wind exactly four turns of tape onto the take-up reel.
6	At the processor console, operate the ENABLE/HALT switch to ENABLE.
7	Momentarily depress the START switch. This should cause the tape to spin, reading in the program loader from tape.
8	At the DECwriter, the '=' character is printed. This is a request for the name of the program to be loaded into core memory.
9	Type **ATRSC** followed by a carriage return. The cold program is loaded into core memory and started.
10	A message is printed, similar to the following:

     COLD ATRS

STEP	PROCEDURE

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11   **PSWD**= is printed. The system is now ready for the configuration information.

12   Type in the password that is used to become SUPER USER, followed by a carriage return.

          Note: The password can be any sequence of characters up to a length of 16. The password is not printed; therefore, it should be recorded as typed for future reference.

13   **ID**= is printed.

14   Type in the 3-digit ATRS cordboard identification number.

15   **TIMER**= is printed.

16   Type in the time of the next current day (eg,05/26/17/00), when the summary report should be printed.

17   **MAY 26 1700** is printed.

18   **DATE**= is printed.

19   Type in the current time of day (eg, 05/26/08/00).

20   **#SWBDS**= is printed, requesting the number of switchboard entries to be made.

21   Type in the number of switchboard entries (eg, 50).

          Note: The number 50 indicates the maximum number of switchboard definitions that can be entered into ATRS. Since this number cannot be changed, a large number should be entered to allow for future growth of the system.

22   **#USERS**= is printed.

23   Type in the exact number of users to be assigned (eg, 4).

24   **#TSPS**= is printed, asking for the number of TSPS ports to be assigned.

25   Type in the exact number of TSPS ports to be assigned (eg, 3).

          Note: The number of TSPS ports must be the exact number of ports that will be assigned. To add ports at a later date requires the complete reconfiguration of the system.

26a   If Generic 2 is provided, the following message is printed—

ADD A ATRS-ATRS COMMUNICATION LINE (Y OR N)?

27a   Type in Y if yes or N if no.

STEP	PROCEDURE

28 The following message is printed—

    ASSIGN A TSPS:

    ID=

This ID will be the character attached to each report from the TSPS location to identify its origin.

29 **DEV=** is printed. The system is asking for the device the port will be assigned to.

30 Type in the device code **DJ.**

31 **LINE=** is printed. This is the line number on the DJ.

32 Type in the line number the port is being assigned to (eg, 9).

33 **LINE ADDED** is printed when the TSPS line is added.

Note: This process is continued for the remaining TSPS assignments. User assignments are made next.

34 The following message is printed—

    ASSIGN USER #2

    DEV=

Note: Users are assigned in order starting with user number 2. User number 1 is assigned last. The users must be assigned sequentially. The second user will be the dial-up port connected to the second DC line.

35 Type in **DC.**

36 **LINE=** is printed.

37 Type in **2.** This is the line number the dial-up is connected to.

38 **SPEED** is printed.

Note: 1 is for 110 baud and 2 is for 300 baud.

39 Type in **2.**

40 The following message is printed—

    1014 STORAGE AVAILABLE

    ASSIGNMENT=

STEP	PROCEDURE

The system is asking for the number of 64 byte blocks to be assigned to the user (eg, 63).

Note: Masking capability is determined by the amount of storage assigned to each user. Storage is assigned to the user terminals in blocks. A block is equal to 64 bytes. Each byte contains 8 bits of binary information.

41   Type in **63**.

Note: All users except for number 1 are assigned using this procedure.

42   The following message is printed—

     ASSIGN THE MAIN CONSOLE:

     DEV=

The system is requesting the device for user number 1, the main console.

43   Type in **DL**.

44   **LINE=** is printed.

45   Type in **O**.

46   The following message is printed—

     238 STORAGE AVAILABLE

     ASSIGNMENT=

The system is requesting the storage for user number 1.

47   Type in **238**. This is the remaining storage. The system configuration is now complete.

48   The DECwriter will print:

     WARM ATRS

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Note: A printout will follow that reviews the system configuration. The printout should be torn from the DECwriter and kept for record-keeping purposes.

F. Creating Switchboard Definition Table

2.09 The switchboard definition table contains a list of valid switchboard numbers that will be entering trouble reports to the ATRS System. The procedure for creating the switchboard definition table is as follows.

STEP	PROCEDURE
1	At the DECwriter, type in **SU** followed by a carriage return.
2	**PSWD**= is printed.
3	Type in the password.
4	Type in **ED SWBD.**
5	**SWBD#**= is printed.
6	Type in the 3-digit switchboard number.
7	**NPA**= is printed.
8	Type in the originating NPA served by the preceding switchboard number.
9	**NNX**= is printed.
10	Type in a valid NNX within the home area.
11	**ENTERED** is printed.
	Note: The system will return and ask for the next switchboard number and its associated information. To terminate the process, type in a control **C** and remove SUPER USER privileges by typing in **SU** followed by a carriage return.

G. Creating Backup Tape

2.10 The ATRS System should be backed up at least twice a day. This procedure is performed to save on DECtape copies of the warm ATRS program (ATRSW), the switchboard definitions (SWBD), and the masks (BKPM). If this information is needed, it can be read into the system from the backup tape instead of being entered manually. The ATRSW and BKPM will also be needed to recover from a crash condition. The procedure for making backup tapes is as follows:

STEP	PROCEDURE
1	At the DECwriter, tear off the previous day's printout and file for future reference.
	Note: The printout should be checked to ensure that all reports are being received and that no problems have occurred.
2	Type in **d** followed by a carriage return. This prints the current time and date at the top of the sheet.
3	Type in **P TSPS** followed by a carriage return. A printout will follow.

STEP	PROCEDURE
4	Type in **P SL** followed by a carriage return. A printout will follow.
	Note: These reports will be used when the backup is completed to verify that the input ports are functioning properly.
5	At the tape drive unit, mount the oldest tape in the tape rack on the left spindle of the tape drive numbered 0.
	Note: The other tape drive can be on any number except 0.
6	Feed the tape over the head, and wind exactly four turns on the take-up reel.
7	Operate the WRITE/ENABLE switch to ENABLE.
8	Operate the REMOTE/LOCAL switch to REMOTE.
9a	If the DECwriter is not in the SUPER USER mode, type in **SU** and enter the password when the system prints **PSWD=**.
10	Type in **TP BKPM**, followed by a carriage return.
11	The system will print **WHICH USERS?**.
12	Type in 1—$, followed by a carriage return. The tape will spin and will be finished in approximately 8 minutes.
13	**#** is printed when backup is finished.
14b	If **TAPE SW ERROR** is printed on the console, check the switches on the tape drive and start over at Step 10.
15c	If **TAPE OV ERROR** is printed on the console, the mask for all users will not fit onto one tape.
16c	Type in **TP CLR**, followed by a carriage return.
17c	When the tape stops spinning, type in **TP BKPW**, followed by a carriage return. This will back up the warm program.
18c	When the tape stops spinning, type in **TP BKPSW**, followed by a carriage return. This will back up the switchboards.
19c	Continue from Step 10.
20d	If **TAPE FM ERROR** is printed on the console, the contents of the tape are not in correct format.
21d	Type in **TP CLR**. The tape will be cleared of all information.

STEP	PROCEDURE

22d   Continue from Step 10.

23   Type in **TP LIST**, followed by a carriage return. Printout will follow, showing when the backup for each user was made.

24   # character is printed.

25   Type in **P A**, followed by a carriage return. Printout will follow, showing the number of masks entered by each user and the amount of storage available.

26   At the tape drive unit, operate the WRITE/ENABLE switch to LOCK.

27   Operate the REMOTE/LOCAL switch to LOCAL.

28   Operate the tape rewind switch. When the tape is rewound, operate the REMOTE/LOCAL switch to OFF.

29   Remove the tape from the tape drive. Write the date and time from the last entry under the **TP LIST** printout on the label.

30   Type in **P TSPS**, followed by a carriage return.

Note: Compare this report with the one made prior to the backup. Each location should have incremented. If not, refer to the ATRS Trouble Locating Procedures, Section 190-401-322, to locate the trouble.

31   Type in **P SL**, followed by a carriage return. Compare this report with the one made prior to the backup. Each switchboard location should have incremented. If not, refer to the ATRS Trouble Locating Procedures, Section 190-401-322, to locate the trouble.

Note: When making the last backup tape for the day, type in **d**, followed by a carriage return. This will show the correct date and time at the end of that day's printout.

32e   If the console is not to be left in the SUPER USER mode, type in **SU**, followed by a carriage return.

H. System Start-Up After Vendor Maintenance

2.11   This procedure describes the method for bringing the system back up after the vendor has taken the system down for maintenance purposes. The procedure for system start-up is as follows:

STEP	PROCEDURE

1   Prior to allowing the preventive or maintenance personnel to take the system down, make a backup tape in accordance with Steps 1 through 32e, Procedure G.

STEP	PROCEDURE

2   At the DECwriter, type **W**, followed by the message:

> **ATRS will be down in order for the vendor to perform preventive maintenance tests. A summary report will be sent prior to taking the system down. This report will be combined with the 1600 report. If there are any questions, call the ATRS location.**

3   Notify the Network Service Centers and NOTIS that the system will be down, and that a summary report will be printed prior to the vendor taking over the system.

4a   If the DECwriter is not in the SUPER USER mode, type in **SU**, and enter the password when the system prints **PSWD=**.

5   When the vendor arrives, type in **t**, followed by the time the summary report is to be printed before the vendor takes the system down (eg, 10/01/09/00).

Note: Wait approximately 5 minutes to allow the system to dump the summary report.

6   Turn the system over to the vendor.

7   When the vendor finishes, mount the backup tape made in Step 1 on the tape drive unit numbered 0, feed the tape over the head, and wind exactly four turns of tape onto the take-up reel.

8   Operate the ENABLE/HALT switch to HALT.

9   Set the processor console switches (starting left to right) to 773000 (111 111 011 000 000 000), with 1 being up and 0 being down.

10   Operate the LOAD ADRS switch.

Note: The address lamps corresponding to the raised switches in the switch register should be lighted. If the wrong lamps are lighted, depress the START switch and proceed from Step 10. If the wrong lamps are still lighted, check the position of the OFF/POWER/LOCK switch. If it was not set to POWER, proceed from Step 1; otherwise, the processor may be malfunctioning. If only one or two of the lamps are extinguished, the bulbs could be burned out. Have computer maintenance personnel check the bulbs after the procedure is completed.

11   At the tape drive unit, operate the WRITE/ENABLE switch to WRITE, the REMOTE/LOCAL switch to REMOTE, the thumbwheel to 0.

12   Operate the ENABLE/HALT switch to ENABLE.

13   Momentarily depress the START switch. The tape should spin and the character "=" should be printed at the console.

14   Type in **ATRSW**, followed by a carriage return.

15   Prompt character > should be printed.

STEP	PROCEDURE
16	Type in **SU**, followed by a carriage return.
17	**PSWD**= is printed.
18	Type in the password.
19	Type in **t**, followed by the date and time the next summary report is due (eg, 10/01/16/00).
20	Type in **d**, followed by the current date and time (eg, 10/01/12/00).
21	Type in **TF RESTSW**. This enters the switchboard definitions from tape. When the switchboards are entered, the system will print **ENTERED**.
22	Type in **TP REST**. The system will print— **NORMAL RESTORE? (Y or N)**
23	Type in **Y**. The system will print **WHICH USERS?**.
24	Type in **1—$**. The system is now up and running.
25	Type in **P SC**. A summary report should follow, indicating that reports are being received.
26	Advise all network service centers and NOTIS that the system is back up and running.
27a	If SUPER USER privileges are to be removed from the console, type in **SU**.

3. CRASH PROCEDURES

3.01 This part describes procedures for restoring the operation of the ATRS computer after a malfunction has occurred that caused a system crash.

3.02 The output from all of the terminals prior to the system malfunction should be saved. This information can be used to determine which sequence of events caused the malfunction. If the problem is in the program, the information can also be useful in finding and correcting the trouble.

A. Crash Worksheet Was Generated

3.03 The following procedure describes the method of system restoral when a crash worksheet was generated.

STEP	PROCEDURE
1	At processor console, operate the OFF/POWER/LOCK switch to POWER.
2	Operate the ENABLE/HALT switch to HALT.
3	Set the processor console switches (starting left to right) to 773012 (111 111 011 000 001 010), with 1 being up and 0 being down.

STEP	PROCEDURE

4   Depress the LOAD ADRS switch.

Note: The address lamps corresponding to the raised switches in the switch register should be lighted. If the wrong lamps are lighted, depress the START switch and proceed from Step 2. If the wrong lamps are still lighted, check the position of the OFF/POWER/LOCK switch. If it was not set to POWER, proceed from Step 1; otherwise, the processor may be malfunctioning. If only one or two of the lamps are extinguished, the bulbs could be burned out. Have computer maintenance personnel check the bulbs after the procedure is completed.

5   Operate the ENABLE/HALT switch to ENABLE.

6   Mount a spare formatted tape on the left sprocket of either tape drive, feed the tape over the head, and wind exactly four turns onto the take-up reel.

7   On the tape drive that has the formatted tape, operate the WRITE/ENABLE switch to ENABLE.

8   Operate the REMOTE/LOCAL switch to REMOTE, and the thumbwheel to 0.

9   On the processor console, momentarily depress the START switch. The dump tape should spin.

10   When the tape stops spinning, remove the tape and write CRASH TAPE and the date on the label.

11   To restore the system, at the processor console, operate the ENABLE/HALT switch to HALT.

12   Set the processor console switches (starting left to right) to 773000 (111 111 011 000 000 000), with 1 being up and 0 being down.

13   Depress the LOAD ADRS switch.

Note: The address lamps corresponding to the raised switches in the switch register should be lighted. If the wrong lamps are lighted, depress the START switch and proceed from Step 13. If the wrong lamps are still lighted, check the position of the OFF/POWER/LOCK switch. If it was not set to POWER, proceed from Step 11; otherwise, the processor may be malfunctioning. If only one or two of the lamps are extinguished, the bulbs could be burned out. Have computer maintenance personnel check the bulbs after the procedure is completed.

14   Mount the latest backup tape containing the warm ATRS program (ATRSW), the switchboard definitions (SWBD), and the masks (BKPM), on the left spindle of either tape drive.

15   Feed the tape over the head, and wind exactly four turns of tape onto the take-up reel.

16   On the tape drive that has the tape, operate the WRITE/ENABLE switch to WRITE/LOCK.

STEP	PROCEDURE
17	Operate the REMOTE/LOCAL switch to REMOTE, and the thumbwheel to 0.
18	On the processor console, operate the ENABLE/HALT switch to ENABLE.
19	Momentarily depress the START switch.
20	At the system console, the '=' character is printed.
21	Type in **ATRSW**, followed by a carriage return.
	Note: The ATRS warm program will be loaded into core memory and started automatically. A message will be printed indicating this, followed by the configuration information. The prompt character > will follow the configuration information.
22a	If this procedure fails, proceed from Step 11. If it fails a second time, load the ATRS generic tape using Steps 1 through 10 in Procedure E of this section, then continue at Step 11.
23b	If the console is not in the SUPER USER mode, type in **SU**. The system will print **PSWD=**.
24b	Type in the password.
25	Type in **t**, followed by the time the next summary report should be printed out (eg, 05/26/16/00).
26	**May 26 16:00** is printed.
27	Type in **d**, followed by the current time of day (eg, 05/26/09/32).
28	**MAY 26 09:32** is printed.
29	Type in **TP RESTSW**.
	Note: If this fails, use the tape labeled SWBD and proceed from Step 14.
30	**ENTERED** is printed when the switchboards are entered.
31	Type in **TP REST**. The user masks are entered.
32	**NORMAL RESTORE?** (**Y or N**) is printed.
33	Type in **Y**.
	Note: The warm ATRS program (ATRSW) must be entered from the backup tape first, followed by the switchboards (SWBD) and the user masks (BKPM).
34	**WHICH USERS?** is printed.

STEP	PROCEDURE
35	Type in 1—$. The system should now be up and running.
36	Type in **P SC**. A summary report will follow indicating that TSPS reports are being received.

Note: After the system is restored, notify NOTIS and the NSCs when the last backup tape was made. All data that was entered after the last backup will have to be reentered.

B. Crash Worksheet Was Not Generated

3.04 The following procedure describes the method of system restoral when a crash worksheet was not generated.

STEP	PROCEDURE
1	At processor console, operate the OFF/POWER/LOCK switch to POWER.
2	Operate the ENABLE/HALT switch to HALT.
3	Set the processor console switches (starting left to right) to 777707 (111 111 111 111 000 111) with 1 being up and 0 being down.
4	Depress the LOAD ADRS switch.

Note: The address lamps corresponding to the raised switches in the switch register should be lighted. If the wrong lamps are lighted, depress the START switch and proceed from Step 4. If the wrong lamps are still lighted, the processor is malfunctioning. Proceed from Step 10 after the computer is repaired.

5	Depress the EXAM switch.

Note: Record the numbers displayed on the data lamps (the lower row of lamps on the processor).

6	Set the processor console switches (starting left to right) to 000610 (000 000 000 110 001 000) with 1 being up and 0 being down.
7	Depress the LOAD ADRS switch.

Note: The address lamps corresponding to the raised switches in the switch register should be lighted. If the wrong lamps are lighted, depress the START switch and proceed from Step 7. If the wrong lamps are still lighted, the processor is malfunctioning. Proceed from Step 10 after the computer is repaired.

STEP	PROCEDURE
8	Operate the ENABLE/HALT switch to ENABLE.
9	Momentarily depress the START switch.
	Note: The computer should print a crash worksheet. Write the contents of memory location 777707, found in Step 5, and the current time of day on the crash worksheet.
10	Repeat Steps 1 through 36 in Procedure A.

TABLE A

TC11 DECtape CONTROLS AND INDICATORS

CONTROL OR INDICATOR	FUNCTION
REMOTE/OFF/LOCAL Switch REMOTE Position	 Disables the FWD/HOLD/REV switch and places the transport under computer control (on-line).
LOCAL Position	Enables the FWD/HOLD/REV switch and removes the transport from computer control (off-line).
OFF Position	Removes power from the reel motors and removes the transport from computer control.
FWD/HOLD/REV Switch (spring-loaded to HOLD) FWD Position	 Moves the tape from left to right across the read/write head (provided REMOTE/OFF/LOCAL is in LOCAL).
HOLD Position	The tape remains stationary (provided REMOTE/OFF/LOCAL is in LOCAL).
REV Position	Moves the tape from right to left across the read/write head (provided REMOTE/OFF/LOCAL is in LOCAL).
ADDRESS SELECT Switch (thumbwheel switch)	Configures the transport logic to respond to the address indicated on the thumbwheel.
WRITE ENABLE/WRITE LOCK Switch WRITE ENABLE Position	 Lights the WRITE indicator and allows a write operation.
WRITE LOCK Position	Turns off the WRITE indicator and prevents a write operation.
WRITE Indicator	Lighted when the WRITE ENABLE/WRITE LOCK switch is in the WRITE ENABLE position. Extinguished when the WRITE ENABLE/WRITE LOCK switch is in the WRITE LOCK position.
REMOTE SELECT Indicator	Lighted when the transport is in the remote (on-line) mode and is selected by the controller. Extinguished when the transport is in the off or local (off-line) mode or is not selected by the controller.

TABLE B

LA36 DECWRITER II CONTROLS

| CONTROL	FUNCTION
POWER ON/OFF ON Position OFF Position	Allows normal unit operation. Removes power. The POWER switch should be in the OFF position when changing ribbon, changing paper, or adjusting the print head.
LINE/LOCAL LINE Position LOCAL Position	Enables the LA36 to transmit and receive. The LA36 receive/transmit lines are disabled. Only local operation can be performed when in the LOCAL position.
BAUD RATE 110, 150, 300 110 Position 150 Position 300 Position	Selects the rate at which characters are transmitted and received over the communications line. 10 characters per second. 15 characters per second. 30 characters per second.
Numeric Keypad	The numeric keypad enables numbers to be entered in an adding machine fashion. Each key in the numeric keypad generates the same ASCII character as the corresponding key in the main keyboard.
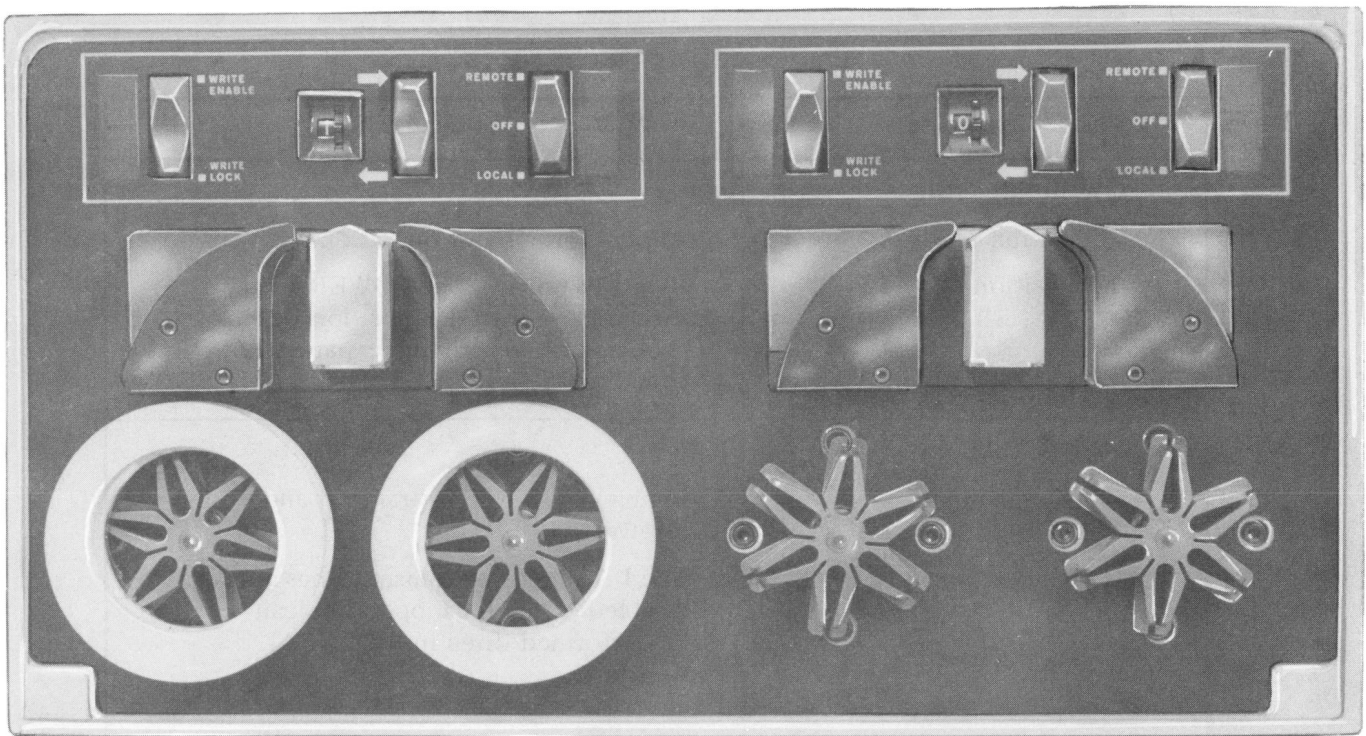
Fig. 1—TC11 DECtape Unit

Fig. 2—LA36 DECwriter II
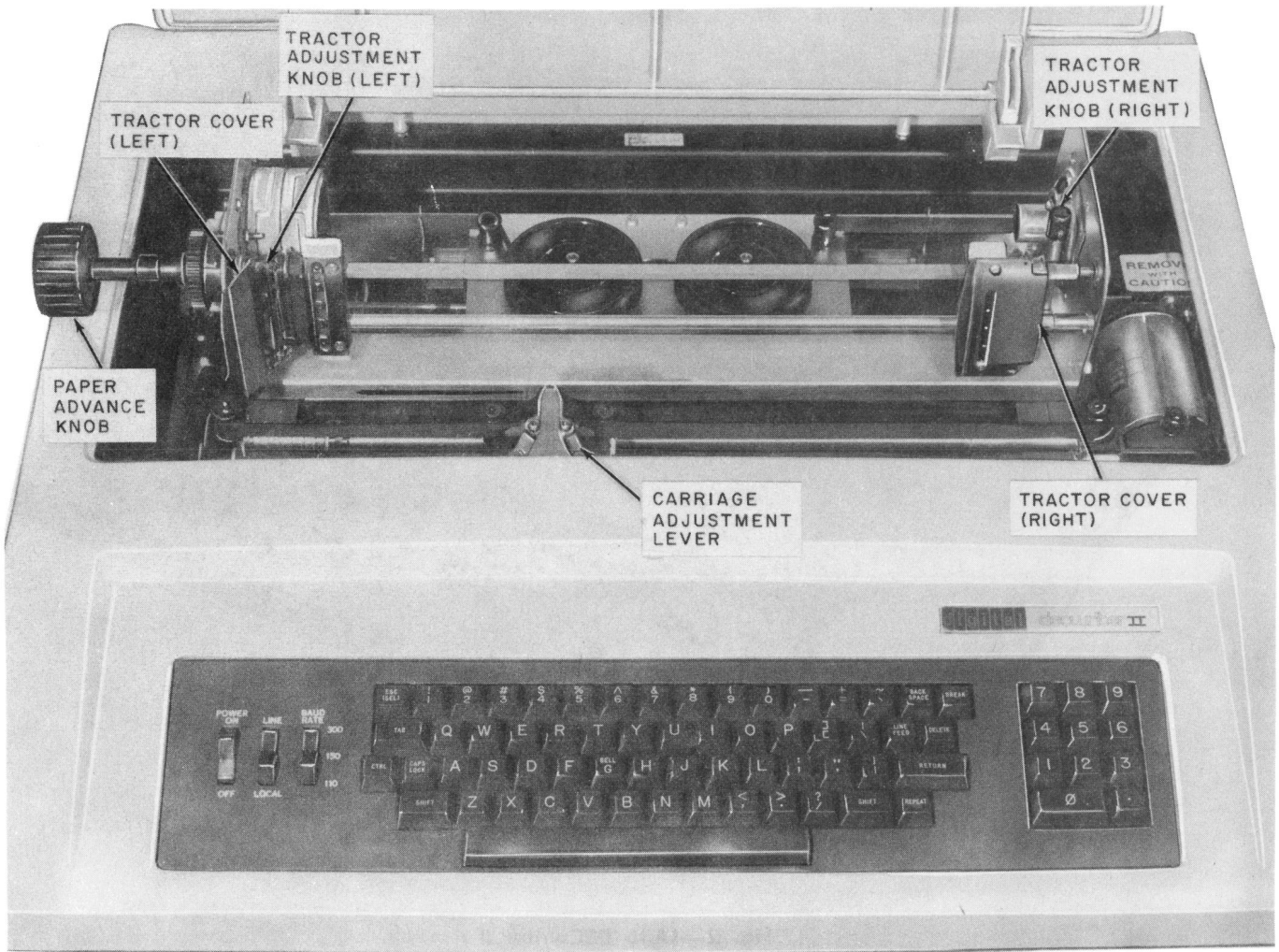
Fig. 3—LA36 DECwriter II
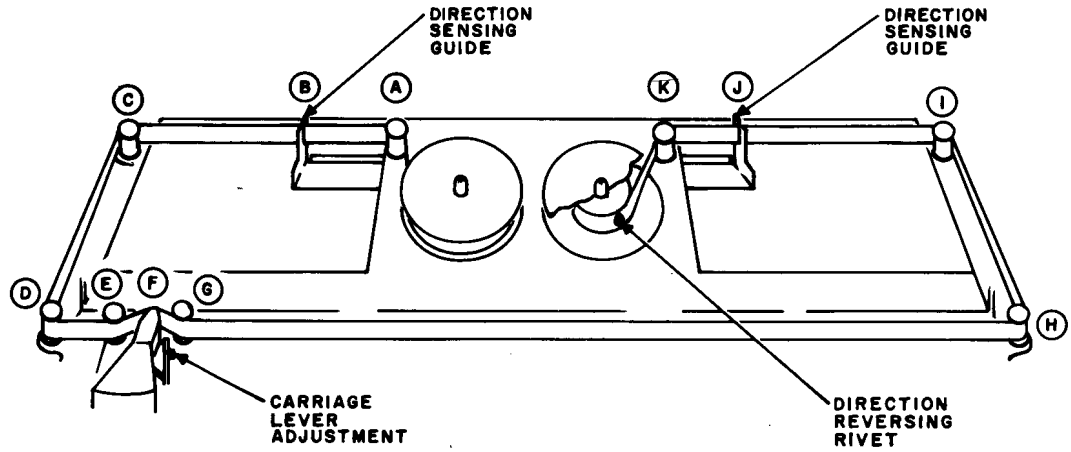
Fig. 4—LA36 DECwriter II Ribbon Threading Diagram