KS-19125, L3, RECORDER
MAGNETIC TAPE HANDLING AND THREADING

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1. GENERAL

1.01 This section covers the handling of automatic message accounting (AMA) magnetic recording tape and describes the method of threading tape over the tape path of the KS-19125, L3, recorder (tape transport).

1.02 This section is reissued to add a note to subparagraph 4.01(c) and update to standard format. Revision arrows are used to emphasize the more significant changes. The Equipment Test List is not affected.

1.03 The AMA teletypewriter (TTY) messages and explanations are listed in the input and output message manuals. References are made to system input and output messages, the details of which can be found in these manuals.

2. TAPE REELS

2.01 The KS-19125, L3, recorder (Fig. 1), used in 9-track recording systems, is furnished with reel hold-down knobs which are designed to accommodate 10-1/2 inch diameter tape reels having United States of America Standards Institute (USASI) type hubs.

3. TAPE CHANGE PROCEDURE

A. Conditions of Tape Change

3.01 ***End-of-Tape (EOT) Condition Detected by the System:*** Sensing of the EOT of 9-track tape on the L3 recorder requires the use of tape with USASI compatible photoreflective markers. L3 recorders or L2 recorders, which are modified for 9-track operation, cannot sense EOT transparent windows.

(a) ***No. 1 Electronic Switching System (ESS):*** The EOT condition signals system circuitry that the end of the tape is near. If a data block is being written, system programming permits continued recording until the data block is completed and then orders that the appropriate labels and EOT mark be recorded on the completed tape. This condition causes the system maintenance TTY to print out the appropriate AMA EOT and AMA change-tape messages and also causes the OS (out-of-service) lamp to be lighted at the AMA frame control panel. The AMA recording is automatically switched to the standby recorder which then becomes the active recorder. The EOT condition remains at the first recorder until manual controls are activated to facilitate tape change.

(b) ***No. 1 Traffic Service Position System (TSPS):*** When the EOT marker is detected,

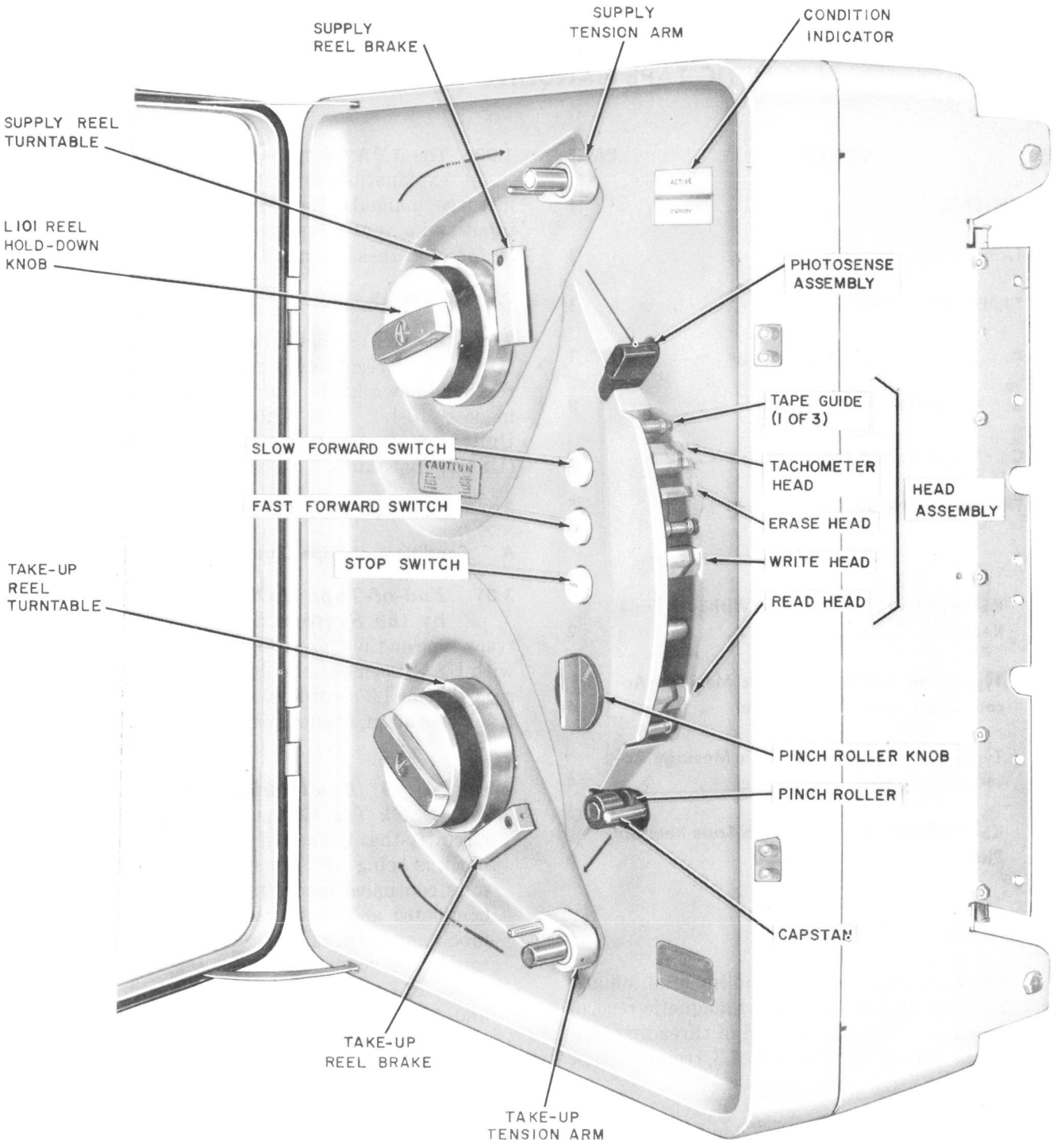

Fig. 1—KS-19125, L3, Recorder (Without Tape Reels)

the system causes the recording which is in process to be aborted and to be automatically switched to the standby recorder. The entire block of information which was interrupted by EOT sensing is recorded on the standby recorder which now becomes the active recorder. The EOT report causes the appropriate AMA out-of-service message to be printed at the TTY. This message is followed by a diagnostic test which indicates the EOT condition. The tape attendant shall request that the EOT mark be written on the completed tape by typing in the AMA EOT message. The output message OK followed by the appropriate AMA out-of-service message will be received; this verifies that the EOT mark has been written on the tape. The system places the tape unit in quarantine and lights the OS lamp at the control panel.

3.02 ***Completion of Recording Period:*** When the system recognizes the completion of a daily recording period, it makes an appropriate entry on the magnetic tape and switches to the standby tape transport. No TTY printout or alarms are received at the master control center. Recording periods may vary in accordance with local office requirements, in which case one reel of tape may contain more than one day's AMA data. The programming of the system causes appropriate start and end information to be recorded on the tape to identify each day's recorded data.

3.03 ***Broken Tape: Caution: Due to possible service interruption, do not splice a broken tape. Forward both sections of the tape to the processing center with the notification form and adhesive labels placed on the outside of the containers to identify each section of tape.*** A broken tape causes the supply and/or take-up tension arms to actuate switches that cause the system to transfer the AMA recording to the other tape transport. The AMA broken tape message is printed out on the maintenance TTY.

B. Tape Removal Sequence

3.04 ***Caution: The desired AMA unit should be on standby; otherwise, the tape mark will be written on the wrong AMA tape. Before performing tape removal, a replacement tape must be available. Also to avoid mutilation or erasing of recorded data, the area of the tape containing recorded data should not be allowed to pass over the recording head again. Under no circumstances should a tape be remounted until after it has been processed by the accounting center.*** Perform tape removal procedure in the following sequence:

(1) Request that the EOT mark be written on the completed tape by typing in the appropriate AMA EOT message on the TTY.

(2) Verify that the appropriate change tape message is received in response to (1). This output message confirms that the EOT mark has been successfully recorded on the indicated AMA tape and that the unit has been placed in the quarantine out-of-service state.

(3) ***Caution: Verify that the appropriate OS lamp (0 or 1) is lighted, indicating that the transport (0 or 1) has been placed in quarantine and released for manual control.*** At the AMA frame control panel (Fig. 2 and 3), depress appropriate MAN C_ key for AMA unit 0 or 1. When this locking key is operated, it takes the tape transport out of service.

(4) At the AMA tape recorder panel (Fig. 1), depress FAST FORWARD switch to wind remaining supply reel tape on take-up reel. Depress STOP switch just before completion of winding. This operation is necessary to prevent the end of the tape from whipping if it runs off the reel.

(5) Turn the pinch roller knob to LOAD. This operation retracts the pinch roller from the tape drive capstan. Carefully grasping the outer edge of reel flange or the hold-down knob (reel locking bar), manually rotate the take-up reel clockwise until the remaining supply reel tape has been wound on the take-up reel.

(6) Carefully hold the take-up reel by the outer edge of the outer flange or reel hub so it cannot rotate; then manually rotate the reel hold-down knob approximately a full turn counterclockwise to loosen reel on turntable and remove the reel from tape transport.

(7) If new tapes are furnished with a tape-end retainer (block of sponge-like rubber), it is recommended that this retainer be reused in the reel of completed tape to prevent loss of tape tension on the reel during shipment to the data processing center.

(8) Place the reel in a clean, dust-free reel container.

(9) Complete the entries on Form E-5233 as described in Section 034-311-301.

(10) A self-adhesive label or the equivalent shall be attached to the reel container to provide the following information:

- Central office
- Transport number
- Tape date(s)
- Tape of tape(s).

(11) Place the reel or reels and the completed Form E-5233 in the shipping container provided for this purpose. Fill out a shipping address label, attach it to the shipping container, and forward the tape to the data processing center in accordance with local company procedures and practices.

C. Tape Reload Sequence

3.05 Clean the read-write assembly in accordance with the instructions in Section 034-360-701.

3.06 Observe the tape damage prevention measures described in Section 034-311-301.

3.07 ***Perform Tape Reload Procedure For Recorders Equipped With Automatic Beginning of Tape (BOT) Positioning Features:*** To reload the tape, proceed as follows:

(1) Turn pinch roller knob on the transport panel (Fig. 1) to LOAD position.

(2) Remove the empty supply reel (upper reel) as described in subparagraph 3.04(6).

(3) ***Caution: Avoid pulling or pushing on the reel flanges when mounting reel on tape transport; apply force to the reel hub only.*** Transfer the empty reel to the take-up reel turntable with the groove facing inward, making certain that the reel hold-down knob is in the unlocked position that permits the reel to be freely positioned over the hold-down assembly. Push the reel firmly against the turntable surface and turn the reel hold-down knob clockwise until firmly secured. Make certain the reel is securely mounted on the hold-down assembly and is flush against the turntable. Check the motion of the reel on the take-up turntable for wobble, warpage, and proper positioning by manually rotating the reel clockwise several times.

(4) Carefully remove the new reel of tape from its container. ***Caution: Some reels come equipped with a write-enable ring. This removable ring is not required for AMA recording and shall be removed from hub of***

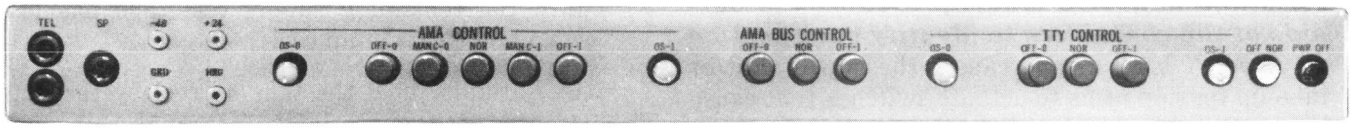

Fig. 2—Typical No. 1 ESS Automatic Message Accounting Frame Control Panel

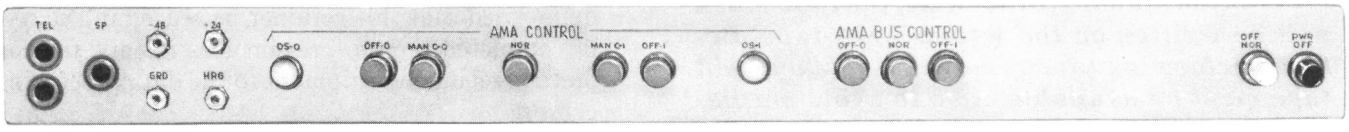

Fig. 3—Typical No. 1 TSPS Automatic Message Accounting Frame Control Panel

the reel before mounting reel on transport. Check the condition of the reel for warpage, poor alignment, or other visible damage or contamination. If there is evidence of these conditions, do not use the reel of tape.

(5) ***Caution: To avoid mounting a reel of tape backward, make certain that the tape feed will be to the right and from the top of the reel and that the write-enable ring groove faces inward. (See Fig. 4 for threading guidelines stenciled on the panel of transport.)*** Place the new reel of tape on the supply reel turntable with the groove facing inward, making certain that the reel hold-down knob is in the unlocked position that permits the reel to be freely positioned. Push the reel firmly against the turntable surface and turn the reel hold-down knob clockwise until firmly secured. Check the motion of the reel on the supply turntable for wobble, warpage, and proper positioning by manually rotating the reel clockwise several times.

(6) ***Tape Threading:*** Pull out a sufficient amount of tape to reach a short distance beyond the take-up reel. Thread the tape along the guidelines marked on the panel and tension arms. Loop the tape around supply tape tension arm guides as indicated by the arrows. Thread the tape through the slot in the photosense assembly (EOT sensor), over the guides and the heads of head assembly, between the pinch roller and the tape drive capstan, and around the guides on the take-up tension arm as indicated by the arrows. Then overlap approximately four layers of tape on hub of the take-up reel by turning the reel clockwise manually. This operation should lock the tape to the take-up reel hub. Next, remove the excess slack in the tape loops by manually turning the supply reel counterclockwise and the take-up reel clockwise.

(7) Turn the pinch roller knob to RUN position.

(8) Depress the SLOW FORWARD switch, causing the tape to advance at slow speed. Observe whether the tape is advancing properly, passing smoothly over the tension arm guides, and riding in the guides of the head assembly. Check the tape winding on the take-up reel. If the tape edge touches either reel flange, check the seating of the reel on the turntable. If the reel seating is proper and the reel is not damaged, but the tape still touches the reel flanges, adjust turntable height as described in Section 034-360-701. Check the supply and take-up tension arms to ensure that they move freely and maintain tension on the tape.

(9) Depress the STOP switch on completion of (8) unless the motor has stopped automatically because the photoreflective BOT marker has passed under the sensor.

(10) Depress NOR key on the AMA control panel (Fig. 2 and 3).

Note: When the NOR key is depressed, this either initiates an automatic search for and positioning of the BOT mark or simply a positioning of the mark.

3.08 ***Reload Tape Recorder Not Equipped With Automatic BOT Positioning Feature:*** To reload the tape, proceed as follows:

(1) Perform paragraph 3.07 steps (1) through (8).

(2) Depress the STOP switch on completion of subparagraph 3.07(8) so the BOT photoreflective marker is positioned at the capstan.

(3) Depress the NOR key on the AMA control panel (Fig. 2 and 3).

3.09 Upon recognizing that the NOR key has been depressed to indicate that the tape transport is ready for service, the system performs a diagnosis of the transport.

3.10 The result of the test is reported on the maintenance TTY.

Note: In case of failure of the diagnostic test, follow the maintenance procedures as specified in the sections associated with the system employing the AMA recorder (No. 1 ESS, No. 1 TSPS, etc).

3.11 The system, upon recognizing an all-tests-passed (ATP) printout for the diagnostic test, places the transport in the standby state and lights the STANDBY indicator on the panel of the transport.

4. TROUBLE CONDITIONS

4.01 Trouble conditions which cause the system to transfer to the standby transport result in

Fig. 4—KS-19125, L3, Recorder (With Tape Reels in Place)

part of a day's AMA data being recorded on one reel of tape and part being recorded on the reel of the standby transport; therefore, the processing center must be alerted as to the details relating to the tapes and the trouble. (See description of Form E-5233 in Section 034-311-301.)

(a) ***AMA Fuse Blown:*** When the AMA fault recognition program has detected a blown fuse, all dc and ac power is removed from the circuit. Such a condition initiates a major alarm and causes the system to transfer AMA recording to the standby tape transport. An output TTY message is also printed out, indicating the blown fuse condition. Retire the major alarm and replace the blown fuse as soon as possible.

(b) ***One AMA Unit Out of Service:*** When the AMA fault recognition program detects a fault in the active AMA unit, the system automatically removes the unit from service. Such a condition initiates a major alarm and causes the system

to transfer the AMA recording to the standby tape transport. The failure is reported by an output TTY message. Retire the major alarm. The system automatically diagnoses the faulty unit, printing out the results of the test on the maintenance TTY. Employing the test results, follow maintenance procedures shown in the appropriate section to restore the unit to service.

(c) ***Both AMA Units Out of Service:*** If the AMA fault recognition program detects a fault in the active AMA unit and removes it from service while the other AMA unit is also out of service, a major alarm occurs and an output message is printed out on the maintenance TTY. Retire the major alarm. A diagnostic test result follows the output message. Using the results of the diagnostic test, follow the maintenance procedure to restore the unit to service as soon as possible. When both AMA units are out of service and the attendant believes one of the recorders is capable of accurate recording (for example, diagnostic failure in a maintenance circuit), type on the maintenance TTY the appropriate AMA restore message which will cause the system to place the selected AMA unit in the active state and will light the ACTIVE indicator on the panel of the recorder.

◗***Note:*** If a new tape is loaded when both AMA units are out of service, manually advance the beginning of the tape marker beyond the heads before going normal.◖