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SUITE 906
1177 WEST HASTINGS ST

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General

0719 Card Reader
Subsystem

Operator Reference

This Library Memo announces the release and availability of Updating Package A to "SPERRY UNIVAC 0719 Card Reader Subsystem Operator Reference", UP-8617.

This update changes the disclaimer to include the required FCC interim warning on device radiation.

Copies of Updating Package A are now available for requisitioning. Either the updating package only or the complete manual with the updating package may be requisitioned by your local Sperry Univac representative. To receive only the updating package, order UP-8617-A. To receive the complete manual, order UP-8617.

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SPERRY UNIVAC

0719 Card Reader Subsystem

Operator Reference

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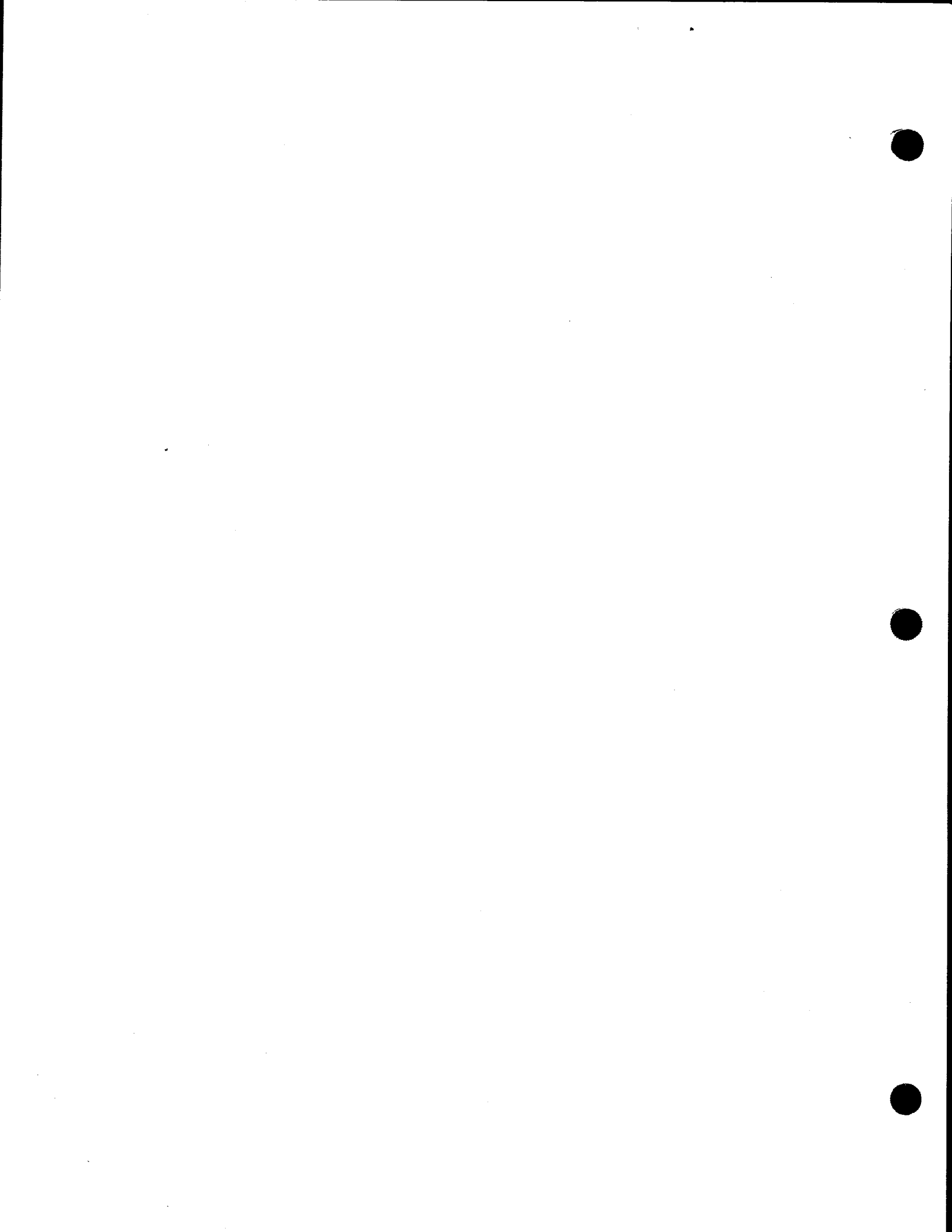


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1. Introduction

This manual contains the information and procedures required to operate the SPERRY UNIVAC 0719 Card Reader Subsystem (Figure 1—1).

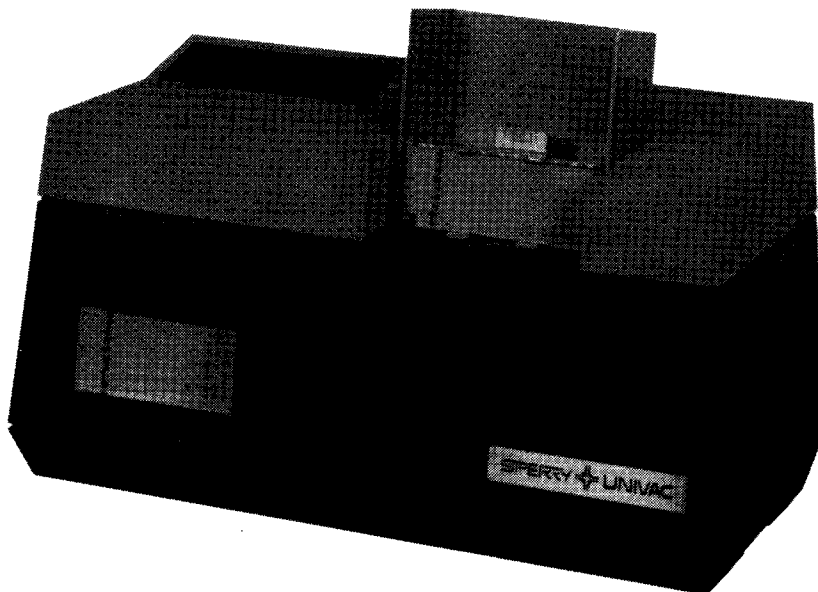


Figure 1—1. SPERRY UNIVAC 0719 Card Reader Subsystem



2. Subsystem Description

2.1. GENERAL

The 0719 Card Reader Subsystem is a self-contained table-top device that provides online input to the processor. The card reader has the capability of reading 300 or 600 standard 80-column cards per minute. It contains one hopper and one stacker, each having a 1000-card capacity. Control of the feed mechanism is on a demand basis from the processor. Reading is column by column in serial form. Each feed command received from the processor causes a single card to be fed into the transport path to be read and then stacked.

Card movement is from right to left. The hopper is located on the right and the stacker is on the left.

Figure 2—1 shows the card reader transport path with the major components:

- Hopper
- Transport mechanism
- Read station
- Sensor
- Stacker
- Top cover

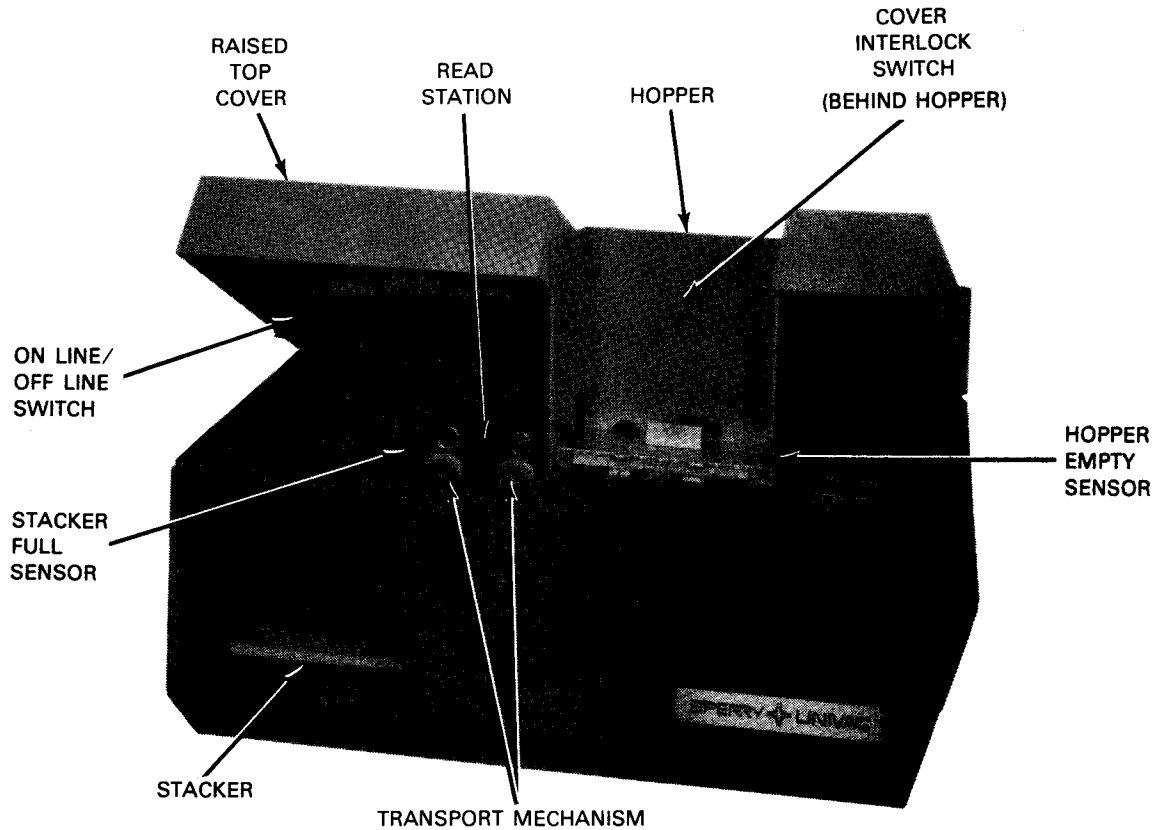


Figure 2-1. Card Reader Transport Path

2.1.1. Hopper

The hopper has a capacity of 1000 standard thickness (0.0070 ± 0.0004 inch; 0.168—0.188 millimeter) punched cards. Its convenient location makes it easy to use. Cards are placed in the vertical hopper with the face-side down (row 9 facing rear of hopper). The hopper contains a sensor to signal when it is empty.

2.1.2. Transport Mechanism

Control of the card read mechanism is on a demand basis from the processor. The card is initially moved rearward by a pair of picker knives into the ready station. Combination pinch-and-scrub rollers moves the card from right to left onto the transport rolls, and a combination of feed and pressure rollers move the card through the read station and into the stacker.

2.1.3. Read Station

The read station is located between two sets of transport rollers; one set is located adjacent to the hopper, and the second set is located adjacent to the stacker. The read station contains one column of light sensors that are activated when light from the light-emitting diodes (LED) passes through the holes appearing in each column of the card. A read-sprocket signal provides electrical signals to accurately locate the columnar position of the card within the read station. Data validation is accomplished by multistrobing the holes in each column and performing a light and dark check when each card is read. The upper half of the read station is hinged to facilitate the removal of any jammed cards.

2.1.4. Sensors

The hopper and stacker each contain a sensing device. These sensors detect when the hopper is empty or when the stacker has reached card capacity. Either condition lights the HOPPER indicator, which is located on the operator control panel, and automatically shuts down the card reader. When the hopper empties, the card reader continues operating (motors continue to run) for about 10 seconds awaiting the next card. If no cards are forthcoming, the card reader shuts down.

2.1.5. Stacker

The stacker has a capacity of 1000 standard thickness punched cards. The cards are fed into the stacker with the face-side down (row 9 to the rear of the hopper). The cards exit onto a spring-loaded platform that moves down with the weight of the cards until 1000 cards have accumulated; when this condition is reached, a sensor shuts down the card reader.

2.1.6. Top Cover

The card reader has a top cover that can be raised by lifting it at a point to the immediate left of the hopper.

The top cover is held up by a support arm. This arm must be released by pressing up on the underside of the arm joint prior to closing the cover.

CAUTION

Do not force the top cover closed. When closing, release the locking support arm at the left side of the card reader.

When the top cover is raised during operation, card feeding stops.



3. Controls and Indicators

3.1. OPERATOR CONTROL PANEL

The 0719 card reader contains an operator control panel located at the top left corner of the unit. The electronic logic required to control the ON-OFF, RUN, and STOP switch/indicators, and the LED status indicators, is supplied by the card reader.

3.1.1. Operator Control Panel Controls and Indicators

The operator control panel controls and indicators are shown in Figure 3—1; Table 3—1 lists their functions.

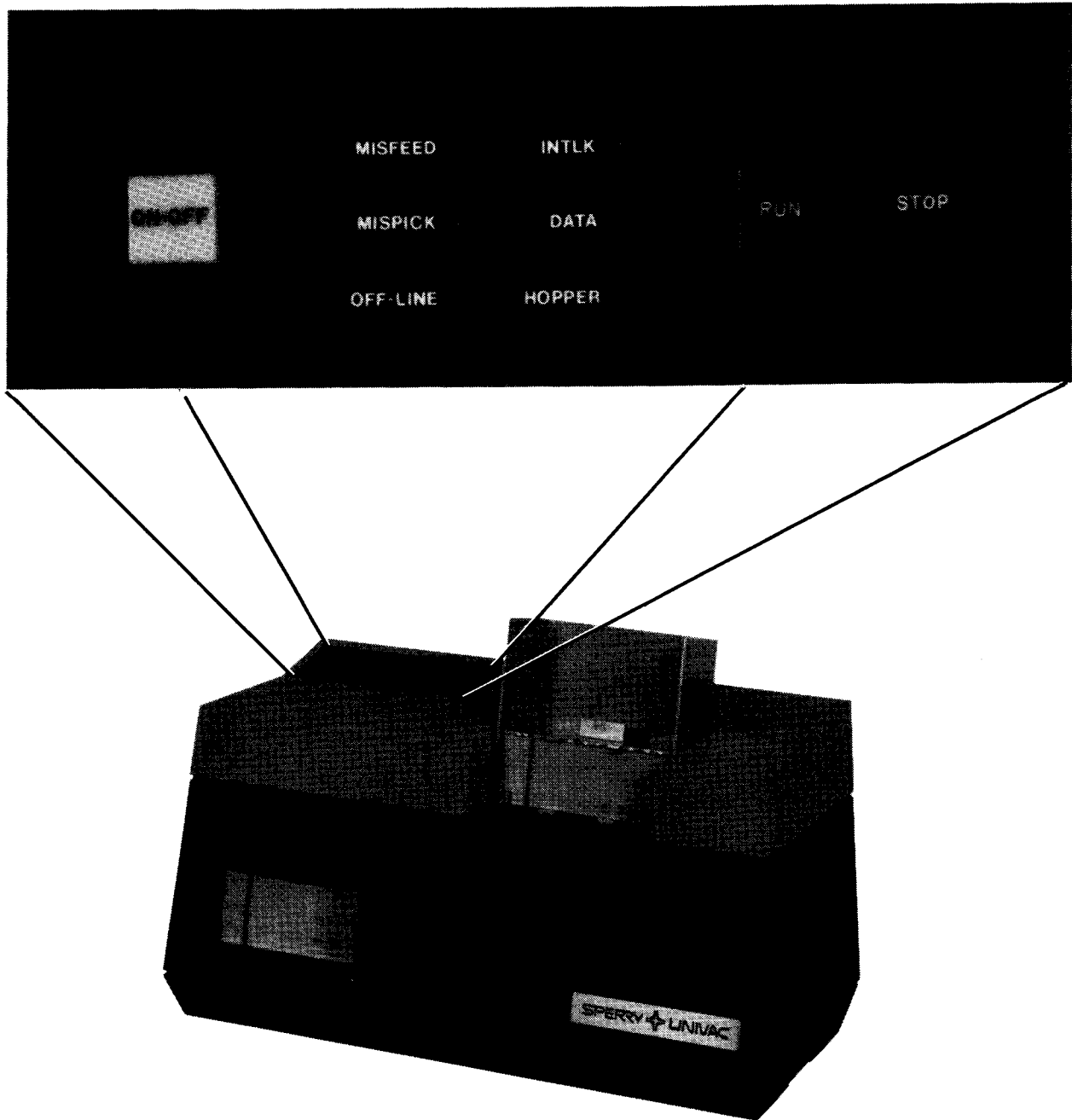


Figure 3-1. Operator Control Panel

Table 3-1. Operator Control Panel, Controls and Indicators

Control/Indicator	Function
ON-OFF switch/indicator	Applies power to card reader and causes ON-OFF indicator to light.
RUN switch/indicator	When pressed, places card reader in operation and causes RUN indicator to light, if card reader is ready.
STOP switch/indicator	When pressed, causes card reader to stop and STOP indicator to light. An error condition sensed during run time also causes card reader to stop and STOP indicator to light.
MISFEED indicator (LED)	Indicates that a card in the ready station did not arrive at the read station in the allotted time period.
MISPICK indicator (LED)	Indicates that a card in hopper did not cover the ready-station photocell in the allotted time period after a feed command is issued.
OFF-LINE indicator (LED)	Indicates ON LINE/OFF LINE toggle switch, located to the left of stacker under top cover, is in OFF LINE position.
INTLK indicator (LED)	Indicates top cover is open or that the casework is not properly fastened.
DATA indicator (LED)	Indicates data being read from a card caused a failure, such as a light/dark check, or an error detected during a redundant read check.
HOPPER indicator (LED)	Lights if the hopper is empty or the stacker is full.

3.1.2. ON LINE/OFF LINE Switch

The ON LINE/OFF LINE switch is located under the top cover, to the left of the stacker. Its position determines whether the card reader is online or offline to the processor.

3.1.3. Interlock Switch

An interlock plunger-type switch, which is located under the top cover behind the hopper, is provided to prevent operation of the card reader when the top cover is in a raised position.

The interlock switch operates as follows:

- In (engaged) position

When closed, top cover engages this switch which holds the INTLK indicator off and permits normal operation of card reader.

- Center (normal) position

Top cover, when opened, releases the switch to this position, thereby causing the INTLK and STOP indicators to light, and the card reader to shut off.

3.1.4. Power Circuit Breaker Switch

A power circuit breaker switch is located at the rear lower portion of the card reader (Figure 3—2). This switch protects the power circuits of the card reader and can be used as a master power turn-off switch.

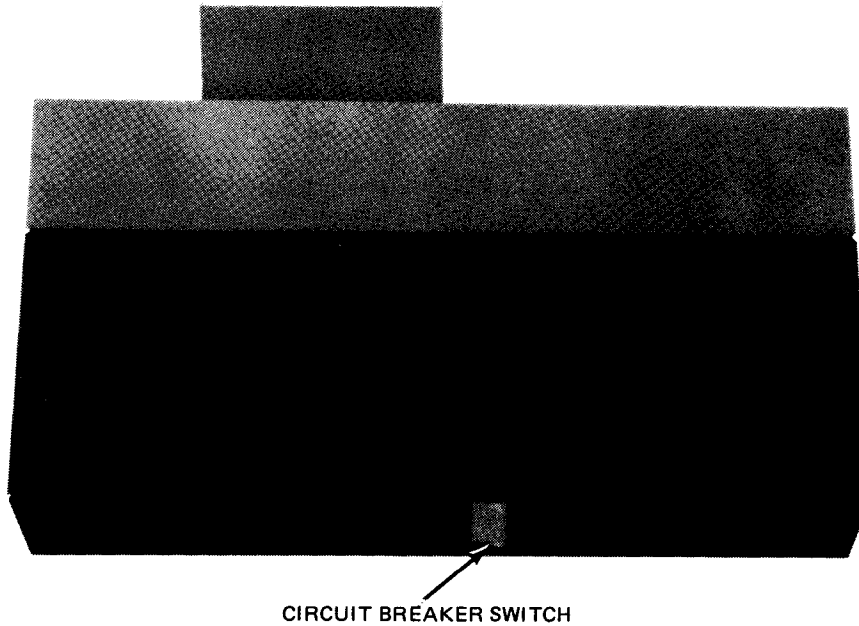


Figure 3—2. Power Circuit Breaker Switch (Rear View)

4. Operation

4.1. GENERAL

The following functions are performed by the operator for the operation of the card reader:

- Turn on
- Turn off
- Load cards
- Unload cards
- Recover operation after a stop condition occurs

4.2. TURN-ON PROCEDURES

The card reader can only be turned on locally. To turn power on to the card reader, proceed as follows:

1. Ensure that the power plug is connected to the correct power source and that the power circuit breaker is set to the ON position.
2. Ensure that the control cable is connected to the controller via the processor cabinet.
3. Check that the top cover is down and that the casework is properly positioned and fastened.
4. Set the ON-OFF switch to the ON position by pressing then releasing switch. Observe that the ON-OFF and STOP indicators are lit.

4.3. TURN-OFF PROCEDURES

The card reader can only be turned off locally. To turn power off from the card reader, proceed as follows:

1. Set the ON-OFF switch to the OFF position by pressing and then releasing the switch. Observe that the ON-OFF and STOP indicators extinguish.
2. If the card reader is to be moved to another location, remove the power plug from the power source receptacle, then remove the control cable plug from the controller.

4.4. CARD LOADING

Cards are loaded into the hopper, read while passing through the read station, and stacked in the stacker. Cards may be loaded into the hopper either while the card reader is operating (feeding) or stopped. The procedure to load cards to be read into the hopper is as follows:

1. Remove the card weight from the hopper.
2. Select a handful of cards. Fan and jog the cards for evenness and also to permit easier loading and feeding.
3. Place the cards into the hopper, face-side down (row 9 to rear of hopper).
4. Place the card weight on top of the cards in the hopper.
5. Repeat the card loading procedure until all cards to be read are placed in the hopper or until the hopper is full. It is necessary to place the card weight on top of the last card that is loaded into the hopper.

4.5. CARD UNLOADING

Cards may be removed from the card reader anytime during operation or when stopped. To remove cards from either the stacker or the hopper, proceed as follows:

- Stacker
- Hold spring-loaded card platform down, grasp cards, and lift them out from the stacker.
- Hopper
 1. Remove the card weight from the top of the cards in the hopper.
 2. Remove the cards by lifting them up and out of the hopper.
 3. Replace the card weight into the hopper.

4.6. OPERATION

After card reader is properly turned on and cards are loaded into the hopper, proceed as follows:

1. Ensure that the OFF LINE switch (under top cover to left of stacker) is set to the ON LINE position. (OFF-LINE and INTLK indicators should both be off.)
2. Press the RUN switch. Observe that the RUN indicator is lit. Card reader is now ready to start reading either by command from the processor, or by pressing the RUN switch.

4.7. RECOVERY PROCEDURES

Abnormal conditions that may occur in the card reader are indicated by the status indicators provided on the operator control panel. When an abnormal condition is encountered, or upon lifting the top cover of the card reader, the card reader stops operation.

Table 4—1 lists the fault diagnosis indications, and Table 4—2 lists the remedial action required to clear each probable fault.

Table 4-1. Fault Diagnosis Indications

RUN	STOP	MISFEED	MISPICK	OFF-LINE	INTLK	DATA	HOPPER	Probable Fault
●	○	○	○	○	○	○	○	Operational and waiting
○	●	●	○	○	○	○	○	Jammed card in transport mechanism
○	●	○	●	○	○	○	○	Card transferred from hopper delayed or card jammed in hopper.
○	●	○	○	●	○	○	○	ON LINE/OFF LINE switch in OFF LINE position
○	●	○	○	○	●	○	○	Top cover raised or casework not fastened properly.
○	●	○	○	○	○	●	○	Light check and/or dark check error
●	○	○	○	○	○	●	○	Double strobe error
○	●	○	○	○	○	○	●	Hopper empty or stacker full

Table 4-2. Operator Remedial Action (Part 1 of 2)

Indication	Probable Fault	Remedial Action
MISFEED and STOP indicators lit, preceding card continues through transport mechanism, then reader stops feeding cards.	Card jammed in transport mechanism	<ol style="list-style-type: none"> 1. Raise top cover; INTLK indicator lights. 2. Set ON LINE/OFF LINE switch to OFF LINE; OFF-LINE indicator lights. 3. Remove jammed card from transport mechanism. Raising hinged read station and gently turning transport rollers by hand may be required to completely free jammed card. 4. Examine removed card and bottom (first) card in hopper for damage and possible cause for jam. 5. Restore proper order to cards in hopper. 6. Set ON LINE/OFF LINE switch to ON LINE; OFF-LINE indicator extinguishes. 7. Close top cover; INTLK indicator extinguishes. 8. Press RUN switch. RUN indicator lights, MISFEED and STOP indicators extinguish.
MISPICK and STOP indicators lit, card feeding stopped.	Card not picked from bottom of hopper	<ol style="list-style-type: none"> 1. Raise top cover; INTLK indicator lights. 2. Set ON LINE/OFF LINE switch to OFF LINE; OFF-LINE indicator lights. 3. Remove remaining cards from hopper. Examine bottom card for possible damage. Replace cards carefully into hopper, at same time restoring proper order to cards. 4. Set ON LINE/OFF LINE switch to ON LINE; OFF-LINE indicator extinguishes. 5. Close top cover; INTLK indicator extinguishes. 6. Press RUN switch. RUN indicator lights, MISPICK and STOP indicators extinguish.

Table 4-2. Operator Remedial Action (Part 2 of 2)

Indication	Probable Fault	Remedial Action
STOP and INTLK indicators lit, card feeding stopped.	Top cover not closed properly	<ol style="list-style-type: none">1. Open top cover and then close. If indicator remains lit, examine casework for proper fastening; check interlock switch and ensure switch plunger is in center position.2. Close top cover; INTLK indicator should extinguish.3. Press RUN switch. RUN indicator lights, STOP indicator extinguishes.
DATA and RUN indicators lit.	Failed double strobe test	Card reader automatically records status of this condition to processor and continues reading cards to completion.
DATA and STOP indicators lit, card feeding stopped.	Light check/dark check error	<ol style="list-style-type: none">1. Remove top card in stacker and mark card for future programmer reference.2. Press RUN switch. RUN indicator lights, DATA and STOP indicators extinguish.
HOPPER and STOP indicators lit, card feeding stopped.	Either hopper empty, or stacker full	<p>If hopper is empty, card reading is complete.</p> <p>If stacker is full and there are cards remaining in hopper, proceed as follows:</p> <ol style="list-style-type: none">1. Remove cards from stacker as specified in 4.5.2. Press RUN switch; HOPPER and STOP indicators extinguish. Card reader continues operation under control from processor.
No indicators lit; no reaction to pressing any switch at the operator control panel.	Power loss	<p>Check for the following conditions:</p> <ol style="list-style-type: none">1. proper connection to power source;2. ensure power source is turned on; and3. that power circuit breakers at rear of card reader are on. If power circuit breakers are off, reset and attempt turn-on procedure. If power circuit breaker trips again, call Sperry Univac customer engineer.

5. Operator-Performed Maintenance

5.1. GENERAL

The operator-performed maintenance on the card reader is as follows:

- Removal of jammed cards
- Cleaning and inspecting card transport mechanism
- Replacing indicator lamps

5.2. CLEARING CARD JAM

A card jammed in the transport mechanism causes the card reader to stop, and the STOP and MISFEED indicators to light.

Clear card jam as follows:

1. Raise top cover; INTLK indicator lights.
2. Set ON LINE/OFF LINE switch to OFF LINE; OFF-LINE indicator lights.
3. Remove card from transport mechanism by raising hinged read station and gently turning transport rollers to free jammed card.
4. To resume operation, inspect all removed cards for damage (replace if not reusable) and reorder the cards in the hopper.
5. Set ON LINE/OFF LINE switch to ON LINE; OFF-LINE indicator extinguishes.
6. Close top cover; INTLK indicator extinguishes.
7. Press RUN switch. RUN indicator lights, MISFEED and STOP indicators extinguish. Card reader resumes operation under control of the processor.

5.3. CLEANING

The card reader must be cleaned periodically. Failure to do so can result in faulty operation.

To clean card reader, proceed as follows:

1. Ensure that card reader is in STOP position.
2. Remove all cards from both hopper and stacker.
3. Raise card reader top cover.
4. Remove all paper, dust, and debris from the transport mechanism, hopper, and stacker using a soft brush and vacuum cleaner. Wipe hopper and stacker with clean dry cloth.
5. Inspect the picker knives and the pinch-and-scrub rollers for cleanliness.
6. Close top cover and turn on as specified in the turn-on procedures.

5.4. LAMP REPLACEMENT

Defective indicator lamps in the operator control panel are replaced by the operator. The ON-OFF, RUN, and STOP switch/indicators are the only indicators containing replaceable lamps. To replace a defective lamp in the switch/indicators, proceed as follows:

1. Grasp switch lens and pull forward to remove.
2. Using a piece of 1/8-inch or 4-mm rubber tubing, slide tubing over bulb, push down, turn counterclockwise, and remove bulb.
3. Place new lamp into tubing with lamp base protruding from tubing.
4. Place lamp base into lamp socket using tubing, press in and turn clockwise. Remove tubing from lamp.
5. Replace switch lens by pressing lens into place.

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