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STANDARD OPERATING INSTRUCTIONS FOR DEUCE

Report by

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SUMMARY

Operating a computer on a production run requires attention to a number of details to ensure successful operation. Many of these detailed procedures are common to all jobs, others are common to most.

This report gives a standard procedure for operating DEUCE on production work; variations may be needed by the particular ambient circumstances at different DEUCE installations, but it is hoped that the procedure set out will form an acceptable basis in most cases. In any particular case these standard instructions should be supplemented by written operating instructions for the job concerned. Between them, the general and specific operating instructions should specify the operation completely and should not require additional verbal explanation.

1. STANDARD COMPUTER STATE

Put the keys, lamps, etc, on the Control Panel, Punch and Reader in the standard state described below before using the computer.

Control Panel Keys

All keys level except Stop Key and Char Key.
Stop key raised (on NORMAL).
Char key raised.

Control Panel Lamps

32 OS lamps off.
32 ID lamps off.
Red lamp above Stop key off.
Lamp above Read key off.
Lamp above Punch key off.
No red lamps on in the upper right corner of the Control Panel (a red light here should be reported to the engineer).

Lamps on Reader

All lamps off.

Lamps on Punch

Ready lamp on.
All other lamps off.

Switches on Punch

Counters re-set to zero.
Parameter switches OFF or set to required pattern.

Cards in Punch

Cards removed from hopper.
Punch run out and cards removed from stacker.

Hopper refilled with salmon stripe cards.
Punch run in.

2. HOW TO ACHIEVE THIS

Symptom	Remedy
OS lamp(s) on	Press down "Clear OS" key on the right hand side of OS lamps.
ID lamp(s) on	Press down "Clear ID" key on the right hand side of ID lamps.
Red lamp on above Stop key	Press down Release key.
Lamp above Read key on	Raise Read key.
Lamp above Punch key on	Raise Punch key.
R.H.S. lamps on Reader - 1 on	Remove cards from hopper.
- 2, 3 on	Run out.
- 6 on	Remove cards from stacker.

Symptom		Remedy
L.H.S. lamps on Reader	- Not Ready lamp on	Put Control Panel keys in their standard positions.
	- Missed Card lamp on	Raise Run In key on Reader.
	- Any other on	All others should now be off.
Lamps on Punch	- Called lamp on	Raise Punch key on the Control Panel.
	- Ready lamp off	Put red cards in hopper if necessary and press run in key.

3. WHAT YOU NEED FOR A PARTICULAR JOB

For a particular job you need:-

a) Operating instructions for the particular job. These will be a list of two sorts of things -

i) what you must do, and
ii) what DEUCE will do

in the order in which they are expected to happen.

b) List of input cards.

c) Input cards, in trays (two sorts - program cards and data cards).

d) Trays for output cards. (with all necessary index cards prepared ready).

4. HOW TO MANAGE CARDS DURING A RUN

Reader

Place cards in the Reader hopper, face inwards and with the Y-row edge leading. Put in as many as you can comfortably hold in your hand. Read in the first handful of cards with the Initial Input key. When the Reader hopper is empty and lamps 1-5 are off, remove all the cards from the stacker, and refill the hopper. Read in these cards with the Run In key.

Punch

Place blank cards in the Punch hopper, face downwards and with the Y-row edge leading, and press the Run In key. When the Punch hopper is empty or almost empty, press the Stop key (the Ready lamp on the Punch will then be off). Remove cards from the stacker, refuel the hopper and press the Run In key.

Warning

Never place cards in or remove cards from either Reader or Punch without first checking that the appropriate Ready lamp is off. If it is not,

for Reader - raise Run In key on Reader
for Punch - press Stop key on Punch

Trays

Keep two trays on the console desk - one for input cards, and one for output cards. All cards must be either in a tray or in the Reader or Punch. Keep a marker in the input cards to show where you are.

5. MONITOR DISPLAY

Line up the monitor display if you have been given the necessary information. (See 8).

6. UNEXPECTED SITUATIONS

Symptoms	Remedy
a) Computer buzzes	Press down Alarum key, or if this does not work raise the Alarum key to suppress the noise. Also consult the list of failure indications. If this is a failure indication, do what the operating instructions say you should. If not EMERGENCY (see 7).
b) No buzz, but computer stops, (i.e. Go lamp is off)	Look for Other Symptoms.
Other Symptoms	
Reader called but not Ready - Missed Card lamp on	EMERGENCY (see 7).
Reader called but not Ready - Missed Card lamp off	Examine R.H.S. lamps on Reader.
Reader called but not Ready - R.H.S. lamps 1-3 on	Remove cards from stacker. Press Run In key.
Reader called but not Ready - R.H.S. lamps 1, 2 on; 3 off	Reader card jam.
Reader called but not Ready - R.H.S. lamps 1 on; 2, 3 off	Run In. If this is not successful, Reader Card jam.
Reader called but not Ready - R.H.S. lamps 1-3 off	Refuel hopper if there are any more input cards; if not, EMERGENCY (see 7).
Reader Card jam	Take cards out of hopper, and examine to see if the top cards are damaged. If they are, reproduce them. Now put the cards back carefully, and run in. If this is not successful, call for engineer's help.
Punch called but not Ready	Remove cards from stacker. Refill the Punch hopper if necessary, and run in. If this is not successful, Punch Card jam.
Punch Card jam	Take cards out of hopper, throw away any that are damaged, and replace them carefully. Run in. If this is not successful, call for engineer's help.
Both Reader and Punch called	EMERGENCY (see 7).
Neither called	Look through the list of operating instructions and the list of failure indications. If this does not help you, EMERGENCY (see 7).
c) No buzz and the computer going(i.e. the go lamp is on), but not doing what the operating instructions say it should.	Is this a failure indication? If not, EMERGENCY (see 7).

7. EMERGENCY

If the programmer is available, ask for his help. If he is not available do what he said you should in an EMERGENCY, if anything. Otherwise do this:

a) Clear Read and Punch by raising Read and Punch keys on the Control Panel.

b) Put the Stop key at STOP.

c) Write down the NIS, Source and Destination displayed on the IS lamps.

d) POST MORTEM (see 8).

8. THINGS THE OPERATING INSTRUCTIONS MIGHT TELL YOU TO DO

Stop the Computer

Put the Stop key at STOP.

One-shot or Single-shot

Press down the Single shot key and release it.

Release

Press down the Release key and release it.

Call Read Manually

Press down the Read key on the Control Panel and release it.

Call Punch Manually

Press down the Punch key on the Control Panel and release it.

Clear Read

Raise the Read key on the Control Panel and release it.

Clear Punch

Raise the Punch key on the Control Panel and release it.

Set N S-D(c) on the IS keys

NIS, Source and Destination keys - level = 0, down = 1.
Characteristic key - Up = 0, level = 1 and down = 2.

Obey N S-D(c) (or a sequence of such instructions) with External Trec and Cont TT (or with External Trec and one-shot)

a) Put the Stop key at STOP.

b) Put External Trec key down.

c) Set N S-D(c) on the IS keys.

d) Press down Cont TT key (or Single shot key) and release.

e) Raise the External Trec key.

Program Display

Put the Stop key at AUG STOP. Fill the Punch hopper with Program Display cards (i.e. instruction cards with a mauve edge).
Press down Program Display key and release it. Punching continues until:

a) The Punch is not Ready. To continue remove cards from stacker, refill hopper and Run In.

b) The Punch is not called and the red lamp above the Stop key is on. To continue release (the red lamp will go off) and then press Program Display key.

c) The Punch is not called, and the red lamp above the Stop key is not on. To continue raise and then press Program Display key.

Request Stop

To Request Stop on NIS = n, S = s, D = d (where one, two or three of n, s and d may be specified).

a) Stop key to Stop

b) Set the given n, s and/or d on the IS keys.

c) Press down corresponding Request Stop switches leaving the other(s) (if any) up.

d) Raise the External Tree key.

e) Stop key to normal.

f) The computer will Request Stop on the next instruction it reaches of the specified form.

g) Stop key to Stop.

Now proceed as instructed.

Restore Control to GIP 5

Put P32 on ID. Put Stop key at NORMAL. Read in "Re-enter GIP" (2L86) with the initial input key. When the computer stops, the next codeword is on the OS lamps, but has not yet been obeyed.

Post Mortem

Put Stop key at Stop
Set 0 30-0 (1) on the IS keys
Depress External Tree key
One-shot
Raise External Tree key
Put Stop key at NORMAL
Call Read manually.

Run in Post Mortem (either ZP29 if the program is not controlled by GIP, or ZP29 (GIP) if the program is controlled by GIP). Cards are then punched (between reading various bits of program). After punching a number up to 268 triads of cards the computer stops at 0-22 X.

Line up Monitor Display

The R.H.S. monitor display tube shows the 32 mcs, in order, of a DL selected by the rotary switch. The display is said to be lined up when mc 0 of the program is at the top of the screen.

To Line Up

a) If the operating instructions for the particular job give the contents of one minor cycle of a particular DL:

i) use rotary switch to bring this DL on to the R.H.S. display tube;
ii) identify the given mc;
iii) press MC SLIP button until this mc is in the correct position.

b) While the program is being stored on the drum, some people find it possible to line up in DL11:

i) use rotary switch to bring DL11 on to the R.H.S. display tube;
ii) press MC SLIP button until the longest interval between filling consecutive rows occurs between the bottom row and the top row.

A Buchanan.

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