Digital Computer Laboratory
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

To: Group 6345

From: Joseph W. Thompson

Date: 28 April 1955

SUBJECT: S&EC OPERATORS' CHECK LIST

A. WHILE IN THE TAPE ROOM

1. Process all performance requests.

a. Read them over carefully and make sure that they are filled out completely.

b. Make sure that all the instructions are understood; if not,

(1) Call the programmers involved.

(2) If they cannot be reached, use your own judgment in running the problem. Run it if computer time is available or hold up the run if computer time is not available.

c. Prepare any necessary fp tapes or dummy logging title tapes.

d. If any director tapes are needed, have the Tape Room combine the tapes needed for the run and also prepare the necessary director tapes.

2. Prepare the result sheets which will be needed for each performance request.

3. Make sure that all tapes needed to complete runs are in good condition. The tapes may need reproducing and comparing.

4. Make sure that the proper tapes have logging titles; if not, punch one in. Any tape which is not read in by the Group 11 Input Program should not have a logging title unless there are no 7th holes in the title.

5. Make sure that the starting end of each tape is on the outside of the roll.

6. Check the "to be filed" box and the tape files for tapes which can complete runs.

7. Check the "to be verified" box and the "to be typed" box for tapes which can complete runs once the tapes are ready.

8. If a programmer uses a tape which has a problem number other than his own, add a flexo "10" to the problem number in the flexo logging title and label the tape properly, providing this tape reads in before his own tapes. It is not necessary to reproduce a new tape.

Example: John Doe has problem #190, but requires tapes in this order:

E, fb 127-10-20-R1
fc 127-10-21 R1
fb 190-11-4 R1, Rs

The operator will add the necessary flexo "10" and thus use tapes in the following order:

E, fb 10127-10-20 R1
fc 10127-10-21 R1
fb 190-11-4 R1, Rs

The operator may also prepare a dummy logging title to read in first instead of adding a flexo "10" to the two tapes.

Example: E, fb 190-11- R1
fc 127-10-20 R1
fc 127-10-21 R1
fb 190-11-4 R1, Rs

A dummy logging title consists of:

fb problem # - programmer's # -
SP 1 - SP 0

If for any reason a programmer whose problem # is 127 needs tape fb 127-10-20, it is okay to use fb 10127-10-20, which is actually the same tape; however, if the programmer uses only tape fb 10127-10-20, you must make up a dummy logging title to read in first.

E, fb 127-10- R1
fb 10127-10-20 R1, Rs

Also, if a programmer uses a special tape with a problem number other than his own along with his own data tapes, you must prepare a dumming logging title tape, because the data tapes will have no logging titles.

E, fb 126-20- R1
fb 10172-20-30 R1 Special tape
126-21 -3Rs Data tape

9. See that the following items are ready for use in the computer room.

a. 3 line hand punch

b. several white pencils

c. several lead pencils

d. result sheets

e. dated tabs for recording chamber of camera

f. film record sheets

g. operator's manual

These must be ready in addition to the short, long, and production run books, and the WWI operation chart.

B. IN THE COMPUTER ROOM (15 minutes before operating)

1. Check the computer log book to see what was done.

2. If possible, the scope and camera should be partially checked.

a. Scope power and beam switches should be turned on.

b. Master display switch should be on.

c. Power cable should be connected.

d. Magazine should be installed if necessary.

e. Magazine should be checked for the amount of film.

f. The aperture should be at the proper setting. As of this writing it is 5.6.

g. The three-position switch should be on A.

h. Check recording chamber.

(1) Clock should be wound and correct time set.

(2) The proper dated tabs should be inserted in slot.

3. Flexowriters

a. See that there is a sufficient supply of two-part paper in all flexowriters.

b. The paper should be aligned properly and the feed roll release should be in a released position.

c. There should be a good supply of tape in all flexowriters and the tape should be inserted in the punches with the shiny side up.

d. Check the tabular settings in each machine. Tab settings must start with a margin of 14 and tabs every ten spaces apart to and including 164.

e. Check the chad boxes (chip boxes) and empty if necessary.

4. Magnetic Tape.

a. Turn on all magnetic tape units.

b. If possible:

(1) Rewind units #2, 3A, 3B to second limit stop.

(2) Rewind units #0, 1 to first limit stop.

c. Put all units on automatic.

d. Be sure that the transfer switch for unit #0 is in the proper position and locked; also check this when you leave the Computer Room.

5. Toggle Switch Storage

a. See that all toggle switches are in the "up" position wherever there is a red dot.

C. OPERATING THE COMPUTER

1. Initial set up (before operating programs)

a. Start each logging tape with sufficient feed out (~ 6 inches).

b. Punch in the date of the form; e.g., 4-5-55 only. Do not use 4/5/55.

(1) Make sure that the 7th hole key is depressed.

c. Set up the standard time in the left MIR and 76 in the right MIR, activate, read in once the clock on the wall reads the time you have set up. This resets the computer clock to zero and punches and prints the standard time set up in the left MIR.

(1) The hour, a number between 0 and 23, is put into digits 1 and 2 of the insertion panel (left MIR) as an octal number.

(2) The number of tens of minutes, a number between 0 and 5, is put into digit 3 of the insertion panel.

(3) The remaining number of minutes, a number between 0 and 9, is put into digits 4 and 5 of the insertion panel as an octal number.

(4) Placing a 1 in the sign digit of the insertion panel adds 0.5 minutes to the standard time; e.g.,

Session starts at	You insert
2029.0	0.24211
0017.0	0.00107
2359.5	1.27511
1537.5	1.17307

Throw the si 1 and si 11/12 switches on.

2. Write into the camera log book the amount of film in the magazine and the initial frame number to be used by our group.

3. Check the operations of terminal equipment.

a. Magnetic drum test
b. Magnetic tape test
} if necessary

c. Scope calibration

(1) Check all three scopes

d. PETR test

e. Test storage check

4. Pulling in program from magnetic tape #0

a. lm 5, rm 63, ri

(1) lm 5 means to insert 0.00005 in the left MIR.

(2) rm 63 means to insert 0.00063 in the right MIR.

(3) ri means to activate and read in.

(4) This pulls in the director tape and scope post-mortem programs onto the buffer drum if it isn't already there.

b. lm 2, rm 63, ri

(1) This pulls in CS II onto the buffer drum if it isn't already there.

c. lm 0, rm 63, ri

(1) This pulls in the generalized post-mortem program onto the buffer drum.

NOTE: Dial STOP after each test!

5. Operating programs

a. Runs are normally done in the following sequence:

(1) All resubmitted short runs

(2) All short runs

(3) All resubmitted long runs

(4) All long runs

(5) Production runs (run at least one for each programmer each day).

This sequence is broken only by special request, which must first be approved.

b. Dial stop after the completion of every run.

c. When there is lost time, punch in down. When the computer is again available punch in a tab followed immediately by the time lost in minutes only. All information about lost time must be on one line and the letters *l* and o should not follow the tab because they are considered to be 1's or zeros and will be included as part of the lost time. Terminate the line by a carriage return.

d. If an operatorw' mistake occurs such as failing to erase, reading in the wrong tape, failing to activate, etc., punch in a su followed by a carriage return. However, do not use the su if any useful information was obtained. Leave word as to how much time should be deducted.

e. Be sure to fill out the result sheets with the necessary information:

(1) Indicate how much was recorded on magnetic tape and on which unit it was recorded.

(2) If the drum was used, indicate Group and SAR.

(3) Check if the scope, or direct flexowriter were used.

(4) Indicate how and where the program stopped. (If it stops on an istop or stop, give contents of FF #2.

f. Check the delayed print-outs or punch-outs periodically to see if everything is okay.

g. Determine whether a program is operating properly or not.

h. Be prepared for any alarm.

i. Be able to detect any troubles which may interest the engineers or technicians present.

j. When the session is over, manually punch in two slashes followed by a carriage return.

k. Use lower case letters when punching anything manually on the logging tape. Be sure that the 7th hole key is depressed.

l. Never let anyone use the direct punch unless it is absolutely unavoidable. If it can't be avoided, feed out about one foot of tape before the direct punch is used.

D. AFTER OPERATING

1. Index the camera 10-12 times at the end of each session if the magazine is to be removed. Remove the magazine and fill out a film record slip.

a. If you work the early morning shift, take down the magazine (which should be delivered to the photo lab as soon as it opens). Replace this with another magazine.

b. If you work Sunday, remove the magazine before the computer power is turned off and replace it with another magazine. Leave the removed magazine in the Tape Room where it can be picked up Monday morning and delivered to the Photo Lab.

2. Fill in the last frame number used by our group in the camera log book (the initial frame was recorded before operating the computer).

3. Write up all comments of your session in the computer log book. Record the symptoms of any difficulties and not the diagnosis.

4. Fill out the computer percentage form carefully (read M-1671-1).

5. Change the computer schedule on the bulletin board in the Computer Room by indicating the hours you actually had the computer, if the difference in time involved was over 15 or 20 minutes.

6. Turn off magnetic tape units if they aren't going to be used.

7. Print out the logging tape to see if it is a good log and transcribe the times onto the result sheets. If necessary correct logging tapes

8. Separate results.

9. File tapes and the carbon copies of results. (If time is not available, leave this job for the operator on the next shift.)

E. GENERAL COMMENTS

1. Labeling of tapes will be done in the following manner:

a. 5-56 or fb (tape title) will be used for all converted tapes.

b. All flexo (fc) tapes can either be CS I or CS II (oct. or dec.).

c. Sub. for all subroutines.

d. Special "data" tapes may be labeled "standard".

2. At no time during a session should the operator on duty leave the computer room while a program is running.

3. The camera-scope magazine should be removed and another installed as soon as possible on week-days. Before the computer power is turned off on Sunday nights, the magazine should be removed and another installed.

4. DL-725-3 should be used to record all programs recorded for print-outs or punch-outs on the delayed units. These programs should be listed in the order of recording sequence. If the results were obtained from the delayed units, indicate this on the form. If the results were not obtained, attach the form to the magnetic tape reel and place the reel in one of the "save" slots in the magnetic tape box in the computer room. Leave word about this for the operator of the next shift.

5. Time cards should be punched when you actually start work and at the end of your regular work shift. The only exception to this practice should be on authorized, pre-arranged overtime. Unauthorized overtime should be kept at a minimum, since it is not possible at present to approve all unauthorized overtime.

6. All spare reels should be kept in the delayed printer cabinet. Groups 6345 and 61 have their own tin boxes for reels. We have three spare reels in our box. Their numbers can be 1-6 (3 on units 3A, 3B, 2; the other 3 are kept as spares). We should never touch any Group 61 reels unless given permission and they should never touch ours unless given permission.

7. When you have trouble with the delayed equipment, inform the technician on duty.

8. If you learn something which may be of interest to the other operators, write it up and put it in the Notes Book.

9. If there are any difficulties with the delayed punchouts or the printouts, save the reel on which the information was recorded.

10. If you have trouble with the delayed equipment printing wrong characters or punching when it should be printing, punch out the section which gave trouble by using the "reproduce no print" switch. This punch out will be good in most cases.

11. Label all result sheets with date, programmers' name, and tape numbers used.

a. If the programmer was present, indicate this.

b. If programmers take both carbon and original copies, leave word.

c. Please note on result sheet if programmer uses scope and indicate how and where the program stopped.

12. Fill out separate Computer Percentage Forms for the time up until 2400.

13. Check all 5-56 punch-out results; if there is no logging title on the tape, punch one in before sum-checking it (using the number the programmer specifies).

14. When typing in information for the logging tape, terminate each item by a carriage return. For example, the date, down time, su.

15. Be sure to use fb tapes and not fc tapes when programmers so request it.

16. Terminate all fp tapes with two slashes; never use a carriage return as a terminating character.

17. Write only the initial and last frame numbers in the camera log book for each session.

18. Whenever there is trouble of any kind concerning our utility programs, obtain lights, scope PM as you have in the past. In addition, give information on exactly what you were doing or did previous to the trouble. For instance, if you have troubles with post-mortems, be sure to leave information on the ranges, what you were using to get PM (MIR, FP tapes, etc.).

19. When changing or checking tabs in the Flexowriters, be sure not to lean on the tab or margin rack. This has caused considerable trouble in the past.

20. All S&EC programmers should submit requests to have any tape converted. However, we still have to convert Group 61 tapes which are still being put in conversion boxes. These conversions are not logged.