

Digital Computer Laboratory
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SUBJECT: DIRECTOR TAPES

To: Those Listed

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ABSTRACT: Director tapes are paper tapes obtained by typing S&EC performance requests on a flexowriter. Under certain restrictions it is possible to place the director tape in the mechanical reader and the tapes involved in the run in the PETR, and to execute the run by a single pushing of the read-in button.

General Description

A director tape for a particular run on the computer is a paper tape which is obtained by typing the performance request for the run on a flexowriter. Under certain restrictions, which will be described, it is possible to place the director tape in the mechanical tape reader and the tapes involved in the run (spliced together in the proper sequence) in the PETR, and to execute the complete run by pushing the read-in button.

A director tape program has been incorporated into the utility control program and operates from group 2 of the buffer drum. If a director tape is being used, then pushing the read-in button eventually sends computer control to this program which reads in words, one at a time, from the director tape and acts accordingly.

Restrictions on the Use of Director Tapes

1) Only standard abbreviations can be used on the performance request.

The vocabulary which the director tape program can comprehend has been limited to a set of standard abbreviations. These are described in DCL-23 and in this memorandum.

2) CSI flexo tapes cannot be used in a director tape run.

The addition of the director tape facility has required several changes in the CS2 conversion program. The corresponding changes have not been made in the CSI conversion program.

3) The performance request must be written as if normal run conditions held for the run.

The operating instructions as listed on the performance request must be complete (see DCL-23).

4) All programs in the run must be terminated by the instruction, STOP.

Programs in a director tape run must not terminate by stopping the computer. The STOP instructions, which is described in DCL-25, has been defined so that individual programs can be operated effectively with or without a director tape.

Post-Mortem Request Tapes

Post-mortem request tapes are treated somewhat differently in a director tape run. Ordinarily these are read in after an alarm occurs and operate immediately. However, in a director tape run a post-mortem request tape should be read in prior to the programs to which it applies. In this case the request is not immediately executed, but is instead stored on group 7 of the buffer drum. The programs in the run can then be read in and operated.

If an alarm occurs during a program the operator can execute the post-mortem request on the drum by pressing the examine selector panel button and then pressing the read-in button. If no alarm occurs the post-mortem request can be completely ignored.

For example, if fp100-0-0 is to be given only when tape fb100-0-0 stops in an alarm, then the programmer would write on the performance request

e, fp100-0-0, ri, fb100-0-0, ri, rs,

A post-mortem request which has been stored in this manner on the drum will remain undisturbed until another post-mortem request tape is read in.

Post-mortem requests which have been stored on the drum can also be executed by means of the following words in the director tape.

rm 33, ri, (1)

For example, if fp100-0-0 is to be run when tape fb100-0-0 gives an alarm, and if fp100-0-1 is to be run when tape fb100-0-0 does not give an alarm, then the programmer would write on the performance request.

e, fp100-0-0, ri, fb100-0-0, ri, rs, fp100-0-1, ri, rm 33, ri,

However if fp100-0-0 were to be run in either case the programmer would write

e,fp100-0-0, ri, fb100-0-0, ri, rs, rm 33, ri,

(1) rm 33 is a special case of the standard abbreviation, rm x, which is described in DCL-23.

The Director Word, isa x

isa x Start the program in MCM by interpreting the instruction in register x(octal).

The director word, isa x, is analagous to the standard abbreviation, sa x. It can, however, only be used on a performance request if a director tape is to be prepared.

The Director Word, eg x

eg x Record +0 in all registers of auxiliary drum group x(octal).

MCM is left undisturbed by the director word, eg x, unless x = 0.

The director word, eg x, can be used on a performance request only if a director tape is to be prepared.

The Director Words, bo x and bi x

bo x Record the contents of MCM on auxiliary drum group x(octal)

bi x Read the contents of auxiliary drum group x(octal) into MCM.

The director words, bo x and bi x, can be used on a performance request only if a director tape is to be prepared.

Tape Room Procedure

The programmer will indicate on his performance request whether or not a director tape is desired. If a director tape is required the tape room will type the performance request exactly as indicated (unless it contains obvious errors) and will splice together the tapes involved in the proper sequence.

The director tape vocabulary consists only of the standard abbreviations described here and in DCL-23. All director words must be terminated by commas.

The characters

space, color, tab, carriage return, stop, back space, shift up, shift down, nullify⁽¹⁾

are ignored.

(1) For the nullify character we have the following exception: not more than 5 initial nullifies can occur introducing a director tape.

The character pairs

1 and 1, 0 and o

are interchangeable.

Characters not ignorable or in the vocabulary are illegal and generally will stop the computer.

The tape room must also check each tape used in the run to see that the following conventions are observed.

1) All fc tapes end with a START AT block which is terminated by a single carriage return. (e.g., tape terminated by fences or two carriage returns will not work).

2) All fp tapes end with exactly two vertical bars (e.g., 3 vertical bars or 2 vertical bars and a carriage return will not work).

Operating Procedure

If a director tape is used for a particular run the computer operator should do the following:

- 1) Place the run tapes in the PETR.
- 2) Place the director tape in the mechanical reader.
- 3) Set the selector panel to 1.00000 and press the read-in button. Do not press the examine selector panel button.

The utility control program will then take its operating instructions from the director tape.

Words on the director tape will be read in one at a time by the director tape program and will be typed on the direct printer as they are read in. The operator can thus keep track of the progress of the run.

The computer should not be stopped at any intermediate point of a director tape run. If this occurs both the lights and the direct printer record should be saved for the programmer.

If trouble develops during the read in of a paper tape the usual SA 40 procedure can be applied.

Post-mortem request tapes are read in prior to the programs to which they apply. If an alarm occurs the operator can execute the post-mortem request by pushing the examine selector panel button and then pushing the read in button (the contents of the selector panel must remain 1.00000). Before doing this, however, the operator should check the direct printer record to see that a post-mortem request tape has actually been read in by the programmer.

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