



INTEROFFICE MEMORANDUM

M-1103

DATE May 24, 1961

SUBJECT ANALYZER ¹

TO PDP Distribution List

FROM Adams Associates, Inc.

AREA: 0000-1200

START: 0000

RESTART: None

PURPOSE:

This debugging aid provides a program listing including memory location, mnemonic operation code, octal contents of the location and a listing of all instructions which refer to this memory location and the memory locations of these instructions. An example of the listing produced is shown below:

```
0100    LAC  20 0107  0105 JMP,  
0101    ADD  40 0110  0103 IDX,  
0102    DAC  24 0107  
0103    IDX  44 0101  
0104    SZA  64 0100  
0105    JMP  60 0100  
0106    JMP  62 0327  
0107           00 0000  0100 LAC, 0102 DAC,  
0110           00 0121  0110 ADD,
```

Approximately 1750 references can be accommodated by the program. As no references occur for shift, operate, skip, and in-out instructions a program of 3000 instructions can probably be handled.

USE:

Start the program at 0000. Place the program tape to be analyzed in the reader and depress the continue button. At the end of the program tape the computer will halt at location 0200. If another section of the same program is also to be analyzed turn sense switch 2 on and depress continue after putting the tape in the reader.

At the conclusion of the last section turn off sense switch 2 and put the program tape back into the reader so it may be read

a second time. Depressing the continue button will commence Part Two of the program which produces the actual listing. Again sense switch 2 is used to inform the computer when the last program section has been processed. In order to list references (for which no memory location is present on the input tape it is necessary to depress the continue button once when sense switch 2 is turned off. The next halt is the Analyzer program final halt.

SPECIAL NOTES:

The input tapes to the Analyzer program must be in read-in mode. If the program to be analyzed uses the Punch Load Package it will be necessary to read the program into memory and punch it out in read-in mode. This may be accomplished by using PRIM (Punch Read-In Mode), or some other similar routine.

Occasional difficulty has been experienced with the current paper tape reader, where a single RPB instruction results in the reading of more than three lines of tape. Since the Analyzer determines the end of tape from the lack of DIO instruction this error will result in the computer halting at 0200 erroneously. To remedy this situation it is necessary to back the tape up (a minimum of 3 lines) until a 32 appears under the read head. Turn on sense switch 2, if it is off, and depress continue.

SENSE SWITCHES:

- 1 on Output will be punched for
 the PDP off line Flexowriter
- off output will be printed on
 the on-line typewriter.

- 2 on More program section follow
- off End at program tape.

HALTS:

- 0001 beginning of routine depress continue

- 0042 too many references. to continue reset
 reader with program
 tape in beginning
 position and depress
 continue.

- 0200 end of program tape set sense switch 2
 as desired and depress
 continue.

0332 final halt.

1. Acknowledgment

The Analyzer was supplied to DEC by Charles W. Adams Associates, Inc., Bedford, Massachusetts