

M E M O R Y P R I N T R O U T I N E
S D U M P

1.0 C O N T E N T S

	<u>Page</u>
1.0 CONTENTS	
2.0 GENERAL	1
3.0 USE OF SDUMP	2
3.1 MANUAL ENTRANCE TO SDUMP	2
3.2 PROGRAMMED ENTRANCE TO SDUMP	2
3.3 ERROR RECOVERY	2
3.4 ALPHANUMERIC PRINTING	2
4.0 REASSEMBLY OPTIONS	3
4.1 OPTIONS NOT AFFECTING THE SIZE OF THE ROUTINE	3
4.1.1 Location of Print Area	3
4.1.2 Location of Instruction Area for SDUMP	3
4.1.3 Upper Limit of Area to be Printed by SDUMP	3
4.1.4 Lower Limit of Area to be Printed by SDUMP	3
4.2 SPACE REDUCTION	3

This document is preliminary in nature and is intended as a vehicle for meeting immediate needs with regard to system familiarization and orientation. UNIVAC® Division of Sperry Rand Corporation reserves the right to change and/or modify such information contained herein as may be required by subsequent system developments.

2.0 GENERAL

SDUMP is a routine to print the contents of memory in octal. It operates in a minimum amount of space, and at the same time restores everything it uses except the print area. Since it is assumed that this area is being used by the worker program to contain a print image, the contents of the area are printed before the routine begins printing the rest of memory. Each line of the printout contains at the left the 5 digit octal address of the lowest order memory location printed on that line, followed by the octal representation of 32 memory locations in 8 groups of 4 locations each. Each group of 4 locations is represented by 8 octal digits.

SDUMP will be provided in two forms. One form $\boxed{S484}$ is an object code deck for users with 4K storage. It uses 0600-01003 as a print area and the SDUMP routine itself occupies locations 3714-4095 (07202-07777).

The second form $\boxed{SD84}$ in which SDUMP will be provided is source code for users with 8K storage. Various options will be available in assembling the routine, as described in Section 4.0 below. Since these options are exercised by altering the source code, it is recommended that a master copy of the source code be maintained at each installation. This can be reproduced to provide a working copy for anyone who desires to produce a modified routine. Any such routine should be clearly labeled to indicate the deviations from the standard.

3.0 USE OF SDUMP

3.1 MANUAL ENTRANCE TO SDUMP

To enter SDUMP manually, execute a transfer of control to 07202, the start of the program area for SDUMP. This is the location defined by the label XDP. The routine will print the contents of memory and stop on a JHJ instruction. At this time pushing the START button causes memory to be printed again. If it is desired to continue running the program, manually execute a transfer of control to the desired point in that program.

3.2 PROGRAMMED ENTRANCE TO SDUMP

To enter SDUMP automatically in the program, one writes the instruction

JR | 07253

If SDUMP is assembled with the program with which it is to be used, the instruction can be written

JR | XDX

If not, the operand portion of this instruction must contain the actual value assigned to XDX in the assembly of the version of SDUMP being used.

3.3 ERROR RECOVERY

If an abnormal condition occurs in the printer, the program will stall in a loop. To continue with the dump, correct the condition in the printer. (See the 1004 Operator's Manual.)

3.4 ALPHANUMERIC PRINTING

Depression of Sense Switch 1 prior to entering SDUMP will cause it to print in alphanumeric rather than octal format.

4.0 REASSEMBLY OPTIONS

4.1 OPTIONS NOT AFFECTING THE SIZE OF THE ROUTINE

SDUMP is distributed in the form of source code ready for assembly, to produce a routine occupying the upper portion of the available storage, with the print area occupying the last 132 characters. This source code includes instructions to suppress the printing of any line that is a duplicate of the preceding line. In case one or more lines are suppressed, one line containing 4 asterisks will be printed to mark the suppression. The size of the program produced is 533 locations. The total space required including the print area is 665 locations. Without altering these figures the following changes can be made.

4.1.1 Location of Print Area

The standard definition is found on card 00105 and reads,

XDA	EQU	8060
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4.1.2 Location of Instruction Area for SDUMP

The standard definition is found on card 00110 and reads,

XDP	EQU	XDA-533
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These two definitions place the print area at the end of available storage for an 8K storage and the instruction area adjacent to the print area.

4.1.3 Upper Limit of Area to be Printed by SDUMP

The definition is found on card 00120. The standard definition is

XDH	EQU	XDA+131
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4.1.4 Lower Limit of Area to be Printed by SDUMP

This definition is found on card 00125. The standard definition is

XDL	EQU	0
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4.2 SPACE REDUCTION

The program for the memory print can occupy fewer locations if some of the tetrads and the interrupt entry for the printer can be destroyed at the time SDUMP operates. The following table summarizes the various limitations that can be imposed, the space reduction that results, and the cards to remove from the source deck to achieve each such reduction. All the cards connected with a single feature have the same key in columns 60-64.

Restriction	Positions Saved	IDENT in 60-64	Cards to Remove
No line suppression	151	*-**-*	00145-00155, 00190, 00195, 00204, 00284, 00288, 00400-00490, 00564, 00576
AR2: not printed properly	5	*1	00377
AR2: destroyed (requires the preceding change)	31	*1	00160, 00175, 00377, 00580
Some extraneous characters appear at right of listing	5	*2	00260
No alphanumeric dumping	10	*3	00500, 00504
1004 Base Address and Print Advance character will be destroyed	20	*4	00232, 00234, 00256, 00258
1004 interrupt entry is destroyed	15	*5	00216, 002565, 00257
Tetrad 19 is destroyed	10	*6	00212, 00280
TOTAL	242		
Maximum size of SDUMP	533		
Minimum size of SDUMP	291		