

RECOMP II USERS' PROGRAM NO. 1001

PROGRAM TITLE: AFIT 016 MEMORY DUMP

PROGRAM CLASSIFICATION: Service Routine

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PURPOSE: To punch or type in command form with locations, or to punch in alphanumeric form the contents of N consecutive memory locations, beginning at IA (initial address) and ending at FA (final address). $1 \leq N \leq 4080$.

There is also provision for outputting a block of consecutive words in "standard form" for use with the RELOCATOR; (see Program Description AFI 015).

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TITLE: AFI 016 MEMORY DUMP

TYPE: Utility Routine

LOCATIONS USED: 6000-6207
6210-6227 for storage of L & V loops
0001-0003 optional use

PURPOSE: To punch or type in command form with locations, or to punch in alphanumeric form the contents of N -consecutive memory locations, beginning at IA (initial address) and ending at FA (final address). $1 \leq N \leq 4080$.

There is also provision for outputting a block of consecutive words in "standard form" for use with the RELOCATOR; (see Program Description AFI 015).

USE: I NORMAL OUTPUT SWITCH D UP

1. At the first word of the MEMORY DUMP routine, enter the command word

+00 IA.0 + 00 FA.0

2. Set sense switches B and C for desired mode of output:

(1) C DOWN: Alphanumeric Punch preceded by a location counter setting to IA.0.

(2) C UP: Command Form Output with Locations

a) B down: Type in command form with each command word preceded by its location.

b) B up: Punch same as (a) above. The commands with locations may then be printed by off-line equipment.

3. PRESS START button.

The area of memory being output will be displayed as

+ 00 IA.0 + 00 FA.0.

The contents of memory locations IA through FA, inclusive, will be output. When finished, the computer

will halt at the first word of the MEMORY DUMP routine. Another IA, FA may then be entered.

4. When punching a "normal" tape it is often desired to have a location counter setting at the end of the tape. A setting IA.0 may be accomplished with D and C, set for normal punch. (D up. C down) by entering the command word -00 IA.0 ± 00 0000.0 and pressing the START button.

II. OUTPUT IN STANDARD RELOCATOR FORM: SWITCH D DOWN.

1. At the first word of the MEMORY DUMP routine enter the command word

+ 00 IA.0 + MØ FA.0

where MØ is a 2-digit octal number equal to the number of "key words" following FA.

2. Set sense switches B and C for desired mode of output.

(1) C DOWN: Alphanumeric Punch

(2) C UP: Command Form Output with Locations

a) B Down: Type with locations

b) B up: Punch with locations

3. Press START button.

The contents of memory locations IA through (FA + MØ) will be output, plus the following:

- (1) The specified block of memory words is preceded by:

L 7710.0
C + 00 IA.0 + MØ FA.1
S

- (2) The block of words is followed by:

L 7736.0
S

2 E (b)

4. When preparing a tape of a routine for use with the RELOCATOR a second "Designator" is often necessary to specify a group of commands stored in fixed locations. This second designator may be output with switch D down by entering

- 00 IA.0 + 00 FA.0

and pressing the START button. The following will be output:

L 7710.0
C -00 IA.0 + 00 FA.1
S

III RESTRICTIONS

1. The contents of the Rapid Access locations 7760-7777 may not be output if IA is less than 7760.
2. The MEMORY DUMP routine may not be used to output itself in RELOCATOR form in the same memory area. The MEMORY DUMP should be stored in two separate areas and one used to output the other.

IV. ADDITIONAL NOTES.

1. The contents of the L & V loops are saved and replaced before the routine halts.
2. The contents of one or more Rapid Access locations may be output with locations if IA & FA are within 7760 through 7777.
3. When punching in alphanumeric form (C down) 12 "blanks" or "punchet holes" are punched after each specified block of words. When in RELOCATOR mode 40 "blanks" are punched after each START code. This will insure proper subsequent reading by the photoreader.

V. OPTIONAL USE OF THE START 1, 2, and 3 BUTTONS.

When filling into memory, the MEMORY DUMP tape will halt near the end of the tape before filling locations 0001, 0002 and 0003. If these locations are not in the area desired to be output, the following features may be

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added by pressing the photoreader FILL button again before removing the MEMORY DUMP tape.

1. START 1: The location counter will be set to the first word of the MEMORY DUMP routine, ready for an IA, PA entry.
2. START 2: A HALT code followed by 40 blanks will be punched on the tape.
3. START 3: When preparing a tape of a routine in "standard" RELOCATOR form, it is usually desired to precede the main routine by the RELOCATOR routine. If the RELOCATOR is stored in memory at 7710-7757 these locations may be output by pressing START 3 with switch D up for normal output.

After each of the above operations, the computer will halt at the first word of the MEMORY DUMP.

VI. ERROR HALTS: This routine will halt at the location of its first word for each of the following:

- 1) START 3 with D down
- 2) If a -IA has been entered in the first word location and both C and D are up.

VII. VERIFICATION OF TAPES PUNCHED BY the MEMORY DUMP.

Alphanumeric tapes punched by this routine should be verified immediately as a check for punch errors.

1. A tape punched in "normal" alphanumeric form may be verified as usual by placing it in the photo reader and pressing the VERIFY button.
2. Alphanumeric tapes in "standard RELOCATOR" form may be verified as follows:
 - 1) Set operation switch on SINGLE COMMAND.
 - 2) Insert tape and press VERIFY.

Location 7710 in the RELOCATOR routine may not verify. This does not signify a punch error, as this location is used to store the designator. Press RESET then VERIFY.

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- 3) Computer will stop at 7711.1.
 - 4) Set Location Counter manually to IA.0, the initial address output.
 - 5) Press VERIFY. If there is no error, the computer will stop at 7736.1.
 - 6) If there is more on the tape press VERIFY again. If the second designator -IA has been used, location 7710 again may not verify.
 - 7) RESET & continue to VERIFY until finished.
3. Tapes punched in command form with locations will not verify and may not be used to fill memory.

VIII. EXAMPLE OF TYPING

As an example of the typed output, the appearance of this routine AFI 016 MEMORY DUMP in "standard" RELOCATOR form is given on page 6.

7710 +0060000+1062071
1 +0077100+5177320
2 +4000230+4100230

7 +4200000+0077650
7750 +0177760+4277650
1 +4277670+0377640
2 +5277200+0077610
3 +4100010+6077610
4 +0177770+5377641
5 +5777671+0000000
6 +4000000+0000000
7 +4000000-0000000

L77100
C+0060000+1062071
s

6000 +0060000+1062070
1 +6562100+6762200
2 +6460000+6660100
7 +6461610+5777610
6210 +7704140-0000001
1 +0374320+1111001
2 +1723541+4100471
3 +6020071+2760041
4 +4000340-0003701
5 +4222000-0042401
6 +0020001-7767601
7 +6657000-0000001

L77360
S

H

0001 +7760000+0000000
2 +6562100+5762000
3 +5661771+5762011

L77100
C-0000010+0000031
s

H

6E