DOCUMENT TRANSMITTAL
Product Specification

CONTROL DOC.
None

SYSTEM B1800/B1700

PL FILE NO. _____

PROJ. NO. _____   COORD. _____   CHKR. *Wall*   TO RECORDS 7-17-78   DISTRIBUTION 7-17-78

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SBP 1085 REV. 9-71

PRODUCT SPECIFICATION

REV LTR	REVISION ISSUE DATE	APPROVED BY	REVISIONS
B	7/11/78	J Hale	CHANGES FOR THE MARK VIII.0 RELEASE

1-1   Added new condition to the use of SYSTEM/LOAD.DUMP.
2-1   Changed <tape name> to <tape label>.
      Deleted ADD from the LO command.
2-2   Changed ADD to AD.
2-3   Reworded section DISK.
2-6   Changed definition for SENSE SWITCH 2.
3-3   Changed Error #5 from "A/B/C BAD LOAD..." to
      "A/B/C NOT LOADED ...".
      Added Error #6 :   "A/B/C NOT DUMPED ... NOT ON DISK".
      Added Error #7 :   "A/B/C NOT DUMPED ... LOCKED OUT".

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GENERAL DESCRIPTION

SYSTEM/LOAD.DUMP is an MCP utility used to copy a file or group
of files from a library tape to disk or from disk to tape. It is
initiated only by a control message from the SPO or card reader
or by ZIP messages.   It creates a single library tape on a
disk-to-tape copy and generates a tape directory which becomes
the first file on the tape.

Related   utility   programs   that   also do file-copying, but with
different characteristics, are:

Any media to any media (single file copy) . . . . OMPALL
Disk to disk (multi-file copy). . . . . DISK/COPY or
                                                  SYSTEM/DISK.DUMP
Floppy disk . . . . DISKETTE/COPY
LOAD.DUMP tape to single or multiple tapes. . . . SYCOPY
Verification of copy by SYSTEM/LOAD.DUMP. . . . . CHECK/LOAD.DUMP
Copy and merge non-library tapes . . . . TAPECOPY

The library tapes and disk files created are unique to the
B1800/B1700 and are not compatible with other Burroughs systems.

SYSTEM/LOAD.DUMP is not designed to:

- load or dump multipack files

- load or dump files on to floppy disk

- copy disk-to-disk or tape-to-tape

- file-equate disk or tape to other devices

- produce multiple copies of library tapes

RELATED DOCUMENTATION

	Name		Number
B1800/B1700	Software Operational Guide		1068731
B1800/B1700	MCP II	P.S.	2212 5462
B1800/B1700	SYSTEM/DISK.DUMP	P.S.	2212 5496
B1800/B1700	DISK COPY	P.S.	2212 5066
B1800/B1700	SYCOPY	P.S.	2212 5199
B1800/B1700	OMPALL	P.S.	2212 5116
B1800/B1700	TAPECOPY	P.S.	2219 0110

OPERATION

OPERATING ENVIRONMENT

SYSTEM/LOAD.DUMP will run on a B1700 or B1800 with MCP II and tape and disk hardware. If the memory size exceeds 64K, the program will utilize larger I/O buffers and therefore minimize I/O.

OPERATING INSTRUCTIONS

One control message will initiate the program and provide all necessary data. Since the variations are many, the syntax of the statement is shown in BNF version.

<LOAD.DUMP statement>	::=	<head> <file list>; NOTE: Semicolon is required except on SPO input.
<head>	::=	<dump> <tape label> 1 <load> <tape label>
<tape label>	::=	<tape single> 1 <tape single> / <tape single>
<tape single>	::=	<identifier> 1 "<any string, blanks permitted>"
<dump>	::=	<du> <from where> TO
<du>	::=	DU 1 DUMP 1 UN 1 UNLOAD
<from where>	::=	<null string> 1 FROM <disk label>
<load>	::=	<lo> <to where> FROM
<lo>	::=	LO 1 LOAD 1 AD
<to where>	::=	<null string> 1 TO <disk label>
<disk label>	::=	<tape single>
<file list>	::=	<file name> 1 <file name> <file list> 1 <file name> , <file list>
<file name>	::=	<single> 1 <single> / = 1 <single> / <single> 1 =/=

```
<single>                    ::=   <a string of fewer than 11
                                   non blank characters>
                               I "<a string of fewer than 11
                                   characters, blanks permitted>"
```

The statement may be expressed in quasi-COBOL metalanguage, where
the symbols are explained as follows:

    []   meaning "0 or 1 occurrence of"
    []*   meaning "1 or n occurrences, separated by commas or blanks"
    ()   meaning "one of the enclosed choices"


```
AD
LO[AD]    [TO disk-label] FROM            single-name[/single-name] *
                                tape-label  single-name/=
UN[LOAD]                                   =/=
DU[MP]    [FROM disk-label] TO
```


Implications of the Syntax:

The formulation of a LOAD.DUMP message follows a few simple
rules. The relation is always disk first, then tape.   That is,
the disk name must occur first in the message. If the default of
system disk is used, the message is still phrased as if the disk
reference occurred first.

              No Default   Default
              ----------   -------
         LOAD TO DISK FROM TAPE   or   LOAD FROM TAPE
         AD TO DISK FROM TAPE   or   AD FROM TAPE
         DUMP FROM DISK TO TAPE   or   DUMP TO TAPE
         UNLOAD FROM DISK TO TAPE   or   UNLOAD TO TAPE

Semantics:

Although the possibilities of results are many, only four actions
are possible.

LOAD   This will load specified files or a specified group of
            files from tape to disk. Single files may be specified
            or families of files on the tape may be specified as
            shown below:

            "multifile-ID/=" will load a family of files
            "=/=" will load all files

AD   AD is similar to LOAD except that each specified file
            is loaded only if it was not formerly on the disk.

DUMP   This message creates a LOAD.DUMP tape with the files
            copied from disk in the order requested.   If no disk
            label is provided, the copy is done from the system

disk.   The pack-id is not allowed in the file section
of the DUMP message.

UNLOAD   UNLOAD creates a LOAD-DUMP tape in the same manner as
           DUMP, except that the copied files are afterwards
           removed from the disk.

EXTERNAL MEDIA FORMAT

DISK

The disk files to be loaded or dumped may not be multi-pack
files. Additionally, pseudo decks are changed to data files when
they are dumped and remain such with subsequent loads or dumps.

The disk file headers must be consistent and as defined below:

        FH.HDR.SIZE = 540 + 36 * FH.AREAS.RQST
        FH.AREA.CTR < FH.AREAS.RQST
        All FH.AREA.ADDRESS'es should be zeros beyond the one
        specified by FH.AREA.CTR.

Consistency is not checked by SYSTEM/LOAD-DUMP prior to Release
6-0.

TAPE

The default format is an ANSI-labeled, multi-file, multi-reel
tape. The first file on the tape is a directory created by
SYSTEM/LOAD-DUMP of all the files on the tape, listed in order.
This directory will bear the same name as the tape-label in the
LOAD-DUMP statement. The naming of the rest of the files is
relational. If the tape label is AAAA/BBBB or AAAA, then the
files will bear the ANSI label AAAA/F000001, AAAA/F000002, etc.
The name of the disk from which the files were copied does not
appear anywhere on the tape.

The directory file is made up of (n+1) records of 20 bytes each,
where n = the total number of remaining files on the tape. The
first record has the value "III.4 DUMP" while the rest are 20
character file names as copied from disk.

Absent areas on a disk file will not be dumped to tape, however,
incomplete areas are copied in their entirety because the
end-of-file pointer is not utilized.

OPERATING SUGGESTIONS

BUFFER SIZE

The speed of execution of SYSTEM/LOAD.DUMP is directly related to
memory size and the level of MCP release. The record size is
always 180 bytes, but the buffer size is determined by the MCP.

Prior to 6.0 release, buffer size is chosen to be an arithmetic
divisor of the area size, so that for files whose disk area size
is a prime number, the program is forced to use one sector per
block. This condition results in a bottleneck of disk I/O's.
The 6.0 MCP is not constrained by this situation.

SENSE SWITCH 0

This switch controls redundancy checking by SYSTEM/LOAD.DUMP.
Normally, it is set to OFF, which means that the program does not
check for redundancy, either as inclusion or as duplication.
Error messages will be printed if there is inclusion or
duplication and the user is responsible for determining the
validity of such messages. The program, in general, will run
faster when the switch is off.

If the user wishes to have the program check for inclusion and
duplication, a modify message must be entered from the SPO as
follows:

        MO SYSTEM/LOAD.DUMP SW 0 1

With the switch ON, no spurious SPO messages will be generated,
but run-time may be somewhat longer. The advantage is that no
file will be loaded or dumped more than once.

EXAMPLES OF SENSE SWITCH 0 OFF

LOAD

1. Inclusion

   LOAD FROM TAPE.A X/=, X, X/A

   Both X and X/A are included in X/=, however, the program does
   not check for this. If there are files with the family-name
   X, the program will load all of them as directed by X/=. It
   will then generate two error messages.

   X NOT LOADED -- NOT ON TAPE
   X/A NOT LOADED -- NOT ON TAPE

   These files may or may not be on the tape, but if they are,
   they have been loaded. If none of the files are on the tape,
   three error messages will appear on the SPO.

   X/= NOT LOADED -- NOT ON TAPE

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```
X NOT LOADED -- NOT ON TAPE
X/A NOT LOADED -- NOT ON TAPE
```

2. Duplication

LOAD FROM TAPE.A X X

In this statement, the program is instructed to load file X twice. If there are two copies of X on TAPE.A, SYSTEM/LOAD.DUMP will load both of them and no error messages will be generated. If one copy of X is on the tape, that copy will be loaded and the following error message will be printed.

X NOT LOADED --NOT ON TAPE

If the file is not on TAPE.A at all, the above error message is printed once.

If a tape has n copies of a file and the instruction is:

LOAD FROM TAPE.A X X X ... X   (X occurring n + m times),

then X will be loaded and removed n times and the message

X NOT LOADED --NOT ON TAPE

will be displayed once.

DUMP

The same file may be dumped more than once. If the user requests the dump of a file which is not on disk, the error messages will be duplicated. Thus,

DUMP TO TAPE.A X, X, X/=

will generate two identical messages:

X NOT DUMPED --NOT ON DISK

if X does not exist or no file exists with the name X/***.

SENSE SWITCH 1

This sense switch should be set to zero, unless SYSTEM/LOAD.DUMP itself needs to be debugged.

SENSE SWITCH 2

This sense switch is no longer used beginning with release 7.0.

OPERATING PRECAUTIONS

UNLOAD

Care should be taken when using the UNLOAD statement. Since the files are deleted from disk immediately after being written to tape, everything is lost if the tape generated is unusable. A safer method is to do a DUMP, run CHECK/LOAD.DUMP to insure a good tape and then remove the disk files by entering an "RE" message from the SPO.

EXECUTE

SYSTEM/LOAD.DUMP should be initiated only by a LOAD.DUMP statement. The command "EX SYSTEM/LOAD.DUMP" will generate a job which cannot run to completion due to the absence of a "PARAMETERS" file.

BAD HEADERS

The program does not check the validity of disk file headers. They may be inconsistent or completely faulty. It is the user's responsibility to determine this.

MANUAL TAPE REWIND

If a tape is manually rewound or taken off-line while it is being used by SYSTEM/LOAD.DUMP, the job will probably not terminate correctly even when the tape is put back on-line.

FILE EQUATES

File equating of the tape and disk files to other hardware types of peripherals is possible but should not be attempted.

PROGRAM ABORTION

If SYSTEM/LOAD.DUMP aborts during a DUMP, all files on the tape are good up to the error point. It should be noted, however, that the file directory will have a list of all files specified in the LOAD.DUMP statement and some of these may not be on the tape. This will cause an I/O error in future LOADs if the tape is read past this point.

If a DS-message is input to the MCP while the tape is in a multifile search during a LOAD, the SPO may not respond until a tapemark has been reached.

ERROR MESSAGES

MCP-GENERATED MESSAGES

1. The most common message is (in COBOL-style meta-syntax):

   "A/B/C NOT   DUMPED   -- NOT ON DISK"
                 LOADED

   The message may be spurious.

2. "ERROR WHILE LOOKING FOR PACK ID FOR LOAD.DUMP   -   POSSIBLY
   INVALID "=". "

   MCP expects the disk to be mounted when the LOAD.DUMP
   statement is received.

3. " LOAD
     DUMP   MESSAGE REQUIRES "TO"   PRECEDING THE TAPE NAME".
     AD   "FROM"
     UNLOAD

   This means that the LOAD.DUMP statement has a syntax error.
   "TO" or "FROM" must be present before the tape name.

4. "TAPE NAME MISSING FOR LOAD.DUMP".

   This is displayed if there are no file names nor a tape name.

5. "DANGLING SLASH FOR TAPE NAME IN LOAD.DUMP MESS".

   Something such as "LOAD FROM A/ FILE.1, FILE.2, etc." was
   specified. It is a syntax error.

6. "LOAD.DUMP MSG ERROR - EXTRA SLASH IN TAPE NAME".

   This syntax error must have been something like "LOAD FROM
   A/B/C FILE.1..." or "LOAd FROM A/B/ FILE.1...".

7.   LOAD
   "FILES WERE NOT SPECIFIED TO DUMP   -- NOTHING DONE".
                                 AD
                                 UNLOAD

   Up to and including the tape name, there has been no error,
   however, no files were specified in the statement.

8. "LOAD.DUMP MSG ERROR -- PACK.ID "PACK.1" SPECIFIED IN FILE
    NAME".

    This is a common syntax error. The pack name was included in
    the file name, e.g.

    DUMP TO TAPE.1 PACK.1/A/B

    The correct statement would be:

    DUMP FROM PACK.1 TO TAPE.1 A/B

9. A LOAD.DUMP tape generated by a DUMP statement and whose job
    was aborted may not have all the files as specified in the
    tape directory. If this partial tape is loaded to disk, the
    following message may appear:

    "MTX ERROR ON END LABEL. RSLT.DESC = 2D000A02".
    " -- MTD PARITY ON LABEL READ DS OR DP".

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SYSTEM/LOAD.DUMP GENERATED MESSAGES

1. "NOT A LIBRARY TAPE".

   The first record in the first file on the tape does not
   contain the characters "III.4 DUMP". This message would
   appear if the request were for a LOAD.

2. "A/B/C NOT LOADED --NOT ON TAPE".

   "C" may be "=". The message indicates that the requested
   file was not on the tape, and therefore, was not loaded to
   disk. The message may be spurious and/or misleading, if SW 0
   = 0.

3. "A/B/C HAS INCONSISTENT FILE HEADER, WATCH OUT".

   This is a warning and may occur in a LOAD or a DUMP. Dumping
   or loading of such a file may hang a pre-6.0 Release MCP.

4. "A/B/C NOT DUMPED --MULTI-PACK FILE".

   It is not possible to dump a multipack file.

5. "A/B/C NOT LOADED : <integer1> TAPE ERRS, <integer2> DISK
   ERRS"

   This error message will be displayed after possible messages
   from the MCP reporting some non-recoverable disk or tape I/O
   errors.

6. "A/B/C NOT DUMPED --NOT ON DISK"

   The message indicates that the requested file was not on the
   disk, and therefore not dumped to the tape.

7. "A/B/C NOT DUMPED --LOCKED OUT"

   The requested file was on disk, but was locked out by another
   program.

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