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	SYSTEM INITIALIZATION TAPE	INITT/S- 25	
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ABSTRACT and CONTENTS

This document describes the format of the System Initialization tape, and the program, CINIT, which is used to create it.

I. The System Initialization Tape

The System Initialization Tape is divided into two basic parts: the bootstrap part and the data part. The bootstrap part is automatically read in its entirety into the M1 core by the CHIO when a restart is initiated. The data part may be used by the system clean-up routines.

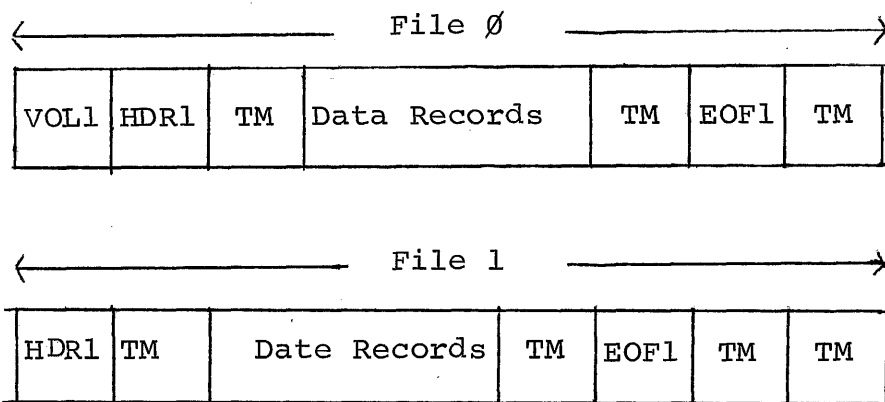
A. Basic Format of the tape

The tape is a standard OS labelled tape, 7 track, odd parity, 556 bpi. It must contain at least one complete file, the bootstrap, and may contain more. (No provision for a multivolume tape has been made.)

The fixed fields within the labels on the tape are as follows:

```
VOL1& EOVL           Volume serial  INIT00
HDR1& EOF1* 1st file  File ID    INITIALIZESYSTEMT
                        File serial  INIT00
                        Vol. Seq.    1
                        File Seq.   1
HDR1 + EOF1* Subsequent files
                        File serial  INIT00
```

* EOF1 labels' Block Count field should be correct.



Layout of Tape

B. Format of Files on the Tape

Each file on the tape consists of one or more pairs of records, each record consisting of 4136 six bit bytes, or 1034 24 bit words. The layout of each record pair is as follows:

Record 2n	Words	0-8	ID	
		9-1032	data	(1st half of a page)
		1033	0	
Record 2n+1	Words	0-8	ID	
		9-1032	data	(2nd half of page)
		1033	checksum	

The contents of the identification field are the same for each record of the pair. The nature of these contents is determined by what kind of file they are in... bootstrap or data. In the bootstrap file, words 0 - 7 are ignored, and word 8 contains the core page number of the accompanying data. In the data file (or files) words 5 and 6 contain the Unique Name of the page formed by the accompanying data, word 7 is its Disk or Drum address, and word 8 is its core page number, if appropriate. Words 0 - 4 are available for further special information. The checksum applies only to the data as follows:

$$\text{data}_0 \text{ EOR } \text{data}_1 \dots \text{ EOR } \text{data}_{2047} \text{ EOR } \text{checksum} = 0$$

II. Creating a SYS INIT Tape

The SAVE file (THOMPSON) CINIT is a program for creating and examining SYS INIT tapes. Executivity is required to use it. Upon being entered the program will ask for a tape unit, and then give its herald - ∇ . A list and description of the then available commands follows.

CREATE TAPE.

Rewinds the tape, writes the volume label, and initializes the file writing machinery.

WRITE LABEL $\left\{ \begin{array}{l} \cdot \\ \cdot \\ \cdot \end{array} \right. \text{NUMBER } \underline{n.} \}$

Will ask for a file name, maximum of 17 characters, to be given as in QED substitute, i.e. first character typed is delimiter, a generation number, 1 to 3 digits, and a version number, 1 to 2 digits. Write a header label, either where the tape is, or at the head of the nth file. File numbers are \emptyset origin.

READ LABEL $\left\{ \begin{array}{l} \cdot \\ \cdot \\ \cdot \end{array} \right. \text{NUMBER } \underline{n.} \}$

Types the name, generation number and version number of either the label where the tape is (the tape is assumed to be positioned at a label) or of the header label of file n.

DUMP n $\left\{ \begin{array}{l} \text{CORE} \\ \text{DISK} \end{array} \right\}$ PAGES

FROM FILE filename $\left\{ \begin{array}{l} \cdot \\ \cdot \\ \cdot \end{array} \right.$ FIRST PAGE # n

$\left\{ \begin{array}{l} \cdot \\ \cdot \\ \cdot \end{array} \right.$ TO FILE # n

$\left\{ \begin{array}{l} \cdot \\ \cdot \\ \cdot \end{array} \right.$ PAGE # n. $\left. \right\} \left. \right\}$

Puts pages on the tape. Expects SPL dump file format.

(See PIF/S-21). Core pages are dumped in bootstrap form (see above), disk pages in data form. Dumping may start anywhere in the file (FIRST PAGE #) and may go to any file on the tape (TO FILE #) and any page number within the tape file (PAGE #). Page numbering is \emptyset origin.

END_FILE $\left\{ \begin{array}{l} \cdot \\ \cdot \\ \cdot \end{array} \right.$ AFTER PAGE # n. $\left. \right\}$

Terminates the current file either where it is, or after page n. Writes trailer label.

END_TAPE $\left\{ \begin{array}{l} \cdot \\ \cdot \\ \cdot \end{array} \right.$ AFTER FILE # n. $\left. \right\}$

Terminates the tape, either where it is, or after file n, and then rewinds. The last file on the tape must already have been ended with END FILE.

UNWIND.

Rewinds the tape.

FINISHED.

Rewinds the tape and exits from the program.