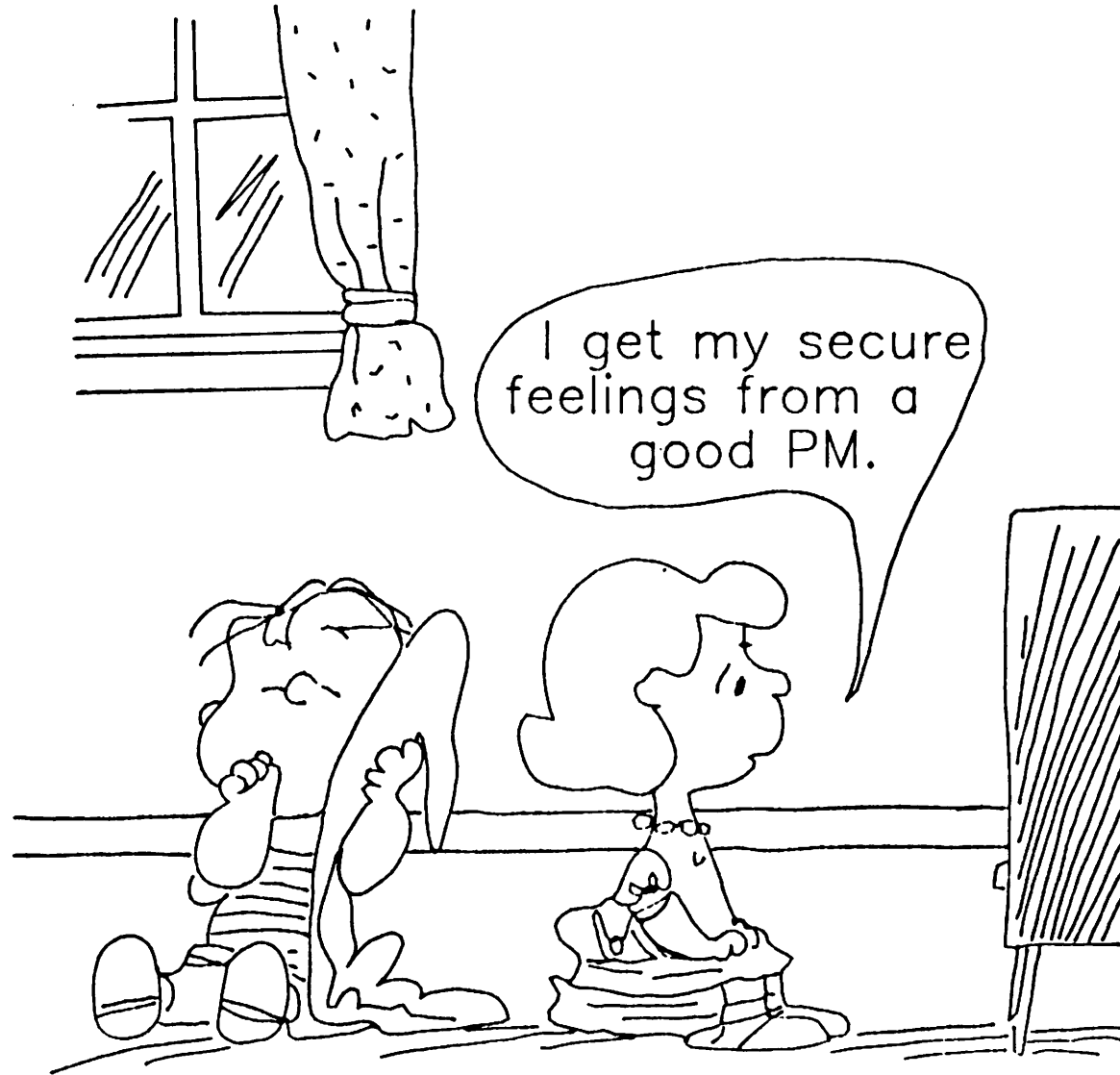


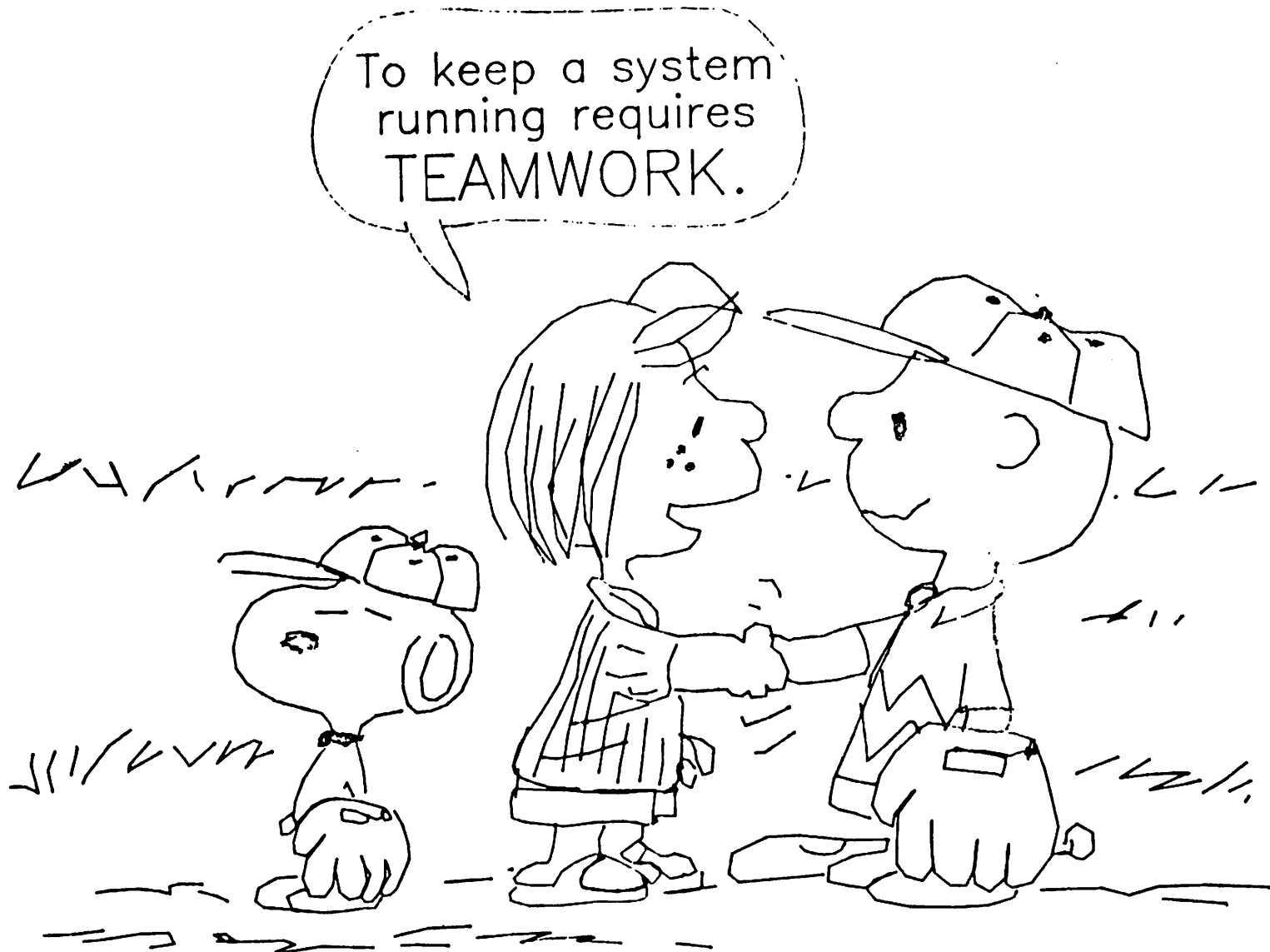
Peripherals and Preventive Maintenance





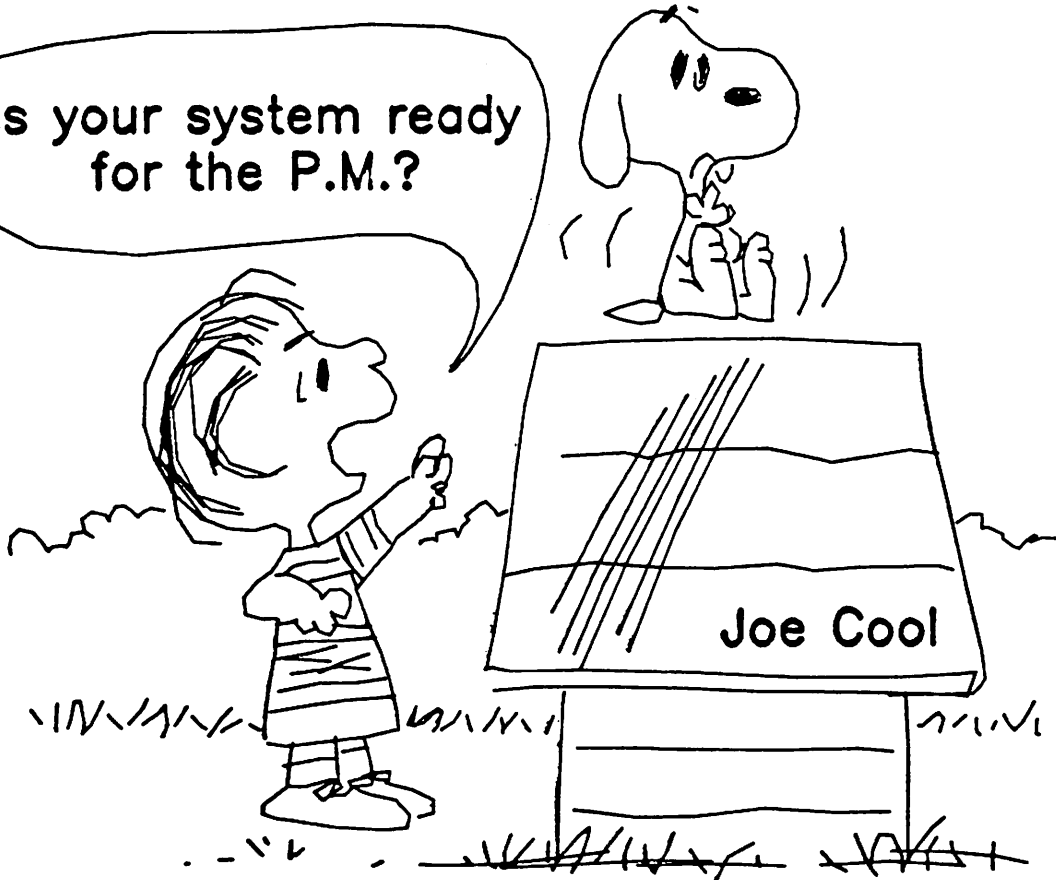
I get my secure feelings from a good PM.

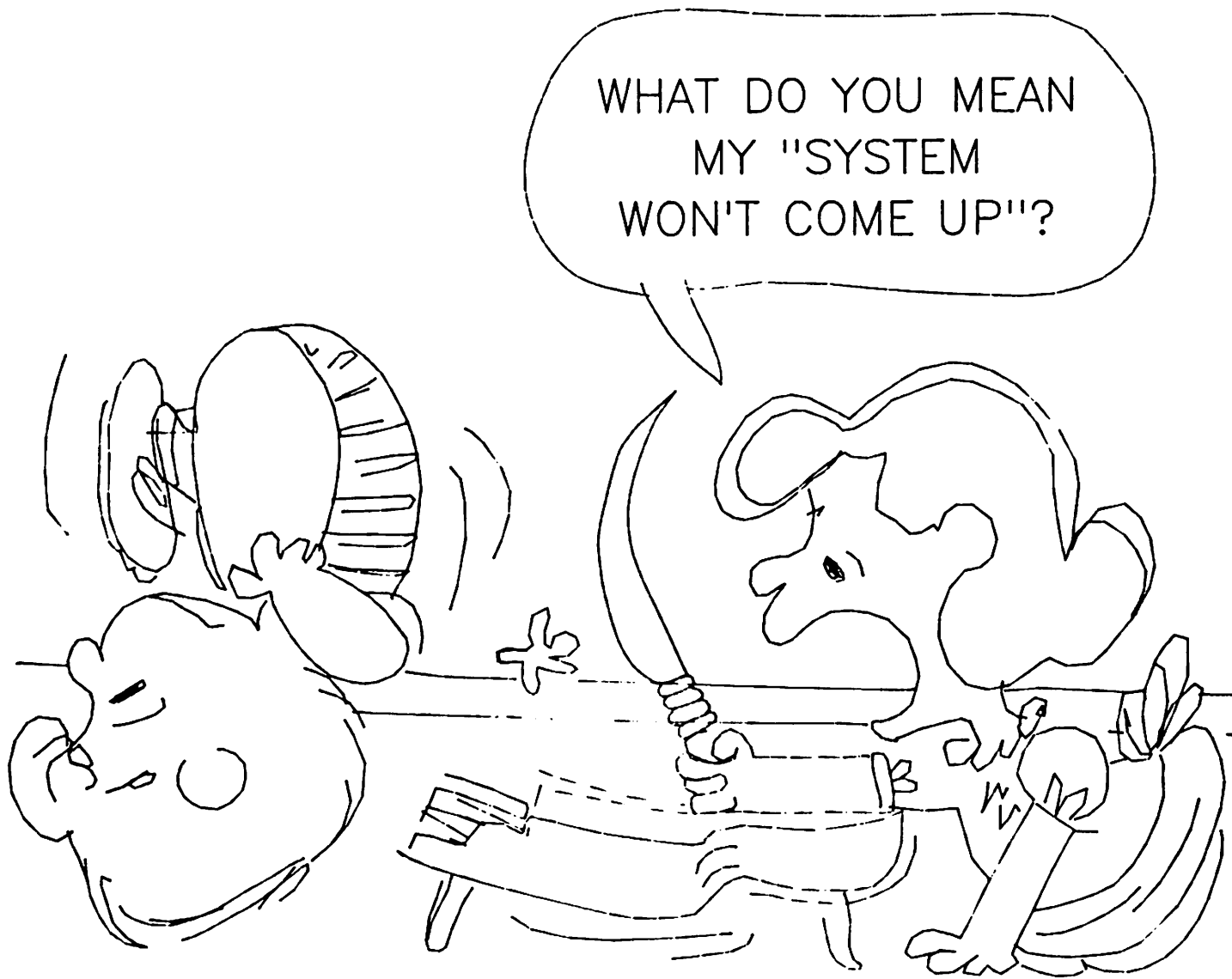




Preventive Maintenance

Is your system ready
for the P.M.?





BLDACCT1

DESCRIPTION:

Builds a stream job to recreate the accounting structure

CONSIDERATIONS:

it is unsupported
should have done it when you need it
will not recreate user attributes
store job files on tape

BLDACCT1 (cont.)

OPERATION:

:RUN BLDACCT1

BULDACCT-VERSION 3/16/77

THIS PROGRAM WILL RECONSTRUCT THE ACCOUNTING STRUCTURE

THE FILE JOBACCT AND JOBACCTB CAN BE TEXTED IN
BY THE EDITOR TO INSURE IT IS CORRECT
THIS FILE CAN BE STREAMED TO REBUILD THE ACCOUNTS

HAVE A HAPPY DAY

END OF PROGRAM
:RUN PSCREEN

```
:JOB MANAGER.SYS;HIPRI
:CONTINUE
:NEWACCT ACKERMAN,MARTIN;PASS=TROLL;MAXPRI=HS&
::CAP=SM,AM,AL,GL,DI,OP,UV,CS,ND,SF,BA,IA,PM,MR,DS,PH;ACCESS=(&
:R,X:ANY;A,W,L:AC)
:CONTINUE
:NEWACCT ANY,USER;PASS=;MAXPRI=CS&
::CAP=AM,AL,GL,ND,SF,BA,IA;ACCESS=(&
:R,A,W,L,X:AC)
:CONTINUE
*NEWACCT CLASS,TEST;PASS=;MAXPRI=CS&
  *-AM,AL,GL,ND,SF,BA,IA;ACCESS=(&
    *-AC)

      *PASS=SWD;MAXPRI=CS&
        *-ND,SF,BA,IA,PM,MR,DS,PH;ACCESS=(&

::CAP=SM,AM,AL,GL,DI,OP,UV,CS,ND,SF,BA,IA,PM,MR,DS,PH;ACCESS=(&
:R,X:ANY;A,W,L:AC)
:CONTINUE
:NEWACCT SUPP1,TEST;PASS=;MAXPRI=CS&
::CAP=AM,AL,GL,ND,SF,BA,IA;ACCESS=(&
:R,A,W,L,X:AC)
:CONTINUE
:NEWACCT SUPPORT,FIELD;PASS=;MAXPRI=BS&
::CAP=SM,AM,AL,GL,DI,OP,UV,CS,ND,SF,BA,IA,PM,MR,DS,PH;ACCESS=(&
:R,X:ANY;A,W,L:AC)
:CONTINUE
:NEWACCT UTILS,MANAGER;PASS=;MAXPRI=BS&
::CAP=SM,AM,AL,GL,DI,OP,CS,ND,SF,BA,IA,PM,MR,DS,PH;ACCESS=(&
:R,X:ANY;A,W,L:AC)
:CONTINUE
:STREAM JOBACCTR
:EOJ
```



```
:JOB MARTIN.ACKERMAN/TROLL
:CONTINUE
:NEWGRUP LOG;PASS=&
::CAP=BA,IA;ACCESS=(&
:R,A,W,L,X,S:GU)
:CONTINUE
:NEWGROUP PROG;PASS=&
::CAP=BA,IA,PM,DS,PH;ACCESS=(&
:R,X:ANY;A,W,L,S:AL;A,W,L,S:GU)
:CONTINUE
:ALTGROUP PUB;PASS=&
::CAP=HA,IA,PM,MR,DS,PH;ACCESS=(&
:R,X:ANY;A,W,L,S:AL;A,W,L,S:GU)
:CONTINUE
:NEWGROUP SOURCE;PASS=&
::CAP=HA,IA,PM,DS,PH;ACCESS=(&
:R,X:ANY;A,W,L,S:AL;A,W,L,S:GU)
:CONTINUE
*NEWGROUP TEXT;PASS=MLA&
  --RA,IA,PM,MR,DS,PH;ACCESS=(&
    S:GU)

  --;HOME=SOURCE;MAXPRI=BS&
    CS,ND,SF,BA,IA,PM,MR,DS,PH

:ALTUSER MANAGER;PASS=;HOME=PUB;MAXPRI=BS&
::CAP=SM,AM,AL,GL,DI,OP,CS,ND,SF,BA,IA,PM,MR,DS,PH
:EOJ
:CONTINUE
:JOB MANAGER.SYS;HIPRI
:REPORT 2.2
:EOJ
```

RUN FREE2.PUR.SYS

FREE2 B00.01 (C) HEWLETT-PACKARD CO., 1976

VOLUME= MH7925U0

LARGEST FREE AREA= 42370

	SIZE	COUNT	SPACE	AVERAGE
>100000	0	0	0	0
>10000	1	42370	42370	42370
>1000	3	5398	1799	1799
>100	5	1480	296	296
>10	18	450	25	25
>1	267	742	2	2

TOTAL FREE SPACE=50440

SYSTEM TOTAL FREE SPACE=50440

END OF PROGRAM

:VINIT

THIS COMMAND REQUIRES SYSTEM SUPERVISOR (OP) CAPABILITY. (CIERR 955)
HELLO MANAGER.SYS

:VINIT

VINIT 800.03 (C) HEWLETT-PACKARD CO., 1978

>PDTRACK 1

LDEV: 1

LOGICAL PACK SIZE = 815 CYLINDERS, 72 ALTERNATE TRACKS AVAILABLE

		FIRST	LAST		ALTERNATE
CYL	HEAD	SECTOR(X)	SECTOR(X)	STATUS	CYL HEAD
165	1	271600	271677	DELETED	
256	3	440300	440377	DELETED	
275	0	465300	465377	DELETED	
276	0	466400	466477	DELETED	
473	3	1024400	1024477	DELETED	
711	6	1440500	1440577	DELETED	
722	4	1454600	1454677	DELETED	

>EXIT

END OF SUBSYSTEM

MEMLOGAN/MEMTIMER

DESCRIPTION:

Allows detecting memory problems
before they occur.

Reference:
System Utilities Manual
(30000-90044)



:RUN MEMLOGAN.PUB.SYS

MEMLOGAN 800.00 (C) HEWLETT-PACKARD CO., 1978

LOGGING STARTED - DATE: 1/ 7/79 TIME: 10:27
 FIRST ERROR LOGGED - DATE: 1/ 7/79 TIME: 10:27
 LAST ERROR LOGGED - DATE: 2/ 6/80 TIME: 13:04
 LAST LOG UPDATE - DATE: 2/ 6/80 TIME: 13:04
 TIMING INTERVAL - 1:00:00

-----				-----				-----				
I	ADDRESS		I	ERROR TYPE			I	ERROR I				

I	CONTROLLER	I	BOARD	I	ROW	I	TYPE	BIT	CHIP	I	COUNT	I

I	CONTROLLER A	I	0	I	0	I	DATA	3	U49	I	1	I
I		I		I	0	I	MULTIPLE BIT ERROR			I	1	I
I		I		I	1	I	DATA	2	U38	I	1	I
I		I		I	1	I	MULTIPLE BIT ERROR			I	1	I
I		I	1	I	1	I	DATA	2	U38	I	398	I

END OF PROGRAM

```
:RUN MEMLOGAN.PUB.SYS;PARM=1
```

```
MEMLOGAN 800.00 (C) HEWLETT-PACKARD CO., 1978
```

```

LOGGING STARTED      - DATE:  1/ 7/79    TIME: 10:27
FIRST ERROR LOGGED   - DATE:  1/ 7/79    TIME: 10:27
LAST ERROR LOGGED    - DATE:  2/ 6/80    TIME: 13:04
LAST LCG UPDATE      - DATE:  2/ 6/80    TIME: 13:04
TIMING INTERVAL      - 1:00:00

```

-----				-----				-----				
I	ADDRESS		I	ERROR TYPE			I	ERROR I				

I	CONTROLLER	I	BOARD	I	ROW	I	TYPE	BIT	CHIP	I	COUNT	I

I	CONTROLLER A	I	0	I	0	I	DATA	3	U49	I	1	I
I		I		I	0	I	MULTIPLE BIT ERROR			I	1	I
I		I		I	1	I	DATA	2	U38	I	1	I
I		I		I	1	I	MULTIPLE BIT ERROR			I	1	I
I		I	1	I	1	I	DATA	2	U38	I	398	I

```
END OF PROGRAM
```

```
:REDO
```

```
RUN MEMLOGAN.PUB.SYS;PARM=1
```

```
MEMLOGAN 800.00 (C) HEWLETT-PACKARD CO., 1978
```

```
* NO ENTRIES IN MEMLOG FILE *
```

```
END OF PROGRAM
```

:RUN MENTIMER.PUB.SYS;PARM=2

MENTIMER 800.00 (C) HEWLETT-PACKARD CO., 1976

END OF PROGRAM

:RUN MEMLOGAN.PUB.SYS

MEMLOGAN 800.00 (C) HEWLETT-PACKARD CO., 1978

LOGGING STARTED - DATE: 2/ 6/80 TIME: 13:31
FIRST ERROR LOGGED - DATE: 2/ 6/80 TIME: 13:31
LAST ERROR LOGGED - DATE: 2/ 6/80 TIME: 13:31
LAST LOG UPDATE - DATE: 2/ 6/80 TIME: 13:31
TIMING INTERVAL - 0:00:02

I ADDRESS		I		ERROR TYPE			I ERROR I	
I CONTROLLER	I BOARD	I ROW	I TYPE	BIT	CHIP	I COUNT	I	
I CONTROLLER A	I 1	I 1	I DATA	2	U38	I 1	I	

END OF PROGRAM

RUN MEMLOGAN.PUR.SYS

MEMLOGAN B00.00 (C) HEWLETT-PACKARD CO., 1978

LOGGING STARTED - DATE: 2/ 6/80 TIME: 13:31
FIRST ERROR LOGGED - DATE: 2/ 6/80 TIME: 13:31
LAST ERROR LOGGED - DATE: 2/ 6/80 TIME: 13:32
LAST LOG UPDATE - DATE: 2/ 6/80 TIME: 13:32
TIMING INTERVAL - 0:00:02

I ADDRESS	I ERROR TYPE I ERROR I

I CONTROLLER I BOARD I ROW I TYPE BIT CHIP I COUNT I	

I CONTROLLER A I 1 I 1 I DATA 2 U38 I 2 I	

END OF PROGRAM

:RUN MEMTIMER.PUB.SYS;PARM=3600

MEMTIMER 800.00 (C) HEWLETT-PACKARD CO., 1976

END OF PROGRAM

RUN MEMLOGAN.PUB.SYS

MEMLOGAN 800.00 (C) HEWLETT-PACKARD CO., 1978

LOGGING STARTED - DATE: 2/ 6/80 TIME: 13:31
FIRST ERROR LOGGED - DATE: 2/ 6/80 TIME: 13:31
LAST ERROR LOGGED - DATE: 2/ 6/80 TIME: 13:35
LAST LOG UPDATE - DATE: 2/ 6/80 TIME: 13:35
TIMING INTERVAL - 1:00:00

I	ADDRESS	I	ERROR TYPE	I	ERROR I							
I	CONTROLLER	I	BOARD	I	ROW	I	TYPE	BIT	CHIP	I	COUNT	I
I	CONTROLLER A	I	1	I	1	I	DATA	2	U38	I	6	I

END OF PROGRAM

#NAME TAPETEST
#TITLE MAG TAPE TESTING AND CERTIFICATION PROGRAM
#AUTHOR GERRY WADE
#COMPANY HEWLETT PACKARD
#ADDRESS 5600 SOUTH DTC PARKWAY
#PLACE ENGLEWOOD, CO. 80110
#PHONE 303-771-3455
#LANGUAGE SPL
#HARDWARE SERIES-I AND SERIES-II
#MIT 1737
#EXTERNAL NONE
#PREP DEFAULT
#FILEEQ NONE
#ABSTRACT

THIS PROGRAM CERTIFIES MAG TAPES AND MAY BE USED TO SET UP AND CHECK OUT TAPE DRIVES. IT WRITES RECORDS OF 4095 WORDS IN LENGTH, EACH WORD HAS ALL BITS SET TO ONES. AFTER EACH WRITE A CHECK IS MADE TO DETERMINE THE NUMBER OF RETRYS THE SYSTEM HAD TO MAKE IN ORDER TO WRITE THE RECORD. ALL RETRYS AND TAPE ERRORS ARE REPORTED ALONG WITH THE RECORD NUMBER AND POSITION ON THE TAPE (IN FEET).

IT MAY BE RUN EITHER FROM A SESSION OR VIA THE SYSTEM CONSOLE AND SWITCH REGISTER IF RUN FROM A BATCH JOB.

#GUIDE

RUN TAPETEST (NO FILE EQUATIONS ARE NEEDED)

IF RUN FROM A SESSION:

THE PROGRAM WILL ASK FOR THE DEVICE NAME OF THE MAG TAPE DRIVE TO BE USED. REPLY WITH A LOGICAL DEVICE NUMBER, DEVICE CLASS NAME, OR 'TAPE'.

THE PROGRAM WILL OPEN THE TAPE FILE, VERIFY THAT IT IS A MAG TAPE, LIST THE TAPE DENSITY, THEN ASK FOR A COMMAND.

VALID COMMANDS ARE:

WRITE.....CERTIFY THE TAPE BY WRITING ON IT.

REWIND.....REWIND THE CURRENT TAPE.

PAUSE.....PAUSE ON ANY ERROR DETECTED.

NOPAUSE.....DON'T PAUSE ON ERRORS.

TAPE.....SELECT ANOTHER TAPE DRIVE.

EXIT.....TERMINATE THE PROGRAM.

TYPING A CONTROL-Y WHILE THE PROGRAM IS CERTIFYING WILL RETURN TO THE COMMAND INPUT POINT AND ACCEPT A NEW COMMAND.

AT THE END OF THE TAPE THE TAPE IS REWOUND, THE TOTAL LENGTH OF THE TAPE IS LISTED AND THE PROGRAM ASKS FOR A NEW COMMAND.

IF RUN AS A BATCH JOB:

ALL MESSAGES ARE GIVEN ON THE SYSTEM CONSOLE.
PROGRAM FLOW IS CONTROLLED VIA THE SYSTEM SWITCH REGISTER.
THE MAG TAPE FILE WILL BE REQUESTED FOR FILE 'TESTTAPE' ON
DEVICE 'TAPE' ON THE CONSOLE.

SWITCH REGISTER SWITCHES 'ON' (UP) MEAN:

SWITCH 0 ENABLE ALL OTHER SWITCHES
SWITCH 1 CERTIFY THE TAPE
SWITCH 2 REWIND THE TAPE
SWITCH 3 PAUSE ON ERRORS

SWITCH 15 TERMINATE THE PROGRAM

#COMMENT

THE METHOD OF INTERACTION MAY BE REVERSED BY RUNNING THE PROGRAM
WITH PARM=1. IE. IF RUN FROM A SESSION AND PARM=1 THEN ALL LISTINGS
WILL BE ON THE SYSTEM CONSOLE AND PROGRAM CONTROL FROM THE SWITCHES.
CONVERSLY IF RUN FROM A BATCH JOB AND PARM=1 THEN ALL LISTINGS WILL
BE ON \$STDLIST AND COMMANDS ARE TAKEN FROM \$STDIN. IN THE LAST CASE
PLEASE NOTE THAT THERE IS NO WAY TO ENTER A CONTROL-Y FROM A BATCH
JOB.

A FILE EQUATION MAY BE GIVEN FOR FILE 'TESTTAPE' IN ORDER TO
SPECIFY THE TAPE DRIVE TO BE USED IF DESIRED BUT
IT IS NOT NECESSARY.

:RUN TAPETEST

***** TAPETEST <2.0> *****

MOUNT THE TAPE TO BE TESTED FOR FILE 'TESTTAPE'

YOU MAY TYPE CONTROL-Y AT ANY TIME TO SUSPEND *

THE PROGRAM AND CONTROL THE TAPE

WHAT DEVICE IS THE TESTTAPE ON ? R

1600 BPI TAPE DRIVE

ENTER ACTION(WRITE,REWIND,EXIT,PAUSE,NOPAUSE,TAPE)? WRITE

WRITE RETRY ON RECORD #333 165 FEET

WRITE RETRY ON RECORD #477 236 FEET

WRITE RETRY ON RECORD #568 281 FEET

WRITE RETRY ON RECORD #612 302 FEET

WRITE RETRY ON RECORD #1843 911 FEET

WRITE RETRY ON RECORD #1917 947 FEET

WRITE RETRY ON RECORD #1960 969 FEET

WRITE RETRY ON RECORD #2429 1200 FEET

END OF TAPE

CERTIFIED 1201 FEET WITH R ERRORS

ENTER ACTION(WRITE,REWIND,EXIT,PAUSE,NOPAUSE,TAPE)? EXIT

***** END OF TAPETEST *****

END OF PROGRAM

LISTLOG2

DESCRIPTION:

Prints in ASCII format the contents of any
MPE log files.

Reference:
System Utilities Manual
(30000-90044)



:RUN LISTLOG2

LISTLOG2 R01.00 (C) HEWLETT-PACKARD CO., 1979

ENTER FIRST AND LAST LOG FILE TO BE ANALYZED

FIRST?187

LAST?189

ENTER EVENTS TO BE PRINTED

TYPE NO. EVENT

0 LOG FAILURE

1 SYSTEM UP

2 JOB INITIATION

3 JOB TERMINATION

4 PROCESS TERMINATION

5 FILE CLOSE

6 SYSTEM SHUTDOWN

7 POWER FAILURE

8 SPOOLING LOG RECORD

9 LINE DISCONNECTION

10 LINE CLOSE

11 I/O ERRORS

12 VOLUME MOUNT/DISMOUNT

13 VOLUME SET MOUNT/DIS.

14 TAPE LABELS

15 CONSOLE LOG

ENTER EVENT NUMBERS SEPARATED BY COMMAS

A CARRIAGE RETURN ASSUMES ALL EVENTS WILL BE EVALUATED

11

DO YOU WANT TO PURGE LOG FILES?NO

DO YOU WISH TO RUN AGAIN(Y OR N)?NO

END OF PROGRAM

:RUN PSCREEN.PAULSON.STAFF

TIME TYPE JOB#

B1.00

DATE: WED, FEB, 13, 1980

LOGFILE: 188

```

* -----
DRT/UNIT--LDEV--STATUS--TYPE/--DVR/--XMISSION/--DRIVER/
                                SURTYPE FUNCT COUNT DATA A
14:7 :4 :2 I/O SYS 6 0 7 101512 24 0 7 0 140001
ASDYWB CFMPLRT G--TARGET/--TARGET/--PCB/--DVR/--DVR/ UENC
                                DST# ADDRESS STAT PAR1 PAR2-DVR C
0001110000000000 000010 000000 007074 000000 000000
* -----
DRT/UNIT--LDEV--STATUS--TYPE/--DVR/--XMISSION/--DRIVER/
                                SURTYPE FUNCT COUNT DATA A
14:8 :45:0 I/O SYS 6 0 7 100552 24 0 1 1024 100001
ASDYWB CFMPLRT G--TARGET/--TARGET/--PCB/--DVR/--DVR/ UENC
                                DST# ADDRESS STAT PAR1 PAR2-DVR C
0000110100000000 100121 000030 010421 000000 000014
* -----
DRT/UNIT--LDEV--STATUS--TYPE/--DVR/--XMISSION/--DRIVER/
                                SURTYPE FUNCT COUNT DATA A
15:21:20:0 I/O SYS 6 0 7 100552 24 0 1 1024 100001
ASDYWB CFMPLRT G--TARGET/--TARGET/--PCB/--DVR/--DVR/ UENC
                                DST# ADDRESS STAT PAR1 PAR2-DVR C
0000110100000000 100117 000030 010421 000000 000014
* -----
DRT/UNIT--LDEV--STATUS--TYPE/--DVR/--XMISSION/--DRIVER/
                                SURTYPE FUNCT COUNT DATA A
15:24:27:6 I/O SYS 6 0 7 100552 24 0 1 1024 100001
ASDYWB CFMPLRT G--TARGET/--TARGET/--PCB/--DVR/--DVR/ UENC
                                DST# ADDRESS STAT PAR1 PAR2-DVR C
0000110100000000 100117 000030 010421 000000 000014
* -----
DRT/UNIT--LDEV--STATUS--TYPE/--DVR/--XMISSION/--DRIVER/
                                SURTYPE FUNCT COUNT DATA A
15:24:47:6 I/O SYS 6 0 7 100552 24 0 1 1024 100001
ASDYWB CFMPLRT G--TARGET/--TARGET/--PCB/--DVR/--DVR/ UENC
                                DST# ADDRESS STAT PAR1 PAR2-DVR C
0000110100000000 100117 000030 010421 000000 000014
* -----

```


LOGUTIL

DESCRIPTION:

Prints I/O error logs in a more readable form than LISTLOG2.

CONSIDERATIONS:

It is unsupported!



:REDO
RUN LOGUTIL

LOGUTIL <6.4> SAT, FEB 16, 1980, 12:00 PM
AUDIT, SNAP, OR ERRCLIST ? AUDIT
ENTER THE *LIST* DEVICE (RETURN => \$STDLIST) LP
ENTER STARTING, STOPPING LOGFILE NUMBERS ? 188, 189
IS INPUT FROM DISC OR TAPE ? DISC
OUTPUT TO A JOB SUMMARIES FILE ? NO
SELECT THE LOG RECORD TYPES TO BE LISTED WITH (Y/N)
TYPE 0: LOG FILE ERRORS ? N
TYPE 1: LOG FILE HEADERS ? N
TYPE 2: JOB INITIATIONS ? N
TYPE 3: JOB TERMINATIONS ? N
TYPE 4: PROCESS COMPLETION ? N
TYPE 5: FILE CLOSURES ? N
TYPE 6: SYSTEM SHUT DOWNS ? N
TYPE 7: POWER FAILURES ? N
TYPE 8: SPOOFLE FINISHED ? N
TYPE 9: LINE DISCONNECTS ? N
TYPE 10: LINE CLOSURES ? N
TYPE 11: I/O ERRORS ? Y
TYPE 12: DISC LOAD ? N
TYPE 13: DISC MOUNT ? N
TYPE 14: TAPE MOUNT ? N
TYPE 15: CONSOLE LOG ? N
JOB SUMMARIES ? N

END OF PROGRAM
:RUN PSCREEN

LOGFILE AUDIT:SAT, FEB 16, 1980, 12:01 PM

TIME TYPE JOB # * * * * * FRI, FEB 15, 1980 * * *

12:12	I/O	ERR	SYS	LDEV=6	STATUS=X142000	,FUNCTION=X000001
12:12	I/O	ERR	SYS	LDEV=6	STATUS=X142000	,FUNCTION=X000001
12:12	I/O	ERR	SYS	LDEV=6	STATUS=X142000	,FUNCTION=X000001
13:40	I/O	ERR	SYS	LDEV=7	STATUS=X100512	,FUNCTION=X000000
13:47	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
13:49	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:08	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:08	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:09	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:13	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:13	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:13	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:18	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:19	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:19	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:19	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:19	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:21	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:21	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
16:25	I/O	ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
		ERR	SYS	LDEV=7	STATUS=X100552	,FUNCTION=X000001
				LDEV=7	STATUS=X100552	,FUNCTION=X000001
					STATUS=X100552	,FUNCTION=X000001
						,FUNCTION=X000001
						,FUNCTION=X000001

16:25 I/O ERR
16:29 I/O ERR SYS LDEV=7 STATUS=X102552 ,
16:29 I/O ERR SYS LDEV=7 STATUS=X102552 ,FUNCTION=X000001
16:29 I/O ERR SYS LDEV=7 STATUS=X102552 ,FUNCTION=X000001
16:33 I/O ERR SYS LDEV=7 STATUS=X100552 ,FUNCTION=X000001
16:34 I/O ERR SYS LDEV=7 STATUS=X100552 ,FUNCTION=X000001
16:34 I/O ERR SYS LDEV=7 STATUS=X100552 ,FUNCTION=X000001
16:35 I/O ERR SYS LDEV=7 STATUS=X100552 ,FUNCTION=X000001
16:35 I/O ERR SYS LDEV=7 STATUS=X100552 ,FUNCTION=X000001
16:37 I/O ERR SYS LDEV=7 STATUS=X100552 ,FUNCTION=X000001
16:40 I/O ERR SYS LDEV=7 STATUS=X100552 ,FUNCTION=X000001

END OF AUDIT:1643 RECORDS ANALYZED
0 LOG FILE ERRORS
2 LOG FILE HEADERS
130 JOB INITIATIONS
127 JOB TERMINATIONS
252 PROCESS COMPLETIONS
93 SPOOFLE FINISHED
89 I/O ERRORS
950 CONSOLE RECORDS

:RUN LOGUTIL

LOGUTIL <6.4> SAT, FEB 16, 1980, 11:57 AM
AUDIT, SNAP, OR ERRORLIST ? SNAP
ENTER THE 'LIST' DEVICE (RETURN => \$STDLIST)
ENTER STARTING, STOPPING LOGFILE NUMBERS ? 186, 190
IS INPUT FROM DISC OR TAPE ? DISC
COPY LOGFILES TO TAPE ? NO
LOG FILES SNAP LIST SAT, FEB 16, 1980, 11:57 AM

FILE	#REC	REGIN/END DATES	TOTAL
----	----	-----	-----
186	0	EMPTY LOG FILE ENCOUNTERED *****	0
187	73	WED, NOV 1, 1972, 12:00 AM WED, NOV 1, 1972, 12:14 AM	73
188	1238	TUE, FEB 12, 1980, 7:08 PM FRI, FEB 15, 1980, 1:52 PM	1311
189	405	FRI, FEB 15, 1980, 2:22 PM FRI, FEB 15, 1980, 6:47 PM	1716
190	119	FRI, FEB 15, 1980, 6:44 PM FRI, FEB 15, 1980, 7:21 PM	1835

A TOTAL OF 1835 LOG RECORDS WERE READ
A TOTAL OF 5 LOG FILES WERE READ

END OF PROGRAM
RUN PSCREEN

:RUN LOGUTIL

LOGUTIL <6.4> SAT, FEB 16, 1980, 12:07 PM
AUDIT, SNAP, OR ERRORLIST ? ERRORLIST
ENTER THE 'LIST' DEVICE (RETURN => \$STDLIST) LP
ENTER STARTING, STOPPING LOGFILE NUMBERS ?188,188
IS INPUT FROM DISC OR TAPE ? DISC
LIST INDIVIDUAL ERRORS ? YES
ENTER Y/N FOR THE TYPES TO BE LISTED
TYPE 0 MOVING HEAD DISC Y
TYPE 1 FIXED HEAD DISC N
TYPE 8 CARD READER N
TYPE 9 PAPER TAPE READER N
TYPE 16 TERMINAL N
TYPE 18 RJE-LINE N
TYPE 19 HIGH SPEED SERIAL N
TYPE 20 READER/PUNCH N
TYPE 22 SYNC SNGL LINE CNTRL N
TYPE 23 PROG CONTROLLER N
TYPE 24 MAG TAPE Y
TYPE 32 LINE PRINTER N
TYPE 33 CARD PUNCH N
TYPE 34 PAPER TAPE PUNCH N
TYPE 35 PLOTTER N
TYPE 41 DS-3000 N

END OF PROGRAM
:RUN PSCREEN

LOGFILE ERROPLIST SAT, FEB 16, 1980, 12:07 PM

*****WED, FEB 13, 1980, 2:07 PM*****MAG TAPE
LOGICAL DEVICE 7 DRT 6 UNIT 0 STATUS= %101512
FUNCTION IS %000007
COMPLETION STATUS: <IRRECOVERABLE ERROR> TAPE PARITY ERROR
SYSTEM BUFFER USED
MISC DATA =%140001, #P1=%000000 , #P2=%000000
NO TRANSFER IN PROGRESS
READY

*****WED, FEB 13, 1980, 2:08 PM*****MAG TAPE
LOGICAL DEVICE 7 DRT 6 UNIT 0 STATUS= %109552
FUNCTION IS WRITE
COMPLETION STATUS: <SUCESSFUL> WITH TAPE RETRY
MISC DATA =%100001, #P1=%000000 , #P2=%000014
NO TRANSFER IN PROGRESS
READY INTERRUPT
NOT READY INTERRUPT
CLEAR INTERFACE INTERRUPT
TRANSFER ERROR INTERRUPT

*****WED, FEB 13, 1980, 3:21 PM*****MAG TAPE
LOGICAL DEVICE 7 DRT 6 UNIT 0 STATUS= %100552
FUNCTION IS WRITE
COMPLETION STATUS: <SUCESSFUL> WITH TAPE RETRY
MISC DATA =%100001, #P1=%000000 , #P2=%000014
NO TRANSFER IN PROGRESS
READY INTERRUPT
NOT READY INTERRUPT
CLEAR INTERFACE INTERRUPT
TRANSFER ERROR INTERRUPT

! SUMMARY OF I/O ERRORS !

*****LINE PRINTER
LOGICAL DEVICE 6 DRT 14 UNIT 0
HAD 0 READ AND 5 WRITE ERRORS. TOTAL ERRORS =6
THERE WERE 1 WATCHDOG TIMER INTERRUPT

*****MAG TAPE
LOGICAL DEVICE 7 DRT 6 UNIT 0
HAD 1 READ AND 55 WRITE ERRORS. TOTAL ERRORS =57
THERE WERE 1 SYSTEM BUFFER USED
THERE WERE 57 NO TRANSFER IN PROGRESS
THERE WERE 56 READY INTERRUPT
THERE WERE 55 NOT READY INTERRUPT
THERE WERE 56 CLEAR INTERFACE INTERRUPT
THERE WERE 56 TRANSFER ERROR INTERRUPT
THERE WERE 1 READY

:RUN LOGUTIL

LOGUTIL <6.4> SAT, FEB 16, 1980, 12:03 PM
AUDIT, SNAP, OR ERRORLIST ? ERROR LIST
ENTER THE *LIST* DEVICE (RETURN => \$STDLIST) LP
ENTER STARTING, STOPPING LOGFILE NUMBERS ? 187, 190
IS INPUT FROM DISC OR TAPE ? DISC
LIST INDIVIDUAL ERRORS ? NO

END OF PROGRAM
:RUN PSCREEN

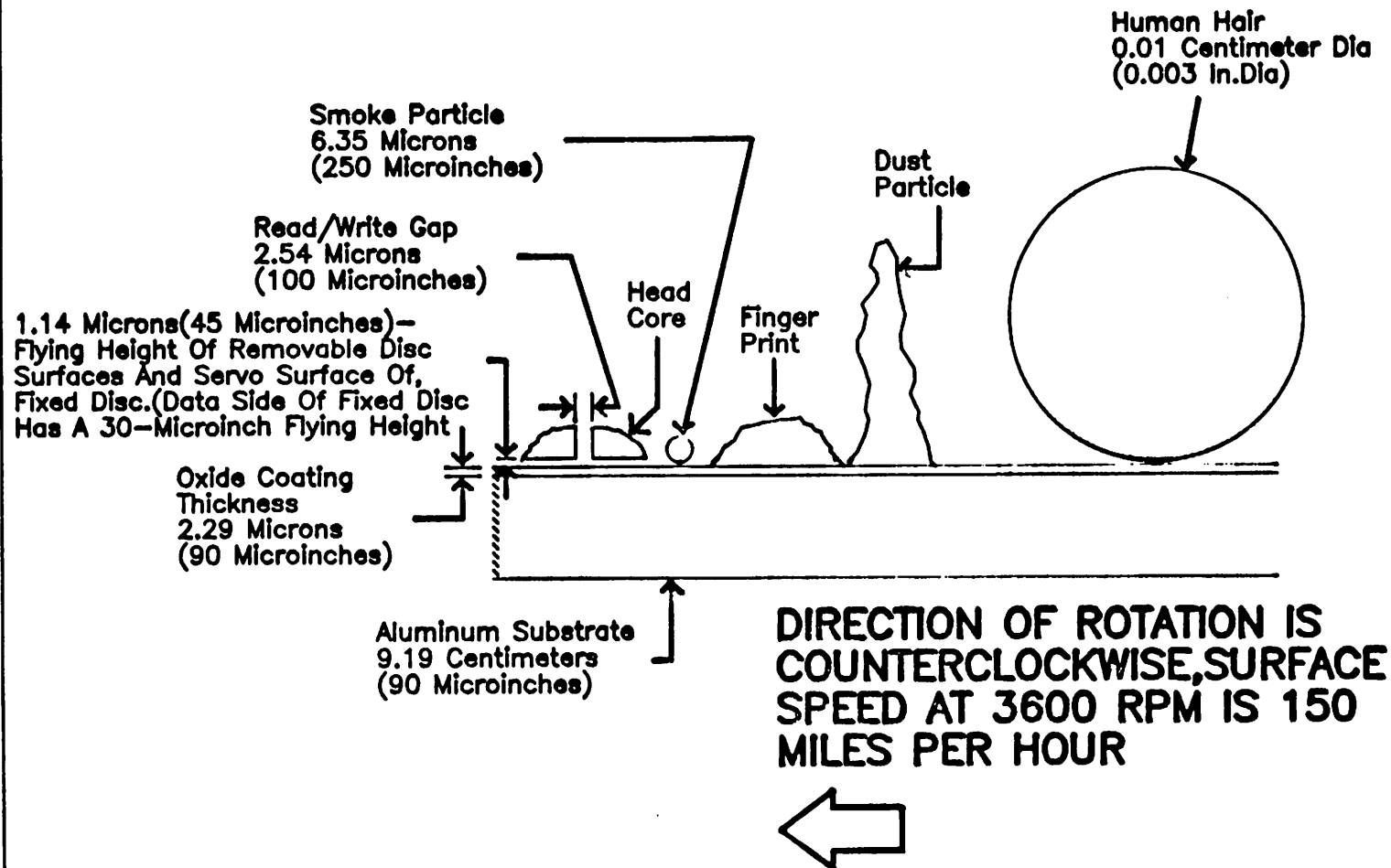
LOGFILE ERRORLIST SAT, FEB 16, 1980, 12:03 PM

! SUMMARY OF I/O ERRORS !

*****LINE PRINTER
LOGICAL DEVICE 6 DRT 14 UNIT 0
HAD 0 READ AND 5 WRITE ERRORS. TOTAL ERRORS =7
THERE WERE 2 WATCHDOG TIMER INTERRUPT

*****MAG TAPE
LOGICAL DEVICE 7 DRT 6 UNIT 0
HAD 1 READ AND 81 WRITE ERRORS. TOTAL ERRORS =83
THERE WERE 1 SYSTEM BUFFER USED
THERE WERE 83 NO TRANSFER IN PROGRESS
THERE WERE 2 DEVICE FLAG SET
THERE WERE 82 READY INTERRUPT
THERE WERE 81 NOT READY INTERRUPT
THERE WERE 82 CLEAR INTERFACE INTERRUPT
THERE WERE 82 TRANSFER ERROR INTERRUPT
THERE WERE 1 READY

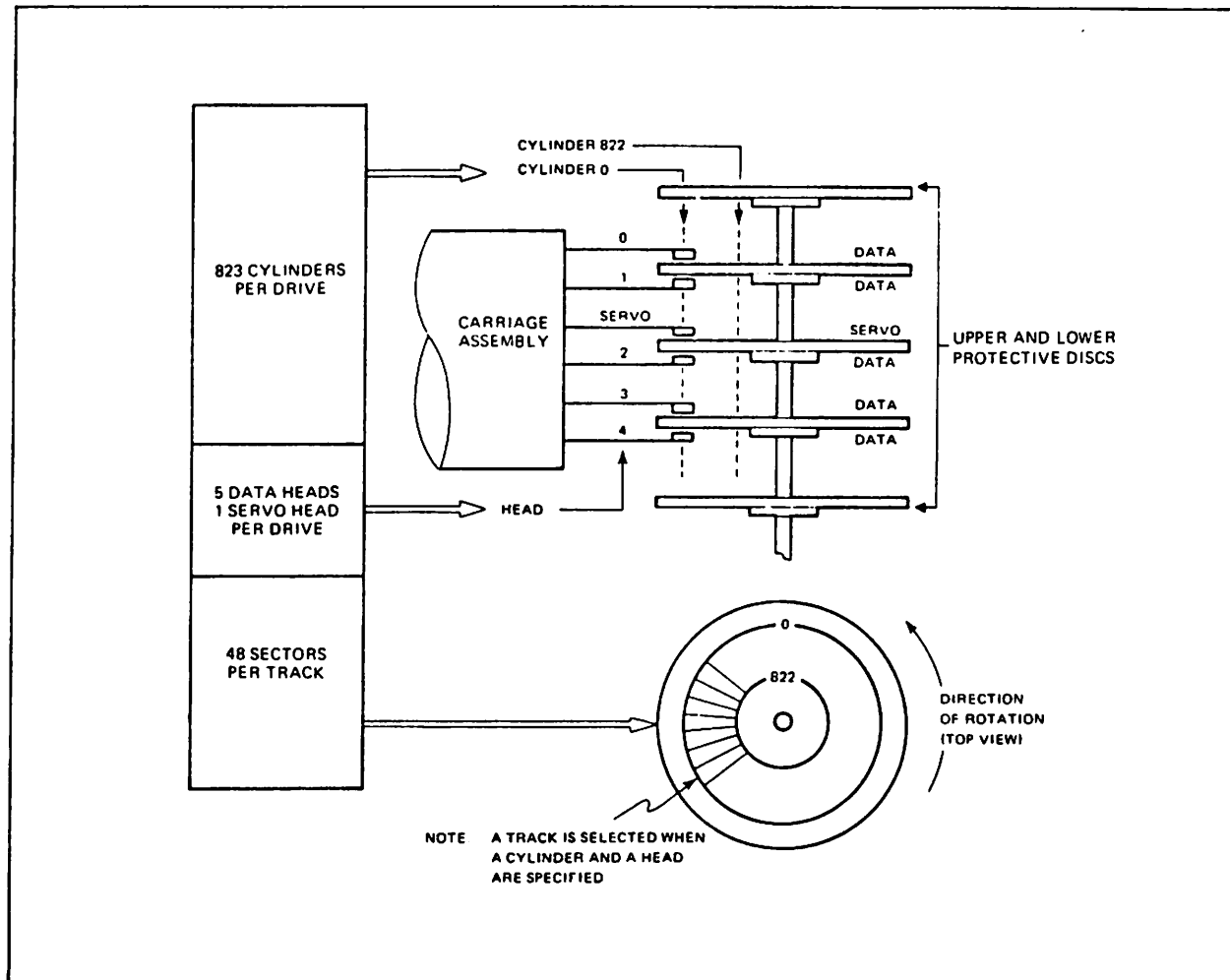
Theory of Operation



HP-1000 Slide Prep System

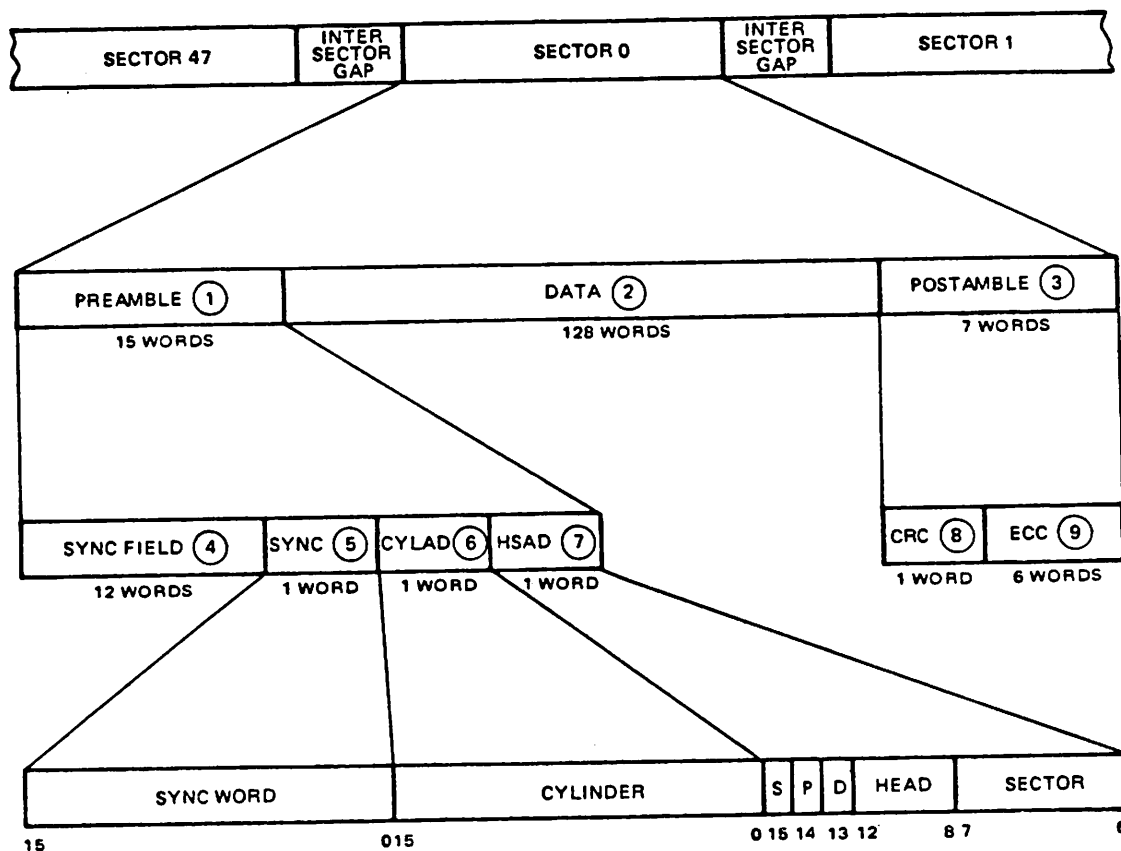


VIEWB

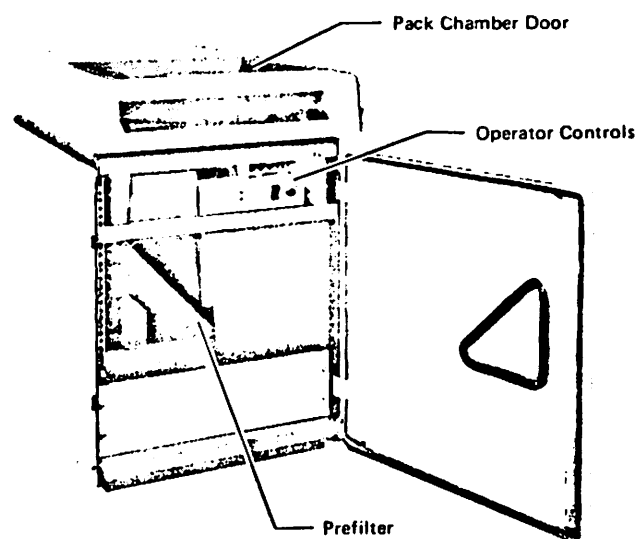


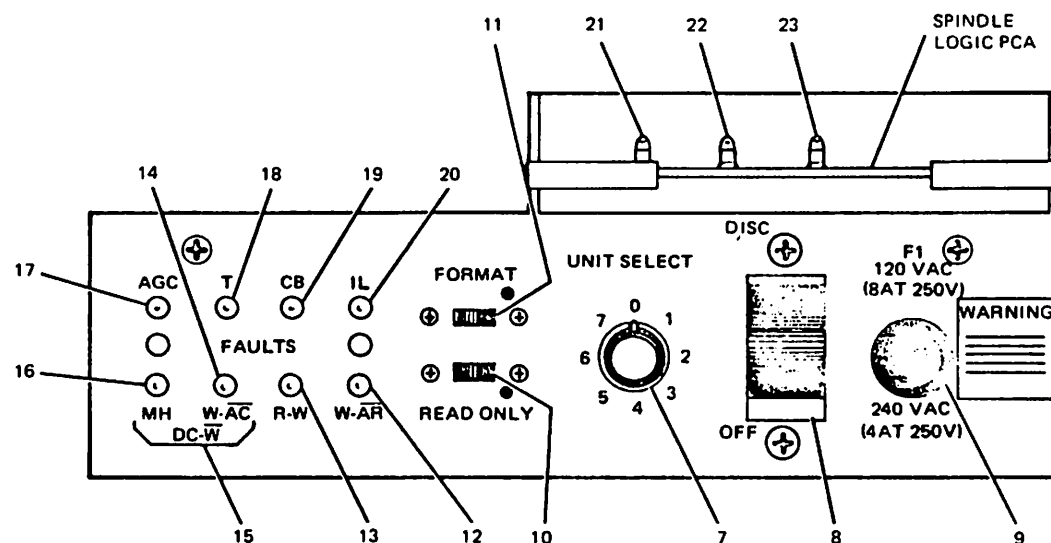
7301-358

Figure 4-1. Addressing Structure of an HP 7920A Disc Drive



- ① PREAMBLE – 15 WORDS FOR SYNCHRONIZATION AND ADDRESSING
- ② DATA – 128 WORDS OF DATA
- ③ POSTAMBLE – DATA CHECKING AND ERROR CORRECTION INFORMATION
- ④ SYNC FIELD – 12 WORDS (192 BITS) OF 0's
- ⑤ SYNC – SYNC WORD – 100376_8 IF ECC FIELD IS VALID (BITS 15-0)
 100377_8 OTHERWISE
- ⑥ CYLAD – CYLINDER – CYLINDER ADDRESS (BITS 15-0)
- ⑦ HSAD – S – IF "I", SPARE TRACK IN ACTIVE USE (BIT 15)
P – IF "I", PROTECTED TRACK (BIT 14)
D – IF "I", DEFECTIVE TRACK (BIT 13)
HEAD – HEAD ADDRESS (BITS 12-8)
SECTOR – SECTOR ADDRESS (BITS 7-0)
- ⑧ CRC – CYCLIC REDUNDANCY CHECK – 1 WORD OF CHECK INFORMATION
- ⑨ ECC – ERROR CORRECTION CODE – 6 WORDS OF CHECK AND CORRECTION INFORMATION





7905/06 DRIVE FAULT STATUS

FAULT	LED(s) ILLUMINATED
CB	yellow
T	red
AGC	yellow,red
IL	green
$\overline{W} \cdot \overline{AR}$	yellow,green
$R \cdot W$	green,red
$W \cdot \overline{AC}$	yellow,green,red
MH	red,red
$\overline{W} \cdot DC$	red,red,yellow

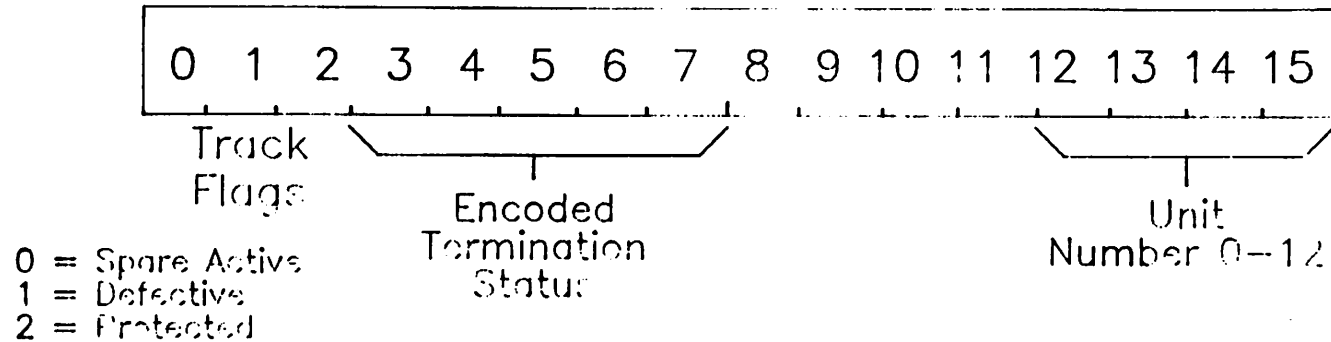


INDICATOR/ INDICATION	ACTIVE STATE		FUNCTIONAL DIAGRAM
	LOGIC EQUATION	CIRCUIT DESCRIPTION	
AGC LED Indicator	AGCF • DRDY = AGC • SKH • DRDY	Indicator is lit when both of the following conditions are met: a. Heads are out of cylinder area between inner and outer guard bands. [DRDY (Drive Ready) signal active.] b. AGC (Automatic Gain Control) and DRDY (Drive Ready) signals active.	Fault Detection System, figure 7-29.
CB LED Indicator	CRB • DRDY	Indicator is lit when both of the following conditions are met: a. CRB (Carriage Back) signal active. b. DRDY (Drive Ready) signal active.	Fault Detection System, figure 7-29.
MH LED Indicator	MHS + WRITE • DCW	Indicator is lit when more than one head is selected for reading or writing.	fault Detection System, figure 7-29.
W • AC and MH LED Indicators	WRITE • DCW	Both indicators are lit when the following conditions are met: a. DC current supplied to head drivers. b. Drive not in write mode.	Fault Detection System, figure 7-29.
T LED Indicator	TOFL	Indicator is lit when any one of the following conditions is met: a. Heads not settled on specified cylinder within 90 milliseconds after SK (Seek) signal is activated. b. Heads not settled on cylinder 0 within 1250 milliseconds after SKH (Seek Home) signal becomes active. c. Heads do not reach fully retracted position within 1250 milliseconds after RET (Retrack) signal becomes active. d. Heads not settled on cylinder 0 within 1250 milliseconds after RH (Restore Home) signal becomes active.	Fault Detection System, figure 7-29.

INDICATOR/ INDICATION	ACTIVE STATE		FUNCTIONAL DIAGRAM
	LOGIC EQUATION	CIRCUIT DESCRIPTION	
W • \overline{AR} LED Indicator	WRITE • ACRY	Indicator is lit when both of the following conditions are met: a. Drive in write mode. b. ACRY (Access Ready) signal inactive.	Fault Detection System, figure 7-29.
R • W LED Indicator	URG • WRITE	Indicator is lit when both of the following conditions are met: a. URG (Unselected Read Gate) signal active. b. WRITE (Write) signal active.	Fault Detection System, figure 7-29.
W • \overline{AC} LED Indicator	WRITE • \overline{ACW}	Indicator is lit when the following conditions are met: a. Drive in write mode. b. No data signal present.	Fault Detection System, figure 7-29.
IL LED Indicator	— — —	Indicator is lit when any one of the following conditions is met: a. Any PCA (with the exception of PCA-A11 and PCA-A12) not firmly seated or correctly positioned in the drive. b. Pack loading assembly disconnected. c. 25 Vac, +36 Vdc, +12 Vdc, +5 Vdc, -12 Vdc, -24 Vdc, or -36 Vdc power source out of tolerance or missing. d. Temperature of heat sink on PCA-A9 rises above a specified limit. e. A spindle fault is detected.	Fault Detection System, figure 7-29.

7905/6/20/25 Drives

Status word 1 Format



Encoded Termination Status:

Bit 3 4 5 6 7

0 0 0 0 0	Normal Completion
0 0 0 0 1	Illegal Opcode <%26
0 0 0 1 0	Set Wakeup
0 0 1 1 1	Cyl Compare Error
0 1 0 0 0	Uncorrectable Data
0 1 0 0 1	Hd/Sec Compare Error
0 1 0 1 0	I/O Program Error
0 1 1 0 0	End of Cylinder
0 1 1 1 0	Overrun (TFR) Error
0 1 1 1 1	Possibly Correctable Data Error

Bit 3 4 5 6 7

1 0 0 0 0	Illegal Spare Trk Access
1 0 0 0 1	Defective Track
1 0 0 1 0	Hd moving during Data Op
1 0 0 1 1	Status 2 Error
1 0 1 1 0	Write attempted on Protected or Defective Trac
1 0 1 1 1	Unit Available
1 1 1 1 1	Drive Attention (Seek Complete)



7905/6/20/25 Disk Drive

Status Word 2

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Status-2 Error
(Any * bit true)

Address of last
available surface

Invalid Cyl Addr
Invalid Hd Addr
Invalid Sec Addr
Multiple Seeks

Bit	Description
-----	-------------

7	Always 0
---	----------

8	Attention
---	-----------

9	Protected
---	-----------

10	Format
----	--------

11	*Fault
----	--------

12	First Status
----	--------------

13	*Seek Check
----	-------------

14	*Drive Not Ready
----	------------------

15	*Drive Busy
----	-------------

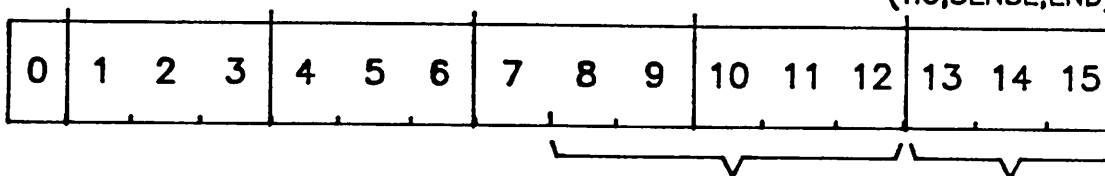
Note: Status 1 same as Status 3 in bits 3-15.



2888A Disc File

STATUS WORD

(TIO,SENSE,END)



Bit	Description
-----	-------------

0	SIO OK
1	200 TRACKS/INCH
2	INTERRUPT REQUEST
3	DRIVE OFF/ON LINE
4	DRIVE UNSAFE
5	SEEK INCOMPLETE
6	DRIVE BUSY
7	PACK CHANGE
8	*CONTROLLER STATUS 0-37 ₈
9	
10	
11	
12	DRIVE NUMBER 0-7
13	
14	
15	

2888A Disc File

*CONTROLLER STATUS

8	9	10	11	12	
0	0	0	0	0	ERROR FREE
0	0	0	0	1	ILLEGAL OPCODE
0	0	0	1	1	CYLINDER NUMBER>405
0	0	1	0	0	HEAD NUMBER>19
0	0	1	0	1	TIME-OUT, SEARCH FOR ADDRESS (HEAD,SECTOR)>100ms
0	0	1	1	0	DEFECTIVE TRACK ADDRESSED
0	0	1	1	1	HEADS MISPOSITIONED
0	1	0	0	0	CYCLIC ERROR IN ADDRESS FIELD
0	1	0	0	1	CYCLIC ERROR IN DATA FIELD
0	1	0	1	0	I/O PROGRAM ERROR
0	1	0	1	1	SEQUENCE ERROR-DATA FIELD DOES NOT FOLLOW AN ADDRESS FIELD DURING SEARCH
0	1	1	0	0	CYLINDER OVERRUN
0	1	1	0	1	ZERO SECTOR COUNT IN CYCLIC CHECK OPCODE
0	1	1	1	0	DATA OVERRUN
1	0	0	0	0	ILLEGAL TERMINATION- I/O TERMINATED BEFORE COMPLETING A READ OR WRITE ADDRESS
1	0	0	1	1	DRIVE ERROR
1	0	1	0	0	TRANSFER ERROR
1	1	1	1	1	DRIVE ATTENTION

:RUN SECTOR.PAULSON.STAFF

DISC HARDWARE ADDRESS CALCULATOR <1.0>

ENTER DISC TYPE (0 OR 1) 0

ENTER SUBTYPE 0

DISC HAS 2 HEADS,200 TRACKS, 24 SECTORS PER TRACK

ENTER SUBTYPE 1

DISC HAS 2 HEADS,200 TRACKS, 24 SECTORS PER TRACK

ENTER SUBTYPE 2

DISC HAS 4 HEADS,200 TRACKS, 24 SECTORS PER TRACK

ENTER DISC TYPE (0 OR 1) 0

ENTER SUBTYPE 3

DISC HAS 20 HEADS,400 TRACKS, 23 SECTORS PER TRACK

ENTER SUBTYPE 4

DISC HAS 2 HEADS,400 TRACKS, 48 SECTORS PER TRACK

ENTER SUBTYPE 5

DISC HAS 1 HEADS,400 TRACKS, 48 SECTORS PER TRACK

ENTER SUBTYPE 6

DISC HAS 3 HEADS,400 TRACKS, 48 SECTORS PER TRACK

ENTER SUBTYPE 7

DISC HAS 3 HEADS,120 TRACKS, 48 SECTORS PER TRACK

ENTER SUBTYPE 8

DISC HAS 5 HEADS,800 TRACKS, 48 SECTORS PER TRACK

ENTER SUBTYPE 9

ENTER DISC TYPE (0 OR 1) 0

:RUN PSCREEN

ABORT?YES

PROGRAM ABORTED PER USER REQUEST. (CIERR 989)

:RUN SECTOR.PAULSON.STAFF

DISC HARDWARE ADDRESS CALCULATOR <1.0>

ENTER DISC TYPE (0 OR 1) 0

ENTER SURTYPE 6

DISC HAS 3 HEADS, 400 TRACKS, 48 SECTORS PER TRACK

ENTER MOST SIGNIFICANT SECTOR ADDRESS

ENTER LEAST SIGNIFICANT SECTOR ADDRESS 666

SECTOR NUMBER 666

TRACK 4 HEAD 1 SECTOR 42

ENTER MOST SIGNIFICANT SECTOR ADDRESS

ENTER LEAST SIGNIFICANT SECTOR ADDRESS 680

SECTOR NUMBER 680

TRACK 4 HEAD 2 SECTOR 8

ENTER MOST SIGNIFICANT SECTOR ADDRESS

ENTER LEAST SIGNIFICANT SECTOR ADDRESS 5678

SECTOR NUMBER 5678

TRACK 39 HEAD 1 SECTOR 14

ENTER MOST SIGNIFICANT SECTOR ADDRESS

ENTER LEAST SIGNIFICANT SECTOR ADDRESS

ENTER DISC TYPE (0 OR 1) 0

ENTER SURTYPE 9

ENTER DISC TYPE (0 OR 1)

END OF PROGRAM

REASONS FOR TAPE FAILURE

- **DROPOUTS**
- **SELF CONTAMINATION**
- **LOW WRAPPING TENSION**
- **HIGH WRAPPING TENSION**
- **EDGE DAMAGE**
- **POOR ENVIRONMENT**

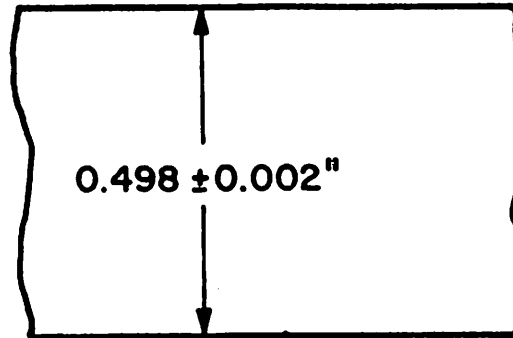
ENVIRONMENTAL LIMITATIONS

- EASILY CONTAMINATED BY DIRT
- DETERIORATION OF OXIDE, BINDER, OR BASE MATERIAL WHEN EXCEEDING TEMPERATURE AND HUMIDITY RANGES:

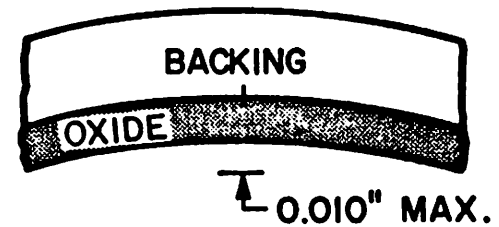
TEMPERATURE RANGE	40° TO 90°F
HUMIDITY RANGE	20 TO 80%

TAPE

WIDTH

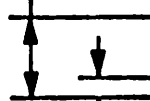


CUPPING
TENDENCY



THICKNESS

$0.0019 \pm 0.0003"$

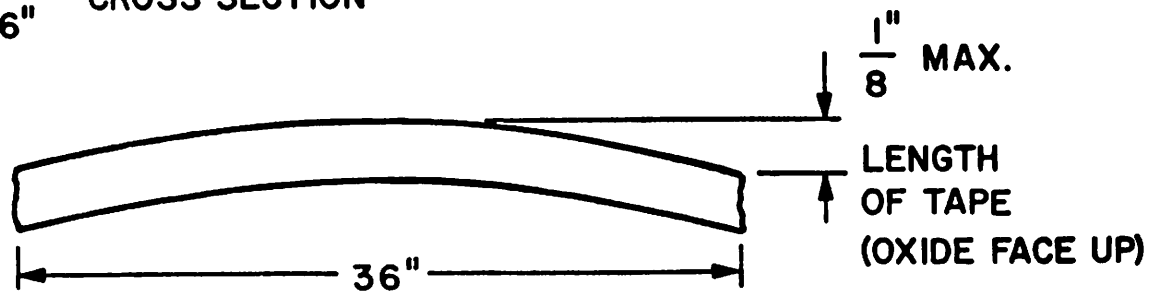


$0.0006"$

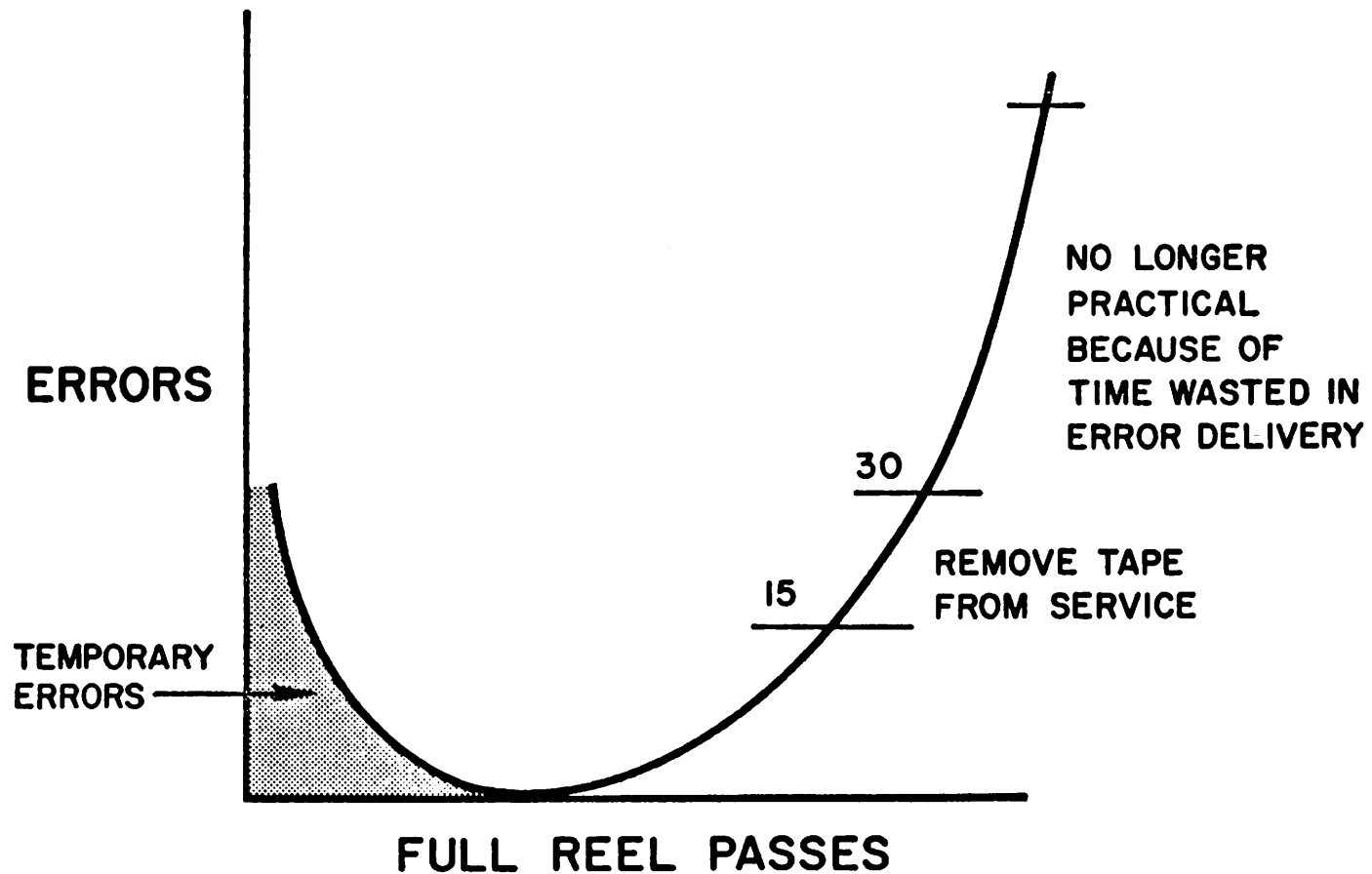
CROSS SECTION

OXIDE

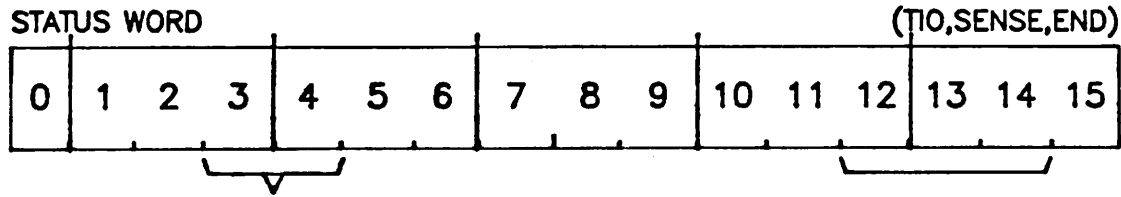
CUT SKEW



MAGNETIC TAPE PERFORMANCE



7970B/E Magnetic Tape Drive

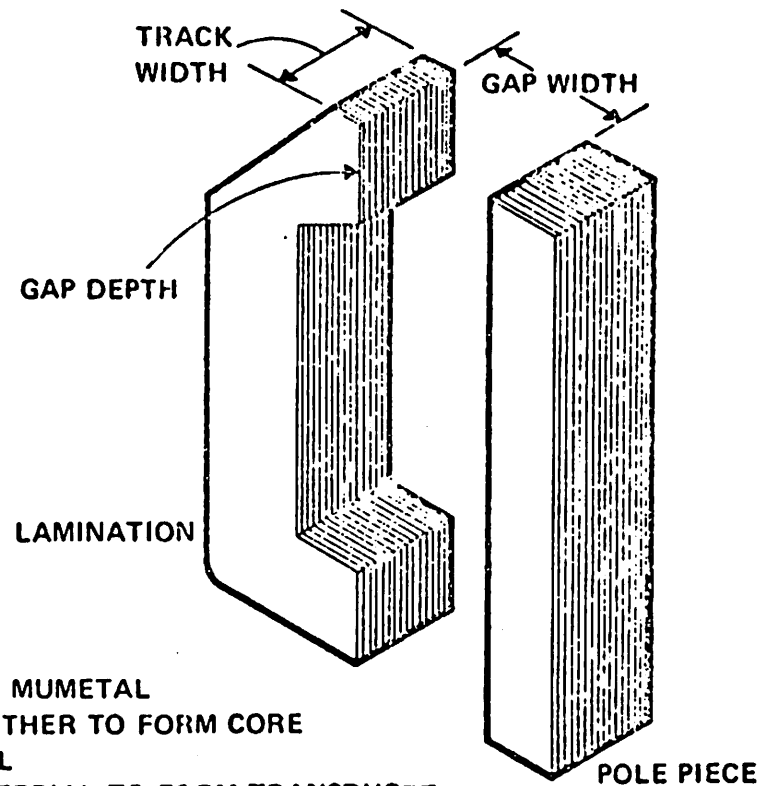


Bit	Description
0	SIO OK
1	ODD BYTES READ
2	INTERRUPT REQUEST
3	UNIT SELECT
4	
5	
6	END OF TAPE (EOT)
7	WRITE FILE PROTECT
8	UNIT READY (ON LINE)
9	BEGINNING OF TAPE (BOT)
10	800/1600 CPI
11	WRITE STATUS
12	FILE MARK DETECTED
13	*CONTROLLER STATUS
14	
15	
	7 TRACK/9 TRACK

*CONTROLLER STATUS

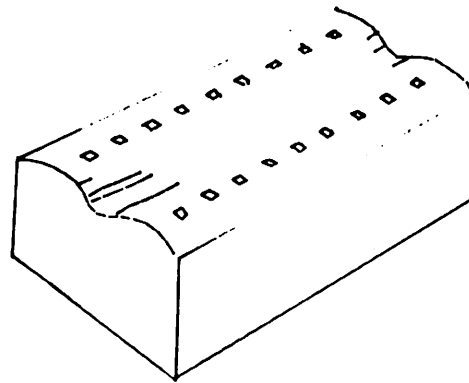
12	13	14	
0	0	0	UNIT READY TO INTERRUPT
0	0	1	TRANSFER ERROR
0	1	0	COMMAND REJECTED
0	1	1	TAPE RUNAWAY (25 FEET)
1	0	0	TIMING ERROR
1	0	1	TAPE ERROR (PARITY,CRC,etc)
1	1	1	ERROR FREE

HEAD CONSTRUCTION



- FRETS ARE ETCHED FROM MUMETAL
- FRETS ARE BONDED TOGETHER TO FORM CORE
- CORE IS WOUND WITH COIL
- ASSEMBLED WITH GAP MATERIAL TO FORM TRANSDUCER

STACK ASSEMBLY



Transducers Assembled Into Side Pieces
With Magnetic Shielding Between

Gaps Are Optically Aligned In A
Jig And Epoxied In Place

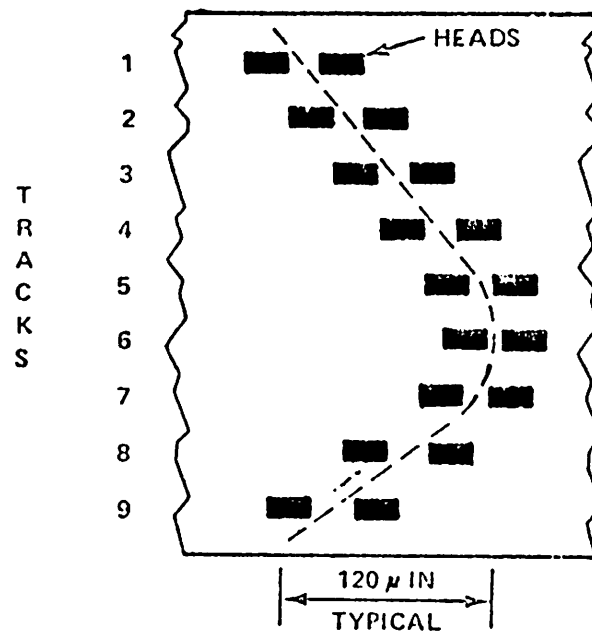
Head Is Lapped For Proper Contour
And Tested

HP-1000 Slide Prep System



MT08

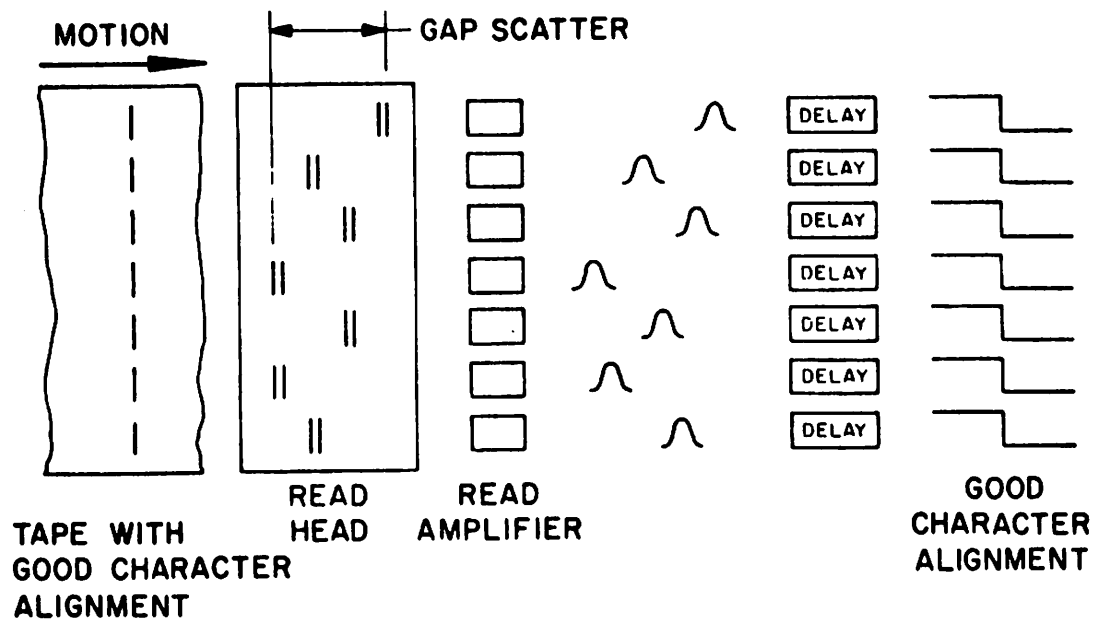
GAP SCATTER



STANDARDS SPECIFY $< 150 \mu$ IN

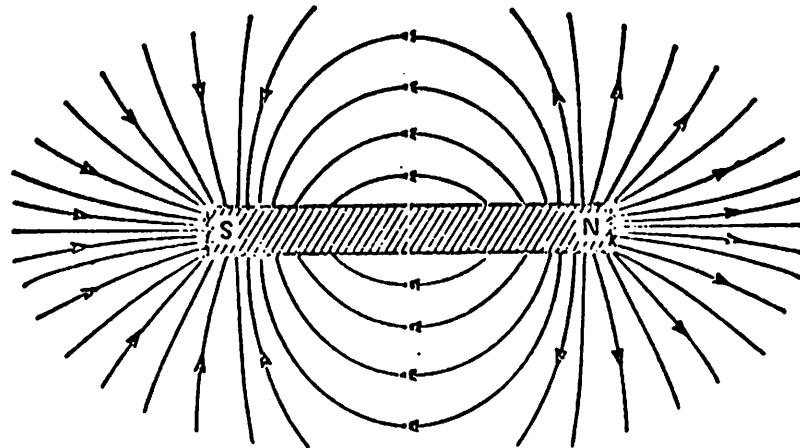
- THE DRYING EPOXY PUSHES HEAD TRANSDUCERS OUT OF LINE RESULTING IN BITS BEING DISPLACED ACROSS TAPE
- GAP SCATTER HAS PARABOLIC CONTOUR

STATIC SKEW (GAP SCATTER)



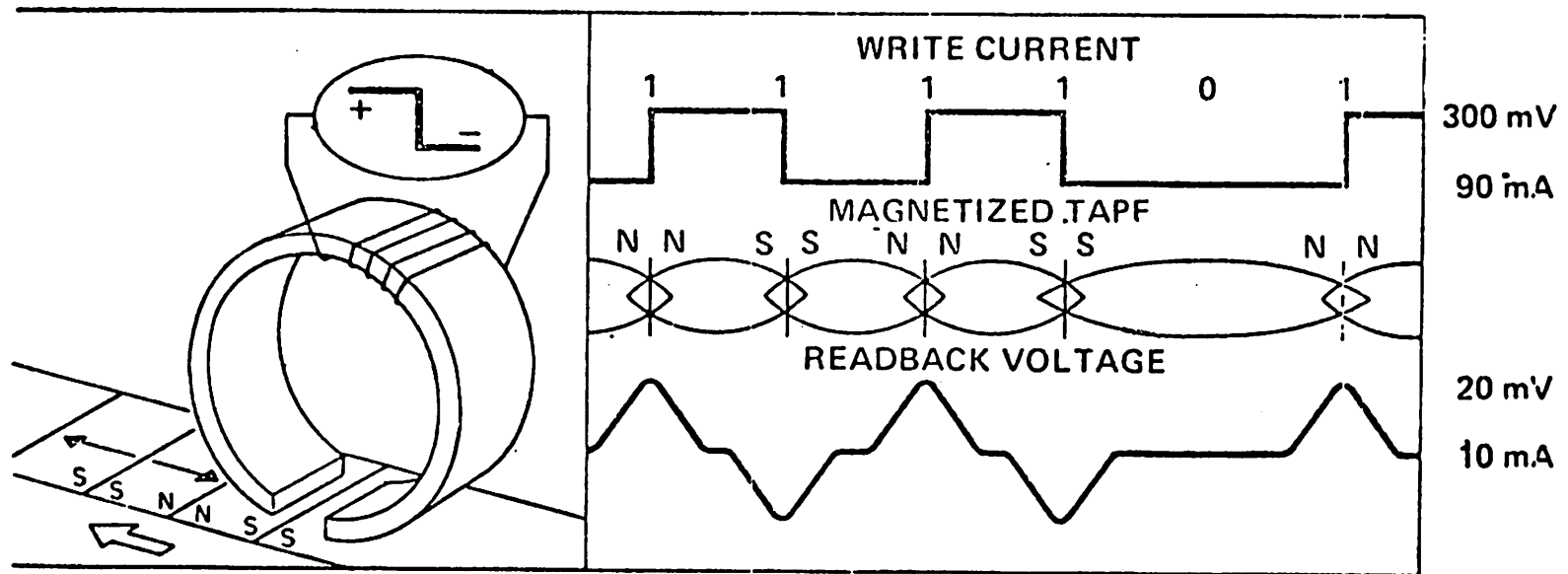
- TWO DELAY ADJUSTMENTS FOR EACH TRACK
- POTENTIOMETER ADJUSTMENT RATHER THAN DELAY TAPS

FIELD PATTERN AROUND A BAR MAGNET

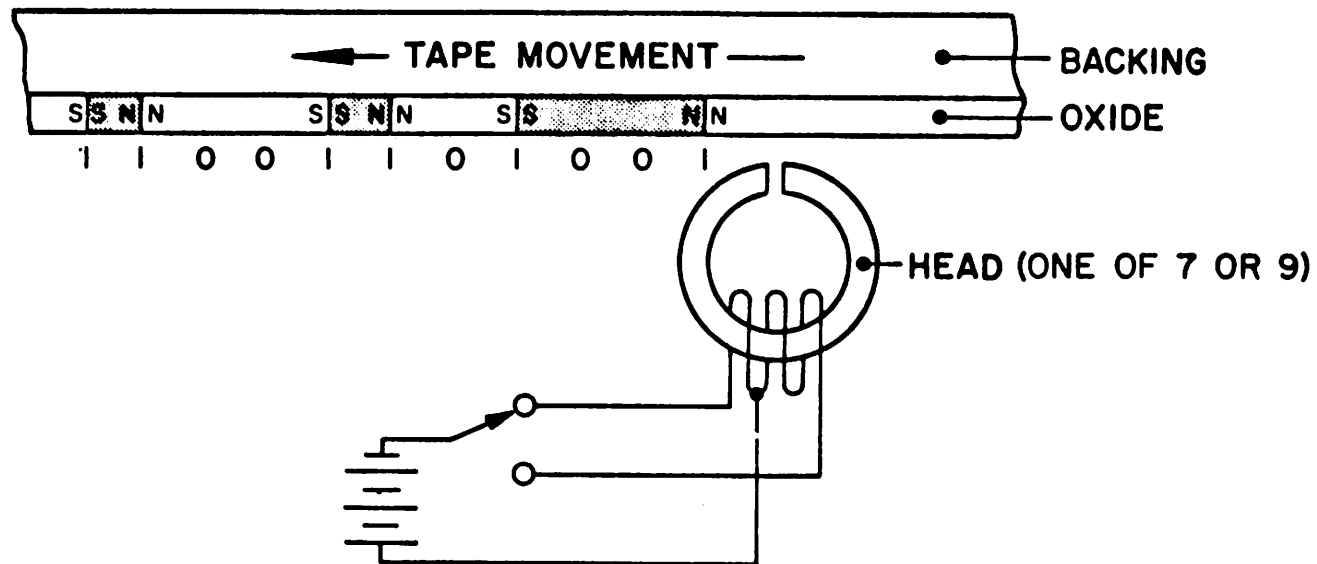


THE RECORDING PROCESS

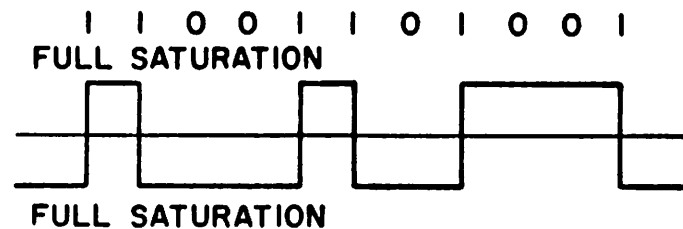
DATA IS RECORDED ON TAPE AS IT PASSES A HEAD WHICH IS
POLARIZED IN EITHER A NORTH OR SOUTH DIRECTION



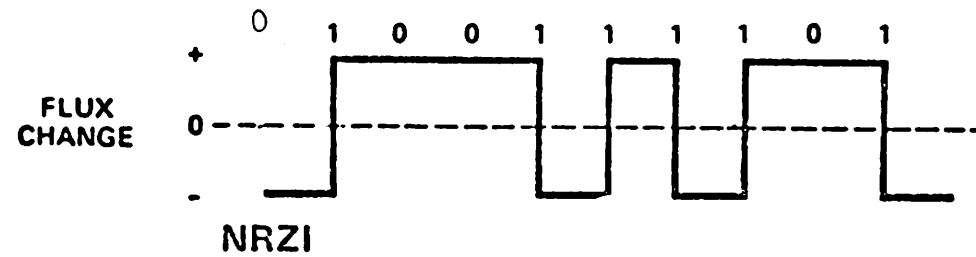
NRZI RECORDING



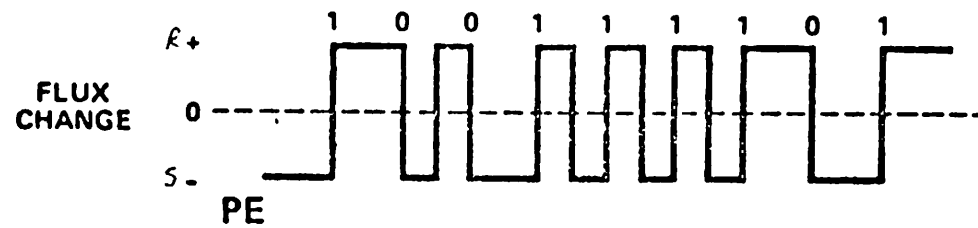
OPERATION OF THE SWITCH.
ONLY A CHANGE FOR A
LOGICAL "ONE" NO CHANGE
IN FLUX FOR A LOGICAL
"ZERO".



NRZI VERSUS PE



FLUX-TRANSITION ONLY FOR "1" BIT



FLUX TRANSITION FOR EACH BIT MAKES DATA REDUNDANT
AND SELF CLOCKING
REDUCES PULSE CROWDING