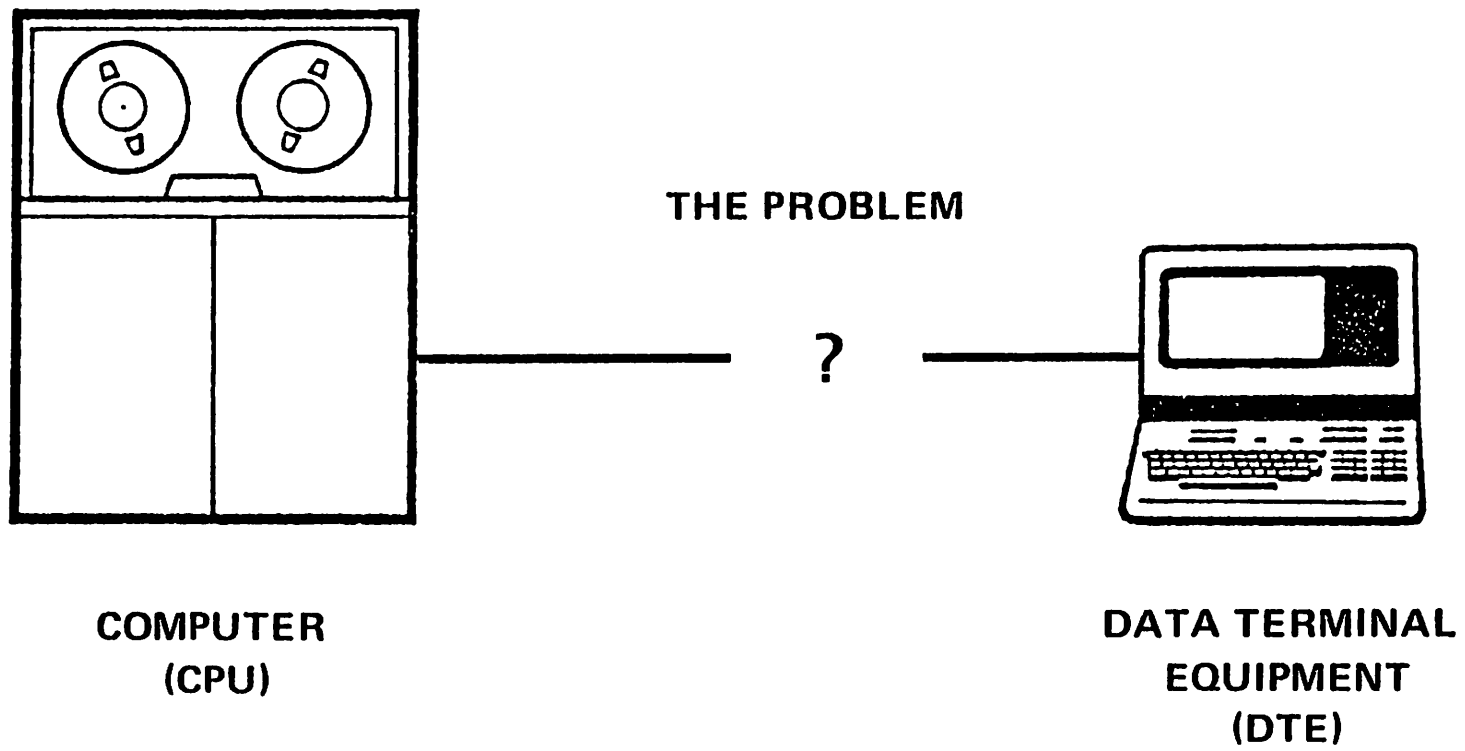


DATA COMM
HANDOUTS

OUTLINE

1. Bits, bauds, bits/sec
2. RS 232C Interface standard
3. Hardwired vs. Modem connected
4. Types of Data channels
5. Asynchronous vs. Synchronous transmission
6. Types of telephone services available
7. Types of Modems available
8. Data concentrators
9. Types of advanced protocols - BISYNC, SDLC, HDLC
10. Packet switching networks; direct digital connection

DATA TRANSMISSION



BITS, BAUDS, BITS/SEC

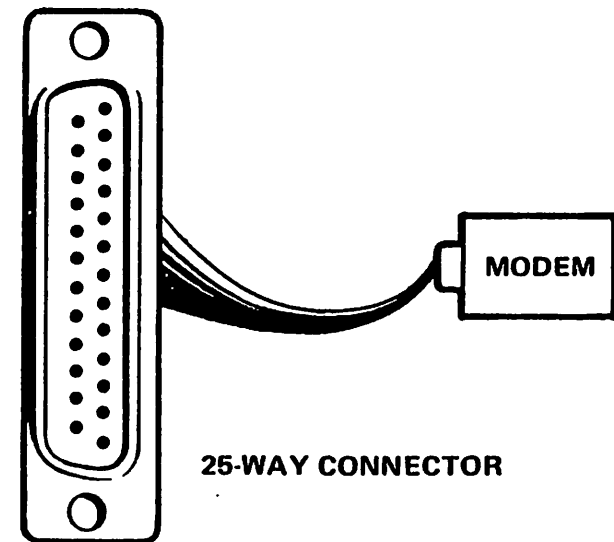
1. BIT - Binary digit
2. BAUD - Speed of digital signals
3. BITS/SEC - Actual data rate
4. When Baud rate = BPS
5. When Baud rate $\neq$ BPS
6. Bandwidth and Baud say similar things

STANDARD DTE/MODEM INTERFACE

- **V24 – SPECIFIES INTERFACE OPERATION**
- **V28 – SPECIFIES ELECTRICAL CHARACTERISTICS**
- **V24 + V28 $\equiv$ EIA RS-232C**

RS-232C/V24 MODEM INTERFACE

EARTH	{	PIN 1	PROTECTIVE EARTH
		PIN 7	SIGNAL GROUND OV
TRANSMIT CONTROL	{	PIN 2	TRANSMIT DATA
		PIN 15	TRANSMIT CLOCK
		PIN 4	RTS
		PIN 5	CTS
		PIN 24	EXT TRANSMIT CLOCK
RECEIVE CONTROL	{	PIN 3	RECEIVE DATA
		PIN 17	RECEIVE CLOCK
		PIN 8	DCD (RLSD)
GENERAL	{	PIN 6	DATA SET READY
		PIN 20	DATA TERMINAL READY



DATA CHANNELS

SIMPLEX

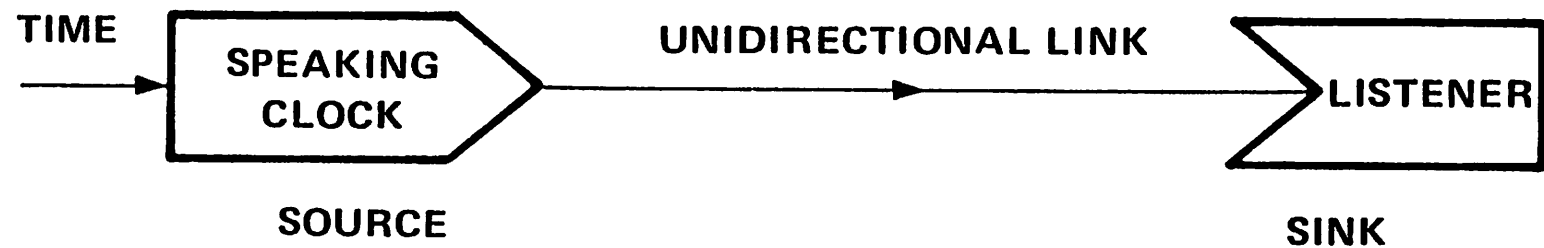
HALF DUPLEX

FULL DUPLEX

ASYNCHRONOUS

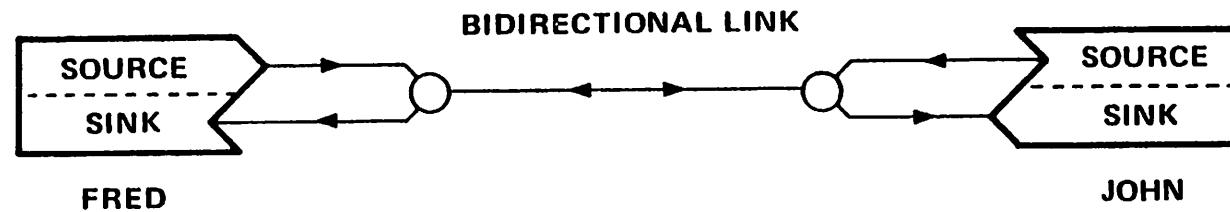
SYNCHRONOUS

SIMPLEX TRANSMISSION



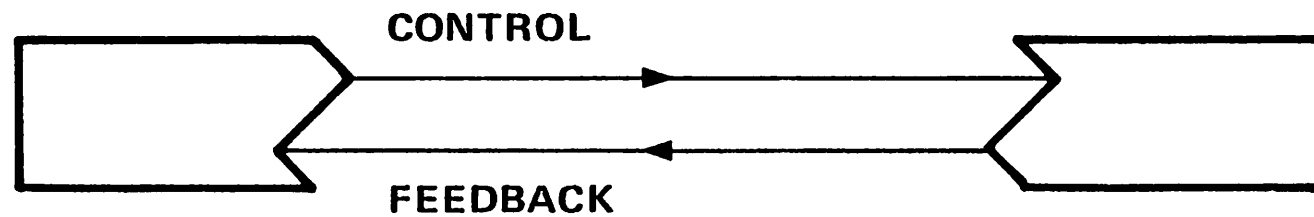
INFORMATION CAN FLOW IN ONE DIRECTION ONLY
(e.g. SPEAKING CLOCK)

HALF-DUPLEX TRANSMISSION



INFORMATION MAY FLOW IN EITHER DIRECTION, BUT NOT SIMULTANEOUSLY
(e.g. NORMAL CONVERSATION)

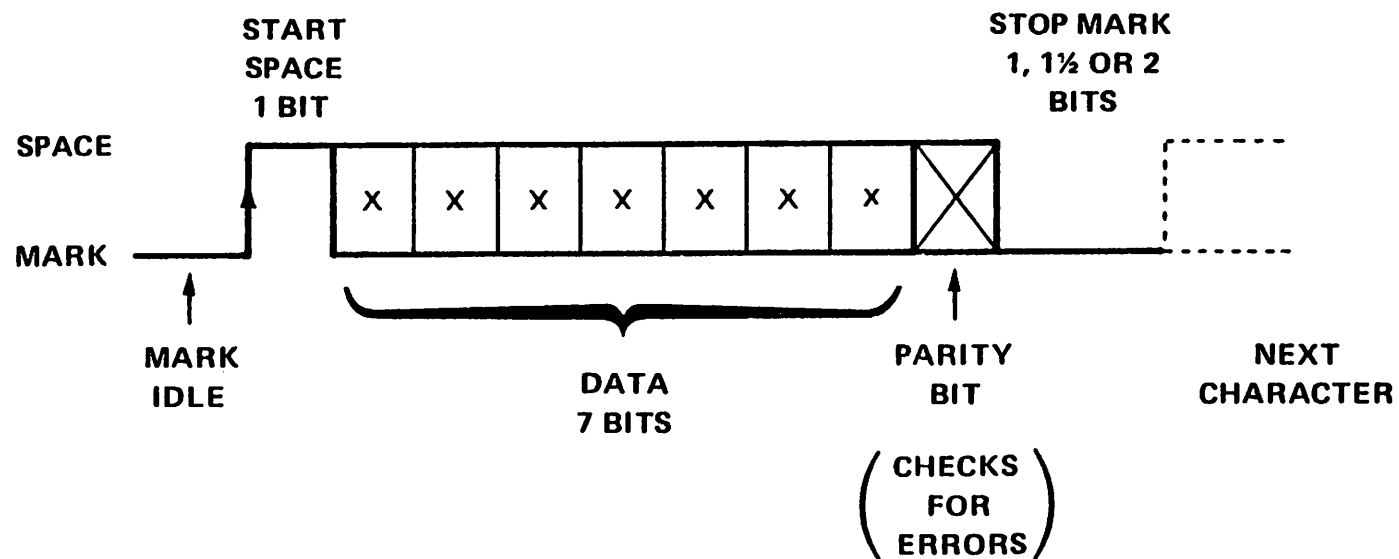
FULL-DUPLEX TRANSMISSION



INFORMATION MAY FLOW IN BOTH DIRECTIONS SIMULTANEOUSLY
(e.g. REMOTE CONTROL SYSTEMS)

ASYNCHRONOUS TRANSMISSION

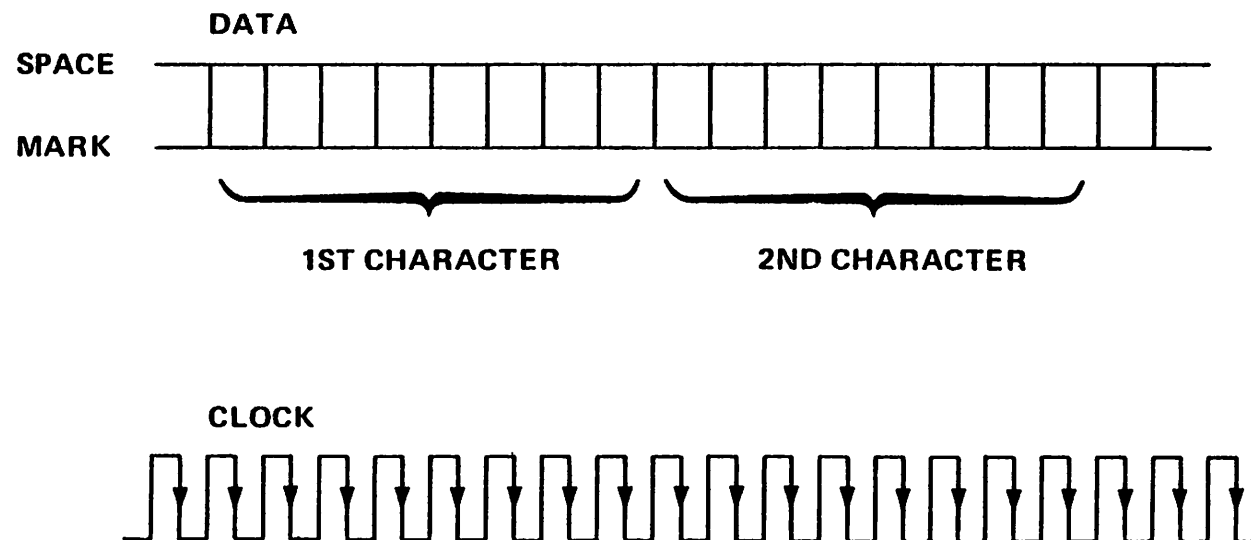
(e.g. ASCII CODE)



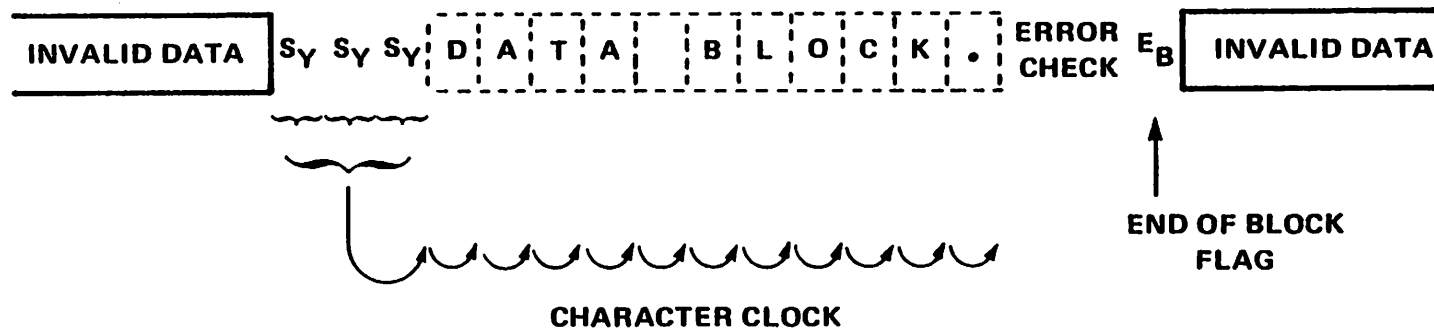
MESSAGE FORMAT



SYNCHRONOUS TRANSMISSION

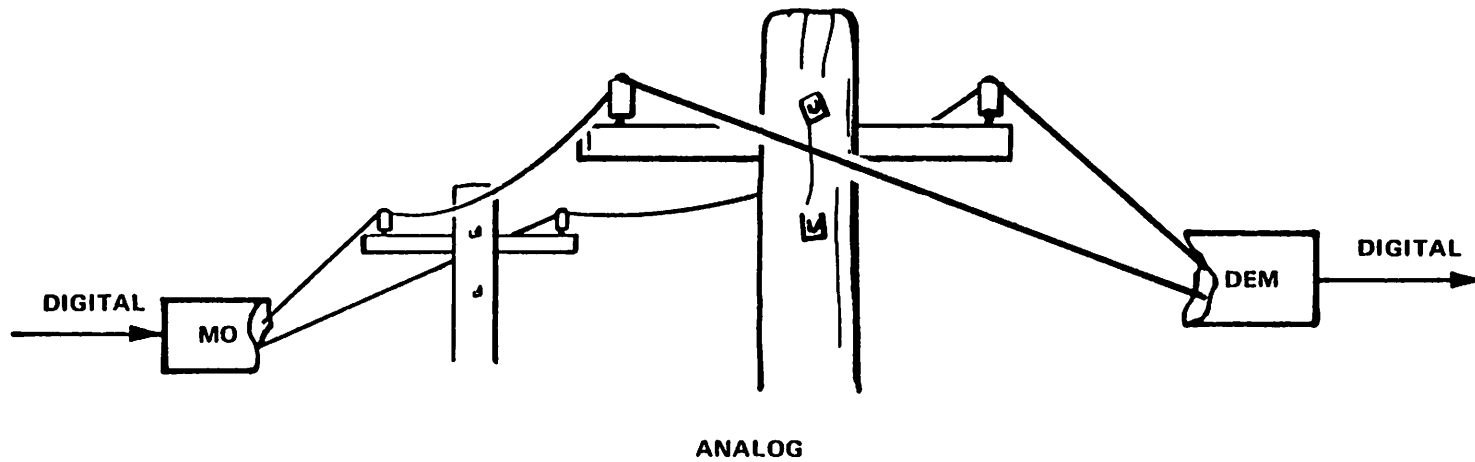


SYNCHRONOUS MESSAGE FORMAT



NOTE: CHARACTER CLOCK IS USED BY DTE/CPU NOT BY MODEM

THE SOLUTION



MO = MODULATOR

DEM = DEMODULATOR

TYPES OF SERVICE

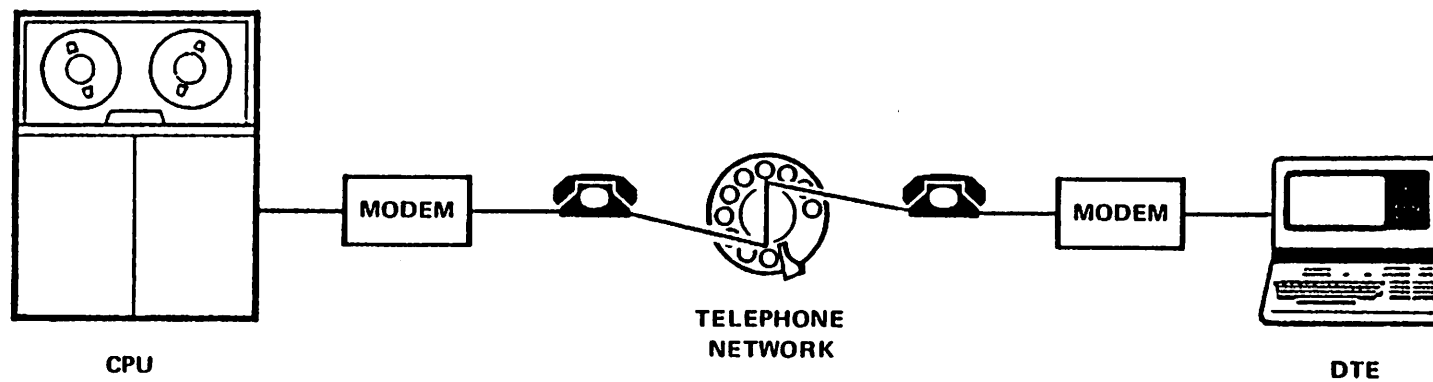
DIAL-UP LINES:

- **GENERALLY AVAILABLE**
- **NO SPECIAL INSTALLATION**
- **2-WIRE ONLY**

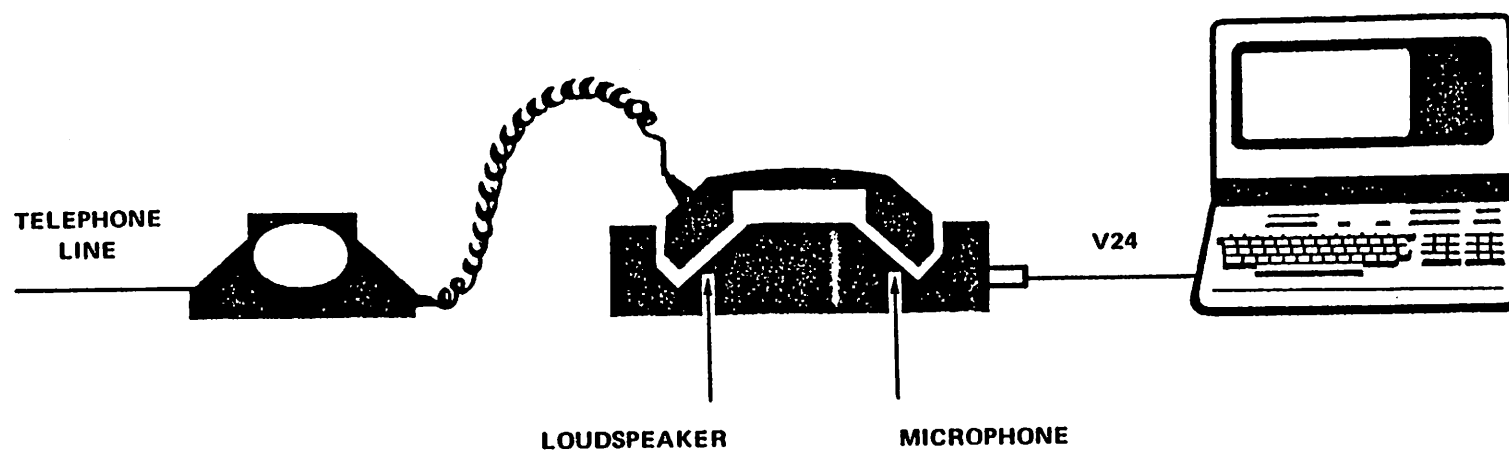
LEASED LINES:

- **BETTER QUALITY**
- **FIXED COST – NOT USAGE DEPENDENT**
- **CAN BE 4-WIRE**

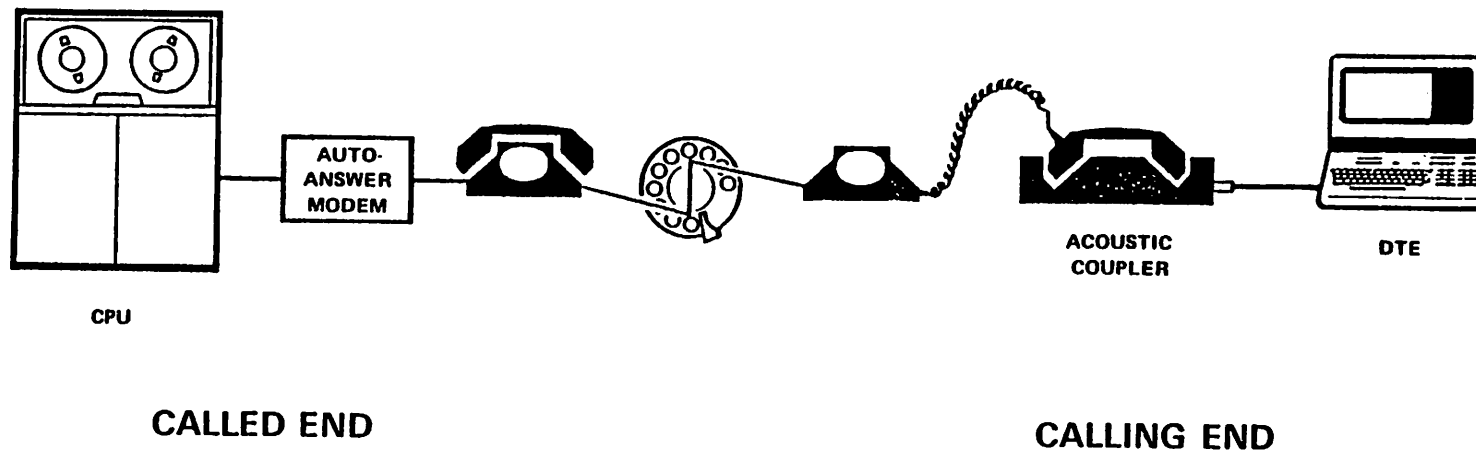
DIAL-UP SYSTEM



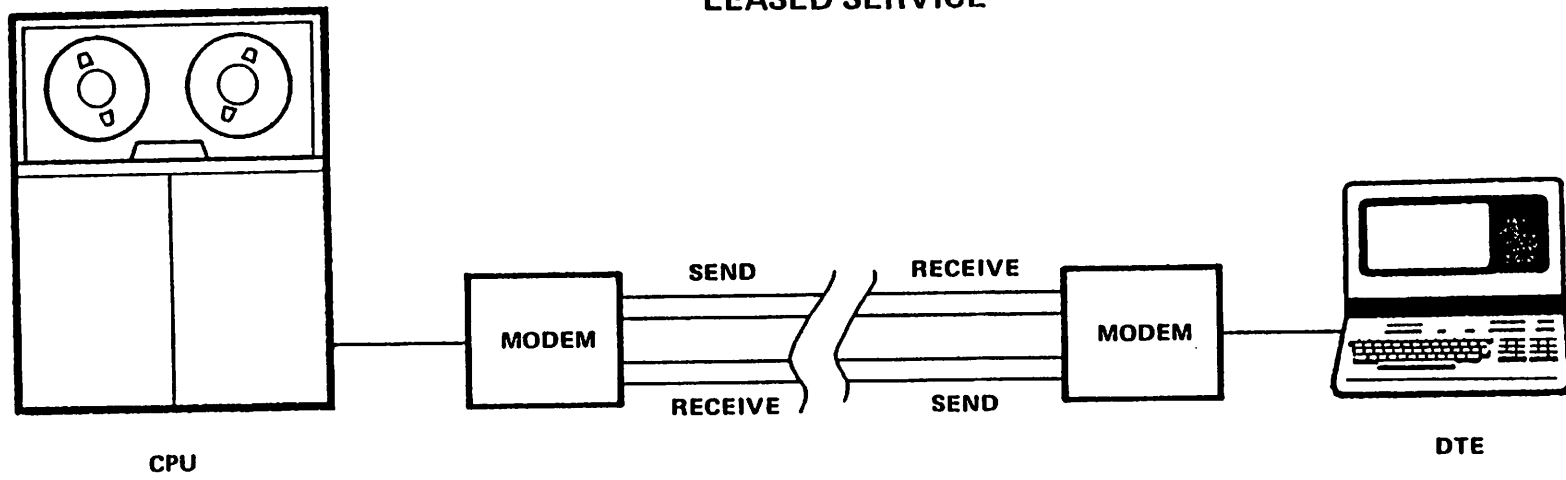
ACOUSTIC COUPLER



TYPICAL SYSTEM



LEASED SERVICE



BELL DATASETS — LOW SPEED

TYPE 103A	300 bps ASYNCHRONOUS	
	FULL-DUPLEX 2 WIRE DIAL-UP	
103F	LEASED LINE VERSION OF ABOVE	
113A	ORIGINATE	} VERSIONS OF ABOVE
113B	ANSWER	
TYPE 202	ASYNCHRONOUS 1200/1800 bps	
	HALF-DUPLEX 2 WIRE	
	FULL-DUPLEX 4 WIRE	
	DIAL-UP/LEASED VERSIONS AVAILABLE	
TYPE 212A	SYNCHRONOUS/ASYNCHRONOUS 1200 bps	
	FULL-DUPLEX 2 WIRE DIAL-UP	

BELL DATASETS -- HIGH SPEED

TYPE 201 B/C	2400 bps SYNCHRONOUS HALF DUPLEX 2 WIRE FULL DUPLEX 4 WIRE 1200 bps FALL BACK
TYPE 208	4800 bps SYNCHRONOUS AUTOMATICALLY EQUALISED
208A	FULL DUPLEX 4 WIRE
208B	HALF DUPLEX DIAL-UP
TYPE 209A	9600 bps SYNCHRONOUS AUTOMATICALLY EQUALISED 4 WIRE ONLY 4 CHANNEL BUILT IN MULTIPLEXER

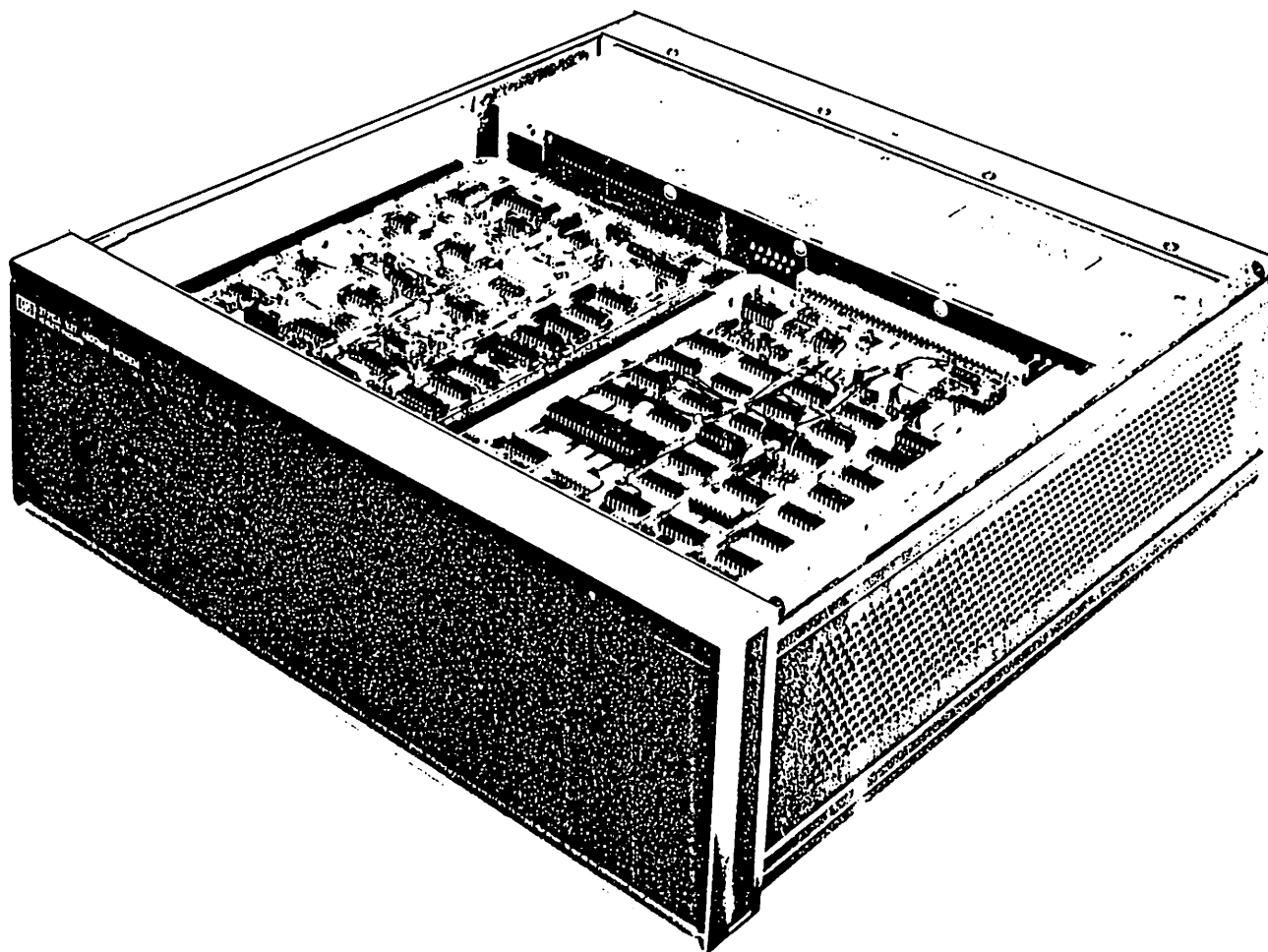
37210A

FEATURES:

**4800 BIT/S, SYNCHRONOUS TRANSMISSION
AUTOMATIC EQUALIZATION
COMPATIBLE WITH CCITT V27 bis/ter
BUILT-IN TEST PATTERN GENERATOR/ ERROR CHECKER**

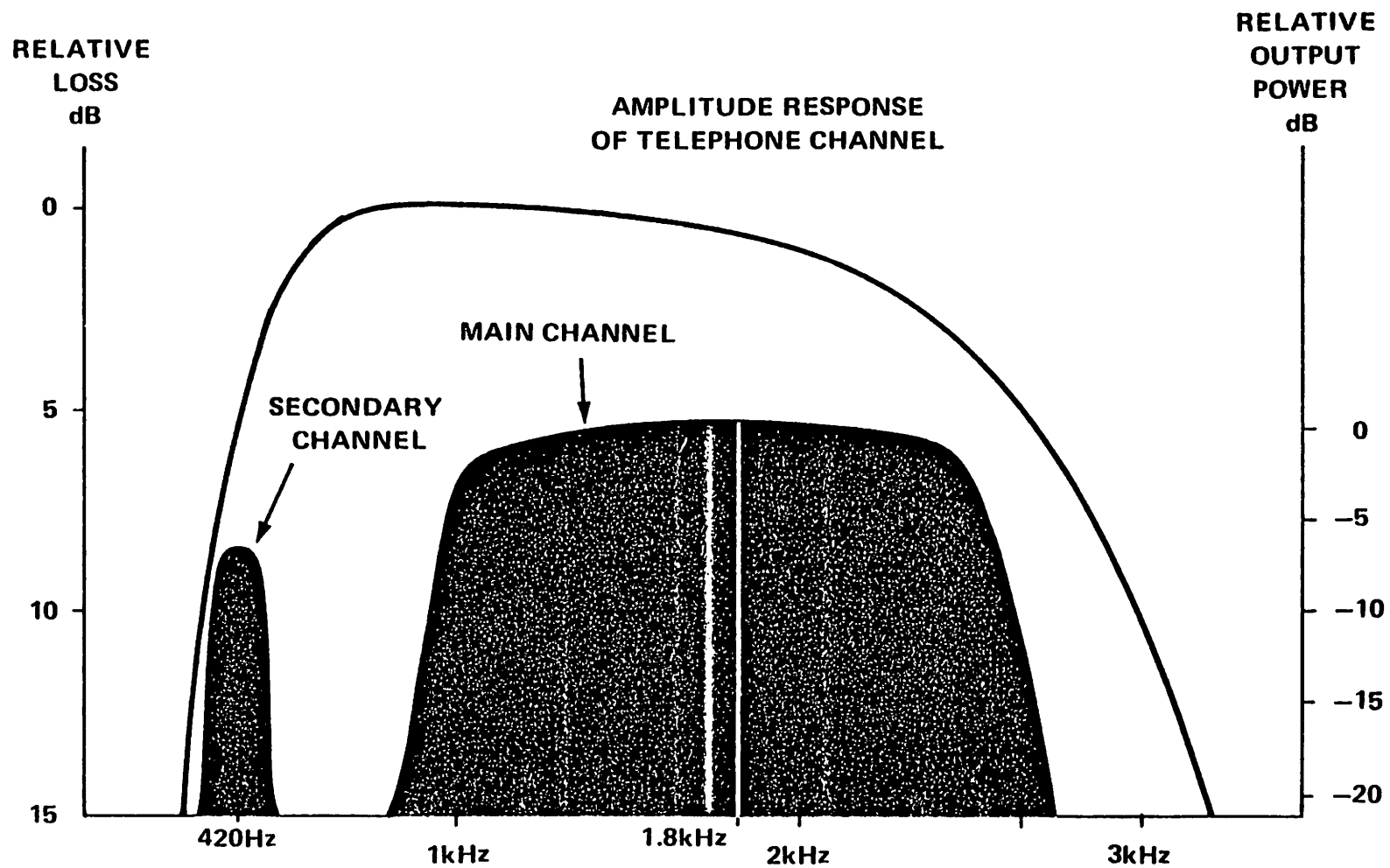
OPTIONS:

**001 – PTT LINE ISOLATION, 4-WIRE
002 – PTT LINE ISOLATION, 2-WIRE
003 – AUTO-ANSWER (US)
004 – SECONDARY CHANNEL
005 – REMOTE COMMAND**



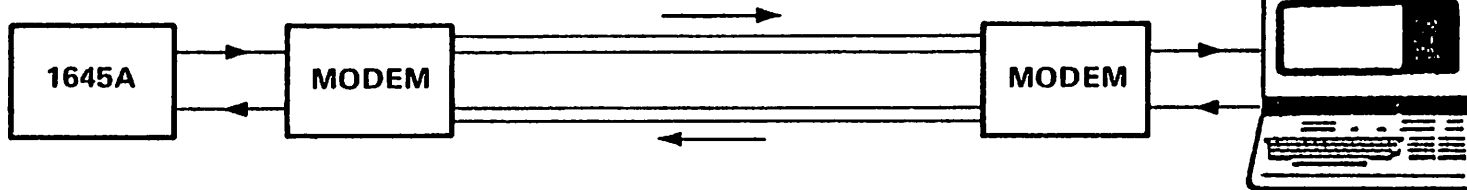
SECONDARY CHANNEL

- **FSK ASYNCHRONOUS CHANNEL**
- **150 BIT/S 4-WIRE INDEPENDENT CHANNEL**
- **75 BIT/S 2-WIRE BACKWARD CHANNEL**

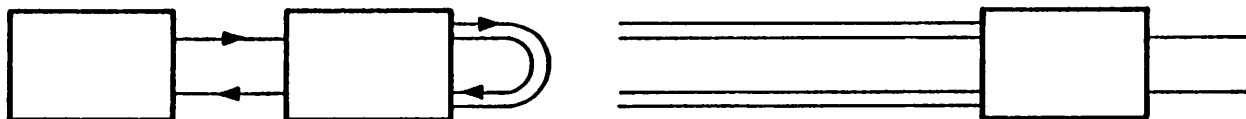


FAULT DIAGNOSIS

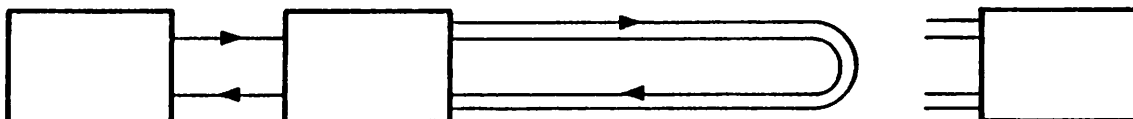
REPLACE TERMINAL WITH TEST SET



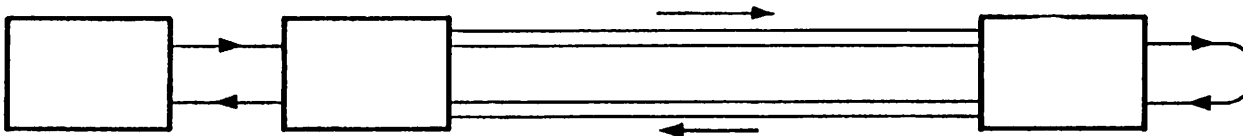
LOCAL LINE LOOPBACK: TEST LOCAL MODEM



REMOTE LINE LOOPBACK: TEST LINE IN LOOP



REMOTE DIGITAL LOOPBACK: TEST REMOTE MODEM

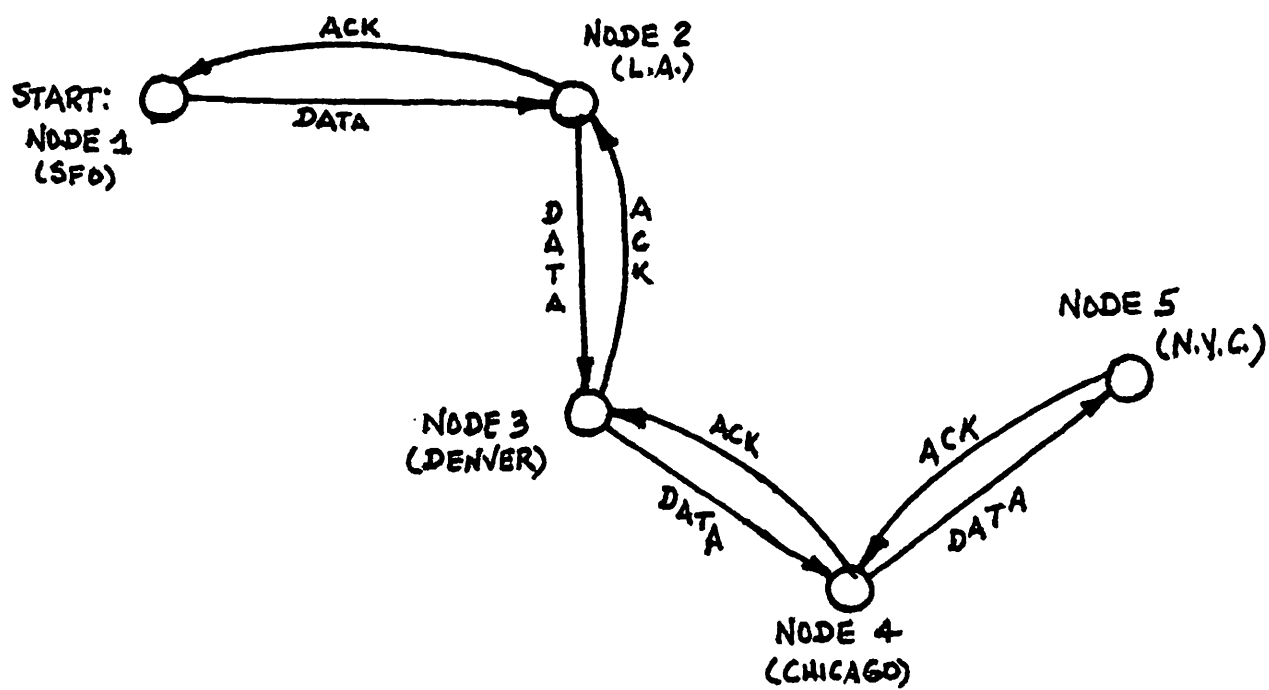


PROTOCOLS

1. BISYNC -

2. SDLC -

3. Packet switching -



USER

DUMP

ANALYSIS

TWO TYPE OF SEGMENTS:

CODE AND DATA.

CODE

PB

P

PL

STT

TWO TYPES OF DATA SEGMENTS:

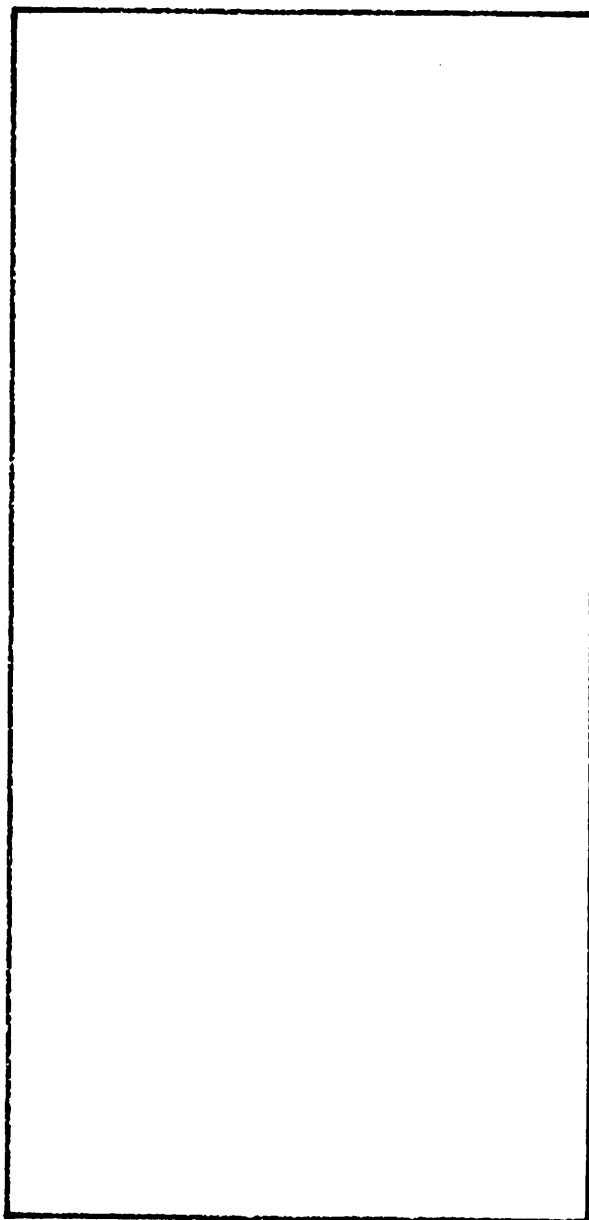
EXTRA DATA SEGMENT

AND

THE STACK

EXTRA DATA SEGMENT

Q



THE STACK

a	PXGLOBAL
b	PXFIXED
c	PXFILE
DL	SUBSYSTEM GLOBAL
DB	GLOBLAS
Q	LOCALS
S	EXPANSION
Z	STACK OVERFLOW

PROCESS

1. PCBT ENTRY
2. ONE OR MORE CODE SEGMENTS
3. ONE STACK
4. POSSIBLE EXTRA DATA SEGMENTS

A PROCESS IS LINKED TO

1. JOB INFORMATION TABLE (JIT)
2. JOB DIRECTORY TABLE (JDT)
3. JOB MASTER TABLE (JMAT)

HOW TO PROCESS A DUMP

1. STREAM DUMPJOB
2. RUN SYSINFO
3. FILL OUT THE SMR
4. GATHER INFORMATION

WHAT YOU MIGHT FIND

1. JOB OR SESSION THAT CAUSED THE FAILURE.
2. I/O ERRORS.

REMEMBER:

A DUMP IS ONLY A SNAPSHOT.

THE CAUSE COULD BE GONE.

HP3000 III MEMORY DUMP B00.03 OF SYS VER B UPDATE 01 FIX 00 DUMP TIME 1/22/80, 9:55AM
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***** REGISTERS *****

```

*****
* DATA SEGMENT * CODE SEGMENT * MISCELLANEOUS * STATUS = 101036 * CPX2 = 000001
*****
* DB BANK = 0 * PB = 072734 * X = 000001 * MODE = PRIV * RUN/HALT = RUN
* DB = 072734 * P = 073140 * CIR = 030240 * INTERRUPTS = OFF * SYS DUMP = ON
* S BANK = 1 * PL = 111403 * CPX1 = 000001 * TRAPS = OFF * COLD LOAD = OFF
* DL = 154502 * PBBANK = 0 * SP1 = 000003 * STACK OP = LEFT * LOAD REG = OFF
* Q = 157153 * (P-PB) = 000204 * SP2 = 110054 * OVERFLOW = OFF * LOAD ADDR = OFF
* S = 157237 * * * CARRY = OFF * LOAD MEM = OFF
* Z = 161626 * * * COND CODE = CCE * DISP MEM = OFF
* Z BANK = 1 * * * SEGMENT # = 36 * SNGL INST = OFF
*****

```

***** FIXED LOW MEMORY *****

```

CODE SEGMENT TABLE POINTER      011640
EXTENDED CODE SEGMENT TABLE POINTER 001674
DATA SEGMENT TABLE POINTER      001640
PROCESS CONTROL BLOCK BASE       017240
CURRENT PCB POINTER              020160
INTERRUPT STACK BASE             022300
INTERRUPT STACK LIMIT            023676
INTERRUPT MASK                   000000

```

HP3000 III MEMORY DUMP 000.03 OF SYS VER B UPDATE 01 FIX 00 DUMP TIME 1/22/80, 9:55AM
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BANK 0

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***** PROCESS CONTROL BLOCK (1ST HALF) *****

PCB ENTRY NO	DATA SEGMENT			PROCESS LINKS			WAIT										ISC			PSEUDO				INT				MSTATE					
	XDS	STK	ADB	LT	FOP	HQP	WNS	M	RG	RL	MA	BIO	IO	UCP	JNK	TIM	INT	SON	FA	ACT	T-P	SIR	CH	PSIM	OVR	HK	SK		ST	H8	CY	BK	
3		101		D	17	2	SET								JNK																		ABSENT
48		67	SET	D	12	36	SET								JNK																		CORRES
59		70	SET	D	22	12	SET								JNK																		INCORE
67		71	SET	D	22	12									JNK																		OUT
70		72		D	22	12									JNK																		INCORE
110		73																			ACT	IMP	CR										OUT
111		74													JNK																		OUT
112	11	75		D	7	5									JNK																		INCORE
113		76													JNK																		ABSENT
114		77											IO		JNK																		OUT
115		100													JNK																		OUT
116		143																															OUT
117		105		D	36		SET																										OUT
118		106		D	25		SET							UCP																			INCORE
119		107																															INCORE
120	104	110	SET	D	20							BIO	IO																				OUT
121		160					SET																										INCORE
122		123																															OUT
123		152	SET	D	2	20						BIO																					OUT
124		177	SET									BIO																					INCORE
125		142	SET									BIO																					OUT
126		130	SET									BIO																					OUT
127		166	SET									BIO																					OUT
128		212		RD	1	1																											OUT
129		203	SET	D	5	1						BIO									ACT		SIR	CR									INCORE
130	203	205										BIO																					INCORE
131	241	234										BIO																					OUT
132	241	250	SET			2						BIO																					NORM

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BANK 0

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***** PROCESS CONTROL BLOCK (2ND HALF) *****

PCB ENTRY NO	SW	MAM	OA	FPTR	SPTR	BPTR	PRI	PCST	LG	NL	DEAD	FAC	IQPTR	LIV	BMS	PPC	STOV	PTYPE	TLO	PBX	LAT	WSP	PRINX	PFC	SC
1			2		4		61	301	1		NO				1	SNF	NUL	PR06		000010	000217	052573			
2						5				1	NO				1	SNF	NUL	MAM							
3						6					NO				1	SNF	NUL	SYSIO			000016	052335			
4						7					NO				1	SNF	NUL	IOMS			000111	052335			
5						8					NO				1	SNF	NUL	LOG		000001	000031	052335			
6						9					NO				1	SNF	NUL	MEMLG		000002	000023	052335			
7						10					NO				1	SNF	NUL	SYST		000003	000002	052335			
8						11					NO				1	SNF	NUL	UCOP		000004	000155	052335			
9						12					NO				1	SNF	NUL	PFAIL		000005		052335			
10						13					NO				1	SNF	NUL	DVREC		000006	000046	052335			
11						14					NO				1	SNF	NUL	LOAD		000007	005402	052335			
12						15					NO				1	SNF	NUL	UMAIN	000020		000106	052335			
13						16					NO				1	SNF	NUL	SYST			001476	052335			
14						17					NO				1	SNF	NUL	SPOOL			010254	052335			
15						18					NO				1	SNF	NUL	SPOOL			000054	052335			
16						19					NO				1	SNF	NUL	UMAIN	000372		001222	052335			
17						20					NO				1	SNF	NUL	UMAIN	000006		000102	052335			
18						21					NO				1	SNF	NUL	UMAIN	000372		000105	052335			
19						22					NO				1	SNF	NUL	USONM	000131	000013	005526	052335			
20						23					NO				1	SNF	NUL	UMAIN	000372		000514	052335			
21						24					NO				1	SNF	NUL	USONM	000131	000013	002503	052335			
22						25					NO				1	SNF	NUL	USONM	000131	000013	000067	052335			
23						26					NO				1	SNF	NUL	UMAIN	000300		000077	052335			
24						27					NO				1	SNF	NUL	UMAIN	000325		000024	052335			
25						28					NO				1	SNF	NUL	UMAIN	000021		000103	052335			
26						29					NO				1	SNF	NUL	USONM	000104	000013	002702	052335			

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***** PROCESS CONTROL BLOCK (1ST HALF) *****

PCB ENTRY NO	DATA SEGMENT			PROCESS LINKS			WAIT										ISC			PSIM				
	XDS	STK	ADB	LT	FQP	BQP	WWS	M	RG	RL	MA	BIO	IO	UCP	JNK	TIM	INT	SON	FA		ACT	IMP	SIR	CR
3		101		D	17	2	SET								JNK									
4		67	SET			1	SET								JNK									
5		70	SET	D	12	36	SET								JNK									
6		71	SET			2									JNK									
7		72		D	22	12									JNK									
10		73				2														ACT	IMP		CR	
11		74				2									JNK									
12	11	75		D	7	5									JNK									
13		76													JNK									
14		77				2							IO		JNK									
15		100				2									JNK									
16		143				2												SON						NORM
17		105		D	36	2	SET							UCP										NORM
20		106		D	25	2	SET											SON	FA					NORM
21		107				2							IO					SON	FA					NORM
22	104	110	SET	D	20	7					BIO												CR	NORM
23		160				2	SET											SON						NORM
24		123				2	SET											SON						NORM
25	152	165	SET	D	2	20					BIO												CR	NORM
26	177	142	SET			2					BIO												CR	NORM
30	127	130	SET			2					BIO												CR	NORM
31	122	166	SET			2					BIO												CR	NORM
35	*	212		RD	1	1														ACT		SIR	CR	NORM
36	203	205	SET	D	5	17					BIO												CR	NORM
40		234				2	SET											SON						NORM
43	241	250	SFT			2					BIO												CR	NORM

HP3000 III MEMORY DUMP 800.03 OF SYS VER B UPDATE 01 FIX 00 DUMP TIME 1/22/80, 9:55AM
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***** PROCESS CONTROL BLOCK (2ND HALF) *****

PCB ENTRY NO	SW	MAM	DA	FPTR	SPTR	BPTR	PRI	PCST	LQ	NL	DEAD	FAC	IQPTR	LIV	BMS	PPC	STOV	PTYPE	TLO	PBX
3		2		4		5	61	301	1		NO				1	SNF	NUL	PRG		000010
4						6	55		1	1	NO			1	SNF	NUL	MAM			
5						7	62				NO			1	SNF	NUL	SYSIO			
6						10	175	44	1		NO			1	SNF	NUL	IOMS			
7						11	62	301	1		NO			1	SNF	NUL	LOG		000001	
8						12	175	301	1		NO			1	SNF	NUL	MEMLG		000002	
9						13	175	301	1		NO			1	SNF	NUL	SYST		000003	
10					24	14	12	301	1		NO			1	SNF	NUL	UCOP		000004	
11						15	175	301	1		NO			1	SNF	NUL	PFAIL		000005	
12						17	216	301	1		NO			1	SNF	NUL	DVREC		000006	
13						20	233	24			NO			1	SNF	NUL	LOAD		000007	
14					25	21	214	42	1		NO			1	SNF	NUL	UMAIN	000020		
15						22	214	60	1		NO			1	SNF	NUL	SYST			
16						23	227	2			NO			1	SNF	NUL	SPOOL			
17						31	231	24			NO			1	SNF	NUL	SPOOL			
18						30	232	2			NO			1	SNF	NUL	UMAIN	000372		
19							230	2			NO			1	SNF	NUL	UMAIN	000006		
20							230	2			NO			1	SNF	NUL	UMAIN	000372		
21							230	2			NO			1	SNF	NUL	UMAIN	000372		
22							230	2			NO			1	SNF	NUL	USONM	000131	000013	
23							230	2			NO			1	SNF	NUL	USONM	000131	000013	
24							230	2			NO			1	SNF	NUL	USONM	000131	000013	
25							230	2			NO			1	SNF	NUL	USONM	000131	000013	
26							230	2			NO			1	SNF	NUL	USONM	000131	000013	
27							230	2			NO			1	SNF	NUL	USONM	000131	000013	
28							230	2			NO			1	SNF	NUL	USONM	000131	000013	
29							230	2			NO			1	SNF	NUL	USONM	000131	000013	
30							230	2			NO			1	SNF	NUL	USONM	000131	000013	
31							230	2			NO			1	SNF	NUL	USONM	000131	000013	
32							230	2			NO			1	SNF	NUL	USONM	000131	000013	
33							230	2			NO			1	SNF	NUL	USONM	000131	000013	
34							230	2			NO			1	SNF	NUL	USONM	000131	000013	
35							230	2			NO			1	SNF	NUL	USONM	000131	000013	
36							230	2			NO			1	SNF	NUL	USONM	000131	000013	
37							230	2			NO			1	SNF	NUL	USONM	000131	000013	
38							230	2			NO			1	SNF	NUL	USONM	000131	000013	
39							230	2			NO			1	SNF	NUL	USONM	000131	000013	
40							230	2			NO			1	SNF	NUL	USONM	000131	000013	
41							230	2			NO			1	SNF	NUL	USONM	000131	000013	
42							230	2			NO			1	SNF	NUL	USONM	000131	000013	
43							230	2			NO			1	SNF	NUL	USONM	000131	000013	
44							230	2			NO			1	SNF	NUL	USONM	000131	000013	
45							230	2			NO			1	SNF	NUL	USONM	000131	000013	
46							230	2			NO			1	SNF	NUL	USONM	000131	000013	
47							230	2			NO			1	SNF	NUL	USONM	000131	000013	
48							230	2			NO			1	SNF	NUL	USONM	000131	000013	
49							230	2			NO			1	SNF	NUL	USONM	000131	000013	
50							230	2			NO			1	SNF	NUL	USONM	000131	000013	

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***** PRESENT STACKS *****

***** PCBX AND STACK MARKERS FOR DST212 (PCB 35) *****
 **** CURRENT PROCESS ****

SEG REL DL	SEG REL DB	JMAT INDEX	JPCNT INDEX	JOB INPUT LOG DEV #	JOB OUTPUT LOG DEV #	JDT DST INDEX	JIT DST INDEX	JOB TYPE
000602	000602	11	12	34	34	216	215	#339

ADDRESS	BANK	X	DELTA P	STATUS	DELTA Q	SEGMENT
157153	1	000005	015545	102036	000006	36 HARDRES (36)
157145	1	000004	003361	142006	000005	6 FILESYS4 (4)
157140	1	000004	002444	142012	000426	12 FILESYS7 (10)
156512	1	000004	002414	140017	000045	17 CIFORM (17)
156445	1	000004	002636	142420	000077	20 CIINIT (20)
156346	1	000016	004067	140066	000260	66 UDC (70)
156066	1	000014	000414	140066	000561	66 UDC (70)
155305	1	000000	002560	142020	000077	20 CIINIT (20)
155206	1	000000	000000	140046	000004	46 MORGUE (46)

HP3000 III MEMORY DUMP 800.03 OF SYS VER 8 UPDATE 01 FIX 00 DUMP TIME 1/22/80, 9:55AM
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BANK 0

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***** DST TABLE *****

SEGMENT NUMBER	SEGMENT DESCRIPTION	REFERENCE BIT	SEGMENT LENGTH	ABSOLUTE PB ADDR	BANK/ LDEV	DISC ADDRESS	INDX TO OVLY SEL0	INDX TO LOCK NEW	MAN REF BIT MAP
1	(CODE SEGMENT TABLE)	OFF	1400	011640	0				RESIDENT
2	(DATA SEGMENT TABLE)	OFF	10000	001640	0				RESIDENT
3	(PROCESS CONTROL BLOCK)	OFF	3000	017240	0				RESIDENT
4	(CST EXTENSION)	OFF	4000	013240	0				RESIDENT
5	(SYSTEM GLOBAL AREA)	OFF	640	001000	0				RESIDENT
6	(FIXED LOW CORE)	ON	3000	000000	0				RESIDENT
7	(INTERRUPT CONTROL STACK)	OFF	1440	022240	0				RESIDENT
10	(SYSTEM BUFFERS)	ON	2020	051300	0				RESIDENT
11	(UCOP REQUEST QUEUE)	OFF	130	000014	3				001547
12	(PROCESS-PROCESS COMMUNICATION TABLE)	OFF	304		1	7123			
13	(I/O QUEUE)	OFF	5400	033670	0				RESIDENT
14	(TERMINAL BUFFERS)	OFF	7770	023700	0				RESIDENT
15	(LOGICAL-PHYSICAL DEVICE TABLE)	ON	330	065674	0				RESIDENT
16	(LOGICAL DEVICE AND CLASS TABLE)	ON	2364	062004	5				137777
17	(DRIVER LINKAGE TABLE)	OFF	110	000174	0				RESIDENT
20	(I/O RESOURCE TABLES)	OFF	20	000304	0				RESIDENT
21	(DISK FREE SPACE)	OFF	10004	000154	3		ON OLST		
22	(LOADER SEGMENT TABLE)	OFF	2650	021174	4		ON OLST		
23	(TIMER REQUEST LIST)	OFF	304	000430	0				RESIDENT
24	(DIRECTORY)	ON	2004	166404	4				157755
25	(DIRECTORY SPACE)	OFF	604	167300	1		ON OLST		
26	(RIN TABLE)	OFF	154	172134	0		ON OLST		
27	(WORKING SET TABLE)	OFF	2370	053320	0				RESIDENT
30	(JOB PROCESS COUNT)	ON	20	000734	0				RESIDENT
31	(JOB MASTER TABLE)	OFF	604	007334	4		ON OLST		
32	(TAPE LABEL TABLE)	OFF	1754	065754	4		ON OLST		
33	(MESSAGE CATALOG)	OFF	1444		1	106007			
34	(REPLY INFORMATION TABLE)	OFF	2004	014470	3		ON OLST		
35	(VOLUME TABLE)	ON	240	070400	1				137333
36	(BREAKPOINT TABLE)	OFF	204	072530	0				RESIDENT
37	(LOG BUFFER 1)	OFF	404	177370	0		ON OLST		
40	(LOG BUFFER 2)	OFF	404	151560	2		ON OLST		
41	(PREEMPTIVE MESSAGES)	OFF	1274		1	106000			
42	(STANDARD MESSAGES)	OFF	1214	044244	2		ON OLST		
43	(CST BLOCK)	OFF	40	000324	0				RESIDENT
44	(JOB CUTOFF TABLE)	OFF	104	066224	0				RESIDENT
45	(SYSTEM JIT)	OFF	104	176370	4		ON OLST		
46	(MAN TABLE)	OFF	5000	055710	0				RESIDENT
47	(VIRTUAL DISK SPACE BIT MAP)	OFF	764	062710	0				RESIDENT
50	(VIRTUAL DISK SPACE LOCATOR)	OFF	2000	063674	0				RESIDENT
51	(BANK TABLE)	OFF	44	000364	0				RESIDENT
52	(ILT-DIT)	OFF	10010	041270	0				RESIDENT
53	(SIR TABLE)	OFF	174	066330	0				RESIDENT
54	(FILE MULTI-ACCESS VECTOR)	OFF	204	176710	1		ON OLST		
55	(INPUT DEVICE DIRECTORY)	OFF	1204	175474	1		ON OLST		
56	(OUTPUT DEVICE DIRECTORY)	OFF	2004	116704	3		ON OLST		
57	(WELCOME MESSAGE #1)	OFF	1754		1	7547			
60	(WELCOME MESSAGE #2)	OFF	1754		1	7557			

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***** DST TABLE *****

SEGMENT NUMBER	SEGMENT DESCRIPTION	REFERENCE BIT	SEGMENT LENGTH	ABSOLUTE PB ADDR	BANK/ LDEV	DISC ADDRESS
1	(CODE SEGMENT TABLE)	OFF	1400	011640	0	
2	(DATA SEGMENT TABLE)	OFF	10000	001640	0	
3	(PROCESS CONTROL BLOCK)	OFF	3000	017240	0	
4	(CST EXTENSION)	OFF	4000	013240	0	
5	(SYSTEM GLOBAL AREA)	OFF	640	001000	0	
6	(FIXED LOW CORE)	ON	3000	000000	0	
7	(INTERRUPT CONTROL STACK)	OFF	1440	022240	0	
10	(SYSTEM BUFFERS)	ON	2020	051300	0	
11	(UCOP REQUEST QUEUE)	OFF	130	000014	3	
12	(PROCESS-PROCESS COMMUNICATION TABLE)	OFF	304		1	7123
13	(I/O QUEUE)	OFF	5400	033670	0	
14	(TERMINAL BUFFERS)	OFF	7770	023700	0	
15	(LOGICAL-PHYSICAL DEVICE TABLE)	ON	330	065674	0	
16	(LOGICAL DEVICE AND CLASS TABLE)	ON	2364	062004	5	
17	(DRIVER LINKAGE TABLE)	OFF	110	000174	0	
20	(I/O RESOURCE TABLES)	OFF	20	000304	0	
21	(DISK FREE SPACE)	OFF	10004	000154	3	
22	(LOADER SEGMENT TABLE)	OFF	2650	021174	4	
23	(TIMER REQUEST LIST)	OFF	304	000430	0	
24	(DIRECTORY)	ON	2004	166404	4	
25	(DIRECTORY SPACE)	OFF	604	167300	1	
26	(RIN TABLE)	OFF	154	172134	0	
27	(WORKING SET TABLE)	OFF	2370	053320	0	
30	(JOB PROCESS COUNT)	ON	20	000734	0	
31	(JOB MASTER TABLE)	OFF	604	007334	4	
32	(TAPE LABEL TABLE)	OFF	1754	065754	4	
33	(MESSAGE CATALOG)	OFF	1444		1	106007
34	(REPLY INFORMATION TABLE)	OFF	2004	014470	3	
35	(VOLUME TABLE)	ON	240	070400	1	
36	(BREAKPOINT TABLE)	OFF	204	072530	0	
37	(LOG BUFFER 1)	OFF	404	177370	0	
40	(LOG BUFFER 2)	OFF	404	151560	2	
41	(PREEMPTIVE MESSAGES)	OFF	1274		1	106000
42	(STANDARD MESSAGES)	OFF	1214	044244	2	
43	(CST BLOCK)	OFF	40	000324	0	
44	(JOB CUTOFF TABLE)	OFF	104	066224	0	
45	(SYSTEM JIT)	OFF	104	176370	4	
46	(MAM TABLE)	OFF	5000	055710	0	
47	(VIRTUAL DISK SPACE BIT MAP)	OFF	764	062710	0	
50	(VIRTUAL DISK SPACE LOCATOR)	OFF	2000	063674	0	
51	(BANK TABLE)	OFF	44	000364	0	
52	(ILT-DIT)	OFF	10010	041270	0	
53	(SIR TABLE)	OFF	174	066330	0	
54	(FILE MULTI-ACCESS VECTOR)	OFF	204	176710	1	
55	(INPUT DEVICE DIRECTORY)	OFF	1204	175474	1	
56	(OUTPUT DEVICE DIRECTORY)	OFF	2004	116704	3	
57	(WELCOME MESSAGE #1)	OFF	1754		1	7547
60	(WELCOME MESSAGE #2)	OFF	1754		1	7557

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177770: 000000 000000 000000 040260 100000 177774 000000 100001

BANK MARKER #####
000000: 100000 177774 000000 100001

000004: 010760 007310 000400 115275 000000 000000 000000 000000

CST 174 #####
**** (14 10 7323 NOT PRINTED) ****

007324: 000144 000604 000420 007153 000000 000000 000000 000001

NST 31 (JOB MASTER TABLE) #####
007334(000000): 030005 000032 000032 000000 000003 040053 100026 000000 000017 000010 000005 000000 007334: 0+.....
007350(000014): 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 007350:+.....
007364(000030): 000000 000000 005410 040026 047520 042522 040524 047522 051531 051440 020040 020040 007364:@.OPERATOR\$.....
007400(000044): 020040 020040 020040 020040 047520 020040 020040 020040 012024 120026 004046 007001 007400:OP.....
007414(000060): 011226 177777 000000 012024 000000 040043 047520 042522 020040 020040 050122 047504 007414:@.OPER.....
007430(000074): 020040 020040 045105 040516 047040 020040 050125 041040 020040 020040 017036 120026 007430:JEANN.....
007444(000110): 004426 002405 015226 177777 000000 017036 000000 100025 047520 042522 020040 020040 007444:@.OPER.....
007460(000124): 050122 047504 020040 020040 041114 030061 032440 020040 050125 041040 020040 020040 007460:BL015.....
007474(000140): 033065 120026 004455 012000 013710 000000 100000 005417 005610 040037 051501 046105 007474:@.SALE.....
007510(000154): 051465 020040 050122 047504 020040 020040 020040 020040 020040 020040 050125 041040 007510:@.SALE.....
007524(000170): 020040 020040 023447 120026 004072 026001 007226 177777 000000 023447 005610 040022 007524:@.SALE.....
007540(000204): 051501 046105 051461 020040 050122 047504 020040 020040 020040 020040 020040 020040 007540:@.SALE.....
007554(000220): 050125 041040 020040 020040 026455 120026 004026 022404 012226 177777 000000 026455 007554:@.SALE.....
007570(000234): 005610 040024 051501 046105 051466 020040 050122 047504 020040 020040 020040 020040 007570:@.SALE.....
007604(000250): 020040 020040 050125 041040 020040 020040 024050 120026 004026 027004 011626 177777 007604:@.SALE.....
007620(000264): 000000 024050 005410 040051 047520 042522 020040 020040 050122 047504 020040 020040 007620:@.SALE.....
007634(000300): 020040 020040 020040 020040 050125 041040 020040 020040 020040 020040 020040 020040 007634:@.SALE.....
007650(000314): 013226 177777 000000 027056 005410 040050 044524 042515 051524 051040 050122 047504 007650:@.SALE.....
007664(000330): 020040 020040 020040 020040 020040 020040 046501 052114 041524 046040 023046 120026 007664:@.SALE.....
007700(000344): 004437 026401 017226 177777 000000 023046 005410 040047 051501 044440 020040 020040 007700:@.SALE.....
007714(000360): 042105 053040 020040 020040 052117 047131 020040 020040 051501 044440 020040 020040 007714:@.SALE.....
007730(000374): 021042 120026 004435 027002 016626 177777 000000 021042 005610 040052 051501 046105 007730:@.SALE.....
007744(000410): 051463 020040 050122 047504 020040 020040 020040 020040 177777 000000 016034 000000 007744:@.SALE.....
007760(000424): 020040 020040 016034 120026 004442 031001 020226 177777 000000 016034 000000 100024 007760:@.SALE.....
007774(000440): 047520 042522 020040 020040 050122 047504 020040 020040 041114 052524 031065 020040 007774:@.SALE.....
010010(000454): 050125 041040 020040 020040 034067 120026 004454 035403 015710 000000 100000 005417 010010:@.SALE.....
010024(000470): 000000 100021 047520 042522 020040 020040 050122 047504 020040 020040 041114 052524 010024:@.SALE.....
010040(000504): 031065 020040 050125 041040 020040 020040 034067 120026 004451 030004 021310 000000 010040:@.SALE.....
010054(000520): 100000 005417 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 010054:@.SALE.....
010070(000534): 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 010070:@.SALE.....
010104(000600): 042526 000040 020040 040143

010140: 000000 000430 002400 023421 000004 024044 000004 155416

010134: EV. AC

JMAT - Job MASTER Table Entry

1 1 1 1 1 1											
0 1:2:3 4:5:6 7:8:9 0:1:2 3:4:5											
0	state :D I:G:A U:C: INPRI									0	state
1	ty: job/session number									1	0 = free entry
2										2	1 = introduced, in
3	user name									3	DEVREC
4										4	%40 = waiting, DEVREC
5										5	has scheduled
6										6	%60 = initial, UCOP
7	account name									7	has created JSMP
8										8	2 = executing, JSMP
9										9	finished initial.
10										10	3 = terminating.
11										11	4 = suspended
12										12	D = duplicative
13	job name									13	I = interactive
14										14	G = group passwd
15										15	(SET QUIET if state=2)
16										16	A = account passwd
17										17	U = user passwd
18										18	0 = password validated
19										19	1 = must validate
20	group logon name									20	passwd
21										21	
22	JIN device : JLIST device									22	C = JLIST is device
23	Julian date (CALENDAR)									23	class index
24	time (CLOCK)									24	
25										25	ty = 1 - session
26	main pin : XPRI									26	2 - job
27	CPU lim. (0 deflt, -1 no lim.)									27	
28										28	
29	S:R:N:FT :OUTPRI : NUMCOPIES									29	ORIGJIN/ORIGJLIST is
30										30	used as a scheduling
31	ORIGJIN : ORIGJLIST									31	link by UCOP (state=
	0 1:2:3 4:5:6 7:8:9 0:1:2 3:4:5										%40). DB rel. ptr. to
	1 1 1 1 1 1										next entry. Last entry
											contains 0.

S = ORIGJIN is spooled.
 R = RESTART
 N = SEQUENCED

FT = funny terminal
 00 - regular term.
 01 - regular term.,
 special logon
 10 - APL term.
 11 - APL term.

C = JLIST is device
 class index

ty = 1 - session
 2 - job

ORIGJIN/ORIGJLIST is
 used as a scheduling
 link by UCOPI (state=
 %40). DB rel. ptr. to
 next entry. Last entry
 contains 0.

```

$$$$$ 1ST 31 (JOB MASTER TABLE) $$$$$$
007334(000000): 030003 000032 000032 000000 000003 040053 100026 000000 000017 000010 000005 000000
007350(000014): 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000
007364(000030): 000000 000000 000000 005410 040026 047520 042522 040524 047522 051531 051440 020040 020040
007400(000044): 020040 020040 020040 020040 047520 020040 020040 020040 012024 120026 004046 007001
007414(000060): 011122 177777 000000 012024 000000 040043 047520 042522 020040 020040 050122 047504
007430(000074): 020040 020040 045105 040516 047040 020040 050125 041040 020040 020040 017036 120026
007444(000110): 004426 002405 015226 177777 000000 017036 000000 100025 047520 042522 020040 020040
007460(000124): 050122 047504 020040 020040 041114 030061 032440 020040 050125 041040 020040 020040
007474(000140): 033065 120026 004455 012000 013710 000000 100000 005417 005610 040037 051501 046105
007510(000154): 051465 020040 050122 047504 020040 020040 020040 020040 020040 020040 050125 041040
007524(000170): 020040 020040 023447 120026 004072 026001 007226 177777 000000 023447 005610 040022
007540(000204): 051501 046105 051461 020040 050122 047504 020040 020040 020040 020040 020040 020040
007554(000220): 050125 041040 020040 020040 026455 120026 004026 022404 012226 177777 000000 026455
007570(000234): 005610 040024 051501 046105 051466 020040 050122 047504 020040 020040 020040 020040
007604(000250): 020040 020040 050125 041040 020040 020040 024050 005410 040051 047520 042522 020040 020040
007620(000264): 000000 024050 005410 040051 047520 042522 020040 020040 050122 047504 020040 020040
007634(000300): 020040 020040 020040 020040 050125 041040 020040 020040 027056 120026 004442 002400
007650(000314): 013226 177777 000000 027056 005410 040050 044524 042515 051524 051040 050122 047504
007664(000330): 020040 020040 020040 020040 020040 020040 046501 052114 041524 046040 023046 120026
007700(000344): 004437 026401 017226 177777 000000 023046 005410 040047 051501 044440 020040 020040
007714(000360): 042105 053040 020040 020040 052117 047131 020040 020040 051501 044440 020040 020040
007730(000374): 021042 120026 004435 027002 016626 177777 000000 021042 005610 040052 051501 046105
007744(000410): 051463 020040 050122 047504 020040 020040 020040 020040 020040 020040 050125 041040
007760(000424): 020040 020040 016034 120026 004442 031001 020226 177777 000000 016034 000000 100024
007774(000440): 047520 042522 020040 020040 050122 047504 020040 020040 041114 052524 031065 020040
010010(000454): 050125 041040 020040 020040 034067 120026 004454 035403 015710 000000 100000 005417
010024(000470): 000000 100021 047520 042522 020040 020040 050122 047504 020040 020040 041114 052524
010040(000504): 031065 020040 050125 041040 020040 020040 034067 120026 004451 030004 021310 000000
010054(000520): 100000 005417 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000
010070(000534): 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000
LINES 010104 - 010133 SAME AS ABOVE
010134(000600): 042526 000040 020040 040143

```

```

007334: 0.....6+.....
007350: .....@.....
007364: .....@.OPERATORSYS.....
007400: .....UP.....
007414: .....JEANN.#OPER....PR00
007430: .....PUB.....
007444: .....BL015....OPER....
007460: PR00....PUB.....
007474: 65....@.SALE
007510: SS....PR00....PUB
007524: .....@.
007540: SALES1....PR00
007554: PUB.....
007570: ..@.SALES6....PR00
007604: .....PUB.....
007620: ..((..@)OPEN....PR00
007634: .....PUB.....
007650: .....@.(ITEMS)PR00
007664: .....MATLCTL &&..
007700: .....&&..@.SAI
007714: DEV.....TONY....SAI
007730: .....@.SALE
007744: S3....PR00....PUB
007760: .....2....BL0125..
007774: OPER....PR00....BL01
010010: PUB.....87....
010024: 25....OPER....PR00....BL01
010040: 25....PUB.....87....)0..
010054: .....
010070: .....

```

HP3000 I/O MEMORY DUMP 800.03 OF SYS VER B UPDATE 00 FIX 02 DUMP TIME 2/07/80, 8:17AM
(C) HEWLETT-PACKARD CO. 1976

```
***** PROCESS CONTROL BLOCK (1ST HALF) *****
```

(

 ACT IMP SIR
 SON FA
 ACT IMP
 ACT IMP
 ACT IMP
 ACT IMP
 NORM
 NORM
 NORM
 NORM
 NORM
 NORM
 start at 27

HP3000 III MEMORY DUMP B00.03 OF SYS VER B UPDATE 01 FIX 00 DUMP TIME 1/22/80, 9:55
(C) HEWLETT-PACKARD CO. 1976

***** SIR TABLE *****

SIR # 20 LOCKED BY PIN # 35
NO IMPEDED PROCESSES

FMAVT

SIR # 45 LOCKED BY PIN # 35
NO IMPEDED PROCESSES

FILE INTEGRITY

***** MONITOR TABLE *****

LOCATION	PIN	EVENT				
72425	355	EXCHDB	0000024	002212	142021	
72441	355	EXCHDB	0000000	002115	140021	
72455	355	EXCHDB	0000024	002212	142021	
72471	355	EXCHDB	0000000	002115	140021	
72505	355	EXCHDB	0000024	002212	142021	
72521	355	EXCHDB	0000000	002115	140021	
66535	355	EXCHDB	0000024	002212	142021	
66551	355	EXCHDB	0000000	002115	140021	
66565	355	QUIESCE	1000002	004003	010231	
66601	355	EXCHDB	0000024	014561	143036	
66615	355	EXCHDB	0000000	002115	140021	
66631	355	EXCHDB	0000024	002212	142021	
66645	355	EXCHDB	0000000	002115	140021	
66661	355	EXCHDB	0000024	002212	142021	
66675	355	EXCHDB	0000000	002115	140021	
66711	355	EXCHDB	0000024	002212	142021	
66725	355	EXCHDB	0000000	002115	140021	
66741	355	EXCHDB	0000024	002212	142021	

PIN	EVENT				
35	EXCHDB	000000	002115	140021	
35	EXCHDB	000024	002115	142021	
35	EXCHDB	000000	002115	140021	
35	EXCHDB	000024	002115	142021	
35	EXCHDB	000000	002115	140021	
35	EXCHDB	000024	002115	142021	
35	EXCHDB	000000	002115	140021	
35	EXCHDB	000024	002115	142021	
35	300	001072	100000	070301	
35	EXCHDB	000000	002115	140021	
35	EXCHDB	000024	002115	142021	
35	EXCHDB	000000	002115	140021	
35	EXCHDB	000024	002115	142021	
35	EXCHDB	000000	002115	140021	
35	EXCHDB	000024	002115	142021	
35	EXCHDB	000000	002115	140021	
35	EXCHDB	000024	002115	142021	
35	EXCHDB	000000	002115	140021	

HP3000 III MEMORY DUMP 000,03 OF SYS VER 8 UPDATE 01 FIX 00 DUMP TIME 1/22/80, 9:55AM
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BANK 0

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***** I/O REQUEST TABLE (FREE LIST) *****

ELEMENTS IN TABLE
ELEMENTS IN PRIMARY AREA
SIZE OF EACH ELEMENT
INDEX OF FIRST FREE ELEMENT
INDEX TO LAST FREE ELEMENT

255
249
11
3274
420

MAXIMUM NUMBER OF ELEMENTS IN USE 44
CURRENT NUMBER OF ELEMENTS IN USE 10
OVERFLOWS 0
TOTAL REQUEST 720631

TABLE INDEX	LOGICAL DEVICE	PCB	ADDR REL	OST	BUFFER ADDRESS	FUNC	COUNT	PARM1	PARM2	MISC	FLAGS.....	STATUS	DESCRIPTION	STATUS
420	1	35	SEG	24	1177	READ	600W	000000	000101	000000	007000 IW BL CO	NORMAL	COMPLETION	
2302	61	35	+DB	22	2232	READ	200W	000001	161764	000000	007000 IW BL CO	NORMAL	COMPLETION	
23273	61	35	+DB	22	0	FOPEN	0W	000000	000000	000000	007000 IW BL CO	NORMAL	COMPLETION	
23664	61	35	+DB	22	2774	WRITE	200W	000001	161764	000000	007000 IW BL CO	NORMAL	COMPLETION	
2022	61	35	+DB	22	2774	READ	200W	000001	161764	000000	007000 IW BL CO	NORMAL	COMPLETION	
270	61	35	+DB	22	2523	READ	200W	000001	161764	000000	007000 IW BL CO	NORMAL	COMPLETION	
2610	1	0	ARS	1	153700	READ	4133W	000000	015423	000000	041000 SP CO	NORMAL	COMPLETION	
2445	1	0	ARS	1	153700	WRITE	4134W	000000	015423	000000	041000 SP CO	NORMAL	COMPLETION	
3760	1	35	SEG	24	311	READ	600W	000000	002736	000000	007000 IW BL CO	NORMAL	COMPLETION	
754	1	0	ARS	2	101644	WRITE	1404W	000000	010377	000000	041000 SP CO	NORMAL	COMPLETION	
576	1	0	ARS	2	053714	WRITE	104W	000000	010367	000000	041000 SP CO	NORMAL	COMPLETION	
2562	1	0	ABS	0	040420	WRITE	100W	000000	010373	000000	041000 SP CO	NORMAL	COMPLETION	
5041	1	0	ARS	0	172134	WRITE	154W	000000	006752	000000	041000 SP CO	NORMAL	COMPLETION	
3745	1	0	ABS	0	000154	WRITE	10004W	000000	007037	000000	041000 SP CO	NORMAL	COMPLETION	
51	1	0	ARS	0	177370	WRITE	404W	000000	007723	000000	041000 SP CO	NORMAL	COMPLETION	
704	1	0	ABS	0	116704	WRITE	2004W	000000	007363	000000	041000 SP CO	NORMAL	COMPLETION	
506	1	0	ABS	0	014470	WRITE	2004W	000000	007103	000000	041000 SP CO	NORMAL	COMPLETION	
575	1	0	ARS	0	163254	READ	23237W	000000	106711	000000	041000 SP CO	NORMAL	COMPLETION	
711	1	0	ARS	0	062004	WRITE	2364W	000000	007637	000000	041000 SP CO	NORMAL	COMPLETION	
361	34	34	+DB	0	0	WRITE	0W	000320	000000	000000	007000 IW BL CO	NORMAL	COMPLETION	
1300	34	34	+DB	0	000034	0W	0W	000000	000000	000000	007000 IW BL CO	NORMAL	COMPLETION	
1434	34	34	SEG	0	306	READ	170W	000000	124031	000000	005000 IW CO	NORMAL	COMPLETION	
474	34	34	+DB	1	1	READ	12W	000003	000000	000043	007000 IW BL CO	NORMAL	COMPLETION	
4021	34	34	+DB	1	7010	WRITE	445W	000320	000144	000032	007000 IW BL CO	NORMAL	COMPLETION	
2111	34	34	+DB	1	174001	WRITE	1151W	000320	000144	000032	007000 IW BL CO	NORMAL	COMPLETION	
36	2	2	SEG	1	15723	READ	545W	000001	163116	000000	007000 IW BL CO	NORMAL	COMPLETION	
2547	3	3	SEG	1	10660	READ	545W	000001	136110	000000	007000 IW BL CO	NORMAL	COMPLETION	
1173	3	3	SEG	1	6642	READ	572W	000003	006546	000000	007000 IW BL CO	NORMAL	COMPLETION	
3376	3	3	SEG	1	13705	READ	656W	000003	154412	000000	007000 IW BL CO	NORMAL	COMPLETION	
4403	3	3	SEG	1	12676	READ	772W	000001	040772	000000	007000 IW BL CO	NORMAL	COMPLETION	
163	3	3	+DB	1	177103	READ	51W	100001	017140	000043	007010 IW BL CO	TERMINATED BY SPECIAL CHAR		1
174	3	3	SBUFF	0	0	000005	0W	000010	000000	000000	017000 SB IW BL	NORMAL	COMPLETION	
1774	3	3	+DB	1	7030	WRITE	68W	000320	000144	000000	007000 IW BL CO	NORMAL	COMPLETION	
1425	3	3	+DB	1	177103	READ	0W	100001	017140	000043	007000 IW BL CO	NORMAL	COMPLETION	
3131	34	34	+DB	0	513	WRITE	1W	000320	000000	000000	007000 IW BL CO	NORMAL	COMPLETION	
3567	34	34	+DB	0	0	000034	0W	000000	000000	000000	007000 IW BL CO	NORMAL	COMPLETION	
1002	34	34	SEG	1	306	READ	170W	000000	124027	000000	005000 IW CO	NORMAL	COMPLETION	
4533	34	34	+DB	1	1770	WRITE	0W	000000	000004	000000	007000 IW BL CO	NORMAL	COMPLETION	
222	34	34	+DB	1	1770	WRITE	0W	000000	000004	000000	007000 IW BL CO	NORMAL	COMPLETION	
237	1	1	SEG	4	1177	WRITE	100W	000000	001543	000000	007000 IW BL CO	NORMAL	COMPLETION	
125	1	1	SEG	4	311	READ	600W	000000	002742	000000	007000 IW BL CO	NORMAL	COMPLETION	
			SEG	4	311	READ	600W	000000	002650	000000	007000 IW BL CO	NORMAL	COMPLETION	

HP3000 III MEMORY DUMP 800.03 OF SYS VER B UPDATE 01 FIX 00 DUMP TIME 1/22/80, 9:55AM
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BANK 0

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***** INTERKUP LINKAGE TABLE *****

DRT NO	SHARED SEL CHAN	CHANNEL QUEUE	ILT SYS DB REL ADDR	SIOP SYS DB REL ADDR	SIOP SIZE	Q#	DITPU	UNIT EXTRACT INSTRUCTION	ABS ADDRESS	SIO PROGRAM	
4	NO	0	40270	040303	174	3	040477	037437	041303	000000	041305 JUMP
									041305	040000	013000 CONTROL
									041307	040000	001200 CONTROL
									041311	067776	041513 WRITE
									041313	040000	007427 CONTROL
									041315	040001	001407 CONTROL
									041317	077776	041465 READ
									041321	040001	001406 CONTROL
									041323	077776	041474 READ
									041325	040001	001405 CONTROL
									041327	077776	041473 READ
									041331	040001	001404 CONTROL
									041333	077776	041472 READ
									041335	040001	001403 CONTROL
									041337	077776	041471 READ
									041341	040001	001402 CONTROL
									041343	077776	041470 READ
									041345	040001	001401 CONTROL
									041347	077776	041467 READ
									041351	040001	001400 CONTROL
									041353	077776	041466 READ
									041355	014000	000000 SET BANK
									041357	040000	006000 CONTROL
									041361	067776	041513 WRITE
									041363	040000	002400 CONTROL
									041365	014000	000064 SET BANK
									041367	077200	167603 HEAD
									041371	004000	041355 JUMP (CONDITIONAL)
									* 041373	034000	020000 END WITH INTERRUPT
									041375	034000	020000 END WITH INTERRUPT
									041377	034000	020000 END WITH INTERRUPT
									041401	034000	020000 END WITH INTERRUPT
									041403	167600	053120 WRITE
									041405	067600	053120 WRITE
									041407	004000	041355 JUMP (CONDITIONAL)
									041411	034000	020000 END WITH INTERRUPT
									041413	000000	000000 JUMP
									041415	000000	000000 JUMP
									041417	000000	000000 JUMP
									041421	000000	000000 JUMP
									041423	000000	000000 JUMP
									041425	000000	000000 JUMP
									041427	000000	000000 JUMP
									041431	000000	000000 JUMP
									041433	040001	006400 CONTROL
									041435	077771	000000 READ
									041437	040001	000000 CONTROL
									041441	077776	000000 READ

HP 3000 II MEMORY DUMP 800.00 OF SYS VER UPDATE FIX DUMP TIME / / , : AM
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***** FIXED LOW MEMORY *****

↑
CODE SEGMENT TABLE POINTER 100511

PGM ERROR INVALID ADDRESS 00000100512
PGM ERROR INVALID ADDRESS 00000021041
EXTENDED CODE SEGMENT TABLE POINTER 051525

DATA SEGMENT TABLE POINTER 034461

PROCESS CONTROL BLOCK BASE 020060

PGM ERROR INVALID ADDRESS 00000020061
PGM ERROR INVALID ADDRESS 00000021041
CURRENT PCB POINTER 033461

INTERRUPT STACK BASE 031467

INTERRUPT STACK LIMIT 034460

INTERRUPT MASK 032460

**** WARNING! PROBABLE BAD ADDRESS FOR ONE/ALL OF THE FOLLOWING! ****

CBT BASE
DBT BASE
PCB BASE