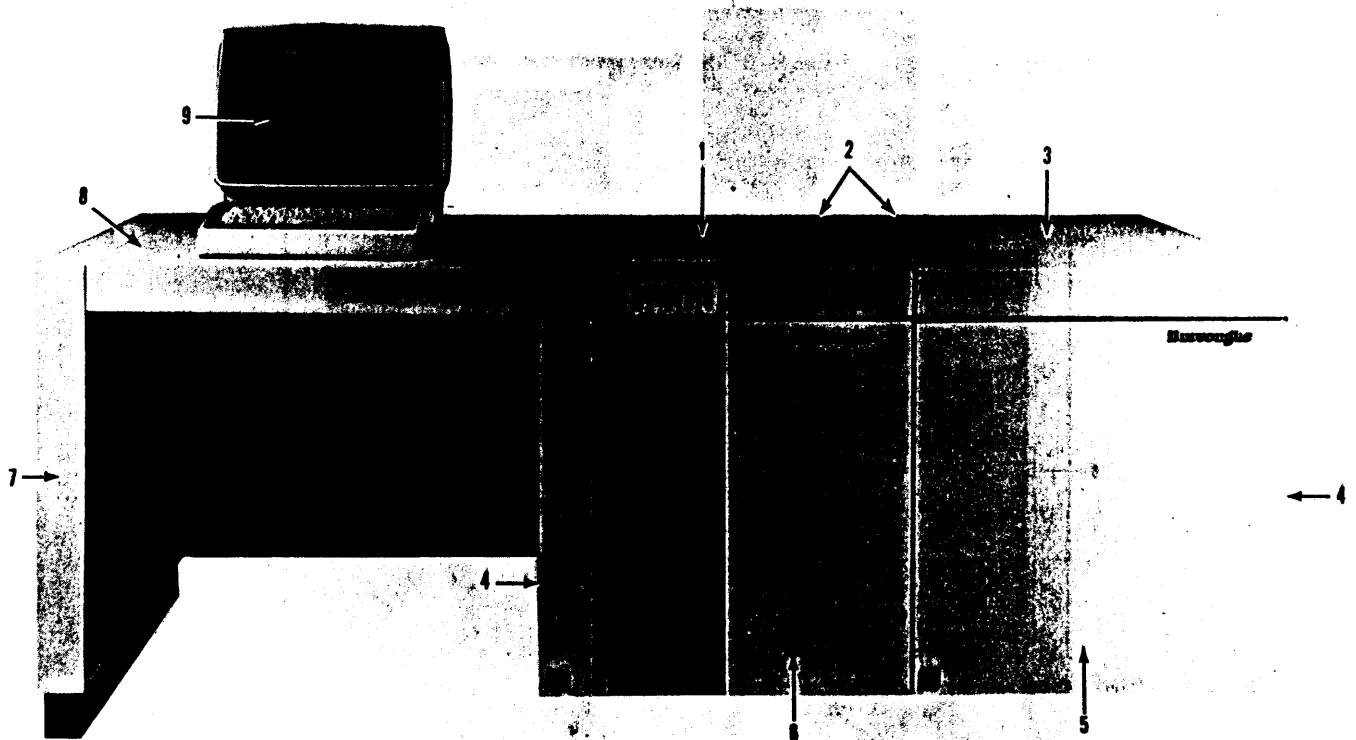


CABINET PANELS (PLATE 1-1)

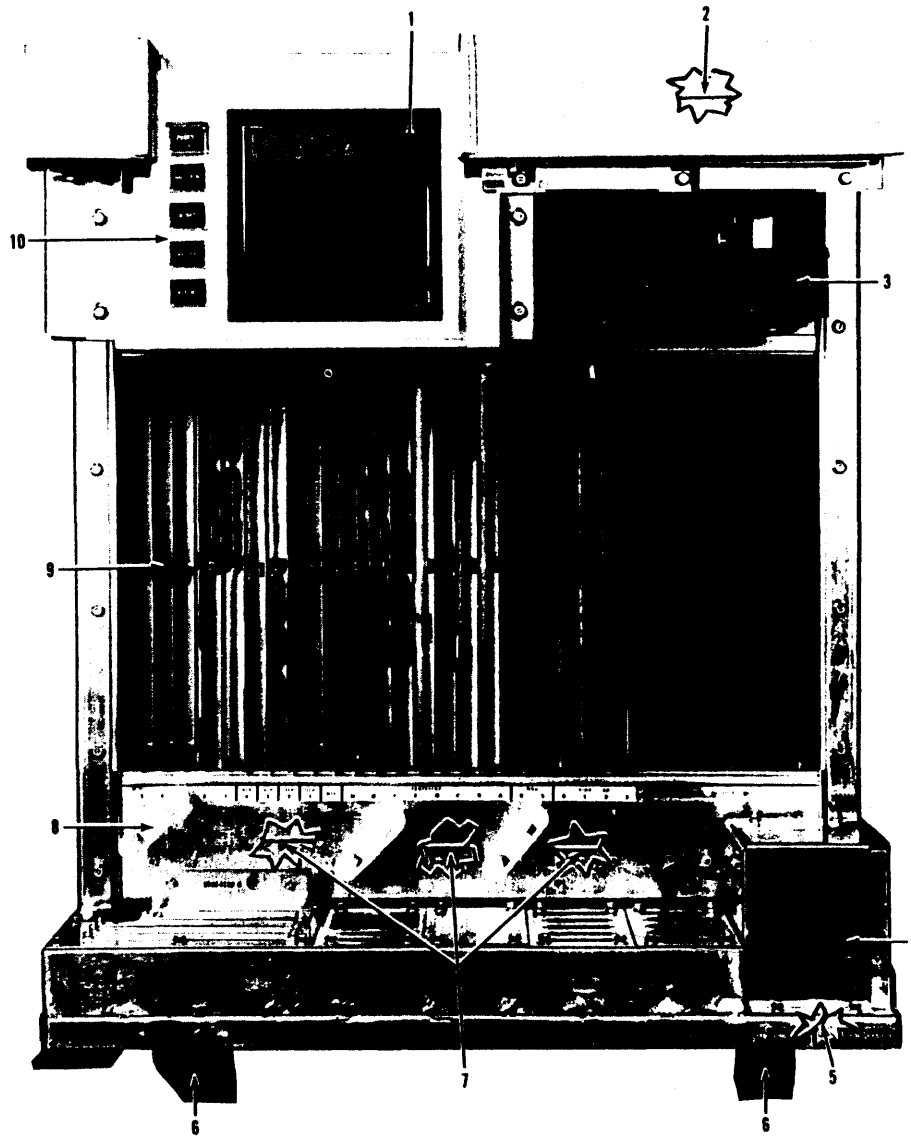


PART NUMBERS (PLATE 1-1)

1	2228 5514	top cover
2	2233 5160	rear door
3	2231 2490	top cover
4	2228 5464	side panel
5	2233 5277	front door, includes: 1257 4745 'B' medallion 1282 5386 'Burroughs' logo
6	2233 5178	front door, includes: 1257 4745 'B' medallion 1282 5386 'Burroughs' logo 2231 2748 'B 1900' decal 2228 9987 cassette door panel
7	2231 3290	leg
8	2231 3571	table top
9	-----	MT 983 Terminal, refer to TP 100 and TP 200 Parts Catalogs, Forms 1130200 and 1097730.

NOTE: Cabinet Colors:
 gray 264
 black 814

CABINET (FRONT VIEW) (PLATE 1-2)

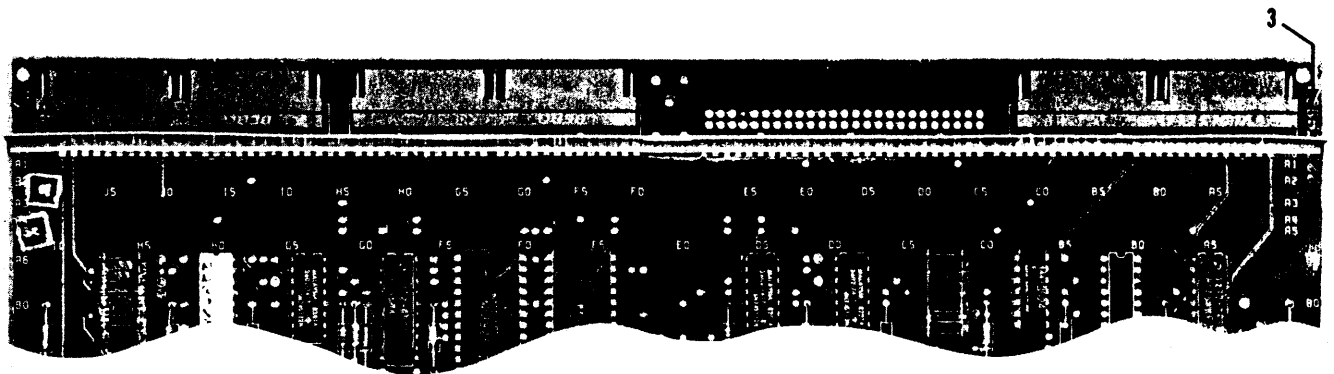
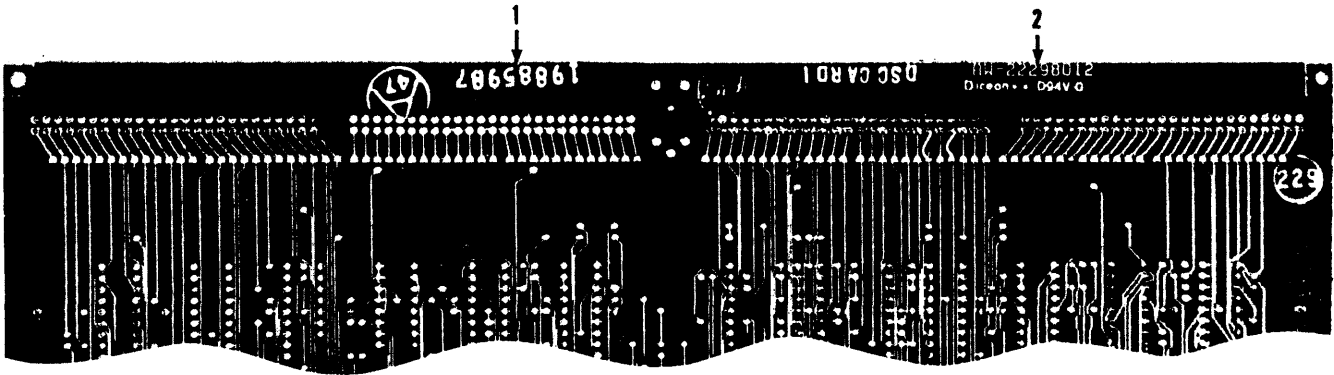


TC3001

PART NUMBERS (PLATE 1-2)

1	-----	refer to A 9490 CASSETTE TAPE PARTS CATALOG (form 1062296)	6	2228 7056	caster
2	2233 4205	interconnect board assy includes:	7	1988 2117	fan (50/60 HZ)
		2219 2280 resistor pack (R6T1/S1)	8	2226 0020	retainer
		1111 8676 resistor 562 ohm 1/4W 2%	9	-----	refer to PRINTED CIRCUIT CARDS AND COMPONENTS
		1101 4867 capacitor 27UF 20V 5%	10	2233 5186	cassette panel assembly, includes:
		1196 6595 capacitor 33UF 25V 20%			1973 9952 lamp (14V)
3	2231 4009	cable tray cover, use: 2231 2342 cable tray			2157 0759 lamp (28V)
4	2206 9777	circuit breaker (240V 20A)			2228 7213 pushbutton switch
5	2231 3852	power cord, includes: 2026 6698 plug (20A)			2225 7976 alternating pushbutton switch
					2225 7968 lens (POWER)
					2228 7155 lens (HALT/RUN)
					2225 9980 lens (MODE)
					2228 7171 lens (MASTER)
					2228 7189 lens (INTERRUPT)
					2600 3327 switch guard

PC CARDS AND COMPONENTS (PLATE 1-4)



TC3003

PART NUMBERS (PLATE 1-4)

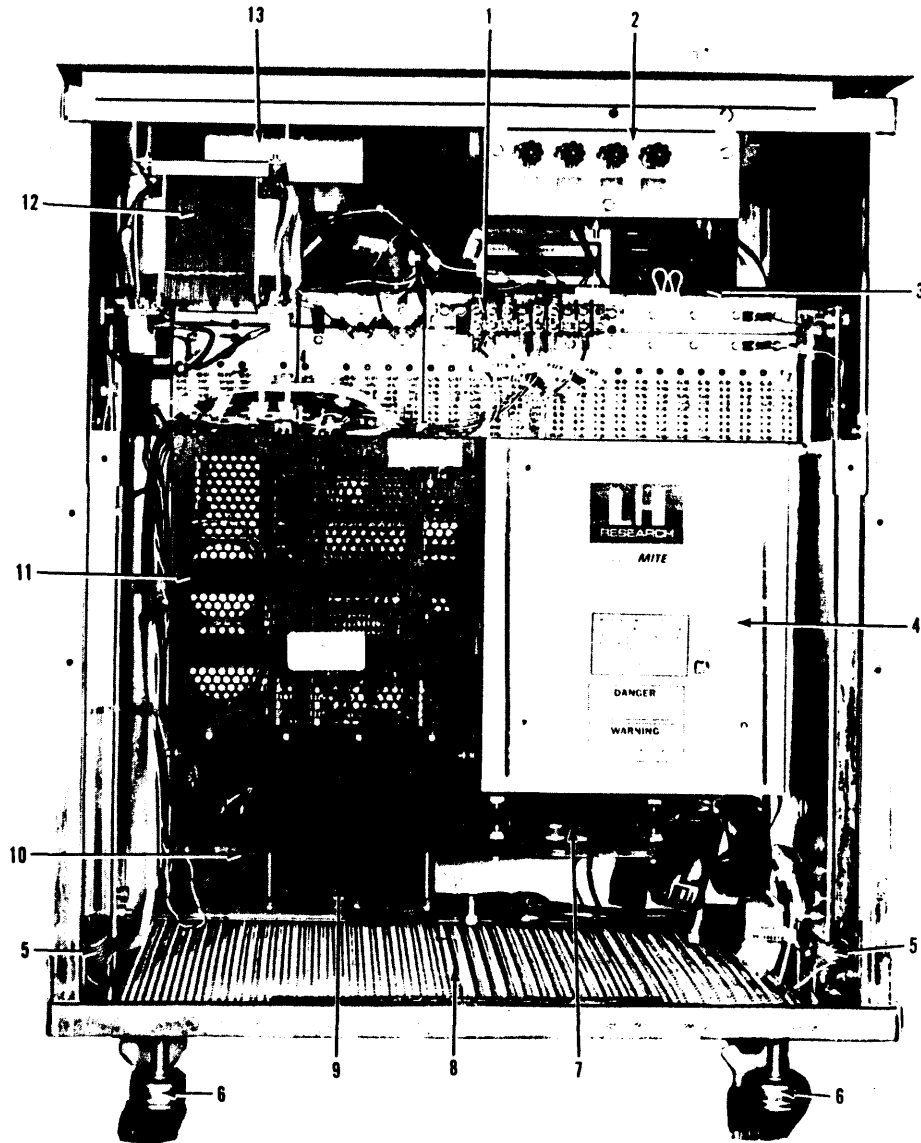
- HOW TO ORDER PC CARDS**
- 1 ----- Stamped part number identifies the complete card assembly. Order this number when complete assembly is required.
 - 2 ----- Etched part number identifies the art work. Do not order.
 - 3 ----- Etched part number identifies the bare board. Do not order.

COMPONENTS:

The only component that is furnished separately for replacement on P.C. Cards is as follows:

1272 1205 64Kx1 RAM CHIP

CABINET (REAR VIEW) (PLATE 1-3)



TC3002

PART NUMBERS (PLATE 1-3)

1	1102 7109	terminal block, use: 2231 2961 mounting block 1256 1155 screw 1256 7459 lockwasher 1256 8036 washer	5	2226 0053	spring
			6	2228 7049	caster
			7**	----	fan (50/60 HZ)
			8	2228 7221	filter
			9**	----	fan (50/60HZ)
2	2233 6077	AC distribution assembly, includes: 1126 6764 transformer (50/60 HZ) 2228 6652 relay (25A, 24V) 1150 2200 fuseholder 2208 6144 fuse (2A, 250V)	10*	2233 7877	hall effect board assembly
			11*	2217 9998	power supply (2V) 50/60HZ
			12	2233 4726	transformer (50/60 HZ), use: 2233 4353 shield
3	* 1989 0557	overtemp board assembly (not shown in photo)	13	2228 7254	EMI filter.
	* 1989 0581	airloss board assembly (not shown in photo)			
4*	2232 1327	power module (5V 200A) 50/60HZ			

* Component parts not
furnished separately.

** Part number not
available at time of
printing.

WD INFOMASTER 1-0174971013003 01/13/84
TLX BURMEDSYSE PSD
ZCZC 03 PASADENA CA JAN 13, 1984
TLX 542240 SEREGION ATL
BT

ALL REGIONAL TSC MGRS
CLAUDE COURDY INTL CSE WHO 3027
J. HARRIS WHO MCCORD BLDG
H.C. PARDINI 2A31 WHO
A. BEGON LIEGE
A. MUSSO LIEGE
J. SANDERS CSC SOUTH

SUB: MAGNETIC CASSETTE CONTROL ON B1990 (GEM) SYSTEMS

MARKETING HAS ALLOWED THE USE OF THE MAG TAPE CASSETTE CONTROL ON B1990 SYSTEMS FOR INTERNAL SYSTEMS ONLY, AND NOT TO BE OFFERED FOR CUSTOMER USE. THIS REQUIRES AN I/O EXTENSION - 5 BACKPLANE TO HOUSE THE CONTROL. HOWEVER, THE BACKPLANE AT ITS CURRENT LEVEL WILL NOT DRIVE THE CASSETTE CONTROL. IN ORDER FOR THE CONTROL TO WORK, A BACKPLANE WIRE MUST BE REMOVED FROM I/O EXTENSION - 5. THIS CHANGE IS TO BE CONSIDERED TEMPORARY ONLY AND IS NOT AS YET SUPPORTED BY ENGINEERING. ALSO, IF THIS CHANGE IS PERFORMED IT MUST BE WELL DOCUMENTED SO THE WIRE IS RE-INSTALLED IF THE SYSTEM/BACKPLANE IS TO BE MOVED OR RE-APPLIED. ANY QUESTIONS REGARDING THIS CHANGE OR ITS ENGINEERING STATUS SHOULD BE REFERED TO P A AND S LIEGE.

REMOVE : SUB-DISTRIBUTION CARD SLOT
1 HY FROM
SINGLE CARD CONTROL CARD SLOT
1 HY

R.A. KWIECIEN
P A AND S PASADENA

(BURROUGHS CORPORATION
460 SIERRA MADRE VILLA
PASADENA CA. 91105) .
NNNN
1650 EST

SE REGION ATL

DISCONNECTED 13-Jan-84 16:57 17 MSG 86

2 phase 2080
hot 1 / hot
1 1/2

B1965 AND B1995 SYSTEMS CONFIGURATIONS

- CABINETS

- SINGLE 1965
- EXPANSION 1990
- OPTIONAL CONSOLE TABLE

- PROCESSORS

- SINGLE
- DUAL

- MEMORY

- 2 MEMORY CONTROL CARDS
 - CARD R 64k chips
 - CARD S
- 2 MEMORY STORAGE CARDS
 - 1 MB PER CARD (FULLY POPULATED)
 - MINIMUM PHYSICAL MEMORY IS 512 K (HALF POPULATED BOARD)
 - MAXIMUM MEMORY SIZE IS 2 MEGABYTES (2048 K)
 - PHYSICAL MEMORY MAY BE CONFIGURED IN 512 K INCREMENTS
 - ONLY A SINGLE HALF POPULATED BOARD IS PERMITTED PER SYSTEM

B1965 AND B1995

SYSTEMS CONFIGURATIONS

- MULTILINE CONTROL
 - MAXIMUM OF 2 PERMITTED
 - MINIMUM OF 1 BASE CARD AND 1 QUAD LINE ADAPTOR
 - MAXIMUM OF 32 LINES

- DISK SUBSYSTEM CONTROL *II* *8086 micro processor*
 - MAXIMUM OF 2 PERMITTED
 - MINIMUM OF 1 REQUIRED
 - MAXIMUM OF 8 SPINDLES PER CONTROL (16 MAXIMUM)

B1905 AND B1995
SYSTEMS CONFIGURATIONS

min software
10.01.59

- I/O CONTROLS

- TTL *no CTR interface*

CARD READER - 1T *80cd*

MAGNETIC TAPE - 6T *streams or protec*

USED ONLY IN MAIN CABINET *not in expansion*

SHARES TTL SLOTS FOR MLC-4 ADAPTORS

- CTL

PRINTER CONTROL - 7 *Band printer*

MAGNETIC TAPE - 5

READER SORTER - 2

PRINTER CONTROL - 3

PRINTER CONTROL - 4 (FOR KATAKANA)

USED ONLY IN I/O EXTENSION - 5 *unique to this machine*

LIMITED TO 3 CTL CONTROLS

only I/O extension

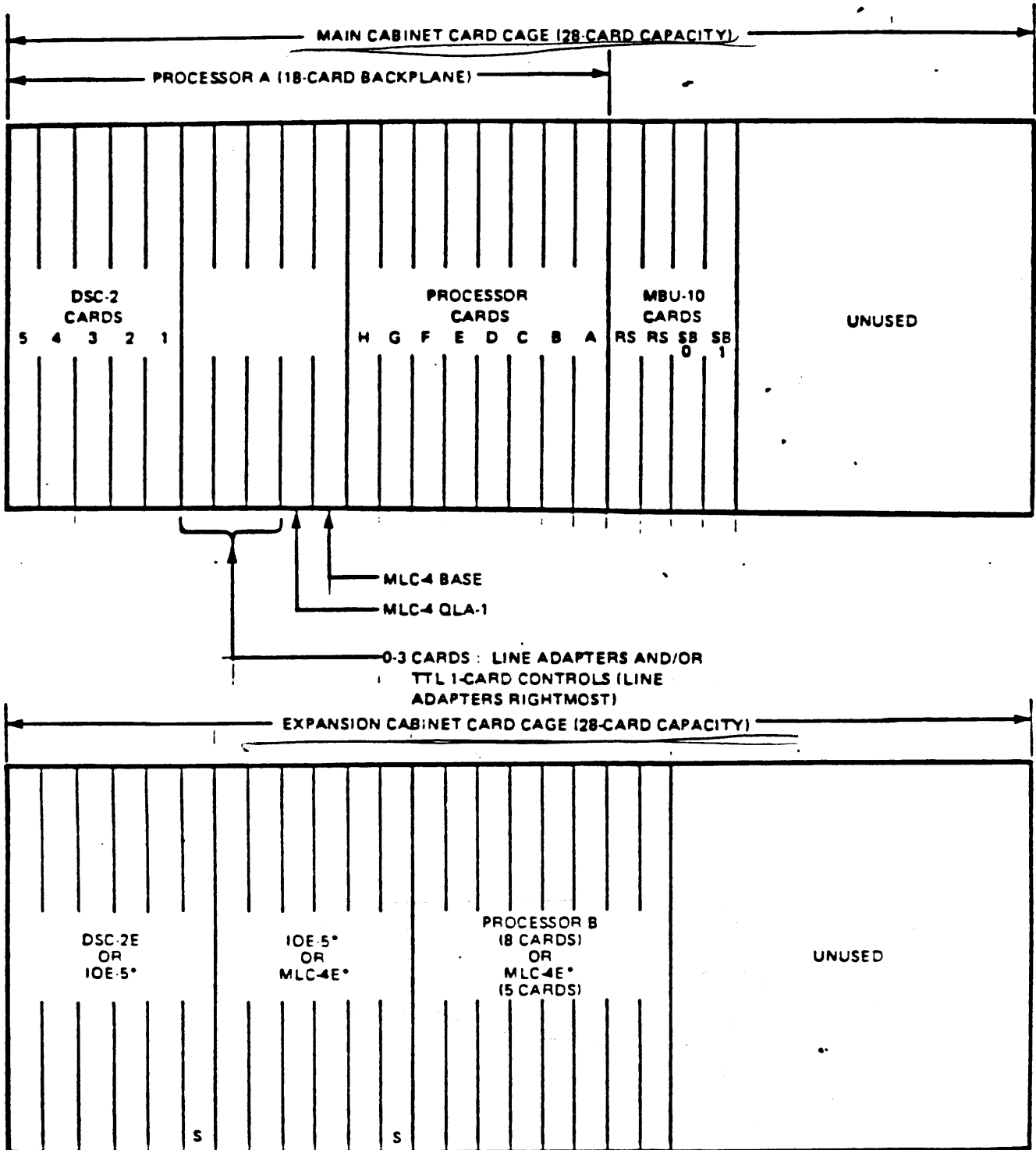
- MAXIMUM CTL AND TTL "SOFT" I/O CONTROLS = 8
(INCLUDES 2 DSC-2)

BACKPLANES USED IN THE B1965 AND B1995 SYSTEMS

TOTAL NUMBER OF BACKPLANE TYPES = 6

ONLY ONE OF EACH TYPE IS PERMITTED IN ANY CONFIGURATION

<u>BACKPLANE NAME</u>	<u>USE</u>	<u>NUMBER OF CARD SLOTS</u>
1 M-PROCESSOR-9 (USED IN MAIN CABINET ONLY)	MASTER OR SINGLE PROCESSOR 8 PROCESSOR CARDS 5 MULTILINE CONTROL/TTL I/O CARDS 5 DSC-2 CARDS	18 (ALL USED)
2 M-PROCESSOR-9S (USED IN EXPANSION CABINET ONLY)	SLAVE PROCESSOR	8 (ALL USED)
3 MEMORY BACKPLANE-9 (USED IN MAIN CABINET ONLY)	MEU-9 2 MEMORY CONTROL CARDS 2 STORAGE BOARDS (1 MB EACH)	6 (4 USED)
4 I/O EXTENSION - 5 (USED IN MAIN CABINET WITH ONE CTL CONTROL <u>OR</u> IN EXPANSION CABINET)	ACCEPTS UP TO 3 CTL CONTROLS (5 CARDS TOTAL)	6 (ALL USED)
5 MULTILINE CONTROL - 4, BACKPLANE - 1 (USED IN EXPANSION CABINET ONLY)	ACCEPTS ONE BASE CARD AND UP TO 4 ADAPTORS	6 (5 USED)
5. DSC EXTENSION - 1 (USED IN EXPANSION CABINET ONLY)	USES 5 DSC-2 CARDS USES 1 SUB-DISTRIBUTION CARD	6 (ALL USED)

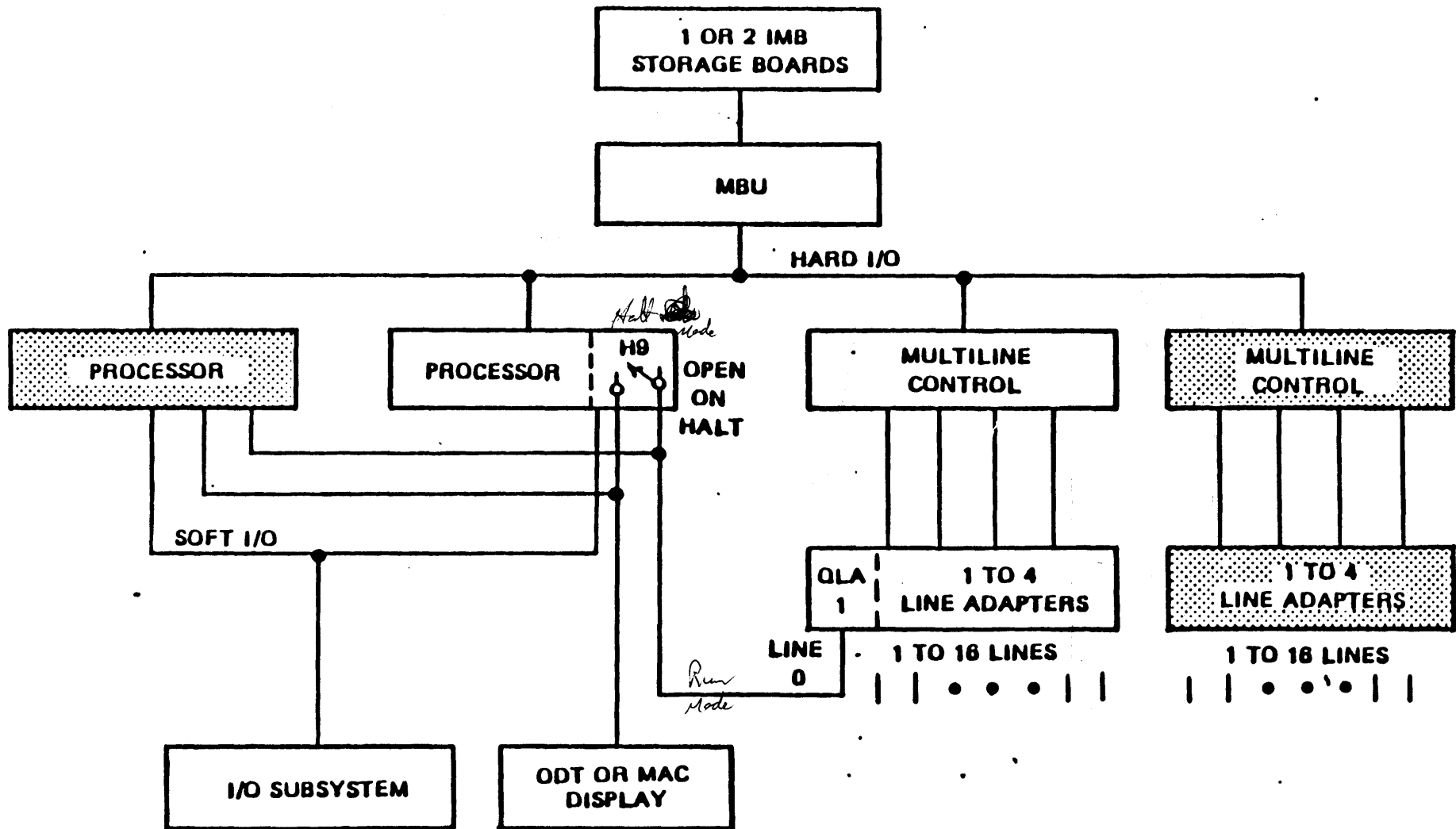


PAGE 2-2

- * ONE ONLY
- S SUBDISTRIBUTION CARD FOR DSC OR IOE

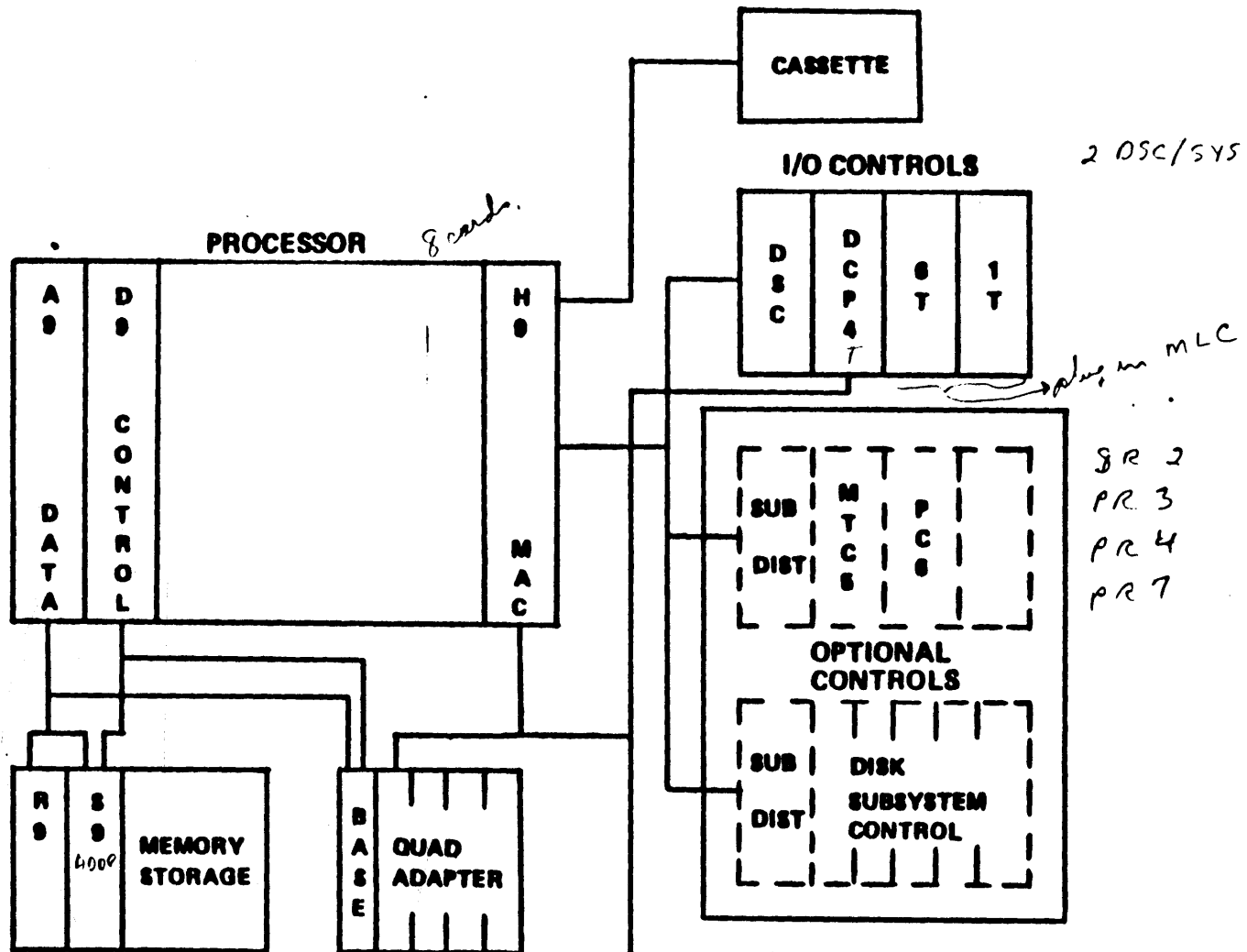
G14536

FIGURE 1-28.



- 1 OR 2 DSC: 1 TO 8 SPINDLES EACH PLUS LINE PRINTER
- 0 TO 3 CTL CONTROLS: LINE PRINTER
MAG. TAPE
READER SORTER
- 0 TO 3 TTL CONTROLS: CARD READER
MAG TAPE

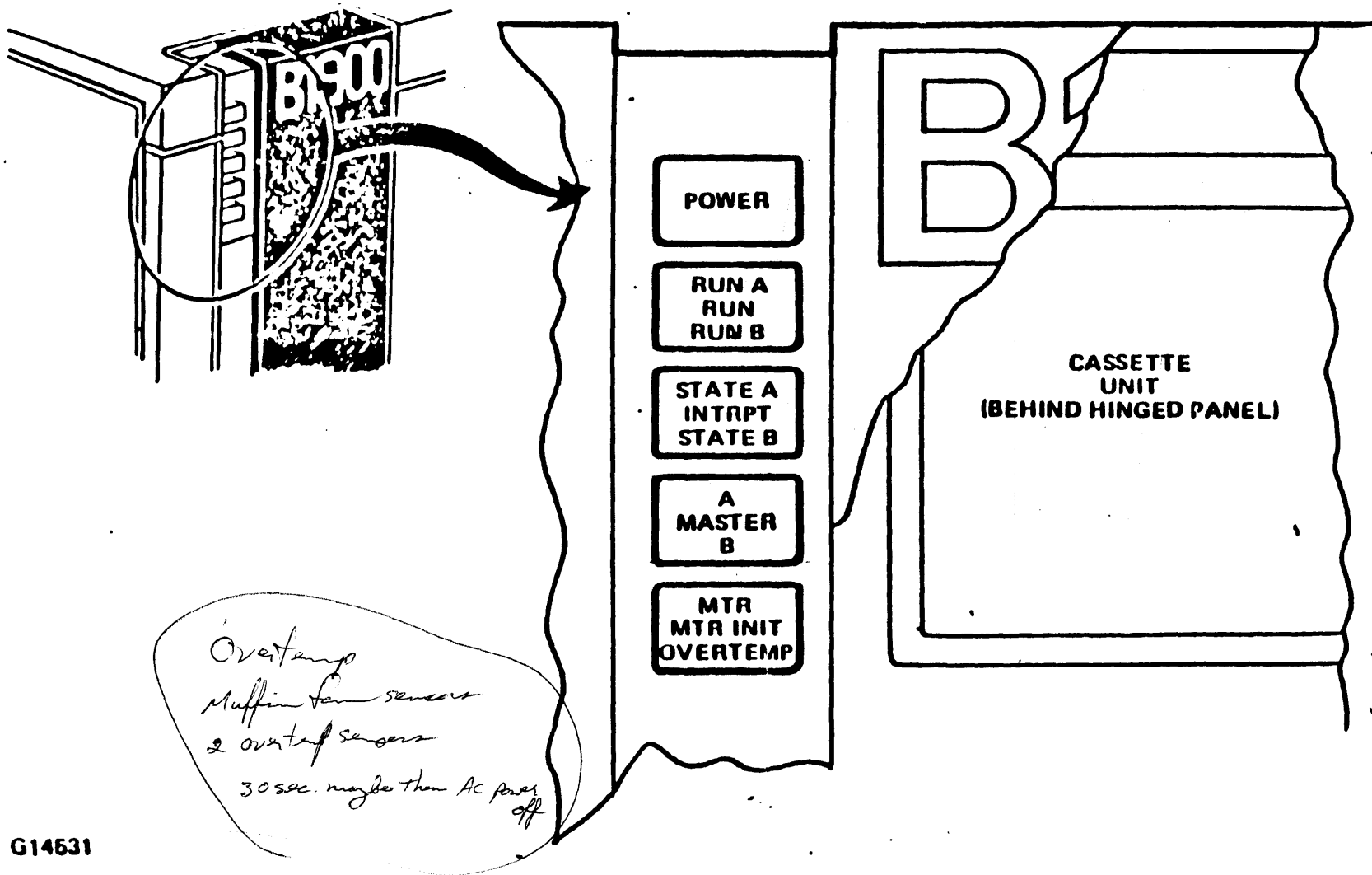
OPTIONAL



MBU
 1 MFC/card
 2nd MAX

MLC
 LINE 3 REMOTE
 LINE 0 ODT
 11 LINES/ADAPT / 16 LINE W/ADAPT
 T01 or RS232 JUMPER'S ONLY
SYSTEM DIAGRAM
 38.4 Cardpages

R 199C SYSTEM M/D
 E 199C SYSTEM OPERATIONS



G14631

FIG. 1-6.

POWER Push Button and Indicator

The POWER push button controls AC power to the central system, which may consist of one or two cabinets. The indicator remains lighted as long as power is applied. A clear plastic cover is provided to prevent the button from being accidentally pressed.

RUN Push Button, RUN A and RUN B Indicators

If the system is in HALT state, pressing RUN changes the state to RUN. If the system is in RUN state, pressing RUN changes the state to HALT.

In a two-processor system, the RUN button has direct effect only on the processor designated as master; the slave, if on line, changes state under master processor control.

The RUN A and RUN B indicators show the current state of each processor. A lighted indicator shows that the processor is in RUN state and an unlighted indicator shows that the processor is in HALT state.

INTRPT Push Button, STATE A and STATE B Indicators

If the system is in RUN state, pressing INTRPT (interrupt) sets CC register bit 0 in the processor designated master. This remains as a soft interrupt signal which must be detected by software to halt the processor, or the master processor if a two-processor system. This permits an orderly halt under software control.

The STATE A or STATE B indicator goes on when bit 3 of the CC register of the designated register goes TRUE, which occurs under software control.

MASTER Push Button, A and B Indicators

Pressing MASTER in a two-processor system reverses the existing processor master-slave designations. The current designation is shown by the A/B indicators; either A or B is lighted to show which processor is designated as master. In a one-processor system, the push button has no effect and the A indicator is lighted as long as system power is applied.

MTR INIT Push Button, MTR and OVERTEMP Displays

Pressing MTR INIT causes the drive to rewind cassette tape to beginning of tape (BOT). The MTR indicator is on if the processor is in TAPE mode; in this mode the system fetches microinstructions from the cassette. If the system is not in TAPE mode, micros are fetched from S-Memory or from Cache.

The OVERTEMP indicator lights if one of the thermocouples on the thermal protect board detects an over-temperature condition, or if an absence of rotation is detected by a sensor in any of the fans. A rise of the ambient room temperature above 40 degrees Celsius, the loss of a fan's operation, or a clogged air filter will result in an internal system temperature in excess of 55 degrees Celsius, illuminate the OVERTEMP indicator, and remove ac input from the power supplies.

Registers

In this document, the term register is used to refer to (1) actual storage units of specific sizes and configurations that can be used as sources and destinations, (2) subregisters, which are independently addressable segments of certain larger registers, and (3) two specialized memory units, the A-Stack and the Scratchpad. The term pseudoregister is used to refer to register-like entities, not necessarily storage units, which are sources only or destinations only.

Table 1-3 presents the register names in a matrix that is based on the group and select codes used in microinstructions to reference specific registers. Top of A-Stack (TAS) is included in the table, but the A-Stack itself and the Scratchpad are not.

The register descriptions that follow are grouped according to functional categories.

B1900 [SINGLE or DUAL] PROCESSOR SYSTEM

TO INITIATE OPERATING SYSTEM: 1) Place CLEAR/START Cassette in Drive.
2) Set System Disk Drive labeled DPA to RUN
3) Type MTR GO on COMMAND line and push XMT

TO INITIATE MEMORY DUMP : 1) Type TEXT DUMP and push XMT.
2) Initiate Operating System as above.

TO TOGGLE STATE OF SWITCH : Type Name of Switch and push XMT.
TO CHANGE DISPLAY PAGE : Type Name of Page and push XMT.

OPERATOR INFORMATION REGISTERS:

T = HHHHHH X = HHHHHH PERM =H A = HHHHHH
L = HHHHHH Y = HHHHHH PERP =H LR = HHHHHH

CPU CONDITION: [See text]

FIGURE 1-24.

COMMAND >

<

Mode.	.Switches.	.Display	..Reads..Writes.....Action.....
NORMAL	MASTER: A	REG S16	SRnn:addr	SWnn:addr=values	CLEAR RESET REWIND
ONLY	SLAVE: OFF	STK S24	CR:addr	CW:addr=values	MTR CLRELOG NOTEXT
ONLY	REMOTE:OFF	CK S39	BACK or -	REGISTER=data	CCLR STEP RUN GO
TAPE	SINGLE:OFF	CSE MAC	NEXT or +	ALLREGS=data	RC SCREEN H9TEST
FROZEN	INTRPT:OFF	OPR	RDTEXT	TEXT characters (= : are optional)	
CASSETTE:	BOT		SLAVE: ABSENT	¹¹⁰ MASTER: HALTED	ERROR

[DATA DISPLAY AREA BELOW]

12.0

Halt instead of interrupt

PAGE 1-77

Figure 1-16. Soft Panel Display with System in HALT (Note Menu)

```

-----
TA=.....H   FU=.....H   X=HHHHHH   SUM=HHHHHH   S0A=HHHHHH   S0B=HHHHHH
TB=.....H   FT=.....H   Y=HHHHHH   CMPX=HHHHHH   S1A=HHHHHH   S1B=HHHHHH
TC=.....H   FLC=.....H   T=HHHHHH   CMPY=HHHHHH   S2A=HHHHHH   S2B=HHHHHH
TD=.....H   FLD=.....H   L=HHHHHH   XANY=HHHHHH   S3A=HHHHHH   S3B=HHHHHH
TE=.....H   FLE=.....H   A=.HHHHH   XEOY=HHHHHH   S4A=HHHHHH   S4B=HHHHHH
TF=.....H   FLF=.....H   "M"=..HHHH   MSKX=HHHHHH   S5A=HHHHHH   S5B=HHHHHH
CA=.....H   BICN=.....H   BR=HHHHHH   MSKY=HHHHHH   S6A=HHHHHH   S6B=HHHHHH
CB=.....H   FLCN=.....H   LR=HHHHHH   XORY=HHHHHH   S7A=HHHHHH   S7B=HHHHHH
LA=.....H   NULL=HHHHHH   FA=HHHHHH   DIFF=HHHHHH   S8A=HHHHHH   S8B=HHHHHH
LB=.....H   RSVD=HHHHHH   FB=HHHHHH   MAXS=HH0000   S9A=HHHHHH   S9B=HHHHHH
LC=.....H   PERM=.....H   FL=..HHHH   NULL=HHHHHH   S10A=HHHHHH   S10B=HHHHHH
LD=.....H   PERP=.....H   TAS=HHHHHH   "U"=..HHHH   S11A=HHHHHH   S11B=HHHHHH
LE=.....H   XYCN=.....H   CP=.....HH   NULL=HHHHHH   S12A=HHHHHH   S12B=HHHHHH
LF=.....H   XYST=.....H   NULL=HHHHHH   DATA=HHHHHH   S13A=HHHHHH   S13B=HHHHHH
CC=.....H   INCN=.....H   "CNS"=HHHHHH   "CMND"=HHHHHH   S14A=HHHHHH   S14B=HHHHHH
CD=.....H   MSSW=.....H   TIME=HHHHHH   NULL=HHHHHH   S15A=HHHHHH   S15B=HHHHHH
-----

```

FIGURE 1-18.

2 1965/95 SYSTEM M/C
MEMORY BASE UNIT

F A REGISTER (ADDRESS)

32 bits

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
ISTRG		RCW		WORD ADDRESS														STACK		EIT ADDRESS			
EFC																							

ERROR LOG REGISTER

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
PCRT		U		SI		MBU ID		W		D		ST		R		AREA		STK		SYNDROME					

- PCRT: Port accessing memory when error detected.
- U: Uncorrectable error detected.
- S: Single bit error detected and corrected.
- MBU ID: ID bits for MBU-9 (010).
- W: Error detected during write operation.
- D: Duplicate error logged (single or uncorrectable).
- ST BC: Storage board, address bit 23.
- R: Row, address bit 22.
- AREA: Address bits 21, 20, 19, 18.
- STK: Stack, address bit 5.

MEMORY BASE UNIT

SYNDROME TABLE

SYNDROME C:2 3456	HEX	BIT IN ERROR
000 0111	07	0
000 1011	0B	1
000 1101	0D	2
000 1111	0F	3
001 0011	13	4
001 0101	15	5
001 0111	17	6
001 1001	19	7
001 1011	1E	8
001 1101	1D	9
010 0011	23	10
010 0101	25	11
010 0111	27	12
010 1001	29	13
010 1011	2E	14
010 1101	2D	15
010 1111	2F	16
011 0001	31	17
011 0011	33	18
011 0101	35	19
011 0111	37	20
011 1001	39	21
011 1011	3E	22
011 1101	3D	23
100 0011	43	24
100 1001	49	25
100 1011	4E	26
100 1101	4D	27
101 0001	51	28
101 0011	53	29
101 0101	55	30
110 0001	61	31
100 0001	41	ECC 1
010 0001	21	ECC 2
001 0001	11	ECC 3
000 1001	09	ECC 4
000 0101	05	ECC 5
000 0011	03	ECC 6

© 1965/95 SYSTEM M/C
MEMORY BASE UNIT

156 chipson board

MBU = 2 MEMORY BOARD (156 64K RAMS)

S T A C K 0				:	S T A C K 1				
row 0	row 1	row 0	row 1	:	row 0	row 1	row 0	row 1	
↑	↑			:	↑	↑		↑	
#19	#19			:	#19	#19			
#18	#18	#E0	#E0	:	#18	#18	#E0	#E0	O
#17	#17	#E1	#E1	:	#17	#17	#E1	#E1	T
#16	#16	#E2	#E2	:	#16	#16	#E2	#E2	H
#15	#15	#E3	#E3	:	#15	#15	#E3	#E3	E
#14	#14	#E4	#E4	:	#14	#14	#E4	#E4	R
#13	#13	#E5	#E5	:	#13	#13	#E5	#E5	C
#12	#12	#E6	#E6	:	#12	#12	#E6	#E6	O
#11	#11	#31	#31	:	#11	#11	#31	#31	T
#10	#10	#30	#30	:	#10	#10	#30	#30	H
#9	#9	#29	#29	:	#9	#9	#29	#29	E
#8	#8	#28	#28	:	#8	#8	#28	#28	R
#7	#7	#27	#27	:	#7	#7	#27	#27	C
#6	#6	#26	#26	:	#6	#6	#26	#26	O
#5	#5	#25	#25	:	#5	#5	#25	#25	T
#4	#4	#24	#24	:	#4	#4	#24	#24	H
#3	#3	#23	#23	:	#3	#3	#23	#23	E
#2	#2	#22	#22	:	#2	#2	#22	#22	R
#1	#1	#21	#21	:	#1	#1	#21	#21	C
#0	#0	#20	#20	:	#0	#0	#20	#20	O
↓	↓			:	↓	↓		↓	

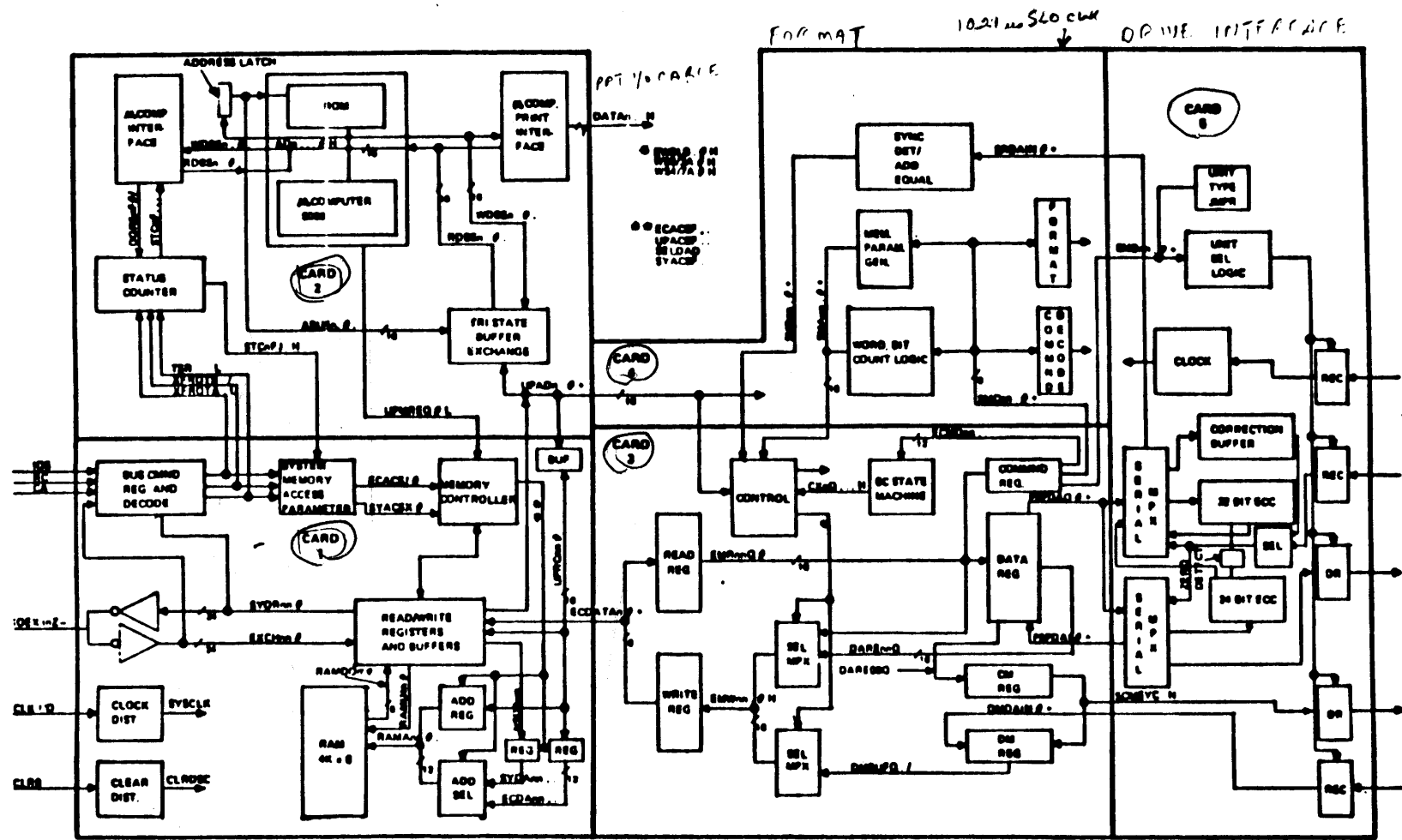
●OA6F23@ TYPE: _____

LOCATION : ST.BD. ___ STK ___ ROW ___ BIT ___

●OA5CD5@ TYPE: _____

LOCATION : ST.BD. ___ STK ___ ROW ___ BIT ___

main fixed 5-42 mag 1 spindle



B 199C SYSTEM W/C
DISK SUBSYSTEM CONTROL

DSC BLOCK DIAGRAM

Card 1 - interface w/system, Rom.
Card 2 - printer 3, 4, 5 cards — Take place of 21 O.D.C cards