05 - CORE MAP Rtn. Zero Page Data Map

Page:- 05 Col:- 00 Mod 11/06

Step	Instruction		Address	Comment	Octal	Step
00						00
01						01
02	*			INTERRUPT	000000	02
03	JUMP	I Z	0004		026004	03
04				→ Interrupt Handler 1/1200	003200	04
05	JUMP	Z	0005	loop * TRAP	022005	05
06						06
07						07
10				→ DISMISS Interrupt Handler 1/1227	003227	10
11				→ COMPLETION Rtn. 1/1645	003645	11
12						12
13						13
14				→ SYSTEM TABLE 0/0124	000124	14
15	IORST			* From MAINS OFF	000017	15
16	LDA	Z	0021		212021	16
17	STA	Z	0002		252002	17
20	HALT			* From MA=SW interrupt.	000001	20
21	JUMP	I Z	0010	Dismiss Interrupt.	026010	21
22				→ PRINT QUEUE TABLE ORIGIN	-	22
23				→ TASK SPOOL TABLE ORIGIN	-	23
24				→ DEVICE TABLE origin 2/1000	005000	24
25				→ FILE TABLE TABLE origin 0/0120	000120	25
26				→ MAINS OFF DEVICE LIST	-	26
27				Parity Interrupt Flag	000000	27
30				SPOOLING ACTIVITY COUNTER	000000	30
31				COMMAND Rtn. Active (= B17)	000000	31
32				→ ON-LINE SECURITY CONTROL BLOCK	-	32
33	*ENTRY			LOCKOUT O.S.	000000	33
34	INT ON				000006	34
35	INT ON			(In case of power fail)	000004	35
36	JUMP	Z	0036	loop	022036	36
37				→ 1st FREE CORE SEGMENT.	000000	37
40				CURRENT TASK NUMBER	-	40
41				CATALOGUE UPDATE FLAG	000000	41
42						42
43				A Reg : CONVERT to BINARY	-	43
44				B Reg : " " " "	-	44
45				No. of Characters Input	-	45
46				LAST TASK to use "COMMAND" sty.	000001	46
47				→ TASK CONTROL TABLE origin	-1	47
50				→ FIRST SUSPEND STACK element	000000	50
51				Maximum TASK NUMBER	000000	51
52				→ DISC CONTROL TABLE origin 0/0020	000020	52
53				→ DISC LIST origin	-	53
54				→ 1st FREE DISC QUEUE ELEMENT	-	54
55				No. of I/O STATIONS	-	55
56				→ FIRST FREE SUSPEND STACK element	-	56
57				Max. PRINT QUEUE No.	-	57
60				Max. PLAIN PAPER QUEUE No.	-	60
61				Print Spool Queue Extension Count	-	61
62				(→ CLOCK absolute count)		62
63						63
64						64
65				BASE ADDRESS (+B17), CURRENT ROUTE	-	65
66				→ INPUT or PRINT BUFFER	-	66
67				→ SPOOL BUFFER	-	67
70				→ NEXT SPOOL KEY	-	70
71					-	71
72				→ MASTER BUFFER	-	72
73				→ FILE TABLE	-	73
74				→ I/O CONTROL AREA	-	74
75						75
76				→ INHIBIT FLAGS 0/0474	000474	76
77				→ SYSTEM DATE 0/0477	000477	77

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BUSINESS COMPUTERS LTD.

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OS - CORE MAP Mk. 2 Zero Page Data Map

Page:- 05 Col:- 01

Step	Instruction	Address	Comment	Octal	Step
00	JMP		to BOOTSTRAP	004400	00
01	DATO3B			010670	01
02	DATO2B			010570	02
03	DATO1B/START			011470	03
04	JUMP	0104		020104	04
05				000001	05
06			I.O.S. VERSION No. (ASCII Year, Month)	-	06
07					07
10			DEVICE 70 } Dis Control Table	000000	10
11			DEVICE 71 }	000000	11
12			DEVICE 72 }	000000	12
13			DEVICE 73 }	000000	13
14			}	000000	14
15			Dis Scribd }	000000	15
16			Table }	000000	16
17			}	000000	17
20			}	000000	20
21			Fib Table }	000000	21
22			Table }	000000	22
23			}	000000	23
24			}	000000	24
25			Device }	000000	25
26			System Table }	000000	26
27			}	000000	27
30					30
31					31
32					32
33					33
34					34
35					35
36					36
37					37
40					40
41					41
42					42
43					43
44					44
45					45
46					46
47					47
50					50
51					51
52					52
53					53
54					54
55					55
56					56
57					57
60					60
61					61
62					62
63					63
64			→ Priority Type Table origin 6/0400		64
65			→ Task Control Area, Task 0 2/0657		65
66			Device Code, 1st Line Printer 0,30	000030	66
67			Device Code, 1st Serial Printer 0,34	000034	67
70			"JUMP I2 13,42"	027342	70
71			Device Codes Tape unit 1,1	000401	71
72			Device Code, 1st ANT 20,60	010060	72
73			" " , 1st VDU 50,40	024040	73
74			TASK PARTITION TABLE Pointer	-	74
75			TASK Control Table Pointer	-	75
76			DISC Mains Fail Mask	004400	76
77			MAINS FAIL TABLE Pointer	-	77

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OS - DUMMY I/O CONTROL AREA

[Origin is at Step 20]

Page:- 05 Col:- 02

Step	Instruction		Address	Comment	Octal	Step
00						00
01						01
02						02
03						03
04						04
05						05
06				BASE (+BIT)	—	06
07				→ INPUT BUFFER / INNER PRINT BUFFER	—	07
10				→ SPOOL BUFFER	—	10
11				→ NEXT "KEY" in SPOOL Rtn.	—	11
12					—	12
13				→ MASTER BUFFER	—	13
14				→ FILE TABLE	—	14
15				→ I/O CONTROL AREA	—	15
16				PROGRAM NAME		16
17				(ASCII 4 chars)		17
20	*ORIGIN			Flags / INPUT device / OUTPUT device	—	20
21						21
22				Return Address, "GET" routine (=-1 if Halted)	000000	22
23				Return Address, "PUT" routine	000000	23
24				→ INPUT SERVICE Rtn.	—	24
25				→ OUTPUT SERVICE Rtn.	—	25
26				Return Address, "STOUT" routine	000000	26
27				PRINT Q No. for "POST" routine	000000	27
30				Return Address (GET PASSWORD)	000000	30
31				Debug Control Word	000000	31
32						32
33						33
34						34
35				COMMAND Rtn. (→ Original GET Rtn)	000000	35
36				STIN (Flags, Length (STIN)	000000	36
37				STOUT Absolute Byte Address of Message	000000	37
40				STIN = Continuation (STIN)	000000	40
41						41
42				OVERRUN CHARACTER	000000	42
43						43
44						44
45						45
46				FAAS/MAGIC DEVICE CODE	—	46
47				IN x2	—	47
50				Count	—	50
51				Input Count / Status / Buffered EOF	—	51
52	*ENTRY			INPUT SERVICE ROUTINE	← PA →	52
53	JSBR	I	1724			53
54	P:=-1				—	54
55						55
56				OUT x2	—	56
57				Special Effects Control Word	—	57
60	*ENTRY			OUTPUT SERVICE ROUTINE	← BA →	60
61	JSBR	I	1725			61
62	P:=-1				—	62
63				PLAIN PAPER PRINT Q No.	000000	63
64				ESCAPE POINT	000000	64
65				FLASH REQUEST WORD	000000	65
66				PRINTER THAT No. for Command Rtn.	—	66
67						67
70						70
71						71
72				Default Restart Address	—	72
73				Save A Reg	—	73
74				Save B Reg	—	74
75				File Table Mask (bits 17-16)	—	75
76				Return Address, Name Address Processed	—	76
77				Exit Counter, " " " "	—	77

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OS - I/O STATION Initialiser

Page:- 05 Col:- 03

Step	Instruction		Address	Comment	Octal	Step
00	*ENTRY			I/O STATION Initialiser	← BA →	00
01	LDA	Z	0405	→ I/O STATION Table		01
02	STA	Z	0176	Pointer		02
03	JSBR		0560	Establish Start-up Fcb Table		03
04	LDA	IZ	0405	= No. of I/O Stations		04
05	STA	Z	0055			05
06	STA	Z	0177	Counter		06
07	ANØ					07
10						10
11	LDA		0172	} Device Codes, next BNK	LDA =0147	11
12	STA	Z	0172	}	STA 53	12
13	LDA		0173	} Device Codes, next VDU	INCA	13
14	STA	Z	0173	}	STA 61	14
15	INSZ	Z	0051	No. of Tasks (=task no.) * NEXT I/O STATION		15
16	INSZ	Z	0176	Type Table pointer		16
17	WOOP		0177			17
20	INSZ		0175	Control Table pointer		20
21	INSZ		0174	Partition Table pointer		21
22	JSBR		0400	Create I/O Control Block.		22
23	JSBR	IZ	1707	Duplicate I/O Control Block		23
24	P1=5/0200					24
25	P2=0					25
26	P3=64 words					26
27	LDA		0215	→ I/O control Block		27
30	STA	I	0175	= Control Pointer, this task		30
31	DESZ	Z	0177	Counter		31
32	JUMP		0315	Onto next station		32
33	JUMP	I	0300	Return.		33
34						34
35						35
36						36
37						37
40						40
41						41
42						42
43						43
44						44
45						45
46						46
47	*ENTRY			Test for Switch Task	← BA →	47
50	LDA	Z	1720	Sw. Reg.		50
51	ANDA		0375	360370		51
52	CMPA	Z	0210	Bit 6		52
53	CMA/SKIP					53
54	JUMP	I	0347	Return - Normal Startup		54
55	STA	IZ	0406	No Partitions		55
56	INCA					56
57	STA	IZ	0105	One I/O Station		57
60	LDB	Z	0403	→ Partition Base Table entry		60
61	INCB					61
62	LDA		0374	5/0000		62
63	STA	IZ	B	Task 1 Partition = 5/0000		63
64	LDA	Z	1720	Sw. Reg.		64
65	ANDA	Z	0207	000007		65
66	SWAPA					66
67	INCA					67
70	LDB	Z	0405	→ I/O Table		70
71	INCB					71
72	STA	IZ	B	Into I/O Station 1 Control Block.		72
73	JUMP	I	0347	Return.		73
74				5/0000		74
75				MASK	360370	75
76					001400	76
77				01010	001010	77

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OS - I/O Initialisation

Page:- 5 Col:- 04

Step	Instruction		Address	Comment	Octal	Step
00	*ENTRY				← BA →	00
01	LDA	Z	0023	→ Task Spool Table origin		01
02	ADA	Z	0051	This Task No		02
03	STA		0211	→ Next Spool Req		03
04	LDA	IZ	0176	= Device Type Identifier / Printer Task No.		04
05	ANDA	Z	1752	Bottom Byte		05
06	STA		0266	= Printer Task No.		06
07	NOOP		171			07
10	LDA	I	0174	= Partition Base, then route		10
11	SFA	Z	0455	Programming Base		11
12	CASA/COMPSA					12
13	STA		0206	Base (+BIT) for Offset Addressing		13
14	LDA	I	0174	= Partition Base, then route.		14
15	ADA	I	0401	Partition Size		15
16	SFA	Z	0326	CF32A		16
17	STA		0213	→ MASTER BUFFER		17
20	ADA	Z	0316	CF128		20
21	STA		0210	→ SPOOL BUFFER		21
22	ADA	Z	0316	CF128		22
23	STA		0207	→ I/O BUFFER		23
24	ADA	Z	0302	CF64		24
25	STA		0325	→ Start of I/O Control Area.		25
26	ADA	Z	0220	CF16		26
27	STA		0215	→ I/O Control Area		27
30	NOOP					30
31	NOOP					31
32	LDA	IZ	0176	= Device Type Identifier / Printer Task No.		32
33	SWAPA					33
34	ANDA	Z	1752	Bottom Byte (leaves Device Type)		34
35	A=0					35
36	JUMP		0444	VDU.		36
37	LDB	Z	0172			37
40	STB		0220	Device Codes		40
41	ADB		0171	Increment for next device	ANK	41
42	STB	Z	0172			42
43	JUMP		0452	Magic		43
44	LDB	Z	0173			44
45	CMPB		0476	027447 57,47		45
46	LDB	Z	0172	Switch to ANK range	VDU, etc	46
47	STB		0220	Device Codes		47
50	ADB		0171	Increment for next device		50
51	STB	Z	0173			51
52	LSA			} Type No. x 4		52
53	LSA					53
54	ADA		0477	Table origin		54
55	LDB	IZ	A	} → Input Service Rtn.		55
56	STB		0224			56
57	INCA			}		57
60	LDB	IZ	A	} Input Service R.		60
61	STB		0254			61
62	INCA			}		62
63	LDB	IZ	A	} → Output Service Rtn		63
64	STB		0225			64
65	INCA			}		65
66	LDB	IZ	A	} Output Service R.		66
67	STB		0262			67
70	JUMP	I	0400	return.		70
71	[illegible]		[illegible]	[illegible]		71
72						72
73	[illegible]		[illegible]			73
74	JUMP		[illegible]			74
75	[illegible]	I	0177	[illegible]		75
76	[illegible]		[illegible]	57,47	027447	76
77			[illegible]	→ Type Table origin 5/1240		77

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BUSINESS COMPUTERS LTD.

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Date:-

OS-I/O Tiedekirja

Page:- 5 Col:-05

Step	Instruction		Address	Comment	Octal	Step
00						00
01						01
02						02
03						03
04						04
05						05
06						06
07						07
10						10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
20				2/0601		20
21				"JSBR I 0661"		21
22				"JSBR I 1766"		22
23				"JSBR 0120"		23
24				"JSBR I 1767"		24
25				12/0407		25
26				6/0054		26
27				12/1726		27
30	✱ENTRY			Establish Au-Disp - Security	← DA →	30
31	LDA	Z	0563	→ Control Block (from Configuration Table)		31
32	STA	Z	0032	→ OAS Control Block		32
33	ANØ/CLA					33
34	JUMP	I	0530	Return - No OAS		34
35	STA	IZ	0032	(No OAS until Control Board is in use)		35
36	NOOP					36
37	LDA		0522	"JSBR I 1765		37
40	STA	I	0525	12/0407		40
41	LDA		0523	"JSBR 0120"		41
42	STA	I	0526	6/0054		42
43	LDA		0524	"JSBR I 1767"		43
44	STA	I	0527	12/1726		44
45	LDA		0521	"JSBR I 0661"		45
46	STA	I	0520	2/0601		46
47	JUMP	I	0530	Return.		47
50						50
51						51
52						52
53						53
54						54
55						55
56						56
57						57
60	✱ENTRY			Establish Start-up Fcb Table	← DA →	60
61	LDA		1733	-0/0564 → Fcb Table Table in CT		61
62	ADA	Z	0500	Start-up Fcb Table No.		62
63	LDA	IZ	A	→ Start-up Fcb Table		63
64	STA		0214			64
65	LDA	Z	0500	Start-up Fcb Table No.		65
66	RRA/ALSB					66
67	SKIP/COMPSTA			Shift to bits 17-16		67
70	SKIP					70
71	IDECA					71
72	STA		0275			72
73	JUMP	I	0560	Return.		73
74						74
75						75
76						76
77						77

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OS - INITIATOR DISCS SUBROUTINE

Page:- 05 Col:- 06

Step	Instruction		Address	Comment	Octal	Step
00	*ENTRY				← BA →	00
01	LDA	Z	0420	Max 70		01
02	ADA	Z	0421	71	Max. controllers available at	02
03	ADA	Z	0422	72	one time	03
04	ADA	Z	0423	73		04
05	ANDA	Z	1752	Retain byte		05
06	LSA			x2		06
07	ADA	Z	0204	CF4		07
10	JSBR	IZ	1704	Get main (Disc list)		10
11	SFA	Z	0270	000070		11
12	STA	Z	0053	→ Disc list origin		12
13	NOOP					13
14	NOOP					14
15	LDA	Z	0204	Max. No. of controllers		15
16	STA	Z	0177	Counter		16
17	LDA	Z	0404	→ Disc count table in Configuration Table		17
20	STA	Z	0176	Source pointer		20
21	LDA	Z	0270	000070		21
22	STA	Z	0175	Device Code		22
23	LDA	Z	0274	000074		23
24	STA	Z	0174	= Offset to next entry in list.		24
25	LDA	IZ	0176	= No. of Discs, has device *NEXT DEVICE		25
26	ANDA	Z	1752	Retain Byte		26
27	STA	Z	0173	Loop counter		27
30	ANΦ/CMA					30
31	COMPA			"Not installed" (CT-1)		31
32	LDB	Z	0052	→ Disc Control Table origin		32
33	ADB	Z	0175	Device Code		33
34	STA	IZ	B	Control word = Φ (not in use), = -1 (not installed)		34
35	ADB	Z	0204	CF4		35
36	ANΦ/CMA			Installed?		36
37	JUMP		0761	Yes		37
40	STA	IZ	B	No label area		40
41	INSZ	Z	0175	Device Code		41
42	INSZ	Z	0176	Source pointer (from 0710)		42
43	DESZ	Z	0177	Counter		43
44	JUMP		0625	Onto next device		44
45	JUMP	I	0600	Return.		45
46	LDA	Z	0173	Loop counter (No. of discs)		46
47	SWAPA					47
50	IORA	Z	0174	(Offset to next entry in disc list)		50
51	LDB	Z	0052	→ Disc list origin		51
52	ADB	Z	0175	Device Code		52
53	STA	IZ	B			53
54	LDB	Z	0053	→ Disc list origin + Next disc		54
55	ADB	Z	0174	Offset to next entry		55
56	CMA/COMPA					56
57	STA	IZ	B	Indicate disc is not on-line.		57
60	INSZ	Z	0174	? update list pointer		60
61	INSZ	Z	0174			61
62	DESZ	Z	0173	Loop counter		62
63	JUMP		0654	onto next disc		63
64	LDA		0176	= Mains Fail Mask		64
65	IORA	Z	0175	Device Code		65
66	INSZ		0177	Mains Fail pointer		66
67	STA	I	0177	= Mains Fail word, this device		67
70	LDA	IZ	0176	= Disc Table in CT		70
71	SWAPA					71
72	ANDA	Z	1752	Retain Byte (removes Drive Type)		72
73	ADA	Z	0220			73
74	JSBR		1600	Establish Service Rtn.		74
75	LDA		1675	= Device Code		75
76	ADA	Z	0024	Device Table origin		76
77	LDB	IZ	1325	→ Service Rtn.		77

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BUSINESS COMPUTERS LTD. MOLECULAR 10

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Date:-

OS - Initiator

Page:- 05 Col:- 07

Step	Instruction		Address	Comment	Octal	Step
00	SFB	Z	0212			00
01	STA	IZ	8	Completion Address		01
02	ADB	Z	0214			02
03	STB		0760	Save		03
04	LDB		1325	→ Equiv sys.		04
05	CASB/COMPSB					05
06	STB	IZ	A			06
07	STB	I	0760			07
10	JUMP		0642			10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
20						20
21						21
22						22
23						23
24						24
25						25
26						26
27						27
30						30
31						31
32						32
33						33
34						34
35						35
36						36
37						37
40						40
41						41
42						42
43						43
44						44
45						45
46						46
47						47
50						50
51						51
52						52
53						53
54						54
55						55
56						56
57						57
60				(read log 0703, 0761) Spare B		60
61	STB		0760	(Spare 0637)		61
62	LDA	Z	0316	PB counts		62
63	JSBR	IZ	1704	Get Mem (Failed Proc, Insert		63
64	STA	I	0760	address into table		64
65	JUMP		0646			65
66	JSBR	IZ	1707	Duplicate Initialiser Name (Spare 1727)		66
67	P_1= 0/0570					67
70	P_2= 13/1614					70
71	P_3= 8 words					71
72	LDA	Z	0562	→ System Table		72
73	STA	I	0777			73
74	LDB	IZ	0073	→ Spool FCB (FCB Table)		74
75	LDA		1715	→ Spool FCB (12 words)		75
76	JUMP		1730			76
77				6/0670		77

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OS - INITIATOR

Page:- 05 Col:- 10

Step	Instruction		Address	Comment	Octal	Step
00	* ENTRY			MAP CORE	← BA →	00
01	INTINS ON				0000 11	01
02	NOOP					02
03	CHC					03
04	JSBR	I	1077	11/0000 Switch Reg. Interrupt		04
05	INT OFF				000005	05
06	LDA	Z	1715	Core Length Tab.		06
07	A=Ø					07
10	JUMP		1010	Zero - O.S. in 2nd Half.		10
11	MASK	I		Enable call "abort" flags.	000002	11
12	JSBR	I	1076	10/1740 Determine Core Length		12
13	NOOP					13
14	LDA	Z	1720	= Switch Reg.		14
15	A=Ø					15
16	JUMP		1740	Test for recovery or configuration replacements		16
17	STA	Z	0012	} No recovery to be carried out		17
20	STA	Z	0013			20
21	LDA	Z	0055	"DATO1B/START"		21
22	JSBR		1100	READ CONFIGURATION TABLE		22
23	JSBR		0347	Test for "Single Task"		23
24	JSBR	I2	1707	Duplicate (Recovery data)		24
25	P1 = 0/0012					25
26	P2 = 6/0574					26
27	P3 = 4words					27
30	JSBR	I2	1707	Duplicate (Start of Zero Page)		30
31	P1 = 5/0002					31
32	P2 = 0/0002					32
33	P3 = 94 words				000136	33
34	JSBR	I	1075	10/1700 Establish free core chain.		34
35	JUMP		1072	Patch.		35
36	JSBR	I2	1620	ESTABLISH TEST Ø		36
37	INT ON				000004	37
40	LDA	Z	0026	→ Mains Fail Device list origin		40
41	STA		0177	Pointer		41
42	LDA	Z	0411	} → Print Queue Table		42
43	STA	Z	0022	}		43
44	LDA	Z	0412	} → Task Spool Table		44
45	STA	Z	0023	}		45
46	LDA	Z	0407	} Max. Print Queue Number		46
47	STA	Z	0057	}		47
50	JUMP		1120	} Max. Plotter Paper Queue Number (patch)		50
51	STA	Z	0060	}		51
52	JSBR		0600	Establish DISCS		52
53	LDA	Z	0047	→ Task Control Table Origin		53
54	STA		0175	Pointer		54
55	LDA	Z	0403	→ Partition Table Origin		55
56	STA		0174	Pointer		56
57	JSBR		0300	Establish I/O STATION TASK Partitions		57
60	JSBR		1400	Establish PRINTER TASK Partitions		60
61	INSZ		0177			61
62	CLA					62
63	STA	I	0177	Indicate End of Mains Fail Device List.		63
64	JSBR		1700	Establish Free Table.		64
65	JUMP	I	1000	Return.		65
66	LSA/AHSB			Bit 15 Set? (from 1747)		66
67	JUMP		1660	Yes - Select Configuration Table		67
70	CLA			(from 1665)		70
71	JUMP		1017			71
72	JSBR		1210	Establish Control Table Mains Switch. (from 1035)		72
73	CLA					73
74	JUMP		1036			74
75				Establish Free Core Chain 10/1700		75
76				Core Length Inspection 10/1740		76
77				Switch Reg Interrupt 11/0000		77

Programmer:-

OS - Initiator

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Step	Instruction		Address	Comment	Octal	Step
00	*ENTRY			TRANSFER CONFIGURATION TABLE	← BA →	00
01	STA	Z	0065	Read/Write		01
02	JUMP	Z	+127	7 No. of Sectors (Octal)		02
03	STA	Z	0173	5		03
04	LDA	Z	0322	000400 Core Address		04
05	LDB	Z	0007	Sector No.		05
06	JSBR	Z	0057	Transfer Table		06
07	JUMP	I	1100	Return		07
10	*ENTRY				← ISA →	10
11	STA		1115			11
12	JSBR		1140	Label Disc		12
13	LDA		1115			13
14	JUMP	I	1110	Return.		14
15				Save Acc.	-	15
16						16
17						17
20	LDA	Z	0410	Spool Q Extension / Move Plain Paper Q.		20
21	SWAPA					21
22	ANDA	Z	1752	Keep Byte		22
23	STA	Z	0061	Print Spool Q Extension.		23
24	LDA	Z	0410			24
25	ANDA	Z	1752	Keep Byte (Move Plain Paper Q No)		25
26	JUMP		10.51			26
27	LDA	Z	0011	No of Sects. (from 1102)		27
30	IORA	Z	0167	Read/Ecode.		30
31	JUMP		1103			31
32						32
33						33
34				Label Sector No.	000040	34
35				→ Label Core Address 0/1000	001000	35
36					340000	36
37					000777	37
40	*ENTRY			LABEL DISC (Interrupt OFF location)	← BA →	40
41	LDA	Z	1002	Drive / Device		41
42	ANDA	Z	0277	000077 (Leaves Device Code)		42
43	ADA		1177			43
44	STA		1164	"NOT BUSY"		44
45	ADA		1176			45
46	STA		1163	"DATO 1B/IOPLS"		46
47	ADA		1175			47
50	STA		1162	"DATO 2A"		50
51	ADA		1174			51
52	STA		1166	"DATI 3A/STOP"		52
53	ADA		1173			53
54	STA		1157	"DATO 3A/STOP"		54
55	LDA	Z	1002			55
56	ANDA		1136	340000 (Leaves Drive #)		56
57	DATO3A/STOP				-	57
60	LDA		1135	Core Address 0/1000		60
61	LDB		1134	Label Sector No. 000040		61
62	DATO2A				-	62
63	DATO1B/IOPLS				-	63
64	NOT BUSY				-	64
65	JUMP		1164			65
66	DATI3A/STOP				-	66
67	ANDA		1137	000777		67
70	ANDA					70
71	JUMP	I	1140	Return		71
72	JUMP		1155	Retry. (STATUS)		72
73					000300	73
74					001600	74
75					001100	75
76					001500	76
77					011700	77

Programmer:-

OS-INITIATOR

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Step	Instruction		Address	Comment	Octal	Step
00	JSBR	Z	0057	Transfer Table (from 1106)		00
01	ADA	Z	0316	000200		01
02	INCB				MKI	02
03	DES2	Z	0177	Counter		03
04	JUMP		1200			04
05	JUMP		1107			05
06						06
07						07
10	*ENTRY			Obtain Task & Macro OS Control Blocks	← BA →	10
11	LDA	I2	0405	No. of I/O Stations		11
12	ADA	I2	0406	No. of Printers		12
13	INCA					13
14	JSBR	I2	1704	Get Main Task Control Table		14
15	STA	Z	0047			15
16	ADA		0165	→ Task OS Control Area 0/0657		16
17	STA	I2	0047			17
20	LDA	Z	0205	CF5 (Error Address Table, + End of Field word)		20
21	NOOP					21
22	NOOP					22
23	NOOP					23
24	JSBR	I2	1704	Get Main Macro-OS Device List		24
25	DECA					25
26	STA	Z	0026	→ Macro OS Device List origin		26
27	JUMP	I	1210	Return.		27
30						30
31						31
32						32
33						33
34						34
35						35
36						36
37						37
40	I/O Station Type Table	*	origin			40
41				Type 0 (BNK) Input Status P1 4/0505		41
42				Input Status P1 4/0743		42
43				Output Status P1 4/0402		43
44				Output Status P1 4/0736		44
45				Type 1 (V16) Input Status P1 4/0505		45
46				Input Status P1 4/0723		46
47				Output Status P1 4/0402		47
50				Output Status P1 4/0720		50
51				Type 2 (V24) Input Status P1 4/0505		51
52				Input Status P1 4/0705		52
53				Output Status P1 4/0402		53
54				Output Status P1 4/0700		54
55				Type 3 (WHP) Input Status P1 7/1404		55
56				Input Status P1 0		56
57				Output Status P1 4/0402		57
60				Output Status P1 4/0736		60
61						61
62						62
63						63
64						64
65						65
66						66
67						67
70						70
71						71
72						72
73						73
74						74
75						75
76						76
77						77

Programmer:-

OS - Dummy Printer Control Area

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[Origin is at step 20]

Step	Instruction	Address	Comment	Octal	Step
00					00
01					01
02					02
03					03
04				000000	04
05				000000	05
06			BASE (+B17)	-	06
07			-> INNER PRINT BUFFER	-	07
10			-> SPOOL BUFFER	-	10
11			-> NEXT "KEY" for SPOOL Mtn.	-	11
12				000000	12
13			-> MASTER BUFFER	-	13
14			-> FINE TABLE 0/1200		14
15			-> I/O CONTROL AREA	-	15
16			PROGRAM NAME	000000	16
17			(ASCII 4 chars)	000000	17
20	*ORIGIN		B17=IN USE / Ø / OUTPUT DEVICE CODE	-	20
21				100000	21
22			Return Address (=-1 if called)	000000	22
23					23
24					24
25			-> OUTPUT SERVICE Mtn.	-	25
26				000000	26
27			PRINT Q No. for POST Mtn.	000000	27
30			Return Address (Periph. Output)	000000	30
31			Delay Control Word	000000	31
32			CURRENT STATUS	000000	32
33			PRINTER IDENTIFIER (D-LII)	-	33
34			PRINTER CONTROL WORD (B15="L" command)	-	34
35			Length of Inner Print Buffer (characters) (132)	000204	35
36			PROGRAM ENTRY POINT	000000	36
37			-> USER'S TERMINATION Mtn.	000000	37
40			OUTER BUFFERS IN USE COUNT	000000	40
41			SUSPEND / CANCEL REQUEST INDICATOR	100000	41
42			CANCEL PERMIT / ADVISE COMPLETION REQUEST	000000	42
43			PRINT QUEUE No. for Unspooling.	000000	43
44			Program Name currently Loaded	000000	44
45			(Part 2)	000000	45
46			A Reg setting to Periph. Output Mtn.	000000	46
47			Outstanding Line Feed Count	000000	47
50			-> OUTER BUFFER A } Exchanged	-	50
51			-> OUTER BUFFER B } dependently	-	51
52			Reprint Flag (B16)	000000	52
53					53
54					54
55					55
56					56
57					57
60					60
61					61
62					62
63					63
64					64
65					65
66					66
67					67
70					70
71					71
72			Default Restart Address	-	72
73			Save A Reg	-	73
74			Save B Reg	-	74
75			File Table Mask (Bits 17-16)	-	75
76			Return Address, Name & Address Processor	-	76
77			Exit Counter, " " " "	-	77

Programmer:-

OS-PRINTER INITIATOR

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Step	Instruction		Address	Comment	Octal	Step
00	*ENTRY				← BA →	00
01	JUMP	—	1472	Patch.		01
02	STA	Z	0176	Pointer		02
03	LDA	I2	0406	=No. of Printers		03
04	STA	Z	0177	Counter		04
05	ANØ					05
06	JUMP	I	1400	Return - No printers		06
07	LDA		0166	} Device Code, next Line Printer		07
10	STA	Z	0172	}		10
11	LDA		0167	} Device Codes, next Serial Printer		11
12	STA	Z	0173	}		12
13	LDA	—	1477	"SP @"		13
14	STA	Z	0174	Identifier, 1st printer		14
15	JUMP	—	1430	[illegible]		15
16	[illegible]					16
17	[illegible]			[illegible]		17
20	[illegible]			}		20
21	[illegible]					21
22						22
23						23
24						24
25						25
26						26
27						27
30	INSZ	Z	0051	No of Tables (=Table No) *NEXT PRINTER		30
31	INSZ	Z	0176	Type Table Pointer		31
32	INOOP		[illegible]	[illegible]		32
33	INSZ		0175	Control Table pointer		33
34	INSZ		0174	Positioning Table pointer		34
35	INSZ	Z	0174	Identifier (ASCII)		35
36	JSBR		1500	Create I/O control area		36
37	JSBR	I2	1731	Space Fill Inner Print Buffer		37
40	P_1 = /					40
41	P_2 = 68 words				000104	41
42	JSBR	I2	1707	Duplicate I/O Control Area		42
43	P_1 = 5/1204					43
44	P_2 = /					44
45	P_3 = 60 words				000074	45
46	LDA		1315	→ I/O Control Area		46
47	STA	I	0175	= Control Pointer, then Paste		47
50	DSZ	Z	0177	Counter		50
51	JUMP		1430	Jump next printer		51
52	JUMP	I	1400	Return.		52
53						53
54						54
55						55
56						56
57						57
60						60
61						61
62						62
63						63
64						64
65						65
66						66
67						67
70						70
71				Next VDU output device	—	71
72	LDA	Z	0173	Device Code, next VDU (Patch from 1401)		72
73	ANDA	Z	1752			73
74	STA		1471	Save Next VDU output device code		74
75	LDA	Z	0406	→ Print Table		75
76	JUMP		1402			76
77				SP @		77

Programmer:-

05 - Printer Initialiser

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Step	Instruction		Address	Comment	Octal	Step
00	* ENTRY				← BA →	00
01	LDA	Z	0023	→ Task Spool Table Origin		01
02	ADA	Z	0051	This Task No.		02
03	STA		1311	→ Next Spool Key.		03
04	LDA	I	0174	= Partition Base, this task.		04
05	SFA	Z	0400	Programming Base		05
06	CLSA/COMPSA					06
07	STA		1306	Base (+ B17) for Offset Addressing		07
10	LDA	I	0174	= Partition Base, this task.		10
11	ADA	Z	0401	Partition Size		11
12	SFA	Z	0326	CF384		12
13	STA		1313	→ MASTER BUFFER		13
14	ADA	Z	0316	CF128		14
15	STA		1310	→ BOOL BUFFER		15
16	ADA	Z	0316	CF128		16
17	STA		1307	→ INNER PRINT BUFFER		17
20	STA		1440			20
21	ADA	Z	0306	CF80		21
22	STA		1315	→ I/O Control Area (Origin)		22
23	SFA	Z	0214	CF12		23
24	STA		1444			24
25	LDA	IZ	0176	= Device Type Identifier/Start up Q No.		25
26	ANDA	Z	1752	Bottom Byte		26
27	STA		1334	Start up Print Q Number.		27
30	LDA	Z	0174	= Identifier		30
31	STA		1333	S		31
32	JSBR	IZ	1560			32
33	STA		1350	→ Outer Buffer A		33
34	" INSZ	Z	0175			34
35	JSBR		1560			35
36	STA		1351	→ Outer Buffer B		36
37	NOOP					37
40	LDA	IZ	0176			40
41	ANDA	Z	1753	Top Byte (Leaves Device Type Code)		41
42	SWAPA					42
43	STA		1565	Save Type		43
44	JSBR		1600	Obtain Device Code & Exclusively Seize DCB		44
45	LDA		1565	Type		45
46	CMPA	Z	0206	DRIF?		46
47	SKIP			Yes.		47
50	CMPA	Z	0207	DIAB?		50
51	SKIP			Yes.		51
52	JUMP		1572			52
53	LDB		1675	Output Device Code		53
54	ADB	Z	0210	Target Region Code		54
55	ADB	Z	0024	Device Table origin		55
56	LDA		1566			56
57	JUMP		1570			57
60	* ENTRY			Obtain outer buffer address	← BIA →	60
61	LDA		1564	CF69		61
62	JSBR	IL	1704	Get Version		62
63	JUMP	I	1560			63
64	LDA		1571	CF 69	000105	64
65				Save Type	/	65
66				(Stanley 1613) Save Addr.	/	66
67	LDA					67
70	ADA	Z	0202	(Save '1557)		70
71	STA	IL	B		000105	71
72	LDA		1675	Device Code (from 1544)		72
73	STA		1320	= Device Code		73
74	JUMP	I	1500	Return.		74
75	JUMP					75
76						76
77	JUMP					77

Programmer:-

OS- Printer Service relocation pt.

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Step	Instruction		Address	Comment	Octal	Step
00	*ENTRY				←BA→	00
01	ADA		0164	+ Type Table origin		01
02	LDA	I2	A	→ Device Type parameter block		02
03	STA		1676	Parameter pointer		03
04	LDA	I	1676	→ Dummy Channel program		04
05	STA		1616			05
06	INSZ		1676			06
07	LDA	I	1676	= length of Channel Program (words)		07
10	STA		1620			10
11	INSZ		1676			11
12	JSBR	I2	1704	GetMain [illegible]		12
13	STAP		11566	Save		13
14	STA		1617			14
15	JSBR	I2	1707	Duplicate Dummy Channel program		15
16	R=/					16
17	R=/					17
20	R=/					20
21	LDB	I	1676	→ Device Code		21
22	LDA	I2	B	= Device Code		22
23	INSZ	I2	B			23
24	STA		1675	Device Code		24
25	NOOP		[illegible]	[illegible]		25
26	INSZ		1676			26
27	LDB	I	1676	= Service Offset		27
30	ADB		1617	Base of Channel Program.		30
31	STB		1625	→ Service rtn. [illegible]		31
32	LDA		1617	Base of Channel program.		32
33	ANDA		1672	001777		33
34	STA		1674	= Relocation Coefficient		34
35	LDA	I	1617	= word *NEXT WORD		35
36	ANDA		1673	370000		36
37	ANØ					37
40	JUMP		1652	Bypass – no section relocated.		40
41	CMPA	Z	0347	Bit 13.		41
42	JUMP		1656	"01" type instruction – insert device code.		42
43	LDA	I	1617	= word.		43
44	ANDA	Z	0341	Bit 11		44
45	A=Ø					45
46	JUMP		1652	Bypass – zero page reference.		46
47	LDA		1674	Relocation Coefficient		47
50	ADA	I	1617			50
51	STA	I	1617			51
52	INSZ		1617	Pointer		52
53	DESZ		1620	counter		53
54	JUMP		1635	Goto next word		54
55	JUMP	I	1600	Return.		55
56	LDA		1675	Device Code		56
57	JUMP		1650			57
60	LRA3			(from 1067)		60
61	ANDA	Z	0203	(Access Table Number)		61
62	ADA	Z	0214	Configuration Table Table origin		62
63	LDA	I2	A			63
64	STA	Z	0007			64
65	JUMP		1070	Continue		65
66						66
67			[illegible]			67
70						70
71						71
72				MASK	001777	72
73				MASK	370000	73
74				Relocation coefficient	—	74
75				Device Code	—	75
76				Parameter Pointer	—	76
77				Target Table pointer	—	77

Programmer:-

OS - Establish File Table

Page:- 05 Col:- 17

Step	Instruction		Address	Comment	Octal	Step
00	*ENTRY			Establish File Table	←BA→	00
01	LDA	Z	0073	→ File Table		01
02	STA		1705			02
03	JSBR	I2	1707	Duplicate File Table		03
04	P1 = 0/0600					04
05	P2 = /					05
06	P3 = 64 words					06
07	JSBR	I2	1707	Duplicate Passwords etc.		07
10	P1 = 0/0440					10
11	P2 = 0/1300					11
12	P3 = 31 words					12
13	JSBR	I2	1707	Duplicate Spool FCB		13
14	P1 = 0/0570					14
15	P2 = 12/0000					15
16	P3 = 8 words					16
17	LDA	Z	0414	→ FCB Area		17
20	STA		1725			20
21	LDA	Z	0415	= length of FCB Area		21
22	STA		1726			22
23	JSBR	I2	1707	Duplicate FCB's		23
24	P1 = 0/0700					24
25	P2 = /					25
26	P3 = /					26
27	JUMP		0766	Patch		27
30	CMPB		1775	001377 Not entered		30
31	STA	I2	0073			31
32	JSBR	I2	1707	File Table Table		32
33	P1 = 0/0564		[illegible]	(used by 0561)		33
34	P2 = 0/0120		[illegible]			34
35	P3 = 4 words					35
36	JSBR		0520	Establish on-line security		36
37	JUMP	I	1700	Return		37
40	ANDA		1777	Recovery Mask	← from 1016	40
41	CMPA	Z	1720			41
42	JUMP		1745			42
43	LDA	Z	1720	= Secret Key		43
44	JUMP		1066	No recovery - test for BLS		44
45	SWAPA					45
46	LDB	Z	0320	000300		46
47	STB	Z	1000	Disc No.		47
50	CLB					50
51	STB	Z	1001			51
52	LDB		1776	200070 Drive Device		52
53	STB	Z	1002			53
54	RSA/ALSB					54
55	JSBR		1110	Label Unit 70 Fixed		55
56	INSZ	Z	1002			56
57	RSA/ALSB					57
60	JSBR		1110	Label Unit 71 Fixed		60
61	INSZ	Z	1002			61
62	RSA/ALSB					62
63	JSBR		1110	Label Unit 72 Fixed		63
64	INSZ	Z	1002			64
65	RSA/ALSB					65
66	JSBR		1110	Label Unit 73 Fixed		66
67	LDA	Z	1720			67
70	ANDA	Z	0323	Bit 9 (Recovery bit)		70
71	ANA					71
72	JUMP		1017	No recovery		72
73	JUMP		1021	Restart		73
74						74
75					001377	75
76				Device to Fixed	200070	76
77				Recovery Mask	017447	77

Programmer:-