

INDEXED SEQUENTIAL FILE ACCESS HANDLER
(mk 2)

Date:- 19/3/70

(24)

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Step	Instruction	Address	Comment	Octal	Step
00			MASK 1	377766b	00
01			"PROCEEDING REC" I/O		01
02	LOA	Z 45	* PATCH ALPHA FEATURE //		02
03	COMA	Z 231	//		03
04	JUMP	675			04
05	JUMP	576			05
06	JUMP	675			06
07			GET PATCH 7/3517		07
10	LOA	Z 163			10
11	JSR	IL 1725			11
12	3777-				12
13	LOA	Z 156	SAVE -> (P3)		13
14	STA	Z 155			14
15	LOA	IL A			15
16	JSR	IL 1725			16
17	3776-				17
20	LOA	Z 153	SAVE (P2)		20
21	STA	Z 154			21
22	LOA	Z 142			22
23	ANDA	Z 234	REMOVE F I/O		23
24	IORA	Z 355	SAVE OPTIONS (BIS)		24
25	STA	Z 147			25
26	LOA	Z 142			26
27	ANDA	Z 344			27
30	A=3		SEC. FILE ACC OPTION?		30
31	JUMP	1600	YES 17/1		31
32	JSR	IL 1667	* FIND ENTRY IN PRIMARY LVL. **		32
33	JUMP	660	NO ENTRY		33
34	STA	Z 160	ENTRY (A-REG CONTAINS START ADDR -		34
35	LOA	Z 147	- PRIMARY INDEX REC.)		35
36	ANDA	Z 234			36
37	STA	Z 147			37
40	JSR	IL 1725			40
41	3777-				41
42	INCA				42
43	LOA	IL A	F. I/O, SEC INDEX.		43
44	IORA	Z 147			44
45	STA	Z 147	SEC END. REC I/O.		45
46	LOA	IL 163	- 1		46
47	AN=3				47
50	JUMP	660	EXIT, NOT FOUND		50
51	STA	Z 153	REC I/O.		51
52	JSR	IL 1665	* FIND ENTRY IN SEC. LVL. **		52
53	JUMP	276	NO ENTRY -		53
54	LOA	Z 147	ENTRY		54
55	ANDA	Z 234			55
56	STA	Z 147			56
57	JSR	IL 1721			57
60	3777-				60
61	LOA	IL A			61
62	IORA	Z 147			62
63	STA	Z 272	ACTUAL REC F. I/O		63
64	JSR	IL 1721			64
65	3776-				65
66	JUMP	376			66
67	LOA	Z 141	REC I/O		67
70	STA	Z 153			70
71	JSR	IL 1873	PATCH ACTUAL REC		71
72	P1				72
73	P2	153			73
74	P3				74
75	IN52	Z 155			75
76	IL 2	Z 155			76
77	JUMP	IL 153	EXIT		77

Step	Instruction	Address	Comment	Octal	Step
00	- B/A -		* * FIND ENTRY IN PRIMARY INDEX * *		00
01	LDA	300			01
02	JSR	500	SUSPEND, IF NEEDED.		02
03	JSR	I2 1721			03
04	3777 -		→ WORD 1, PCB		04
05	ADA	Z 202			05
06	LDA	I2 A			06
07	JORA	Z 147			07
10	STA	314	P I/D PRIMARY IND.		10
11	LDA	Z 201			11
12	STA	Z 153	REC I/D		12
13	JSR	I2 1670	FETCH PRIM IND.		13
14	P1 /				14
15	P2 153				15
16	P3 7				16
17	LDA	Z 151			17
20	STA	344	→ START OF REC		20
21	JSR	I2 1721	PCB, WORD 1		21
22	3777 -				22
23	ADA	Z 203			23
24	LOB	I2 A			24
25	STB	360	KEY LENGTH		25
26	DECA				26
27	JUMP	332			27
30	SWAPA		* ALPHA CATCH.		30
31	JUMP	543			31
32	LDA	I2 A	P. I/D PRIM IND.		32
33	JORA	Z 341			33
34	STA	336			34
35	JSR	I2 1700			35
36	P1 /				36
37	STA	Z 160	MAX REC I/D		37
40	IMCB	"			40
41	LDA	I2 B	RECORD LENGTH		41
42	STA	345			42
43	JSR	I2 1724	SKIP IF ≠ 0		43
44	P1 /		ADDR REC		44
45	P2 /		LENGTH		45
46	JUMP	371	NOT LOADED		46
47	LDA	344			47
50	ADA	Z 202			50
51	STA	356	→ 1ST WORD KEY (INDEX)		51
52	LDA	Z 154			52
53					53
54	STA	357			54
55	JSR	I2 1723	SKIP IF BLOCKS EQUAL		55
56	P1 /				56
57	P2 /				57
60	P3 /				60
61	SKNAT		SIZE OF INDEX KEY < INPUT KEY		61
62	JUMP	370	MATCH		62
63	LDA	Z 153			63
64	COMP	Z 160	MAX REC I/D		64
65	JUMP	371	NOT LOADED		65
66	INCA				66
67	JUMP	312			67
70	INSZ	Z 1663	LOADED		70
71	LOB	Z 1663	NOT LOADED		71
72	CLA				72
73	STA	Z 1663			73
74	LDA	344			74
75	JUMP	I2 B			75
76	STA	274	STA 274		76
77	JUMP	473	JUMP 473		77

Step	Instruction	Address	Comment	Octal	Step
00	- BIA -		** FIND ENTRY IN SEC INO **		00
01	LOA	487			01
02	JSR	588			02
03	CLA				03
04	STA	271	"PRECEDING REC I/D"		04
05	LDA	Z 147			05
06	STA	H16			06
07	JSR	R 1676	CATCH SEC INO REC		07
10	P1 -				10
11	P2 153				11
12	P3 7				12
13	LDA	Z 151			13
14	ADA	Z 272			14
15	STA	H26 → K67			15
16	LDA	Z 154			16
17	STA	H27 → (P2)			17
20	JSR	R 1721			20
21	3777 -				21
22	ADA	Z 273			22
23	LOB	R A			23
24	STB	H37	KEY LENGTH		24
25	JSR	R 1723	SICIF IF =		25
26	P1 -		→ INDEX KEY		26
27	P2 -		→ INPUT KEY		27
30	P3 -		LENGTH		30
31	SICIF				31
32	JUMP	H46	MATCH		32
33	SKMT		...		33
34	JUMP	H62	INDEX KEY > INPUT KEY		34
35	LDA	Z 153			35
36	STA	Z 271			36
37	LDA	H26	MOVE DOWN		37
40	DECA		CHANG.		40
41	LDA	R A			41
42	ANDP		END?		42
43	JUMP	H63	EXIT		43
44	STA	Z 153			44
45	JUMP	H67	REPEAT		45
46	INSL	Z 1663	LOADED		46
47	LDA	H26			47
50	DECA				50
51	LOB	H27			51
52	DECB				52
53	LDA	R A	TRANSFER NEXT I/D		53
54	STA	R B			54
55	LDA	H26			55
56	SFA	Z 282			56
57	LDA	R A			57
60	STA	Z 161	ACTUAL REC I/D		60
61	JUMP	H66			61
62	LDA	Z 153			62
63	LOB	H27			63
64	DELB				64
65	STA	R B			65
66	LOB	Z 1663	NOT LOADED		66
67	CLA				67
70	STA	Z 1663			70
71	LDA	Z 271			71
72	JUMP	R B			72
73	ADA	Z 147		LOA Z 167	73
74	ANDA	Z 352	BOTH	ANDP Z 352	74
75	A=7		EXTRACT ACTUAL DATA RE	A=3	75
76	JUMP	H65	NO	JUMP 1765	76
77	JUMP	H67	YES	JUMP 287	77

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Step	Instruction	Address	Comment	Octal	Step
00	- B/A -		** SUSPEND, IF NEEDED **		00
01	LOB	Z 1663			01
02	BN = b		BUGY?		02
03	JUMP	515	NO		03
04	LOB	Z 156	YES - RESTART ROUTING		04
05	SFB	Z 2b3			05
06	LDA	Z 147			06
07	ANDA	Z 344			07
10	A = b		GET & FETCH ?		10
11	LOB	Z 1662	YES - RET. ADDR.		11
12	STB	514			12
13	JSSR	IZ 1626	SUSPEND		13
14	P1 -		RETURN ADDR.		14
15	STA	Z 1663	SET FLAG		15
16	JUMP	I 5bb	RETURN		16
17	- B/A -		** GET HANDLE **		17
20	JUMP	572	* PATCH FOR 'ALPHA' FEATURE		20
21	ANDA	Z 1752	bbb377		21
22	LORA	Z 341			22
23	STA	525			23
24	JSSR	IZ 17bb.	EXTRACT KEY LENGTH (WORDS)		24
25	P1 -				25
26	LGA				26
27	STA	541	KEY LENGTH (CHARS)		27
30	COMP	Z 45			30
31	JUMP	5bb4			31
32	SICAT				32
33	JUMP	IZ 1641	TO MANY CHARS		33
34	LDA	Z 163	key		34
35	JUMP	1674	patch for loop addressing		35
36	JSSR	IL 1741	move 2 PAD.		36
37	P1 36bb-				37
40	P2 -		key		40
41	P3 -				41
42	CLA				42
43	STA	Z 43			43
44	JUMP	IZ 517	EXIT		44
45	1/.bbbb-				45
46	- B/A -		** ROUTING TO READ		46
47	LDA	546	CORRECT O/L * *		47
50	JSSR	IZ 1725			50
51	3777 -				51
52	LDA	E 546			52
53	LOB	Z 216			53
54	ANEG		DELETE?		54
55	LOB	Z 214	NO		55
56	STB	Z 153			56
57	JSSR	IZ 167b			57
60	2				60
61	153				61
62	LORA	545			62
63	JSSR	Z 163b			63
64	STA	Z 16b			64
65	JSSR	IL 1721			65
66	3777 -				66
67	STA	IZ 16b			67
70	INSZ	Z 16b			70
71	JUMP	IZ 16b			71
72	LDA	Z 16b	* PATCH 'ALPHA' FEATURE		72
73	ANDA	Z 347	RET 13		73
74	A = b				74
75	JUMP	2b2			75
76	LDA	Z 16b			76
77	JUMP	521			77

Step	Instruction	Address	Comment	Octal	Step
00	LDA	IL 155	SEQUENTIAL ACCESS * 2		00
01	STA	62D			01
02	LDA	Z 154			02
03	DECA				03
04	LDA	IL A			04
05	DN=D				05
06	Jump	276	EXIT		06
07	STA	Z 15			07
10	LDA	Z 16D			10
11	INCA				11
12	LDA	IL A			12
13	INCA	Z 147			13
14	STA	616			14
15	JSR	IL 167D	FETCH SOL REC		15
16	P1				16
17	P2 152				17
20	P3				20
21	LDA	Z 151			21
22	INCA				22
23	STA	637	→ KEY - 1		23
24					24
25	JSR	IL 1721			25
26	3777-				26
27	LDA	Z 263			27
30	LDA	IL A			30
31	INCA				31
32	STA	641	KEY CONC (A + 1)		32
33	LDA	Z 154			33
34	DECA				34
35	STA	64D			35
36	JSR	IL 17D7	TRANSFER KEY		36
37	P1				37
40	P2				40
41	P3				41
42	LDA	IL 151			42
43	STA	Z 153	ACTUAL REC E/D		43
44	JSR	IL 1721			44
45	3776-				45
46	STA	274	(P3)		46
47	LDA	Z 1747			47
50	AND	28D			50
51	Jump	67D			51
52	JSR	IL 1721			52
53	3777-				53
54	LDA	IL A			54
55	INCA	Z 147			55
56	STA	272	FILE E/D + OF 150MS.		56
57	Jump	271			57
60	LDB	Z 154			60
61	DECB				61
62	CLA				62
63	STA	IL 1B			63
64	Jump	276			64
65	LDA	41D			65
66	STA	272			66
67	Jump	271			67
70	STA	Z 147			70
71	AND	Z 352	BIF 14		71
72	A=D				72
73	Jump	275			73
74	Jump	652			74
75	JSR	IL 1721	ALPHA (E/D) REC.		75
76	363D-				76
77	Jump	33D			77

OS - Tally 1000 Series

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Step	Instruction	Address	Comment	Octal	Step
00	*ENTRY		Output	← LA →	00
01	DATA/START			015400	01
02	JSBR	0021	Wait for Data		02
03	DATA/STOP			016200	03
04	AND				04
05	JUMP	I 0000	Return.		05
06	→ STA	0014	Status	*STATUS	06
07	CLA			*COMPLETED	07
10	STA	0015	Interrupt Completion		10
11	JSBR	0021	Wait		11
12	STOP			012000	12
13	JUMP	0011			13
14			line feed Count/Status	-	14
15			→ feed by word 1	-	15
16			Count	-	16
17	*ENTRY		SERVICE INTERRUPT	← LA →	17
20	JUMP	I 0021	Resume Interrupt Program		20
21	*ENTRY		WAIT	← LA →	21
22	JUMP	I 0017	Resume Interrupt		22
23	INT OFF		*Start of Interrupt P.	000005	23
24	DATA/STOP			016200	24
25	H=0				25
26	(JUMP	0006	Status - count		26
27	→ LDB	I 0015	= word 1		27
30	BPOS				30
31	(LDA	Z 0213	"NUL VT"		31
32	→ BNZ				32
33	(LDA	Z 0214	"NUL FF"		33
34	→ A=0				34
35	(JUMP	0045			35
36	→ STB	0014	line feed Count		36
37	JUMP	0042			37
40	LDA	Z 0212	"NUL LF"		40
41	JSBR	0000	Output (line feed)		41
42	DESZ	0014	line feed Count		42
43	(JUMP	0040	also used line feed		43
44	→ STIP				44
45	JSBR	0000	Output character (Valid top of line feed)		45
46	INSTR	0016	Count (character)		46
47	LDA	0015			47
50	ADA	0015	x2		50
51	ADA	Z 0203	CF3		51
52	STA	0015	Source x2		52
53	JUMP	0064			53
54	LDB	0015	Source x2	*Next character	54
55	INSTR	0015			55
56	JSBR	I 1417	load absolute byte		56
57	(CMPA	Z 0260	"NUL 0"		57
60	(ADA	Z 0237	"NUL 0"		60
61	→ CMPA	Z 0375	"NUL DEL"		61
62	(LDA	Z 0216	"NUL 50"		62
63	→ JSBR	0000	Output character		63
64	DESZ	0016	Count		64
65	(JUMP	0054	also used character		65
66	→ LDA	Z 0212	"NUL LF"		66
67	JSBR	0000	Output line feed		67
70	LDA	Z 0215	"NUL CR"		70
71	JSBR	0000	Output carriage return.		71
72	JUMP	0007	Complete		72
73					73
74					74
75					75
76					76
77					77

OS - Diado Service

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Step	Instruction	Address	Comment	Octal	Step
00					00
01			Completion Test	-	01
02	*ENTRY		Diado Input Service	← BA →	02
03	DATIB			010210	03
04	DATIA/STOP			016110	04
05	B=0				05
06	JUMP	0011	Status - free abort		06
07	→ CMPA	Z 0206	"N/A ACK"		07
10	SKIP				10
11	→ CASAI/COMPAS				11
12	STA	0001	Terminate Completed		12
13	JSBR	0040	Resume Output Service		13
14	JUMP	I 0002	Return (diagnosis)		14
15	*ENTRY		Output Character	← BA →	15
16	DATIB/START			015400	16
17	JSBR	0042	Wait for "done"		17
20	DATIB/STOP			016200	20
21	A=0				21
22	JUMP	0027	Status - Abort		22
23	→ CMPA	0001	Input received?		23
24	JUMP	I 0015	No - return		24
25	→ LDA	0001	Completion code		25
26	APOS				26
27	STA	0035	Status		27
30	→ CIA		* Completed		30
31	STA	0036	Terminate Completion		31
32	JSBR	0042	Wait		32
33	STOP			012000	33
34	JUMP	0032	loop		34
35			Pin Feed Count / Status	-	35
36			→ Buffer Word 1	-	36
37			Count	-	37
40	*ENTRY		DIADO OUTPUT SERVICE	← BA →	40
41	JUMP	I 0042	Resume Character Program		41
42	*ENTRY		WAIT	0/021 ← BA →	42
43	JUMP	I 0040	Diagnosis Interrupt		43
44	INT OFF		* START Character Program	000005	44
45	DATIB/STOP			016200	45
46	STOP			012010	46
47	DATIB/START			011210	47
50	SWAPB				50
51	IORA	Z B			51
52	A=0				52
53	JUMP	0027	Status - abort		53
54	→ STA	0001	Abort Input Completion code		54
55	LDA	I 0036	= Word 1		55
56	APOS				56
57	JUMP	0115	Special Function		57
60	→ ANB				60
61	JUMP	0071	Form Feed		61
62	→ STA	0035	Pin Feed Count		62
63	JUMP	0066			63
64	LDA	Z 0212	"N/A LF"		64
65	JSBR	0015	Output		65
66	DESZ	0035	Pin Feed Count		66
67	JUMP	0064	into next pin feed		67
70	→ JUMP	0073			70
71	LDA	Z 0214	Form Feed		71
72	JSBR	0015	Output		72
73	INBZ	0037	Count	* Process data	73
74	LDA	0036			74
75	ADA	0036	x2		75
76	ADA	Z 0203	CF 3		76
77	STA	0036	Source x2		77

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Step	Instruction	Address	Comment	Octal	Step
00	JUMP		0105		00
01	HDB		0036 Source 2 *Next Character		01
02	INSZ		0036		02
03	JSBR	I2	1417 Read Absolute Byte		03
04	JSBR		0015 Output		04
05	DESZ		0037 Count		05
06	JUMP		0101 auto next character		06
07	HDA	Z	0215 "NL CR"		07
10	JSBR		0015 Output		10
11	HDA	Z	0203 "NL ETX"		11
12	JSBR		0015 Output		12
13	JSBR		0042 Wait for "CHK"		13
14	JUMP		0030 Completed		14
15	ANDA	Z	1753 Top Byte *Special function		15
16	AND				16
17	JUMP		0146 Absolute Vertical Tab		17
20	CMFA	Z	1753 Top Byte		20
21	JUMP		0135 Negative line feed		21
22	HDA	Z	0233 "NL ESC"		22
23	JSBR		0015 Output		23
24	HDA	I	0036 =Ward 1		24
25	SWAPA				25
26	ANDA	Z	0375 000177		26
27	JSBR		0015 Output (Jan 0151)		27
30	HDA	I	0036 =Ward 1		30
31	ANDA	Z	0375 000177		31
32	A=0				32
33	JSBR		0015 Output		33
34	JUMP		0073 Process data.		34
35	HDA	I	0036 =Ward 1 *Negative LF		35
36	STA		0035 Line feed count		36
37	HDA	Z	0233 "NL ESC"		37
40	JSBR		0015 Output		40
41	HDA	Z	0212 "NL LF"		41
42	JSBR		0015 Output		42
43	INSZ		0035 Count		43
44	JUMP		0137 auto next		44
45	JUMP		0073 Process data.		45
46	HDA	Z	0233 "NL ESC" *Absolute VT		46
47	JSBR		0015 Output		47
50	HDA	Z	0213 "NL VT"		50
51	JUMP		0127 Merge		51
52					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					72
73					73
74					74
75					75
76					76
77					77

OS

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Step	Instruction	Address	Comment	Octal	Step
00					00
01					01
02					02
03					03
04					04
05					05
06			INIT GME DISC BOOTSTRAP		06
07					07
10					10
11					11
12					12
13					13
14			{ I D		14
15			{ L E		15
16			{ BEP SP		16
17			{ N O		17
20			{ T SP		20
21			{ F o		21
22			{ U N		22
23			{ D MUL		23
24			{ BEP SP		24
25			{ h o		25
26			{ A D		26
27			{ E D		27
30			{ MUL n 000156		30
31			{ o MUL 067400		31
32			{ u e 074545		32
33			{ s MUL 071400		33
34			{ CR P		34
35			{ R o		35
36			{ C E		36
37			{ S S		37
40			{ ? MUL		40
41			{ BEP CR		41
42			{ SO T		42
43			{ A S		43
44			{ K SP		44
45					45
46			{ Tech		46
47					47
50			{ SP		50
51			{ fun Name		51
52			{ SP		52
53			{ SP H		53
54			{ A L		54
55			{ T E		55
56			{ D SP		56
57			{ A T		57
60			{ SP		60
61					61
62			{ back address		62
63					63
64					64
65			{ A		65
66			{ =		66
67					67
70			{ Prog		70
71					71
72					72
73			{ SI MUL		73
74	(AMSB		{ (fun 0535)		74
75	SFA	2 0065			75
76	> STA	0540			76
77	JUMP	0536			77

Programmer:-

OS - ASCII for Executive

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Step	Instruction	Address	Comment	Octal	Step
00			CAN NUL		00
01			CR P		01
02			R O		02
03			G R		03
04			A M		04
05			? SP		05
06			L NUL		06
07			SP O		07
10			F F		10
11			SP L		11
12			I N		12
13			E SI		13
14			SP NUL		14
15			SP T		15
16			E M		16
17			P E		17
20			R A		20
21			T U		21
22			R E		22
23			SI SP		23
24			SP SO		24
25			BEL D		25
26			E L		26
27			E T		27
30			I O		30
31			N S		31
32			SP S		32
33			T O		33
34			P P		34
35			E D		35
36			SI SP		36
37			NUL N		37
40				1102	40
41					41
42					42
43			SP SP		43
44			P R		44
45			I N		45
46			T SP		46
47			Q		47
50			Printer No.		50
51			ML		51
52			CR SO	006416	52
53			C O		53
54			M M		54
55			A N		55
56			D ?		56
57			SP NUL		57
60			SI NUL		60
61			16 01400		61
62				220404	62
63			RET. "PROGRAM?"	71701	63
64				3716-	64
65					65
66					66
67					67
70					70
71					71
72					72
73					73
74	FCB 05		→ Program Name	201425	74
75	I/O Program		2 = Local Director = 03	040003	75
76	FCB 06		→ Program Name	201425	76
77	Printer Program		2 = Local Director = 04	040004	77