

```

000.001      2  DEBUG  EQU    1          DEBUG MODE
              3
              4  ***    FLAGS - SET AND CLEAR PROGRAM FLAGS.
              5  *
              6  *      J.G. LETWIN, 2/2/78
              7  *
              8  *      COPYRIGHT 1978, BY THE HEATH COMPANY.
              9

```

```

000.000      10
              11      XTEXT  ASCII

```

```

13X **      ASCII CHARACTER EQUIVALENCES.

```

```

14X
000.015      15X CR      EQU    13          CARRIAGE RETURN
000.012      16X LF      EQU    10          LINE FEED
000.200      17X NULL     EQU    200Q        PAD CHARACTER
000.000      18X NUL2     EQU    0
000.007      19X BELL     EQU    7           BELL CHARACTER
000.177      20X RUBOUT   EQU    177Q
000.010      21X BKSF     EQU    10Q          CTL-H
000.026      22X C.SYN    EQU    26Q          SYNC
000.002      23X C.STX    EQU    2           STX
000.047      24X QUOTE    EQU    47Q
000.011      25X TAB      EQU    11Q
000.033      26X ESC      EQU    33Q
000.012      27X NL       EQU    12Q          NEW LINE (HDOS SYSTEMS)
000.212      28X ENL      EQU    NL+200Q      NL + END-OF-LINE-FLAG
000.014      29X FF       EQU    14Q          FORM FEED
000.001      30X CTLA      EQU    01Q          CTL-A
000.002      31X CTLB      EQU    02Q          CTL-B
000.003      32X CTLC      EQU    03Q          CTL-C
000.004      33X CTLD      EQU    04Q          CTL-D
000.017      34X CTLO      EQU    17Q          CTL-O
000.020      35X CTLP      EQU    20Q          CTL-P
000.021      36X CTLQ      EQU    21Q          CTL-Q
000.023      37X CTLS      EQU    23Q          CTL-S
000.032      38X CTLZ      EQU    32Q          CTL-Z
000.000      39      XTEXT  DEVDEF

```

```

41X **      DEVICE TABLE ENTRIES.

```

```

42X
000.000      43X      ORG    0
44X
000.000      45X DEV.NAM DS    2          DEVICE NAME
000.000      46X DV.EL     EQU    00000000B   END OF DEVICE LIST FLAG
000.001      47X DV.NU     EQU    00000001B   DEVICE ENTRY NOT IN USE
48X
000.002      49X DEV.RES DS    1          DRIVER RESIDENSE CODE
000.001      50X DR.IM     EQU    00000001B   DRIVER IN MEMORY
000.002      51X DR.FR     EQU    00000010B   DRIVER PERMINANTLY RESIDENT
52X
000.003      53X DEV.JMP DS    1          JMP TO PROCESSOR

```

DEV

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000.004	54X	DEV.DDA	DS	2	DRIVER ADDRESS
000.006	55X	DEV.FLG	DS	1	FLAG BYTE
000.001	56X	DT.DD	EQU	00000001B	DIRECTORY DEVICE
000.002	57X	DT.CR	EQU	00000010B	CAPABLE OF READ OPERATION
000.004	58X	DT.CW	EQU	00000100B	CAPABLE OF WRITE OPERATION
	59X				
000.007	60X	DEV.SPG	DS	1	SECTORS PER GROUP THIS DEVICE
000.010	61X	DEV.MUM	DS	1	MOUNTED UNIT MASK
000.011	62X	DEV.MNU	DS	1	MAXIMUM NUMBER OF UNITS
000.012	63X	DEV.UNT	DS	2	ADDRESS OF UNIT SPECIFIC DATA TABLE
	64X				
000.014	65X	DEV.DVL	DS	2	DRIVER BYTE LENGTH
000.016	66X	DEV.DVG	DS	1	DRIVER ROUTINE GROUP ADDRESS
	67X				
000.017	68X	DEVELEN	EQU	*	DEVICE TABLE ENTRY LENGTH

70X \*\* UNIT SPECIFIC DEVICE DATA TABLE ENTRIES

	71X				
000.000	72X	ORG		0	
	73X				
000.000	74X	UNT.FLG	DS	1	UNIT SPECIFIC *DEV.FLG*
000.001	75X	UNT.GRT	DS	2	ADDRESS OF GROUP RESERVATION TABLE (IF DT.DD)
000.003	76X	UNT.GTS	DS	2	GRT SECTOR NUMBER
000.005	77X	UNT.DIS	DS	2	DIRECTORY FIRST SECTOR NUMBER
	78X				
000.007	79X	UNT.SIZ	EQU	*	SIZE OF UNIT SPECIFIC DATA TABLE PER UNIT
000.007	80	XTEXT		DIFDEF	

82X \*\* DIRECTORY FILE FLAGS.

	83X				
000.200	84X	DIF.SYS	EQU	10000000B	SYSTEM FILE
000.100	85X	DIF.LOC	EQU	01000000B	LOCKED FOR CHANGE
000.040	86X	DIF.WP	EQU	00100000B	WRITE PROTECTED
000.020	87X	DIF.CNT	EQU	00010000B	CONTIGUOUS FILE
	88X				
000.007	89	XTEXT		DIRDEF	

91X \*\* DIRECTORY ENTRY FORMAT.

	92X				
000.000	93X	ORG		0	
	94X				
	95X				
000.377	96X	DF.EMP	EQU	3770	FLAGS ENTRY EMPTY
000.376	97X	DF.CLR	EQU	3760	FLAGS ENTRY EMPTY, REST OF DIR ALSO CLEAR
	98X				
000.000	99X	DIR.NAM	DS	8	NAME
000.010	100X	DIR.EXT	DS	3	EXTENSION
000.013	101X	DIR.PRO	DS	1	PROJECT

DIR

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000.014	102X DIR.VER DS	1	VERSION
000.015	103X DIRIDL EQU *		FILE IDENTIFICATION LENGTH
	104X		
000.015	105X DIR.CLU DS	1	CLUSTER FACTOR
000.016	106X DIR.FLG DS	1	FLAGS
000.017	107X DS	1	RESERVED
000.020	108X DIR.FGN DS	1	FIRST GROUP NUMBER
000.021	109X DIR.LGN DS	1	LAST GROUP NUMBER
000.022	110X DIR.LSI DS	1	LAST SECTOR INDEX (IN LAST GROUP)
000.023	111X DIR.CRD DS	2	CREATION DATE
000.025	112X DIR.ALD DS	2	LAST ALTERATION DATE
	113X		
000.027	114X DIRELEN EQU *		DIRECTORY ENTRY LENGTH
000.027	115 XTEXT IOCDEF		
	117X **		I/O CHANNEL DEFINITIONS.
	118X		
000.000	119X ORG	0	
	120X		
000.000	121X IOC.LNK DS	2	ADDRESS OF NEXT CHANNEL, =0 IF LAST
000.002	122X IOC.DDA DS	2	THREAD JUMP TO DEVICE DRIVER (VIA DEV TABLE)
	123X		
000.004	124X IOC.FLG DS	1	FILE TYPE FLAGS
000.001	125X FT.DD EQU 00000001B		=1 IF DIRECTORY DEVICE
000.002	126X FT.OR EQU 00000010B		=1 IF OPEN FOR READ
000.004	127X FT.OW EQU 00000100B		=1 IF OPEN FOR WRITE
000.010	128X FT.OU EQU 00001000B		=1 IF OPEN FOR UPDATE
000.003	129X IOC.SQL EQU *-IOC.DDA		LENGTH OF INFO FOR SEQUENTIAL FILE (FROM IOC)
	130X		
000.005	131X IOC.GRT DS	2	ADDRESS OF GROUP RESERVATION TABLE
000.007	132X IOC.SPG DS	1	SECTORS PER GROUP, THIS DEVICE
000.010	133X IOC.CGN DS	1	CURRENT GROUP NUMBER
000.011	134X IOC.CSI DS	1	CURRENT SECTOR INDEX (IN CURRENT GROUP)
000.012	135X IOC.LGN DS	1	LAST GROUP NUMBER
000.013	136X IOC.LSI DS	1	LAST SECTOR INDEX (IN LAST GROUP)
000.010	137X IOC.DRL EQU *-IOC.FLG		LENGTH OF INFO NORMALLY COPIED BACK TO THE CHANNEL TABLE
	138X *		
000.014	139X IOC.DTA DS	2	DEVICE TABLE ADDRESS FOR THIS DEVICE
000.016	140X IOC.DES DS	2	SECTOR NUMBER OF DIRECTORY ENTRY
000.020	141X IOC.DEV DS	2	DEVICE CODE
000.022	142X IOC.UNI DS	1	UNIT NUMBER (0-9)
000.021	143X IOC.DIL EQU *-IOC.DDA		LENGTH OF INFO FOR DIRECTORY FILE (FROM IOC)
	144X		
000.023	145X IOC.DIR DS	DIRELEN	DIRECTORY ENTRY
	146X		
000.052	147X IOCELEN EQU *		IOC ENTRY LENGTH
	148X		
000.001	149X IOCCTD EQU 1		INDEX OF USER CHANNEL #0 IN CHANIAB (FIRST = 0)
000.052	150 XTEXT HOSDEF		

```

152X **      HOSDEF - DEFINE HOS PARAMETER.
153X *
154X
155X
000.026      156X VERS      EQU      1*16+6      VERSION 1.6
157X
000.377      158X SYSCALL EQU      3770      SYSCALL INSTRUCTION
159X
000.000      160X
161X          ORG      0
162X
163X *      RESIDENT FUNCTIONS
164X
000.000      165X .EXIT      DS      1      EXIT (MUST BE FIRST)
000.001      166X .SCIN      DS      1      SCIN
000.002      167X .SCOUT     DS      1      SCOUT
000.003      168X .PRINT     DS      1      PRINT
000.004      169X .READ      DS      1      READ
000.005      170X .WRITE     DS      1      WRITE
000.006      171X .CONSL     DS      1      SET/CLEAR CONSOLE OPTIONS
000.007      172X .CLRCD     DS      1      CLEAR CONSOLE BUFFER
000.010      173X .LOADO     DS      1      LOAD AN OVERLAY
000.011      174X .VERS      DS      1      RETURN HDOS VERSION NUMBER
000.012      175X .SYSRES    DS      1      PRECEDING FUNCTIONS ARE RESIDENT
176X
177X
178X *      *HDOSDVLO.SYS* FUNCTIONS
179X
000.040      180X          ORG      40A
181X
000.040      182X .LINK      DS      1      LINK (MUST BE FIRST)
000.041      183X .CTLCD     DS      1      CTL-C
000.042      184X .OPENR     DS      1      OPENR
000.043      185X .OPENW     DS      1      OPENW
000.044      186X .OPENU     DS      1      OPENU
000.045      187X .OPENC     DS      1      OPENC
000.046      188X .CLOSE     DS      1      CLOSE
000.047      189X .POSIT     DS      1      POSITION
000.050      190X .DELET     DS      1      DELETE
000.051      191X .RENAM     DS      1      RENAME
000.052      192X .SETTP     DS      1      SETTOP
000.053      193X .DECODE     DS      1      NAME DECODE
000.054      194X .NAME      DS      1      GET FILE NAME FROM CHANNEL
000.055      195X .CLEAR     DS      1      CLEAR CHAN
000.056      196X .CLEARA    DS      1      CLEAR ALL CHANS
000.057      197X .ERROR     DS      1      LOOKUP ERROR
000.060      198X .CHFLG     DS      1      CHANGE FLAGS
000.061      199X .DISMT     DS      1      FLAG SYSTEM DISK DISMOUNTED
000.062      200X .LOADD     DS      1      LOAD DEVICE DRIVER
201X
202X
203X *      *HDOSDVLI.SYS* FUNCTIONS
204X
000.200      205X          ORG      2000
206X
000.200      207X .MOUNT     DS      1      MOUNT (MUST BE FIRST)

```

214X \*\* HDOS SYSTEM EQUIVALENCES.

241X \*\* S.VAL -- SYSTEM VALUE DEFINITIONS.

```
242X *
243X *      THESE VALUES ARE SET AND MAINTAINED BY THE SYSTEM.
```

```

244X *
245X *      THE DECK HOSEQU MUST BE MODIFIED WHEN THIS IS MODIFIED.

```

040,277	248X	ORG	S.VAL	
040,277	250X	S.DATE	DS	9
040,310	251X	S.DATC	DS	2
040,312	252X	S.TIME	DS	4
040,316	253X	S.HIMEM	DS	2
040,320	255X	S.SYSM	DS	2
040,322	257X	S.USRM	DS	2

040.324

258X

259X S.OMAX DS 2

MAX OVERLAY SIZE FOR SYSTEM

260X

261X

262X \*\* THE FOLLOWING FIVE CELLS SHOULD BE MODIFIED/READ ONLY VIA THE 'CONSL' SYSCALL

263X

000.200

264X CSL.ECH EQU 10000000B

SUPPRESS ECHO

000.002

265X CSL.WRP EQU 00000010B

WRAP LINES AT WIDTH

000.001

266X CSL.CHR EQU 00000001B

OPERATE IN CHARACTER MODE

267X

000.000

268X I.CSLMD EQU 0

S.CSLMD IS FIRST BYTE

040.326

269X S.CSLMD DS 1

CONSOLE MODE

270X

000.200

271X CTP.BKS EQU 10000000B

TERMINAL PROCESSES BACKSPACES

000.040

272X CTP.MLI EQU 00100000B

MAP LOWER CASE TO UPPER ON INPUT

000.020

273X CTP.MLO EQU 00010000B

MAP LOWER CASE TO UPPER ON OUTPUT

000.010

274X CTP.2SB EQU 00001000B

TERMINAL NEEDS TWO STOP BITS

000.002

275X CTP.BKM EQU 00000010B

MAP BKSP (UPON INPUT) TO RUBOUT

000.001

276X CTP.TAB EQU 00000001B

TERMINAL SUPPORTS TAB CHARACTERS

277X

000.001

278X I.CONTY EQU 1

S.CONTY IS 2ND BYTE

000.000

279X \*S.CSLMD-I.CONTY

040.327

280X S.CONTY DS 1

CONSOLE TYPE FLAGS

000.002

281X I.CUSOR EQU 2

S.CUSOR IS 3RD BYTE

000.000

282X \*S.CSLMD-I.CUSOR

040.330

283X S.CUSOR DS 1

CURRENT CURSOR POSITION

000.003

284X I.CONWI EQU 3

S.CONWI IS 4TH BYTE

000.000

285X \*S.CSLMD-I.CONWI

040.331

286X S.CONWI DS 1

CONSOLE WIDTH

287X

000.001

288X CO.FLG EQU 00000001B

CTL-D FLAG

000.200

289X CS.FLG EQU 10000000B

CTL-S FLAG

290X

000.004

291X I.CONFL EQU 4

S.CONFL IS 5TH BYTE

000.000

292X \*S.CSLMD-I.CONFL

040.332

293X S.CONFL DS 1

CONSOLE FLAGS

294X

040.333

295X S.CAADR DS 2

ADDRESS FOR ABORT PROCESSING (>256 IF VALID)

040.335

296X S.CCTAB DS 6

ADDR FOR CTL-A, CTL-B, CTL-C PROCESSING

040.343

297 XTEXT ESINT

299X \*\* S.INT - SYSTEM INTERNAL WORKAREA DEFINITIONS.

300X \*

301X \* THESE CELLS ARE REFERENCED BY OVERLAYS AND MAIN CODE, AND

302X \* MUST THEREFORE RESIDE IN FIXED LOW MEMORY.

303X

040.343

304X ORG S.INT

305X

306X

307X \*\* CONSOLE STATUS FLAGS

308X

040.343

309X S.CDB DS 1

CONSOLE DESCRIPTOR BYTE

000.000

310X CDB.H85 EQU 00000000B

000.001	311X	CDB.H84	EQU	00000001B	=0 IF H8-5, =1 IF H8-4
040.344	312X	S.BAUD	DS	2	[0-14] H8-4 BAUD RATE, =0 IF H8-5
	313X	*			[15] =1 IF BAUD RATE => 2 STOP BITS
	314X				
	315X	**		TABLE ADDRESS WORDS	
	316X				
040.346	317X	S.DLINK	DS	2	ADDRESS OF DATA IN HDOS CODE
040.350	318X	S.OFWA	DS	2	FWA OVERLAY TABLE
040.352	319X	S.CFWA	DS	2	FWA CHANNEL TABLE
040.354	320X	S.DFWA	DS	2	FWA DEVICE TABLE
040.356	321X	S.RFWA	DS	2	FWA RESIDENT HDOS CODE
	322X				
	323X	**		DEVICE DRIVER DELAYED LOAD FLAGS	
	324X				
040.360	325X	S.DDLDA	DS	2	DRIVER LOAD ADDRESS (HIGH BYTE=0 IF NO LOAD PENDING)
040.362	326X	S.DDLEN	DS	2	CODE LENGTH IN BYTES
040.364	327X	S.DDGRP	DS	1	GROUP NUMBER FOR DRIVER
040.365	328X		DS	1	HOLD PLACE
	329X	*S.DDSEC		DS 2	SECTOR NUMBER FOR DRIVER ( * OBSOLETE ! * )
040.366	330X	S.DDDTA	DS	2	DEVICE'S ADDRESS IN DEVLST +DEV.RES
040.370	331X	S.DDOPC	DS	1	OPEN OFCODE PENDING
	332X				
	333X	**		OVERLAY MANAGEMENT FLAGS	
	334X				
000.001	335X	OVL.IN	EQU	00000001B	IN MEMORY
000.002	336X	OVL.RES	EQU	00000010B	PERMINANTLY RESIDENT
000.014	337X	OVL.NUM	EQU	00001100B	OVERLAY NUMBER MASK
000.200	338X	OVL.UCS	EQU	10000000B	USER CODE SWAPPED FOR OVERLAY
	339X				
040.371	340X	S.OVLFL	DS	1	OVERLAY FLAG
040.372	341X	S.UCSF	DS	2	FWA SWAPPED USER CODE
040.374	342X	S.UCSL	DS	2	LENGTH SWAPPED USER CODE
040.376	343X	S.OVLS	DS	2	SIZE OF OVERLAY CODE
041.000	344X	S.OVLE	DS	2	ENTRY POINT OF OVERLAY CODE
	345X				
041.002	346X	S.SSN	DS	2	SWAP AREA SECTOR NUMBER
041.004	347X	S.OSN	DS	2	OVERLAY SECTOR NUMBER
	348X				
	349X	*			SYSCALL PROCESSING WORK AREAS
	350X				
041.006	351X	S.CACC	DS	1	(ACC) UPON SYSCALL
041.007	352X	S.CODE	DS	1	SYSCALL INDEX IN PROGRESS
	353X				
	354X	*			JUMPS TO ROUTINES IN RESIDENT HDOS CODE
	355X				
041.010	356X	S.JUMPS	DS	0	START OF DUMP VECTORS
041.010	357X	S.SDD	DS	3	JUMP TO STAND-IN DEVICE DRIVER
041.013	358X	S.FASER	DS	3	JUMP TO FATERR (FATAL SYSTEM ERROR)
041.016	359X	S.DIREA	DS	3	JUMP TO DIREAD (DISK FILE READ)
041.021	360X	S.FCI	DS	3	JUMP TO FCI (FETCH CHANNEL INFO)
041.024	361X	S.SCI	DS	3	JUMP TO SCI (STORE CHANNEL INFO)
041.027	362X	S.GUP	DS	3	JUMP TO GUP (GET UNIT POINTER)
	363X				
041.032	364X	S.MOUNT	DS	1	0 IF THE SYSTEM DISK IS MOUNTED
041.033	365X	S.DCS	DS	1	DEFAULT CLUSTER SIZE-1
	366X				

ESINT

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041.034	367X	S.BOOTF	DS	1	BOOT FLAGS
000.001	368X	BOOT.P	EQU	00000001B	EXECUTE PROLOGUE UPON BOOTUP
	369X				
	370X	*			STACK VALUE SAVED FOR OVERLAY SYSCALLS
	371X				
041.035	372X	S.OVSTK	DS	2	VALUE OF SP UPON SYSCALLS USING OVERLAY
	373X				
041.037	374X		DS	1	RESERVED
	376X	**			ACTIVE I/O AREA.
	377X	*			
	378X	*			THE AIO.XXX AREA CONTAINS INFORMATION ABOUT THE I/O OPERATION
	379X	*			CURRENTLY BEING PERFORMED, THE INFORMATION IS OBTAINED FROM
	380X	*			THE CHANNEL TABLE, AND WILL BE RESTORED THERE WHEN DONE.
	381X	*			
	382X	*			NORMALLY, THE AIO.XXX INFORMATION WOULD BE OBTAINED DIRECTLY
	383X	*			FROM VARIOUS SYSTEM TABLES VIA POINTER REGISTERS. SINCE THE
	384X	*			8080 HAS NO GOOD INDEXED ADDRESSING, THE DATA IS MANUALLY
	385X	*			COPIED INTO THE AIO.XXX CELLS BEFORE PROCESSING, AND
	386X	*			BACKDATED AFTER PROCESSING.
	387X				
041.040	388X	AIO.VEC	DS	3	JUMP INSTRUCTION
041.041	389X	AIO.DDA	EQU	*-2	DEVICE DRIVER ADDRESS
041.043	390X	AIO.FLG	DS	1	FLAG BYTE
041.044	391X	AIO.GRT	DS	2	ADDRESS OF GROUP RESERV TABLE
041.046	392X	AIO.SPG	DS	1	SECTORS PER GROUP
041.047	393X	AIO.CGN	DS	1	CURRENT GROUP NUMBER
041.050	394X	AIO.CSI	DS	1	CURRENT SECTOR INDEX
041.051	395X	AIO.LGN	DS	1	LAST GROUP NUMBER
041.052	396X	AIO.LSI	DS	1	LAST SECTOR INDEX
041.053	397X	AIO.DTA	DS	2	DEVICE TABLE ADDRESS
041.055	398X	AIO.DES	DS	2	DIRECTORY SECTOR
041.057	399X	AIO.DEV	DS	2	DEVICE CODE
041.061	400X	AIO.UNI	DS	1	UNIT NUMBER (0-9)
	401X				
041.062	402X	AIO.DIR	DS	DIRELEN	DIRECTORY ENTRY
	403X				
041.111	404X	AIO.CNT	DS	1	SECTOR COUNT
041.112	405X	AIO.EOM	DS	1	END OF MEDIA FLAG
041.113	406X	AIO.EOF	DS	1	END OF FILE FLAG
041.114	407X	AIO.TFF	DS	2	TEMP FILE POINTERS
041.116	408X	AIO.CHA	DS	2	ADDRESS OF CHANNEL BLOCK (IOC.DDA)
041.120	410X	S.SCR	DS	2	SYSTEM SCRATCH AREA ADDRESS
041.122	411	XTEXT	ECDEF		



413X \*\* ERROR CODE DEFINITIONS.

000.000	414X			
000.000	415X	ORG	0	
000.001	416X	DS	1	NO ERROR #0
000.002	417X EC.EOF	DS	1	END OF FILE
000.003	418X EC.EOM	DS	1	END OF MEDIA
000.004	419X EC.ILC	DS	1	ILLEGAL SYSCALL CODE
000.005	420X EC.CNA	DS	1	CHANNEL NOT AVAILABLE
000.006	421X EC.DNS	DS	1	DEVICE NOT SUITABLE
000.007	422X EC.IDN	DS	1	ILLEGAL DEVICE NAME
000.010	423X EC.IFN	DS	1	ILLEGAL FILE NAME
000.011	424X EC.NRD	DS	1	NO ROOM FOR DEVICE DRIVER
000.012	425X EC.FNO	DS	1	CHANNEL NOT OPEN
000.013	426X EC.ILR	DS	1	ILLEGAL REQUEST
000.014	427X EC.FUC	DS	1	FILE USAGE CONFLICT
000.015	428X EC.FNF	DS	1	FILE NAME NOT FOUND
000.016	429X EC.UND	DS	1	UNKNOWN DEVICE
000.017	430X EC.ICN	DS	1	ILLEGAL CHANNEL NUMBER
000.020	431X EC.DIF	DS	1	DIRECTORY FULL
000.021	432X EC.IFC	DS	1	ILLEGAL FILE CONTENTS
000.022	433X EC.NEM	DS	1	NOT ENOUGH MEMORY
000.023	434X EC.RF	DS	1	READ FAILURE
000.024	435X EC.WF	DS	1	WRITE FAILURE
000.025	436X EC.WPV	DS	1	WRITE PROTECTION VIOLATION
000.026	437X EC.WP	DS	1	DISK WRITE PROTECTED
000.027	438X EC.FAP	DS	1	FILE ALREADY PRESENT
000.030	439X EC.DDA	DS	1	DEVICE DRIVER ABORT
000.031	440X EC.FL	DS	1	FILE LOCKED
000.032	441X EC.FAO	DS	1	FILE ALREADY OPEN
000.033	442X EC.IS	DS	1	ILLEGAL SWITCH
000.034	443X EC.UUN	DS	1	UNKNOWN UNIT NUMBER
000.035	444X EC.FNR	DS	1	FILE NAME REQUIRED
000.036	445X EC.DIW	DS	1	DEVICE IS NOT WRITABLE (OR WRITE LOCKED)
000.037	446X EC.UNA	DS	1	UNIT NOT AVAILABLE
000.040	447X EC.TLV	DS	1	ILLEGAL VALUE
000.041	448X EC.ILO	DS	1	ILLEGAL OPTION
000.042	449X EC.VPM	DS	1	VOLUME PRESENTLY MOUNTED ON DEVICE
000.043	450X EC.NVM	DS	1	NO VOLUME PRESENTLY MOUNTED
000.044	451X EC.FOD	DS	1	FILE OPEN ON DEVICE
000.045	452X EC.NPM	DS	1	NO PROVISIONS MADE FOR REMOUNTING MORE DISKS
000.046	453X EC.DNI	DS	1	DISK NOT INITIALIZED
000.047	454X EC.DNR	DS	1	DISK IS NOT READABLE
000.050	455X EC.DSC	DS	1	DISK STRUCTURE IS CORRUPT
000.051	456X EC.NCV	DS	1	NOT CORRECT VERSION OF HDOS
000.052	457X EC.NOS	DS	1	NO OPERATING SYSTEM MOUNTED
000.053	458X EC.IOI	DS	1	ILLEGAL OVERLAY INDEX
000.054	459X EC.OTL	DS	1	OVERLAY TOO LARGE
	460	XTEXT	FILDEF	

FILDEF

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462X \*\* FILDEF - FILE TYPE DEFINITIONS.

463X \*

464X \*

465X

466X

000.000

467X FT.ABS

EQU

0

ABSOLUTE BINARY

000.001

468X FT.PIC

EQU

1

POSITION INDEPENDANT CODE

000.002

469X FT.REL

EQU

2

RELOCATABLE CODE

000.003

470X FT.BAC

EQU

3

COMPILED BASIC CODE

000.054

471

XTEXT

ABSDEF

473X \*\* ABS FORMAT EQUIVALENCES.

474X

000.000

475X

ORG

0

476X

000.000

477X ABS.ID

DS

1

377Q = BINARY FILE FLAG

000.001

478X

DS

1

FILE TYPE (FT.ABS)

000.002

479X ABS.LDA

DS

2

LOAD ADDRESS

000.004

480X ABS.LEN

DS

2

LENGTH OF ENTIRE RECORD

000.006

481X ABS.ENT

DS

2

ENTRY POINT

482X

000.010

483X ABS.COD

DS

0

CODE STARTS HERE

.....  
 FLAGS - SET/CLEAR FILE FLAGS  
 MAIN ROUTINE  
 .....

HEATH HBASM V1.4 01/20/78  
 14:53:50 16-MAY-80

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```

042.170          486      ORG      USERFWA-ABS.COD
042.170 377 000    487      DB      377Q,FT,ABS
042.172 200 042    488      DW      USERFWA      LOAD ADDRESS
042.174 255 003    489      DW      MEML-USERFWA    LOAD SIZE
042.176 200 042    490      DW      ENTRY      ENTRY POINT
042.176 200 042    491
042.176 200 042    492
042.176 200 042    493 **      FLAGS - MAIN ENTRY POINT.
042.176 200 042    494
042.200          495      ENTRY EQU      *
042.200 315 267 043 496      CALL     PRS      PRESET PROGRAM      /79.12.GC/
042.203 315 372 043 497      CALL     QUI      OFFER USER INSTRUCTIONS
042.203 315 372 043 498
042.203 315 372 043 499 *      RESTART ADDRESS
042.203 315 372 043 500
042.206 257      501      RESTART XRA      A
042.207 377 055    502      DB      SYSCALL,.CLEAR  CLEAR CHANNEL 0
042.207 377 055    503
042.207 377 055    504
042.211 315 136 031 505      FLAGS1 CALL     $TYPTX
042.214 012 106 151 506      DB      NL,'File Name?',' '+2000
042.230 041 155 046 507      LXI      H,LINE
042.233 315 351 045 508      CALL     $RTL      READ LINE IN UPPER CASE
042.236 332 264 043 509      JC      EXIT      NONE
042.241 021 047 046 510      LXI      D,DEFAULT
042.244 001 065 047 511      LXI      B,FLAGA
042.247 377 053    512      DB      SYSCALL,.DECODE DECODE DEV INFO
042.251 332 220 043 513      JC      ERROR      NO GOOD
042.254 072 065 047 514      LDA      FLAGA+0      (A) = DEVICE TYPE
042.257 346 001    515      ANI      DT,DD
042.261 076 005    516      MVI      A,EC,DNS
042.263 312 220 043 517      JZ      ERROR      NOT DIRECTORY DEVICE
042.266 021 047 046 518      LXI      D,DEFAULT
042.271 041 155 046 519      LXI      H,LINE
042.274 257      520      XRA      A
042.275 377 042    521      DB      SYSCALL,.OPENR  OPEN FOR READ
042.277 332 220 043 522      JC      ERROR
042.302 052 352 040 523      LHLD     S,CFWA
000.000          524      ERRNZ    IOCCTD-1      ASSUME LINK 1 TO USER CHAN #0
042.305 315 211 030 525      CALL     $HLIHL
042.310 315 234 030 526      CALL     $INDL
042.313 041 000    527      DW      IOC,DIR+DIR,FLG
042.315 315 136 031 528      CALL     $TYPTX
042.320 103 165 162 529      DB      'Current Flags = ',' '+2000
042.340 173      530      MOV      A,E      (A) = FLAGS
042.341 365      531      PUSH     PSW      SAVE FLAGS
042.342 315 251 045 532      CALL     TFF      TYPE FILE FLAGS
042.345 257      533      XRA      A
042.346 377 046    534      DB      SYSCALL,.CLOSE  CLOSE FILE
042.350 361      535      POP      PSW      (A) = FLAGS
042.351 346 100    536      ANI      DIF,LOC
042.353 312 050 043 537      JZ      FLAGS2
000.001          538      IF      DEBUG
000.001          539      JMP      FLAGS2      * * DEBUG * *
000.001          540      ENDIF
000.001          541
  
```

```

542 *      LOCKED. CANNOT CHANGE
543
042.356 315 136 031 544      CALL    $TYPTX
042.361 007 012 124 545      DB      BELL,NL,'This file is locked; its flags cannot be changed.',ENL
043.045 303 211 042 546      JMP     FLAGS1
547
043.050 315 136 031 548 FLAGS2 CALL    $TYPTX
043.053 012 040 116 549      DB      NL,' New flags:',', ' +2000
043.070 041 321 046 550      LXI     H,LINE2
043.073 315 351 045 551      CALL    $RTL,          READ UPPER CASE
043.076 332 264 043 552      JC      EXIT          EOF
553
554 *      CODE NEW FLAGS
555
043.101 006 000 556      MVI     B,0          (B) = FLAG ACCUM
043.103 176 557 FLAGS3 MOV     A,M
043.104 247 558      ANA     A
043.105 345 559      PUSH    H          SAVE LINE ADDRESS
043.106 312 171 043 560      JZ      FLAGS5          END OF LINE
043.111 041 211 043 561      LXI     H,FLAGB
043.114 315 301 045 562      CALL    $TBLS          FIND FLAG
043.117 312 161 043 563      JE      FLAGS4          GOT FLAG
564
565 *      ILLEGAL FLAG
566
043.122 315 136 031 567      CALL    $TYPTX
043.125 007 012 111 568      DB      BELL,NL,'Illegal flag -',', ' +2000
043.146 341 569      POP     H
043.147 176 570      MOV     A,M          (A) = BAD FLAG
043.150 315 340 045 571      CALL    $WCHAR
043.153 315 343 045 572      CALL    $CRLF
043.156 303 050 043 573      JMP     FLAGS2          GET NEW FLAGS
574
043.161 176 575 FLAGS4 MOV     A,M
043.162 260 576      ORA     B          ACCUMULATE FLAGS
043.163 107 577      MOV     B,A
043.164 341 578      POP     H
043.165 043 579      INX     H          MOVE TO NEXT FLAG
043.166 303 103 043 580      JMP     FLAGS3
581
582 *      GOT ALL THE FLAGS. SETEM
583
043.171 016 377 584 FLAGS5 MVI     C,3770          (C) = MASK
043.173 021 047 046 585      LXI     D,DEFAULT
043.176 041 155 046 586      LXI     H,LINE
043.201 377 060 587      DB      SYSCALL,CHFLG
043.203 332 220 043 588      JC      ERROR
043.206 303 211 042 589      JMP     FLAGS1
590
043.211 127 040 591 FLAGB DB      'W',DIF.WP
043.213 123 200 592      DB      'S',DIF.SYS
043.215 114 100 593      DB      'L',DIF.LOC
043.217 000 594      DB      0

```

```

596 **      ERROR - ERROR ENCOUNTERED.
597 *
598
599
043.220      600 ERROR EQU *
043.220 315 226 043 601 CALL ERROR.
043.223 303 206 042 602 JMP RESTART
603
043.226 365 604 ERROR. PUSH PSW
043.227 315 136 031 605 CALL $TYPTX
043.232 012 007 105 606 DB NL,BELL,'ERROR - ',','+2000
043.244 361 607 POP PSW
043.245 046 012 608 MVI H,NL
043.247 377 057 609 DB SYSCALL,'ERROR LOOKUP ERROR
043.251 311 610 RET

```

```

612 **      CCHIT - HERE IF CTL-C HIT.
613 *
614
615
043.252 315 136 031 616 CCHIT CALL $TYPTX
043.255 136 303 617 DB ',C'+2000
043.257 377 007 618 DB SYSCALL,'CLRCD CLEAR CONSOLE
043.261 303 206 042 619 JMP RESTART

```

```

621 **      EXIT - EXIT TO OS.
622
623
043.264 257 624 EXIT XRA A
043.265 377 000 625 DB SYSCALL,'EXIT

```

```

629 ** PRS - PRESET CONSOLE.
630 *
631
632
043.267 633 PRS EQU *
634
043.267 377 011 635 DB SYSCALL,,VERS /79.12.GC/
043.271 332 362 043 636 JC PRSERR1 PROBABLY NO ,VERS SYSCALL /79.12.GC/
043.274 376 026 637 CFI VERS
043.276 302 362 043 638 JNZ PRSERR1 NOT CORRECT VERSION OF HDOS /79.12.GC/
639
043.301 257 640 XRA A
043.302 062 326 040 641 STA S,CSLMD
043.305 041 252 043 642 LXI H,CCHIT
043.310 076 003 643 MVI A,CTLG
043.312 377 041 644 DB SYSCALL,,CTLC
043.314 076 377 645 MVI A,3770
043.316 377 046 646 DB SYSCALL,,CLOSE CLOSE OVERLAY CHANNEL
043.320 041 231 047 647 LXI H,RHEML
043.323 377 052 648 DB SYSCALL,,SETTP SET RUN MEMORY LIMIT
043.325 315 136 031 649 CALL $TYPTX
043.330 012 106 114 650 DB NL, 'FLAGS Issue $50.05.00.',NL,ENL
043.361 311 651 RET
652
043.362 076 050 653 PRSERR1 MVI A,EC.NCV NOT CORRECT VERSION OF HDOS /79.12.GC/
654
043.364 315 226 043 655 PRSERR CALL ERROR. /79.12.GC/
043.367 303 264 043 656 JMP EXIT /79.12.GC/

```

```

658 ** OUI - OFFER USER INSTRUCTIONS.
659 *
660 * ENTRY NONE
661 * EXIT NONE
662 * USES ALL
663
043.372 315 136 031 665 OUI CALL $TYPTX
043.375 111 156 163 666 DB 'Instructions (Yes/No) <No>?', /+2000
044.031 041 155 046 667 LXI H,LINE
044.034 315 351 045 668 CALL $RTL.
044.037 332 264 043 669 JC EXIT EOF
044.042 176 670 MOV A,M
044.043 247 671 ANA A
044.044 310 672 RZ DEFAULT, NO
044.045 376 116 673 CFI 'N'
044.047 310 674 RE NO
044.050 376 131 675 CFI 'Y'
044.052 302 372 043 676 JNE OUI KEEP TRYING TILL THE BOZO GETS IT RIGHT
044.055 315 136 031 677 CALL $TYPTX
044.060 012 106 114 678 DB NL,'FLAGS is used to set and/or clear the file flags. When'
044.147 012 160 162 679 DB NL,'prompted for the new flass, specify ALL the flass that are'
044.242 012 164 157 680 DB NL,'to be set. Note that if you set the 'L' flass, you will'
044.331 012 156 157 681 DB NL,'not be able to clear it again. The lesal flass are:'

```

045.015	012	682	DB	NL	
045.016	012 127 011	683	DB	NL,'W	Write protect file. May not be renamed, replaced, or deleted.'
045.116	012 123 011	684	DB	NL,'S	Suppress normal listings or copyins of file.'
045.174	012 114 011	685	DB	NL,'L	Lock the file from further flag changes.'
045.247	212	686	DB	ENL	
045.250	311	687	RET		

689 \*\* TFF - TYPE FILE FLAGS.

690 \*

691 \* TYPE THE CURRENT FLAGS ON THE CONSOLE.

692 \*

693 \* ENTRY (A) = FLAGS

694 \* EXIT CURSOR LEFT AFTER LAST FLAG

695 \* USES A,F,H,L

696

697

045.251	041 271 045	698	TFF	LXI	H,TFFA	(HL) = FLAG TABLE FWA
---------	-------------	-----	-----	-----	--------	-----------------------

045.254	207	699	TFF4	ADD	A	
---------	-----	-----	------	-----	---	--

045.255	345	700		PUSH	PSW	SAVE FLAGS
---------	-----	-----	--	------	-----	------------

045.256	176	701		MOV	A,M	
---------	-----	-----	--	-----	-----	--

045.257	334 340 045	702		CC	%CHAR	TYPE CHARACTER IF FLAG SET
---------	-------------	-----	--	----	-------	----------------------------

045.262	043	703		INX	H	POINT TO NEXT FLAG CHARACTER
---------	-----	-----	--	-----	---	------------------------------

045.263	341	704		POP	PSW	RESTORE FLAGS
---------	-----	-----	--	-----	-----	---------------

045.264	247	705		ANA	A	
---------	-----	-----	--	-----	---	--

045.265	302 254 045	706		JNZ	TFF4	MORE FLAGS SET
---------	-------------	-----	--	-----	------	----------------

045.270	311	707		RET		EXIT
---------	-----	-----	--	-----	--	------

708

045.271	123 114 127	709	TFFA	DB	'SLW'	
---------	-------------	-----	------	----	-------	--

045.274	000	710		DB	0	IGNORE THE CONTIGUOUS FLAG /79,12,6C/
---------	-----	-----	--	----	---	---------------------------------------

045.275	061 062 063	711		DB	'1234' CODES	
---------	-------------	-----	--	----	--------------	--

000.000		712		ERRNZ	DIF,SYS-200Q	
---------	--	-----	--	-------	--------------	--

000.000		713		ERRNZ	DIF,LOC-100Q	
---------	--	-----	--	-------	--------------	--

000.000		714		ERRNZ	DIF,WP-40Q	
---------	--	-----	--	-------	------------	--

000.000		715		ERRNZ	DIF,CNT-20Q	
---------	--	-----	--	-------	-------------	--

045.301

718

XTEXT TBL5

```

720X **      $TBL5 - TABLE SEARCH
721X *
722X *      TABLE FORMAT
723X *
724X *      DB      KEY1,VAL1,
725X *      .
726X *      .
727X *      DB      KEYN,VALN
728X *      DB      0
729X *
730X *      ENTRY   (A) = PATTERN
731X *      (H,L) = TABLE FWA
732X *      EXIT    (A) = PATTERN IF FOUND
733X *      'Z' SET IF FOUND
734X *      'Z' CLEAR IF NOT FOUND OR PATTERN=0
735X *      USES    A,F,H,L
736X
737X
045.301 305      738X $TBL5 PUSH B
045.302 376 000  739X CPI 0
045.304 312 326 045 740X JZ TBL2
045.307 107      741X MOV B,A
045.310 176      742X TBL1 MOV A,M
045.311 043      743X INX H
045.312 270      744X CMP B
045.313 312 330 045 745X JZ TBL3
045.316 247      746X ANA A
045.317 043      747X INX H
045.320 302 310 045 748X JNZ TBL1
045.323 053      749X DCX H
045.324 053      750X DCX H
045.325 257      751X XRA A
045.326 376 001  752X TBL2 CPI 1
753X
754X *      DONE
755X
045.330 301      756X TBL3 POP B
045.331 311      757X RET
045.332          758X XTEXT HLIHL

```

/78.10.GC/

/78.10.GC/

(A) = CHARACTER

IF MATCH

SKIP FAST

IF NOT END OF TABLE

SET TO ZERO FOR OLD USERS

/78.10.GC/

CLEAR ZERO

/78.10.GC/

760X \*\* \$HLIHL = LOAD HL INDIRECT THROUGH HL.

761X \*

762X \* (HL) = ((HL))

763X \*

764X \* ENTRY NONE

765X \* EXIT NONE

766X \* USES A,H,L

767X



030.211 768X \$HLIHL EQU 30211A IN H17 ROM  
045.332 769 XTEXT INDL

771X \*\* \$INDL - INDEXED LOAD.  
772X \*  
773X \* \$INDL LOADS DE WITH THE TWO BYTES AT (HL)+DISPLACEMENT  
774X \*  
775X \* THIS ACTS AS AN INDEXED FULL WORD LOAD.  
776X \*  
777X \* (DE) = ( (HL) + DISPLACEMENT )  
778X \*  
779X \* ENTRY ((RET)) = DISPLACEMENT (FULL WORD)  
780X \* (HL) = TABLE ADDRESS  
781X \* EXIT TO (RET+2)  
782X \* USES A,F,D,E  
783X  
784X

030.234 785X \$INDL EQU 30234A IN H17 ROM  
045.332 786 XTEXT RCHAR

788X \*\* \$RCHAR - READ SINGLE CHARACTER FROM CONSOLE.  
789X \*  
790X \* ENTRY NONE  
791X \* EXIT (A) = CHARACTER  
792X \* USES A,F  
793X  
794X

045.332 377 001 795X \$RCHAR DB SYSCALL,,SCIN  
045.334 332 332 045 796X JC \$RCHAR NOT READY  
045.337 311 797X RET  
798X  
045.340 377 002 799X \$WCHAR DB SYSCALL,,SCOUT  
045.342 311 800X RET  
045.343 801 XTEXT CRLF

803X \*\* \$CRLF - TYPE CARRIAGE RETURN/ LINE FEED  
804X \*  
805X \* \$CRLF IS USED TO GENERATE PADDED CRLF'S.  
806X \*  
807X \* ENTRY NONE  
808X \* EXIT (A) = 0  
809X \* USES A,F  
810X  
811X

045.343 076 012 812X \$CRLF MVI A,NL  
045.345 377 002 813X DB SYSCALL,,SCOUT  
045.347 257 814X XRA A

045.350 311  
045.351

815X  
816

RET  
XTEXT RTL

818X \*\* \$RTL = READ TEXT LINE.

819X \*

820X \* \$RTL READS A LINE FROM THE TERMINAL.

821X \*

822X \* CHARACTER ARE ACCEPTED FROM THE TERMINAL, RUBOUT AND BACKSPACE

823X \* CHARACTERS ARE PROCESSED, WHEN A CARRIAGE RETURN IS ENTERED,

824X \* \$RTL RETURNS.

825X \*

826X \* ENTRY (HL) = BUFFER FWA

827X \* EXIT 'C' CLEAR IF OK

828X \* DATA IN BUFFER

829X \* (A) = TEXT LENGTH

830X \* 'C' SET IF CTL-D STRUCK

831X \* USES A,F

832X

833X

045.351 315 360 045  
045.354 330  
045.355 303 027 046

834X \$RTL.

CALL

\$RTL

\$RTL IN UPPER CASE

835X

RC

CTL-D

836X

JMP

\$HLU

MAP LINE TO UPPER CASE

837X

045.360  
045.360 345

838X \$RTL

EQU

\*

839X

PUSH

H

SAVE FWA

045.361 315 332 045  
045.364 376 004

840X \$RTL1

CALL

\$RCHAR

841X

CPI

CTLD

045.366 312 013 046

842X

JE

\$RTL2

CTL-D STRUCK

045.371 167  
045.372 043

843X

MOV

M,A

844X

INX

H

045.373 376 012  
045.375 302 361 045

845X

CPI

NL

846X

JNE

\$RTL1

046.000 053  
046.001 066 000

847X

DCX

H

046.003 043

848X

MVI

M,0

849X

INX

H

850X

851X \*

ALL DONE. COMPUTE LENGTH

852X

046.004 353  
046.005 343

853X

XCHG

(DE) = LWA+1

854X

XTHL

(HL) = FWA

046.006 173  
046.007 225

855X

MOV

A,E

856X

SUB

L

(A) = LENGTH

046.010 247  
046.011 321

857X

ANA

A

CLEAR CARRY

858X

POP

D

RESTORE (DE)

046.012 311

859X

RET

860X

861X \*

CTL-D STRUCK

862X

046.013 341  
046.014 067

863X \$RTL2

POP

H

(HL) = FWA

864X

STC

046.015 311  
046.016

865X

RET

866

XTEXT MCU

```

868X **      MCU - MAP LOWER CASE TO UPPER CASE.
869X *
870X *      MCU MAPS A LOWER CASE ALPHABETIC TO UPPER
871X *      CASE.
872X *
873X *      ENTRY (A) = CHARACTER
874X *      EXIT (A) = CHARACTER RESULT
875X *      USES A,F
876X
877X
046.016 376 141 878X $MCU CPI 'a'
046.020 330 879X RC NOT LOWER CASE
046.021 376 173 880X CPI 'z'+1
046.023 320 881X RNC NOT LOWER CASE
046.024 326 040 882X SUI 'a','A'
046.026 311 883X RET
046.027 884 XTEXT MLU

```

```

886X **      MLU - MAP LOWER CASE LINE TO UPPER CASE.
887X *
888X *      MLU MAPS THE LOWER CASE ALPHABETICS IN A LINE TO UPPER CASE.
889X *
890X *      ENTRY (HL) = LINE FWA
891X *      EXIT NONE
892X *      USES NONE
893X
894X
046.027 365 895X $MLU PUSH PSW SAVE (PSW)
046.030 345 896X PUSH H SAVE FWA
046.031 053 897X DCX H ANTICIPATE INX H
046.032 043 898X $MLU1 INX H
046.033 176 899X MOV A,M (A)= CHARACTER
046.034 315 016 046 900X CALL $MCU MAP CHAR TO UPPER
046.037 167 901X MOV M,A
046.040 247 902X ANA A
046.041 302 032 046 903X JNZ $MLU1 MORE TO GO
046.044 341 904X POP H RESTORE (HL)
046.045 361 905X POP PSW RESTORE (PSW)
046.046 311 906X RET
046.047 907 XTEXT TYPTX

```

```

909X **      $TYPTX - TYPE TEXT.
910X *
911X *      $TYPTX IS CALLED TO TYPE A BLOCK OF TEXT ON THE SYSTEM CONSOLE.
912X *
913X *      IMBEDDED ZERO BYTES INDICATE A CARRIAGE RETURN LINE FEED.
914X *      A BYTE WITH THE 2000 BIT SET IS THE LAST BYTE IN THE MESSAGE.
915X *
916X *      ENTRY (RET) = TEXT
917X *      EXIT TO (RET+LENGTH)

```

919X

· 920X

921X

921X \$TYPTX

31136A

.....

923X

923X \$TYFTX. EQU

IN H17 ROM

046.047	123 131 060	926	DEFALT	DB	'SY0',0,0,0	DEFAULTS
		927				
046.055		928	MEML	EQU	*	LOAD MEML
		929				
046.055		930	PATCH	DS	64	PATCH AREA
		931				
046.155		932	LINE	DS	100	LINE BUFFER
046.321		933	LINE2	DS	100	FLAGS BUFFER
047.065		934	FLAGA	DS	100	DECODE BUFFER
047.231		935	RMEML	EQU	*	RUN MEML
		936				
047.231		937		END		

ASSEMBLY COMPLETE

937 STATEMENTS

0 ERRORS DETECTED

12952 BYTES FREE

```

XREF V1.1

```

## PAGE 22

[illegible]

.....  
 FLAGS - SET/CLEAR FILE FLAGS  
 .....  
 CROSS REFERENCE TABLE  
 .....

XREF V1.1

PAGE 23  
 .....

AIO.CSI 041050	394L			
AIO.DDA 041041	389E			
AIO.DES 041055	398L			
AIO.DEV 041057	399L			
AIO.DIR 041062	402L			
AIO.DTA 041053	397L			
AIO.EOF 041113	406L			
AIO.EOM 041112	405L			
AIO.FLG 041043	390L			
AIO.GRT 041044	391L			
AIO.LGN 041051	395L			
AIO.LSI 041052	396L			
AIO.SPG 041046	392L			
AIO.TFP 041114	407L			
AIO.UNI 041061	400L			
AIO.VEC 041040	388L			
BELL 000007	19E	545	568	606
BKSP 000010	21E			
BOOT.F 000001	368E			
C.STX 000002	23E			
C.SYN 000026	22E			
CCHIT 043252	616L	642		
CDB.H84 000001	311E			
CDB.H85 000000	310E			
CD.FLG 000001	288E			
CR 000015	15E			
CS.FLG 000200	289E			
CSL.CHR 000001	266E			
CSL.ECH 000200	264E			
CSL.WRP 000002	265E			
CTLA 000001	30E			
CTLB 000002	31E			
CTLC 000003	32E	643		
CTLD 000004	33E	841		
CTLD 000017	34E			
CTLP 000020	35E			
CTLQ 000021	36E			
CTLS 000023	37E			
CTLZ 000032	38E			
CTP.2SB 000010	274E			
CTP.BKM 000002	275E			
CTP.BKS 000200	271E			
CTP.MLI 000040	272E			
CTP.MLO 000020	273E			
CTP.TAB 000001	276E			
D.CON 040110	226L			
D.RAM 040240	229L			
D.VEC 040130	228L			
DEBUG 000001	2E	538		
DEFAULT 046047	510	518	585	926L
DEV.DDA 000004	54L			
DEV.DVG 000016	66L			
DEV.DVL 000014	65L			
DEV.FLG 000006	55L			
DEV.JMP 000003	53L			
DEV.MNU 000011	62L			
DEV.MUM 000010	61L			
DEV.NAM 000000	45L			

.....

CROSS REFERENCE TABLE

DEV.RES	000002	49L			
DEV.SPG	000007	60L			
DEV.UNT	000012	63L			
DEVELEN	000017	68E			
DF.CLR	000376	97E			
DF.EMP	000377	96E			
DIF.CNT	000020	87E	715		
DIF.LOC	000100	85E	536	593	713
DIF.SYS	000200	84E	592	712	
DIF.WP	000040	86E	591	714	
DIR.ALD	000025	112L			
DIR.CLU	000015	105L			
DIR.CRD	000023	111L			
DIR.EXT	000010	100L			
DIR.FGN	000020	108L			
DIR.FLG	000016	106L	527		
DIR.LGN	000021	109L			
DIR.LSI	000022	110L			
DIR.NAM	000000	99L			
DIR.PRO	000013	101L			
DIR.VER	000014	102L			
DIRELEN	000027	114E	145	402	
DIRIDL	000015	103E			
DR.IM	000001	50E			
DR.PR	000002	51E			
DT.CR	000002	57E			
DT.CW	000004	58E			
DT.DD	000001	56E	515		
DV.EL	000000	46E			
DV.NU	000001	47E			
EC.CNA	000004	420L			
EC.DDA	000027	439L			
EC.DIF	000017	431L			
EC.DIW	000035	445L			
EC.DNI	000045	453L			
EC.DNR	000046	454L			
EC.DNS	000005	421L	516		
EC.DSC	000047	455L			
EC.EQF	000001	417L			
EC.EOM	000002	418L			
EC.FAO	000031	441L			
EC.FAP	000026	438L			
EC.FL	000030	440L			
EC.FNF	000014	428L			
EC.FNQ	000011	425L			
EC.FNR	000034	444L			
EC.FOD	000043	451L			
EC.FUC	000013	427L			
EC.ICN	000016	430L			
EC.IDN	000006	422L			
EC.IFC	000020	432L			
EC.IFN	000007	423L			
EC.ILC	000003	419L			
EC.ILO	000040	448L			
EC.ILR	000012	426L			
EC.ILV	000037	447L			
EC.IOI	000052	458L			
EC.IS	000032	442L			

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.....'FLAGS' - SET/CLEAR FILE FLAGS.....

.....CROSS REFERENCE TABLE.....

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EC.NCV	000050	456L	653			
EC.NEM	000021	433L				
EC.NQS	000051	457L				
EC.NPM	000044	452L				
EC.NRD	000010	424L				
EC.NVM	000042	450L				
EC.OTL	000053	459L				
EC.RF	000022	434L				
EC.UNA	000036	446L				
EC.UND	000015	429L				
EC.UUN	000033	443L				
EC.VPM	000041	449L				
EC.WF	000023	435L				
EC.WP	000025	437L				
EC.WPV	000024	436L				
ENL	000212	28E	545	650	686	
ENTRY	042200	490	495E			
ERROR	043220	513	517	522	588	600E
ERROR.	043226	601	604L	655		
ESC	000033	26E				
EXIT	043264	509	552	624L	656	669
FF	000014	29E				
FLAGA	047065	511	514	934L		
FLAGB	043211	561	591L			
FLAGS1	042211	505L	546	589		
FLAGS2	043050	537	548L	573		
FLAGS3	043103	557L	580			
FLAGS4	043161	563	575L			
FLAGS5	043171	560	584L			
FT.ABS	000000	467E	487			
FT.BAC	000003	470E				
FT.DD	000001	125E				
FT.OR	000002	126E				
FT.OU	000010	128E				
FT.OW	000004	127E				
FT.PIC	000001	468E				
FT.REL	000002	469E				
I.CONFL	000004	291E	292			
I.CONTY	000001	278E	279			
I.CONWI	000003	284E	285			
I.CSLMD	000000	268E				
I.CUSOR	000002	281E	282			
IOC.CGN	000010	133L				
IOC.CSI	000011	134L				
IOC.DDA	000002	122L	129	143		
IOC.DES	000016	140L				
IOC.DEV	000020	141L				
IOC.DIL	000021	143E				
IOC.DIR	000023	145L	527			
IOC.DRL	000010	137E				
IOC.DTA	000014	139L				
IOC.FLG	000004	124L	137			
IOC.GRT	000005	131L				
IOC.LGN	000012	135L				
IOC.LNK	000000	121L				
IOC.LSI	000013	136L				
IOC.SPG	000007	132L				
IOC.SQL	000003	129E				

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[illegible]

FLAGS SET/CLEAR FILE FLAGS

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CROSS REFERENCE TABLE

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S.MOUNT	041032	364L											
S.OFWA	040350	318L											
S.OMAX	040324	259L											
S.OSN	041004	347L											
S.OVLE	041000	344L											
S.OVLFL	040371	340L											
S.OVLS	040376	343L											
S.OVSTK	041035	372L											
S.RFWA	040356	321L											
S.SCI	041024	361L											
S.SCR	041120	410L											
S.SDD	041010	357L											
S.SQVR	041146	233L	235										
S.SSN	041002	346L											
S.SYSM	040320	255L											
S.TIME	040312	252L											
S.UCSF	040372	341L											
S.UCSL	040374	342L											
S.USRM	040322	257L											
S.VAL	040277	230L	248										
STACK	042200	237E											
STACKL	001032	235E											
SYDD	040130	227E											
SYSCALL	000377	158E	502	512	521	534	587	609	618	625	635	644	646
		648	795	799	813								
TAB	000011	25E											
TBL1	045310	742L	748										
TBL2	045326	740	752L										
TBL3	045330	745	756L										
TFF	045251	532	698L										
TFFA	045254	699L	706										
TFFA	045271	698	709L										
UNT.DIS	000005	77L											
UNT.FLG	000000	74L											
UNT.GRT	000001	75L											
UNT.GTS	000003	76L											
UNT.SIZ	000007	79E											
USERFWA	042200	238E	486	488	489								
VERS	000026	156E	637										

28204 BYTES FREE

