

# **FLOPPY DIAGNOSTIC LOADER/GENERATOR**

## **TEST PROGRAM (16 and 32 - Bit)**

**Consists of:**

<b>Program Description</b>	<b>06-225M95R01A15</b>
<b>Assembly Listing</b>	<b>06-225F01M96R01A13</b>
<b>Assembly Listing</b>	<b>06-225F02M91R01A13</b>

# **PERKIN-ELMER**

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FLOPPY DIAGNOSTIC LOADER/GENERATOR

1. PROGRAM TITLE

Floppy Diagnostic Loader/Generator (FDLG)

16 bit	06-225F01
32 bit	06-225F02

2. PURPOSE OF THE PROGRAM

The FDLG provides the facilities to load, build, and maintain Perkin-Elmer diagnostics on a floppy disc. The need for a paper tape diagnostic is eliminated. The Perkin-Elmer Floppy Media Disc (FMD) System is the only storage medium the FDLG supports.

3. MINIMUM HARDWARE REQUIRED

Processor: any 16 or 32-bit processor (7/32 with halfword mode, must be run in fullword mode)

Memory: 16-bit processor - 32KB  
32-bit processor - 32KB

Console: Teletype on current loop interface; address X'02'.  
or  
- Carousel 30 or 35 on current loop interface; address X'02'.  
or  
- Carousel 300 on PASLA or PALM; address X'10,11'; full duplex; highest clock rate.  
or  
- Teletype on micro-I/O bus; address X'C0'.  
or  
- CRT on micro-I/O bus; address X'C0'.  
or  
- CRT on current loop interface; address X'02'.  
or  
- Carousel 30 or 35 on micro-I/O bus; address X'C0'.  
or  
- Carousel 300 on micro-I/O bus; address X'C0'.  
or  
- CRT on PASLA or PALM; address X'10,11'; full duplex; highest clock rate.

Display Device - display panel; address X'01'

or  
- any ASCII console device as shown under console above.

List Device: Same as under "Console", plus high speed line printer; address X'62'.

Output Device: Floppy Media Disc System; address X'C1'.

Input Device: Floppy Media Disc System; address X'C1'.

#### 4. SYSTEM REQUIREMENTS

All I/O devices must have Perkin-Elmer standard addresses; if not, the following locations must be changed to reflect their actual addresses:

<u>LABEL</u>	<u>DEFAULT</u>	<u>DEVICE</u>
TTYAD	X'02'	Current Loop Device
LPAD	X'62'	Line Printer
MBUS	X'C0'	Micro-I/O Bus Console
FLPAD	X'C1'	Floppy Media Disc System

#### 5. LOADING PROCEDURES

Insert any diskette of the supplied set in the desired drive and set up addresses X'78,79' as follows:

X'78' = Floppy Media Disc (FMD) System address

X'79' = YY, where YY = 86 for drive 0  
96 for drive 1  
A6 for drive 2  
B6 for drive 3

Load the standard X'50' sequence shown below. The boot load program determines whether to load the 16-bit or 32-bit FDLG.

#### 50 SEQUENCE

<u>LOCATION</u>	<u>CONTENTS</u>
X'30'	X'0000'
X'32'	X'0000'
X'34'	X'0000'
X'36'	X'0500'
X'50'	X'D500'
X'52	X'00CF'
X'54'	X'4300'
X'56'	X'0080'

Execute the X'50' sequence and the processor will stop with X'FFFF' in the display (or 'LOAD OK' printed on the micro-I/O bus console), a successful load is indicated. (The bootloader program loaded by the autoloader retries until successful loading is accomplished; nominal successful loading time is less than 5 seconds). The FDLG loader segment may be restarted at any time by addressing X'6000' for both 16-bit processors and 32-bit processors. To execute the generator segment, address location START+4 and execute. The following is printed on the console device:

FDLG GENERATOR R01

\*

#### NOTE

The loader segment normally communicates only with the display or the system console.

The generator segment uses the halfword labeled DEVTYP to specify console type and it must be set up before executing the generator segment. Both bytes in the halfword must be set up as follows:

<u>DEVTYP</u>	<u>USE</u>
X'0101'	CRT on PASLA or PALM
X'0202'	Current loop device
X'0404'	Carousel on PASLA or PALM
X'0505'	Micro-I/O bus device

Any value in DEVTYP other than those shown is illegal and is interpreted as X'0202'.

## 6. OPERATOR COMMAND INFORMATION

### 6.1 COMMAND/OPTION INPUT STRUCTURE

An asterisk (\*), output to the console device, indicates that the program is awaiting operator input. All options must be typed in from the console, followed by a space and the desired arguments separated by commas. A carriage return (CR) is issued to terminate every command/option input. An invalid command/option or value causes a (?) followed by a carriage return (CR), line feed (LF), and an asterisk (\*) to occur. If an error is made during entry of the option, the hash mark (#) can be input to delete the entire line, causing a carriage return (CR), line feed (LF), and an asterisk (\*) to be output; or, the left arrow (←) can be input to delete the previous character or a string of characters can be deleted by inputting a (←) left arrow for each character to be deleted; the same is applicable to the DELETE character.

### 6.1.1 Delimiters And Field Termination

Either a space or comma may be used as a field delimiter. Any non-hexadecimal character input in any field (except the program name field) terminates that field; any field in excess of the maximum size allowed causes command rejection.

## 6.2 OPERATOR COMMANDS

The generator segment of the FDLG uses the following commands:

LIMITS	CREATE	DUPLICATE	INITIALIZE
FIND	UPDATE	SEQNUM	

### NOTE

The program examines each command for its first character only.

### 6.2.1 INITIALIZE

This command prepares a formatted diskette for FDLG use. It initializes the directory, writes the boot loader program to sectors 5 and 6, and finds output medium capacity. A diskette must be loaded, ready, and NOT write-protected.

Format:           INTIALIZE

Example:           \*I(CR)  
                  EOJ  
                  \*

### 6.2.2 LIMITS

This command specifies the low and high boundaries of the memory image to be written to the diskette by the CREATE or UPDATE command. Memory limits depend only on the processor type (16 or 32-bit) and available memory. The software supports a full 24 bit address.

Format:           LIMITS     LLLLLL,HHHHHH(CR)  
                  LLLLLL = low memory limits to be transferred.  
                  HHHHHH = high memory limits to be transferred.

Example:           \*L A00,27C5(CR)

NOTE

Six-digit input is only valid for 32-bit processors; 16-bit processors use four-digit input.

6.2.3   SEQNUM

This command assigns a three digit sequence number, a three digit 06- number, the program revision level and a 30-character, free-form, program description. The sequence number used for each program should be unique; if it is not unique, an error message is printed on the console when the CREATE or DUPLICATE command is executed.

Format:           SEQNUM     SSS,PPP,RR [.R] ,NNNN.....(CR)  
                  SSS       = sequence number  
                  PPP       = 06 number  
                  RR [.R]   = revision level, followed by an optional extension field indicating that the program has been patched to correct a problem with the stated revision level. The extension number corresponds to the number of change page packages incorporated. When the program is revised, all patches are programmed in and the extension field reverts to zero (a zero extension field is NOT printed when the LIST function is used).

NOTE

Not all change page packages are incorporated as they may not be applicable to all supported processors.

NNN           = program description, up to 30 characters.

Example:           S 03A,156,00,F01   MEMORY TEST PART 1(CR)

#### 6.2.4 CREATE

This command outputs a memory image to the output device using the parameters entered with LIMITS and SEQNUM.

Format: CREATE(CR)

Example: \*C  
\*EOJ  
\*

#### 6.2.5 DUPLICATE

This command duplicates the program string specified from current input program (defined by FIND command) to the termination sequence number or EOF; the string is appended to the program(s) on the output device, and the termination sequence number is copied.

#### NOTE

If any deleted programs exist on the input drive (from using the UPDATE function), they are eliminated by the DUPLICATE function when they are copied to the output device.

Format: DUPLICATE NNN(CR)  
NNN = sequence number

EXAMPLE: \*D 403  
EOJ  
  
\*D  
EOJ

#### 6.2.6 FIND

This command will search the specified volume for the specified sequence number and make that sequence number "current".

Format: FIND X,NNN(CR)  
X = I or O, specifying input (I) or output (O) volume.  
NNN = sequence number

Example: \*F I,4C  
EOJ  
\*

NOTE: Sequence number 000 is reserved for EOF.

## 6.2.7 UPDATE

This command deletes the specified sequence number from the diskette and CREATES a new program using the LIMITS and SEQNUM parameters previously entered.

Format:               UPDATE XXX(CR)  
                      XXX = sequence number to be deleted.

Example:             \*U 124(CR)  
                      EOJ  
                      \*

## 7. OPERATING PROCEDURES

This section describes the loader and generator operations.

### 7.1 LOADER PROCEDURES

Boot load the program as described in Section 5; or if already resident in memory, execute the program at X'6000' for both the 16-bit version and the 32-bit version. The processor then halts and the display contains X'FFFF'. Enter the program's sequence number (nonzero) to be loaded into the switch register/display and depress run. The FDLG reads the display and attempts to load the requested program. If the display contains X'FF', it indicates a successful load. After five retries, an error code is displayed. See Section 8 for an explanation of the error codes. If the switch register/display was set to zero, the FDLG will list the program definition block for each program on the diskette. The program assumes that the user wants a hard copy when he lists the contents of the media. To this end, the program searches for I/O device presence and availability in this order:

1. Line Printer
2. Micro-I/O bus console
3. Current loop interface
4. PASLA/PALM

If the device is present and it has correct status, it will list the media in the above priority.

#### NOTE

If the processor has no display (e.g. Model 5/16), all reference to the display is replaced by the Micro-I/O bus console. All entry is via the console keyboard and all display is in ASCII. See Section 8.1 for Micro-bus console messages.

### 7.2 GENERATOR PROCEDURES

Generator Procedures are as follows:



### 7.2.1 Device Assignments

Input/Output device selection is semiautomatic; input is whatever drive is specified in bits 2 and 3 of location X'79' (auto-load parameter) and the output drive is the other drive in the 0-1 or 2-3 even/odd pair. For example, if the boot drive is 1, input is set to 1 and output is set to 0; if the boot drive is 2, input is set to 2 and output is set to 3.

#### NOTE

The FDLG writes ONLY to the specified output drive; therefore, this drive must not be write protected.

### 7.2.2 Medium Initialization

Medium initialization of the output diskette must be done before the FDLG can use a diskette.

### 7.2.3 CREATE

This function finds the last directory entry (EOV) and adds a program in memory to the end of the directory. To create a program on a diskette follow these steps:

1. Load memory with the program to be put on the output diskette.
2. Place an initialized diskette in the output drive, without write protect.

#### NOTE

When building new media, the first two programs written to the diskette MUST be the 16 and/or 32-bit FDLG, for boot load purposes. Duplicating the first two programs from any FDLG diskette in the set supplied or by creating the FDLG twice in succession (with two unique sequence numbers) on an initialized diskette accomplishes this.

3. Boot load the FDLG from the input drive. Address X'6004' for both the 16-bit version and the 32-bit version and execute. The title (FDLG) is printed, followed by a prompt.

#### NOTE

The generator segment uses "DEVTYP" to determine which I/O device to use as a console; "DEVTYP" must be set up according to Section 5.

4. Enter the LIMITS option.
5. Enter the SEQNUM option.
6. Enter the CREATE command; the program is written to the output diskette and verified.
7. To add another program, load it into memory, start the generator at X'6004', and go to Step 4.

#### 7.2.4 DUPLICATION

To duplicate an entire diskette:

1. Boot load the FDLG from the input diskette and/or start the generator segment at X'6004'.
2. Use the FIND command to position the current program pointer for the input diskette to the desired sequence number.
3. Initialize the output diskette.
4. Issue the DUPLICATE command, with no termination sequence number. This command tells the FDLG to duplicate to EOF.

#### NOTE

The normal duplication mode is to load the input program into memory and to write it to the output diskette. This mode is only deviated from when the LIMITS of the program being copied exceed 64KB and a 16-bit processor is being used; or when the LIMITS would overwrite the resident FDLG; or memory below X'A00' for 32-bit processors, or below X'2D0' for 16-bit processors. In this special mode, the program is read and copied one, 128-byte sector at a time. The time required to duplicate a program is measureably longer and the amount of head loading and unloading is extremely noticeable.

5. To copy a section of a diskette, position the input diskette (using FIND) and issue the DUPLICATE command specifying a termination sequence number. The input diskette is copied from the current position (including the current program) to the termination sequence number (including the termination sequence number).

### 7.2.5 UPDATE

To UPDATE a program to a later revision or to replace it entirely, follow these steps:

1. Load memory with the program to be put on the output diskette.
2. Boot load the FDLG and/or restart the generator segment at X'6004'.
3. Input the LIMITS option.
4. Input the SEQNUM option.
5. Issue the UPDATE command, specifying a sequence number. The corresponding program is deleted and the new memory resident program is created on the output diskette.

#### NOTE

If the specified sequence number does not exist, the command is rejected; a question mark and prompt are output.

## 8. MESSAGES

### 8.1 LOADER MESSAGES

The loader segment messages are:

<u>Display Data</u>	<u>ASCII Message</u>	<u>Meaning</u>
FFFF	FDLG LOADER R01	Successful load
00FF	EOJ	Job completed
EEEE	EOV	Program not found
3333	I/O ERROR ON LOAD	Bad status on load
5555	ATTEMPT TO OVER-LOAD FDLG	-
1111	EOV NOT FOUND	Read complete directory and program or EOV not found.

## 8.2 GENERATOR MESSAGES

Generator segment messages are:

1. VERIFY ERROR - I/O error while verifying program just added to output diskette.
2. LOW > HIGH ERROR - low limits greater than high limits on input with LIMITS or when read from program definition block during any other function.
3. DISKETTE FULL - room does not exist on output diskette to fit a program with present parameters; a shorter program may fit.
4. DIRECTORY FULL - directory at maximum capacity (127 entries).
5. DEFECTIVE MEDIA - output medium has more than two bad tracks and cannot be used.
6. ILLEGAL INSTRUCTION - an illegal instruction has occurred. Refer to the appropriate user manual to determine where the address of the illegal instruction is stored.
7. MACHINE MALFUNCTION - a machine malfunction interrupt has occurred.
8. READ ERROR - status error on input drive.
9. DIRECTORY READ ERROR ON DRIVE X - read failed after five re-try attempts. (X = drive number)
10. WRITE ERROR ON OUTPUT DRIVE - status error on output drive.
11. ERROR ON DIRECTORY UPDATE - directory update status failure.
12. FDLG GENERATOR R01 - program title, printed when generator segment is started.
13. SEQUENCE NUMBER EXISTS ON OUTPUT MEDIA - attempt to CREATE or DUPLICATE a non-unique sequence number.

## 9. FDLG STRUCTURE

### 9.1 DIRECTORY STRUCTURE

The directory is divided into four, 128-byte blocks, with thirty-two, 4-byte entries per block. The first two bytes in each entry correspond to the hexadecimal sequence number associated with the program and the second two bytes point to the Program

Definition Block (PDB) associated with that program. The PDB always precedes the memory image of the program and it contains the sequence number, 06- part number, revision number, program name or description, number of sectors used for this program, and the memory boundary of the program. The last directory entry is usually followed by an EOF directory entry (four bytes of zeros), except when the directory is full. It is then followed by an end of directory entry (four bytes of X'FF'). A maximum of 127 entries are allowed in the directory.

## 9.2 OVERALL FILE STRUCTURE

Sectors 1-4 and 7-27 are unused; they are reserved for OS compatibility requirements. Sectors 28-31 are the directory. Sectors 5-6 are the FDLG boot loader. Sectors 32-2002 are available for program storage.

## 9.3 STARTING ADDRESSES

The FDLG starts at the following addresses:

Loader segment - X'6000'  
Generator segment - X'6004'

The upper limits of the FDLG programs are X'5FFF' (24KB) and X'7FFF' (32KB) for the 16 and 32-bit processors, respectively. Any contiguous block of memory below or above the FDLG can be used for program output.

## 9.4 SPECIAL CONSIDERATIONS

Exercise care when specifying limits for the CREATE and UPDATE functions, because dedicated memory should not normally be altered by a program load function. Also, the MAC segmentation registers should not normally be read from or written to. Dedicated memory is defined as:

16-bit machine < X'2D0'  
32-bit machine < X'A00'

PROG= FDLG16 ASSEMBLED BY CAL 03-066R07-00 (32-BIT)

		1	SCRAT		FDL00010
		2	NORX3		FDL00020
		3	WIDTH 120		FDL00030
		4	SQUEZ		FDL00040
		5	SQCHK		FDL00050
		6	CROSS		FDL00060
0000R		7	IFZ ADC-2		FDL00070
		8	FDLG16	PROG 06-225F01M96R01A13 FLOPPY DIAGNOSTIC LOADER/GENERATOR	FDL00080
		9	ELSE		FDL00090
		10	FDLG32	PROG 06-225F02M91R01A13 FLOPPY DIAGNOSTIC LOADER/GENERATOR	FDL00100
		11	ENDC		FDL00110
	0000 0000	12	R0	EQU 0	FDL00120
	0000 0001	13	R1	EQU 1	FDL00130
	0000 0002	14	R2	EQU 2	FDL00140
	0000 0003	15	R3	EQU 3	FDL00150
	0000 0004	16	R4	EQU 4	FDL00160
	0000 0005	17	R5	EQU 5	FDL00170
	0000 0006	18	R6	EQU 6	FDL00180
	0000 0007	19	R7	EQU 7	FDL00190
	0000 0008	20	R8	EQU 8	FDL00200
	0000 0009	21	R9	EQU 9	FDL00210
	0000 000A	22	RA	EQU 10	FDL00220
	0000 000B	23	RB	EQU 11	FDL00230
	0000 000C	24	RC	EQU 12	FDL00240
	0000 000D	25	RD	EQU 13	FDL00250
	0000 000E	26	RE	EQU 14	FDL00260
	0000 000F	27	RF	EQU 15	FDL00270
	0000 01CE	28	LDBUF	EQU ENDDAD-STARTAD+X'81'&X'FFFE'	FDL00280
	0000 001B	29	STDIRM	EQU 27	FDL00290
	0000 001C	30	STDIR	EQU 28	FDL00300
	0000 001F	31	ENDDIR	EQU 31	FDL00310
	0000 0020	32	STSAV	EQU 32	FDL00320
0000R	4300 01C8R	33	STARTL	B STARTL1	FDL00330
0004R	4300 1872R	34		B STARTG	FDL00340
0008R		35	DS	8 FILLER	FDL00350
0010R		36	IFZ	ADC-2	FDL00360
0010R	0505	37	DEVTYP	DC X'0505'	FDL00370
		38	ELSE		FDL00380
		39	DEVTYP	DC X'0101'	FDL00390
		40	ENDC		FDL00400
0012P	1011	41	PASAD	DC X'1011'	FDL00410
0014P	02	42	TTYAD	DB X'02'	FDL00420
0015R	62	43	LPAD	DB X'62'	FDL00430
0015R	C0	44	MBUS	DB X'C0'	FDL00440
0017P	C1	45	FLPAD	DB X'C1'	FDL00450
0018P		46	CNOP	4	FDL00460
0018P	00C0	47	DCX	0 DUMMY	FDL00470
		48	*		FDL00480
		49	* LABEL INBUF MUST BE ON A HW BOUNDARY, NOT A FW BOUNDARY		FDL00490
		50	*		FDL00500
001AR		51	INBUF	DS 128	FDL00510
009AR		52	PRTBUF	DS 72	FDL00520
00E2P		53	CONIN	DS 72	FDL00530

012AR	2A	54	ASTERISK	DB	C**					
012BR	00	55	LPFLG	DB	X'0'				FDL00540	
012CR	00	56	FLG16	DB	X'0'				FDL00550	
012DR	00	57	LDFLG	DB	X'0'				FDL00560	
012ER	00	58	RANGE	DB	X'0'				FDL00570	
012FR	00	59	F516	DB	X'0'				FDL00580	
0130R	00	60	F32	DB	X'0'				FDL00590	
0131R	EE	61	PASL2	DB	X'EE'				FDL00600	
0132R	A3	62	PASWR	DB	X'A3'				FDL00610	
0133R	A1	63	PASRD	DB	X'A1'				FDL00620	
0134R		64		CNOP	4				FDL00630	
0134R	0000	65		DCX	0		DUMMY		FDL00640	
		66	*						FDL00650	
		67	* LABEL SEQNUM MUST BE ON A HW BOUNDARY, NOT A FW BOUNDARY							FDL00660
		68	*						FDL00670	
0136R	0000	69	SEQNUM	DC	X'0'				FDL00680	
0138R	0000	70	PO6	DC	X'0'				FDL00690	
013AR	0000	71	REVLEV	DC	X'0'				FDL00700	
013CR	0000	72	LOW	DC	X'0'				FDL00710	
013ER	0A00	73		DC	X'A00'				FDL00720	
0140R	0000	74	HIGH	DC	X'0'				FDL00730	
0142R	3FFF	75		DC	X'3FFF'				FDL00740	
0144R	0000	76	LRNS	DC	X'0'				FDL00750	
0146R		77	FFORM	DS	30				FDL00760	
0164R	0000	78		DC	X'0'				FDL00770	
0166R	0000	79	NEXTI	DC	X'0'				FDL00780	
0168R	0000	80	CSNI	DC	X'0'				FDL00790	
016AR	0000	81	CSNPDBP	DC	X'0'				FDL00800	
016CR	0000	82	CSEQNUMO	DC	X'0'				FDL00810	
016ER	0000	83	CSEQNUMI	DC	X'0'				FDL00820	
0170R	0000	84	PRECMDO	DC	X'0'				FDL00830	
0172R	0000	85	PRECMDI	DC	X'0'				FDL00840	
0174R	0000	86	DIRP	DC	X'0'				FDL00850	
0176R	0000	87	DRO	DC	X'0'				FDL00860	
0178R	0000	88	DRI	DC	X'0'				FDL00870	
017AR	9894	89	TTY	DC	X'9894'				FDL00880	
017CR	079C	90	MAXLRNO	DC	X'79C'				FDL00890	
017ER	0000	91	LPDB	DC	X'0'				FDL00900	
0180R	0000	92	NSLRN	DC	X'0'				FDL00910	
0182R	0000	93	NSLRNA	DC	X'0'				FDL00920	
0184R	0000	94	TERMSEQ	DC	X'0'				FDL00930	
0186R	0000	95	CSPI	DC	X'0'				FDL00940	
0188R	0000	96	SIZEI	DC	X'0'				FDL00950	
018AR	0000	97	IPDBP	DC	X'0'				FDL00960	
018CR	0020	98	NCPDBP	DC	STSAV		aaa		FDL00970	
018ER	0000	99	TEMSAV	DC	X'0'				FDL00980	
0190R		100		CNOP	4				FDL00990	
		101	*						FDL01000	
		102	* LABEL R5SAV MUST BE ON A FW BOUNDARY							FDL01010
		103	*						FDL01020	
0190R	0000	104	R5SAV	DCX	0,0				FDL01030	
0192R	0000								FDL01040	
0194R	5345 514E 554D	105	SN	DC	C'SEQNUM'				FDL01050	
019AR	3036 4E55 4D20	106		DC	C'06NUM'				FDL01060	
01A0R	4E41 4D45	107		DC	C'NAME'				FDL01070	

01A4R	4C4F	5720	108	DC	C'LOW'	FDL01080	
01A8R	4849	4748	109	DC	C'HIGH'	FDL01090	
01ACR	5245	5620	110	DC	C'REV'	FDL01100	
01B0R			111	ALIGN	2	FDL01110	
01B0R	8800		112	STOPIT	DC X'8800'	BREAKPOINT	FDL01120
01B2R	2201		113		DC X'2201'	LOOP	FDL01130
01B4R	2411		114	SINC	LIS R1,1	LOAD DISPLAY ADDRESS	FDL01140
01B6R	C820	0040	115		LHI R2,X'40'	LOAD INCRIMENTAL CMD	FDL01150
01BAR	9E12		116		OCR R1,R2	COMMAND	FDL01160
01BCR	030D		117		BR RD	RETURN	FDL01170
01BER	2411		118	SNOR	LIS R1,1	LOAD DISPLAY ADDRESS	FDL01180
01COR	C820	0080	119		LHI R2,X'80'	LOAD NORMAL CMD	FDL01190
01C4R	9E12		120		OCR R1,R2	COMMAND	FDL01200
01C6R	030D		121		BR RD	RETURN	FDL01210
01C8P	41C0	0442R	122	STARTL1	BAL RC,CLRDIS	CLEAR DISPLAY	FDL01220
01CCR	2400		123		LIS R0,0	CLEAR	FDL01230
01CER	D200	012FR	124		STB R0,F516	CLEAR FLAG	FDL01240
01D2R	D200	0130R	125		STB R0,F32	CLEAR FLAG	FDL01250
01D6R	240F		126		LIS R0,15	SET LOAD FLAG	FDL01260
01D8R	D200	012DR	127		STB R0,LDFLG	STORE FLAG	FDL01270
01DCR	41C0	13AAR	128		BAL RC,LCORE	INIT LOW CORE	FDL01280
01E0R	41C0	181CR	129		BAL RC,FIOD	FIND I/O	FDL01290
01E4R	41C0	174AR	130		BAL RC,SETUP	PROCESS PRE-CMDS	FDL01300
01E8R	2411		131	CONL	LIS R1,1	LOAD DISPLAY ADDRESS	FDL01310
01EAR	9D12		132		SSR R1,R2	SENSE STATUS	FDL01320
01EGR	C520	0004	133		CLHI R2,X'04'	FALSE SYNC	FDL01330
01FOR	4230	0276R	134		BNE DISPLD	USE DISPLAY	FDL01340
01F4P	D320	012CR	135		LB R2,FLG16	GET FLAG	FDL01350
01F8R	0822		136		LDAR R2,R2	SET CC	FDL01360
01FAR	2333		137		BZ SET32	SET SERIES 32 FLAG	FDL01370
01FCR	4300	0358R	138		B P516	SET SERIES 16 FLAG & USE MICRO-BUS	FDL01380
0200R	2422		139	SET32	LIS R2,2	LOAD FLAG	FDL01390
0202R	D220	0130R	140		STB R2,F32	SET FLAG	FDL01400
0206R	C830	1A7CR	141	P32	LDAI R3,FOXS	LOAD ADDRESS	FDL01410
020AR	C820	0010	142		LHI R2,16	LOAD SIZE	FDL01420
020ER	41C0	1552R	143		BAL RC,PASLAD	PRINT	FDL01430
0212P	C830	012AR	144		LDAI R3,ASTERISK	LOAD ADDRESS	FDL01440
0216R	2421		145		LIS R2,1	LOAD SIZE	FDL01450
0218R	41C0	1552R	146		BAL RC,PASLAD	PRINT	FDL01460
021CR	D330	0133R	147		LB R3,PASRD	GET READ COMMAND	FDL01470
0220P	9E13		148		OCR R1,R3	COMMAND	FDL01480
0222P	2440		149		LIS R4,0	CLEAR	FDL01490
0224P	9D12		150	INP1	SSR R1,R2	SENSE STATUS	FDL01500
0225R	2081		151		BTBS 8,1	BUSY LOOP	FDL01510
0228R	9B12		152		RDR R1,R2	READ DATA	FDL01520
022AR	9A12		153		WDR R1,R2	ECHO DATA	FDL01530
022CR	C420	007F	154		NHI R2,X'7F'	STRIP PARITY	FDL01540
0230R	C520	000D	155		CLHI R2,X'0D'	CR	FDL01550
0234P	4330	03CAR	156		BE LOADIT	YES, LOAD	FDL01560
0238R	C520	0040	157		CLHI R2,C'a'	ADDRESS REQUEST??	FDL01570
023CR	4330	01B0R	158		BE STOPIT	DO BREAKPOINT	FDL01580
0240R	C520	0060	159		CLHI R2,X'60'	LOWER CASE CHECK	FDL01590
0244R	2183		160		BL COMINP1	SKIP	FDL01600
0246R	CB20	0020	161		SHI R2,X'20'	MAKE UPPER CASE	FDL01610
024AR	C520	0023	162	CONINP1	CLHI R2,X'23'	POUND SIGN	FDL01620



024ER	43B0	0206R	163		BFC	11,P32	RECYCLE	FDLO1630
0252R	C520	0008	164		CLHI	R2,X'08'	BS??	FDLO1640
* 0256R	2334		165		BE	INP2	YES	FDLO1650
0258R	C520	005F	166		CLHI	R2,X'5F'	DELETE??	FDLO1660
* 025CR	2134		167		BNE	INP3	NO	FDLO1670
025ER	9044		168	INP2	SRLS	R4,4	REMOVE LAST	FDLO1680
0260R	4300	0224R	169		B	INP1	LOOP	FDLO1690
0264R	0812		170	INP3	LDAR	R1,R2	SWAP REGISTERS	FDLO1700
0266R	41C0	0BAAR	171		BAL	RC,CONVERT	CHANGE TO HEX	FDLO1710
026AR	9144		172		SLLS	R4,4	SHIFT	FDLO1720
026CR	0641		173		OAR	R4,R1	MERGE DATA	FDLO1730
026ER	D310	0012R	174		LB	R1,PASAD	RE-LOAD ADDRESS	FDLO1740
0272R	4300	0224R	175		B	INP1	LOOP	FDLO1750
0276R	41D0	01B4R	176	DISPLD	BAL	RD,SINC	SET INCREMENTAL	FDLO1760
* 027AR	2501		177		LHI	RO,X'FFFF'	LOAD F'S	FDLO1770
027CR	9810		178		WHR	R1,R0	WRITE DATA	FDLO1780
027ER	41D0	01BER	179		BAL	RD,SNOR	SET NORMAL	FDLO1790
0282R	C800	0A0F	180	SPIO	LHI	RO,X'0A0F'	LOAD PSW CONSTANT	FDLO1800
0286R	9104		181		SLLS	RO,4	SCALE	FDLO1810
0288R	9520		182		EPSR	R2,R0	SET WAIT BIT	FDLO1820
028AR	9910		183	RDIO	RHR	R1,R0	READ DISPLAY	FDLO1830
028CR	9400		184		EXBR	RO,RO	SWAP DATA	FDLO1840
028ER	0800		185		LDAR	RO,RO	SET CC	FDLO1850
0290R	4330	0450R	186		BZ	LIST	DISPLAY=0	FDLO1860
0294R	C400	0FFF	187	COML	NHI	RO,X'FFF'	REMOVE ANY JUNK	FDLO1870
0298R	4000	016ER	188		STH	RO,CSEQNUMI	SET SEQUENCE NUMBER	FDLO1880
029CR	41C0	0442R	189		BAL	RC,CLRDIS	CLEAR DISPLAY	FDLO1890
02A0R	2482		190		LIS	R8,2	SET INPUT MODE	FDLO1900
02A2R	2400		191		LIS	RO,0	CLEAR ERROR RETURN FLAG	FDLO1910
02A4R	41E0	1602R	192		BAL	RE,RDIRECT	READ DIRECTORY	FDLO1920
02A8R	0800		193		LDAR	RO,RO	LOAD RO	FDLO1930
02AAR	4230	0338R	194		BNZ	DERPT	DIRECTORY ERROR	FDLO1940
02AER	0833		195		LDAR	R3,R3	SET R3	FDLO1950
02B0R	4330	0348R	196		BZ	EOVDIS	WRITE EOVS	FDLO1960
02B4R	41C0	11E2R	197		BAL	RC,SULH56	LOAD R5-R6	FDLO1970
02B8R	2490		198		LIS	R9,0	CLEAR ERROR RETURN FLAG	FDLO1980
02BAR	41E0	16D4R	199		BAL	RE,RDLRN	LOAD PDB	FDLO1990
02BER	0899		200		LDAR	R9,R9	LOAD R9	FDLO2000
02C0R	4230	0340R	201		BNZ	ERRRDP	LOAD ERROR	FDLO2010
02C4R	D390	012CR	202		LB	R9,FLG16	LOAD 16 BIT FLAG	FDLO2020
02C8R	4859	0020R	203		LDA	R5,INBUF+6(R9)	LOAD LOW	FDLO2030
02CCR	4869	0024R	204		LDA	R6,INBUF+10(R9)	LOAD HIGH	FDLO2040
02D0R	C550	0000R	205		CLAI	R5,STARTL	COMPARE LOW TO START	FDLO2050
* 02D4R	23B3		206		BFC	11,LERR	ERROR	FDLO2060
* 02D6R	2186		207		BL	CHKHLS	CHECK H<S	FDLO2070
* 02D8R	230D		208		B	CHKLGE	CHECK L>E	FDLO2080
02DAR	C800	5555	209	LERR	LHI	RO,X'5555'	LOAD ERROR CODE	FDLO2090
02DER	4300	030CR	210		B	PRTCODE	PRINT	FDLO2100
02E2R	CA60	0080	211	CHKHLS	AHI	R6,128	ADD MAX EXTRA SIZE	FDLO2110
02E6R	C560	0000R	212		CLAI	R6,STARTL	COMPARE HIGH TO START	FDLO2120
* 02EAR	2288		213		BNL	LERR	ERROR	FDLO2130
02ECR	CB60	0080	214		SHI	R6,128	RESTORE	FDLO2140
* 02F0P	23C5		215		B	LCONT	OK	FDLO2150
02F2R	C550	1AEBR	216	CHKLGE	CLAI	R5,LNZB	COMPARE LOW TO END	FDLO2160
* 02F6R	2382		217		BNL	LCONT	OK	FDLO2170

*	02F8R	220F	218		B	LERR	ERROR	FDL02180
	02FAR	2641	219	LCONT	AIS	R4,1	INC LRN TO 1ST OF PROGRAM	FDL02190
	02FCR	2490	220		LIS	R9,0	CLEAR ERROR RETURN FLAG	FDL02200
	02FER	41E0 16D4R	221		BAL	RE,RDLRN	READ PROGRAM	FDL02210
	0302R	0899	222		LDAR	R9,R9	LOAD ERROR FLAG	FDL02220
	0304R	4230 0340R	223		BNZ	ERRRDP	LOAD ERROR	FDL02230
	0308R	C800 00FF	224		LHI	RO,X'FF'	LOAD CODE	FDL02240
	030CR	D390 012FR	225	PRTCODE	LB	R9,F516	LOAD 516 FLAG	FDL02250
	0310R	0899	226		LDAR	R9,R9	SET CC	FDL02260
	0312R	4230 0598R	227		BNZ	D516	USE MICRO-BUS	FDL02270
	0316R	D390 0130R	228		LB	R9,F32	GET FLAG	FDL02280
	031AR	0899	229		LDAR	R9,R9	SET CC	FDL02290
	031CR	4230 061CR	230		BNZ	D32	USE PASLA	FDL02300
	0320R	41D0 01B4R	231		BAL	RD,SINC	SET INCRIMENTAL	FDL02310
	0324R	9400	232		EXBR	RO,RO	SWAP	FDL02320
	0326R	9810	233		WHR	R1,RO	WRITE DATA	FDL02330
	0328R	41D0 01BER	234		BAL	RD,SNOR	SET NORMAL	FDL02340
	032CR	4300 0282R	235		B	SPIO	STOP AT INPUT	FDL02350
	0330R	C800 DDDD	236	EODPT	LHI	RO,X'DDDD'	LOAD ERROR CODE	FDL02360
	0334R	4300 030CR	237		B	PRTCODE	PRINT	FDL02370
	0338R	C800 1111	238	DERPT	LHI	RO,X'1111'	LOAD ERROR CODE	FDL02380
	033CR	4300 030CR	239		B	PRTCODE	PRINT	FDL02390
	0340R	C800 3333	240	ERRRDP	LHI	RO,X'3333'	LOAD ERROR CODE	FDL02400
	0344R	4300 030CR	241		B	PRTCODE	PRINT	FDL02410
	0348R	C800 EEEE	242	EOVDIS	LHI	RO,X'EEEE'	LOAD ERROR CODE	FDL02420
	034CR	4300 030CR	243		B	PRTCODE	PRINT	FDL02430
	0350R	C800 00FF	244	EOVPT	LHI	RO,X'FF'	LOAD CODE	FDL02440
	0354R	4300 030CR	245		B	PRTCODE	PRINT	FDL02450
	0358R	2440	246	P515	LIS	R4,0	CLEAR R4 FOR INPUT DATA	FDL02460
	035AR	240F	247		LIS	RO,15	SET FLAG	FDL02470
	035CR	D200 012FR	248		STB	RO,F516	STORE FLAG	FDL02480
	0360R	C830 1A7CR	249		LDAI	R3,FOXS	LOAD ADDRESS	FDL02490
	0364R	C820 0010	250		LHI	R2,16	LOAD SIZE	FDL02500
	0368R	41C0 0804R	251		BAL	RC,MBO	PRINT	FDL02510
	036CR	C830 012AR	252	P516C	LDAI	R3,ASTERISK	LOAD ADDRESS	FDL02520
	0370R	2421	253		LIS	R2,1	LOAD SIZE	FDL02530
	0372R	41C0 0804R	254		BAL	RC,MBO	PRINT	FDL02540
	0376R	C830 0092	255		LHI	R3,X'92'	LOAD READ CMD	FDL02550
	037AR	9E03	256		OCR	RO,R3	COMMAND	FDL02560
	037CR	9B01	257		RDR	RO,R1	DUMMY READ	FDL02570
	037ER	41C0 03D8R	258	P516A	BAL	RC,MBSS	BUSY WAIT	FDL02580
	0382R	9BC1	259		RDR	RO,R1	READ DATA	FDL02590
	0384R	9A01	260		WDR	RO,R1	ECHO DATA	FDL02600
	0386R	C410 007F	261		NHI	R1,X'7F'	STRIP PARITY	FDL02610
	038AR	C510 0060	262		CLHI	R1,X'60'	LOWER CASE CHECK	FDL02620
	* 038ER	2183	263		BL	P516D	SKIP	FDL02630
	0390R	C810 0020	264		SHI	R1,X'20'	MAKE UPPER CASE	FDL02640
	0394R	C510 000D	265	P516D	CLHI	R1,X'0D'	CR CHECK	FDL02650
	0398R	43E0 03CAR	266		BFC	11,LOADIT	LOAD PROGRAM	FDL02660
	039CR	C510 0040	267		CLHI	R1,C'@'	ADDRESS REQUEST??	FDL02670
	03A0R	4330 01B0R	268		BE	STOPIT	DO BREAKPOINT	FDL02680
	03A4R	C510 0023	269		CLHI	R1,X'23'	POUND CHECK	FDL02690
	03A8R	43E0 036CR	270		BFC	11,P516C	RESTART INPUT	FDL02700
	03ACR	C510 005F	271		CLHI	R1,X'5F'	DELETE LAST	FDL02710
	* 03BOR	23EA	272		BFC	11,P516B	REMOVE LAST	FDL02720

	03B2R	C510	0008	273		CLHI	R1,X'08'	BS??	FDL02730
*	03B6R	2337		274		BE	P516B	YES	FDL02740
	03B8R	41C0	OBAAR	275		BAL	RC,CONVERT	CHANGE TO HEX	FDL02750
	03BCR	9144		276		SLLS	R4,4	SHIFT	FDL02760
	03BER	0641		277		OAR	R4,R1	MERGE DATA	FDL02770
	03COR	4300	037ER	278		B	P516A	READ MORE	FDL02780
	03C4R	9044		279	P516B	SRLS	R4,4	REMOVE LSD	FDL02790
	03C5R	4300	037ER	280		B	P516A	READ MORE	FDL02800
	03CAR	C440	OFFF	281	LOADIT	NHI	R4,X'FFF'	REMOVE JUNK	FDL02810
	03CER	4330	0450R	282		BZ	LIST	LIST FLOPPY	FDL02820
	03D2R	08C4		283		LDAR	RO,R4	SWAP REGISTERS	FDL02830
	03D4R	4300	0294R	284		B	COML	GO TO COMMON	FDL02840
	03D8R	9D02		285	MBSS	SSR	RO,R2	SENSE STATUS	FDL02850
	03DAR	2081		286		BTBS	8,1	BUSY LOOP	FDL02860
	03DCR	030C		287		BR	RC	RETURN	FDL02870
	03DER	2445		288	HDR	LIS	R4,5	LOAD COUNT	FDL02880
	03EOR	D3B4	0194R	289	HDR A	LB	RB,SN(R4)	LOAD	FDL02890
	03E4R	D2B4	009CR	290		STB	RB,PRTBUF+2(R4)	STORE	FDL02900
	03E8R	2741		291		SIS	R4,1	DECREMENT	FDL02910
*	03EAR	2215		292		BNM	HDR A	LOOP	FDL02920
	03ECR	2444		293		LIS	R4,4	LOAD COUNT	FDL02930
	03EER	D3B4	019AR	294	HDR 1	LB	RB,SN+6(R4)	LOAD	FDL02940
	03F2R	D2B4	00A3R	295		STB	RB,PRTBUF+9(R4)	STORE	FDL02950
	03F6R	2741		296		SIS	R4,1	DECREMENT	FDL02960
*	03F8R	2215		297		BNM	HDR 1	LOOP	FDL02970
	03FAR	2444		298		LIS	R4,4	LOAD COUNT	FDL02980
	03FCR	D3B4	019FR	299	HDR 2	LB	RB,SN+11(R4)	LOAD	FDL02990
	0400R	D2B4	00BBR	300		STB	RB,PRTBUF+33(R4)	STORE	FDL03000
	0404R	2741		301		SIS	R4,1	DECREMENT	FDL03010
*	0406R	2215		302		BNM	HDR 2	LOOP	FDL03020
	0408R	2442		303		LIS	R4,2	LOAD COUNT	FDL03030
	040AR	D3B4	01A4R	304	HDR 3	LB	RB,SN+16(R4)	LOAD	FDL03040
	040ER	D2B4	00D2R	305		STB	RB,PRTBUF+56(R4)	STORE	FDL03050
	0412R	2741		306		SIS	R4,1	DECREMENT	FDL03060
*	0414R	2215		307		BNM	HDR 3	LOOP	FDL03070
	0416R	2444		308		LIS	R4,4	LOAD COUNT	FDL03080
	0418R	D3B4	01A7R	309	HDR 4	LB	RB,SN+19(R4)	LOAD	FDL03090
	041CR	D2B4	00D9R	310		STB	RB,PRTBUF+63(R4)	STORE	FDL03100
	0420R	2741		311		SIS	R4,1	DECREMENT	FDL03110
*	0422R	2215		312		BNM	HDR 4	LOOP	FDL03120
	0424R	2442		313		LIS	R4,2	LOAD COUNT	FDL03130
	0426R	D3B4	01ACR	314	HDR 5	LB	RB,SN+24(R4)	LOAD	FDL03140
	042AR	D2B4	00A9R	315		STB	RB,PRTBUF+15(R4)	STORE	FDL03150
	042ER	2741		316		SIS	R4,1	DECREMENT	FDL03160
*	0430R	2215		317		BNM	HDR 5	LOOP	FDL03170
	0432R	C8B0	007B	318		LHI	RB,123	FOOL PRINT COUNT	FDL03180
	0436R	C840	001B	319		LHI	R4,STDIRM	FOOL LRN COUNT   aaa	FDL03190
	043AR	4040	0174R	320		STH	R4,DIRP	SAVE COUNTER	FDL03200
	043ER	4300	04E2R	321		B	LCOM1E	PRINT HEADDER	FDL03210
	0442R	41D0	01B4R	322	CLRDIS	BAL	RD,SINC	SET INCRIMENTAL	FDL03220
	0446R	2400		323		LIS	RO,0	LOAD ZERO'S	FDL03230
	0448P	9810		324		WHR	R1,RO	CLEAR DISPLAY	FDL03240
	044AR	41D0	01BER	325		BAL	RD,SNOR	SET NORMAL	FDL03250
	044ER	030C		326		BR	RC	RETURN	FDL03260
	0450R	41C0	0442R	327	LIST	BAL	RC,CLRDIS	CLEAR DISPLAY	FDL03270

0454R	D340	0015R	328	LB	R4,LPAD	LOAD PRINTER ADDRESS	FDL03280
0458R	9D45		329	SSR	R4,R5	SENSE STATUS	FDL03290
045AR	2155		330	BTFS	5,NOLP	EXAMINE OR DU ACTIVE	FDL03300
045CR	245F		331	LIS	R5,15	SET LP FLAG	FDL03310
045ER	D250	012BR	332	STB	R5,LPFLG	STORE	FDL03320
* 0462R	2304		333	B	LCOM	GO TO COMMON	FDL03330
0464R	2450		334	NOLP	LIS R5,0	CLEAR LP FLAG	FDL03340
0466R	D250	012BR	335	STB	R5,LPFLG	STORE	FDL03350
046AR	41C0	083AR	336	LCOM	BAL RC,CPD	CLEAR PRINT BUFFER	FDL03360
046ER	4300	03DER	337	B	HDR	PRINT HEADER	FDL03370
0472R	24B0		338	LCOMA	LIS RB,0	CLEAR RB	FDL03380
0474R	41C0	11E2R	339	LCOM1D	BAL RC,SULH56	LOAD R5-R6	FDL03390
0478R	2482		340		LIS R8,2	SET INPUT FLAG	FDL03400
047AR	2490		341		LIS R9,0	CLEAR ERROR RETURN FLAG	FDL03410
047CR	41E0	16D4R	342	BAL	RE,RDLRN	READ 1ST DIRECTORY BLOCK	FDL03420
0480R	0899		343	LDAR	R9,R9	LOAD ERROR FLAG	FDL03430
* 0482R	2333		344	BZ	LCOM1F	NO ERROR	FDL03440
0484R	4300	0340R	345	B	ERRRDP	LOAD ERROR	FDL03450
0488R	484B	001CR	346	LCOM1F	LH R4,INBUF+2(RB)	LOAD PDB POINTER	FDL03460
048CR	C540	7000	347		CLHI R4,X'7000'	DELETE?	FDL03470
0490R	4330	04F8R	348	BE	LCOM2	YES	FDL03480
0494R	0844		349	LDAR	R4,R4	SET CC	FDL03490
* 0496R	233E		350	BZ	EOVPTA	EOV FOUND	FDL03500
0498R	4210	04CAR	351	BM	EODPTA	EOD FOUND	FDL03510
049CR	41C0	11E2R	352	BAL	RC,SULH56	LOAD R5-R6	FDL03520
04A0R	2490		353	LIS	R9,0	CLEAR ERROR RETURN FLAG	FDL03530
04A2R	41E0	16D4R	354	BAL	RE,RDLRN	READ PDB	FDL03540
04A6R	0899		355	LDAR	R9,R9	LOAD ERROR FLAG	FDL03550
* 04A8R	2333		356	BZ	LCOM1B	NO ERROR	FDL03560
04AAR	4300	0340R	357	B	ERRRDP	LOAD ERROR	FDL03570
04AER	4300	06A0R	358	LCOM1B	B FORMAT	FORMAT PRINT BUFFER	FDL03580
04B2R	D330	012BR	359	EOVPTA	LB R3,LPFLG	GET FLAG	FDL03590
04B6R	0833		360	LDAR	R3,R3	SET CC	FDL03600
04B8R	4330	0350R	361	BZ	EOVPT	IGNORE FF TO LP	FDL03610
04BCR	2421		362	LIS	R2,1	LOAD SIZE	FDL03620
04BER	C830	1ADAR	363	LDAI	R3,TOF	LOAD ADDRESS	FDL03630
04C2R	41C0	15C8R	364	BAL	RC,PRTO	PRINT	FDL03640
04C6R	4300	0350R	365	B	EOVPT	CONTINUE	FDL03650
04CAR	D330	012BR	366	EODPTA	LB R3,LPFLG	GET FLAG	FDL03660
04CER	0833		367	LDAR	R3,R3	SET CC	FDL03670
04D0R	4330	0330R	368	BZ	EODPT	IGNORE FF TO LP	FDL03680
04D4R	2421		369	LIS	R2,1	LOAD SIZE	FDL03690
04D6R	C830	1ADAR	370	LDAI	R3,TOF	LOAD ADDRESS	FDL03700
04DAR	41C0	15C8R	371	BAL	RC,PRTO	PRINT	FDL03710
04DER	4300	0330R	372	B	EODPT	CONTINUE	FDL03720
04E2R	D330	012BR	373	LCOM1E	LB R3,LPFLG	LOAD PRTRFLAG	FDL03730
04E6R	0833		374	LDAR	R3,R3	SET CC	FDL03740
04E8R	4330	051ER	375	BZ	MBCHK	NO	FDL03750
04ECR	C820	0048	376	LHI	R2,72	LOAD SIZE	FDL03760
04FOR	C830	009AR	377	LDAI	R3,PRTRBUF	LOAD ADDRESS	FDL03770
04F4R	41C0	15C8R	378	BAL	RC,PRTO	GO PRINT	FDL03780
04F8R	26B4		379	LCOM2	AIS RB,4	INCREMENT PRINT POINTER	FDL03790
04FAR	C5E0	007D	380		CLHI RB,125	DONE	FDL03800
* 04FER	218C		381	BL	LCOM1C	LOOP	FDL03810
0500R	4840	0174R	382	LCOM2A	LH R4,DIRP	RESTORE POINTER	FDL03820

0504R	2641	383	AIS	R4,1	INCREMENT LRN POINTER	FDL03830	
0506R	4040 0174R	384	STH	R4,DIRP	SAVE POINTER	FDL03840	
050AR	C540 0020	385	CLHI	R4,STSAV	DONE @@@	FDL03850	
050ER	42B0 0472R	386	BTC	11,LCOMA	LOOP	FDL03860	
0512R	4300 0338R	387	B	DERPT	DIRECTORY HAS NO EOY OR EOD	FDL03870	
0516R	4840 0174R	388	LH	R4,DIRP	RESTORE POINTER	FDL03880	
051AR	4300 0474R	389	B	LCOM1D	LOOP	FDL03890	
051ER	D330 012FR	390	MBCHK	LB	R3,F516	LOAD 516 FLAG	FDL03900
0522R	0833	391	LDAR	R3,R3	SET CC	FDL03910	
* 0524R	2339	392	BZ	CONCHK	NOT 516(NO MICRO-BUS)	FDL03920	
0526R	C820 0048	393	LHI	R2,72	LOAD SIZE	FDL03930	
052AP	C830 009AR	394	LDAI	R3,PRTBUF	LOAD ADDRESS	FDL03940	
052ER	41C0 0804R	395	BAL	RC,MBO	GO PRINT	FDL03950	
0532R	4300 04F8R	396	B	LCOM2	CONTINUE	FDL03960	
0536R	2422	397	CONCHK	LIS	R2,2	LOAD CLI ADDRESS	FDL03970
0538R	9D23	398	SSR	R2,R3	SENSE STATUS	FDL03980	
053AR	C530 0004	399	CLHI	R3,X'04'	FALSE SYNC CHECK	FDL03990	
* 053ER	23BC	400	BFC	11,PASCHK	NOT CLI	FDL04000	
0540R	C330 0001	401	THI	R3,X'01'	DU TEST	FDL04010	
* 0544R	2129	402	BP	PASCHK	CLI IS DU	FDL04020	
0546R	C820 0048	403	LHI	R2,72	LOAD SIZE	FDL04030	
054AR	C830 009AR	404	LDAI	R3,PRTBUF	LOAD ADDRESS	FDL04040	
054ER	41C0 0B72R	405	BAL	RC,TTYO	GO PRINT	FDL04050	
0552R	4300 04F8R	406	B	LCOM2	CONTINUE	FDL04060	
0556R	D320 0013R	407	PASCHK	LB	R2,PASAD+1	LOAD TRANSMIT ADDRESS	FDL04070
055AR	9D23	408	SSR	R2,R3	SENSE STATUS	FDL04080	
055CR	C530 0004	409	CLHI	R3,X'04'	FALSE SYNC CHECK	FDL04090	
0560R	43B0 04F8R	410	BFC	11,LCOM2	NOT PASLA	FDL04100	
0564R	C530 000C	411	CLHI	R3,X'0C'	DU CHECK	FDL04110	
0568R	43B0 04F8R	412	BFC	11,LCOM2	PASLA DU	FDL04120	
056CR	C820 0048	413	LHI	R2,72	LOAD SIZE	FDL04130	
0570R	C830 009AR	414	LDAI	R3,PRTBUF	LOAD ADDRESS	FDL04140	
0574R	41C0 1552R	415	BAL	RC,PASLAO	GO PRINT	FDL04150	
0578R	4300 04F8R	416	B	LCOM2	CONTINUE	FDL04160	
057CR	C590 000F	417	CONVB	CLHI	R9,X'F'	COMPARE TO MAX HEX VALUE	FDL04170
* 0580R	23B2	418	BFC	11,CONVB3	OK	FDL04180	
* 0582R	2388	419	BFC	8,CONVB2	NON HEX DIGIT	FDL04190	
0584R	CA90 0030	420	CONVB3	AHI	R9,X'30'	COMPENSATE FOR 0-9	FDL04200
0588R	C590 003A	421	CLHI	R9,X'3A'	NUMBER EQUALS A-F	FDL04210	
* 058CR	2182	422	BL	CONVB1	DONE	FDL04220	
058ER	2697	423	AIS	R9,7	COMPENSATE FOR A-F	FDL04230	
0590R	030D	424	CONVB1	BR	RD	RETURN	FDL04240
0592R	C890 0020	425	CONVB2	LHI	R9,X'20'	LOAD BLANK	FDL04250
0596R	2203	426	BS	CONVB1	EXIT	FDL04260	
0598R	C500 00FF	427	D516	CLHI	R0,X'FF'	EOJ	FDL04270
* 059CR	21B9	428	BTC	11,D516A	NEXT	FDL04280	
059ER	D320 1AEOR	429	LB	R2,EOJMSG	LOAD SIZE	FDL04290	
05A2R	C830 19AOR	430	LDAI	R3,EOJMSG	LOAD ADDRESS	FDL04300	
05A6R	41C0 0804R	431	BAL	RC,MBO	GO PRINT	FDL04310	
05AAR	4300 036CR	432	B	P516C	INPUT	FDL04320	
05AER	C500 EEEE	433	D516A	CLAI	R0,X'EEEE'	EOY	FDL04330
* 05B2R	21B9	434	BTC	11,D516B	NEXT	FDL04340	
05B4R	D320 1AEOR	435	LB	R2,EOVMS	LOAD SIZE	FDL04350	
05B8R	C830 1A66R	436	LDAI	R3,EOVM	LOAD ADDRESS	FDL04360	
05BCR	41C0 0804R	437	BAL	RC,MBO	GO PRINT	FDL04370	

05COR	4300	036CR	438	B	P516C	INPUT	FDL04380
05C4P	C500	3333	439	D516B	CLHI R0,X'3333'	LOAD STATUS ERROR	FDL04390
* 05C8R	21B9		440		BTC 11,D516C	NEXT	FDL04400
05CAR	D320	1AE7R	441		LB R2,LSERRMS	LOAD SIZE	FDL04410
05CER	C830	1A3CR	442		LDAI R3,LSERRM	LOAD ADDRESS	FDL04420
05D2R	41C0	0804R	443		BAL RC,MBO	GO PRINT	FDL04430
05D6R	4300	036CR	444		B P516C	INPUT	FDL04440
05DAR	C500	5555	445	D516C	CLHI R0,X'5555'	OVERLOAD ERROR	FDL04450
* 05DER	21B9		446		BTC 11,D516D	NEXT	FDL04460
05EOR	D320	1AE8R	447		LB R2,LERRMS	LOAD SIZE	FDL04470
05E4R	C830	1A4ER	448		LDAI R3,LERRM	LOAD ADDRESS	FDL04480
05E8R	41C0	0804R	449		BAL RC,MBO	GO PRINT	FDL04490
05ECR	4300	036CR	450		B P516C	INPUT	FDL04500
05FOR	C500	1111	451	D516D	CLHI R0,X'1111'	EOD ERROR	FDL04510
* 05F4R	21B9		452		BTC 11,D516E	NEXT	FDL04520
05F6R	D320	1ADDR	453		LB R2,E0VRTNMS	LOAD SIZE	FDL04530
05FAR	C830	1966R	454		LDAI R3,E0VRTNM	LOAD ADDRESS	FDL04540
05FER	41C0	0804R	455		BAL RC,MBO	PRINT	FDL04550
0602R	4300	036CR	456		B P516C	INPUT	FDL04560
0606R	C500	DDDD	457	D516E	CLHI R0,X'DDDD'	EOD ERROR	FDL04570
* 060AR	2137		458		BNE D516F	EXPANSION	FDL04580
060CR	D320	1AE0R	459		LB R2,EODERRS	LOAD SIZE	FDL04590
0610R	C830	1962R	460		LDAI R3,EODERR	LOAD ADDRESS	FDL04600
0614P	41C0	0804R	461		BAL RC,MBO	PRINT	FDL04610
0618R	4300	036CR	462	D516F	B P516C	INPUT	FDL04620
061CR	C500	00FF	463	D32	CLHI R0,X'FF'	EOJ	FDL04630
* 0620R	21B9		464		BTC 11,D320A	NEXT	FDL04640
0622R	D320	1AE0R	465		LB R2,EOJMSSG	LOAD SIZE	FDL04650
0626R	C830	19A0R	466		LDAI R3,EOJMSG	LOAD ADDRESS	FDL04660
062AR	41C0	1552R	467		BAL RC,PASLAO	GO PRINT	FDL04670
062ER	4300	0206R	468		B P32	INPUT	FDL04680
0632R	C500	EEEE	469	D320A	CLHI R0,X'EEEE'	EOV	FDL04690
* 0636R	21B9		470		BTC 11,D320B	NEXT	FDL04700
0638R	D320	1AE0R	471		LB R2,EOVMS	LOAD SIZE	FDL04710
063CP	C830	1A66R	472		LDAI R3,EOVM	LOAD ADDRESS	FDL04720
0640R	41C0	1552R	473		BAL RC,PASLAO	GO PRINT	FDL04730
0644P	4300	0206R	474		B P32	INPUT	FDL04740
0648R	C500	3333	475	D320B	CLHI R0,X'3333'	LOAD STATUS ERROR	FDL04750
* 064CP	21B9		476		BTC 11,D320C	NEXT	FDL04760
064ER	D320	1AE7R	477		LB R2,LSERRMS	LOAD SIZE	FDL04770
0652R	C830	1A3CR	478		LDAI R3,LSERRM	LOAD ADDRESS	FDL04780
0656R	41C0	1552R	479		BAL RC,PASLAO	GO PRINT	FDL04790
065AR	4300	0206R	480		B P32	INPUT	FDL04800
065ER	C500	5555	481	D320C	CLHI R0,X'5555'	OVERLOAD ERROR	FDL04810
* 0662R	21B9		482		BTC 11,D320D	NEXT	FDL04820
0664R	D320	1AE8R	483		LB R2,LERRMS	LOAD SIZE	FDL04830
0668R	C830	1A4ER	484		LDAI R3,LERRM	LOAD ADDRESS	FDL04840
066CP	41C0	1552R	485		BAL RC,PASLAO	GO PRINT	FDL04850
0670R	4300	0206R	486		B P32	INPUT	FDL04860
0674P	C500	1111	487	D320D	CLHI R0,X'1111'	EOD ERROR	FDL04870
* 0678R	21B9		488		BTC 11,D320E	NEXT	FDL04880
067AR	D320	1ADDR	489		LB R2,E0VRTNMS	LOAD SIZE	FDL04890
067ER	C830	1966R	490		LDAI R3,E0VRTNM	LOAD ADDRESS	FDL04900
0682R	41C0	1552R	491		BAL RC,PASLAO	PRINT	FDL04910
0686R	4300	0206R	492		B P32	INPUT	FDL04920

068AR	C500	DDDD	493	D320E	CLHI	RO,X'DDDD'	EOD ERROR	FDL04930
* 068ER	2137		494		BNE	D320F	EXPANSION	FDL04940
0690R	D320	1AEOR	495		LB	R2,EODERRS	LOAD SIZE	FDL04950
0694R	C830	1962R	496		LDAI	R3,EODERR	LOAD ADDRESS	FDL04960
0698R	41C0	1552R	497		BAL	RC,PASLAO	PRINT	FDL04970
069CR	4300	0206R	498	D320F	B	P32	INPUT	FDL04980
06A0R	41C0	083AR	499	FORMAT	BAL	RC,CPD	CLEAR PRINT BUFFER	FDL04990
06A4R	4890	001AR	500		LH	R9,INBUF	LOAD SEQUENCE NUMBER	FDL05000
06A8R	4330	0350R	501		BZ	EOVPT	EOV	FDL05010
06ACR	4210	0350R	502		BM	EOVPT	EOD	FDL05020
06BOR	D390	001AR	503		LB	R9,INBUF	LOAD 1ST DIGIT	FDL05030
06B4R	41D0	057CR	504		BAL	RD,CONVB	CONVERT	FDL05040
06B8R	D290	009ER	505		STB	R9,PRTBUF+4	STORE	FDL05050
06BCR	D390	001BR	506		LB	R9,INBUF+1	LOAD NEXT 2	FDL05060
06COR	9094		507		SRLS	R9,4	REMOVE 3RD	FDL05070
06C2R	41D0	057CR	508		BAL	RD,CONVB	CONVERT	FDL05080
06C6R	D290	009FR	509		STB	R9,PRTBUF+5	STORE	FDL05090
06CAR	D390	001BR	510		LB	R9,INBUF+1	RELOAD	FDL05100
06CER	C490	000F	511		NHI	R9,X'OF'	REMOVE SECOND	FDL05110
06D2R	41D0	057CR	512		BAL	RD,CONVB	CONVERT	FDL05120
06D6R	D290	00AOR	513		STB	R9,PRTBUF+6	STORE	FDL05130
06DAR	D390	001CR	514		LB	R9,INBUF+2	LOAD 1ST	FDL05140
06DER	41D0	057CR	515		BAL	RD,CONVB	CONVERT	FDL05150
06E2R	D290	00A4R	516		STB	R9,PRTBUF+10	STORE	FDL05160
06E6R	D390	001DR	517		LB	R9,INBUF+3	LOAD NEXT 2	FDL05170
06EAR	9094		518		SRLS	R9,4	REMOVE 3RD	FDL05180
06ECR	41D0	057CR	519		BAL	RD,CONVB	CONVERT	FDL05190
06FOR	D290	00A5R	520		STB	R9,PRTBUF+11	STORE	FDL05200
06F4R	D390	001DR	521		LB	R9,INBUF+3	RELOAD	FDL05210
06F8R	C490	000F	522		NHI	R9,X'OF'	REMOVE 2ND	FDL05220
06FCR	41D0	057CR	523		BAL	RD,CONVB	CONVERT	FDL05230
0700R	D290	00A6R	524		STB	R9,PRTBUF+12	STORE	FDL05240
0704R	D390	001FR	525		LB	R9,INBUF+5	LOAD 1ST+2ND	FDL05250
0708R	9094		526		SRLS	R9,4	REMOVE 2ND	FDL05260
070AR	41D0	057CR	527		BAL	RD,CONVB	CONVERT	FDL05270
070ER	D290	00A9R	528		STB	R9,PRTBUF+15	STORE	FDL05280
0712R	D390	001FR	529		LB	R9,INBUF+5	RELOAD	FDL05290
0716R	C490	000F	530		NHI	R9,X'OF'	REMOVE 1ST	FDL05300
071AR	41D0	057CR	531		BAL	RD,CONVB	CONVERT	FDL05310
071ER	D290	00AAR	532		STB	R9,PRTBUF+16	STORE	FDL05320
0722R	D390	001ER	533		LB	R9,INBUF+4	LOAD EXTENSION DIGIT	FDL05330
0726R	9094		534		SRLS	R9,4	SCALE	FDL05340
* 0728R	2339		535		BZ	FMTA	SKIP (FIELD=0)	FDL05350
072AR	41D0	057CR	536		BAL	RD,CONVB	CONVERT	FDL05360
072ER	D290	00ACR	537		STB	R9,PRTBUF+18	STORE	FDL05370
0732R	C890	002E	538		LHI	R9,C'.'	LOAD DECIMAL POINT	FDL05380
0736R	D290	00ABR	539		STB	R9,PRTBUF+17	STORE	FDL05390
073AR	24A0		540	FMTA	LIS	RA,0	CLEAR RA	FDL05400
073CR	D39A	002AR	541	FLOOP	LB	R9,INBUF+16(RA)	LOAD	FDL05410
0740R	D29A	00BOR	542		STB	R9,PRTBUF+22(RA)	MOVE	FDL05420
0744R	26A1		543		AIS	RA,1	INCREMENT COUNT	FDL05430
0746R	C5A0	001E	544		CLHI	RA,30	DONE	FDL05440
* 074AR	20B7		545		BTC	11,FLOOP	LOOP	FDL05450
074CR	D390	0021R	546		LB	R9,INBUF+7	LOAD MSB	FDL05460
0750R	9094		547		SRLS	R9,4	REMOVE LOWER	FDL05470

0752R	41D0	057CR	548	BAL	RD,CONVB	CONVERT	FDL05480	
0756R	D290	00D0R	549	STB	R9,PRTBUF+54	STORE	FDL05490	
075AR	D390	0021R	550	LB	R9,INBUF+7	RELOAD	FDL05500	
075ER	C490	000F	551	NHI	R9,X'OF'	REMOVE UPPER	FDL05510	
0762R	41D0	057CR	552	BAL	RD,CONVB	CONVERT	FDL05520	
0766R	D290	00D1R	553	STB	R9,PRTBUF+55	STORE	FDL05530	
076AR	D390	0022R	554	LB	R9,INBUF+8	LOAD NEXT 2	FDL05540	
076ER	9094		555	SRLS	R9,4	REMOVE LOWER	FDL05550	
0770R	41D0	057CR	556	BAL	RD,CONVB	CONVERT	FDL05560	
0774R	D290	00D2R	557	STB	R9,PRTBUF+56	STORE	FDL05570	
0778R	D390	0022R	558	LB	R9,INBUF+8	RELOAD	FDL05580	
077CR	C490	000F	559	NHI	R9,X'OF'	REMOVE UPPER	FDL05590	
0780R	41D0	057CR	560	BAL	RD,CONVB	CONVERT	FDL05600	
0784R	D290	00D3R	561	STB	R9,PRTBUF+57	STORE	FDL05610	
0788R	D390	0023R	562	LB	R9,INBUF+9	LOAD LAST 2	FDL05620	
078CR	9094		563	SRLS	R9,4	REMOVE LOWER	FDL05630	
078ER	41D0	057CR	564	BAL	RD,CONVB	CONVERT	FDL05640	
0792R	D290	00D4R	565	STB	R9,PRTBUF+58	STORE	FDL05650	
0796R	D390	0023R	566	LB	R9,INBUF+9	RELOAD	FDL05660	
079AR	C490	000F	567	NHI	R9,X'OF'	REMOVE UPPER	FDL05670	
079ER	41D0	057CR	568	BAL	RD,CONVB	CONVERT	FDL05680	
07A2R	D290	00D5R	569	STB	R9,PRTBUF+59	STORE	FDL05690	
07A6R	D390	0025R	570	LB	R9,INBUF+11	LOAD MSB	FDL05700	
07AAR	9094		571	SRLS	R9,4	REMOVE LOWER	FDL05710	
07ACR	41D0	057CR	572	BAL	RD,CONVB	CONVERT	FDL05720	
07BOR	D290	00D9R	573	STB	R9,PRTBUF+63	STORE	FDL05730	
07B4R	D390	0025R	574	LB	R9,INBUF+11	RELOAD	FDL05740	
07B8R	C490	000F	575	NHI	R9,X'OF'	REMOVE UPPER	FDL05750	
07BCR	41D0	057CR	576	BAL	RD,CONVB	CONVERT	FDL05760	
07COR	D290	00DAR	577	STB	R9,PRTBUF+64	STORE	FDL05770	
07C4R	D390	0026R	578	LB	R9,INBUF+12	LOAD NEXT 2	FDL05780	
07C8R	9094		579	SRLS	R9,4	REMOVE LOWER	FDL05790	
07CAR	41D0	057CR	580	BAL	RD,CONVB	CONVERT	FDL05800	
07CER	D290	00DBR	581	STB	R9,PRTBUF+65	STORE	FDL05810	
07D2R	D390	0026R	582	LB	R9,INBUF+12	RELOAD	FDL05820	
07D6R	C490	000F	583	NHI	R9,X'OF'	REMOVE UPPER	FDL05830	
07DAR	41D0	057CR	584	BAL	RD,CONVB	CONVERT	FDL05840	
07DER	D290	00DCR	585	STB	R9,PRTBUF+66	STORE	FDL05850	
07E2R	D390	0027R	586	LB	R9,INBUF+13	LOAD LAST 2	FDL05860	
07E6R	9094		587	SRLS	R9,4	REMOVE LOWER	FDL05870	
07E8R	41D0	057CR	588	BAL	RD,CONVB	CONVERT	FDL05880	
07ECR	D290	00DDR	589	STB	R9,PRTBUF+67	STORE	FDL05890	
07FOR	D390	0027R	590	LB	R9,INBUF+13	RELOAD	FDL05900	
07F4R	C490	000F	591	NHI	R9,X'OF'	REMOVE UPPER	FDL05910	
07F8R	41D0	057CR	592	BAL	RD,CONVB	CONVERT	FDL05920	
07FCR	D290	00DER	593	STB	R9,PRTBUF+68	STORE	FDL05930	
0800R	4300	04E2R	594	B	LCOM1E	RETURN	FDL05940	
0804R	D300	0016R	595	MB0	LB	RO,MBUS	LOAD CCNSOLE ADDRESS	FDL05950
0808R	2412		596	LIS	R1,2	LOAD WRITE CMD	FDL05960	
080AR	9EC1		597	OCR	RO,R1	COMMAND	FDL05970	
080CR	2309		598	B	MB2	SKIP	FDL05980	
080ER	9D04		599	MB1	SSR	RO,R4	SENSE STATUS	FDL05990
0810R	2081		600	BTBS	8,1	BUSY LOOP	FDL06000	
0812R	DA03	0000	601	WD	RO,0(R3)	WRITE DATA	FDL06010	
0816R	2631		602	AIS	R3,1	INCREMENT BUFFER POINTER	FDL06020	



0818R	2721	603	SIS	R2,1	DECREMENT COUNT	FDL06030	
* 081AR	2036	604	BNZ	MB1	LOOP	FDL06040	
081CR	030C	605	BR	RC	RETURN	FDL06050	
081EP	241D	606	MB2	LIS	R1,13	LOAD CR	FDL06060
0820R	9D04	607	SSR	R0,R4	SENSE STATUS	FDL06070	
0822P	2081	608	BTBS	8,1	BUSY LOOP	FDL06080	
0824R	9A01	609	WDR	R0,R1	WRITE DATA	FDL06090	
0826R	241A	610	LIS	R1,10	LOAD LF	FDL06100	
0828R	9D04	611	SSR	R0,R4	SENSE STATUS	FDL06110	
082AR	2081	612	BTBS	8,1	BUSY LOOP	FDL06120	
082CR	9A01	613	WDR	R0,R1	WRITE DATA	FDL06130	
082ER	2511	614	LCS	R1,1	LOAD NULL	FDL06140	
0830R	9DC4	615	SSR	R0,R4	SENSE STATUS	FDL06150	
0832R	2081	616	BTBS	8,1	BUSY LOOP	FDL06160	
0834R	9A01	617	WDR	R0,R1	WRITE DATA	FDL06170	
0836R	4300 080ER	618	B	MB1	SKIP	FDL06180	
083AR	C890 0049	619	CPD	LHI	R9,73	LOAD R9	FDL06190
083ER	C8A0 0020	620	LHI	RA,X'20'	LOAD ASCII BLANK	FDL06200	
0842R	2791	621	CPD1	SIS	R9,1	DECREMENT COUNT	FDL06210
* 0844R	D2A9 009AR	622	STB	RA,PRTBUF(R9)	CLEAR	FDL06220	
0848R	2033	623	BNZ	CPD1	LOOP	FDL06230	
084AR	030C	624	BR	RC	RETURN	FDL06240	
	0000 084CR	625	STARTAD	EQU	*	FDL06250	
084CR	2440	626	BOOTST	LIS	R4,0	LOAD	FDL06260
084ER	2303	627	BS	BOOT1	SKIP	FDL06270	
0850R	4000	628	DC	X'4000'		FDL06280	
0852P	4010	629	DC	X'4010'		FDL06290	
0854R	4040 0022	630	BOOT1	STH	R4,X'22'	REGISTER SAVE POINTER(16BIT)	FDL06300
0858R	C840 001C	631	LHI	R4,STDIR	LOAD DIRECTORY LRN	000	FDL06310
085CR	D310 0078	632	LB	R1,X'78'	LOAD DEVICE ADDRESS		FDL06320
0860R	D320 0079	633	LB	R2,X'79'	LOAD BOOT CMD		FDL06330
0864R	C420 0030	634	NHI	R2,X'30'	REMOVE DRIVE #		FDL06340
0868R	C620 00C7	635	OHI	R2,X'C7'	SET STOP CMD		FDL06350
086CR	C850 00D0	636	LHI	R5,X'D0'	LOAD START		FDL06360
0870R	C860 0999R	637	LHI	R6,ENDAD	LOAD END		FDL06370
0874R	CB60 084CR	638	SHI	R6,STARTAD	FIND REAL SIZE		FDL06380
0878R	CA60 00D0	639	AHI	R6,X'D0'	ADD IN REAL BIAS		FDL06390
		640	* LOAD REST OF	BOOTLOADER			FDL06400
087CR	9D13	641	BOOT1B	SSR	R1,R3	SENSE STATUS	FDL06410
087ER	2081	642	BTBS	8,1	WAIT FOR BUSY NOT		FDL06420
0880R	D915 0000	643	RH	R1,0(R5)	READ DATA		FDL06430
0884R	2652	644	AIS	R5,2	BUMP		FDL06440
0886R	0565	645	CLAR	R6,R5	DONE??		FDL06450
0888R	2286	646	BNCS	BOOT1B	NO, LOOP		FDL06460
088AR	9D13	647	SSR	R1,R3	SENSE FINAL STATUS		FDL06470
088CR	2152	648	BTFS	5,REDOBL	RETRY BOOT LOAD		FDL06480
088ER	230E	649	BS	STOPA	STOP BOOT LOAD		FDL06490
0890R	C850 D500	650	REDOBL	LHI	R5,X'D500'	SETUP	FDL06500
0894R	4050 0050	651	STH	R5,X'50'	AUTOLOAD		FDL06510
0898R	C850 00CF	652	LHI	R5,X'CF'	PARAMETERS		FDL06520
089CR	4050 0052	653	STH	R5,X'52'	ON ERROR		FDL06530
08A0R	9E12	654	OCR	R1,R2	STOP		FDL06540
08A2R	9D13	655	SSR	R1,R3	SENSE STATUS		FDL06550
08A4R	2221	656	BFBS	2,1	IDLE NOT LOOP		FDL06560
08A6R	4300	657	DC	X'4300'	JUMP TO		FDL06570

08A8R	0050	658		DC	X'50'	AUTOLOAD & RETRY	FDL06580
08AAR	9E12	659	STOPA	OCR	R1,R2	STOP BOOT LOAD	FDL06590
08ACP	9D13	660	IDLE	SSR	R1,R3	SENSE STATUS	FDL06600
08AER	2221	661		BFBS	2,1	IDLE NOT LOOP	FDL06610
08BOR	C850 01CE	662		LDAI	R5,LDBUF	LOAD START	FDL06620
08B4R	C860 01EE	663		LDAI	R6,LDBUF+32	LOAD END	FDL06630
08B8R	9814	664		WHR	R1,R4	WRITE LRN TO CONTROLLER	FDL06640
08BAR	2726	665		SIS	R2,6	CHANGE STOP TO READ	FDL06650
08BCR	9E12	666		OCR	R1,R2	READ	FDL06660
		667	* READ DIRECTORY				FDL06670
08BER	9D13	668	BOOT1C	SSR	R1,R3	SENSE STATUS	FDL06680
08COR	2081	669		BTBS	8,1	WAIT FOR BUSY NOT	FDL06690
08C2R	D915 0000	670		RH	R1,0(R5)	READ DATA	FDL06700
08C6R	2652	671		AIS	R5,2	BUMP	FDL06710
08C8R	0565	672		CLAR	R6,R5	DONE??	FDL06720
08CAR	2286	673		BNCS	BOOT1C	NO, LOOP	FDL06730
08CCR	9D13	674		SSR	R1,R3	SENSE FINAL STATUS	FDL06740
08CER	2152	675		BTFS	5,REDO	ERROR RETRY	FDL06750
08DOR	236A	676		BS	STOP1	ISSUE STOP	FDL06760
08D2R	2626	677	REDO	AIS	R2,6	CHANGE READ TO STOP	FDL06770
08D4R	9E12	678		OCR	R1,R2	STOP	FDL06780
08D6R	C830 08ACR	679		LDAI	R3,IDLE	GET BRANCH ADDRESS	FDL06790
08DAR	CB30 084CR	680		SHI	R3,STARTAD	GET SIZE	FDL06800
08DER	CA30 0080	681		AHI	R3,X'80'	ADD IN REAL CORRECTED BIAS	FDL06810
08E2R	03C3	682		BR	R3	BRANCH	FDL06820
08E4R	2626	683	STOP1	AIS	R2,6	CHANGE READ TO STOP	FDL06830
08E6R	9E12	684		OCR	R1,R2	STOP	FDL06840
08E8R	9E13	685		SSR	R1,R3	SENSE STATUS	FDL06850
08EAR	2221	686		BFBS	2,1	IDLE NOT LOOP	FDL06860
08ECR	C840 4000	687		LHI	R4,X'4000'	LOAD TEST DATA	FDL06870
08F0R	0A44	688		AAR	R4,R4	DOUBLE	FDL06880
08F2R	2115	689		BMS	IS16	16 BIT MACHINE	FDL06890
08F4R	2470	690		LIS	R7,0	SET 32 FLAG	FDL06900
08F6R	4840 01D4	691		LH	R4,LDBUF+6	LOAD 32 BIT PDB POINTER	FDL06910
08FAR	236A	692		BS	COM	SKIP	FDL06920
08FCR	4840 01D0	693	IS16	LH	R4,LDBUF+2	LOAD 16 BIT PDB POINTER	FDL06930
0900R	2472	694		LIS	R7,2	CLEAR 32 FLAG	FDL06940
0902R	C850 01CE	695	COM	LDAI	R5,LDBUF	LOAD START	FDL06950
0906R	C860 024D	696		LDAI	R6,LDBUF+127	LOAD END	FDL06960
090AR	9814	697	COM1	WHR	R1,R4	WRITE LRN OF PDB TO CONTROLLER	FDL06970
090CR	2726	698		SIS	R2,6	CHANGE STOP TO READ	FDL06980
090ER	9E12	699		OCR	R1,R2	READ	FDL06990
		700	* READ PDB				FDL07000
0910R	9D13	701	BOOT1D	SSR	R1,R3	SENSE STATUS	FDL07010
0912R	2081	702		BTBS	8,1	WAIT FOR BUSY NOT	FDL07020
0914R	D915 0000	703		RH	R1,0(R5)	READ DATA	FDL07030
0918R	2652	704		AIS	R5,2	BUMP	FDL07040
091AR	0565	705		CLAR	R6,R5	DONE??	FDL07050
091CR	2286	706		BNCS	BOOT1D	NO, LOOP	FDL07060
091ER	9D13	707		SSR	R1,R3	SENSE FINAL STATUS	FDL07070
0920R	2152	708		BTFS	5,REDO1	ERROR RETRY	FDL07080
0922R	230C	709		BS	RDLDRGEN	READ PROGRAM	FDL07090
0924R	2626	710	REDO1	AIS	R2,6	CHANGE READ TO STOP	FDL07100
0926R	9E12	711		OCR	R1,R2	STOP	FDL07110
0928R	9D13	712		SSR	R1,R3	SENSE STATUS	FDL07120

092AR	2221	713	BFBS	2,1	IDLE NOT LOOP	FDL07130
092CR	C830 0902R	714	LDAI	R3,COM	GET BRANCH ADDRESS	FDL07140
0930R	CB30 084CR	715	SHI	R3,STARTAD	GET SIZE	FDL07150
0934R	CA30 0080	716	AHI	R3,X'80'	ADD IN REAL CORRECTED BIAS	FDL07160
0938R	0303	717	BR	R3	BRANCH	FDL07170
093AR	2626	718	RDLDRGEN	AIS R2,6	CHANGE READ TO STOP	FDL07180
093CR	9E12	719	OCR	R1,R2	STOP	FDL07190
093ER	9D13	720	SSR	R1,R3	SENSE STATUS	FDL07200
0940R	2221	721	BFBS	2,1	IDLE NOT LOOP	FDL07210
0942R	2726	722	SIS	R2,6	CHANGE STOP TO READ	FDL07220
0944R	2641	723	AIS	R4,1	INCREMENT LRN TO PROGRAM	FDL07230
0946R	4850 01D6	724	REDO3	LH R5,LDBUF+8	LOAD LOW	FDL07240
094AR	4050 0992R	725	STH	R5,BOOTEN16	STORE TRANSFER	FDL07250
094ER	4050 0998R	726	STH	R5,BOOTEN32	STORE TRANSFER	FDL07260
0952R	4860 01DA	727	LH	R6,LDBUF+12	LOAD HIGH	FDL07270
0956R	9814	728	WHR	R1,R4	WRITE LRN OF PROGRAM	FDL07280
0958R	9E12	729	OCR	R1,R2	READ	FDL07290
		730	* READ LOADER/GENERATOR PROGRAM			FDL07300
095AR	9D13	731	BOOT1E	SSR R1,R3	SENSE STATUS	FDL07310
095CR	2081	732	BTBS	8,1	WAIT FOR BUSY NOT	FDL07320
095ER	D915 0000	733	RH	R1,0(R5)	READ DATA	FDL07330
0962R	2652	734	AIS	R5,2	BUMP	FDL07340
0964R	0565	735	CLAR	R6,R5	DONE??	FDL07350
0966R	2286	736	BNCS	BOOT1E	NO, LOOP	FDL07360
0968R	9D13	737	SSR	R1,R3	SENSE FINAL STATUS	FDL07370
096AR	2152	738	BTFS	5,REDO2	ERROR RETRY	FDL07380
096CR	230C	739	BS	TURNOVER	TURNOVER CONTROL	FDL07390
096ER	2626	740	REDO2	AIS R2,6	CHANGE READ TO STOP	FDL07400
0970R	9E12	741	OCR	R1,R2	STOP	FDL07410
0972R	9D13	742	SSR	R1,R3	SENSE STATUS	FDL07420
0974R	2221	743	BFBS	2,1	IDLE NOT LOOP	FDL07430
0976R	C830 0946R	744	LDAI	R3,REDO3	GET BRANCH ADDRESS	FDL07440
097AR	CB30 084CR	745	SHI	R3,STARTAD	GET SIZE	FDL07450
097ER	CA30 0080	746	AHI	R3,X'80'	ADD IN REAL CORRECTED BIAS	FDL07460
0982R	0303	747	BR	R3	BRANCH	FDL07470
0984R	2626	748	TURNOVER	AIS R2,6	CHANGE READ TO STOP	FDL07480
0986R	9E12	749	OCR	R1,R2	STOP	FDL07490
0988R	9D13	750	SSR	R1,R3	SENSE STATUS	FDL07500
098AR	2221	751	BFBS	2,1	IDLE NOT LOOP	FDL07510
098CR	0877	752	LDAR	R7,R7	LOAD 32 FLAG	FDL07520
* 098ER	2333	753	BZ	G032	JUMP TO 32BIT START	FDL07530
0990R	4300	754	DC	X'4300'	BRANCH TO	FDL07540
0992R	6000	755	BOOTEN16	DC X'6000'	16 BIT START	FDL07550
0994R	4300	756	G032	DC X'4300'	BRANCH TO	FDL07560
0996R	4000	757	DC	X'4000'	(RX3 TYPE)	FDL07570
0998R	6000	758	BOOTEN32	DC X'6000'	32 BIT START	FDL07580
	0000 0999R	759	ENDAD	EQU *-1		FDL07590
099AR	D310 0016R	760	MBI	LB R1,MBUS	LOAD ADDRESS	FDL07600
099ER	C800 0092	761	LHI	R0,X'92'	LOAD READ CMD	FDL07610
09A2R	9E10	762	OCR	R1,R0	COMMAND	FDL07620
09A4R	9B12	763	RDR	R1,R2	DUMMY READ	FDL07630
09A6R	2430	764	LIS	R3,0	CLEAR R3	FDL07640
09A8R	9D12	765	MBI1	SSR R1,R2	SENSE STATUS	FDL07650
09AAR	2081	766	BTBS	8,1	BUSY LOOP	FDL07660
09ACR	9B12	767	RDR	R1,R2	READ DATA	FDL07670

09AER	9A12	768		WDR	R1,R2	ECHO DATA	FDL07680
09BOR	C420 007F	769		NHI	R2,X'7F'	STRIP PARITY	FDL07690
09B4R	C520 0060	770		CLHI	R2,X'60'	LOWER CASE CHECK	FDL07700
* 09B8R	2183	771		BL	MBI3	SKIP	FDL07710
09BAR	CB20 0020	772		SHI	R2,X'20'	MAKE UPPER CASE	FDL07720
09BER	C520 0023	773	MBI3	CLHI	R2,X'23'	POUND SIGN	FDL07730
09C2R	43R0 1896R	774		BFC	11,POUND	RECYCLE	FDL07740
09C6R	0822	775		LDAR	R2,R2	RELOAD DATA	FDL07750
09C8P	C520 005F	776		CLHI	R2,X'5F'	DELETE	FDL07760
* 09CCR	21E4	777		BTC	11,MBI2	NO	FDL07770
09CER	2731	778		SIS	R3,1	DECREMENT INPUT COUNT	FDL07780
09D0R	4300 09A8R	779		B	MBI1	CONTINUE	FDL07790
09D4R	D223 00E2R	780	MBI2	STB	R2,COMIN(R3)	STORE DATA	FDL07800
09D8R	C520 000D	781		CLHI	R2,X'0D'	CR	FDL07810
09DCR	43P0 0A8ER	782		BFC	11,GODOIT	EXECUTE	FDL07820
09E0R	2631	783		AIS	R3,1	INCRIMENT INPUT COUNT	FDL07830
09E2R	C530 0031	784		CLHI	R3,49	DONE	FDL07840
09E6R	4280 09A8R	785		BL	MBI1	NO	FDL07850
09EAR	242D	786		LIS	R2,13	ENTER CR	FDL07860
* 09ECR	220C	787		B	MBI2	APPEND CR	FDL07870
09EER	D310 0012R	788	PASLAI	LB	R1,PASAD	LOAD ADDRESS	FDL07880
* 09F2R	2305	789		B	COMIN	SKIP	FDL07890
09F4R	D310 0014R	790	TTYI	LB	R1,TTYAD	LOAD ADDRESS	FDL07900
09F8R	DE10 017BR	791		OC	R1,TTY+1	SET READ MODE	FDL07910
09FCR	2430	792	COMIN	LIS	R3,0	CLEAR R3	FDL07920
09FER	9E12	793	IN1	SSR	R1,R2	SENSE STATUS	FDL07930
0A00R	2081	794		BTBS	8,1	BUSY LOOP	FDL07940
0A02R	9E12	795		RDR	R1,R2	READ DATA	FDL07950
0A04R	D340 0010R	796		LB	R4,DEVYTP	GET DEVICE TYPE	FDL07960
0A08R	2741	797		SIS	R4,1	DECREMENT	FDL07970
* 0A0AR	233A	798		BZ	PASECHO	PASLA	FDL07980
0A0CR	2741	799		SIS	R4,1	DECREMENT	FDL07990
* 0A0ER	2335	800		BZ	CLIECHO	CLI	FDL08000
0A10R	2742	801		SIS	R4,2	DECREMENT	FDL08010
* 0A12R	2336	802		BZ	PASECHO	PASLA	FDL08020
0A14R	4300 0A50R	803		B	NOECHO	SKIP	FDL08030
0A18R	DE10 017AR	804	CLIECHO	OC	R1,TTY	TURN LINE AROUND	FDL08040
* 0A1CR	2305	805		B	ECHOCOM	SKIP	FDL08050
0A1ER	D310 0013R	806	PASECHO	LB	R1,PASAD+1	GET WRITE ADDRESS	FDL08060
0A22R	DE10 0132R	807		OC	R1,PASWR	TURN LINE AROUND	FDL08070
0A26R	9D14	808	ECHOCOM	SSR	R1,R4	SENSE STATUS	FDL08080
0A28R	2081	809		BTBS	8,1	WAIT FOR BUSY NOT	FDL08090
0A2AR	9A12	810		WDR	R1,R2	ECHO DATA	FDL08100
0A2CR	D340 0010R	811		LB	R4,DEVYTP	GET DEVICE TYPE	FDL08110
0A30R	2741	812		SIS	R4,1	DECREMENT	FDL08120
* 0A32R	233B	813		BZ	PASREST	RESTORE READ ADDRESS	FDL08130
0A34R	2741	814		SIS	R4,1	DECREMENT	FDL08140
* 0A36R	2334	815		BZ	CLIREST	TURN LINE AROUND	FDL08150
0A38R	2742	816		SIS	R4,2	DECREMENT	FDL08160
* 0A3AR	2337	817		BZ	PASREST	RESTORE READ ADDRESS	FDL08170
0A3CR	230A	818		BS	NOECHO	SKIP	FDL08180
0A3EP	9D14	819	CLIREST	SSR	R1,R4	SENSE STATUS	FDL08190
0A40R	2081	820		BTBS	8,1	WAIT FOR BUSY NOT	FDL08200
0A42R	DE10 017BR	821		OC	R1,TTY+1	SET READ MODE	FDL08210
* 0A46R	2305	822		B	NOECHO	SKIP	FDL08220

0A48R	D310	0012R	823	PASREST	LB	R1,PASAD	LOAD READ ADDRESS	FDL08230
0A4CR	DE10	0133R	824		OC	R1,PASRD	TURN LINE AROUND	FDL08240
0A50R	C420	007F	825	NOECHO	NHI	R2,X'7F'	STRIP PARITY	FDL08250
0A54R	C520	0060	826		CLHI	R2,X'60'	LOWER CASE CHECK	FDL08260
* 0A58R	2183		827		BL	COMIN1	SKIP	FDL08270
0A5AR	CB20	0020	828		SHI	R2,X'20'	MAKE UPPER CASE	FDL08280
0A5ER	C520	0023	829	COMIN1	CLHI	R2,X'23'	POUND SIGN	FDL08290
0A62R	43B0	1896R	830		BFC	11,POUND	RECYCLE	FDL08300
0A66R	C520	005F	831		CLHI	R2,X'5F'	DELETE	FDL08310
* 0A6AR	21B6		832		BTC	11,IN2	NO	FDL08320
0A6CR	2731		833		SIS	R3,1	DECREMENT COUNT	FDL08330
0A6ER	4210	09FCR	834		BM	COMIN	RESET TO 0	FDL08340
0A72R	4300	09FER	835		B	IN1	RE-START	FDL08350
0A76R	D223	00E2R	836	IN2	STB	R2,COMIN(R3)	STORE DATA	FDL08360
0A7AR	C520	000D	837		CLHI	R2,X'0D'	CR	FDL08370
* 0A7ER	23E8		838		BFC	11,GODOIT	EXECUTE	FDL08380
0A80R	2631		839		AIS	R3,1	INCREMENT COUNT	FDL08390
0A82R	C530	0046	840		CLHI	R3,70	DONE	FDL08400
0A86R	42B0	09FER	841		BTC	11,IN1	NO	FDL08410
* 0A8AR	242D		842		LHI	R2,X'0D'	LOAD CR	FDL08420
0A8CR	220B		843		BS	IN2	APPEND CR	FDL08430
0A8ER	41C0	0442R	844	GODOIT	BAL	RC,CLDRIS	CLEAR DISPLAY	FDL08440
0A92R	D320	00E2R	845		LB	R2,COMIN	LOAD FIRST CHARACTER	FDL08450
0A96R	C520	004C	846		CLHI	R2,C'L'	L INPUT	FDL08460
0A9AR	43B0	14B4R	847		BFC	11,LIMITS	LIMITS	FDL08470
0A9ER	C520	0053	848		CLHI	R2,C'S'	S INPUT	FDL08480
0AA2R	43E0	176CR	849		BFC	11,SEQ	SEQUENCE	FDL08490
0AA6R	C520	0043	850		CLHI	R2,C'C'	C INPUT	FDL08500
0AAAR	43B0	0BCER	851		BFC	11,CREATE	CREATE PROGRAM	FDL08510
0AAER	C520	0044	852		CLHI	R2,C'D'	D INPUT	FDL08520
0AB2R	43B0	0DB0R	853		BFC	11,DUPE	DUPLICATE (COPY)	FDL08530
0AB6R	C520	0046	854		CLHI	R2,C'F'	F INPUT	FDL08540
0ABAR	43E0	1226R	855		BFC	11,FIND	FIND PROGRAM	FDL08550
0ABER	C520	0049	856		CLHI	R2,C'I'	I INPUT	FDL08560
0AC2R	43E0	1344R	857		BFC	11,INIT	INITIALIZE MEDIA	FDL08570
0AC6R	C520	0055	858		CLHI	R2,C'U'	U INPUT	FDL08580
0ACAR	43E0	102ER	859		BFC	11,UPDATE	UPDATE PROGRAM	FDL08590
0ACER	4300	15F0R	860		B	QUEST	BAD INPUT	FDL08600
0AD2R	C810	0020	861	CFFORM	LHI	R1,X'20'	LOAD BLANK	FDL08610
0AD6R	2430		862		LIS	R3,0	SETUP	FDL08620
0AD8R	2441		863		LIS	R4,1	BXLE	FDL08630
0ADAR	C850	001D	864		LHI	R5,29	LIMITS	FDL08640
0ADER	D213	0146R	865	CFFORM1	STB	R1,FFORM(R3)	STORE	FDL08650
0AE2R	C130	0ADER	866		BXLE	R3,CFFORM1	LOOP	FDL08660
0AE6R	030C		867		BR	RC	RETURN	FDL08670
0AE8R	4040	016CR	868	CHKPGM	STH	R4,CSEQNUMO	SET CURRENT TO LAST COPIED	FDL08680
0AECR	41E0	1602R	869		BAL	RE,RDIRECT	READ DIRECTORY	FDL08690
0AF0R	41C0	11E2R	870		BAL	RC,SULH56	LOAD R5-R6	FDL08700
0AF4R	41E0	16D4R	871		BAL	RE,RDLRN	READ PDB	FDL08710
0AF8R	4830	0028R	872		LH	R3,INBUF+14	LOAD ILRNS	FDL08720
0AFCR	0A34		873		AAR	R3,R4	ADD TO START LRN	FDL08730
0AFER	2641		874		AIS	R4,1	INCREMENT LRN TO PROGRAM	FDL08740
0B00R	4810	0170R	875		LH	R1,PRECMDO	LOAD PRE-CMD	FDL08750
0B04R	2421		876		LIS	R2,1	LOAD READ CMD BITS	FDL08760
0B06R	0612		877		OAR	R1,R2	MERGE	FDL08770

OB08R	D320	0017R	878		LB	R2,FLPAD	LOAD ADDRESS	FDL08780
OBOCR	9824		879		WHR	R2,R4	WRITE LRN TO CONTROLLER	FDL08790
OBOER	9E21		880		OCR	R2,R1	COMMAND	FDL08800
OB10R	9D25		881	CP1	SSR	R2,R5	SENSE STATUS	FDL08810
OB12R	2081		882		BTBS	8,1	BUSY LOOP	FDL08820
OB14R	C860	0040	883		LHI	R6,64	LOAD LRN LIMITS	FDL08830
OB18R	9925		884	CP3	RHR	R2,R5	READ DATA	FDL08840
OB1AR	2761		885		SIS	R6,1	DECREMENT COUNT	FDL08850
* OB1CR	2032		886		BNZ	CP3	LOOP	FDL08860
OB1ER	9D25		887		SSR	R2,R5	SENSE STATUS	FDL08870
* OB20R	2158		888		BTC	5,ERR27	NON-ZERO STATUS	FDL08880
OB22R	0543		889		CLAR	R4,R3	COMPLETE PROGRAM CHECKED	FDL08890
* OB24R	2184		890		BTC	11,CP2	NO	FDL08900
OB26R	41D0	18AAR	891		BAL	RD,STOP	STOP	FDL08910
OB2AR	030F		892		BR	RF	RETURN	FDL08920
OB2CR	2641		893	CP2	AIS	R4,1	INCREMENT	FDL08930
* OB2ER	220F		894		B	CP1	READ NEXT LRN	FDL08940
OB30R	41D0	18AAR	895	ERR27	BAL	RD,STOP	STOP	FDL08950
OB34R	D320	1ADBR	896		LB	R2,CHKERRS	LOAD SIZE	FDL08960
OB38R	C830	0B46R	897		LDAI	R3,CHKERR	LOAD ADDRESS	FDL08970
OB3CR	2480		898		LIS	R8,0	SET OUTPUT	FDL08980
OB3ER	41D0	126AR	899		BAL	RD,FINDCON	PRINT	FDL08990
OB42R	4300	1896R	900		B	POUND	RE-START	FDL09000
OB46R	5645	5249 4659 2045	901	CHKERR	DC	C'VERIFY ERROR'		FDL09010
OB4ER	5252	4F52						
OB52R	D320	0017R	902	RESET	LB	R2,FLPAD	LOAD ADDRESS	FDL09020
OB56R	9D21		903		SSR	R2,R1	SENSE STATUS	FDL09030
OB58R	022D		904		BTCR	2,RD	EXIT IF IDLE	FDL09040
OB5AR	4818	0170R	905		LH	R1,PRECMD0(R8)	LOAD PRE-COMMAND	FDL09050
OB5ER	2427		906		LIS	R2,7	LOAD STOP CMD	FDL09060
OB60R	0612		907		OAR	R1,R2	MERGE COMMAND	FDL09070
OB62R	D320	0017R	908		LB	R2,FLPAD	LOAD ADDRESS	FDL09080
OB66R	9E21		909		OCR	R2,R1	COMMAND	FDL09090
OB68R	2611		910		AIS	R1,1	CHANGE STOP TO RESET	FDL09100
OB6AR	9E21		911		OCR	R2,R1	COMMAND	FDL09110
OB6CR	9D21		912		SSR	R2,R1	SENSE STATUS	FDL09120
OB6ER	2221		913		BFBS	2,1	IDLE NOT LOOP	FDL09130
OB70R	030D		914		BR	RD	RETURN	FDL09140
OB72R	D310	0014R	915	TTYO	LB	R1,TTYAD	LOAD ADDRESS	FDL09150
OB76R	DE10	017AR	916		OC	R1,TTY	CMD OUTPUT	FDL09160
* OB7AR	2309		917		B	TTYO2	SKIP	FDL09170
OB7CR	9D14		918	TTYO1	SSR	R1,R4	SENSE STATUS	FDL09180
OB7ER	2081		919		BTBS	8,1	BUSY LOOP	FDL09190
OB80R	DA13	0000	920		WD	R1,0(R3)	WRITE DATA	FDL09200
OB84R	2631		921		AIS	R3,1	INCREMENT CHARACTER PCINTER	FDL09210
OB86R	2721		922		SIS	R2,1	DECREMENT COUNTER	FDL09220
* OB88R	2036		923		BNZ	TTYO1	LOOP	FDL09230
OB8AR	030C		924		BR	RC	RETURN	FDL09240
OB8CR	244D		925	TTYO2	LIS	R4,13	LOAD CR	FDL09250
OB8ER	9D15		926		SSR	R1,R5	SENSE STATUS	FDL09260
OB90R	2081		927		BTBS	8,1	BUSY LOOP	FDL09270
OB92R	9A14		928		WDR	R1,R4	WRITE DATA	FDL09280
OB94R	244A		929		LIS	R4,10	LOAD LF	FDL09290
OB96R	9D15		930		SSR	R1,R5	SENSE STATUS	FDL09300
OB98R	2081		931		BTBS	8,1	BUSY LOOP	FDL09310

OB9AR	9A14	932		WDR	R1,R4	WRITE DATA	FDL09320
OB9CR	C840 00FF	933		LHI	R4,X'FF'	LOAD NULL	FDL09330
OBAOR	9D15	934		SSR	R1,R5	SENSE STATUS	FDL09340
OBA2R	2081	935		BTBS	8,1	BUSY LOOP	FDL09350
OBA4R	9A14	936		WDR	R1,R4	WRITE DATA	FDL09360
OBA6R	4300 0B7CR	937		B	TTY01	SKIP	FDL09370
OBAAR	C510 0030	938	CONVERT	CLHI	R1,X'30'	NUMBER OK	FDL09380
* OBAER	218A	939		BL	BADIN	NO	FDL09390
* OBBOR	C510 003A	940		CLHI	R1,X'3A'	NUMBER OR ALPHA	FDL09400
* OBB4R	218A	941		BL	ISNUM	IT'S A NUMBE (0-9)	FDL09410
* OBB6R	C510 0041	942		CLHI	R1,X'41'	BAD INPUT	FDL09420
* OBBAR	2184	943		BL	BADIN	YES	FDL09430
* OBBCR	C510 0047	944		CLHI	R1,X'47'	ALPHA OK	FDL09440
* OBCOR	2183	945		BL	ISAF	YES	FDL09450
OBC2R	2511	946	BADIN	LCS	R1,1	LOAD NEGATIVE NUMBER	FDL09460
OBC4R	030C	947	OKIN	BR	RC	RETURN	FDL09470
OBC6R	2619	948	ISAF	AIS	R1,9	CORRECT	FDL09480
OBC8R	C410 000F	949	ISNUM	NHI	R1,X'0F'	STRIP UPPER	FDL09490
OBCCR	2204	950		BS	OKIN	EXIT	FDL09500
OBCER	4880 0136R	951	CREATE	LH	R8,SEQNUM	LOAD SEQNUM TO BE ADDED	FDL09510
OBD2R	4080 016CR	952		STH	R8,CSEQNUMO	MAKE CURRENT	FDL09520
OBD6R	2480	953		LIS	R8,0	LOAD OUTPUT FLAG	FDL09530
OBD8R	41E0 1602R	954		BAL	RE,RDIRECT	READ DIRECTORY	FDL09540
OBDCR	4530 016CR	955		CLH	R3,CSEQNUMO	WAS IT THERE?	FDL09550
OBEOR	43B0 0D78R	956		BFC	11,THERE	YES, ERROR	FDL09560
OBE4R	4080 016CR	957		STH	R8,CSEQNUMO	SET EOY=CURRENT	FDL09570
OBE8R	41E0 1502P	958		BAL	RE,RDIRECT	FIND EOY	FDL09580
OBEER	0833	959		LDAR	R3,R3	LOAD RETURN SEQUENCE NUMBER	FDL09590
OBEER	4230 0D1CR	960		BNZ	CR8	EOV NOT RETURNED	FDL09600
OBF2R	08AA	961		LDAR	RA,RA	LOAD DIRECTORY LRN INDICATOR	FDL09610
* OBF4R	C5A0 001C	962		CLHI	RA,STDIR	FIRST 000	FDL09620
* OBF8R	21B7	963		BTC	11,CR1	NO	FDL09630
* OBFAR	0855	964		LDAR	R5,R5	LOAD BIB POINTER	FDL09640
* OBFAR	2135	965		BNZ	CR1	NOT FIRST ENTRY	FDL09650
OBFER	4050 017ER	966		STH	R5,LPDB	SAVE LAST	FDL09660
OC02R	4300 0C32R	967		B	CR4	NO ENTRIES	FDL09670
OC06R	0855	968	CR1	LDAR	R5,R5	LOAD BIB	FDL09680
OC08R	4330 0D52R	969		BZ	CR2	FIRST ENTRY	FDL09690
OC0CR	2752	970		SIS	R5,2	FIND PREVIOUS PDB POINTER	FDL09700
OCOER	4050 017ER	971		STH	R5,LPDB	SAVE POINTER	FDL09710
OC12R	4845 001AR	972		LH	R4,INBUF(R5)	LOAD PDB LRN POINTER	FDL09720
OC16R	4040 0180R	973		STH	R4,NSLRN	SAVE POINTER	FDL09730
OC1AR	41C0 11E2R	974		BAL	RC,SULH56	LOAD R5-R6	FDL09740
OC1ER	41E0 16D4R	975		BAL	RE,RDLRN	READ PDB	FDL09750
OC22R	4830 0028R	976	CR3	LH	R3,INBUF+14	LOAD ILRNS	FDL09760
OC26P	2631	977		AIS	R3,1	CORRECT TO INCLUDE PDB	FDL09770
OC28R	4840 0180R	978		LH	R4,NSLRN	LOAD LRN POINTER	FDL09780
OC2CR	0A43	979		AAR	R4,R3	ADD IN # OF LRNS NEEDED	FDL09790
OC2ER	4040 0182R	980		STH	R4,NSLRNA	LOAD START	FDL09800
OC32R	D370 012CR	981	CR4	LB	R7,FLG16	LOAD 16 BIT FLAG	FDL09810
OC36R	4837 0140R	982		LDA	R3,HIGH(R7)	LOAD HIGH	FDL09820
OC3AR	4847 013CR	983		LDA	R4,LOW(R7)	LOAD LOW	FDL09830
OC3ER	0B34	984		SAR	R3,R4	DIFFERENCE	FDL09840
OC40R	4280 0D2ER	985		BTC	8,CR9	LOW > HIGH	FDL09850
OC44R	2631	986		AIS	R3,1	MAKE BYTE COUNT CORRECT	FDL09860

OC46P	41C0	1024R	987	BAL	RC,D128	DIVIDE	FDL09870	
OC4AR	0822		988	LDAR	R2,R2	LOAD REMAINDER	FDL09880	
OC4CR	2332		989	BZS	CR41	NO REMAINDER	FDL09890	
OC4ER	2631		990	AIS	R3,1	ADD EXTRA FOR OVERFLOW	FDL09900	
OC50R	4030	0144R	991	CR41	STH	R3,LRNS	STORE TO LRN SIZE	FDL09910
OC54R	4840	0182R	992	LH	R4,NSLRNA	LOAD START	FDL09920	
OC58R	4850	0144R	993	LH	R5,LRNS	LOAD SIZE NEEDED	FDL09930	
OC5CR	2651		994	AIS	R5,1	INCLUDE PDB	FDL09940	
OC5ER	0A54		995	AAR	R5,R4	ADD	FDL09950	
OC60R	4B50	017CR	996	SH	R5,MAXLRNO	FIT ?	FDL09960	
OC64R	4220	0D40R	997	BP	CR91	NO	FDL09970	
OC68R	084A		998	LDAR	R4,RA	LOAD DIRECTORY POINTER	FDL09980	
OC6AR	41C0	11E2R	999	BAL	RC,SULH56	LOAD R5-R6	FDL09990	
OC6ER	41E0	16D4R	1000	BAL	RE,RDLRN	RE-READ DIRECTORY BLOCK	FDL10000	
OC72R	4850	017ER	1001	LH	R5,LPDB	LOAD LAST PDB POINTER	FDL10010	
OC76R	4330	0C9ER	1002	BZ	CR11A	OK	FDL10020	
OC7AR	2652		1003	AIS	R5,2	CORRECT POINTER	FDL10030	
OC7CR	C550	007E	1004	CLHI	R5,126	NEXT ENTRY FIT	FDL10040	
OC80R	4280	0CA2R	1005	BTC	8,CR42	OK	FDL10050	
OC84R	08AA		1006	LDAR	RA,RA	LOAD DIRECTORY LRN PCINTER	FDL10060	
OC86R	C5A0	001F	1007	CLAI	RA,ENDDIR	LAST LRN @@@	FDL10070	
OC8AR	4330	11ECR	1008	BE	EOD	FULL	FDL10080	
OC8ER	084A		1009	LDAR	R4,RA	LOAD DIRECTORY LRN POINTER	FDL10090	
OC90R	2641		1010	AIS	R4,1	INCREMENT	FDL10100	
OC92R	41C0	11E2R	1011	BAL	RC,SULH56	LOAD R5-R6	FDL10110	
OC96R	41E0	16D4R	1012	BAL	RE,RDLRN	READ NEXT DIRECTORY LRN	FDL10120	
OC9AR	2452		1013	LIS	R5,2	LOAD POINTER	FDL10130	
* OC9CR	2304		1014	B	CR11	SKIP	FDL10140	
OC9ER	2652		1015	CR11A	AIS	R5,2	INCREMENT POINTER	FDL10150
* OCA0R	2302		1016	B	CR11	SKIP	FDL10160	
OCA2R	2652		1017	CR42	AIS	R5,2	INCREMENT TO NEXT PDB ENTRY	FDL10170
OCA4R	084A		1018	CR11	LDAR	R4,RA	LOAD DIRECTORY LRN	FDL10180
OCA6R	C540	001F	1019	CLAI	R4,ENDDIR	MAXIMUM LRN @@@	FDL10190	
* OCAAR	23BF		1020	BFC	11,CR5	EOV/EOD CHECK	FDL10200	
OCACR	4840	0182R	1021	CR77	LH	R4,NSLRNA	LOAD NEXT START LRN	FDL10210
OCBOR	4045	001AR	1022	STH	R4,INBUF(R5)	STORE NEW POINTER	FDL10220	
OCB4R	4840	0136R	1023	LH	R4,SEQNUM	LOAD SEQUENCE #	FDL10230	
OCB8R	2752		1024	SIS	R5,2	DECREMENT POINTER	FDL10240	
OCBAR	4045	001AR	1025	STH	R4,INBUF(R5)	STORE SEQUENCE #	FDL10250	
OCBER	2654		1026	AIS	R5,4	INCREMENT TO NEXT ENTRY	FDL10260	
OCC0R	2440		1027	LIS	R4,0	CLEAR R4	FDL10270	
OCC2R	4045	001AR	1028	STH	R4,INBUF(R5)	STORE EOV IN DIRECTORY	FDL10280	
* OCC6R	2309		1029	CR69	B	CRPGM	CREATE PROGRAM	FDL10290
OCC8R	2654		1030	CR5	AIS	R5,4	INCREMENT TO NEXT ENTRY	FDL10300
OCCAR	4845	001AR	1031	LH	R4,INBUF(R5)	LOAD NEXT SEQUENCE #	FDL10310	
OCCER	4210	11ECR	1032	BM	EOD	EOD REACHED	FDL10320	
OCD2R	2754		1033	SIS	R5,4	RESTORE	FDL10330	
OCD4R	4300	0CACR	1034	B	CR77	SKIP	FDL10340	
OCD8R	08AA		1035	CRPGM	LDAR	RA,RA	LOAD BLOCK POINTER	FDL10350
OCDAR	40A0	0174R	1036	STH	RA,DIRP	SAVE	FDL10360	
OCDEP	4840	0182R	1037	LH	R4,NSLRNA	LOAD NEXT START LRN	FDL10370	
OCE2R	C850	0136R	1038	LDAR	R5,SEQNUM	LOAD LOW	FDL10380	
OCE6R	C860	0165R	1039	LDAR	R6,SEQNUM+47	LOAD HIGH	FDL10390	
OCEAR	2480		1040	LIS	R8,0	SET OUTPUT	FDL10400	
OCECR	41E0	18CER	1041	BAL	RE,WRLRN	WRITE PDB	FDL10410	



OCFOR	2641		1042	AIS	R4,1	INCREMENT TO PROGRAM START LRN	FDL10420	
OCF2R	D370	012CR	1043	LB	R7,FLG16	LOAD 16 BIT FLAG	FDL10430	
OCF6R	4857	013CR	1044	LDA	R5,LOW(R7)	LOAD LOW	FDL10440	
OCFAR	4867	0140R	1045	LDA	R6,HIGH(R7)	LOAD HIGH	FDL10450	
OCFER	2480		1046	LIS	R8,0	SET OUTPUT FLAG	FDL10460	
ODOOR	41E0	18CER	1047	BAL	RE,WRLRN	WRITE PROGRAM	FDL10470	
ODO4R	4840	0174R	1048	LH	R4,DIRP	LOAD DIRECTORY POINTER	FDL10480	
ODO8R	41C0	11E2R	1049	BAL	RC,SULH56	LOAD R5-R6	FDL10490	
ODOCR	41E0	18CER	1050	BAL	RE,WRLRN	WRITE DIRECTORY	FDL10500	
OD10R	4840	0136R	1051	LH	R4,SEQNUM	LOAD FOR VALIDATION	FDL10510	
OD14R	41F0	0AE8R	1052	BAL	RF,CHKPGM	VALIDATE PROGRAM	FDL10520	
OD18R	4300	11FER	1053	B	EOJ	PRINT EOJ	FDL10530	
OD1CR	D320	1ADDR	1054	CR8	LB	R2,EOVRTNMS	LOAD SIZE	FDL10540
OD20R	C830	1966R	1055	LDAI	R3,EOVRTNM	LOAD ADDRESS	FDL10550	
OD24R	2480		1056	LIS	R8,0	SET OUTPUT	FDL10560	
OD26R	41D0	126AR	1057	BAL	RD,FINDCON	PRINT	FDL10570	
OD2AR	4300	1896R	1058	B	POUND	RE-START	FDL10580	
OD2ER	D320	1ADER	1059	CR9	LB	R2,LGHMSG	LOAD SIZE	FDL10590
OD32R	C830	1974R	1060	LDAI	R3,LGHMSG	LOAD ADDRESS	FDL10600	
OD36R	2480		1061	LIS	R8,0	SET OUTPUT	FDL10610	
OD38R	41D0	126AR	1062	BAL	RD,FINDCON	PRINT	FDL10620	
OD3CR	4300	1896R	1063	B	POUND	RE-START	FDL10630	
OD40R	D320	1ADFR	1064	CR91	LB	R2,TBIGMSG	LOAD SIZE	FDL10640
OD44R	C830	1984R	1065	LDAI	R3,TBIGMSG	LOAD ADDRESS	FDL10650	
OD48R	2480		1066	LIS	R8,0	SET OUTPUT	FDL10660	
OD4AR	41D0	126AR	1067	BAL	RD,FINDCON	PRINT	FDL10670	
OD4ER	4300	1896R	1068	B	POUND	RE-START	FDL10680	
OD52R	27A1		1069	CR2	SIS	RA,1	DECREMENT	FDL10690
OD54R	4050	017ER	1070	STH	R5,LPDB	SAVE	FDL10700	
OD58R	084A		1071	LDAR	R4,RA	LOAD CORRECTED LRN	FDL10710	
OD5AR	41C0	11E2R	1072	BAL	RC,SULH56	LOAD R5-R6	FDL10720	
OD5ER	41E0	16D4R	1073	BAL	RE,RDLRN	READ PREVIOUS LRN	FDL10730	
OD62R	4840	0098R	1074	LH	R4,INBUF+126	LOAD PREVIOUS PDBP	FDL10740	
OD66R	4040	0180R	1075	STH	R4,NSLRN	SAVE	FDL10750	
OD6AR	41C0	11E2R	1076	BAL	RC,SULH56	LOAD R5-R6	FDL10760	
OD6ER	41E0	16D4R	1077	BAL	RE,RDLRN	READ PDB	FDL10770	
OD72R	26A1		1078	AIS	RA,1	INCREMENT	FDL10780	
OD74R	4300	0C22R	1079	B	CR3	CONTINUE	FDL10790	
OD78R	D320	1ADCR	1080	THERE	LB	R2,GOTMSG	LOAD SIZE	FDL10800
OD7CR	C830	0D8AR	1081	LDAI	R3,GOTMSG	LOAD ADDRESS	FDL10810	
OD80R	2480		1082	LIS	R8,0	SET OUTPUT FLAG	FDL10820	
OD82R	41D0	126AR	1083	BAL	RD,FINDCON	PRINT	FDL10830	
OD86R	4300	1896R	1084	B	POUND	RE-START	FDL10840	
OD8AR	5345	5155 454E 4345	1085	GOTMSG	DC	C'SEQUENCE NUMBER EXISTS ON OUTPUT MEDIA'	FDL10850	
OD92R	204E	554D 4245 5220						
OD9AR	4558	4953 5453 204F						
ODA2R	4E20	4F55 5450 5554						
ODAAR	204D	4544 4941						
ODBOR	2420		1086	DUPE	LIS	R2,0	LOAD CHARACTER POINTER	FDL10860
ODB2R	41C0	1806R	1087		BAL	RC,SPCOM	FIND DELIMITER	FDL10870
ODB6R	2721		1088		SIS	R2,1	DECREMENT TO NEXT START	FDL10880
ODB8R	D352	00E2R	1089		LB	R5,CONIN(R2)	LOAD 1ST CHARACTER	FDL10890
ODBCR	C550	000D	1090		CLHI	R5,X'0D'	CR	FDL10900
ODCOR	23BD		1091		BFC	11,D1	DUPE TO EOJ	FDL10910
ODC2R	2622		1092		AIS	R2,2	CORRECT POINTER	FDL10920

0D14P	41E0	153AR	1093		BAL	RE,PACK	PACK DATA	FDL10930
0D18P	4050	0184R	1094	D1A	STH	R5,TERMSEQ	STORE TERMINATION SEQUENCE #	FDL10940
0D1CP	905C		1095		SRLS	R5,12	SCALE	FDL10950
0D1EP	4230	15FOR	1096		BNZ	QUEST	ERROR	FDL10960
0D1FP	2480		1097		LIS	R8,0	SET OUTPUT FLAG	FDL10970
0D14P	41E0	12E0R	1098		BAL	RE,FMAXLRN	FIND CAPACITY	FDL10980
* 0D18P	2303		1099		B	D2	SKIP	FDL10990
0D1AR	2450		1100	D1	LIS	R5,0	LOAD EOY	FDL11000
* 0D1CP	220A		1101		B	D1A	STORE	FDL11010
0D1EP	2482		1102	D2	LIS	R8,2	SET INPUT	FDL11020
0D1OR	41E0	1602R	1103		BAL	RE,RDIRECT	READ DIRECTORY	FDL11030
0D14P	0833		1104		LDAR	R3,R3	SET CC	FDL11040
0D16P	4330	11FER	1105		BZ	EOJ	EOY FOUND	FDL11050
0D1AR	4050	0186R	1106		STH	R5,CSPI	SAVE SEQUENCE POINTER	FDL11060
0D1EP	4030	0168R	1107		STH	R3,CSNI	SAVE SEQUENCE NUMBER	FDL11070
0D1FP	4040	016AR	1108		STH	R4,CSNPDBP	SAVE PDB POINTER	FDL11080
0D16P	41D0	01B4R	1109		BAL	RD,SINC	SET INCRIMENTAL MODE	FDL11090
0D1AR	9433		1110		EXBR	R3,R3	SWAP FOR DISPLAY	FDL11100
0D1CR	9813		1111		WHR	R1,R3	WRITE SEQUENCE NUMBER TO DISPLAY	FDL11110
0D1EP	41C0	01BER	1112		BAL	RD,SNOR	SET NORMAL MODE	FDL11120
0E02R	C550	007C	1113	D21	CLHI	R5,124	LAST ENTRY IN BLOCK	FDL11130
* 0E06R	21BE		1114		BTC	11,D3	NO	FDL11140
0E08R	084A		1115		LDAR	R4,RA	LOAD BLOCK POINTER	FDL11150
0E0AR	2641		1116		AIS	R4,1	INCRIMENT TO NEXT	FDL11160
0E0CR	41C0	11E2R	1117		BAL	RC,SULH56	LOAD R5-R6	FDL11170
0E10P	41E0	16D4R	1118		BAL	RE,RDLRN	READ NEXT BLOCK	FDL11180
0E14P	4860	001AR	1119		LH	R6,INBUF	LOAD NEXT SEQUENCE NUMBER	FDL11190
0E18P	4840	016AR	1120		LH	R4,CSNPDBP	LOAD POINTER	FDL11200
* 0E1CR	2306		1121		B	D4	SKIP	FDL11210
0E1EP	2654		1122	D20	AIS	R5,4	INCRIMENT POINTER	FDL11220
* 0E20R	220F		1123		B	D21	CHECK IF NEW BLOCK NEEDED	FDL11230
0E22P	2654		1124	D3	AIS	R5,4	INCRIMENT TO NEXT ENTRY	FDL11240
0E24P	4865	001AR	1125		LH	R6,INBUF(R5)	LOAD NEXT SEQUENCE NUMBER	FDL11250
0E28P	C560	7000	1126	D4	CLHI	R6,X'7000'	DELETE CHARACTER?	FDL11260
* 0E2CR	22B7		1127		BFC	11,D20	YES	FDL11270
0E2EP	4060	0166R	1128		STH	R6,NEXTI	SAVE	FDL11280
0E32P	41C0	11E2R	1129		BAL	RC,SULH56	LOAD R5-R6	FDL11290
0E36P	41E0	16D4R	1130		BAL	RE,RDLRN	READ PDB	FDL11300
0E3AP	2470		1131		LIS	R7,0	CLEAR	FDL11310
0E3CR	D270	012ER	1132		STB	R7,RANGE	CLEAR FLAG	FDL11320
0E40P	4870	0028R	1133		LH	R7,INBUF+14	LOAD SIZE	FDL11330
0E44P	4070	0188R	1134		STH	R7,SIZEI	SAVE	FDL11340
0E48P	4870	0024R	1135		LH	R7,INBUF+10	LOAD MSD OF HIGH	FDL11350
0E4CR	4230	0FD8R	1136		BNZ	CHK16	>64KB.	FDL11360
0E50R	2480		1137	D5	LIS	R8,0	SET OUTPUT	FDL11370
0E52R	4870	0168R	1138		LH	R7,CSNI	LOAD CURRENT SEQUENCE NUMBER	FDL11380
0E56P	4070	016CR	1139		STH	R7,CSEQNUMO	SET=CURRENT	FDL11390
0E5AR	41E0	1602R	1140		BAL	RE,RDIRECT	READ DIRECTORY	FDL11400
0E5EP	4530	0168R	1141		CLH	R3,CSNI	FOUND	FDL11410
0E62R	43B0	0D78R	1142		BFC	11,THERE	DUPLICATE EXISTS	FDL11420
0E66P	0833		1143		LDAR	R3,R3	SET CC	FDL11430
0E68P	4230	0D1CR	1144		BNZ	CR8	EOY NOT FOUND	FDL11440
0E6CR	0855		1145		LDAR	R5,R5	SET CC	FDL11450
* 0E6EP	2337		1146		BZ	D6	SKIP	FDL11460
0E70R	4845	0018R	1147		LH	R4,INBUF-2(R5)	LOAD PREVIOUS PDBP	FDL11470

OE74R	41C0	11E2R	1148		BAL	RC,SULH56	LOAD R5-R6	FDL11480
OE78R	4300	0E98R	1149		B	D8	SKIP	FDL11490
OE7CR	C5A0	001C	1150	D6	CLHI	RA,STDIR	FIRST BLOCK? @@@	FDL11500
OE80R	43B0	0FD0R	1151		BFC	11,D7	YES	FDL11510
OE84R	084A		1152		LDAR	R4,RA	LOAD BLOCK POINTER	FDL11520
OE86R	2741		1153		SIS	R4,1	DECREMENT	FDL11530
OE88R	41C0	11E2R	1154		BAL	RC,SULH56	LOAD R5-R6	FDL11540
OE8CR	41E0	16D4R	1155		BAL	RE,RDLRN	READ PREVIOUS DIRECTORY BLOCK	FDL11550
OE90R	4840	0098R	1156		LH	R4,INBUF+126	LOAD PDBP	FDL11560
OE94R	41C0	11E2R	1157		BAL	RC,SULH56	LOAD R5-R6	FDL11570
OE98R	41E0	16D4R	1158	D8	BAL	RE,RDLRN	READ PDB	FDL11580
OE9CR	4850	0028R	1159		LH	R5,INBUF+14	LOAD SIZE	FDL11590
OEAR	0A54		1160		AAR	R5,R4	ADD LAST PROGRAM SIZE	FDL11600
OE2R	2651		1161		AIS	R5,1	INCLUDE PDB	FDL11610
OE4R	4050	018CR	1162	D9	STH	R5,NCPDBP	SAVE	FDL11620
OE8R	2482		1163		LIS	R8,2	SET INPUT	FDL11630
OEAR	2651		1164		AIS	R5,1	INCLUDE PDB	FDL11640
OEACR	4A50	0188R	1165		AH	R5,SIZEI	ADD NEW PROGRAM SIZE	FDL11650
OE8R	4550	017CR	1166		CLH	R5,MAXLRNO	FIT	FDL11660
OE4R	43A0	0D40R	1167		BFC	10,CR91	TOO BIG	FDL11670
OE8R	4390	0D40R	1168		BFC	9,CR91	TOO BIG	FDL11680
OEBCR	4840	016AR	1169		LH	R4,CSNPDBP	LOAD POINTER	FDL11690
OE8R	41C0	11E2R	1170		BAL	RC,SULH56	LOAD R5-R6	FDL11700
OE4R	41E0	16D4R	1171		BAL	RE,RDLRN	RE-READ PDB	FDL11710
OE8R	4840	018CR	1172		LH	R4,NCPDBP	LOAD POINTER	FDL11720
OECCR	2480		1173		LIS	R8,0	SET OUTPUT	FDL11730
OE8R	41C0	11E2R	1174		BAL	RC,SULH56	LOAD R5-R6	FDL11740
OE2R	41E0	18CER	1175		BAL	RE,WRLRN	WRITE PDB	FDL11750
OE6R	D370	012ER	1176		LB	R7,RANGE	LOAD FLAG	FDL11760
OE8R	0877		1177		LDAR	R7,R7	SET CC	FDL11770
OE8R	4230	0FECR	1178		BNZ	D13	SPECIAL DUPLICATE	FDL11780
OE8R	4840	016AR	1179		LH	R4,CSNPDBP	LOAD POINTER	FDL11790
OE4R	D370	012CR	1180		LB	R7,FLG16	LOAD FLAG	FDL11800
OE8R	4857	0020R	1181		LDA	R5,INBUF+6(R7)	LOAD LOW	FDL11810
OE8R	4867	0024R	1182		LDA	R6,INBUF+10(R7)	LOAD HIGH	FDL11820
OE8R	C550	0000R	1183		CLAI	R5,STARTL	COMPARE LOW TO START	FDL11830
* OE4R	2184		1184		BL	CHKHLS1	CHECK H<S	FDL11840
* OE6R	238C		1185		BNL	CHKLGE1	CHECK L>E	FDL11850
OE8R	4300	0FECR	1186		B	D13	SPECIAL DUPLICATE	FDL11860
OE8R	CA60	0080	1187	CHKHLS1	AHI	R6,128	ADD MAX EXTRA SIZE	FDL11870
OE8R	C560	0000R	1188		CLAI	R6,STARTL	COMPARE HIGH TO START	FDL11880
OE4R	4380	0FECR	1189		BNL	D13	SPECIAL DUPLICATE	FDL11890
OE8R	CB60	0080	1190		SHI	R6,128	RESTORE	FDL11900
* OE8R	2306		1191		B	D18A	OK	FDL11910
OE8R	C550	1AE8R	1192	CHKLGE1	CLAI	R5,LNZB	COMPARE LOW TO END	FDL11920
* OE12R	2383		1193		BNL	D18A	OK	FDL11930
OE14R	4300	0FECR	1194		B	D13	SPECIAL DUPLICATE	FDL11940
OE18R	D370	012CR	1195	D18A	LB	R7,FLG16	LOAD FLAG	FDL11950
OE1CR	0877		1196		LDAR	R7,R7	SET CC	FDL11960
* OE1ER	2136		1197		BNZ	D18B	16 BIT CPU	FDL11970
OE20R	C550	0A00	1198		CLHI	R5,X'A00'	BLACK HOLE POSSIBLE?	FDL11980
OE24R	4280	0FECR	1199		BL	D13	SPECIAL DUPLICATE	FDL11990
* OE28R	2305		1200		B	D18	SKIP	FDL12000
OE2AR	C550	02D0	1201	D18B	CLHI	R5,X'2D0'	LOW CORE?	FDL12010
OE2EP	4280	0FECR	1202		BL	D13	SPECIAL DUPLICATE	FDL12020

OF32R	2641	1203	D18	AIS	R4,1	INCREMENT PAST PDB	FDL12030
OF34R	2482	1204		LIS	R8,2	SET INPUT	FDL12040
OF36R	41E0 16D4R	1205		BAL	RE,RDLRN	READ PROGRAM	FDL12050
OF3AR	4840 018CR	1206		LH	R4,NCPDBP	LOAD POINTER	FDL12060
OF3ER	2641	1207		AIS	R4,1	INCREMENT PAST PDB	FDL12070
OF40R	2480	1208		LIS	R8,0	SET OUTPUT	FDL12080
OF42R	D370 012CR	1209		LB	R7,FLG16	LOAD FLAG	FDL12090
OF46R	4857 0020R	1210		LDA	R5,INBUF+6(R7)	LOAD LOW	FDL12100
OF4AR	4867 0024R	1211		LDA	R6,INBUF+10(R7)	LOAD HIGH	FDL12110
OF4EP	41E0 18CER	1212		BAL	RE,WRLRN	WRITE PROGRAM	FDL12120
OF52R	41E0 1602R	1213	D10	BAL	RE,RDIRECT	READ DIRECTORY	FDL12130
OF56R	4860 0168R	1214		LH	R6,CSNI	LOAD SEQUENCE NUMBER	FDL12140
OF5AR	4065 001AR	1215		STH	R6,INBUF(R5)	STORE	FDL12150
OF5ER	4860 018CR	1216		LH	R6,NCPDBP	LOAD PDB POINTER	FDL12160
OF62R	4065 001CR	1217		STH	R6,INBUF+2(R5)	STORE	FDL12170
OF66R	C550 007C	1218		CLHI	R5,124	FIT EOVS?	FDL12180
OF6AR	23BB	1219		BFC	11,D11	NO	FDL12190
OF6CR	2460	1220		LIS	R6,0	LOAD EOVS	FDL12200
OF6ER	4065 001ER	1221		STH	R6,INBUF+4(R5)	STORE EOVS	FDL12210
OF72R	4065 0020R	1222		STH	R6,INBUF+6(R5)	STORE EOVS	FDL12220
OF76R	084A	1223		LDAR	R4,RA	LOAD BLOCK POINTER	FDL12230
OF78R	41C0 11E2R	1224		BAL	RC,SULH56	LOAD R5-R6	FDL12240
OF7CR	4300 OFAAR	1225		B	D12	SKIP	FDL12250
OF80P	084A	1226	D11	LDAR	R4,RA	LOAD BLOCK POINTER	FDL12260
OF82R	C540 001F	1227		CLHI	R4,ENDDIR	MAXIMUM? aaa	FDL12270
OF86R	43E0 194CR	1228		BFC	11,WRLRN3	YES, ERROR	FDL12280
OF8AR	41C0 11E2R	1229		BAL	RC,SULH56	LOAD R5-R6	FDL12290
OF8EP	41E0 18CER	1230		BAL	RE,WRLRN	RESTORE LAST	FDL12300
OF92R	2641	1231		AIS	R4,1	INCREMENT TO NEXT BLOCK	FDL12310
OF94R	41C0 11E2R	1232		BAL	RC,SULH56	LOAD R5-R6	FDL12320
OF98R	41E0 16D4R	1233		BAL	RE,RDLRN	READ NEXT BLOCK	FDL12330
OF9CR	2470	1234		LIS	R7,0	LOAD EOVS	FDL12340
OF9ER	4070 001AR	1235		STH	R7,INBUF	STORE	FDL12350
OFA2R	4070 001CR	1236		STH	R7,INBUF+2	STORE	FDL12360
OFA6R	41C0 11E2R	1237		BAL	RC,SULH56	LOAD R5-R6	FDL12370
OFAAR	41E0 18CER	1238	D12	BAL	RE,WRLRN	WRITE DIRECTORY	FDL12380
OFAER	4840 016ER	1239		LH	R4,CSEQNUMI	LOAD FOR VALIDATION	FDL12390
OFB2R	41E0 OAE8R	1240		BAL	RF,CHKPGM	VERIFY	FDL12400
OFB6R	2482	1241		LIS	R8,2	SET INPUT	FDL12410
OFB8R	4850 0184R	1242		LH	R5,TERMSEQ	LOAD TERMINATION	FDL12420
OFBCR	4550 016ER	1243		CLH	R5,CSEQNUMI	DONE	FDL12430
OFCOR	43B0 11FER	1244		BFC	11,EOJ	YES	FDL12440
OFC4R	4850 0166R	1245		LH	R5,NEXTI	LOAD NEXT	FDL12450
OFC8R	4050 016ER	1246		STH	R5,CSEQNUMI	SETUP TO COPY NEXT	FDL12460
OFCCR	4300 ODDER	1247		B	D2	LOOP	FDL12470
OFDOR	C8E0 0020	1248	D7	LHI	R5,STSAV	LOAD NEXT LRN aaa	FDL12480
OFD4R	4300 OEA4R	1249		B	D9	CONTINUE	FDL12490
OFD8R	D370 012CR	1250	CHK16	LB	R7,FLG16	LOAD FLAG	FDL12500
OFDCP	0877	1251		LDAR	R7,R7	SET CC	FDL12510
OFDER	4330 OE50R	1252		BZ	D5	RETURN	FDL12520
OFE2R	247F	1253		LIS	R7,15	SET	FDL12530
OFE4R	D270 012ER	1254		STB	R7,RANGE	SET FLAG	FDL12540
OFE8R	43C0 OE50R	1255		B	D5	RETURN	FDL12550
OFECP	24B1	1256	D13	LIS	RB,1	SET LOOP COUNT	FDL12560
OFEER	48A0 016AR	1257		LH	RA,CSNPDBP	LOAD POINTER	FDL12570

OFF2R	4890	018CR	1258	LH	R9,NCPDBP	LOAD POINTER	FDL12580	
OFF6R	26A1		1259	AIS	RA,1	INCREMENT PAST PDB	FDL12590	
OFF8R	2691		1260	AIS	R9,1	INCREMENT PAST PDB	FDL12600	
OFFAR	2482		1261	D14	LIS	R8,2	SET INPUT	FDL12610
OFFCR	41C0	11E2R	1262	BAL	RC,SULH56	LOAD R5-P6	FDL12620	
1000R	084A		1263	LDAR	R4,RA	LOAD ILRN	FDL12630	
1002R	41E0	16D4R	1264	BAL	RE,RDLRN	READ 1 PROGRAM LRN	FDL12640	
1006P	2480		1265	LIS	R8,0	SET OUTPUT	FDL12650	
1008P	0849		1266	LDAR	R4,R9	LOAD OLRN	FDL12660	
100AR	41C0	11E2R	1267	BAL	RC,SULH56	LOAD R5-R6	FDL12670	
100ER	41E0	18CER	1268	BAL	RE,WRLRN	WRITE 1 PROGRAM LRN	FDL12680	
1012R	45E0	0188R	1269	CLH	RB,SIZEI	DONE?	FDL12690	
1016P	43E0	0F52R	1270	BFC	11,D10	YES	FDL12700	
101AR	26B1		1271	AIS	RB,1	INCREMENT	FDL12710	
101CR	26A1		1272	AIS	RA,1	INCREMENT	FDL12720	
101ER	2691		1273	AIS	R9,1	INCREMENT	FDL12730	
1020R	4300	OFFAR	1274	B	D14	LOOP	FDL12740	
1024R	0823		1275	D128	LDAR	R2,R3	LOAD	FDL12750
1026R	C420	007F	1276	NHI	R2,X'7F'	SAVE REMAINDER	FDL12760	
102AR	9037		1277	SRLS	R3,7	DIVIDE BY SHIFTING	FDL12770	
102CR	030C		1278	BR	RC	RETURN	FDL12780	
102ER	2420		1279	UPDATE	LIS	R2,0	LOAD CHARACTER POINTER	FDL12790
1030R	41C0	1806R	1280	BAL	RC,SPCOM	FIND DELIMITER	FDL12800	
1034R	2621		1281	AIS	R2,1	INCREMENT TO NEXT FIELD	FDL12810	
1036P	41E0	153AR	1282	BAL	RE,PACK	PACK DATA	FDL12820	
103AP	0855		1283	LDAR	R5,R5	SET CC	FDL12830	
103CR	4330	15FOR	1284	BZ	QUEST	NO OPERATION	FDL12840	
1040R	2480		1285	LIS	R8,0	SET OUTPUT	FDL12850	
1042R	4050	018ER	1286	STH	R5,TEMSAV	SAVE	FDL12860	
1046R	4050	016CR	1287	STH	R5,CSEQNUMO	SET CURRENT	FDL12870	
104AR	905C		1288	SRLS	R5,12	SCALE	FDL12880	
104CR	4230	15FOR	1289	BNZ	QUEST	ERROR	FDL12890	
1050R	41E0	1602R	1290	BAL	RE,RDIRECT	CHECK IF EXISTS	FDL12900	
1054R	4530	016CR	1291	CLH	R3,CSEQNUMO	FOUND?	FDL12910	
1058R	42B0	15FOR	1292	BTC	11,QUEST	NO	FDL12920	
105CR	2450		1293	LIS	R5,0	LOAD EOY	FDL12930	
105ER	4050	016CR	1294	STH	R5,CSEQNUMO	SET EOY=CURRENT	FDL12940	
1062R	41E0	1602R	1295	BAL	RE,RDIRECT	FIND EOY	FDL12950	
1066R	0833		1296	LDAR	R3,R3	SET CC	FDL12960	
1068R	4230	0D1CR	1297	BNZ	CR8	EOY NOT FOUND	FDL12970	
106CR	0855		1298	LDAR	R5,R5	SET CC	FDL12980	
106ER	4050	0168R	1299	STH	R5,CSNI	SAVE POINTER	FDL12990	
1072R	40A0	0180R	1300	STH	RA,NSLRN	SAVE POINTER	FDL13000	
1076R	4230	1098R	1301	BNZ	U1	NOT FIRST ENTRY	FDL13010	
107AR	084A		1302	LDAR	R4,RA	LOAD BLOCK POINTER	FDL13020	
107CR	2741		1303	SIS	R4,1	DECREMENT TO PREVIOUS	FDL13030	
107ER	41C0	11E2R	1304	BAL	RC,SULH56	LOAD R5-R6	FDL13040	
1082R	41E0	16D4R	1305	BAL	RE,RDLRN	READ PREVIOUS	FDL13050	
1086R	4840	0098R	1306	LH	R4,INBUF+126	LOAD PDBP	FDL13060	
108AR	4040	018AR	1307	STH	R4,IPDBP	SAVE	FDL13070	
108ER	41C0	11E2R	1308	BAL	RC,SULH56	LOAD R5-R6	FDL13080	
1092R	41E0	16D4R	1309	BAL	RE,RDLRN	READ PDB	FDL13090	
1096R	230A		1310	B	U2	SKIP	FDL13100	
1098P	2752		1311	U1	SIS	R5,2	FIND PREVIOUS PDBP	FDL13110
109AR	4845	001AR	1312	LH	R4,INBUF(R5)	LOAD PDBP	FDL13120	

109ER	4040	018AR	1313	STH	R4,IPDBP	SAVE	FDL13130
10A2R	41C0	11E2R	1314	BAL	RC,SULH56	LOAD R5-R6	FDL13140
10A6P	41E0	16D4R	1315	BAL	RE,RDLRN	READ PDB	FDL13150
10AAR	4860	0028R	1316	LH	R6,INBUF+14	LOAD SIZE	FDL13160
10AER	4060	0188R	1317	STH	R6,SIZEI	SAVE	FDL13170
10B2R	4840	018AR	1318	LH	R4,IPDBP	LOAD POINTER	FDL13180
10B6R	2641		1319	AIS	R4,1	INCREMENT PAST PDB	FDL13190
10B8R	0A46		1320	AAR	R4,R6	ADD SIZEI	FDL13200
10BAR	D370	012CR	1321	LB	R7,FLG16	LOAD FLAG	FDL13210
10BER	4857	013CR	1322	LDA	R5,LOW(R7)	LOAD LOW	FDL13220
10C2R	4867	0140R	1323	LDA	R6,HIGH(R7)	LOAD HIGH	FDL13230
10C6R	0B65		1324	SAR	R6,R5	FIND DIFFERENCE	FDL13240
10C8R	0836		1325	LDAR	R3,R6	PUT IN CORRECT PLACE	FDL13250
10CAR	2631		1326	AIS	R3,1	CORRECT BYTE COUNT	FDL13260
10CCR	41C0	1024R	1327	BAL	RC,D128	DIVIDE	FDL13270
10D0R	0822		1328	LDAR	R2,R2	SET CC	FDL13280
10D2R	2332		1329	BZS	U3	NO REMAINDER	FDL13290
10D4R	2631		1330	AIS	R3,1	COMPENSATE FOR REMAINDER	FDL13300
10D6R	4030	0144R	1331	STH	R3,LRNS	STORE TO PDB	FDL13310
10DAR	4040	0182R	1332	STH	R4,NSLRNA	SAVE FOR VERIFY	FDL13320
10DER	0A43		1333	AAR	R4,R3	ADD IN NEW SIZE	FDL13330
10E0R	2641		1334	AIS	R4,1	ADD IN PDB	FDL13340
10E2R	4540	017CR	1335	CLH	R4,MAXLRNO	FIT?	FDL13350
10E6R	43A0	0D40R	1336	BFC	10,CR91	TOO BIG	FDL13360
10EAR	4390	0D40R	1337	BFC	9,CR91	TOO BIG	FDL13370
10EER	4040	018CR	1338	STH	R4,NCPDBP	SAVE	FDL13380
10F2R	4860	018ER	1339	LH	R6,TEMSAV	RE-LOAD POINTER	FDL13390
10F6P	4060	016CR	1340	STH	R6,CSEQNUM0	SET CURRENT	FDL13400
10FAR	4060	0136R	1341	STH	R6,SEQNUM	SAVE TO PDB	FDL13410
10FER	2480		1342	LIS	R8,0	SET OUTPUT	FDL13420
1100R	C8E0	0136R	1343	LDAI	R5,SEQNUM	LOAD LOW	FDL13430
1104R	C860	0165R	1344	LDAI	R6,SEQNUM+47	LOAD HIGH	FDL13440
1108R	4840	0182R	1345	LH	R4,NSLRNA	LOAD START LRN	FDL13450
110CR	41E0	18CER	1346	BAL	RE,WRLRN	WRITE PDB	FDL13460
1110R	2641		1347	AIS	R4,1	INCREMENT PAST PDB	FDL13470
1112R	D370	012CR	1348	LB	R7,FLG16	LOAD FLAG	FDL13480
1116R	4857	013CR	1349	LDA	R5,LOW(R7)	LOAD LOW	FDL13490
111AR	4867	0140R	1350	LDA	R6,HIGH(R7)	LOAD HIGH	FDL13500
111ER	41E0	18CER	1351	BAL	RE,WRLRN	WRITE PROGRAM	FDL13510
1122R	41E0	1602R	1352	BAL	RE,RDIRECT	FIND MATCHING SEQUENCE NUMBER	FDL13520
1126R	C5A0	001C	1353	CLHI	RA,STDIR	FIRST LRN ? 000	FDL13530
112AR	23E2		1354	BFC	11,U9	YES	FDL13540
112CP	2305		1355	B	U8	SKIP	FDL13550
112ER	C550	0008	1356	CLHI	R5,8	FIRST OR SECOND ENTRY?	FDL13560
1132R	4280	15FOR	1357	BL	QUEST	YES	FDL13570
1136R	C860	7000	1358	LHI	R6,X'7000'	LOAD DELETE CHARACTER	FDL13580
113AR	4065	001AR	1359	STH	R6,INBUF(R5)	DELETE	FDL13590
113ER	4065	001CR	1360	STH	R6,INBUF+2(R5)	DELETE	FDL13600
1142R	41C0	11E2R	1361	BAL	RC,SULH56	LOAD R5-R6	FDL13610
1146R	084A		1362	LDAR	R4,RA	LOAD BLOCK POINTER	FDL13620
1148R	41E0	18CER	1363	BAL	RE,WRLRN	WRITE DIRECTORY	FDL13630
114CP	4840	0180R	1364	LH	R4,NSLRN	LOAD EOF BLOCK POINTER	FDL13640
1150R	41C0	11E2R	1365	BAL	RC,SULH56	LOAD R5-R6	FDL13650
1154R	41E0	16D4R	1366	BAL	RE,RDLRN	READ DIRECTORY BLOCK	FDL13660
1158R	4860	018ER	1367	LH	R6,TEMSAV	LOAD UPDATE SEQUENCE NUMBER	FDL13670

115CR	4850	0168R	1368	LH	R5,CSNI	LOAD EOY BIB POINTER	FDL13680	
1160R	4065	001AR	1369	STH	R6,INBUF(R5)	WRITE SEQUENCE NUMBER	FDL13690	
1164R	4860	0182R	1370	LH	R6,NSLRNA	LOAD POINTER	FDL13700	
1168R	4065	001CR	1371	STH	R6,INBUF+2(R5)	WRITE PDB POINTER	FDL13710	
116CR	41C0	11E2R	1372	BAL	RC,SULH56	LOAD R5-R6	FDL13720	
1170R	41E0	18CER	1373	BAL	RE,WRLRN	WRITE DIRECTORY	FDL13730	
1174R	4850	0168R	1374	LH	R5,CSNI	RE-LOAD POINTER	FDL13740	
1178R	C550	007C	1375	CLHI	R5,124	LAST ENTRY IN BLOCK?	FDL13750	
117CR	4330	11AAR	1376	BE	U63	YES	FDL13760	
1180R	C550	0078	1377	CLHI	R5,120	NEXT TO LAST?	FDL13770	
1184R	4280	11C4R	1378	BL	U68	NO	FDL13780	
1188R	4860	0182R	1379	LH	R6,NSLRNA	LOAD BLOCK POINTER	FDL13790	
118CR	C560	001F	1380	CLHI	R6,ENDDIR	LAST BLOCK	FDL13800	
1190R	4230	11C0R	1381	BNE	U64	NO	FDL13810	
1194R	41C0	11E2R	1382	U65	BAL	RC,SULH56	LOAD R5-R6	FDL13820
1198R	41E0	16D4R	1383	BAL	RE,RDLRN	RE-READ LRN	FDL13830	
119CR	2561		1384	LCS	R6,1	LOAD EOD	FDL13840	
119ER	4060	0096R	1385	STH	R6,INBUF+124	WRITE EOD	FDL13850	
11A2R	4060	0098R	1386	STH	R6,INBUF+126	WRITE EOD	FDL13860	
11A6R	4300	11CER	1387	B	U67	VERIFY	FDL13870	
11AAR	2641		1388	U63	AIS	R4,1	GET NEXT BLOCK	FDL13880
11ACR	41C0	11E2R	1389	BAL	RC,SULH56	LOAD R5-R6	FDL13890	
11BOR	41E0	16D4R	1390	BAL	RE,RDLRN	READ NEXT BLOCK	FDL13900	
11B4R	2460		1391	LIS	R6,0	LOAD EOY	FDL13910	
11B6R	4060	001AR	1392	STH	R6,INBUF	STORE EOY	FDL13920	
11BAR	4060	001CR	1393	STH	R6,INBUF+2	STORE EOY	FDL13930	
11BER	2308		1394	B	U67	SKIP	FDL13940	
11COR	4850	0168R	1395	U64	LH	R5,CSNI	LOAD BIB POINTER	FDL13950
11C4R	2460		1396	U68	LIS	R6,0	LOAD EOY	FDL13960
11C6R	4065	001ER	1397	STH	R6,INBUF+4(R5)	WRITE EOY	FDL13970	
11CAR	4065	0020R	1398	STH	R6,INBUF+6(R5)	WRITE EOY	FDL13980	
11CER	41C0	11E2R	1399	U67	BAL	RC,SULH56	LOAD R5-R6	FDL13990
11D2R	41E0	18CER	1400	BAL	RE,WRLRN	WRITE DIRECTORY	FDL14000	
11D6R	4840	018ER	1401	U66	LH	R4,TEMSAV	LOAD SEQUENCE NUMBER	FDL14010
11DAR	41F0	0AE8R	1402	BAL	RF,CHKPGM	VERIFY	FDL14020	
11DER	4300	11FER	1403	B	EOJ	DONE	FDL14030	
11E2R	C850	001AR	1404	SULH56	LDAI	R5,INBUF	LOAD LOW	FDL14040
11E6R	C860	0099R	1405	LDAI	R6,INBUF+127	LOAD HIGH	FDL14050	
11EAR	030C		1406	BR	RC	RETURN	FDL14060	
11ECR	2480		1407	EOD	LIS	R8,0	SET OUTPUT	FDL14070
11EER	C830	1992R	1408	LDAI	R3,EODMSG	LOAD ADDRESS	FDL14080	
11F2R	D320	1ADDR	1409	LB	R2,EODMSG	LOAD SIZE	FDL14090	
11F6R	41D0	126AR	1410	BAL	RD,FINDCON	PRINT	FDL14100	
11FAR	4300	1896R	1411	B	POUND	RE-START	FDL14110	
11FER	41C0	0442R	1412	EOJ	BAL	RC,CLRDIS	CLEAR DISPLAY	FDL14120
1202R	C830	19A0R	1413	LDAI	R3,EOJMSG	LOAD ADDRESS	FDL14130	
1206R	D320	1AEOR	1414	LB	R2,EOJMSG	LOAD SIZE	FDL14140	
120AR	2480		1415	LIS	R8,0	SET OUTPUT	FDL14150	
120CR	41D0	126AR	1416	BAL	RD,FINDCON	PRINT	FDL14160	
1210R	4300	1896R	1417	B	POUND	RE-START	FDL14170	
1214R	C830	1A66R	1418	EOV	LDAI	R3,EOVM	LOAD ADDRESS	FDL14180
1218R	D320	1AEOR	1419	LB	R2,EOVMS	LOAD SIZE	FDL14190	
121CR	2480		1420	LIS	R8,0	SET OUTPUT	FDL14200	
121ER	41D0	126AR	1421	BAL	RD,FINDCON	PRINT	FDL14210	
1222P	4300	1896R	1422	B	POUND	RE-START	FDL14220	

1226R	2420	1423	FIND	LIS	R2,0	CLEAR CHARACTER POINTER	FDL14230
1228R	41C0 1806R	1424		BAL	RC,SPCOM	FIND DELIMITER	FDL14240
122CR	2621	1425		AIS	R2,1	INCREMENT PAST	FDL14250
122ER	D332 00E2R	1426		LB	R3,CONIN(R2)	LOAD 1ST CHARACTER	FDL14260
1232R	C530 004F	1427		CLHI	R3,C'O'	O INPUT	FDL14270
* 1236R	23B8	1428		BFC	11,FINDO	OUTPUT DEVICE	FDL14280
1238R	C530 0049	1429		CLHI	R3,C'I'	I INPUT	FDL14290
* 123CR	23B3	1430		BFC	11,FINDI	INPUT DEVICE	FDL14300
123ER	4300 15FOR	1431		B	QUEST	INVALID INPUT	FDL14310
1242R	2482	1432	FINDI	LIS	R8,2	SET INPUT FLAG	FDL14320
* 1244R	2302	1433		B	FINDC	GO TO COMMON	FDL14330
1246R	2480	1434	FINDO	LIS	R8,0	SET OUTPUT FLAG	FDL14340
1248R	41C0 1806R	1435	FINDC	BAL	RC,SPCOM	FIND DELIMETER	FDL14350
124CR	2621	1436		AIS	R2,1	INCREMENT PAST	FDL14360
124ER	41E0 153AR	1437		BAL	RE,PACK	PACK + CONVERT DATA	FDL14370
1252R	4058 016CR	1438		STH	R5,CSEQNUMO(R8)	SAVE	FDL14380
1256R	905C	1439		SRLS	R5,12	SCALE	FDL14390
1258R	4230 15FOR	1440		BNZ	QUEST	ERROR	FDL14400
125CR	41E0 1602R	1441		BAL	RE,RDIRECT	FIND IF EXISTS	FDL14410
1260R	0833	1442		LDAR	R3,R3	LOAD RETURNED SEQUENCE #	FDL14420
1262R	4330 1214R	1443		BZ	EOV	EOV ENCOUNTERED	FDL14430
1266R	4300 11FER	1444		B	EOJ	DONE	FDL14440
126AR	C800 2020	1445	FINDCON	LHI	RO,X'2020'	LOAD BLANK	FDL14450
126ER	C810 0048	1446		LHI	R1,72	LOAD COUNT	FDL14460
1272R	2712	1447	FC0	SIS	R1,2	DECREMENT COUNT	FDL14470
1274R	4001 00E2R	1448		STH	RO,CONIN(R1)	STORE	FDL14480
* 1278R	2033	1449		BNZ	FC0	LOOP	FDL14490
127AR	D3A0 0010R	1450		LB	RA,DEVTYP	LOAD DEVICE TYPE	FDL14500
127ER	27A1	1451		SIS	RA,1	DECREMENT	FDL14510
* 1280R	2134	1452		BNZ	FC1	NOT = 1	FDL14520
1282R	41C8 12BOR	1453		BAL	RC,PASLA(R8)	PASLA DEVICE(CRT)	FDL14530
1286R	030D	1454		BR	RD	RETURN	FDL14540
1288R	27A1	1455	FC1	SIS	RA,1	DECREMENT	FDL14550
* 128AR	2134	1456		BNZ	FC2	NOT=2	FDL14560
128CR	41C8 12B8R	1457		BAL	RC,CLI(R8)	CURRENT LOOP DEVICE	FDL14570
1290R	030D	1458		BR	RD	RETURN	FDL14580
1292R	27A1	1459	FC2	SIS	RA,1	DECREMENT	FDL14590
* 1294R	2134	1460		BNZ	FC4	NOT=3	FDL14600
1296R	41C8 12B8R	1461	FC3	BAL	RC,CLI(R8)	DEFAULT TO TTY	FDL14610
129AR	030D	1462		BR	RD	RETURN	FDL14620
129CR	27A1	1463	FC4	SIS	RA,1	DECREMENT	FDL14630
* 129ER	2134	1464		BNZ	FC5	NOT=4	FDL14640
12A0R	41C8 12BOR	1465		BAL	RC,PASLA(R8)	PASLA DEVICE(CARCUSEL)	FDL14650
12A4R	030D	1466		BR	RD	RETURN	FDL14660
12A6R	27A1	1467	FC5	SIS	RA,1	DECREMENT	FDL14670
* 12A8R	2039	1468		BNZ	FC3	NOT=5	FDL14680
12AAR	41C8 12COR	1469		BAL	RC,MB(R8)	MICRO-BUS DEVICE	FDL14690
12AER	030D	1470		BR	RD	RETURN	FDL14700
12BOR	4300 1552R	1471	PASLA	B	PASLAO	OUT ON PASLA	FDL14710
12B4P	4300 09EER	1472		B	PASLAI	IN ON PASLA	FDL14720
12B8R	4300 0B72R	1473	CLI	B	TTYO	OUT ON CURRENT LOOP	FDL14730
12BCR	4300 09F4R	1474		B	TTYI	IN ON CURRENT LOOP	FDL14740
12COR	4300 0B04R	1475	MB	B	MBO	OUT ON MICRO-BUS	FDL14750
12C4R	4300 099AR	1476		B	MBI	IN ON MICRO-BUS	FDL14760
12C8R	0888	1477	FINDDRV	LDAR	R8,R8	LOAD I/O FLAG	FDL14770



*	12CAR	2136	1478		BWZ	FD1	INPUT MODE	FDL14780
	12CCR	4840 0176R	1479		LH	R4,DRO	LOAD INPUT DRIVE #	FDL14790
	12DOR	CA40 0030	1480		AAI	R4,X'30'	LOAD	FDL14800
	12D4R	2305	1481		BS	LEAVE	EXIT	FDL14810
	12D6R	4840 0178R	1482	FD1	LH	R4,DRI	LOAD OUTPUT DRIVE #	FDL14820
	12DAR	CA40 0030	1483		AAI	R4,X'30'	LOAD	FDL14830
	12DER	030C	1484	LEAVE	BR	RC	RETURN	FDL14840
	12EOR	41D0 0B52R	1485	FMAXLRN	BAL	RD,RESET	IDLE CHECK	FDL14850
	12E4R	C840 07D2	1486		LHI	R4,X'7D2'	LOAD MAX GOOD LRN	FDL14860
	12E8R	4818 0170R	1487	FM1	LH	R1,PRECMDO(R8)	LOAD PRECOMMAND	FDL14870
	12ECR	2421	1488		LIS	R2,1	LOAD READ CMD BITS	FDL14880
	12EER	0612	1489		OAR	R1,R2	MERGE	FDL14890
	12FOR	41C0 11E2R	1490		BAL	RC,SULH56	LOAD R5-R6	FDL14900
	12F4R	D320 0017R	1491		LB	R2,FLPAD	LOAD ADDRESS	FDL14910
	12F8R	9824	1492		WHR	R2,R4	WRITE LRN #	FDL14920
	12FAR	9E21	1493		OCR	R2,R1	ISSUE READ	FDL14930
	12FCR	9D23	1494		SSR	R2,R3	SENSE STATUS	FDL14940
	12FER	2081	1495		BTBS	8,1	WAIT FOR BUSY NOT	FDL14950
	1300R	D925 0000	1496	FM2	RH	R2,0(R5)	READ DATA	FDL14960
	1304R	2652	1497		AIS	R5,2	BUMP	FDL14970
	1306R	0565	1498		CLAR	R6,R5	DONE??	FDL14980
	1308R	2284	1499		BNCS	FM2	NO, LOOP	FDL14990
	130AR	9D23	1500		SSR	R2,R3	SENSE STATUS	FDL15000
	130CR	C330 0050	1501		THI	R3,X'50'	TEST FOR DEFECTIVE TRACK	FDL15010
	1310R	2126	1502		BTFS	2,AGAIN	TRY NEXT	FDL15020
	1312R	41D0 18AAR	1503		BAL	RD,STOP	STOP	FDL15030
	1316R	4048 017CR	1504		STH	R4,MAXLRNO(R8)	STORE MAX	FDL15040
	131AR	030E	1505		BR	RE	RETURN	FDL15050
	131CR	41D0 18AAR	1506	AGAIN	BAL	RD,STOP	STOP	FDL15060
	1320R	C540 079E	1507		CLHI	R4,X'79E'	EXCEEDS MINIMUM	FDL15070
*	1324R	2185	1508		BL	MEDERR	YES	FDL15080
	1326R	CB40 001A	1509		SHI	R4,26	DECREMENT	FDL15090
	132AR	4300 12E8R	1510		B	FM1	GO AGAIN	FDL15100
	132ER	4040 017CR	1511	MEDERR	STH	R4,MAXLRNO	STORE RESULT	FDL15110
	1332R	C830 19A4R	1512		LDAI	R3,MEDMSG	LOAD ADDRESS	FDL15120
	1336R	D320 1AE1R	1513		LB	R2,MEDMSG	LOAD SIZE	FDL15130
	133AR	2480	1514		LIS	R8,0	SET OUTPUT	FDL15140
	133CR	41D0 126AR	1515		BAL	RD,FINDCON	PRINT	FDL15150
	1340R	4300 1896R	1516		B	POUND	RE-START	FDL15160
	1344R	2480	1517	INIT	LIS	R8,0	SET OUTPUT	FDL15170
	1346R	41E0 12E0R	1518		BAL	RE,FMAXLRN	FIND MAXIMUM LRN	FDL15180
	134AR	41F0 1362R	1519		BAL	RF,INITDIR	INITIALIZE DIRECTORY	FDL15190
	134ER	41F0 18BER	1520		BAL	RF,WRTBOOT	WRITE LRN 5	FDL15200
	1352R	C840 0020	1521		LDAI	R4,STSAV	LOAD INIT VALUE @@@	FDL15210
	1356R	4040 018CR	1522		STH	R4,NCPDBP	INITIALIZE	FDL15220
	135AR	4040 0182R	1523		STH	R4,NSLRNA	INITIALIZE	FDL15230
	135ER	4300 11FER	1524		B	EOJ	PRINT EOJ	FDL15240
	1362R	2440	1525	INITDIR	LIS	R4,0	CLEAR STORAGE	FDL15250
	1364R	2450	1526		LIS	R5,0	CLEAR POINTER	FDL15260
	1366R	4045 001AR	1527	ID1	STH	R4,INBUF(R5)	STORE	FDL15270
	136AR	2652	1528		AIS	R5,2	INCREMENT POINTER	FDL15280
	136CR	C550 0080	1529		CLHI	R5,128	DONE	FDL15290
*	1370R	20B5	1530		BTC	11,ID1	LOOP	FDL15300
	1372R	C840 001C	1531		LHI	R4,STDIR	LOAD FIRST LRN @@@	FDL15310
	1376R	41D0 0B52R	1532		BAL	RD,RESET	IDLE CHECK	FDL15320

137AR	41C0	11E2R	1533		BAL	RC,SULH56	LOAD R5-R6	FDL15330
137ER	41E0	18CER	1534		BAL	RE,WRLRN	WRITE FIRST LRN	FDL15340
1382R	2641		1535		AIS	R4,1	LOAD SECOND LRN	FDL15350
1384R	41C0	11E2R	1536		BAL	RC,SULH56	LOAD R5-R6	FDL15360
1388R	41E0	18CER	1537		BAL	RE,WRLRN	WRITE SECOND LRN	FDL15370
138CR	2641		1538		AIS	R4,1	LOAD THIRD LRN	FDL15380
138ER	41C0	11E2R	1539		BAL	RC,SULH56	LOAD R5-R6	FDL15390
1392R	41E0	18CER	1540		BAL	RE,WRLRN	WRITE THIRD LRN	FDL15400
1396R	2541		1541		LCS	R4,1	LOAD EOD	FDL15410
1398R	4040	0098R	1542		STH	R4,INBUF+126	STORE	FDL15420
139CR	C840	001F	1543		LHI	R4,ENDDIR	LOAD LAST LRN @@@	FDL15430
13A0R	41C0	11E2R	1544		BAL	RC,SULH56	LOAD R5-R6	FDL15440
13A4R	41E0	18CER	1545		BAL	RE,WRLRN	WRITE LAST LRN	FDL15450
13A8R	030F		1546		BR	RF	RETURN	FDL15460
13AAR	C810	4000	1547	LCORE	LHI	R1,X'4000'	LOAD TEST PATTERN	FDL15470
13AER	0A11		1548		AAR	R1,R1	DOUBLE	FDL15480
1390R	2319		1549		BNM	BIG	32BIT MACHINE	FDL15490
13B2R	2412		1550		LIS	R1,2	SET 16 BIT FLAG	FDL15500
13B4R	D210	012CR	1551		STB	R1,FLG16	STORE	FDL15510
13B8R	C800	13D2R	1552		LDAI	RO,SETUPA	SETUP MM TO POINT TO SETUP	FDL15520
13BCR	4000	003E	1553		STH	RO,X'3E'	TO REMOVE ANY PENDING MMALF	FDL15530
13COR	2309		1554		B	SETUPA	GO	FDL15540
13C2R	2410		1555	BIG	LIS	R1,0	CLEAR 16 BIT FLAG	FDL15550
13C4R	D210	012CR	1556		STB	R1,FLG16	STORE	FDL15560
13C8R	C800	13D2R	1557		LDAI	RO,SETUPA	SETUP MM TO POINT TO SETUP	FDL15570
13CCR	4000	003E	1558		STH	RO,X'3E'	TO REMOVE ANY PENDING MMALF	FDL15580
13D0R	2301		1559		B	SETUPA	GO	FDL15590
13D2R			1560		IFZ	ADC-2		FDL15600
13D2R	C800	20F0	1561	SETUPA	LHI	RO,X'20F0'	LOAD PSW	FDL15610
13D6R	9530		1562		EPSR	R3,RO	SWAP	FDL15620
13D8R	0700		1563	GO16	XAR	RO,RO	LOAD PSW CONSTANT	FDL15630
13DAR	4000	002C	1564		STH	RO,X'2C'	STORE	FDL15640
13DER	4000	0030	1565		STH	RO,X'30'	STORE	FDL15650
13E2R	4000	0032	1566		STH	RO,X'32'	STORE	FDL15660
13E6R	4000	0034	1567		STH	RO,X'34'	STORE	FDL15670
13EAR	4000	0038	1568		STH	RO,X'38'	STORE	FDL15680
13EER	4000	003A	1569		STH	RO,X'3A'	STORE	FDL15690
13F2R	4000	003C	1570		STH	RO,X'3C'	STORE	FDL15700
13F6R	4000	0044	1571		STH	RO,X'44'	STORE	FDL15710
13FAR	4000	004C	1572		STH	RO,X'4C'	STORE	FDL15720
13FER	C800	1AF4R	1573		LHI	RO,REGSAVA	LOAD SAVE POINTER	FDL15730
1402R	4000	0022	1574		STH	RO,X'22'	STORE TO POINTER	FDL15740
1406R	C800	1418R	1575		LDAI	RO,ILLIST	LOAD ADDRESS	FDL15750
140AR	4000	0036	1576		STH	RO,X'36'	STORE	FDL15760
140ER	C800	1424R	1577		LDAI	RO,MCHMAL	LOAD ADDRESS	FDL15770
1412R	4000	003E	1578		STH	RO,X'3E'	STORE	FDL15780
1416R	030C		1579		BR	RC	RETURN	FDL15790
			1580		ELSE			FDL15800
			1581	SETUPA	LHI	RO,X'20F0'	LOAD PSW	FDL15810
			1582		EPSR	R3,RO	SWAP	FDL15820
			1583	GO32A	LHI	RO,X'F0'	LOAD PSW CONSTANT	FDL15830
			1584		STH	RO,X'32'	STORE	FDL15840
			1585		STH	RO,X'3A'	STORE	FDL15850
			1586		LHI	RO,0	LOAD PSW CONSTANT	FDL15860
			1587		STH	RO,X'30'	STORE	FDL15870

			1588	STH	RO,X'34'	STORE	FDL15880
			1589	STH	RO,X'38'	STORE	FDL15890
			1590	STH	RO,X'3C'	STORE	FDL15900
			1591	STH	RO,X'40'	STORE	FDL15910
			1592	LDAI	RO,ILLIST	LOAD ADDRESS	FDL15920
			1593	STA	RO,X'34'	STORE	FDL15930
			1594	LDAI	RO,MCHMAL	LOAD ADDRESS	FDL15940
			1595	STA	RO,X'3C'	STORE	FDL15950
			1596	LI	RO,PSWSAVA	GET ADDRESS	FDL15960
			1597	NHI	RO,X'FF00'	MAKE X'100' BOUNDARY	FDL15970
			1598	AHI	RO,X'100'	MAKE > ORIGINAL	FDL15980
			1599	STH	RO,X'84'	STORE	FDL15990
			1600	LI	RO,REGSAVA	GET ADDRESS	FDL16000
			1601	NHI	RO,X'FF00'	MAKE X'100' BOUNDARY	FDL16010
			1602	AHI	RO,X'108'	MAKE > ORIGINAL	FDL16020
			1603	STH	RO,X'86'	STORE	FDL16030
			1604	LDAI	R3,RELPROT	LOAD ADDRESS	FDL16040
			1605	STA	R3,X'94'	STORE	FDL16050
			1606	LDAI	R3,BNDYERR	LOAD ADDRESS	FDL16060
			1607	STA	R3,X'CC'	STORE	FDL16070
			1608	LDAI	R3,SYSQERR	LOAD ADDRESS	FDL16080
			1609	STA	R3,X'8C'	STORE	FDL16090
			1610	LDAI	R3,SVCERR	LOAD ADDRESS	FDL16100
			1611	LHI	R4,X'9C'	LOAD	FDL16110
			1612	LIS	R5,4	BXLE	FDL16120
			1613	LHI	R6,X'9C'+32	LIMITS	FDL16130
			1614	LCLP	STA R3,0(R4)	STORE	FDL16140
			1615		BXLE R4,LCLP	LOOP	FDL16150
			1616		BR RC	RETURN	FDL16160
			1617		ENDC		FDL16170
			1618	ILLIST	LB R2,ILLMSG	LOAD SIZE	FDL16180
			1619		LDAI R3,ILLMSG	LOAD ADDRESS	FDL16190
			1620		B MCHMAL4	RE-ENABLE	FDL16200
			1621	MCHMAL	EQU *		FDL16210
			1622		LB R1,FLG16	GET FLAG	FDL16220
			1623		LDAR R1,R1	SET CC	FDL16230
			1624		BZ MM32	32 BIT MACHINE	FDL16240
			1625		LH R1,X'38'	GET OLD PSW	FDL16250
			1626		THI R1,X'1'	L FLAG SET??	FDL16260
			1627		BNZ PFAIL	NO, POWER DOWN	FDL16270
			1628		B MCHMAL3	POWER UP	FDL16280
			1629	MN32	LH RO,X'40'	GET POSSIBLE REASON CODE	FDL16290
			1630		BNZ NEW32	SERIES 32	FDL16300
			1631		BTC 1,PFail	EARLY POWER FAIL	FDL16310
			1632	MCHMAL3	LHI RO,X'FO'	LOAD NEW PSW	FDL16320
			1633	MCHMAL2	EPSR R1,RO	DROP MMF INTERRUPT	FDL16330
			1634		LB R2,MMFMSG	LOAD SIZE	FDL16340
			1635		LDAI R3,MMFMSG	LOAD ADDRESS	FDL16350
			1636	MCHMAL4	LIS R8,0	SET OUTPUT	FDL16360
			1637		BAL RD,FINDCON	PRINT	FDL16370
			1638	MCHMAL1	LHI RO,X'20FO'	LOAD CONSTANT	FDL16380
			1639		EPSR R1,RO	SWAP PSW	FDL16390
			1640		LB RO,LDFLG	GET FLAG	FDL16400
			1641		LDAR RO,RO	SET CC	FDL16410
			1642		BNZ STARTL	RE-START LOADER	FDL16420
1418R	D320	1AE2R					
141CR	C830	19B4R					
1420R	4300	1454R					
	0000	1424R					
1424R	D310	012CR					
1428R	0811						
* 142AR	2338						
142CR	4810	0038					
1430R	C310	0001					
1434R	4230	146ER					
* 1438R	2307						
143AR	4800	0040					
143ER	4230	1478R					
1442R	4210	146ER					
1446R	C800	00FO					
144AR	9510						
144CR	D320	1AE2R					
1450R	C830	19C8R					
1454R	2480						
1456R	41D0	126AR					
145AR	C800	20FO					
145ER	9510						
1460R	D300	012DR					
1464R	0800						
1466R	4230	0000R					

146AR	4300	1896R	1643		B	POUND	RE-START	FDL16430
146ER	C800	0A0F	1644	PFAIL	LHI	R0,X'0A0F'	LOAD NEW PSW	FDL16440
1472R	9104		1645		SLLS	R0,4	SCALE	FDL16450
1474R	9510		1646		EPSR	R1,R0	SET WAIT & ENABLE FOR POWER-UP	FDL16460
* 1476R	2204		1647		B	PFAIL	BRANCH/LOOP	FDL16470
* 1478R	2015		1648	NEW32	BM	PFAIL	POWER DOWN	FDL16480
147AR	2400		1649		LIS	R0,0	CLEAR	FDL16490
147CR	4000	0040	1650		STH	R0,X'40'	STORE	FDL16500
1480R	4300	144AR	1651		B	MCHMAL2	POWER UP OR OTHER	FDL16510
1484R	D320	1AE3R	1652	RELPRCT	LB	R2,RPMSGS	LOAD SIZE	FDL16520
1488R	C830	1A8CR	1653		LDAI	R3,RPMSG	LOAD ADDRESS	FDL16530
148CR	4300	1454R	1654		B	MCHMAL4	GO TO COMMON	FDL16540
1490R	D320	1AE9R	1655	BNDYERR	LB	R2,BNDYMSG	LOAD SIZE	FDL16550
1494R	C830	1AACR	1656		LDAI	R3,BNDYMSG	LOAD ADDRESS	FDL16560
1498R	4300	1454R	1657		B	MCHMAL4	GO TO COMMON	FDL16570
149CR	D320	1AE9R	1658	SYSQERR	LB	R2,SYSQMSG	LOAD SIZE	FDL16580
14A0R	C830	1ABER	1659		LDAI	R3,SYSQMSG	LOAD ADDRESS	FDL16590
14A4R	4300	1454R	1660		B	MCHMAL4	GO TO COMMON	FDL16600
14A8R	D320	1AEAR	1661	SVCERR	LB	R2,SVCMSG	LOAD SIZE	FDL16610
14ACR	C830	1AD0R	1662		LDAI	R3,SVCMSG	LOAD ADDRESS	FDL16620
14BOR	4300	1454R	1663		B	MCHMAL4	GO TO COMMON	FDL16630
14B4R	2420		1664	LIMITS	LIS	R2,0	CLEAR CHARACTER POINTER	FDL16640
14B6R	41C0	1806R	1665		BAL	RC,SPCOM	FIND DELIMITER	FDL16650
14BAR	2621		1666		AIS	R2,1	INCREMENT PAST	FDL16660
14BCR	D370	012CR	1667		LB	R7,FLG16	LOAD 16 FLAG	FDL16670
14COR	4020	018ER	1668		STH	R2,TEMSAV	SAVE POINTER	FDL16680
14C4R	41E0	153AR	1669		BAL	RE,PACK	PACK + CONVERT	FDL16690
14C8R	0832		1670		LDAR	R3,R2	GET NEW POINTER	FDL16700
14CAR	4B30	018ER	1671		SH	R3,TEMSAV	FIND DIFFERENCE	FDL16710
14CER	D370	012CR	1672		LB	R7,FLG16	LOAD FLAG	FDL16720
14D2R	0877		1673		LDAR	R7,R7	SET CC	FDL16730
* 14D4R	2336		1674		BZ	LIM32	SKIP IF 32 BIT	FDL16740
14D6R	C530	0004	1675		CLHI	R3,4	4 CHARACTERS ?	FDL16750
14DAR	4220	15FOR	1676		BTC	2,QUEST	TOO MANY	FDL16760
* 14DER	2305		1677		B	LIM2	CONTINUE	FDL16770
14E0R	C530	0006	1678	LIM32	CLHI	R3,6	MORE THAN 6 DIGITS ?	FDL16780
14E4R	4220	15FOR	1679		BTC	2,QUEST	ERROR	FDL16790
14E8R	4057	013CR	1680	LIM2	STA	R5,LOW(R7)	STORE TO LOW	FDL16800
14ECR	41C0	1806R	1681		BAL	RC,SPCOM	FIND DELIMITER	FDL16810
14FOR	2621		1682		AIS	R2,1	INCREMENT PAST	FDL16820
14F2R	4020	018ER	1683		STH	R2,TEMSAV	SAVE POINTER	FDL16830
14F6R	41E0	153AR	1684		BAL	RE,PACK	PACK & CONVERT	FDL16840
14FAR	0832		1685		LDAR	R3,R2	GET NEW POINTER	FDL16850
14FCR	4B30	018ER	1686		SH	R3,TEMSAV	FIND DIFFERENCE	FDL16860
1500R	D370	012CR	1687		LB	R7,FLG16	LOAD 16 FLAG	FDL16870
1504R	0877		1688		LDAR	R7,R7	SET CC	FDL16880
* 1506R	2336		1689		BZ	LIM32A	SKIP IF 32 BIT	FDL16890
1508R	C530	0004	1690		CLHI	R3,4	GREATER THAN 4 DIGITS ?	FDL16900
150CR	4220	15FOR	1691		BTC	2,QUEST	ERROR	FDL16910
* 1510R	2305		1692		B	LIM3	CONTINUE	FDL16920
1512R	C530	0006	1693	LIM32A	CLHI	R3,6	GREATER THAN 6 DIGITS ?	FDL16930
1516R	4220	15FOR	1694		BTC	2,QUEST	ERROR	FDL16940
151AR	4057	0140R	1695	LIM3	STA	R5,HIGH(R7)	STORE TO HIGH	FDL16950
151ER	4B57	013CR	1696		SA	R5,LOW(R7)	FIND DIFFERENCE	FDL16960
1522R	4280	0D2ER	1697		BTC	8,CR9	L>H ERROR	FDL16970

1526R	0835	1698		LDAR	R3,R5	LOAD	FDL16980
1528R	41C0 1024R	1699		BAL	RC,D128	DIVIDE	FDL16990
152CR	0822	1700		LDAR	R2,R2	LOAD REMAINDER	FDL17000
* 152ER	2332	1701		BZ	LIM1	NO REMAINDER	FDL17010
1530R	2631	1702		AIS	R3,1	INCREMENT FOR REMAINDER	FDL17020
1532R	4030 0144R	1703	LIM1	STH	R3,LRNS	SAVE # OF LRNS	FDL17030
1536R	4300 1896R	1704		B	POUND	DONE	FDL17040
153AR	24E0	1705	PACK	LIS	R5,0	CLEAR DATA STORAGE	FDL17050
153CR	D312 00E2R	1706	PK1	LB	R1,CONIN(R2)	LOAD DATA	FDL17060
1540R	41C0 OBAAR	1707		BAL	RC,CONVERT	CONVERT TO HEX	FDL17070
1544R	0811	1708		LDAR	R1,R1	LOAD HEX	FDL17080
* 1546R	2115	1709		BM	PK2	BAD RETURN	FDL17090
1548R	9154	1710		SLLS	R5,4	ROTATE DATA	FDL17100
154AR	0AE1	1711		AAR	R5,R1	ADD IN NEXT DATA	FDL17110
154CR	2621	1712		AIS	R2,1	INCREMENT COUNT	FDL17120
* 154ER	2209	1713		B	PK1	LOOP	FDL17130
1550R	030E	1714	PK2	BR	RE	RETURN	FDL17140
1552R	D310 0012R	1715	PASLAC	LB	R1,PASAD	LOAD READ ADDRESS	FDL17150
1556R	DE10 0131R	1716		OC	R1,PASL2	SET CMD2 BYTE	FDL17160
155AR	DE10 0133R	1717		OC	R1,PASRD	SET READ MODE	FDL17170
155ER	9B14	1718		RDR	R1,R4	DUMMY READ	FDL17180
1560R	9D14	1719		SSR	R1,R4	SENSE STATUS	FDL17190
1562R	2281	1720		BFBS	8,1	WAIT FOR BUSY	FDL17200
1564R	D310 0013R	1721		LB	R1,PASAD+1	LOAD WRITE ADDRESS	FDL17210
1568R	DE10 0132R	1722		OC	R1,PASWR	SET WRITE MODE	FDL17220
156CR	4300 15A6R	1723		B	PA04	SKIP	FDL17230
1570R	D310 0013R	1724	PA05	LB	R1,PASAD+1	LOAD WRITE ADDRESS	FDL17240
1574R	9D14	1725		SSR	R1,R4	SENSE STATUS	FDL17250
1576R	2081	1726		BTBS	8,1	BUSY LOOP	FDL17260
1578R	DA13 0000	1727		WD	R1,0(R3)	WRITE DATA	FDL17270
157CR	2631	1728		AIS	R3,1	INCREMENT POINTER	FDL17280
157ER	2721	1729		SIS	R2,1	DECREMENT COUNT	FDL17290
1580R	D310 0012R	1730		LB	R1,PASAD	LOAD READ ADDRESS	FDL17300
1584R	9D14	1731		SSR	R1,R4	SENSE STATUS	FDL17310
1586R	218C	1732		BTFS	8,PA03	BUSY = INPUT READY	FDL17320
1588R	9B14	1733		RDR	R1,R4	INPUT DATA	FDL17330
158AR	C540 0014	1734		CLHI	R4,X'14'	COMPARE TO DC4(STOP)	FDL17340
158ER	42E0 159ER	1735		BTC	11,PA03	JUNK CHARACTER	FDL17350
1592R	9D14	1736	PA02	SSR	R1,R4	SENSE STATUS	FDL17360
1594R	2081	1737		BTBS	8,1	BUSY LOOP	FDL17370
1596R	9B14	1738		RDR	R1,R4	READ DATA	FDL17380
1598R	C540 0012	1739		CLHI	R4,X'12'	COMPARE TO DC2(GO)	FDL17390
* 159CR	20E5	1740		BTC	11,PA02	LOOP UNTIL MATCH	FDL17400
159ER	0822	1741	PA03	LDAR	R2,R2	LOAD COUNT	FDL17410
15A0R	4230 1570R	1742		BNZ	PA05	CONTINUE	FDL17420
15A4R	030C	1743		BR	RC	RETURN	FDL17430
15A6R	D310 0013R	1744	PA04	LB	R1,PASAD+1	LOAD WRITE ADDRESS	FDL17440
15AAR	9D14	1745		SSR	R1,R4	SENSE STATUS	FDL17450
15ACR	2081	1746		BTBS	8,1	BUSY LOOP	FDL17460
15AER	244D	1747		LIS	R4,13	LOAD CR	FDL17470
15B0R	9A14	1748		WDR	R1,R4	WRITE DATA	FDL17480
15B2R	9D14	1749		SSR	R1,R4	SENSE STATUS	FDL17490
15B4R	2081	1750		BTBS	8,1	BUSY LOOP	FDL17500
15B6R	244A	1751		LIS	R4,10	LOAD LF	FDL17510
15B8R	9A14	1752		WDR	R1,R4	WRITE DATA	FDL17520

158AR	9D14	1753	SSR	R1,R4	SENSE STATUS	FDL17530
15BCP	2081	1754	BTBS	8,1	BUSY LOOP	FDL17540
15BEP	C840 00FF	1755	LHI	R4,X'FF'	LOAD DELETE	FDL17550
15C2R	9A14	1756	WDR	R1,R4	WRITE DATA	FDL17560
15C4R	4300 1570R	1757	B	PA05	RETURN	FDL17570
15C8P	D310 0015R	1758	PRTO	LB R1,LPAD	LOAD ADDRESS	FDL17580
15CCR	DE10 0080	1759	OC	R1,X'80'	SET DISABLE	FDL17590
15D0R	9D14	1760	PR1	SSR R1,R4	SENSE STATUS	FDL17600
15D2P	2081	1761	BTBS	8,1	BUSY LOOP	FDL17610
15D4R	DA13 0000	1762	WD	R1,0(R3)	WRITE DATA	FDL17620
15D8R	2631	1763	AIS	R3,1	INCREMENT POINTER	FDL17630
15DAR	2721	1764	SIS	R2,1	DECREMENT COUNT	FDL17640
15DCR	2036	1765	BNZ	PR1	LOOP	FDL17650
15DEP	243D	1766	LIS	R3,13	LOAD CR	FDL17660
15E0R	9D14	1767	SSR	R1,R4	SENSE STATUS	FDL17670
15E2R	2081	1768	BTBS	8,1	BUSY LOOP	FDL17680
15E4R	9A13	1769	WDR	R1,R3	WRITE DATA	FDL17690
15E6R	243A	1770	LIS	R3,10	LOAD LF	FDL17700
15E8P	9C14	1771	SSR	R1,R4	SENSE STATUS	FDL17710
15EAR	2081	1772	BTBS	8,1	BUSY LOOP	FDL17720
15ECR	9A13	1773	WDR	R1,R3	WRITE DATA	FDL17730
15EER	030C	1774	BR	RC	RETURN	FDL17740
15FOR	C830 1600R	1775	QUEST	LDAl R3,QMSG	LOAD ADDRESS	FDL17750
15F4R	2421	1776	LIS	R2,1	LOAD SIZE	FDL17760
15F6R	2480	1777	LIS	R8,0	SET OUTPUT	FDL17770
15F8P	41D0 126AR	1778	BAL	RD,FINDCON	PRINT	FDL17780
15FCR	4300 1896R	1779	B	POUND	RE-START	FDL17790
1600P	3F20	1780	QMSG	DC C'?'		FDL17800
1602R	2400	1781	RDIRECT	LIS R0,0	CLEAR R0	FDL17810
1604R	C8A0 001B	1782	LHI	RA,STDIRM	INIT RA 000	FDL17820
1608R	C840 001C	1783	LHI	R4,STDIR	LOAD START LR 000	FDL17830
160CR	41D0 0B52R	1784	RDLOOP	BAL RD,RESET	IDLE CHECK	FDL17840
1610R	41C0 11E2R	1785	BAL	RC,SULH56	LOAD R5-R6	FDL17850
1614R	4898 016CR	1786	LH	R9,CSEQNUMO(R8)	LOAD CURRENT SEQUENCE #	FDL17860
1618R	4818 0170R	1787	LH	R1,PRECMDO(R8)	LOAD PRE-COMMAND	FDL17870
161CR	2421	1788	LIS	R2,1	LOAD READ CMD	FDL17880
161ER	0612	1789	OAR	R1,R2	MERGE CMD	FDL17890
1620R	D320 0017R	1790	LB	R2,FLPAD	LOAD ADDRESS	FDL17900
1624R	9824	1791	WHR	R2,R4	WRITE LRN TO CONTROLLER	FDL17910
1626R	9E21	1792	CCR	R2,R1	ISSUE READ CMD	FDL17920
1628R	26A1	1793	RDIRECT2	AIS RA,1	INCREMENT CURRENT LRN POINTER	FDL17930
162AR	C5A0 0020	1794	CLHI	RA,STSAV	EXHAUSTED DIRECTORY ?	FDL17940
162ER	4330 1692R	1795	BE	RDIRERR	YES	FDL17950
1632R	9D23	1796	SSR	R2,R3	SENSE STATUS	FDL17960
1634R	2081	1797	BTBS	8,1	WAIT FOR BUSY NOT	FDL17970
1636R	D925 0000	1798	RDHL	RH R2,0(R5)	READ 2 BYTES	FDL17980
163AR	2652	1799	AIS	R5,2	BUMP	FDL17990
163CR	0565	1800	CLAR	R6,R5	DONE??	FDL18000
163ER	2284	1801	BNCS	RDHL	NO, LOOP	FDL18010
1640R	9D23	1802	SSR	R2,R3	SENSE STATUS	FDL18020
1642R	4250 1692R	1803	BTC	5,RDIRERR	READ ERROR	FDL18030
1646R	2450	1804	LIS	R5,0	SETUP	FDL18040
1648R	2464	1805	LIS	R6,4	BXLE	FDL18050
164AR	C870 007C	1806	LHI	R7,X'7C'	LIMITS	FDL18060
164ER	4835 001AR	1807	RDIRECT1	LH R3,INBUF(R5)	LOAD SEQUENCE #	FDL18070

1652R	4210	1682R	1808	BM	EOD1	EOD	FDL18080
1656R	0833		1809	LDAR	R3,R3	LOAD SEQUENCE #	FDL18090
1658R	4330	166ER	1810	BZ	EOV1	EOV	FDL18100
165CR	0539		1811	CLAR	R3,R9	MATCH	FDL18110
165ER	4330	167CR	1812	BE	MATCH	YES	FDL18120
1662R	C150	164ER	1813	BXLE	R5,RDIRECT1	LOOP	FDL18130
1666R	41C0	11E2R	1814	BAL	RC,SULH56	LOAD R5-R6	FDL18140
166AR	4300	1628R	1815	B	RDIRECT2	CONTINUE	FDL18150
166ER	2541		1816	EOV1	LCS R4,1	LOAD F'S	FDL18160
1670R	2430		1817	LIS	R3,0	LOAD EOV	FDL18170
1672R	4818	0170R	1818	EOVEX	LH R1,PRECHDO(R8)	LOAD PRE-CMD	FDL18180
1676R	41D0	18AAR	1819	BAL	RD,STOP	ISSUE STOP	FDL18190
167AR	030E		1820	BR	RE	RETURN	FDL18200
167CR	4845	001CR	1821	MATCH	LH R4,INBUF+2(R5)	LOAD PDB POINTER	FDL18210
1680R	2207		1822	BS	EOVEX	EXIT	FDL18220
1682R	D300	012DR	1823	EOV1	LB R0,LDFLG	LOAD LOAD FLAG	FDL18230
1686R	0800		1824	LDAR	RO,RO	SET CC	FDL18240
1688R	203D		1825	BNZ	EOV1	NO PRINT IF LOAD MODE	FDL18250
168AR	41D0	18AAR	1826	BAL	RD,STOP	STOP	FDL18260
168ER	4300	11E2R	1827	B	EOD	PRINT	FDL18270
1692R	0800		1828	RDIRERR	LDAR RO,RO	LOAD ERROR COUNT	FDL18280
1694R	C500	0005	1829	CLHI	RO,X'05'	FIVE TIMES	FDL18290
1698R	42B0	16AER	1830	BTC	11,RDIRERR1	YES, HARD ERROR	FDL18300
169CR	260C		1831	AIS	RO,1	INCREMENT COUNT	FDL18310
169ER	4818	0170R	1832	LH	R1,PRECHDO(R8)	LOAD PRE-CMD	FDL18320
16A2R	41D0	18AAR	1833	BAL	RD,STOP	STOP	FDL18330
16A6R	084A		1834	LDAR	R4,RA	RELOAD LRN POINTER	FDL18340
16A8R	27A1		1835	SIS	RA,1	DECREMENT CURRENT POINTER	FDL18350
16AAR	4300	160CR	1836	B	RDLOOP	LOOP	FDL18360
16AER	41C0	12C8R	1837	RDIRERR1	BAL RC,FINDDRV	FIND ERROR DRIVE	FDL18370
16B2R	D240	19FAR	1838	STB	R4,RDEMSG+30	STORE TO MESSAGE	FDL18380
16B6R	41D0	18AAR	1839	BAL	RD,STOP	STOP	FDL18390
16BAR	D300	012DR	1840	LB	RO,LDFLG	LOAD LOAD FLAG	FDL18400
16BER	0800		1841	LDAR	RO,RO	SET CC	FDL18410
16COR	023E		1842	BNZR	RE	RETURN	FDL18420
16C2R	C830	19DCR	1843	LDAI	R3,RDEMSG	LOAD ADDRESS	FDL18430
16C6R	D320	1AE3R	1844	LB	R2,RDEMSG5	LOAD SIZE	FDL18440
16CAR	2480		1845	LIS	R8,0	SET OUTPUT	FDL18450
16CCR	41D0	126AR	1846	BAL	RD,FINDCON	PRINT	FDL18460
16DOR	4300	1896R	1847	B	POUND	RE-START	FDL18470
16D4R	2400		1848	RDLRN	LIS RO,0	CLEAR ERROR COUNTER	FDL18480
16D6R	D370	012CR	1849	LB	R7,FLG16	GET FLAG	FDL18490
16DAR	4057	0190R	1850	STA	R5,R5SAV(R7)	SAVE R5	FDL18500
16DER	41D0	0B52R	1851	RLRNLOOP	BAL RD,RESET	IDLE CHECK	FDL18510
16E2R	4818	0170R	1852	LH	R1,PRECHDO(R8)	LOAD PRE-CMD	FDL18520
16E6R	2421		1853	LIS	R2,1	LOAD READ	FDL18530
16E8R	0612		1854	OAR	R1,R2	MERGE CMD	FDL18540
16EAR	D320	0017R	1855	LB	R2,FLPAD	LOAD ADDRESS	FDL18550
16EER	9824		1856	WHR	R2,R4	WRITE LRN TO CONTROLLER	FDL18560
16FOR	9E21		1857	OCR	R2,R1	READ	FDL18570
16F2R	9D23		1858	RLHL	SSR R2,R3	SENSE STATUS	FDL18580
16F4R	2081		1859	BTBS	8,1	WAIT FOR BUSY NOT	FDL18590
16F6R	C870	007E	1860	LHI	R7,126	LOAD LOOP COUNT	FDL18600
16FAR	D925	0000	1861	RLHL1	RH R2,0(R5)	READ 2 BYTES	FDL18610
16FER	26E2		1862	AIS	R5,2	BUMP	FDL18620

1700R	2772	1863	SIS	R7,2	DECREMENT	FDL18630
1702R	2214	1864	BNMS	RLHL1	DONE??	FDL18640
1704R	0565	1865	CLAR	R6,R5	DONE??	FDL18650
1706R	228A	1866	BNCS	RLHL	NO, LOOP	FDL18660
1708R	9D23	1867	SSR	R2,R3	SENSE STATUS	FDL18670
170AR	2154	1868	BTC	5,RDLRNE	READ ERROR	FDL18680
170CR	41E0 18AAR	1869	BAL	RD,STOP	STOP	FDL18690
1710R	030E	1870	BR	RE	RETURN	FDL18700
1712R	C500 0005	1871	RDLRNE	CLHI R0,X'05'	FIVE TIMES?	FDL18710
1716R	4330 172CR	1872	BE	RDLRNE1	YES	FDL18720
171AR	2601	1873	AIS	R0,1	INCREMENT	FDL18730
171CR	41E0 18AAR	1874	BAL	RD,STOP	STOP	FDL18740
1720R	D370 012CR	1875	LB	R7,FLG16	LOAD FLAG	FDL18750
1724R	4857 0190R	1876	LDA	R5,R5SAV(R7)	RESTORE R5	FDL18760
1728R	4300 16DER	1877	B	RLRNLOOP	RETRY	FDL18770
172CR	41D0 18AAR	1878	RDLRNE1	BAL RD,STOP	STOP	FDL18780
1730R	D390 012DR	1879	LB	R9,LDFLG	LOAD LOAD FLAG	FDL18790
1734R	0899	1880	LDAR	R9,R9	SET CC	FDL18800
1736R	023E	1881	BNZR	RE	RETURN	FDL18810
1738R	C830 19FCR	1882	LDAR	R3,RDLMSG	LOAD ADDRESS	FDL18820
173CR	D320 1AE4R	1883	LB	R2,RDLMSG5	LOAD SIZE	FDL18830
1740R	2480	1884	LIS	R8,0	SET OUTPUT	FDL18840
1742R	41D0 126AR	1885	BAL	RD,FINDCON	PRINT	FDL18850
1746R	4300 1896R	1886	B	POUND	RESTART	FDL18860
174AR	C810 00C0	1887	SETUP	LHI R1,X'CO'	LOAD DISABLE	FDL18870
174ER	4820 0176R	1888	LH	R2,DRO	LOAD DRIVE #	FDL18880
1752R	9124	1889	SLLS	R2,4	SCALE	FDL18890
1754R	0612	1890	OAR	R1,R2	MERGE	FDL18900
1756R	4010 0170R	1891	STH	R1,PRECMDO	STORE	FDL18910
175AR	C810 00C0	1892	LHI	R1,X'CO'	LOAD DISABLE	FDL18920
175ER	4820 0178R	1893	LH	R2,DRI	LOAD DRIVE #	FDL18930
1762R	9124	1894	SLLS	R2,4	SCALE	FDL18940
1764R	0612	1895	OAR	R1,R2	MERGE	FDL18950
1766R	4010 0172R	1896	STH	R1,PRECMDI	STORE	FDL18960
176AR	030C	1897	BR	RC	RETURN	FDL18970
176CR	2420	1898	SEQ	LIS R2,0	CLEAR CHARACTER POINTER	FDL18980
176ER	2430	1899	LIS	R3,0	CLEAR STORAGE POINTER	FDL18990
1770R	41C0 1806R	1900	BAL	RC,SPCOM	FIND DELIMITER	FDL19000
1774R	2621	1901	AIS	R2,1	INCREMENT PAST	FDL19010
1776R	41E0 153AR	1902	BAL	RE,PACK	PACK AND CONVERT	FDL19020
177AR	4050 0136R	1903	STH	R5,SEQNUM	STORE	FDL19030
177ER	905C	1904	SRLS	R5,12	SCALE	FDL19040
1780R	4230 15FOR	1905	BNZ	QUEST	TOO MANY CHARACTERS IN FIELD	FDL19050
1784R	41C0 1806R	1906	BAL	RC,SPCOM	FIND DELIMITER	FDL19060
1788R	2621	1907	AIS	R2,1	INCREMENT PAST	FDL19070
178AR	41E0 153AR	1908	BAL	RE,PACK	PACK AND CONVERT	FDL19080
178ER	4050 0138R	1909	STH	R5,PO6	STORE	FDL19090
1792R	905C	1910	SRLS	R5,12	SCALE	FDL19100
1794R	4230 15FOR	1911	BNZ	QUEST	TOO MANY CHARACTERS IN FIELD	FDL19110
1798R	41C0 1806R	1912	BAL	RC,SPCOM	FIND DELIMITER	FDL19120
179CR	2621	1913	AIS	R2,1	INCREMENT PAST	FDL19130
179ER	41E0 153AR	1914	BAL	RE,PACK	PACK + CONVERT	FDL19140
17A2R	4050 013AR	1915	STH	R5,REVLEV	STORE	FDL19150
17A6R	9058	1916	SRLS	R5,8	SCALE	FDL19160
17A8R	4230 15FOR	1917	BNZ	QUEST	TOO MANY CHARACTERS IN FIELD	FDL19170



17ACR	D312	00E2R	1918	LB	R1,CONIN(R2)	LOAD CHARACTER	FDL19180	
17BOR	C510	002E	1919	CLHI	R1,C'.'	PERIOD ?	FDL19190	
17B4R	4230	17D6R	1920	BNE	SEQ3	NO EXTENSION	FDL19200	
17B8R	2621		1921	AIS	R2,1	POINT TO EXTENSION CHARACTER	FDL19210	
17BAR	41E0	153AR	1922	BAL	RE,PACK	PACK + CONVERT	FDL19220	
17BER	D250	018ER	1923	STB	R5,TEMSAV	SAVE	FDL19230	
17C2R	9054		1924	SRLS	R5,4	SCALE	FDL19240	
17C4R	4230	15FOR	1925	BNZ	QUEST	MORE THAN ONE CHARACTER	FDL19250	
17C8R	D350	018ER	1926	LB	R5,TEMSAV	RE-LOAD	FDL19260	
17CCR	915C		1927	SLLS	R5,12	SCALE	FDL19270	
17CER	4650	013AR	1928	OH	R5,REVLEV	MERGE	FDL19280	
17D2R	4050	013AR	1929	STH	R5,REVLEV	STORE	FDL19290	
17D6R	41C0	1806R	1930	SEQ3	BAL	RC,SPCOM	FDL19300	
17DAR	2621		1931	AIS	R2,1	INCREMENT PAST	FDL19310	
17DCR	41C0	0AD2R	1932	BAL	RC,CFFORM	CLEAD FREE FORM BUFFER	FDL19320	
17EOR	2430		1933	LIS	R3,0	CLEAR COUNT	FDL19330	
17E2R	D312	00E2R	1934	SEQ1	LB	R1,CONIN(R2)	FDL19340	
17E6R	C510	000D	1935	CLHI	R1,X'0D'	CR	FDL19350	
17EAR	4330	1802R	1936	BE	SEQ2	YES	FDL19360	
17EER	D213	0146R	1937	STB	R1,FFORM(R3)	STORE	FDL19370	
17F2R	0833		1938	LDAR	R3,R3	LOAD FREE FORM COUNT	FDL19380	
17F4R	C530	001E	1939	CLHI	R3,30	DONE	FDL19390	
17F8R	4330	15FOR	1940	BE	QUEST	TOO MANY CHARACTERS	FDL19400	
17FCR	2631		1941	AIS	R3,1	ICNRIMENT POINTER	FDL19410	
17FER	2621		1942	AIS	R2,1	INCREMENT POINTER	FDL19420	
1800R	220F		1943	BS	SEQ1	LOOP	FDL19430	
1802R	4300	1896R	1944	SEQ2	B	POUND	FDL19440	
1806R	D312	00E2R	1945	SPCOM	LB	R1,CONIN(R2)	FDL19450	
180AR	C510	0020	1946	CLHI	R1,X'20'	BLANK	FDL19460	
180ER	2336		1947	BES	SPCOM1	YES	FDL19470	
1810R	C510	002C	1948	CLHI	R1,X'2C'	COMMA	FDL19480	
1814R	2333		1949	BES	SPCOM1	YES	FDL19490	
1816R	2621		1950	AIS	R2,1	INCREMENT POINTER	FDL19500	
1818R	2209		1951	BS	SPCOM	LOOP	FDL19510	
181AR	030C		1952	SPCOM1	BR	RC	FDL19520	
181CR	D310	0079	1953	FIOD	LB	R1,X'79'	LOAD BOOT COMMAND	FDL19530
1820R	C410	0030	1954		NHI	R1,X'30'	REMOVE DRIVE #	FDL19540
1824R	9014		1955		SRLS	R1,4	SCALE	FDL19550
1826R	4330	1848R	1956		BZ	BOOT0	IN=0;OUT=1	FDL19560
182AR	2711		1957		SIS	R1,1	DECREMENT	FDL19570
182CR	4330	183AR	1958		BZ	BOOT1A	IN=1;OUT=0	FDL19580
1830R	2711		1959		SIS	R1,1	DECREMENT	FDL19590
1832R	4330	1856R	1960		BZ	BOOT2	IN=2;OUT=3	FDL19600
1836R	4300	1864R	1961		B	BOOT3	IN=3;OUT=2	FDL19610
183AR	2411		1962	BOOT1A	LIS	R1,1	LOAD ADDRESS	FDL19620
183CR	4010	0178R	1963		STH	R1,DRI	DRI=1	FDL19630
1840R	2410		1964		LIS	R1,0	LOAD ADDRESS	FDL19640
1842R	4010	0176R	1965		STH	R1,DRO	DRO=0	FDL19650
1846R	030C		1966		BR	RC	RETURN	FDL19660
1848R	2410		1967	BOOT0	LIS	R1,0	LOAD ADDRESS	FDL19670
184AR	4010	0178R	1968		STH	R1,DRI	DRI=0	FDL19680
184ER	2411		1969		LIS	R1,1	LOAD ADDRESS	FDL19690
1850R	4010	0176R	1970		STH	R1,DRO	DRO=1	FDL19700
1854R	030C		1971		BR	RC	RETURN	FDL19710
1856R	2412		1972	BOOT2	LIS	R1,2	LOAD ADDRESS	FDL19720

1858R	4010	0178R	1973		STH	R1,DRI	DRI=2	FDL19730
185CR	2413		1974		LIS	R1,3	LOAD ADDRESS	FDL19740
185ER	4010	0176R	1975		STH	R1,DRO	DRO=3	FDL19750
1862R	03CC		1976		BR	RC	RETURN	FDL19760
1864R	2413		1977	BOOT3	LIS	R1,3	LOAD ADDRESS	FDL19770
1866R	4010	0178R	1978		STH	R1,DRI	DRI=3	FDL19780
186AR	2412		1979		LIS	R1,2	LOAD ADDRESS	FDL19790
186CR	4010	0176R	1980		STH	R1,DRO	DRO=2	FDL19800
1870R	03CC		1981		BR	RC	RETURN	FDL19810
1872R	41C0	0442R	1982	STARTG	BAL	RC,CLRDIS	CLEAR DISPLAY	FDL19820
1876R	41C0	13AAR	1983		BAL	RC,LCORE	INITIALIZE LOW CORE	FDL19830
187AR	41C0	181CR	1984		BAL	RC,FIOD	SET DRO + DRI	FDL19840
187ER	41C0	174AR	1985		BAL	RC,SETUP	SETUP DRO AND DRI	FDL19850
1882R	2410		1986		LIS	R1,0	CLEAR FLAG	FDL19860
1884R	D210	012DR	1987		STB	R1,LDFLG	STORE	FDL19870
1888R	C830	1A6AR	1988		LDAI	R3,TITLE	LOAD ADDRESS	FDL19880
188CR	D320	1AE9R	1989		LB	R2,TITLES	LOAD SIZE	FDL19890
1890R	2480		1990		LIS	R8,0	SET OUTPUT	FDL19900
1892R	41D0	126AR	1991		BAL	RD,FINDCON	PRINT	FDL19910
1896R	C830	012AR	1992	POUND	LDAI	R3,ASTERISK	LOAD ADDRESS	FDL19920
189AR	2421		1993		LIS	R2,1	LOAD SIZE	FDL19930
189CR	2480		1994		LIS	R8,0	SET OUTPUT	FDL19940
189ER	41D0	126AR	1995		BAL	RD,FINDCON	PRINT	FDL19950
18A2P	2484		1996		LIS	R8,4	SET INPUT	FDL19960
18A4R	41D0	126AR	1997		BAL	RD,FINDCON	INPUT DATA	FDL19970
* 18A8R	2200		1998		B	*	NO RETURN	FDL19980
18AAAR	4818	0170R	1999	STOP	LH	R1,PRECMDO(R8)	LOAD PRECMD	FDL19990
18AER	2427		2000		LIS	R2,7	LOAD STOP CMD	FDL20000
18BOR	0612		2001		OAR	R1,R2	MERGE	FDL20010
18B2R	D320	0017R	2002		LB	R2,FLPAD	LOAD ADDRESS	FDL20020
18B6R	9E21		2003		OCR	R2,R1	COMMAND	FDL20030
18B8R	9D21		2004		SSR	R2,R1	SENSE STATUS	FDL20040
18BAR	2221		2005		BFBS	2,1	IDLE NOT LOOP	FDL20050
18BCR	030D		2006		BR	RD	RETURN	FDL20060
18BER	2445		2007	WRTBOOT	LIS	R4,5	LOAD LRN FOR BOOT	FDL20070
18COR	C850	084CR	2008		LDAI	R5,BOOTST	LOAD LOW	FDL20080
18C4R	C860	0999R	2009		LDAI	R6,BOOTEN32+1	LOAD HIGH	FDL20090
18C8R	41E0	18CER	2010		BAL	RE,WRLRN	WRITE LRN	FDL20100
18CCR	030F		2011		BR	RF	RETURN	FDL20110
18CER	2480		2012	WRLRN	LIS	R8,0	SET OUTPUT	FDL20120
18D0R	2400		2013		LIS	R0,0	CLEAR RETRY COUNT	FDL20130
18D2P	D370	012CR	2014		LB	R7,FLG16	GET FLAG	FDL20140
18D6R	4057	0190R	2015		STA	R5,R5SAV(R7)	SAVE R5	FDL20150
18DAR	41E0	0B52R	2016	WRLRN2	BAL	RD,RESET	IDLE CHECK	FDL20160
18DER	4810	0170R	2017		LH	R1,PRECMDO	LOAD PRE-CMD	FDL20170
18E2R	2422		2018		LIS	R2,2	LOAD WRITE CMD	FDL20180
18E4R	0612		2019		OAR	R1,R2	MERGE	FDL20190
18E6R	D320	0017R	2020		LB	R2,FLPAD	LOAD ADDRESS	FDL20200
18EAR	9824		2021		WHR	R2,R4	WRITE LRN TO CONTROLLER	FDL20210
18ECR	9E21		2022		OCR	R2,R1	COMMAND	FDL20220
18EER	9C23		2023	WLHL	SSR	R2,R3	SENSE STATUS	FDL20230
18FOR	2081		2024		BTBS	8,1	WAIT FOR BUSY NOT	FDL20240
18F2R	C870	007E	2025		LHI	R7,126	LOAD LOOP COUNT	FDL20250
18F6R	D825	0000	2026	WLHL1	WH	R2,0(R5)	WRITE 2 BYTES	FDL20260
18FAR	2652		2027		AIS	R5,2	BUMP	FDL20270

18FCR	2772		2028	SIS	R7,2	DECREMENT	FDL20280
18FER	2214		2029	BNMS	WLHL1	DONE??	FDL20290
1900R	0565		2030	CLAR	R6,R5	DONE??	FDL20300
* 1902R	228A		2031	BNC	WLHL	NO, LOOP	FDL20310
1904R	9D23		2032	SSR	R2,R3	SENSE STATUS	FDL20320
* 1906R	2154		2033	BTC	5,WBERR	WRITE ERROR	FDL20330
1908R	41D0 18AAR		2034	BAL	RD,STOP	STOP	FDL20340
190CR	030E		2035	BR	RE	RETURN	FDL20350
190ER	C500 0005		2036	WBERR	CLHI R0,X'05'	MAXIMUM	FDL20360
1912R	43B0 1924R		2037	BFC	11,WBERR1	YES, HARD	FDL20370
1916R	2601		2038	AIS	R0,1	INCRIMENT COUNT	FDL20380
1918R	D370 012CR		2039	LB	R7,FLG16	LOAD FLAG	FDL20390
191CR	4857 0190R		2040	LDA	R5,R5SAV(R7)	RESTORE R5	FDL20400
1920R	4300 1944R		2041	B	WRLRN1	CONTINUE	FDL20410
1924R	C540 0020		2042	WBERR1	CLHI R4,STSAV	LRN MAX @@@	FDL20420
1928R	4280 194CR		2043	BL	WRLRN3	DIRECTORY ERROR	FDL20430
192CR	2480		2044	LIS	R8,0	SET OUTPUT	FDL20440
192ER	41D0 18AAR		2045	BAL	RD,STOP	STOP	FDL20450
1932R	C830 1A06R		2046	LDAI	R3,RECMGS	LOAD ADDRESS	FDL20460
1936R	D320 1AE5R		2047	LB	R2,RECMGS	LOAD SIZE	FDL20470
193AR	2480		2048	LIS	R8,0	SET OUTPUT	FDL20480
193CR	41D0 126AF		2049	BAL	RD,FINDCON	PRINT	FDL20490
1940R	4300 1896R		2050	B	POUND	RE-START	FDL20500
1944R	41D0 18AAR		2051	WRLRN1	BAL RD,STOP	STOP	FDL20510
1948R	4300 18DAR		2052	B	WRLRN2	CONTINUE	FDL20520
194CR	41D0 18AAR		2053	WRLRN3	BAL RD,STOP	STOP	FDL20530
1950R	C830 1A22R		2054	LDAI	R3,DIRER	LOAD ADDRESS	FDL20540
1954R	D320 1AE6R		2055	LB	R2,DIRERS	LOAD SIZE	FDL20550
1958R	2480		2056	LIS	R8,0	SET OUTPUT	FDL20560
195AR	41D0 126AR		2057	BAL	RD,FINDCON	PRINT	FDL20570
195ER	4300 1896R		2058	B	POUND	RE-START	FDL20580
1962R	454F 4420		2059	EODERR	DC C'EOD'		FDL20590
1966R	454F 5620 4E4F 5420		2060	EOVRTNM	DC C'E0V NOT FOUND'		FDL20600
196ER	464F 554E 4420						
1974R	4C4F 5720 3E20 4849	2061	LGHMSG	DC	C'LOW > HIGH ERROR'		FDL20610
197CR	4748 2045 5252 4F52						
1984R	4449 534B 4554 5445	2062	TBIGMSG	DC	C'DISKETTE FULL'		FDL20620
198CR	2046 554C 4C20						
1992R	4449 5245 4354 4F52	2063	EODMSG	DC	C'DIRECTORY FULL'		FDL20630
199AR	5920 4655 4C4C						
19A0R	454F 4A20	2064	EOJMSG	DC	C'E0J'		FDL20640
19A4R	4445 4645 4354 4956	2065	MEDMSG	DC	C'DEFECTIVE MEDIA'		FDL20650
19ACR	4520 4D45 4449 4120						
19B4R	494C 4C45 4741 4C20	2066	ILLMSG	DC	C'ILLEGAL INSTRUCTION'		FDL20660
19BCR	494E 5354 5255 4354						
19C4R	494F 4E20						
19C8R	4D41 4348 494E 4520	2067	MMEMSG	DC	C'MACHINE MALFUNCTION'		FDL20670
19D0R	4D41 4C46 554E 4354						
19D8R	494F 4E20						
19DCR	4449 5245 4354 4F52	2068	RDEMSG	DC	C'DIRECTORY READ ERROR ON DRIVE X'		FDL20680
19E4R	5920 5245 4144 2045						
19ECR	5252 4F52 204F 4E20						
19F4R	4452 4956 4520 5820						
19FCR	5245 4144 2045 5252	2069	RDLMSG	DC	C'READ ERROR'		FDL20690
1A04R	4F52						

1A06R	5752	4954	4520	4552	2070	RECMMSG	DC	C*WRITE ERROR ON OUTPUT DRIVE*	FDL20700
1A0ER	524F	5220	4F4E	204F					
1A16R	5554	5055	5420	4452					
1A1ER	4956	4520							
1A22R	4552	524F	5220	4F4E	2071	DIRER	DC	C*ERROR ON DIRECTORY UPDATE*	FDL20710
1A2AR	2044	4952	4543	544F					
1A32R	5259	2055	5044	4154					
1A3AR	4520								
1A3CR	492F	4F20	4552	524F	2072	LSERRM	DC	C*I/O ERROR ON LOAD*	FDL20720
1A44R	5220	4F4E	204C	4F41					
1A4CR	4420								
1A4ER	4154	5445	4D50	5420	2073	LERRM	DC	C*ATTEMPT TO OVERLOAD FDLG*	FDL20730
1A56R	544F	204F	5645	524C					
1A5ER	4F41	4420	4644	4C47					
1A66R	454F	5620			2074	EOVM	DC	C*EOV*	FDL20740
1A6AR	4644	4C47	2047	454E	2075	TITLE	DC	C*FDLG GENERATOR R01*	FDL20750
1A72P	4552	4154	4F52	2052					
1A7AR	3031								
1A7CR	4644	4C47	204C	4F41	2076	FOXS	DC	C*FDLG LOADER R01*	FDL20760
1A84R	4445	5220	5230	3120					
1A8CR	5245	4C4F	4341	5449	2077	RPMSG	DC	C*RELOCATION/PROTECTION INTERRUPT*	FDL20770
1A94R	4F4E	2F50	524F	5445					
1A9CR	4354	494F	4E20	494E					
1AA4R	5445	5252	5550	5420					
1AACR	424F	554E	4441	5259	2078	BNYMSG	DC	C*BOUNDARY VIOLATION*	FDL20780
1AB4R	2056	494F	4C41	5449					
1ABCR	4F4E								
1ABER	5359	5354	454D	2051	2079	SYSQMSG	DC	C*SYSTEM Q INTERRUPT*	FDL20790
1AC6R	2049	4E54	4552	5255					
1ACER	5054								
1AD0R	5356	4320	4552	524F	2080	SVCMSG	DC	C*SVC ERROR*	FDL20800
1AD8R	5220								
1ADAR	0C				2081	TOF	DB	X*C*	FDL20810
1ADBR	0C				2082	CHKERRS	DB	12	FDL20820
1ADCR	26				2083	GOTMSG	DB	38	FDL20830
1ADDR	0E				2084	EOVRTNMS	DB	14	FDL20840
1ADER	10				2085	LGHMSG	DB	16	FDL20850
1ADFR	0D				2086	TBIGMSG	DB	13	FDL20860
	0000	1ADDR			2087	EODMSG	EQU	EOVRTNMS	FDL20870
1AE0R	03				2088	EOJMSG	DB	3	FDL20880
1AE1R	0F				2089	MEDMSG	DB	15	FDL20890
1AE2R	13				2090	ILLMSG	DB	19	FDL20900
	0000	1AE2R			2091	MMFMSG	EQU	ILLMSG	FDL20910
1AE3R	1F				2092	RDEMMSG	DB	31	FDL20920
1AE4R	0A				2093	RDLMSG	DB	10	FDL20930
1AE5R	1B				2094	RECMMSG	DB	27	FDL20940
1AE6R	19				2095	DIRERS	DB	25	FDL20950
1AE7R	11				2096	LSERRMS	DB	17	FDL20960
1AE8R	18				2097	LERRMS	DB	24	FDL20970
	0000	1AE0R			2098	EOVMS	EQU	EOJMSG	FDL20980
	0000	1AE3R			2099	RPMSG	EQU	RDEMMSG	FDL20990
1AE9R	12				2100	BNYMSG	DB	18	FDL21000
	0000	1AE9R			2101	SYSQMSG	EQU	BNYMSG	FDL21010
	0000	1AE9R			2102	TITLES	EQU	SYSQMSG	FDL21020
1AEAR	09				2103	SVCMSG	DB	9	FDL21030

	0000 1AEOR	2104	EODERRS	EQU	EOJMSGS
1AEBR	00	2105		DB	0
	0000 1AEBR	2106	LNZB	EQU	*-1
1AECR		2107		ALIGN	4
1AECR		2108	PSWSAVA	DS	8
1AF4R		2109	REGSAVA	DS	512
1CF4R		2110		END	

FDL21040  
FDL21050  
FDL21060  
FDL21070  
FDL21080  
FDL21090  
FDL21100





D516B	0000	05C4R	434	439*					
D516C	0000	05DAR	440	445*					
D516D	0000	05FOR	446	451*					
D516E	0000	0606R	452	457*					
D516F	0000	0618R	458	462*					
D6	0000	0E7CR	1146	1150*					
D7	0000	0FDOR	1151	1248*					
D8	0000	0E98R	1149	1158*					
D9	0000	0EA4R	1162*	1249					
DERPT	0000	0338R	194	238*	387				
DEVTP	0000	0010R	37*	796	811	1450			
DIRER	0000	1A22R	2054	2071*					
DIRERS	0000	1AE6R	2055	2095*					
DIRP	0000	0174R	86*	320	382	384	388	1036	1048
DISPLD	0000	0276R	134	176*					
DRI	0000	0178R	88*	1482	1893	1963	1968	1973	1978
DRO	0000	0176R	87*	1479	1888	1965	1970	1975	1980
DUPE	0000	0EB0R	853	1086*					
ECHOCOM	0000	0A26R	805	808*					
ENDAD	0000	0999R	28	637	759*				
ENDDIR	0000	001F	31*	1007	1019	1227	1380	1543	
EOD	0000	11ECR	1008	1032	1407*	1827			
EOD1	0000	1682R	1808	1823*					
EODERR	0000	1962R	460	496	2059*				
EODERRS	0000	1AE0R	459	495	2104*				
EODMSG	0000	1992R	1408	2063*					
EODMSGS	0000	1ADDR	1409	2087*					
EODPT	0000	0330R	236*	368	372				
EODPTA	0000	04CAR	351	366*					
EOJ	0000	11FER	1053	1105	1244	1403	1412*	1444	1524
EOJMSG	0000	19A0R	430	466	1413	2064*			
EOJMSGS	0000	1AE0R	429	465	1414	2088*	2098	2104	
EOV	0000	1214R	1418*	1443					
EOV1	0000	166ER	1810	1816*	1825				
EOVDIS	0000	0348R	196	242*					
EOVEX	0000	1672R	1818*	1822					
EOVM	0000	1A66R	436	472	1418	2074*			
EOVMS	0000	1AE0R	435	471	1419	2098*			
EOVPT	0000	0350R	244*	361	365	501	502		
EOVPTA	0000	04B2R	350	359*					
EOVRTNM	0000	1966R	454	490	1055	2060*			
EOVRTNMS	0000	1ADDR	453	489	1054	2084*	2087		
ERR27	0000	0B30R	888	895*					
ERRRDP	0000	0340R	201	223	240*	345	357		
F32	0000	0130R	60*	125	140	228			
F516	0000	012FR	59*	124	225	248	390		
FC0	0000	1272R	1447*	1449					
FC1	0000	1288R	1452	1455*					
FC2	0000	1292R	1456	1459*					
FC3	0000	1296R	1461*	1468					
FC4	0000	129CR	1460	1463*					
FC5	0000	12A6R	1464	1467*					
FD1	0000	12D6R	1478	1482*					
FFORM	0000	0146R	77*	865	1937				
FIND	0000	1226R	855	1423*					







MM32	0000	143AR	1624	1629*															
MMFMSG	0000	19C8R	1635	2067*															
MMFMSG	0000	1AE2R	1634	2091*															
NCPDBP	0000	018CR	98*	1162	1172	1206	1216	1258	1338	1522									
NEW32	0000	1478R	1630	1648*															
NEXTI	0000	0166R	79*	1128	1245														
NOECHO	0000	0A50R	803	818	822	825*													
NOLP	0000	0464R	330	334*															
NSLRN	0000	0180R	92*	973	978	1075	1300	1364											
NSLRNA	0000	0182R	93*	980	992	1021	1037	1332	1345	1370	1379	1523							
CKIN	0000	0BC4R	947*	950															
P06	0000	0138R	70*	1909															
P32	0000	0206R	141*	163	468	474	480	486	492	498									
P516	0000	0358R	138	246*															
P516A	0000	037ER	258*	278	280														
P516B	0000	03C4R	272	274	279*														
P516C	0000	036CR	252*	270	432	438	444	450	456	462									
P516D	0000	0394R	263	265*															
PACK	0000	153AR	1093	1282	1437	1669	1684	1705*	1902	1908	1914	1922							
PA02	0000	1592R	1736*	1740															
PA03	0000	159ER	1732	1735	1741*														
PA04	0000	15A6R	1723	1744*															
PA05	0000	1570R	1724*	1742	1757														
PASAD	0000	0012R	41*	174	407	788	806	823	1715	1721	1724	1730	1744						
PASCHK	0000	0556R	400	402	407*														
PASECHO	0000	0A1ER	798	802	806*														
PASL2	0000	0131R	61*	1716															
PASLA	0000	12B0R	1453	1465	1471*														
PASLAI	0000	09EER	788*	1472															
PASLAI	0000	1552R	143	146	415	467	473	479	485	491	497	1471	1715*						
PASRD	0000	0133R	63*	147	824	1717													
PASREST	0000	0A48R	813	817	823*														
PASWR	0000	0132R	62*	807	1722														
PFAIL	0000	146ER	1627	1631	1644*	1647	1648												
PK1	0000	153CR	1706*	1713															
PK2	0000	1550R	1709	1714*															
POUND	0000	1896R	774	830	900	1058	1063	1068	1084	1411	1417	1422	1516	1643	1704				
			1779	1847	1886	1944	1992*	2050	2058										
PR1	0000	15D0R	1760*	1765															
PRECMDI	0000	0172R	85*	1896															
PRECMDI	0000	0170R	84*	875	905	1487	1787	1818	1832	1852	1891	1999	2017						
PRTBUF	0000	009AR	52*	290	295	300	305	310	315	377	394	404	414	505	509				
			513	516	520	524	528	532	537	539	542	549	553	557	561				
			565	569	573	577	581	585	589	593	622								
PRTCODE	0000	030CR	210	225*	237	239	241	243	245										
PRTO	0000	15C8R	364	371	378	1758*													
PSWSAVA	0000	1AECR	2108*																
PURETOP	0000	0000R																	
QMSG	0000	1600R	1775	1780*															
QUEST	0000	15FOR	860	1096	1284	1289	1292	1357	1431	1440	1676	1679	1691	1694	1775*				
			1905	1911	1917	1925	1940												
RO	0000	0000	12*	123	124	125	126	127	177	178	180	181	182	183	184				
			184	185	185	187	188	191	193	193	209	224	232	232	233				
			236	238	240	242	244	247	248	256	257	259	260	283	285				
			323	324	427	433	439	445	451	457	463	469	475	481	487				

		493	595	597	599	601	607	609	611	613	615	617	761	762
		1445	1448	1552	1553	1557	1558	1561	1562	1563	1563	1564	1565	1566
		1567	1568	1569	1570	1571	1572	1573	1574	1575	1576	1577	1578	1629
		1632	1633	1638	1639	1640	1641	1641	1644	1645	1646	1649	1650	1781
		1823	1824	1824	1828	1828	1829	1831	1840	1841	1841	1848	1871	1873
		2013	2036	2038										
R1	0000 0001	13*	114	116	118	120	131	132	148	150	152	153	170	173
		174	178	183	233	257	259	260	261	262	264	265	267	269
		271	273	277	324	596	597	606	609	610	613	614	617	632
		641	643	647	654	655	659	660	664	666	668	670	674	678
		684	685	697	699	701	703	707	711	712	719	720	728	729
		731	733	737	741	742	749	750	760	762	763	765	767	768
		788	790	791	793	795	804	806	807	808	810	819	821	823
		824	861	865	875	877	880	903	905	907	909	910	911	912
		915	916	918	920	926	928	930	932	934	936	938	940	942
		944	946	948	949	1111	1446	1447	1448	1487	1489	1493	1547	1548
		1548	1550	1551	1555	1556	1622	1623	1623	1625	1626	1633	1639	1646
		1706	1708	1708	1711	1715	1716	1717	1718	1719	1721	1722	1724	1725
		1727	1730	1731	1733	1736	1738	1744	1745	1748	1749	1752	1753	1756
		1758	1759	1760	1762	1767	1769	1771	1773	1787	1789	1792	1818	1832
		1852	1854	1857	1887	1890	1891	1892	1895	1896	1918	1919	1934	1935
		1937	1945	1946	1948	1953	1954	1955	1957	1959	1962	1963	1964	1965
		1967	1968	1969	1970	1972	1973	1974	1975	1977	1978	1979	1980	1986
		1987	1999	2001	2003	2004	2017	2019	2022					
R2	0000 0002	14*	115	116	119	120	132	133	135	136	136	139	140	142
		145	150	152	153	154	155	157	159	161	162	164	166	170
		182	250	253	285	362	369	376	393	397	398	403	407	408
		413	429	435	441	447	453	459	465	471	477	483	489	495
		603	633	634	635	654	659	665	666	677	678	683	684	698
		699	710	711	718	719	722	729	740	741	748	749	763	765
		767	768	769	770	772	773	775	775	776	780	781	786	793
		795	810	825	826	828	829	831	836	837	842	845	846	848
		850	852	854	856	858	876	877	878	879	880	881	884	887
		896	902	903	906	907	908	909	911	912	922	988	988	1054
		1059	1064	1080	1086	1088	1089	1092	1275	1276	1279	1281	1328	1328
		1409	1414	1419	1423	1425	1426	1436	1488	1489	1491	1492	1493	1494
		1496	1500	1513	1618	1634	1652	1655	1658	1661	1664	1666	1668	1670
		1682	1683	1685	1700	1700	1706	1712	1729	1741	1741	1764	1776	1788
		1789	1790	1791	1792	1796	1798	1802	1844	1853	1854	1855	1856	1857
		1858	1861	1867	1883	1888	1889	1890	1893	1894	1895	1898	1901	1907
		1913	1918	1921	1931	1934	1942	1945	1950	1989	1993	2000	2001	2002
		2003	2004	2018	2019	2020	2021	2022	2023	2026	2032	2047	2055	
R3	0000 0003	15*	141	144	147	148	195	195	249	252	255	256	359	360
		360	363	366	367	367	370	373	374	374	377	390	391	391
		394	398	399	401	404	408	409	411	414	430	436	442	448
		454	460	466	472	478	484	490	496	601	602	641	647	655
		660	668	674	679	680	681	682	685	701	707	712	714	715
		716	717	720	731	737	742	744	745	746	747	750	764	778
		780	783	784	792	833	836	839	840	862	865	866	872	873
		889	897	920	921	955	959	959	976	977	979	982	984	986
		990	991	1055	1060	1065	1081	1104	1104	1107	1110	1110	1111	1141
		1143	1143	1275	1277	1291	1296	1296	1325	1326	1330	1331	1333	1408
		1413	1418	1426	1427	1429	1442	1442	1494	1500	1501	1512	1562	1619
		1635	1653	1656	1659	1662	1670	1671	1675	1678	1685	1686	1690	1693
		1698	1702	1703	1727	1728	1762	1763	1766	1769	1770	1773	1775	1796

		1802	1807	1809	1809	1811	1817	1843	1858	1867	1882	1899	1933	1937
R4	0000 0004	1938	1938	1939	1941	1988	1992	2023	2032	2046	2054			
		16*	149	168	172	173	219	246	276	277	279	281	283	288
		289	290	291	293	294	295	296	298	299	300	301	303	304
		305	306	308	309	310	311	313	314	315	316	319	320	328
		329	346	347	349	349	382	383	384	385	388	599	607	611
		615	626	630	631	664	687	688	688	691	693	697	723	728
		796	797	799	801	808	811	812	814	816	819	863	868	873
		874	879	889	893	918	925	928	929	932	933	936	972	973
		978	979	980	983	984	992	995	998	1009	1010	1018	1019	1021
		1022	1023	1025	1027	1028	1031	1037	1042	1048	1051	1071	1074	1075
		1108	1115	1116	1120	1147	1152	1153	1156	1160	1169	1172	1179	1203
		1206	1207	1223	1226	1227	1231	1239	1263	1266	1302	1303	1306	1307
		1312	1313	1318	1319	1320	1332	1333	1334	1335	1338	1345	1347	1362
		1364	1388	1401	1479	1480	1482	1483	1486	1492	1504	1507	1509	1511
		1521	1522	1523	1525	1527	1531	1535	1538	1541	1542	1543	1718	1719
		1725	1731	1733	1734	1736	1738	1739	1745	1747	1748	1749	1751	1752
		1753	1755	1756	1760	1767	1771	1783	1791	1816	1821	1834	1838	1856
		2007	2021	2042										
R5	0000 0005	17*	203	205	216	329	331	332	334	335	636	643	644	645
		650	651	652	653	662	670	671	672	695	703	704	705	724
		725	726	733	734	735	864	881	884	887	926	930	934	964
		964	966	968	968	970	971	972	993	994	995	996	1001	1003
		1004	1013	1015	1017	1022	1024	1025	1026	1028	1030	1031	1033	1038
		1044	1070	1089	1090	1094	1095	1100	1106	1113	1122	1124	1125	1145
		1145	1147	1159	1160	1161	1162	1164	1165	1166	1181	1183	1192	1198
		1201	1210	1215	1217	1218	1221	1222	1242	1243	1245	1246	1248	1283
		1283	1286	1287	1288	1293	1294	1298	1298	1299	1311	1312	1322	1324
		1343	1349	1356	1359	1360	1368	1369	1371	1374	1375	1377	1395	1397
		1398	1404	1438	1439	1496	1497	1498	1526	1527	1528	1529	1680	1695
		1696	1698	1705	1710	1711	1798	1799	1800	1804	1807	1813	1821	1850
		1861	1862	1865	1876	1903	1904	1909	1910	1915	1916	1923	1924	1926
		1927	1928	1929	2008	2015	2026	2027	2030	2040				
R5SAV	0000 0190R	104*	1850	1876	2015	2040								
R6	0000 0006	18*	204	211	212	214	637	638	639	645	663	672	696	705
		727	735	883	885	1039	1045	1119	1125	1126	1128	1182	1187	1188
		1190	1211	1214	1215	1216	1217	1220	1221	1222	1316	1317	1320	1323
		1324	1325	1339	1340	1341	1344	1350	1358	1359	1360	1367	1369	1370
		1371	1379	1380	1384	1385	1386	1391	1392	1393	1396	1397	1398	1405
		1498	1800	1805	1865	2009	2030							
R7	0000 0007	19*	690	694	752	752	981	982	983	1043	1044	1045	1131	1132
		1133	1134	1135	1138	1139	1176	1177	1177	1180	1181	1182	1195	1196
		1196	1209	1210	1211	1234	1235	1236	1250	1251	1251	1253	1254	1321
		1322	1323	1348	1349	1350	1667	1672	1673	1673	1680	1687	1688	1688
		1695	1696	1806	1849	1850	1860	1863	1875	1876	2014	2015	2025	2028
		2039	2040											
R8	0000 0008	20*	190	340	898	905	951	952	953	957	1040	1046	1056	1061
		1066	1082	1097	1102	1137	1163	1173	1204	1208	1241	1261	1265	1285
		1342	1407	1415	1420	1432	1434	1438	1453	1457	1461	1465	1469	1477
		1477	1487	1504	1514	1517	1636	1777	1786	1787	1818	1832	1845	1852
		1884	1990	1994	1996	1999	2012	2044	2048	2056				
R9	0000 0009	21*	198	200	200	202	203	204	220	222	222	225	226	226
		228	229	229	341	343	343	353	355	355	417	420	421	423
		425	500	503	505	506	507	509	510	511	513	514	516	517
		518	520	521	522	524	525	526	528	529	530	532	533	534











PROG= FDLG32 ASSEMBLED BY CAL 03-066R07-00 (32-BIT)

		1	SCRAT			FDL00010
		2	NORX3			FDL00020
		3	WIDTH 120			FDL00030
		4	SQUEZ			FDL00040
		5	SQCHK			FDL00050
		6	CROSS			FDL00060
000000I		7	IFZ ADC-2			FDL00070
		8	FDLG16	PROG 06-225F01M96R01A13	FLOPPY DIAGNOSTIC LOADER/GENERATOR	FDL00080
		9	ELSE			FDL00090
		10	FDLG32	PROG 06-225F02M91R01A13	FLOPPY DIAGNOSTIC LOADER/GENERATOR	FDL00100
		11	ENDC			FDL00110
	0000 0000	12	R0	EQU 0		FDL00120
	0000 0001	13	R1	EQU 1		FDL00130
	0000 0002	14	R2	EQU 2		FDL00140
	0000 0003	15	R3	EQU 3		FDL00150
	0000 0004	16	R4	EQU 4		FDL00160
	0000 0005	17	R5	EQU 5		FDL00170
	0000 0006	18	R6	EQU 6		FDL00180
	0000 0007	19	R7	EQU 7		FDL00190
	0000 0008	20	R8	EQU 8		FDL00200
	0000 0009	21	R9	EQU 9		FDL00210
	0000 000A	22	RA	EQU 10		FDL00220
	0000 000B	23	RB	EQU 11		FDL00230
	0000 000C	24	RC	EQU 12		FDL00240
	0000 000D	25	RD	EQU 13		FDL00250
	0000 000E	26	RE	EQU 14		FDL00260
	0000 000F	27	RF	EQU 15		FDL00270
	0000 01CE	28	LDBUF	EQU ENDDAD-STARTAD+X'31'&X'FFFE'		FDL00280
	0000 001B	29	STDIRM	EQU 27		FDL00290
	0000 001C	30	STDIR	EQU 28		FDL00300
	0000 001F	31	ENDDIR	EQU 31		FDL00310
	0000 0020	32	STSAV	EQU 32		FDL00320
000000I	4300 81C8 =0001CCI	33	STARTL	B STARTL1		FDL00330
000004I	4300 98C4 =0018CCI	34	B	STARTG		FDL00340
000008I		35	DS	8	FILLER	FDL00350
000008I		36	IFZ	ADC-2		FDL00360
		37	DEVTYP	DC X'0505'		FDL00370
		38	ELSE			FDL00380
000010I	0101	39	DEVTYP	DC X'0101'		FDL00390
		40	ENDC			FDL00400
000012I	1011	41	PASAD	DC X'1011'		FDL00410
000014I	02	42	TTYAD	DB X'02'		FDL00420
000015I	62	43	LPAD	DB X'62'		FDL00430
000016I	C0	44	MBUS	DB X'C0'		FDL00440
000017I	C1	45	FLPAD	DB X'C1'		FDL00450
000018I		46	CNOP	4		FDL00460
000018I	0000	47	DCX	0	DUMMY	FDL00470
		48	*			FDL00480
		49	* LABEL	INBUF MUST BE ON A HW BOUNDARY, NOT A FW BOUNDARY		FDL00490
		50	*			FDL00500
00001AI		51	INBUF	DS 128		FDL00510
00009AI		52	PRTBUF	DS 72		FDL00520
0000E2I		53	CONIN	DS 72		FDL00530

00012AI	2A	54	ASTERISK	DB	C**'				FDL00540	
00012BI	00	55	LPFLG	DB	X'0'				FDL00550	
00012CI	00	56	FLG16	DB	X'0'				FDL00560	
00012DI	00	57	LDFLG	DB	X'0'				FDL00570	
00012EI	00	58	RANGE	DB	X'0'				FDL00580	
00012FI	00	59	F516	DB	X'0'				FDL00590	
000130I	00	60	F32	DB	X'0'				FDL00600	
000131I	EE	61	PASL2	DB	X'EE'				FDL00610	
000132I	A3	62	PASWR	DB	X'A3'				FDL00620	
000133I	A1	63	PASRD	DB	X'A1'				FDL00630	
000134I		64		CNOP	4				FDL00640	
000134I	0000	65		DCX	0		DUMMY		FDL00650	
		66	*						FDL00660	
		67	* LABEL SEQNUM MUST BE ON A HW BOUNDARY, NOT A FW BOUNDARY							FDL00670
		68	*						FDL00680	
000136I	0000	69	SEQNUM	DC	X'0'				FDL00690	
000138I	0000	70	PO6	DC	X'0'				FDL00700	
00013AI	0000	71	REVLEV	DC	X'0'				FDL00710	
00013CI	0000	72	LOW	DC	X'0'				FDL00720	
00013EI	0A00	73		DC	X'A00'				FDL00730	
000140I	0000	74	HIGH	DC	X'0'				FDL00740	
000142I	3FFF	75		DC	X'3FFF'				FDL00750	
000144I	0000	76	LRNS	DC	X'0'				FDL00760	
000146I		77	FFORM	DS	30				FDL00770	
000164I	0000	78		DC	X'0'				FDL00780	
000166I	0000	79	NEXTI	DC	X'0'				FDL00790	
000168I	0000	80	CSNI	DC	X'0'				FDL00800	
00016AI	0000	81	CSNPDBP	DC	X'0'				FDL00810	
00016CI	0000	82	CSEQNUMO	DC	X'0'				FDL00820	
00016EI	0000	83	CSEQNUMI	DC	X'0'				FDL00830	
000170I	0000	84	PRECMDO	DC	X'0'				FDL00840	
000172I	0000	85	PRECMDI	DC	X'0'				FDL00850	
000174I	0000	86	DIRP	DC	X'0'				FDL00860	
000176I	0000	87	DRO	DC	X'0'				FDL00870	
000178I	0000	88	DRI	DC	X'0'				FDL00880	
00017AI	9894	89	TTY	DC	X'9894'				FDL00890	
00017CI	079C	90	MAXLRNO	DC	X'79C'				FDL00900	
00017EI	0000	91	LPDB	DC	X'0'				FDL00910	
000180I	0000	92	NSLRN	DC	X'0'				FDL00920	
000182I	0000	93	NSLRNA	DC	X'0'				FDL00930	
000184I	0000	94	TERMSEQ	DC	X'0'				FDL00940	
000186I	0000	95	CSPI	DC	X'0'				FDL00950	
000188I	0000	96	SIZEI	DC	X'0'				FDL00960	
00018AI	0000	97	IPDBP	DC	X'0'				FDL00970	
00018CI	0000 0020	98	NCPDBP	DC	STSAV		aaa		FDL00980	
000190I	0000	99	TEMSAV	DC	X'0'				FDL00990	
000192I	0200	100		CNOP	4				FDL01000	
		101	*						FDL01010	
		102	* LABEL RSSAV MUST BE ON A FW BOUNDARY							FDL01020
		103	*						FDL01030	
000194I	0000	104	RSSAV	DCX	0,0				FDL01040	
000196I	0000									
000198I	5345 514E 554D	105	SN	DC	C'SEQNUM'				FDL01050	
00019EI	3036 4E55 4D20	106		DC	C'06NUM'				FDL01060	
0001A4I	4E41 4D45	107		DC	C'NAME'				FDL01070	

0001A8I	4C4F	5720	108		DC	C'LOW'		FDL01080
0001ACI	4849	4748	109		DC	C'HIGH'		FDL01090
0001BOI	5245	5620	110		DC	C'REV'		FDL01100
0001B4I			111			ALIGN 2		FDL01110
0001B4I	8800		112	STOPIT	DC	X'8800'	BREAKPOINT	FDL01120
0001B6I	2201		113		DC	X'2201'	LOOP	FDL01130
0001B8I	2411		114	SINC	LIS	R1,1	LOAD DISPLAY ADDRESS	FDL01140
0001BAI	C820	0040	115		LHI	R2,X'40'	LOAD INCRIMENTAL CMD	FDL01150
0001BET	9E12		116		OCR	R1,R2	COMMAND	FDL01160
0001COI	030D		117		BR	RD	RETURN	FDL01170
0001C2I	2411		118	SNOR	LIS	R1,1	LOAD DISPLAY ADDRESS	FDL01180
0001C4I	C820	0080	119		LHI	R2,X'80'	LOAD NORMAL CMD	FDL01190
0001C8I	9E12		120		OCR	R1,R2	COMMAND	FDL01200
0001CAI	030D		121		BR	RD	RETURN	FDL01210
0001CCI	41C0	827E =00044EI	122	STARTL1	BAL	RC,CLRDIS	CLEAR DISPLAY	FDL01220
0001DOI	2400		123		LIS	R0,0	CLEAR	FDL01230
0001D2I	D200	FF59 =00012FI	124		STB	R0,F516	CLEAR FLAG	FDL01240
0001D6I	D200	FF56 =000130I	125		STB	R0,F32	CLEAR FLAG	FDL01250
0001DAI	240F		126		LIS	R0,15	SET LOAD FLAG	FDL01260
0001DCI	D200	FF4D =00012DI	127		STB	R0,LDFLG	STORE FLAG	FDL01270
0001EOI	41C0	91DA =0013BEI	128		BAL	RC,LCORE	INIT LOW CORE	FDL01280
0001E4I	41C0	968E =001876I	129		BAL	RC,FIOD	FIND I/O	FDL01290
0001E8I	41C0	95B8 =0017A4I	130		BAL	RC,SETUP	PROCESS PRE-CMDS	FDL01300
0001ECI	2411		131	CONL	LIS	R1,1	LOAD DISPLAY ADDRESS	FDL01310
0001EEI	9D12		132		SSR	R1,R2	SENSE STATUS	FDL01320
0001FOI	C520	0004	133		CLHI	R2,X'04'	FALSE SYNC	FDL01330
0001F4I	4230	8082 =00027AI	134		BNE	DISPLD	USE DISPLAY	FDL01340
0001F8I	D320	FF30 =00012CI	135		LB	R2,FLG16	GET FLAG	FDL01350
0001FCI	0822		136		LDAR	R2,R2	SET CC	FDL01360
*0001FEI	2333		137		BZ	SET32	SET SERIES 32 FLAG	FDL01370
000200I	4300	8160 =000364I	138		B	P516	SET SERIES 16 FLAG & USE MICRO-BUS	FDL01380
000204I	2422		139	SET32	LIS	R2,2	LOAD FLAG	FDL01390
000206I	D220	FF26 =000130I	140		STB	R2,F32	SET FLAG	FDL01400
00020AI	E630	98C8 =001AD6I	141	P32	LDAI	R3,FOXS	LOAD ADDRESS	FDL01410
00020EI	C820	0010	142		LHI	R2,16	LOAD SIZE	FDL01420
000212I	41C0	9396 =0015ACI	143		BAL	RC,PASLAO	PRINT	FDL01430
000216I	E630	FF10 =00012AI	144		LDAI	R3,ASTERISK	LOAD ADDRESS	FDL01440
00021AI	2421		145		LIS	R2,1	LOAD SIZE	FDL01450
00021CI	41C0	938C =0015ACI	146		BAL	RC,PASLAO	PRINT	FDL01460
000220I	D330	FF0F =000133I	147		LB	R3,PASRD	GET READ COMMAND	FDL01470
000224I	9E13		148		OCR	R1,R3	COMMAND	FDL01480
000226I	2440		149		LIS	R4,0	CLEAR	FDL01490
000228I	9D12		150	INP1	SSR	R1,R2	SENSE STATUS	FDL01500
00022AI	2081		151		BTBS	8,1	BUSY LOOP	FDL01510
00022CI	9B12		152		RDR	R1,R2	READ DATA	FDL01520
00022EI	9A12		153		WDR	R1,R2	ECHO DATA	FDL01530
000230I	C420	007F	154		NHI	R2,X'7F'	STRIP PARITY	FDL01540
000234I	C520	000D	155		CLHI	R2,X'0D'	CR	FDL01550
000238I	4330	819A =0003D6I	156		BE	LOADIT	YES, LOAD	FDL01560
00023CI	C520	0040	157		CLHI	R2,C'@'	ADDRESS REQUEST??	FDL01570
000240I	4330	FF70 =0001B4I	158		BE	STOPIT	DO BREAKPOINT	FDL01580
000244I	C520	0060	159		CLHI	R2,X'60'	LOWER CASE CHECK	FDL01590
*000248I	2183		160		BL	COMINP1	SKIP	FDL01600
00024AI	CB20	0020	161		SHI	R2,X'20'	MAKE UPPER CASE	FDL01610
00024EI	C520	0023	162	COMINP1	CLHI	R2,X'23'	POUND SIGN	FDL01620

000252I	43B0	FFB4 =00020AI	163	BFC	11,P32	RECYCLE	FDLO1630
000256I	C520	0008	164	CLHI	R2,X'08'	BS??	FDLO1640
*00025AI	2334		165	BE	INP2	YES	FDLO1650
00025CI	C520	005F	166	CLHI	R2,X'5F'	DELETE??	FDLO1660
*000260I	2134		167	BNE	INP3	NO	FDLO1670
000262I	1044		168	INP2	SRLS R4,4	REMOVE LAST	FDLO1680
000264I	4300	FFC0 =000228I	169	B	INP1	LOOP	FDLO1690
000268I	0812		170	INP3	LDAR R1,R2	SWAP REGISTERS	FDLO1700
00026AI	41C0	894A =000BB8I	171	BAL	RC,CONVERT	CHANGE TO HEX	FDLO1710
00026EI	1144		172	SLLS	R4,4	SHIFT	FDLO1720
000270I	0641		173	OAR	R4,R1	MERGE DATA	FDLO1730
000272I	D310	FD9C =000012I	174	LB	R1,PASAD	RE-LOAD ADDRESS	FDLO1740
000276I	4300	FFAE =000228I	175	B	INP1	LOOP	FDLO1750
00027AI	41D0	FF3A =0001B8I	176	DISPLD	BAL RD,SINC	SET INCRIMENTAL	FDLO1760
*00027EI	2501		177	LHI	RO,X'FFFF'	LOAD F'S	FDLO1770
000280I	9810		178	WHR	R1,RO	WRITE DATA	FDLO1780
000282I	41D0	FF3C =0001C2I	179	BAL	RD,SNOR	SET NORMAL	FDLO1790
000286I	C800	0A0F	180	SPIO	LHI RO,X'0A0F'	LOAD PSW CONSTANT	FDLO1800
00028AI	1104		181	SLLS	RO,4	SCALE	FDLO1810
00028CI	9520		182	EPSR	R2,RO	SET WAIT BIT	FDLO1820
00028EI	9910		183	RDIO	RHR R1,RO	READ DISPLAY	FDLO1830
000290I	9400		184	EXBR	RO,RO	SWAP DATA	FDLO1840
000292I	0800		185	LDAR	RO,RO	SET CC	FDLO1850
000294I	4330	81C4 =00045CI	186	BZ	LIST	DISPLAY=0	FDLO1860
000298I	C400	0FFF	187	COML	NHI RO,X'FFF'	REMOVE ANY JUNK	FDLO1870
00029CI	4000	FECE =00016EI	188	STH	RO,CSEQNUMI	SET SEQUENCE NUMBER	FDLO1880
0002A0I	41C0	81AA =00044EI	189	BAL	RC,CLRDIS	CLEAR DISPLAY	FDLO1890
0002A4I	2482		190	LIS	R8,2	SET INPUT MODE	FDLO1900
0002A6I	2400		191	LIS	RO,0	CLEAR ERROR RETURN FLAG	FDLO1910
0002A8I	41E0	93B0 =00165CI	192	BAL	RE,RDIRECT	READ DIRECTORY	FDLO1920
0002ACI	0800		193	LDAR	RO,RO	LOAD RO	FDLO1930
0002AEI	4230	8092 =000344I	194	BNZ	DERPT	DIRECTORY ERROR	FDLO1940
0002B2I	0833		195	LDAR	R3,R3	SET R3	FDLO1950
0002B4I	4330	809C =000354I	196	BZ	EOVDIS	WRITE EOVS	FDLO1960
0002B8I	41C0	8F3A =0011F6I	197	BAL	RC,SULH56	LOAD R5-R6	FDLO1970
0002BCI	2490		198	LIS	R9,0	CLEAR ERROR RETURN FLAG	FDLO1980
0002BEI	41E0	946C =00172EI	199	BAL	RE,RDLRN	LOAD PDB	FDLO1990
0002C2I	0899		200	LDAR	R9,R9	LOAD R9	FDLO2000
0002C4I	4230	8084 =00034CI	201	BNZ	ERRRDP	LOAD ERROR	FDLO2010
0002C8I	D390	FE60 =00012CI	202	LB	R9,FLG16	LOAD 16 BIT FLAG	FDLO2020
0002CCI	5859	FD50 =000020I	203	LDA	R5,INBUF+6(R9)	LOAD LOW	FDLO2030
0002D0I	5869	FD50 =000024I	204	LDA	R6,INBUF+10(R9)	LOAD HIGH	FDLO2040
0002D4I	F550	0000 0000I	205	CLAI	R5,STARTL	COMPARE LOW TO START	FDLO2050
*0002DAI	23B3		206	BFC	11,LERR	ERROR	FDLO2060
*0002DCI	2186		207	BL	CHKHLS	CHECK H<S	FDLO2070
*0002DEI	230E		208	B	CHKLGE	CHECK L>E	FDLO2080
0002E0I	C800	5555	209	LERR	LHI RO,X'5555'	LOAD ERROR CODE	FDLO2090
0002E4I	4300	8030 =000318I	210	B	PRTCODE	PRINT	FDLO2100
0002E8I	CA60	0080	211	CHKHLS	AHI R6,128	ADD MAX EXTRA SIZE	FDLO2110
0002ECI	F560	0000 0000I	212	CLAI	R6,STARTL	COMPARE HIGH TO START	FDLO2120
*0002F2I	2289		213	BNL	LERR	ERROR	FDLO2130
0002F4I	CB60	0080	214	SHI	R6,128	RESTORE	FDLO2140
*0002F8I	2307		215	B	LCONT	OK	FDLO2150
0002FAI	F550	0000 1B45I	216	CHKLGE	CLAI R5,LNZB	COMPARE LOW TO END	FDLO2160
*000300I	2383		217	BNL	LCONT	OK	FDLO2170

000302I	4300	FFDA	=0002E0I	218		B	LERR	ERROR	FDL02180
000306I	2641			219	LCONT	AIS	R4,1	INC LRN TO 1ST OF PROGRAM	FDL02190
000309I	2490			220		LIS	R9,0	CLEAR ERROR RETURN FLAG	FDL02200
00030AI	41E0	9420	=00172EI	221		BAL	RE,RDLRN	READ PROGRAM	FDL02210
00030EI	0899			222		LDAR	R9,R9	LOAD ERROR FLAG	FDL02220
000310I	4230	8038	=00034CI	223		BNZ	ERRRDP	LOAD ERROR	FDL02230
000314I	C800	00FF		224		LHI	RO,X'FF'	LOAD CODE	FDL02240
000316I	D390	FE13	=00012FI	225	PRTCODE	LB	R9,F516	LOAD 516 FLAG	FDL02250
00031CI	0899			226		LDAR	R9,R9	SET CC	FDL02260
00031EI	4230	8282	=0005A4I	227		BNZ	D516	USE MICRO-BUS	FDL02270
000322I	D390	FE0A	=000130I	228		LB	R9,F32	GET FLAG	FDL02280
000326I	0899			229		LDAR	R9,R9	SET CC	FDL02290
000324I	4230	82FE	=00062AI	230		BNZ	D32	USE PASLA	FDL02300
00032CI	41D0	FE88	=0001B8I	231		BAL	RD,SINC	SET INCRIMENTAL	FDL02310
000330I	9400			232		EXBR	RO,R0	SWAP	FDL02320
000332I	9810			233		WHR	R1,R0	WRITE DATA	FDL02330
000334I	41D0	FE8A	=0001C2I	234		BAL	RD,SNOR	SET NORMAL	FDL02340
000336I	4300	FF4A	=000286I	235		B	SPIO	STOP AT INPUT	FDL02350
00033CI	C800	DDDD		236	EODPT	LHI	RO,X'DDDD'	LOAD ERROR CODE	FDL02360
000340I	4300	FFD4	=000318I	237		B	PRTCODE	PRINT	FDL02370
000344I	C800	1111		238	DERPT	LHI	RO,X'1111'	LOAD ERROR CODE	FDL02380
000348I	4300	FFCC	=000318I	239		B	PRTCODE	PRINT	FDL02390
00034CI	C800	3333		240	ERRRDP	LHI	RO,X'3333'	LOAD ERROR CODE	FDL02400
000350I	4300	FFC4	=000318I	241		B	PRTCODE	PRINT	FDL02410
000354I	C800	EEEE		242	EOVDIS	LHI	RO,X'EEEE'	LOAD ERROR CODE	FDL02420
000356I	4300	FFBC	=000318I	243		B	PRTCODE	PRINT	FDL02430
00035CI	C800	00FF		244	EOVPT	LHI	RO,X'FF'	LOAD CODE	FDL02440
000352I	4300	FFB4	=000318I	245		B	PRTCODE	PRINT	FDL02450
000364I	2440			246	P516	LIS	R4,0	CLEAR R4 FOR INPUT DATA	FDL02460
000366I	24CF			247		LIS	RO,15	SET FLAG	FDL02470
000368I	D200	FDC3	=00012FI	248		STB	RO,F516	STORE FLAG	FDL02480
00036CI	E630	9766	=001AD6I	249		LDAI	R3,FOXS	LOAD ADDRESS	FDL02490
000370I	C820	0010		250		LHI	R2,16	LOAD SIZE	FDL02500
000374I	41C0	849A	=000812I	251		BAL	RC,MBO	PRINT	FDL02510
000378I	E630	FDAE	=00012AI	252	P516C	LDAI	R3,ASTERISK	LOAD ADDRESS	FDL02520
00037CI	2421			253		LIS	R2,1	LOAD SIZE	FDL02530
00037EI	41C0	8490	=000812I	254		BAL	RC,MBO	PRINT	FDL02540
000382I	C830	0092		255		LHI	R3,X'92'	LOAD READ CMD	FDL02550
000386I	9E03			256		OCR	RO,R3	COMMAND	FDL02560
000388I	9BC1			257		RDR	RO,R1	DUMMY READ	FDL02570
00033AI	41C0	8056	=0003E4I	258	P516A	BAL	RC,MBSS	BUSY WAIT	FDL02580
00038EI	9EC1			259		RDR	RO,R1	READ DATA	FDL02590
000390I	9A01			260		WDR	RO,R1	ECHO DATA	FDL02600
000392I	C410	007F		261		NHI	R1,X'7F'	STRIP PARITY	FDL02610
000396I	C510	0060		262		CLHI	R1,X'60'	LOWER CASE CHECK	FDL02620
*00039AI	2183			263		BL	P516D	SKIP	FDL02630
00039CI	CB10	0020		264		SHI	R1,X'20'	MAKE UPPER CASE	FDL02640
0003A0I	C510	000D		265	P516D	CLHI	R1,X'0D'	CR CHECK	FDL02650
0003A4I	43E0	802E	=0003D6I	266		BFC	11,LOADIT	LOAD PROGRAM	FDL02660
0003A8I	C510	0040		267		CLHI	R1,C'0'	ADDRESS REQUEST??	FDL02670
0003ACI	4330	FE04	=0001B4I	268		BE	STOPIT	DO BREAKPOINT	FDL02680
0003B0I	C510	0023		269		CLHI	R1,X'23'	POUND CHECK	FDL02690
0003B4I	43E0	FFC0	=000378I	270		BFC	11,P516C	RESTART INPUT	FDL02700
0003B8I	C510	005F		271		CLHI	R1,X'5F'	DELETE LAST	FDL02710
*0003BCI	23BA			272		BFC	11,P516B	REMOVE LAST	FDL02720

0003BEI	C510	0008	273		CLHI	R1,X'08'	BS??	FDL02730
*0003C2I	2337		274		BE	P516B	YES	FDL02740
0003C4I	41C0	87F0 =0003B8I	275		BAL	RC,CONVERT	CHANGE TO HEX	FDL02750
0003C8I	1144		276		SLLS	R4,4	SHIFT	FDL02760
0003CAI	0641		277		OAR	R4,R1	MERGE DATA	FDL02770
0003CCI	4300	FFBA =00038AI	278		B	P516A	READ MORE	FDL02780
0003D0I	1044		279	P516B	SRLS	R4,4	REMOVE LSD	FDL02790
0003D2I	43C0	FFB4 =00038AI	280		B	P516A	READ MORE	FDL02800
0003D6I	C440	0FFF	281	LOADIT	NHI	R4,X'FFF'	REMOVE JUNK	FDL02810
0003DAI	4330	807E =00045CI	282		BZ	LIST	LIST FLOPPY	FDL02820
0003DEI	0804		283		LDAR	R0,R4	SWAP REGISTERS	FDL02830
0003EOI	4300	FEB4 =000298I	284		B	COML	GO TO COMMON	FDL02840
0003E4I	9D02		285	MBSS	SSR	R0,R2	SENSE STATUS	FDL02850
0003E6I	2081		286		BTBS	8,1	BUSY LOOP	FDL02860
0003E8I	030C		287		BR	RC	RETURN	FDL02870
0003EAI	2445		288	HDP	LIS	R4,5	LOAD COUNT	FDL02880
0003ECI	D3B4	FDA8 =000198I	289	HDRA	LB	RB,SN(R4)	LOAD	FDL02890
0003FOI	D2B4	FCAB =00009CI	290		STB	RB,PRTBUF+2(R4)	STORE	FDL02900
0003F4I	2741		291		SIS	R4,1	DECREMENT	FDL02910
*0003F6I	2215		292		BNM	HDRA	LOOP	FDL02920
0003F8I	2444		293		LIS	R4,4	LOAD COUNT	FDL02930
0003FAI	D3B4	FDA0 =00019EI	294	HDR1	LB	RB,SN+6(R4)	LOAD	FDL02940
0003FEI	D2B4	FCA1 =0000A3I	295		STB	RB,PRTBUF+9(R4)	STORE	FDL02950
000402I	2741		296		SIS	R4,1	DECREMENT	FDL02960
*000404I	2215		297		BNM	HDR1	LOOP	FDL02970
000406I	2444		298		LIS	R4,4	LOAD COUNT	FDL02980
000408I	D3B4	FD97 =0001A3I	299	HDR2	LB	RB,SN+11(R4)	LOAD	FDL02990
00040CI	D2B4	FCAB =0000B8I	300		STB	RB,PRTBUF+33(R4)	STORE	FDL03000
000410I	2741		301		SIS	R4,1	DECREMENT	FDL03010
*000412I	2215		302		BNM	HDR2	LOOP	FDL03020
000414I	2442		303		LIS	R4,2	LOAD COUNT	FDL03030
000416I	D3B4	FD8E =0001A8I	304	HDR3	LB	RB,SN+16(R4)	LOAD	FDL03040
00041AI	D2B4	FCB4 =0000D2I	305		STB	RB,PRTBUF+56(R4)	STORE	FDL03050
00041EI	2741		306		SIS	R4,1	DECREMENT	FDL03060
*000420I	2215		307		BNM	HDR3	LOOP	FDL03070
000422I	2444		308		LIS	R4,4	LOAD COUNT	FDL03080
000424I	D3B4	FD83 =0001ABI	309	HDR4	LB	RB,SN+19(R4)	LOAD	FDL03090
000428I	D2B4	FCAD =0000D9I	310		STB	RB,PRTBUF+63(R4)	STORE	FDL03100
00042CI	2741		311		SIS	R4,1	DECREMENT	FDL03110
*00042EI	2215		312		BNM	HDR4	LOOP	FDL03120
000430I	2442		313		LIS	R4,2	LOAD COUNT	FDL03130
000432I	D3B4	FD7A =0001B0I	314	HDR5	LB	RB,SN+24(R4)	LOAD	FDL03140
000436I	D2B4	FC6F =0000A9I	315		STB	RB,PRTBUF+15(R4)	STORE	FDL03150
00043AI	2741		316		SIS	R4,1	DECREMENT	FDL03160
*00043CI	2215		317		BNM	HDR5	LOOP	FDL03170
00043EI	C8B0	007B	318		LHI	RB,123	FOOL PRINT COUNT	FDL03180
000442I	C840	001B	319		LHI	R4,STDIRM	FOOL LRN COUNT	FDL03190
000446I	4040	FD2A =000174I	320		STH	R4,DIRP	SAVE COUNTER	FDL03200
00044AI	4300	80A0 =0004EEI	321		B	LCOM1E	PRINT HEADER	FDL03210
00044EI	41D0	FD66 =0001B8I	322	CLRDIS	BAL	RD,SINC	SET INCRIMENTAL	FDL03220
000452I	24C0		323		LIS	R0,0	LOAD ZERO'S	FDL03230
000454I	9810		324		WHR	R1,R0	CLEAR DISPLAY	FDL03240
000456I	41D0	FD68 =0001C2I	325		BAL	RD,SNOR	SET NORMAL	FDL03250
00045AI	03CC		326		BR	RC	RETURN	FDL03260
00045CI	41C0	FFEE =00044EI	327	LIST	BAL	RC,CLRDIS	CLEAR DISPLAY	FDL03270

000460I	D340	FBB1 =000015I	328	LB	R4,LPAD	LOAD PRINTER ADDRESS	FDL03280
000464I	9D45		329	SSR	R4,R5	SENSE STATUS	FDL03290
000466I	2155		330	BTFS	5,NOLP	EXAMINE OR DU ACTIVE	FDL03300
000468I	245F		331	LIS	R5,15	SET LP FLAG	FDL03310
00046AI	D250	FCBD =00012BI	332	STB	R5,LPFLG	STORE	FDL03320
*00046EI	2304		333	B	LCOM	GO TO COMMON	FDL03330
000470I	2450		334	NOLP	LIS R5,0	CLEAR LP FLAG	FDL03340
000472I	D250	FCB5 =00012BI	335	STB	R5,LPFLG	STORE	FDL03350
000476I	41C0	83CE =000848I	336	LCOM	BAL RC,CPD	CLEAR PRINT BUFFER	FDL03360
00047AI	4300	FF6C =0003EAI	337	B	HDR	PRINT HEADDER	FDL03370
00047EI	24B0		338	LCOMA	LIS RB,0	CLEAR RB	FDL03380
000480I	41C0	8D72 =0011F6I	339	LCOM1D	BAL RC,SULH56	LOAD R5-R6	FDL03390
000484I	2482		340		LIS R8,2	SET INPUT FLAG	FDL03400
000486I	2490		341		LIS R9,0	CLEAR ERROR RETURN FLAG	FDL03410
000488I	41E0	92A2 =00172EI	342	BAL	RE,RDLRN	READ 1ST DIRECTORY BLOCK	FDL03420
00048CI	0899		343	LDAR	R9,R9	LOAD ERROR FLAG	FDL03430
*00048EI	2333		344	BZ	LCOM1F	NO ERROR	FDL03440
000490I	4300	FEB8 =00034CI	345	B	ERRRDP	LOAD ERROR	FDL03450
000494I	484B	FB84 =00001CI	346	LCOM1F	LH R4,INBUF+2(RB)	LOAD PDB POINTER	FDL03460
000498I	C540	7000	347	CLHI	R4,X'7000'	DELETE?	FDL03470
00049CI	4330	8064 =000504I	348	BE	LCOM2	YES	FDL03480
0004AOI	0844		349	LDAR	R4,R4	SET CC	FDL03490
*0004A2I	233E		350	BZ	EOVPTA	EOV FOUND	FDL03500
0004A4I	4210	802E =0004D6I	351	BM	EODPTA	EOD FOUND	FDL03510
0004A8I	41C0	8D4A =0011F6I	352	BAL	RC,SULH56	LOAD R5-R6	FDL03520
0004ACI	2490		353	LIS	R9,0	CLEAR ERROR RETURN FLAG	FDL03530
0004AEI	41E0	927C =00172EI	354	BAL	RE,RDLRN	READ PDB	FDL03540
0004B2I	0899		355	LDAR	R9,R9	LOAD ERROR FLAG	FDL03550
*0004B4I	2333		356	BZ	LCOM1B	NO ERROR	FDL03560
0004B6I	4300	FE92 =00034CI	357	B	ERRRDP	LOAD ERROR	FDL03570
0004BAI	4300	81F0 =0006AEI	358	LCOM1B	B	FORMAT PRINT BUFFER	FDL03580
0004BEI	D330	FC69 =00012BI	359	EOVPTA	LB R3,LPFLG	GET FLAG	FDL03590
0004C2I	0833		360	LDAR	R3,R3	SET CC	FDL03600
0004C4I	4330	FE94 =00035CI	361	BZ	EOVPT	IGNORE FF TO LP	FDL03610
0004C8I	2421		362	LIS	R2,1	LOAD SIZE	FDL03620
0004CAI	E630	9666 =001B34I	363	LDAI	R3,TOF	LOAD ADDRESS	FDL03630
0004CEI	41C0	9150 =001622I	364	BAL	RC,PRTO	PRINT	FDL03640
0004D2I	4300	FE86 =00035CI	365	B	EOVPT	CONTINUE	FDL03650
0004D6I	D330	FC51 =00012BI	366	EODPTA	LB R3,LPFLG	GET FLAG	FDL03660
0004DAI	0833		367	LDAR	R3,R3	SET CC	FDL03670
0004DCI	4330	FE5C =00033CI	368	BZ	EODPT	IGNORE FF TO LP	FDL03680
0004EOI	2421		369	LIS	R2,1	LOAD SIZE	FDL03690
0004E2I	E630	964E =001B34I	370	LDAI	R3,TOF	LOAD ADDRESS	FDL03700
0004E6I	41C0	9138 =001622I	371	BAL	RC,PRTO	PRINT	FDL03710
0004EAI	4300	FE4E =00033CI	372	B	EODPT	CONTINUE	FDL03720
0004EEI	D330	FC39 =00012BI	373	LCOM1E	LB R3,LPFLG	LOAD PRTFLAG	FDL03730
0004F2I	0833		374	LDAR	R3,R3	SET CC	FDL03740
0004F4I	4330	8032 =00052AI	375	BZ	MBCHK	NO	FDL03750
0004F8I	C820	0048	376	LHI	R2,72	LOAD SIZE	FDL03760
0004FCI	E630	FB9A =00009AI	377	LDAI	R3,PRTBUF	LOAD ADDRESS	FDL03770
000500I	41C0	911E =001622I	378	BAL	RC,PRTO	GO PRINT	FDL03780
000504I	26B4		379	LCOM2	AIS RB,4	INCREMENT PRINT POINTER	FDL03790
000506I	C5E0	007D	380	CLHI	RB,125	DONE	FDL03800
*00050AI	218C		381	BL	LCOM1C	LOOP	FDL03810
00050CI	4840	FC64 =000174I	382	LCOM2A	LH R4,DIRP	RESTORE POINTER	FDL03820



000510I	2641		383	AIS	R4,1	INCREMENT LRN POINTER	FDL03830	
000512I	4040	FC5E =000174I	384	STH	R4,DIRP	SAVE POINTER	FDL03840	
000516I	C540	0020	385	CLHI	R4,STSAV	DCNE 222	FDL03850	
00051AI	42B0	FF60 =00047EI	386	BTC	11,LCOMA	LOOP	FDL03860	
00051EI	4300	FE22 =000344I	387	B	DERPT	DIRECTORY HAS NO EOF OR EOD	FDL03870	
000522I	4840	FC4E =000174I	388	LCOM1C	LH	R4,DIRP	RESTORE POINTER	FDL03880
000526I	4300	FF56 =000480I	389	B	LCOM1D	LOOP	FDL03890	
00052AI	D330	FC01 =00012FI	390	MBCHK	LB	R3,F516	LOAD 516 FLAG	FDL03900
00052EI	0833		391	LDAR	R3,R3	SET CC	FDL03910	
*000530I	2339		392	BZ	CONCHK	NOT 516(NO MICRO-BUS)	FDL03920	
000532I	C820	0048	393	LHI	R2,72	LOAD SIZE	FDL03930	
000536I	E630	FB60 =00009AI	394	LDAI	R3,PRTBUF	LOAD ADDRESS	FDL03940	
00053AI	41C0	82D4 =000812I	395	BAL	RC,MBO	GO PRINT	FDL03950	
00053EI	4300	FFC2 =000504I	396	B	LCOM2	CONTINUE	FDL03960	
000542I	2422		397	CONCHK	LIS	R2,2	LOAD CLI ADDRESS	FDL03970
000544I	9D23		398	SSR	R2,R3	SENSE STATUS	FDL03980	
000546I	C530	0004	399	CLHI	R3,X'04'	FALSE SYNC CHECK	FDL03990	
*00054AI	23BC		400	BFC	11,PASCHK	NOT CLI	FDL04000	
00054CI	C330	0001	401	THI	R3,X'01'	DJ TEST	FDL04010	
*000550I	2129		402	BP	PASCHK	CLI IS DJ	FDL04020	
000552I	C820	0048	403	LHI	R2,72	LOAD SIZE	FDL04030	
000556I	E630	FB40 =00009AI	404	LDAI	R3,PRTBUF	LOAD ADDRESS	FDL04040	
00055AI	41C0	8622 =000B80I	405	BAL	RC,TTYO	GO PRINT	FDL04050	
00055EI	4300	FFA2 =000504I	406	B	LCOM2	CONTINUE	FDL04060	
000562I	D320	FAAD =000013I	407	PASCHK	LB	R2,PASAD+1	LOAD TRANSMIT ADDRESS	FDL04070
000566I	9D23		408	SSR	R2,R3	SENSE STATUS	FDL04080	
000568I	C530	0004	409	CLHI	R3,X'04'	FALSE SYNC CHECK	FDL04090	
00056CI	43B0	FF94 =000504I	410	BFC	11,LCOM2	NOT PASLA	FDL04100	
000570I	C530	000C	411	CLHI	R3,X'0C'	DJ CHECK	FDL04110	
000574I	43B0	FF8C =000504I	412	BFC	11,LCOM2	PASLA DJ	FDL04120	
000578I	C820	0048	413	LHI	R2,72	LOAD SIZE	FDL04130	
00057CI	E630	FB1A =00009AI	414	LDAI	R3,PRTBUF	LOAD ADDRESS	FDL04140	
000580I	41C0	9028 =0015ACI	415	BAL	RC,PASLAO	GO PRINT	FDL04150	
000584I	4300	FF7C =000504I	416	B	LCOM2	CONTINUE	FDL04160	
000588I	C590	000F	417	CONVB	CLHI	R9,X'F'	COMPARE TO MAX HEX VALUE	FDL04170
*00058CI	23B2		418	BFC	11,CONVB3	OK	FDL04180	
*00058EI	2388		419	BFC	8,CONVB2	NON HEX DIGIT	FDL04190	
000590I	CA90	0030	420	CONVB3	AHI	R9,X'30'	COMPENSATE FOR 0-9	FDL04200
000594I	C590	003A	421	CLHI	R9,X'3A'	NUMBER EQUALS A-F	FDL04210	
*000598I	2182		422	BL	CONVB1	DONE	FDL04220	
00059AI	2697		423	AIS	R9,7	COMPENSATE FOR A-F	FDL04230	
00059CI	030D		424	CONVB1	BR	RD	RETURN	FDL04240
00059EI	C890	0020	425	CONVB2	LHI	R9,X'20'	LOAD BLANK	FDL04250
0005A2I	22C3		426	BS	CONVB1	EXIT	FDL04260	
0005A4I	C500	00FF	427	D516	CLHI	R0,X'FF'	EOJ	FDL04270
*0005A8I	21B9		428	BTC	11,D516A	NEXT	FDL04280	
0005AAI	D320	958C =001B3AI	429	LB	R2,EOJMSG5	LOAD SIZE	FDL04290	
0005AEI	E630	9448 =0019FAI	430	LDAI	R3,EOJMSG	LOAD ADDRESS	FDL04300	
0005B2I	41C0	825C =000812I	431	BAL	RC,MBO	GO PRINT	FDL04310	
0005B6I	4300	FD8E =000378I	432	B	P516C	INPUT	FDL04320	
0005BAI	F500	0000 EEEE	433	D516A	CLAI	R0,X'EEEE'	EOV	FDL04330
*0005COI	21B9		434	BTC	11,D516B	NEXT	FDL04340	
0005C2I	D320	9574 =001B3AI	435	LB	R2,EOVMS	LOAD SIZE	FDL04350	
0005C6I	E630	94F6 =001AC0I	436	LDAI	R3,EOVM	LOAD ADDRESS	FDL04360	
0005CAT	41C0	8244 =000812I	437	BAL	RC,MBO	GO PRINT	FDL04370	

0005CEI	4300	FDA6	=000378I	438		B	P516C	INPUT	FDL04380
0005D2I	C500	3333		439	D516B	CLHI	R0,X'3333'	LOAD STATUS ERROR	FDL04390
*0005D6I	21B9			440		BTC	11,D516C	NEXT	FDL04400
0005D8I	D320	9565	=001B41I	441		LB	R2,LSERRMS	LOAD SIZE	FDL04410
0005DCI	E630	94B6	=001A96I	442		LDAI	R3,LSERRM	LOAD ADDRESS	FDL04420
0005EOI	41C0	822E	=000812I	443		BAL	RC,MBO	GO PRINT	FDL04430
0005E4I	4300	FD90	=000378I	444		B	P516C	INPUT	FDL04440
0005E8I	C500	5555		445	D516C	CLHI	R0,X'5555'	OVERLOAD ERROR	FDL04450
*0005ECI	21E9			446		BTC	11,D516D	NEXT	FDL04460
0005EEI	D320	9550	=001B42I	447		LB	R2,LERRMS	LOAD SIZE	FDL04470
0005F2I	E630	94B2	=001AA8I	448		LDAI	R3,LERRM	LOAD ADDRESS	FDL04480
0005F6I	41C0	8218	=000812I	449		BAL	RC,MBO	GO PRINT	FDL04490
0005FAI	4300	FD7A	=000378I	450		B	P516C	INPUT	FDL04500
0005FEI	C500	1111		451	D516D	CLHI	R0,X'1111'	EOD ERROR	FDL04510
*000602I	21B9			452		BTC	11,D516E	NEXT	FDL04520
000604I	D320	952F	=001B37I	453		LB	R2,E0VRTNMS	LOAD SIZE	FDL04530
000608I	E630	93B4	=0019C0I	454		LDAI	R3,E0VRTNM	LOAD ADDRESS	FDL04540
00060CI	41C0	8202	=000812I	455		BAL	RC,MBO	PRINT	FDL04550
000610I	4300	FD64	=000378I	456		B	P516C	INPUT	FDL04560
000614I	C500	DDDD		457	D516E	CLHI	R0,X'DDDD'	EOD ERROR	FDL04570
*000618I	21Z7			458		BNE	D516F	EXPANSION	FDL04580
00061AI	D320	951C	=001B3AI	459		LB	R2,E0DERRS	LOAD SIZE	FDL04590
00061EI	E630	939A	=0019BCI	460		LDAI	R3,E0DERR	LOAD ADDRESS	FDL04600
000622I	41C0	81EC	=000812I	461		BAL	RC,MBO	PRINT	FDL04610
000626I	4300	FD4E	=000378I	462	D516F	B	P516C	INPUT	FDL04620
00062AI	C500	00FF		463	D32	CLHI	R0,X'FF'	EOJ	FDL04630
*00062EI	21B9			464		BTC	11,D320A	NEXT	FDL04640
000630I	D320	9506	=001B3AI	465		LB	R2,E0JMSSG	LOAD SIZE	FDL04650
000634I	E630	93C2	=0019FAI	466		LDAI	R3,E0JMSSG	LOAD ADDRESS	FDL04660
000638I	41C0	8F70	=0015ACI	467		BAL	RC,PASLAO	GO PRINT	FDL04670
00063CI	4300	FBCA	=00020AI	468		B	P32	INPUT	FDL04680
000640I	C500	EEEE		469	D320A	CLHI	R0,X'EEEE'	EOV	FDL04690
*000644I	21E9			470		BTC	11,D320B	NEXT	FDL04700
000646I	D320	94F0	=001B3AI	471		LB	R2,E0VMS	LOAD SIZE	FDL04710
00064AI	E630	9472	=001AC0I	472		LDAI	R3,E0VM	LOAD ADDRESS	FDL04720
00064EI	41C0	8F5A	=0015ACI	473		BAL	RC,PASLAO	GO PRINT	FDL04730
000652I	4300	FB84	=00020AI	474		B	P32	INPUT	FDL04740
000656I	C500	3333		475	D320B	CLHI	R0,X'3333'	LOAD STATUS ERROR	FDL04750
*00065AI	21E9			476		BTC	11,D320C	NEXT	FDL04760
00065CI	D320	94E1	=001B41I	477		LB	R2,LSERRMS	LOAD SIZE	FDL04770
000660I	E630	9432	=001A96I	478		LDAI	R3,LSERRM	LOAD ADDRESS	FDL04780
000664I	41C0	8F44	=0015ACI	479		BAL	RC,PASLAO	GO PRINT	FDL04790
000668I	4300	FB9E	=00020AI	480		B	P32	INPUT	FDL04800
00066CI	C500	5555		481	D320C	CLHI	R0,X'5555'	OVERLOAD ERROR	FDL04810
*000670I	21E9			482		BTC	11,D320D	NEXT	FDL04820
000672I	D320	94CC	=001B42I	483		LB	R2,LERRMS	LOAD SIZE	FDL04830
000676I	E630	942E	=001AA8I	484		LDAI	R3,LERRM	LOAD ADDRESS	FDL04840
00067AI	41C0	8F2E	=0015ACI	485		BAL	RC,PASLAO	GO PRINT	FDL04850
00067EI	4300	FB88	=00020AI	486		B	P32	INPUT	FDL04860
000682I	C500	1111		487	D320D	CLHI	R0,X'1111'	EOD ERROR	FDL04870
*000686I	21E9			488		BTC	11,D320E	NEXT	FDL04880
000688I	D320	94AB	=001B37I	489		LB	R2,E0VRTNMS	LOAD SIZE	FDL04890
00068CI	E630	9330	=0019C0I	490		LDAI	R3,E0VRTNM	LOAD ADDRESS	FDL04900
000690I	41C0	8F18	=0015ACI	491		BAL	RC,PASLAO	PRINT	FDL04910
000694I	4300	FB72	=00020AI	492		B	P32	INPUT	FDL04920

000698I	C500	DDDD	493	D320E	CLHI	R0,X'DDDD'	EOD ERROR	FDL04930
*00069CI	2137		494		BNE	D320F	EXPANSION	FDL04940
00069EI	D320	9498 =001B3AI	495		LB	R2,EODERRS	LOAD SIZE	FDL04950
0006A2I	E630	9316 =0019BCI	496		LDAI	R3,EODERR	LOAD ADDRESS	FDL04960
0006A6I	41C0	8F02 =0015ACI	497		BAL	RC,PASLAA	PRINT	FDL04970
0006AAI	4300	FR5C =00020AI	498	D320F	B	P32	INPJT	FDL04980
0006AEI	41C0	8196 =000848I	499	FORMAT	BAL	RC,CPD	CLEAR PRINT BUFFER	FDL04990
0006B2I	4890	F964 =00001AI	500		LH	R9,INBUF	LOAD SEQUENCE NUMBER	FDL05000
0006B6I	4330	FCA2 =00035CI	501		BZ	EOVPT	EOV	FDL05010
0006BAI	4210	FC9E =00035CI	502		BM	EOVPT	EOD	FDL05020
0006BEI	D390	F958 =00001AI	503		LB	R9,INBUF	LOAD 1ST DIGIT	FDL05030
0006C2I	41D0	FEC2 =000588I	504		BAL	RD,CONVB	CONVERT	FDL05040
0006C6I	D290	F9D4 =00009EI	505		STB	R9,PRTBUF+4	STORE	FDL05050
0006CAI	D390	F94D =00001BI	506		LB	R9,INBUF+1	LOAD NEXT 2	FDL05060
0006CEI	1094		507		SRLS	R9,4	REMOVE 3RD	FDL05070
0006DOI	41D0	FEB4 =000588I	508		BAL	RD,CONVB	CONVERT	FDL05080
0006D4I	D290	F9C7 =00009FI	509		STB	R9,PRTBUF+5	STORE	FDL05090
0006D8I	D390	F93F =00001BI	510		LB	R9,INBUF+1	RELOAD	FDL05100
0006DCI	C490	000F	511		NHI	R9,X'OF'	REMOVE SECOND	FDL05110
0006EOI	41D0	FEA4 =000588I	512		BAL	RD,CONVB	CONVERT	FDL05120
0006E4I	D290	F9B8 =0000A0I	513		STB	R9,PRTBUF+6	STORE	FDL05130
0006E8I	D390	F930 =00001CI	514		LB	R9,INBUF+2	LOAD 1ST	FDL05140
0006ECI	41D0	FE98 =000588I	515		BAL	RD,CONVB	CONVERT	FDL05150
0006FOI	D290	F9B0 =0000A4I	516		STB	R9,PRTBUF+10	STORE	FDL05160
0006F4I	D390	F925 =00001DI	517		LB	R9,INBUF+3	LOAD NEXT 2	FDL05170
0006F8I	1094		518		SRLS	R9,4	REMOVE 3RD	FDL05180
0006FAI	41D0	FE8A =000588I	519		BAL	RD,CONVB	CONVERT	FDL05190
0006FEI	D290	F9A3 =0000A5I	520		STB	R9,PRTBUF+11	STORE	FDL05200
000702I	D390	F917 =00001DI	521		LB	R9,INBUF+3	RELOAD	FDL05210
000706I	C490	000F	522		NHI	R9,X'OF'	REMOVE 2ND	FDL05220
00070AI	41D0	FE7A =000588I	523		BAL	RD,CONVB	CONVERT	FDL05230
00070EI	D290	F994 =0000A6I	524		STB	R9,PRTBUF+12	STORE	FDL05240
000712I	D390	F909 =00001FI	525		LB	R9,INBUF+5	LOAD 1ST+2ND	FDL05250
000716I	1094		526		SRLS	R9,4	REMOVE 2ND	FDL05260
000718I	41D0	FE6C =000588I	527		BAL	RD,CONVB	CONVERT	FDL05270
00071CI	D290	F989 =0000A9I	528		STB	R9,PRTBUF+15	STORE	FDL05280
000720I	D390	F8FB =00001FI	529		LB	R9,INBUF+5	RELOAD	FDL05290
000724I	C490	000F	530		NHI	R9,X'OF'	REMOVE 1ST	FDL05300
000728I	41D0	FE5C =000588I	531		BAL	RD,CONVB	CONVERT	FDL05310
00072CI	D290	F97A =0000AAI	532		STB	R9,PRTBUF+16	STORE	FDL05320
000730I	D390	F8EA =00001EI	533		LB	R9,INBUF+4	LOAD EXTENSION DIGIT	FDL05330
000734I	1094		534		SRLS	R9,4	SCALE	FDL05340
*000736I	2339		535		BZ	FMTA	SKIP (FIELD=0)	FDL05350
000738I	41D0	FE4C =000588I	536		BAL	RD,CONVB	CONVERT	FDL05360
00073CI	D290	F96C =0000ACI	537		STB	R9,PRTBUF+18	STORE	FDL05370
000740I	C890	002E	538		LHI	R9,C'.'	LOAD DECIMAL POINT	FDL05380
000744I	D290	F963 =0000ABI	539		STB	R9,PRTBUF+17	STORE	FDL05390
000748I	24A0		540	FMTA	LIS	RA,0	CLEAR RA	FDL05400
00074AI	D39A	F8DC =00002AI	541	FLOOP	LB	R9,INBUF+16(RA)	LOAD	FDL05410
00074EI	D29A	F95E =00008CI	542		STB	R9,PRTBUF+22(RA)	MOVE	FDL05420
000752I	26A1		543		AIS	RA,1	INCREMENT COUNT	FDL05430
000754I	C5A0	001E	544		CLHI	RA,30	DONE	FDL05440
*000758I	20E7		545		BTC	11,FLOOP	FLOOP	FDL05450
00075AI	D390	F8C3 =000021I	546		LB	R9,INBUF+7	LOAD MSB	FDL05460
00075EI	1094		547		SRLS	R9,4	REMOVE LOWER	FDL05470

000760I	41D0	FE24 =000588I	548	BAL	RD,CONVB	CONVERT	FDL05480	
000764I	D290	F968 =0000D0I	549	STB	R9,PRTBUF+54	STORE	FDL05490	
000768I	D390	F8B5 =000021I	550	LB	R9,INBUF+7	RELOAD	FDL05500	
00076CI	C490	000F	551	NHI	R9,X'OF'	REMOVE UPPER	FDL05510	
000770I	41D0	FE14 =000588I	552	BAL	RD,CONVB	CONVERT	FDL05520	
000774I	D290	F959 =0000D1I	553	STB	R9,PRTBUF+55	STORE	FDL05530	
000778I	D390	F8A6 =000022I	554	LB	R9,INBUF+8	LOAD NEXT 2	FDL05540	
00077CI	1094		555	SRLS	R9,4	REMOVE LOWER	FDL05550	
00077EI	41D0	FE06 =000588I	556	BAL	RD,CONVB	CONVERT	FDL05560	
000782I	D290	F94C =0000D2I	557	STB	R9,PRTBUF+56	STORE	FDL05570	
000786I	D390	F898 =000022I	558	LB	R9,INBUF+8	RELOAD	FDL05580	
00078AI	C490	000F	559	NHI	R9,X'OF'	REMOVE UPPER	FDL05590	
00078EI	41D0	FD66 =000588I	560	BAL	RD,CONVB	CONVERT	FDL05600	
000792I	D290	F93D =0000D3I	561	STB	R9,PRTBUF+57	STORE	FDL05610	
000796I	D390	F889 =000023I	562	LB	R9,INBUF+9	LOAD LAST 2	FDL05620	
00079AI	1094		563	SRLS	R9,4	REMOVE LOWER	FDL05630	
00079CI	41D0	FDE8 =000588I	564	BAL	RD,CONVB	CONVERT	FDL05640	
0007A0I	D290	F930 =0000D4I	565	STB	R9,PRTBUF+58	STORE	FDL05650	
0007A4I	D390	F87B =000023I	566	LB	R9,INBUF+9	RELOAD	FDL05660	
0007A8I	C490	000F	567	NHI	R9,X'OF'	REMOVE UPPER	FDL05670	
0007ACI	41D0	FDD8 =000588I	568	BAL	RD,CONVB	CONVERT	FDL05680	
0007B0I	D290	F921 =0000D5I	569	STB	R9,PRTBUF+59	STORE	FDL05690	
0007B4I	D390	F86D =000025I	570	LB	R9,INBUF+11	LOAD MSB	FDL05700	
0007B8I	1094		571	SRLS	R9,4	REMOVE LOWER	FDL05710	
0007BAI	41D0	FDCA =000588I	572	BAL	RD,CONVB	CONVERT	FDL05720	
0007BEI	D290	F917 =0000D9I	573	STB	R9,PRTBUF+63	STORE	FDL05730	
0007C2I	D390	F85F =000025I	574	LB	R9,INBUF+11	RELOAD	FDL05740	
0007C6I	C490	000F	575	NHI	R9,X'OF'	REMOVE UPPER	FDL05750	
0007CAI	41D0	FD8A =000588I	576	BAL	RD,CONVB	CONVERT	FDL05760	
0007CEI	D290	F908 =0000DAI	577	STB	R9,PRTBUF+64	STORE	FDL05770	
0007D2I	D390	F850 =000026I	578	LB	R9,INBUF+12	LOAD NEXT 2	FDL05780	
0007D6I	1094		579	SRLS	R9,4	REMOVE LOWER	FDL05790	
0007D8I	41D0	FDAC =000588I	580	BAL	RD,CONVB	CONVERT	FDL05800	
0007DCI	D290	F8FB =0000DBI	581	STB	R9,PRTBUF+65	STORE	FDL05810	
0007E0I	D390	F842 =000026I	582	LB	R9,INBUF+12	RELOAD	FDL05820	
0007E4I	C490	000F	583	NHI	R9,X'OF'	REMOVE UPPER	FDL05830	
0007E8I	41D0	FD9C =000588I	584	BAL	RD,CONVB	CONVERT	FDL05840	
0007ECI	D290	F8EC =0000DCI	585	STB	R9,PRTBUF+66	STORE	FDL05850	
0007FOI	D390	F833 =000027I	586	LB	R9,INBUF+13	LOAD LAST 2	FDL05860	
0007F4I	1094		587	SRLS	R9,4	REMOVE LOWER	FDL05870	
0007F6I	41D0	FD8E =000588I	588	BAL	RD,CONVB	CONVERT	FDL05880	
0007FAI	D290	F8DF =0000DDI	589	STB	R9,PRTBUF+67	STORE	FDL05890	
0007FEI	D390	F825 =000027I	590	LB	R9,INBUF+13	RELOAD	FDL05900	
000802I	C490	000F	591	NHI	R9,X'OF'	REMOVE UPPER	FDL05910	
000806I	41D0	FD7E =000588I	592	BAL	RD,CONVB	CONVERT	FDL05920	
00080AI	D290	F8D0 =0000DEI	593	STB	R9,PRTBUF+68	STORE	FDL05930	
00080EI	4300	FCDC =0004EEI	594	B	LCOM1E	RETURN	FDL05940	
000812I	D300	F800 =000016I	595	MB0	LB	RO,MBUS	LOAD CONSOLE ADDRESS	FDL05950
000816I	2412		596	LIS	R1,2	LOAD WRITE CMD	FDL05960	
000818I	9FC1		597	OCR	RO,R1	COMMAND	FDL05970	
*00081AI	2309		598	B	MB2	SKIP	FDL05980	
00081CI	9DC4		599	MB1	SSR	RO,R4	SENSE STATUS	FDL05990
00081EI	2081		600	BT8S	8,1	BUSY LOOP	FDL06000	
000820I	DA03	0000	601	WD	RO,0(R3)	WRITE DATA	FDL06010	
000824I	2631		602	AIS	R3,1	INCREMENT BUFFER POINTER	FDL06020	

000826I	2721	603	SIS	R2,1	DECREMENT COUNT	FDL06030	
*000828I	2036	604	BNZ	MB1	LOOP	FDL06040	
00082AI	03CC	605	BR	RC	RETURN	FDL06050	
00082CI	241D	606	MB2	LIS	R1,13	LOAD CR	FDL06060
00082EI	9D04	607	SSR	RO,R4	SENSE STATUS	FDL06070	
000830I	2081	608	BTBS	8,1	BUSY LOOP	FDL06080	
000832I	9A01	609	WDR	RO,R1	WRITE DATA	FDL06090	
000834I	241A	610	LIS	R1,10	LOAD LF	FDL06100	
000836I	9D04	611	SSR	RO,R4	SENSE STATUS	FDL06110	
000838I	2081	612	BTBS	8,1	BUSY LOOP	FDL06120	
00083AI	9A01	613	WDR	RO,R1	WRITE DATA	FDL06130	
00083CI	2511	614	LCS	R1,1	LOAD NULL	FDL06140	
00083EI	9D04	615	SSR	RO,R4	SENSE STATUS	FDL06150	
000840I	2081	616	BTBS	8,1	BUSY LOOP	FDL06160	
000842I	9A01	617	WDR	RO,R1	WRITE DATA	FDL06170	
000844I	4300 FFD4 =00081CI	618	B	MB1	SKIP	FDL06180	
000848I	C890 0049	619	CPD	LHI	R9,73	LOAD R9	FDL06190
00084CI	C8A0 0020	620	LHI	RA,X'20'	LOAD ASCII BLANK	FDL06200	
000850I	2791	621	CPD1	SIS	R9,1	DECREMENT COUNT	FDL06210
000852I	D2A9 F844 =00009AI	622	STB	RA,PRTBUF(R9)	CLEAR	FDL06220	
*000856I	2033	623	BNZ	CPD1	LOOP	FDL06230	
000858I	030C	624	BR	RC	RETURN	FDL06240	
	0000 085AI	625	STARTAD	EQU	*	FDL06250	
00085AI	2440	626	BOOTST	LIS	R4,0	LOAD	FDL06260
00085CI	2303	627	BS	BOOT1	SKIP	FDL06270	
00085EI	4000	628	DC	X'4000'	FDL06280	FDL06280	
000860I	4010	629	DC	X'4010'	FDL06290	FDL06290	
000862I	4040 0022	630	BOOT1	STH	R4,X'22'	REGISTER SAVE POINTER(16BIT)	FDL06300
000866I	C840 001C	631	LHI	R4,STDIR	LOAD DIRECTORY LRN 220	FDL06310	
00086AI	D310 0078	632	LB	R1,X'78'	LOAD DEVICE ADDRESS	FDL06320	
00086EI	D320 0079	633	LB	R2,X'79'	LOAD BOOT CMD	FDL06330	
000872I	C420 0030	634	NHI	R2,X'30'	REMOVE DRIVE #	FDL06340	
000876I	C620 00C7	635	OHI	R2,X'C7'	SET STOP CMD	FDL06350	
00087AI	C850 00D0	636	LHI	R5,X'D0'	LOAD START	FDL06360	
00087EI	C860 09A7I	637	LHI	R6,ENDAD	LOAD END	FDL06370	
000882I	CB60 085AI	638	SHI	R6,STARTAD	FIND REAL SIZE	FDL06380	
000886I	CA60 00D0	639	AHI	R6,X'D0'	ADD IN REAL BIAS	FDL06390	
		640	* LOAD REST OF BOOTLOADER			FDL06400	
00088AI	9D13	641	BOOT1B	SSR	R1,R3	SENSE STATUS	FDL06410
00088CI	2081	642	BTBS	8,1	WAIT FOR BUSY NOT	FDL06420	
00088EI	D915 0000	643	RH	R1,0(R5)	READ DATA	FDL06430	
000892I	2652	644	AIS	R5,2	BUMP	FDL06440	
000894I	0565	645	CLAR	R6,R5	DONE??	FDL06450	
000896I	2286	646	BNCS	BOOT1B	NO, LOOP	FDL06460	
000898I	9D13	647	SSR	R1,R3	SENSE FINAL STATUS	FDL06470	
00089AI	2152	648	BTFS	5,REDOBL	RETRY BOOT LOAD	FDL06480	
00089CI	230E	649	BS	STOPA	STOP BOOT LOAD	FDL06490	
00089EI	C850 D500	650	REDOBL	LHI	R5,X'D500'	SETUP	FDL06500
0008A2I	4050 0050	651	STH	R5,X'50'	AUTOLOAD	FDL06510	
0008A6I	C850 00CF	652	LHI	R5,X'CF'	PARAMETERS	FDL06520	
0008AAI	4050 0052	653	STH	R5,X'52'	ON ERROR	FDL06530	
0008AEI	9E12	654	OCR	R1,R2	STOP	FDL06540	
0008B0I	9D13	655	SSR	R1,R3	SENSE STATUS	FDL06550	
0008B2I	2221	656	BFBS	2,1	IDLE NOT LOOP	FDL06560	
0008B4I	4300	657	DC	X'4300'	JUMP TO	FDL06570	

0008B6I	0050	658	DC	X'50'	AUTOLOAD & RETRY	FDL06580
0008B8I	9E12	659	STOPA	CCR R1,R2	STOP BOOT LOAD	FDL06590
0008BAI	9D13	660	IDLE	SSR R1,R3	SENSE STATUS	FDL06600
0008BCI	2221	661		BFBS 2,1	IDLE NOT LOOP	FDL06610
0008BEI	E650 01CE	662		LDAI R5,LDBUF	LOAD START	FDL06620
0008C2I	E660 01EE	663		LDAI R6,LDBUF+32	LOAD END	FDL06630
0008C6I	9814	664		WHR R1,R4	WRITE LRN TO CONTROLLER	FDL06640
0008C8I	2726	665		SIS R2,6	CHANGE STOP TO READ	FDL06650
0008CAI	9E12	666		CCR R1,R2	READ	FDL06660
		667	* READ DIRECTORY			FDL06670
0008CCI	9D13	668	BOOT1C	SSR R1,R3	SENSE STATUS	FDL06680
0008CEI	2081	669		BTBS 8,1	WAIT FOR BUSY NOT	FDL06690
0008DOI	D915 0000	670		RH R1,0(R5)	READ DATA	FDL06700
0008D4I	2652	671		AIS R5,2	BUMP	FDL06710
0008D6I	0565	672		CLAR R6,R5	DONE??	FDL06720
0008D8I	2286	673		BNCS BOOT1C	NO, LOOP	FDL06730
0008DAI	9D13	674		SSR R1,R3	SENSE FINAL STATUS	FDL06740
0008DCI	2152	675		BTFS 5,REDO	ERROR RETRY	FDL06750
0008DEI	230A	676		BS STOP1	ISSUE STOP	FDL06760
0008EOI	2626	677	REDO	AIS R2,6	CHANGE READ TO STOP	FDL06770
0008E2I	9E12	678		OCR R1,R2	STOP	FDL06780
0008E4I	E630 FFD2 =0008BAI	679		LDAI R3,IDLE	GET BRANCH ADDRESS	FDL06790
0008E8I	CB30 085AI	680		SHI R3,STARTAD	GET SIZE	FDL06800
0008ECI	CA30 0080	681		AHI R3,X'80'	ADD IN REAL CORPECTED BIAS	FDL06810
0008FOI	0303	682		BR R3	BRANCH	FDL06820
0008F2I	2626	683	STOP1	AIS R2,6	CHANGE READ TO STOP	FDL06830
0008F4I	9E12	684		OCR R1,R2	STOP	FDL06840
0008F6I	9D13	685		SSR R1,R3	SENSE STATUS	FDL06850
0008F8I	2221	686		BFBS 2,1	IDLE NOT LOOP	FDL06860
0008FAI	C840 4000	687		LHI R4,X'4000'	LOAD TEST DATA	FDL06870
0008FEI	0A44	688		AAR R4,R4	DOUBLE	FDL06880
000900I	2115	689		BMS IS16	16 BIT MACHINE	FDL06890
000902I	2470	690		LIS R7,0	SET 32 FLAG	FDL06900
000904I	4840 01D4	691		LH R4,LDBUF+6	LOAD 32 BIT PDB POINTER	FDL06910
000908I	2304	692		BS COM	SKIP	FDL06920
00090AI	4840 01D0	693	IS16	LH R4,LDBUF+2	LOAD 16 BIT PDB POINTER	FDL06930
00090EI	2472	694		LIS R7,2	CLEAR 32 FLAG	FDL06940
000910I	E650 01CE	695	COM	LDAI R5,LDBUF	LOAD START	FDL06950
000914I	E660 024D	696		LDAI R6,LDBUF+127	LOAD END	FDL06960
000918I	9814	697	COM1	WHR R1,R4	WRITE LRN OF PDB TO CONTROLLER	FDL06970
00091AI	2726	698		SIS R2,6	CHANGE STOP TO READ	FDL06980
00091CI	9E12	699		OCR R1,R2	READ	FDL06990
		700	* READ PDB			FDL07000
00091EI	9D13	701	BOOT1D	SSR R1,R3	SENSE STATUS	FDL07010
000920I	2081	702		BTBS 8,1	WAIT FOR BUSY NOT	FDL07020
000922I	D915 0000	703		RH R1,0(R5)	READ DATA	FDL07030
000926I	2652	704		AIS R5,2	BUMP	FDL07040
000928I	0565	705		CLAR R6,R5	DONE??	FDL07050
00092AI	2286	706		BNCS BOOT1D	NO, LOOP	FDL07060
00092CI	9D13	707		SSR R1,R3	SENSE FINAL STATUS	FDL07070
00092EI	2152	708		BTFS 5,REDO1	ERROR RETRY	FDL07080
000930I	230C	709		BS RDLDRGEN	READ PROGRAM	FDL07090
000932I	2626	710	REDO1	AIS R2,6	CHANGE READ TO STOP	FDL07100
000934I	9E12	711		OCR R1,R2	STOP	FDL07110
000936I	9D13	712		SSR R1,R3	SENSE STATUS	FDL07120

000938I	2221		713	BFBS	2,1	IDLE NOT LOOP	FDL07130
00093AI	E630	FFD2 =000910I	714	LDAI	R3,COM	GET BRANCH ADDRESS	FDL07140
00093EI	CB30	085AI	715	SHI	R3,STARTAD	GET SIZE	FDL07150
000942I	CA30	0080	716	AHI	R3,X'80'	ADD IN REAL CORRECTED BIAS	FDL07160
000946I	0303		717	BR	R3	BRANCH	FDL07170
000948I	2626		718	RDLDRGEN	AIS R2,6	CHANGE READ TO STOP	FDL07180
00094AI	9E12		719	OCR	R1,R2	STOP	FDL07190
00094CI	9D13		720	SSR	R1,R3	SENSE STATUS	FDL07200
00094EI	2221		721	BFBS	2,1	IDLE NOT LOOP	FDL07210
000950I	2726		722	SIS	R2,6	CHANGE STOP TO READ	FDL07220
000952I	2641		723	AIS	R4,1	INCREMENT LRN TO PROGRAM	FDL07230
000954I	48E0	01D6	724	REDO3	LH R5,LDBUF+8	LOAD LOW	FDL07240
000958I	4050	8044 =0009A0I	725	STH	R5,BOOTEN16	STORE TRANSFER	FDL07250
00095CI	4050	8046 =0009A6I	726	STH	R5,BOOTEN32	STORE TRANSFER	FDL07260
000960I	4860	01DA	727	LH	R6,LDBUF+12	LOAD HIGH	FDL07270
000964I	9814		728	WHR	R1,R4	WRITE LRN OF PROGRAM	FDL07280
000966I	9E12		729	CCR	R1,R2	READ	FDL07290
			730	* READ LOADER/GENERATOR PROGRAM			FDL07300
000968I	9D13		731	BOOT1E	SSR R1,R3	SENSE STATUS	FDL07310
00096AI	2081		732	BTBS	8,1	WAIT FOR BUSY NOT	FDL07320
00096CI	D915	0000	733	RH	R1,0(R5)	READ DATA	FDL07330
000970I	26E2		734	AIS	R5,2	BUMP	FDL07340
000972I	0565		735	CLAR	R6,R5	DONE??	FDL07350
000974I	2286		736	BNCS	BOOT1E	NO, LOOP	FDL07360
000976I	9D13		737	SSR	R1,R3	SENSE FINAL STATUS	FDL07370
000978I	21E2		738	BTFS	5,REDO2	ERROR RETRY	FDL07380
00097AI	230C		739	BS	TURNOVER	TURNOVER CONTROL	FDL07390
00097CI	2626		740	REDO2	AIS R2,6	CHANGE READ TO STOP	FDL07400
00097EI	9E12		741	OCR	R1,R2	STOP	FDL07410
000980I	9D13		742	SSR	R1,R3	SENSE STATUS	FDL07420
000982I	2221		743	BFBS	2,1	IDLE NOT LOOP	FDL07430
000984I	E630	FFCC =000954I	744	LDAI	R3,REDO3	GET BRANCH ADDRESS	FDL07440
000988I	CB30	085AI	745	SHI	R3,STARTAD	GET SIZE	FDL07450
00098CI	CA30	0080	746	AHI	R3,X'80'	ADD IN REAL CORRECTED BIAS	FDL07460
000990I	0303		747	BR	R3	BRANCH	FDL07470
000992I	2626		748	TURNOVER	AIS R2,6	CHANGE READ TO STOP	FDL07480
000994I	9E12		749	CCR	R1,R2	STOP	FDL07490
000996I	9D13		750	SSR	R1,R3	SENSE STATUS	FDL07500
000998I	2221		751	BFBS	2,1	IDLE NOT LOOP	FDL07510
00099AI	0877		752	LDAR	R7,R7	LOAD 32 FLAG	FDL07520
*00099CI	2333		753	BZ	GO32	JUMP TO 32BIT START	FDL07530
00099EI	4300		754	DC	X'4300'	BRANCH TO	FDL07540
0009A0I	6000		755	BOOTEN16	DC X'6000'	16 BIT START	FDL07550
0009A2I	4300		756	GO32	DC X'4300'	BRANCH TO	FDL07560
0009A4I	4000		757	DC	X'4000'	(RX3 TYPE)	FDL07570
0009A6I	6000		758	BOOTEN32	DC X'6000'	32 BIT START	FDL07580
	00C0	09A7I	759	ENDAD	EQU *-1		FDL07590
0009A8I	D310	F66A =000016I	760	MBI	LB R1,MBUS	LOAD ADDRESS	FDL07600
0009ACI	C800	0092	761	LHI	R0,X'92'	LOAD READ CMD	FDL07610
0009B0I	9E10		762	OCR	R1,R0	COMMAND	FDL07620
0009B2I	9B12		763	RDR	R1,R2	DUMMY READ	FDL07630
0009B4I	2430		764	LIS	R3,0	CLEAR R3	FDL07640
0009B6I	9D12		765	MBI1	SSR R1,R2	SENSE STATUS	FDL07650
0009B8I	2081		766	BTBS	8,1	BUSY LOOP	FDL07660
0009BAI	9B12		767	RDR	R1,R2	READ DATA	FDL07670

0009BCI	9A12		768	WDR	R1,R2	ECHO DATA	FDL07680	
0009BEI	C420 007F		769	NHI	R2,X'7F'	STRIP PARITY	FDL07690	
0009C2I	C520 0060		770	CLHI	R2,X'60'	LOWER CASE CHECK	FDL07700	
*0009C6I	2183		771	BL	MBI3	SKIP	FDL07710	
0009C8I	CB20 0020		772	SHI	R2,X'20'	MAKE UPPER CASE	FDL07720	
0009CCI	C520 0023		773	MBI3	CLHI	R2,X'23'	POUND SIGN	FDL07730
0009D0I	43E0 8F1C =0018F0I		774		BFC	11,POUND	RECYCLE	FDL07740
0009D4I	0822		775		LDAR	R2,R2	RELOAD DATA	FDL07750
0009D6I	C520 005F		776		CLHI	R2,X'5F'	DELETE	FDL07760
*0009DAI	21E4		777		BTC	11,MBI2	NO	FDL07770
0009DCI	2731		778		SIS	R3,1	DECREMENT INPUT COUNT	FDL07780
0009DEI	4300 FFD4 =0009B6I		779		B	MBI1	CONTINUE	FDL07790
0009E2I	D223 F6FC =0000E2I		780	MBI2	STB	R2,CONIN(R3)	STORE DATA	FDL07800
0009E6I	C520 000D		781		CLHI	R2,X'0D'	CR	FDL07810
0009EAI	43B0 80AE =000A9CI		782		BFC	11,GODOIT	EXECUTE	FDL07820
0009EEI	2631		783		AIS	R3,1	INCREMENT INPUT COUNT	FDL07830
0009FOI	C530 0031		784		CLHI	R3,49	DONE	FDL07840
0009F4I	4280 FFB E =0009B6I		785		BL	MBI1	NO	FDL07850
0009F8I	242D		786		LIS	R2,13	ENTER CR	FDL07860
*0009FAI	220C		787		B	MBI2	APPEND CR	FDL07870
0009FCI	D310 F612 =000012I		788	PASLAI	LB	R1,PASAD	LOAD ADDRESS	FDL07880
*000A00I	2305		789		B	COMIN	SKIP	FDL07890
000A02I	D310 F60E =000014I		790	TTYI	LB	R1,TTYAD	LOAD ADDRESS	FDL07900
000A06I	DE10 F771 =00017BI		791		OC	R1,TTY+1	SET READ MODE	FDL07910
000A0AI	2430		792	COMIN	LIS	R3,0	CLEAR R3	FDL07920
000A0CI	9D12		793	IN1	SSR	R1,R2	SENSE STATUS	FDL07930
000A0EI	2081		794		BTBS	8,1	BUSY LOOP	FDL07940
000A10I	9B12		795		RDR	R1,R2	READ DATA	FDL07950
000A12I	D340 F5FA =000010I		796		LB	R4,DEV TYP	GET DEVICE TYPE	FDL07960
000A16I	2741		797		SIS	R4,1	DECREMENT	FDL07970
*000A18I	233A		798		BZ	PASECHO	PASLA	FDL07980
000A1AI	2741		799		SIS	R4,1	DECREMENT	FDL07990
*000A1CI	2335		800		BZ	CLIECHO	CLI	FDL08000
000A1EI	2742		801		SIS	R4,2	DECREMENT	FDL08010
*000A20I	2336		802		BZ	PASECHO	PASLA	FDL08020
000A22I	4300 8038 =000A5EI		803		B	NOECHO	SKIP	FDL08030
000A26I	DE10 F750 =00017AI		804	CLIECHO	OC	R1,TTY	TURN LINE AROUND	FDL08040
*000A2AI	23C5		805		B	ECHOCOM	SKIP	FDL08050
000A2CI	D310 F5E3 =000013I		806	PASECHO	LB	R1,PASAD+1	GET WRITE ADDRESS	FDL08060
000A30I	DE10 F6FE =000132I		807		OC	R1,PASWR	TURN LINE AROUND	FDL08070
000A34I	9E14		808	ECHOCOM	SSR	R1,R4	SENSE STATUS	FDL08080
000A36I	2081		809		BTBS	8,1	WAIT FOR BUSY NOT	FDL08090
000A38I	9A12		810		WDR	R1,R2	ECHO DATA	FDL08100
000A3AI	D340 F5D2 =000010I		811		LB	R4,DEV TYP	GET DEVICE TYPE	FDL08110
000A3EI	2741		812		SIS	R4,1	DECREMENT	FDL08120
*000A40I	233E		813		BZ	PASREST	RESTORE READ ADDRESS	FDL08130
000A42I	2741		814		SIS	R4,1	DECREMENT	FDL08140
*000A44I	2334		815		BZ	CLIREST	TURN LINE AROUND	FDL08150
000A46I	2742		816		SIS	R4,2	DECREMENT	FDL08160
*000A48I	2337		817		BZ	PASREST	RESTORE READ ADDRESS	FDL08170
000A4AI	23CA		818		ES	NOECHO	SKIP	FDL08180
000A4CI	9D14		819	CLIREST	SSR	R1,R4	SENSE STATUS	FDL08190
000A4EI	2C81		820		BTBS	8,1	WAIT FOR BUSY NOT	FDL08200
000A50I	DE10 F727 =00017BI		821		OC	R1,TTY+1	SET READ MODE	FDL08210
*000A54I	23C5		822		B	NOECHO	SKIP	FDL08220



000A56I	D310	F5B8	=000012I	823	PASREST	LB	R1,PASAD	LOAD READ ADDRESS	FDL08230
000A5AI	DE10	F6D5	=000133I	824		OC	R1,PASRD	TURN LINE AROUND	FDL08240
000A5EI	C420	007F		825	NOECHO	NHI	R2,X'7F'	STRIP PARITY	FDL08250
000A62I	C520	0060		826		CLHI	R2,X'60'	LOWER CASE CHECK	FDL08260
*000A66I	2183			827		BL	COMIN1	SKIP	FDL08270
000A68I	CB20	0020		828		SHI	R2,X'20'	MAKE UPPER CASE	FDL08280
000A6CI	C520	0023		829	COMIN1	CLHI	R2,X'23'	POUND SIGN	FDL08290
000A70I	43E0	8E7C	=0018FOI	830		BFC	11,POUND	RECYCLE	FDL08300
000A74I	C520	005F		831		CLHI	R2,X'5F'	DELETE	FDL08310
*000A78I	2186			832		BTC	11,IN2	NO	FDL08320
000A7AI	2731			833		SIS	R3,1	DECREMENT COUNT	FDL08330
000A7CI	4210	FF8A	=000A0AI	834		BM	COMIN	RESET TO 0	FDL08340
000A80I	4300	FF88	=000A0CI	835		B	IN1	RE-START	FDL08350
000A84I	D223	F65A	=0000E2I	836	IN2	STB	R2,COMIN(R3)	STORE DATA	FDL08360
000A88I	C520	000D		837		CLHI	R2,X'0D'	C?	FDL08370
*000A8CI	2388			838		BFC	11,GODOIT	EXECUTE	FDL08380
000A8EI	2631			839		AIS	R3,1	INCREMENT COUNT	FDL08390
000A90I	C530	0046		840		CLHI	R3,70	DONE	FDL08400
000A94I	42B0	FF74	=000A0CI	841		BTC	11,IN1	NO	FDL08410
*000A98I	242D			842		LHI	R2,X'0D'	LOAD CR	FDL08420
000A9AI	220B			843		BS	IN2	APPEND C?	FDL08430
000A9CI	41C0	F9AE	=00044EI	844	GODOIT	BAL	RC,CLRDIS	CLEAR DISPLAY	FDL08440
000AA0I	D320	F63E	=0000E2I	845		LB	R2,COMIN	LOAD FIRST CHARACTER	FDL08450
000AA4I	C520	004C		846		CLHI	R2,C'L'	L INPUT	FDL08460
000AA8I	43B0	8A62	=00150EI	847		BFC	11,LIMITS	LIMITS	FDL08470
000AACI	C520	0053		848		CLHI	R2,C'S'	S INPJT	FDL08480
000AB0I	43B0	8D12	=0017C6I	849		BFC	11,SEQ	SEQUENCE	FDL08490
000AB4I	C520	0043		850		CLHI	R2,C'C'	C INPUT	FDL08500
000AB8I	43B0	8120	=000BDCI	851		BFC	11,CREATE	CREATE PROGRAM	FDL08510
000ABCI	C520	0044		852		CLHI	R2,C'D'	D INPUT	FDL08520
000AC0I	43B0	82FA	=000DBEI	853		BFC	11,DUPE	DUPLICATE (COPY)	FDL08530
000AC4I	C520	0046		854		CLHI	R2,C'F'	F INPUT	FDL08540
000AC8I	43B0	876E	=00123AI	855		BFC	11,FIND	FIND PROGRAM	FDL08550
000ACCI	C520	0049		856		CLHI	R2,C'I'	I INPUT	FDL08560
000ADOI	43B0	8884	=001358I	857		BFC	11,INIT	INITIALIZE MEDIA	FDL08570
000AD4I	C520	0055		858		CLHI	R2,C'U'	U INPUT	FDL08580
000AD8I	43B0	8566	=001042I	859		BFC	11,UPDATE	UPDATE PROGRAM	FDL08590
000ADCI	4300	8B6A	=00164AI	860		B	QUEST	BAD INPUT	FDL08600
000AE0I	C810	0020		861	CFFORM	LHI	R1,X'20'	LOAD BLANK	FDL08610
000AE4I	2430			862		LIS	R3,0	SETUP	FDL08620
000AE6I	2441			863		LIS	R4,1	BXLE	FDL08630
000AE8I	C850	001D		864		LHI	R5,29	LIMITS	FDL08640
000AECI	D213	F656	=000146I	865	CFFORM1	STB	R1,FFORM(R3)	STORE	FDL08650
000AF0I	C130	FFF8	=000AECI	866		BXLE	R3,CFFORM1	LOOP	FDL08660
000AF4I	030C			867		BR	RC	RETURN	FDL08670
000AF6I	4040	F672	=00016CI	868	CHKPGM	STH	R4,CSEQNUMO	SET CURRENT TO LAST COPIED	FDL08680
000AFAI	41E0	8B5E	=00165CI	869		BAL	RE,RDIRECT	READ DIRECTORY	FDL08690
000AFEI	41C0	86F4	=0011F6I	870		BAL	RC,GULH56	LOAD R5-R6	FDL08700
000B02I	41E0	8C28	=00172EI	871		BAL	RE,RDLRN	READ PDB	FDL08710
000B06I	4830	F51E	=000028I	872		LH	R3,INBUF+14	LOAD ILRNS	FDL08720
000B0AI	0A34			873		AAR	R3,R4	ADD TO START LRN	FDL08730
000B0CI	2641			874		AIS	R4,1	INCREMENT LRN TO PROGRAM	FDL08740
000B0EI	4810	F65E	=000170I	875		LH	R1,PRECMDO	LOAD PRE-CMD	FDL08750
000B12I	2421			876		LIS	R2,1	LOAD READ CMD BITS	FDL08760
000B14I	0612			877		OAR	R1,R2	MERGE	FDL08770

000B16I	D320	F4FD =000017I	878		LB	R2,FLPAD	LOAD ADDRESS	FDL08780
000B1AI	9824		879		WHR	R2,R4	WRITE LRN TO CONTROLLER	FDL08790
000B1CI	9E21		880		OCR	R2,R1	COMMAND	FDL08800
000B1EI	9D25		881	CP1	SSR	R2,R5	SENSE STATUS	FDL08810
000B20I	2081		882		BTBS	8,1	BUSY LOOP	FDL08820
000B22I	C860	0040	883		LHI	R6,64	LOAD LRN LIMITS	FDL08830
000B26I	9925		884	CP3	RHR	R2,R5	READ DATA	FDL08840
000B28I	2761		885		SIS	R6,1	DECREMENT COUNT	FDL08850
*000B2AI	2032		886		BNZ	CP3	LOOP	FDL08860
000B2CI	9D25		887		SSR	R2,R5	SENSE STATUS	FDL08870
*000B2EI	2158		888		BTC	5,ERR27	NON-ZERO STATUS	FDL08880
000B30I	0543		889		CLAR	R4,R3	COMPLETE PROGRAM CHECKED	FDL08890
*000B32I	21E4		890		BTC	11,CP2	NO	FDL08900
000B34I	41D0	8DCC =001904I	891		BAL	RD,STOP	STOP	FDL08910
000B38I	030F		892		BR	RF	RETURN	FDL08920
000B3AI	2641		893	CP2	AIS	R4,1	INCREMENT	FDL08930
*000B3CI	22CF		894		B	CP1	READ NEXT LRN	FDL08940
000B3EI	41D0	8DC2 =001904I	895	ERR27	BAL	RD,STOP	STOP	FDL08950
000B42I	D320	8FEF =001B35I	896		LB	R2,CHKERRS	LOAD SIZE	FDL08960
000B46I	E630	800A =000B54I	897		LDAI	R3,CHKERR	LOAD ADDRESS	FDL08970
000B4AI	2480		898		LIS	R8,0	SET OUTPUT	FDL08980
000B4CI	41D0	872E =00127EI	899		BAL	RD,FINDCON	PRINT	FDL08990
000B50I	4300	8D9C =0018F0I	900		B	POUND	RE-START	FDL09000
000B54I	5645	5249 4659 2045	901	CHKERR	DC	C'VERIFY ERROR'		FDL09010
000B5CI	5252	4F52						
000B60I	D320	F4B3 =000017I	902	RESET	LB	R2,FLPAD	LOAD ADDRESS	FDL09020
000B64I	9D21		903		SSR	R2,R1	SENSE STATUS	FDL09030
000B66I	022D		904		BTCCR	2,RD	EXIT IF IDLE	FDL09040
000B68I	4818	F604 =000170I	905		LH	R1,PRECMD0(R8)	LOAD PRE-COMMAND	FDL09050
000B6CI	2427		906		LIS	R2,7	LOAD STOP CMD	FDL09060
000B6EI	0612		907		OAR	R1,R2	MERGE COMMAND	FDL09070
000B70I	D320	F4A3 =000017I	908		LB	R2,FLPAD	LOAD ADDRESS	FDL09080
000B74I	9E21		909		OCR	R2,R1	COMMAND	FDL09090
000B76I	2611		910		AIS	R1,1	CHANGE STOP TO RESET	FDL09100
000B78I	9E21		911		OCR	R2,R1	COMMAND	FDL09110
000B7AI	9D21		912		SSR	R2,R1	SENSE STATUS	FDL09120
000B7CI	2221		913		BFBS	2,1	IDLE NOT LOOP	FDL09130
000B7EI	030D		914		BR	RD	RETURN	FDL09140
000B80I	D310	F490 =000014I	915	TTYO	LB	R1,TTYAD	LOAD ADDRESS	FDL09150
000B84I	DE10	F5F2 =00017AI	916		OC	R1,TTY	CMD OUTPUT	FDL09160
*000B88I	2309		917		B	TTYO2	SKIP	FDL09170
000B8AI	9E14		918	TTYO1	SSR	R1,R4	SENSE STATUS	FDL09180
000B8CI	2081		919		BTBS	8,1	BUSY LOOP	FDL09190
000B8EI	DA13	0000	920		WD	R1,0(R3)	WRITE DATA	FDL09200
000B92I	2631		921		AIS	R3,1	INCREMENT CHARACTER POINTER	FDL09210
000B94I	2721		922		SIS	R2,1	DECREMENT COUNTER	FDL09220
*000B96I	2036		923		BNZ	TTYO1	LOOP	FDL09230
000B98I	030C		924		BR	RC	RETURN	FDL09240
000B9AI	244D		925	TTYO2	LIS	R4,13	LOAD CR	FDL09250
000B9CI	9E15		926		SSR	R1,R5	SENSE STATUS	FDL09260
000B9EI	2081		927		BTBS	8,1	BUSY LOOP	FDL09270
000BA0I	9A14		928		WDR	R1,R4	WRITE DATA	FDL09280
000BA2I	244A		929		LIS	R4,10	LOAD LF	FDL09290
000BA4I	9E15		930		SSR	P1,R5	SENSE STATUS	FDL09300
000BA6I	2081		931		BTBS	8,1	BUSY LOOP	FDL09310

000BA8I	9A14	932	WDR	R1,R4	WRITE DATA	FDL09320
000BAAI	C840 00FF	933	LHI	R4,X'FF'	LOAD NULL	FDL09330
000BAEI	9D15	934	SSR	R1,R5	SENSE STATUS	FDL09340
000BB0I	2081	935	BTBS	R,1	BUSY LOOP	FDL09350
000BB2I	9A14	936	WDR	R1,R4	WRITE DATA	FDL09360
000BB4I	43C0 FFD2 =000B8AI	937	B	TTYO1	SKIP	FDL09370
000BB8I	C510 0030	938	CONVERT	CLHI R1,X'30'	NUMBER OK	FDL09380
*000BBCI	218A	939	BL	BADIN	NO	FDL09390
000BBEI	C510 003A	940	CLHI	R1,X'3A'	NUMBER OR ALPHA	FDL09400
*000BC2I	218A	941	BL	ISNUM	IT'S A NUMBE (0-9)	FDL09410
000BC4I	C510 0041	942	CLHI	R1,X'41'	BAD INPUT	FDL09420
*000BC8I	218A	943	BL	BADIN	YES	FDL09430
000BCAI	C510 0047	944	CLHI	R1,X'47'	ALPHA OK	FDL09440
*000BCEI	2183	945	BL	ISAF	YES	FDL09450
000BD0I	2511	946	BADIN	LCS R1,1	LOAD NEGATIVE NUMBER	FDL09460
000BD2I	030C	947	OKIN	BR RC	RETURN	FDL09470
000BD4I	2619	948	ISAF	AIS R1,9	CORRECT	FDL09480
000BD6I	C410 000F	949	ISNUM	NHI R1,X'0F'	STRIP UPPER	FDL09490
000BD8I	2204	950	BS	OKIN	EXIT	FDL09500
000BD8I	4880 F556 =000136I	951	CREATE	LH R8,SEQNUM	LOAD SEQNUM TO BE ADDED	FDL09510
000BE0I	4080 F588 =00016CI	952	STH	R8,CSEQNUMO	MAKE CURRENT	FDL09520
000BE4I	2480	953	LIS	R8,0	LOAD OUTPUT FLAG	FDL09530
000BE6I	41E0 9A72 =00165CI	954	BAL	RE,RDIRECT	READ DIRECTORY	FDL09540
000BE8I	4530 F57E =00016CI	955	CLH	R3,CSEQNUMO	WAS IT THERE?	FDL09550
000BEEI	43E0 8194 =000D86I	956	BFC	11,THERE	YES, ERROR	FDL09560
000BF2I	4080 F576 =00016CI	957	STH	R8,CSEQNUMO	SET EOVS-CURRENT	FDL09570
000BF6I	41E0 8A62 =00165CI	958	BAL	RE,RDIRECT	FIND EOVS	FDL09580
000BFAI	0833	959	LDAR	R3,R3	LOAD RETURN SEQUENCE NUMBER	FDL09590
000BFCI	4230 812A =000D2AI	960	BNZ	CR8	EOV NOT RETURNED	FDL09600
000C00I	08AA	961	LDAR	RA,RA	LOAD DIRECTORY LRN INDICATOR	FDL09610
000C02I	C5A0 001C	962	CLHI	RA,STDIR	FIRST	FDL09620
*000C06I	2187	963	BTC	11,CR1	NO	FDL09630
000C08I	0855	964	LDAR	R5,R5	LOAD BIB POINTER	FDL09640
*000COAI	2135	965	BNZ	CR1	NOT FIRST ENTRY	FDL09650
000COCI	4050 F56E =00017EI	966	STH	R5,LPDB	SAVE LAST	FDL09660
000C10I	4300 802C =000C40I	967	B	CR4	NO ENTRIES	FDL09670
000C14I	0855	968	CR1	LDAR R5,R5	LOAD BIB	FDL09680
000C16I	4330 8146 =000D60I	969	BZ	CR2	FIRST ENTRY	FDL09690
000C18I	2752	970	SIS	R5,2	FIND PREVIOUS PDB POINTER	FDL09700
000C1CI	4050 F55E =00017EI	971	STH	R5,LPDB	SAVE POINTER	FDL09710
000C20I	4845 F3F6 =00001AI	972	LH	R4,INBUF(R5)	LOAD PDB LRN POINTER	FDL09720
000C24I	4040 F558 =000180I	973	STH	R4,NSLRN	SAVE POINTER	FDL09730
000C28I	41C0 85CA =0011F6I	974	BAL	RC,SULH56	LOAD R5-R6	FDL09740
000C2CI	41E0 8AFE =00172EI	975	BAL	RE,RDLRN	READ PDB	FDL09750
000C30I	4830 F3F4 =000028I	976	CR3	LH R3,INBUF+14	LOAD ILRNS	FDL09760
000C34I	2631	977	AIS	R3,1	CORRECT TO INCLUDE PDE	FDL09770
000C36I	4840 F546 =000180I	978	LH	R4,NSLRN	LOAD LRN POINTER	FDL09780
000C38I	0A43	979	AAR	R4,R3	ADD IN # OF LRNS NEEDED	FDL09790
000C3CI	4040 F542 =000182I	980	STH	R4,NSLRNA	LOAD START	FDL09800
000C40I	D370 F4E8 =00012CI	981	CR4	LB R7,FLG16	LOAD 16 BIT FLAG	FDL09810
000C44I	5837 F4F8 =000140I	982	LDA	R3,HIGH(R7)	LOAD HIGH	FDL09820
000C48I	5847 F4F0 =00013CI	983	LDA	R4,LOW(R7)	LOAD LOW	FDL09830
000C4CI	0B34	984	SAR	R3,R4	DIFFERENCE	FDL09840
000C4EI	4280 80EA =000D3CI	985	BTC	8,CR9	LOW > HIGH	FDL09850
000C52I	2631	986	AIS	R3,1	MAKE BYTE COUNT CORRECT	FDL09860

000C54I	41C0	83E0	=001038I	987	BAL	RC,D128	DIVIDE	FDL09870	
000C58I	0822			988	LDAR	R2,R2	LOAD REMAINDER	FDL09880	
000C5AI	2332			989	BZS	CR41	NO REMAINDER	FDL09890	
000C5CI	2631			990	AIS	R3,1	ADD EXTRA FOR OVERFLOW	FDL09900	
000C5EI	4030	F4E2	=000144I	991	CR41	STH	R3,LRNS	STORE TO LRN SIZE	FDL09910
000C62I	4840	F51C	=000182I	992	LH	R4,NSLRNA	LOAD START	FDL09920	
000C66I	4850	F4DA	=000144I	993	LH	R5,LRNS	LOAD SIZE NEEDED	FDL09930	
000C6AI	2651			994	AIS	R5,1	INCLUDE PDB	FDL09940	
000C6CI	0A54			995	AAR	R5,R4	ADD	FDL09950	
000C6EI	4B50	F50A	=00017CI	996	SH	R5,MAXLRNO	FIT ?	FDL09960	
000C72I	4220	80D8	=000D4EI	997	BP	CR91	NO	FDL09970	
000C76I	084A			998	LDAR	R4,RA	LOAD DIRECTORY POINTER	FDL09980	
000C78I	41C0	857A	=0011F6I	999	BAL	RC,SULH56	LOAD R5-26	FDL09990	
000C7CI	41F0	8AAE	=00172EI	1000	BAL	RE,RDLRN	RE-READ DIRECTORY BLOCK	FDL10000	
000C80I	4850	F4FA	=00017EI	1001	LH	R5,LPDB	LOAD LAST PDB POINTER	FDL10010	
000C84I	4330	8024	=000CACI	1002	BZ	CR11A	OK	FDL10020	
000C88I	2652			1003	AIS	R5,2	CORRECT POINTER	FDL10030	
000C8AI	C550	007E		1004	CLHI	R5,126	NEXT ENTRY FIT	FDL10040	
000C8EI	4280	801E	=000CB0I	1005	BTC	8,CR42	OK	FDL10050	
000C92I	08AA			1006	LDAR	RA,RA	LOAD DIRECTORY LRN POINTER	FDL10060	
*000C94I	C5A0	001F		1007	CLAI	RA,ENDDIR	LAST LRN @@@	FDL10070	
000C98I	4330	8564	=001200I	1008	BE	EOD	FULL	FDL10080	
000C9CI	084A			1009	LDAR	R4,RA	LOAD DIRECTORY LRN POINTER	FDL10090	
000C9EI	2641			1010	AIS	R4,1	INCREMENT	FDL10100	
000CA0I	41C0	8552	=0011F6I	1011	BAL	RC,SULH56	LOAD R5-R6	FDL10110	
000CA4I	41E0	8A86	=00172EI	1012	BAL	RE,RDLRN	READ NEXT DIRECTORY LRN	FDL10120	
000CA8I	2452			1013	LIS	R5,2	LOAD POINTER	FDL10130	
*000CAA	23C4			1014	B	CR11	SKIP	FDL10140	
000CACI	2652			1015	CR11A	AIS	R5,2	INCREMENT POINTER	FDL10150
*000CAEI	23C2			1016	B	CR11	SKIP	FDL10160	
000CB0I	2652			1017	CR42	AIS	R5,2	INCREMENT TO NEXT PDB ENTRY	FDL10170
000CB2I	084A			1018	CR11	LDAR	R4,RA	LOAD DIRECTORY LRN	FDL10180
*000CB4I	C540	001F		1019	CLAI	R4,ENDDIR	MAXIMUM LRN @@@	FDL10190	
*000CB8I	23EF			1020	BFC	11,CR5	EOV/EOD CHECK	FDL10200	
000CBAI	4840	F4C4	=000182I	1021	CR77	LH	R4,NSLRNA	LOAD NEXT START LRN	FDL10210
000CBEI	4045	F358	=00001AI	1022	STH	R4,INBUF(R5)	STORE NEW POINTER	FDL10220	
000CC2I	4840	F470	=000136I	1023	LH	R4,SEQNUM	LOAD SEQUENCE #	FDL10230	
000CC6I	2752			1024	SIS	R5,2	DECREMENT POINTER	FDL10240	
000CC8I	4045	F34E	=00001AI	1025	STH	R4,INBUF(R5)	STORE SEQUENCE #	FDL10250	
000CCCI	2654			1026	AIS	R5,4	INCREMENT TO NEXT ENTRY	FDL10260	
000CCET	2440			1027	LIS	R4,0	CLEAR R4	FDL10270	
000CD0I	4045	F346	=00001AI	1028	STH	R4,INBUF(R5)	STORE EOV IN DIRECTORY	FDL10280	
*000CD4I	2309			1029	CR69	B	CRPGM	CREATE PROGRAM	FDL10290
000CD6I	2654			1030	CR5	AIS	R5,4	INCREMENT TO NEXT ENTRY	FDL10300
000CD8I	4845	F33E	=00001AI	1031	LH	R4,INBUF(R5)	LOAD NEXT SEQUENCE #	FDL10310	
000CDCI	4210	8520	=001200I	1032	BM	EOD	EOD REACHED	FDL10320	
000CEOI	2754			1033	SIS	R5,4	RESTORE	FDL10330	
000CE2I	4300	FFD4	=000CBAI	1034	B	CR77	SKIP	FDL10340	
000CE6I	08AA			1035	CRPGM	LDAR	RA,RA	LOAD BLOCK POINTER	FDL10350
000CE8I	40A0	F488	=000174I	1036	STH	RA,DIRP	SAVE	FDL10360	
000CECI	4840	F492	=000182I	1037	LH	R4,NSLRNA	LOAD NEXT START LRN	FDL10370	
000CF0I	E650	F442	=000136I	1038	LDAI	R5,SEQNUM	LOAD LOW	FDL10380	
000CF4I	E660	F46D	=000165I	1039	LDAI	R6,SEQNUM+47	LOAD HIGH	FDL10390	
000CF8I	2480			1040	LIS	R8,0	SET OUTPUT	FDL10400	
000CFAI	41E0	8C2A	=001928I	1041	BAL	RE,WRLRN	WRITE PDB	FDL10410	

000CFEI	2641		1042	AIS	R4,1	INCREMENT TO PROGRAM START LRN	FDL10420
000D00I	D370 F428 =00012CI		1043	LB	R7,FLG16	LOAD 16 BIT FLAG	FDL10430
000D04I	5857 F434 =00013CI		1044	LDA	R5,LOW(R7)	LOAD LOW	FDL10440
000D08I	5867 F434 =000140I		1045	LDA	R6,HIGH(R7)	LOAD HIGH	FDL10450
000D0CI	2480		1046	LIS	R8,0	SET OUTPUT FLAG	FDL10460
000D0EI	41E0 8C16 =001928I		1047	BAL	RE,WRLRN	WRITE PROGRAM	FDL10470
000D12I	4840 F45E =000174I		1048	LH	R4,DIRP	LOAD DIRECTORY POINTER	FDL10480
000D16I	41C0 84DC =0011F6I		1049	BAL	RC,SULH56	LOAD R5-R6	FDL10490
000D1AI	41E0 8C0A =001928I		1050	BAL	RE,WRLRN	WRITE DIRECTORY	FDL10500
000D1EI	4840 F414 =000136I		1051	LH	R4,SEQNUM	LOAD FOR VALIDATION	FDL10510
000D22I	41F0 FDD0 =000AF6I		1052	BAL	RF,CHKPGM	VALIDATE PROGRAM	FDL10520
000D26I	4300 84E8 =001212I		1053	B	EOJ	PRINT EOJ	FDL10530
000D2AI	D320 8E09 =001B37I	CR8	1054	LB	R2,E0VRTNMS	LOAD SIZE	FDL10540
000D2EI	E630 8C8E =0019C0I		1055	LDAI	R3,E0VRTNM	LOAD ADDRESS	FDL10550
000D32I	2480		1056	LIS	R8,0	SET OUTPUT	FDL10560
000D34I	41C0 8546 =00127EI		1057	BAL	RD,FINDCON	PRINT	FDL10570
000D39I	4300 8BB4 =0018FOI		1058	B	POUND	RE-START	FDL10580
000D3CI	D320 8DF8 =001B38I	CR9	1059	LB	R2,LGHMSG	LOAD SIZE	FDL10590
000D40I	E630 8C8A =0019CEI		1060	LDAI	R3,LGHMSG	LOAD ADDRESS	FDL10600
000D44I	2480		1061	LIS	R8,0	SET OUTPUT	FDL10610
000D46I	41C0 8534 =00127EI		1062	BAL	RD,FINDCON	PRINT	FDL10620
000D4AI	4300 8BA2 =0018FOI		1063	B	POUND	RE-START	FDL10630
000D4EI	D320 8DE7 =001B39I	CR91	1064	LB	R2,TBGMMSG	LOAD SIZE	FDL10640
000D52I	E630 8C88 =0019DEI		1065	LDAI	R3,TBGMMSG	LOAD ADDRESS	FDL10650
000D56I	2480		1066	LIS	R8,0	SET OUTPUT	FDL10660
000D58I	41D0 8522 =00127EI		1067	BAL	RD,FINDCON	PRINT	FDL10670
000D5CI	4300 8B90 =0018FOI		1068	B	POUND	RE-START	FDL10680
000D60I	27A1	CR2	1069	SIS	RA,1	DECREMENT	FDL10690
000D62I	4050 F418 =00017EI		1070	STH	R5,LPDB	SAVE	FDL10700
000D65I	084A		1071	LDAR	R4,RA	LOAD CORRECTED LRN	FDL10710
000D68I	41C0 848A =0011F6I		1072	BAL	RC,SULH56	LOAD R5-R6	FDL10720
000D6CI	41E0 89BE =00172EI		1073	BAL	RE,RDLRN	READ PREVIOUS LRN	FDL10730
000D70I	4840 F324 =000098I		1074	LH	R4,INBUF+126	LOAD PREVIOUS PDBP	FDL10740
000D74I	4040 F408 =000180I		1075	STH	R4,NSLRN	SAVE	FDL10750
000D78I	41C0 847A =0011F6I		1076	BAL	RC,SULH56	LOAD R5-R6	FDL10760
000D7CI	41E0 89AE =00172EI		1077	BAL	RE,RDLRN	READ PDB	FDL10770
000D80I	26A1		1078	AIS	RA,1	INCREMENT	FDL10780
000D82I	4300 FEAA =000C30I		1079	B	CR3	CONTINUE	FDL10790
000D86I	D320 8DAC =001B36I	THERE	1080	LB	R2,GOTMSG	LOAD SIZE	FDL10800
000D8AI	E630 800A =000D98I		1081	LDAI	R3,GOTMSG	LOAD ADDRESS	FDL10810
000D8EI	2480		1082	LIS	R8,0	SET OUTPUT FLAG	FDL10820
000D90I	41D0 84EA =00127EI		1083	BAL	RD,FINDCON	PRINT	FDL10830
000D94I	4300 8B58 =0018FOI		1084	B	POUND	RE-START	FDL10840
000D98I	5345 5155 454E 4345	1085	GOTMSG	DC	C'SEQUENCE NUMBER EXISTS ON OUTPUT MEDIA'		FDL10850
000DA0I	204E 554D 4245 5220						
000DA8I	4558 4953 5453 204F						
000DB0I	4E20 4F55 5450 5554						
000DB8I	204D 4544 4941						
000DBEI	2420	1086	DUPE	LIS	R2,0	LOAD CHARACTER POINTER	FDL10860
000DC0I	41C0 8A9C =001860I		1087	BAL	RC,SPCOM	FIND DELIMITER	FDL10870
000DC4I	2721		1088	SIS	R2,1	DECREMENT TO NEXT START	FDL10880
000DC6I	D352 F318 =0000E2I		1089	LB	R5,CONIN(R2)	LOAD 1ST CHARACTER	FDL10890
000DCAI	C5E0 000D		1090	CLHI	R5,X'0D'	CR	FDL10900
*000DCEI	23FD		1091	BFC	11,D1	DUPE TO EOF	FDL10910
000DD0I	2622		1092	AIS	R2,2	CORRECT POINTER	FDL10920

000DD2I	41F0	87BE	=001594I	1093		BAL	RE,PACK	PACK DATA	FDL10930
000DD6I	4050	F3AA	=000184I	1094	D1A	STH	R5,TERMSEQ	STORE TERMINATION SEQUENCE #	FDL10940
000DDAI	105C			1095		SRLS	R5,12	SCALE	FDL10950
000DDCI	4230	886A	=00164AI	1096		BNZ	QUEST	ERROR	FDL10960
000DE0I	2480			1097		LIS	R8,0	SET OUTPUT FLAG	FDL10970
000DE2I	41E0	850E	=0012F4I	1098		BAL	RE,FMAXLRN	FIND CAPACITY	FDL10980
*000DE6I	2303			1099		B	D2	SKIP	FDL10990
000DE8I	2450			1100	D1	LIS	R5,0	LOAD EOY	FDL11000
*000DEAI	220A			1101		B	D1A	STORE	FDL11010
000DECI	2482			1102	D2	LIS	R8,2	SET INPUT	FDL11020
000DEEI	41E0	886A	=00165CI	1103		BAL	RE,RDIRECT	READ DIRECTORY	FDL11030
000DF2I	0833			1104		LDAR	R3,R3	SET CC	FDL11040
000DF4I	4330	841A	=001212I	1105		BZ	EOJ	EOY FOUND	FDL11050
000DF8I	4050	F38A	=000186I	1106		STH	R5,CSPI	SAVE SEQUENCE POINTER	FDL11060
000DFCI	4030	F368	=000168I	1107		STH	R3,CSNI	SAVE SEQUENCE NUMBER	FDL11070
000E00I	4040	F366	=00016AI	1108		STH	R4,CSNPDBP	SAVE PDB POINTER	FDL11080
000E04I	41D0	F3B0	=0001B8I	1109		BAL	RD,SINC	SET INCREMENTAL MODE	FDL11090
000E08I	9433			1110		EXRR	R3,R3	SWAP FOR DISPLAY	FDL11100
000E0AI	9813			1111		WHR	R1,R3	WRITE SEQUENCE NUMBER TO DISPLAY	FDL11110
000E0CI	41D0	F3B2	=0001C2I	1112		BAL	RD,SNOR	SET NORMAL MODE	FDL11120
000E10I	C550	007C		1113	D21	CLHI	R5,124	LAST ENTRY IN BLOCK	FDL11130
*000E14I	21BE			1114		BTC	11,D3	NO	FDL11140
000E16I	084A			1115		LDAR	R4,RA	LOAD BLOCK POINTER	FDL11150
000E18I	2641			1116		AIS	R4,1	INCREMENT TO NEXT	FDL11160
000E1AI	41C0	83D8	=0011F6I	1117		BAL	RC,SULH56	LOAD R5-R6	FDL11170
000E1EI	41E0	890C	=00172EI	1118		BAL	RE,RDLRN	READ NEXT BLOCK	FDL11180
000E22I	4860	F1F4	=00001AI	1119		LH	R6,INBUF	LOAD NEXT SEQUENCE NUMBER	FDL11190
000E26I	4840	F340	=00016AI	1120		LH	R4,CSNPDBP	LOAD POINTER	FDL11200
*000E2AI	2306			1121		B	D4	SKIP	FDL11210
000E2CI	2654			1122	D20	AIS	R5,4	INCREMENT POINTER	FDL11220
*000E2EI	220F			1123		B	D21	CHECK IF NEW BLOCK NEEDED	FDL11230
000E30I	2654			1124	D3	AIS	R5,4	INCREMENT TO NEXT ENTRY	FDL11240
000E32I	4865	F1E4	=00001AI	1125		LH	R6,INBUF(R5)	LOAD NEXT SEQUENCE NUMBER	FDL11250
000E36I	C560	7000		1126	D4	CLHI	R6,X'7000'	DELETE CHARACTER?	FDL11260
*000E3AI	22E7			1127		BFC	11,D20	YES	FDL11270
000E3CI	4060	F326	=000166I	1128		STH	R6,NEXTI	SAVE	FDL11280
000E40I	41C0	83B2	=0011F6I	1129		BAL	RC,SULH56	LOAD R5-R6	FDL11290
000E44I	41E0	88E6	=00172EI	1130		BAL	RE,RDLRN	READ PDB	FDL11300
000E48I	2470			1131		LIS	R7,0	CLEAR	FDL11310
000E4AI	D270	F2E0	=00012EI	1132		STB	R7,RANGE	CLEAR FLAG	FDL11320
000E4EI	4870	F1D6	=000028I	1133		LH	R7,INBUF+14	LOAD SIZE	FDL11330
000E52I	4070	F332	=000188I	1134		STH	R7,SIZEI	SAVE	FDL11340
000E56I	4870	F1CA	=000024I	1135		LH	R7,INBUF+10	LOAD MSD OF HIGH	FDL11350
000E5AI	4230	818E	=000FECI	1136		BNZ	CHK16	>64KB	FDL11360
000E5EI	2480			1137	D5	LIS	R8,0	SET OUTPUT	FDL11370
000E60I	4870	F304	=000168I	1138		LH	R7,CSNI	LOAD CURRENT SEQUENCE NUMBER	FDL11380
000E64I	4070	F304	=00016CI	1139		STH	R7,CSEQNUMO	SET=CURRENT	FDL11390
000E68I	41E0	87F0	=00165CI	1140		BAL	RE,RDIRECT	READ DIRECTORY	FDL11400
000E6CI	4530	F2F8	=000168I	1141		CLH	R3,CSNI	FOUND	FDL11410
000E70I	43B0	FF12	=000D86I	1142		BFC	11,THERE	DUPLICATE EXISTS	FDL11420
000E74I	0833			1143		LDAR	R3,R3	SET CC	FDL11430
000E76I	4230	FEB0	=000D2AI	1144		BNZ	CR8	EOY NOT FOUND	FDL11440
000E7AI	0855			1145		LDAR	R5,R5	SET CC	FDL11450
*000E7CI	2337			1146		BZ	D6	SKIP	FDL11460
000E7EI	4845	F196	=000018I	1147		LH	R4,INBUF-2(R5)	LOAD PREVIOUS PDBP	FDL11470

000E82I	41C0	8370	=0011F6I	1148	BAL	RC,SULH56	LOAD R5-R6	FDL11480
000E86I	4300	801C	=000EA6I	1149	B	D8	SKIP	FDL11490
000E8AI	C5A0	001C		1150	D6	CLHI RA,STDIR	FIRST BLOCK? @@@	FDL11500
000E8EI	43B0	8152	=000FE4I	1151	BFC	11,D7	YES	FDL11510
000E92I	084A			1152	LDAR	R4,RA	LOAD BLOCK POINTER	FDL11520
000E94I	2741			1153	SIS	R4,1	DECREMENT	FDL11530
000E96I	41C0	835C	=0011F6I	1154	BAL	RC,SULH56	LOAD R5-R6	FDL11540
000E9AI	41E0	8890	=00172EI	1155	BAL	RE,RDLRN	READ PREVIOUS DIRECTORY BLOCK	FDL11550
000E9EI	4840	F1F6	=000098I	1156	LH	R4,INBUF+126	LOAD PLBP	FDL11560
000EA2I	41C0	8350	=0011F6I	1157	BAL	RC,SULH56	LOAD R5-R6	FDL11570
000EA6I	41E0	8884	=00172EI	1158	D8	BAL RE,RDLRN	READ PDB	FDL11580
000EAAI	4850	F17A	=000028I	1159	LH	R5,INBUF+14	LOAD SIZE	FDL11590
000EAEI	0A54			1160	AAR	R5,R4	ADD LAST PROGRAM SIZE	FDL11600
000EBOI	2651			1161	AIS	R5,1	INCLUDE PDB	FDL11610
000EB2I	4050	F2D6	=00G18CI	1162	D9	STH R5,NCPDBP	SAVE	FDL11620
000EB6I	2482			1163	LIS	R8,2	SET INPUT	FDL11630
000EB8I	2651			1164	AIS	R5,1	INCLUDE PDB	FDL11640
000EBAI	4A50	F2CA	=000188I	1165	AH	R5,SIZEI	ADD NEW PROGRAM SIZE	FDL11650
000EBEI	4550	F2BA	=00017CI	1166	CLH	R5,MAXLRNO	FIT	FDL11660
000EC2I	43A0	FE88	=000D4EI	1167	BFC	10,CR91	TOO BIG	FDL11670
000EC6I	4390	FE84	=000D4EI	1168	BFC	9,CR91	TOO BIG	FDL11680
000ECAI	4840	F29C	=00016AI	1169	LH	R4,CSNPDBP	LOAD POINTER	FDL11690
000ECEI	41C0	8324	=0011F6I	1170	BAL	RC,SULH56	LOAD R5-R6	FDL11700
000ED2I	41E0	8858	=00172EI	1171	BAL	RE,RDLRN	RE-READ PDB	FDL11710
000ED6I	4840	F2B2	=00018CI	1172	LH	R4,NCPDBP	LOAD POINTER	FDL11720
000EDAI	2480			1173	LIS	R8,0	SET OUTPUT	FDL11730
000EDCI	41C0	8316	=0011F6I	1174	BAL	RC,SULH56	LOAD R5-R6	FDL11740
000EFOI	41E0	8A44	=001928I	1175	BAL	RE,WRLRN	WRITE PDB	FDL11750
000EE4I	D370	F246	=00012FI	1176	LB	R7,RANGE	LOAD FLAG	FDL11760
000EE8I	0977			1177	LDAR	R7,R7	SET CC	FDL11770
000EEAI	4230	8112	=001000I	1178	BNZ	D13	SPECIAL DUPLICATE	FDL11780
000EEEI	4840	F278	=00016AI	1179	LH	R4,CSNPDBP	LOAD POINTER	FDL11790
000EF2I	D370	F236	=00012CI	1180	LB	R7,FLG16	LOAD FLAG	FDL11800
000EF6I	5857	F126	=000020I	1181	LDA	R5,INBUF+6(R7)	LOAD LOW	FDL11810
000EFAI	5867	F126	=000024I	1182	LDA	R6,INBUF+10(R7)	LOAD HIGH	FDL11820
000EFEI	F550	0000	0000I	1183	CLAI	R5,STARTL	COMPARE LOW TO START	FDL11830
*000F04I	2184			1184	BL	CHKHLS1	CHECK H<S	FDL11840
*000F06I	238D			1185	BNL	CHKLGE1	CHECK L>E	FDL11850
000F08I	4300	80F4	=001000I	1186	B	D13	SPECIAL DUPLICATE	FDL11860
000FOCI	CA60	0080		1187	CHKHLS1	AHI R6,128	ADD MAX EXTRA SIZE	FDL11870
000F10I	F560	0000	0000I	1188	CLAI	R6,STARTL	COMPARE HIGH TO START	FDL11880
000F16I	4380	80E6	=001000I	1189	BNL	D13	SPECIAL DUPLICATE	FDL11890
000F1AI	CB60	0080		1190	SHI	R6,128	RESTORE	FDL11900
*000F1EI	2307			1191	B	D18A	OK	FDL11910
000F20I	F550	0000	1B45I	1192	CHKLGE1	CLAI R5,LNZB	COMPARE LOW TO END	FDL11920
*000F26I	2383			1193	BNL	D18A	OK	FDL11930
000F28I	4300	80D4	=001000I	1194	B	D13	SPECIAL DUPLICATE	FDL11940
000F2CI	D370	F1FC	=00012CI	1195	D18A	LB R7,FLG16	LOAD FLAG	FDL11950
000F30I	0877			1196	LDAR	R7,R7	SET CC	FDL11960
*000F32I	2136			1197	BNZ	D18B	16 BIT CPU	FDL11970
000F34I	C550	0A00		1198	CLHI	R5,X'A00'	BLACK HOLE POSSIBLE?	FDL11980
000F38I	4280	80C4	=001000I	1199	BL	D13	SPECIAL DUPLICATE	FDL11990
*000F3CI	2305			1200	B	D18	SKIP	FDL12000
000F3EI	C550	02D0		1201	D18B	CLHI R5,X'2D0'	LOW CORE?	FDL12010
000F42I	4280	80BA	=001000I	1202	BL	D13	SPECIAL DUPLICATE	FDL12020

000F46I	2641		1203	D18	AIS	R4,1	INCREMENT PAST PDR	FDL12030
000F48I	2482		1204		LIS	R8,2	SET INPUT	FDL12040
000F4AI	41E0	87E0 =00172EI	1205		BAL	RE,RDLRN	READ PROGRAM	FDL12050
000F4EI	4840	F23A =00018CI	1206		LH	R4,NCPDBP	LOAD POINTER	FDL12060
000F52I	2641		1207		AIS	R4,1	INCREMENT PAST PDB	FDL12070
000F54I	2480		1208		LIS	R8,0	SET OUTPUT	FDL12080
000F56I	D370	F1D2 =00012CI	1209		LB	R7,FLG16	LOAD FLAG	FDL12090
000F5AI	5857	F0C2 =000020I	1210		LDA	R5,INBUF+6(R7)	LOAD LOW	FDL12100
000F5EI	5867	F0C2 =000024I	1211		LDA	R6,INBUF+10(R7)	LOAD HIGH	FDL12110
000F62I	41E0	89C2 =001928I	1212		BAL	RE,WRLRN	WRITE PROGRAM	FDL12120
000F66I	41E0	86F2 =00165CI	1213	D10	BAL	RE,RDIRECT	READ DIRECTORY	FDL12130
000F6AI	4860	F1FA =000168I	1214		LH	R6,CSNI	LOAD SEQUENCE NUMBER	FDL12140
000F6EI	4065	F0A8 =00001AI	1215		STH	R6,INBUF(R5)	STORE	FDL12150
000F72I	4860	F216 =00018CI	1216		LH	R6,NCPDBP	LOAD PDB POINTER	FDL12160
000F76I	4065	F0A2 =00001CI	1217		STH	R6,INBUF+2(R5)	STORE	FDL12170
000F7AI	C550	007C	1218		CLHI	R5,124	FIT EOF?	FDL12180
*000F7EI	23BB		1219		BFC	11,D11	NO	FDL12190
000F80I	2460		1220		LIS	R6,0	LOAD EOF	FDL12200
000F82I	4065	F098 =00001EI	1221		STH	R6,INBUF+4(R5)	STORE EOF	FDL12210
000F86I	4065	F096 =000020I	1222		STH	R6,INBUF+6(R5)	STORE EOF	FDL12220
000F8AI	084A		1223		LDAR	R4,RA	LOAD BLOCK POINTER	FDL12230
000F8CI	41C0	8266 =0011F6I	1224		BAL	RC,SULH56	LOAD R5-R6	FDL12240
000F90I	4300	802A =000FBEI	1225		B	D12	SKIP	FDL12250
000F94I	084A		1226	D11	LDAR	R4,RA	LOAD BLOCK POINTER	FDL12260
000F96I	C540	001F	1227		CLHI	R4,ENDDIR	MAXIMUM? ???	FDL12270
000F9AI	43E0	8A08 =0019A6I	1228		BFC	11,WRLRN3	YES, ERROR	FDL12280
000F9EI	41C0	8254 =0011F6I	1229		BAL	RC,SULH56	LOAD R5-R6	FDL12290
000FA2I	41E0	8982 =001928I	1230		BAL	RE,WRLRN	RESTORE LAST	FDL12300
000FA6I	2641		1231		AIS	R4,1	INCREMENT TO NEXT BLOCK	FDL12310
000FA8I	41C0	824A =0011F6I	1232		BAL	RC,SULH56	LOAD R5-R6	FDL12320
000FACI	41E0	877E =00172EI	1233		BAL	RE,RDLRN	READ NEXT BLOCK	FDL12330
000FBOI	2470		1234		LIS	R7,0	LOAD EOF	FDL12340
000FB2I	4070	F064 =00001AI	1235		STH	R7,INBUF	STORE	FDL12350
000FB6I	4070	F062 =00001CI	1236		STH	R7,INBUF+2	STORE	FDL12360
000FBAI	41C0	8238 =0011F6I	1237		BAL	RC,SULH56	LOAD R5-R6	FDL12370
000FBEI	41E0	8966 =001928I	1238	D12	BAL	RE,WRLRN	WRITE DIRECTORY	FDL12380
000FC2I	4840	F1A8 =00016EI	1239		LH	R4,CSEQNUMI	LOAD FOR VALIDATION	FDL12390
000FC6I	41E0	FB2C =000AF6I	1240		BAL	RF,CHKPGM	VERIFY	FDL12400
000FCAI	2482		1241		LIS	R8,2	SET INPUT	FDL12410
000FCCI	4850	F1B4 =000184I	1242		LH	R5,TERMSEQ	LOAD TERMINATION	FDL12420
000FD0I	4550	F19A =00016EI	1243		CLH	R5,CSEQNUMI	DONE	FDL12430
000FD4I	43E0	823A =001212I	1244		BFC	11,EOJ	YES	FDL12440
000FD8I	4850	F18A =000166I	1245		LH	R5,NEXTI	LOAD NEXT	FDL12450
000FDCT	4050	F18E =00016EI	1246		STH	R5,CSEQNUMI	SETUP TO COPY NEXT	FDL12460
000FE0I	43C0	FE08 =000DECI	1247		B	D2	LOOP	FDL12470
000FE4I	C850	0020	1248	D7	LHI	R5,STSAV	LOAD NEXT LRN ???	FDL12480
000FE8I	43C0	FEC6 =000EB2I	1249		B	D9	CONTINUE	FDL12490
000FECI	D370	F13C =00012CI	1250	CHK16	LB	R7,FLG16	LOAD FLAG	FDL12500
000FF0I	0877		1251		LDAR	R7,R7	SET CC	FDL12510
000FF2I	4330	FE68 =000F5EI	1252		BZ	D5	RETURN	FDL12520
000FF6I	247F		1253		LIS	R7,15	SET	FDL12530
000FF8I	D270	F132 =00012EI	1254		STB	R7,RANGE	SET FLAG	FDL12540
000FFCI	43C0	FE5E =000E5EI	1255		B	D5	RETURN	FDL12550
001000I	2481		1256	D13	LIS	RB,1	SET LOOP COUNT	FDL12560
001002I	48A0	F164 =00016AI	1257		LH	RA,CSNPDBP	LOAD POINTER	FDL12570



001006I	4890	F182 =00018CI	1258	LH	R9,NCPDBP	LOAD POINTER	FDL12580
00100AI	26A1		1259	AIS	RA,1	INCREMENT PAST PDB	FDL12590
00100CI	2691		1260	AIS	R9,1	INCREMENT PAST PDB	FDL12600
00100EI	2482		1261	LIS	R8,2	SET INPUT	FDL12610
001010I	41C0	81E2 =0011F6I	1262	BAL	RC,SULH56	LOAD R5-R6	FDL12620
001014I	084A		1263	LDAR	R4,RA	LOAD ILRN	FDL12630
001016I	41E0	8714 =00172EI	1264	BAL	RE,RDLRN	READ 1 PROGPAM LRN	FDL12640
00101AI	2480		1265	LIS	R8,0	SET OUTPUT	FDL12650
00101CI	0849		1266	LDAR	R4,R9	LOAD JLRN	FDL12660
00101EI	41C0	81D4 =0011F6I	1267	BAL	RC,SULH56	LOAD R5-R6	FDL12670
001022I	41E0	8902 =001928I	1268	BAL	RE,WRLRN	WRITE 1 PROGPAM LRN	FDL12680
001026I	45B0	F15E =000188I	1269	CLH	R3,SIZEI	DONE?	FDL12690
00102AI	43B0	FF38 =000F66I	1270	BFC	11,010	YES	FDL12700
00102EI	26E1		1271	AIS	RB,1	INCREMENT	FDL12710
001030I	26A1		1272	AIS	RA,1	INCREMENT	FDL12720
001032I	2691		1273	AIS	R9,1	INCREMENT	FDL12730
001034I	4300	FFD6 =00100EI	1274	B	D14	LOOP	FDL12740
001038I	0823		1275	LDAR	R2,R3	LOAD	FDL12750
00103AI	C420	007F	1276	NHI	R2,X'7F'	SAVE REMAINDER	FDL12760
00103EI	1037		1277	SRLS	R3,7	DIVIDE BY SHIFTING	FDL12770
001040I	030C		1278	BR	RC	RETURN	FDL12780
001042I	2420		1279	UPDATE LIS	R2,0	LOAD CHARACTER POINTER	FDL12790
001044I	41C0	8818 =001860I	1280	BAL	RC,SPCOM	FIND DELIMITER	FDL12800
001048I	2621		1281	AIS	R2,1	INCREMENT TO NEXT FIELD	FDL12810
00104AI	41E0	8546 =001594I	1282	BAL	RE,PACK	PACK DATA	FDL12820
00104EI	0855		1283	LDAR	R5,R5	SET CC	FDL12830
001050I	4330	85F6 =00164AI	1284	BZ	QUEST	NO OPERATION	FDL12840
001054I	2480		1285	LIS	R8,0	SET OUTPUT	FDL12850
001056I	4050	F136 =000190I	1286	STH	R5,TEMSAV	SAVE	FDL12860
00105AI	4050	F10E =00016CI	1287	STH	R5,CSEQNUMO	SET CURRENT	FDL12870
00105EI	105C		1288	SRLS	R5,12	SCALE	FDL12880
001060I	4230	85E6 =00164AI	1289	BNZ	QUEST	ERROR	FDL12890
001064I	41E0	85F4 =00165CI	1290	BAL	RE,RDIRECT	CHECK IF EXISTS	FDL12900
001068I	4530	F100 =00016CI	1291	CLH	R3,CSEQNUMO	FOUND?	FDL12910
00106CI	42B0	85DA =00164AI	1292	BTC	11,QUEST	NO	FDL12920
001070I	2450		1293	LIS	R5,0	LOAD EOY	FDL12930
001072I	4050	FOF6 =00016CI	1294	STH	R5,CSEQNUMO	SET EOY=CURRENT	FDL12940
001076I	41E0	85E2 =00165CI	1295	BAL	RE,RDIRECT	FIND EOY	FDL12950
00107AI	0833		1296	LDAR	R3,R3	SET CC	FDL12960
00107CI	4230	FCAA =000D2AI	1297	BNZ	CR8	EOY NOT FOUND	FDL12970
001080I	0855		1298	LDAR	R5,R5	SET CC	FDL12980
001082I	4050	FOE2 =000168I	1299	STH	R5,CSNI	SAVE POINTER	FDL12990
001086I	40A0	FOF6 =000180I	1300	STH	RA,NSLRN	SAVE POINTER	FDL13000
00108AI	4230	801E =0010ACI	1301	BNZ	U1	NOT FIRST ENTRY	FDL13010
00108EI	084A		1302	LDAR	R4,RA	LOAD BLOCK POINTER	FDL13020
001090I	2741		1303	SIS	R4,1	DECREMENT TO PREVIOUS	FDL13030
001092I	41C0	8160 =0011F6I	1304	BAL	RC,SULH56	LOAD R5-R6	FDL13040
001096I	41E0	8694 =00172EI	1305	BAL	RE,RDLRN	READ PREVIOUS	FDL13050
00109AI	4840	EFFA =000098I	1306	LH	R4,INBUF+126	LOAD PDBP	FDL13060
00109EI	4040	FOE8 =00018AI	1307	STH	R4,IPDBP	SAVE	FDL13070
0010A2I	41C0	8150 =0011F6I	1308	BAL	RC,SULH56	LOAD R5-R6	FDL13080
0010A6I	41E0	8684 =00172EI	1309	BAL	RE,RDLRN	READ PDB	FDL13090
*0010AAI	23GA		1310	B	U2	SKIP	FDL13100
0010ACI	2752		1311	SIS	R5,2	FIND PREVIOUS PDBP	FDL13110
0010AEI	4845	EF68 =00001AI	1312	LH	R4,INBUF(R5)	LOAD PDBP	FDL13120

0010B2I	4040	F0D4	=00018AI	1313	STH	R4,IPDBP	SAVE	FDL13130
0010B6I	41C0	813C	=0011F6I	1314	BAL	RC,SULH56	LOAD R5-R6	FDL13140
0010B8AI	41E0	8670	=00172EI	1315	BAL	RE,RDLRN	READ PDB	FDL13150
0010B8EI	4860	EF66	=000028I	1316	LH	R6,INBUF+14	LOAD SIZE	FDL13160
0010C2I	4060	F0C2	=000188I	1317	STH	R6,SIZEI	SAVE	FDL13170
0010C6I	4840	F0C0	=00018AI	1318	LH	R4,IPDBP	LOAD POINTER	FDL13180
0010CAI	2641			1319	AIS	R4,1	INCREMENT PAST PDB	FDL13190
0010CCI	0A46			1320	AAR	R4,R6	ADD SIZEI	FDL13200
0010CEI	D370	F05A	=00012CI	1321	LB	R7,FLG16	LOAD FLAG	FDL13210
0010D2I	5857	F066	=00013CI	1322	LDA	R5,LOW(R7)	LOAD LOW	FDL13220
0010D6I	5867	F066	=000140I	1323	LDA	R6,HIGH(R7)	LOAD HIGH	FDL13230
0010DAI	0865			1324	SAR	R6,R5	FIND DIFFERENCE	FDL13240
0010DCI	0836			1325	LDAR	R3,R6	PUT IN CORRECT PLACE	FDL13250
0010DEI	2631			1326	AIS	R3,1	CORRECT BYTE COUNT	FDL13260
0010E0I	41C0	FF54	=001038I	1327	BAL	RC,D128	DIVIDE	FDL13270
0010E4I	0822			1328	LDAR	R2,R2	SET CC	FDL13280
0010E6I	2332			1329	BZS	U3	NO REMAINDER	FDL13290
0010E8I	2631			1330	AIS	R3,1	COMPENSATE FOR REMAINDER	FDL13300
0010E8AI	4030	F056	=000144I	1331	STH	R3,LRNS	STORE TO PDB	FDL13310
0010EEI	4040	F090	=000182I	1332	STH	R4,NSLRNA	SAVE FOR VERIFY	FDL13320
0010F2I	0A43			1333	AAR	R4,R3	ADD IN NEW SIZE	FDL13330
0010F4I	2641			1334	AIS	R4,1	ADD IN PDB	FDL13340
0010F6I	4540	F082	=00017CI	1335	CLH	R4,MAXLRNO	FIT?	FDL13350
0010FAI	43A0	FC50	=000D4EI	1336	BFC	10,CR91	TOO BIG	FDL13360
0010FEI	4390	FC4C	=000D4EI	1337	BFC	9,CR91	TOO BIG	FDL13370
001102I	4040	F086	=00018CI	1338	STH	R4,NCPDBP	SAVE	FDL13380
001106I	4860	F086	=000190I	1339	LH	R6,TEMSAV	RE-LOAD POINTER	FDL13390
00110AI	4060	F05F	=00016CI	1340	STH	R6,CSEQNUM0	GET CURRENT	FDL13400
00110EI	4060	F024	=000136I	1341	STH	R6,SEQNUM	SAVE TO PDB	FDL13410
001112I	2480			1342	LIS	R8,0	SET OUTPUT	FDL13420
001114I	E650	F01E	=000136I	1343	LDAI	R5,SEQNUM	LOAD LOW	FDL13430
001118I	E660	F049	=000165I	1344	LDAI	R6,SEQNUM+47	LOAD HIGH	FDL13440
00111CI	4840	F062	=000182I	1345	LH	R4,NSLRNA	LOAD START LFN	FDL13450
001120I	41E0	8804	=001928I	1346	BAL	RE,WRLRN	WRITE PDB	FDL13460
001124I	2641			1347	AIS	R4,1	INCREMENT PAST PDB	FDL13470
001126I	D370	F002	=00012CI	1348	LB	R7,FLG16	LOAD FLAG	FDL13480
00112AI	5857	F00E	=00013CI	1349	LDA	R5,LOW(R7)	LOAD LOW	FDL13490
00112EI	5867	F00E	=000140I	1350	LDA	R6,HIGH(R7)	LOAD HIGH	FDL13500
001132I	41E0	87F2	=001928I	1351	BAL	RE,WRLRN	WRITE PROGRAM	FDL13510
001136I	41E0	8522	=00165CI	1352	BAL	RE,RDIRECT	FIND MATCHING SEQUENCE NUMBER	FDL13520
00113AI	C5A0	001C		1353	CLHI	RA,STDIR	FIRST LFN ? 000	FDL13530
*00113EI	23E2			1354	BFC	11,09	YES	FDL13540
*001140I	2305			1355	B	U8	SKIP	FDL13550
001142I	C550	0008		1356	CLHI	R5,8	FIRST OR SECOND ENTRY?	FDL13560
001146I	4280	8500	=00164AI	1357	BL	QUEST	YES	FDL13570
00114AI	C860	7000		1358	LHI	R6,X*7000'	LOAD DELETE CHARACTER	FDL13580
00114EI	4065	EEC8	=00001AI	1359	STH	R6,INBUF(R5)	DELETE	FDL13590
001152I	4065	EEC6	=00001CI	1360	STH	R6,INBUF+2(R5)	DELETE	FDL13600
001156I	41C0	809C	=0011F6I	1361	BAL	RC,SULH56	LOAD R5-R6	FDL13610
00115AI	084A			1362	LDAR	R4,RA	LOAD BLOCK POINTER	FDL13620
00115CI	41E0	87C8	=001928I	1363	BAL	RE,WRLRN	WRITE DIRECTORY	FDL13630
001160I	4840	F01C	=000180I	1364	LH	R4,NSLRN	LOAD EGV BLOCK POINTER	FDL13640
001164I	41C0	808E	=0011F6I	1365	BAL	RC,SULH56	LOAD R5-R6	FDL13650
001168I	41E0	85C2	=00172EI	1366	BAL	RE,RDLRN	READ DIRECTORY BLOCK	FDL13660
00116CI	4860	F020	=000190I	1367	LH	R6,TEMSAV	LOAD UPDATE SEQUENCE NUMBER	FDL13670

001170I	4850	FFF4	=000168I	1368	LH	R5,CSNI	LOAD EOY BID POINTER	FDL13660	
001174I	4065	EFA2	=00001AI	1369	STH	R6,INBUF(R5)	WRITE SEQUENCE NUMBER	FDL13690	
001178I	4860	F006	=000182I	1370	LH	R6,NSLRNA	LOAD POINTER	FDL13700	
00117CI	4065	EE9C	=00001CI	1371	STH	R6,INBUF+2(R5)	WRITE PDB POINTER	FDL13710	
001180I	41C0	8072	=0011F6I	1372	BAL	RC,SULH56	LOAD R5-R6	FDL13720	
001184I	41E0	87A0	=001928I	1373	BAL	RE,WRLRN	WRITE DIRECTORY	FDL13730	
001183I	4850	FFDC	=000168I	1374	LH	R5,CSNI	RE-LOAD POINTER	FDL13740	
00118CI	C550	007C		1375	CLHI	R5,124	LAST ENTRY IN BLOCK?	FDL13750	
001190I	4330	802A	=00112EI	1376	BE	J63	YES	FDL13760	
001194I	C550	0078		1377	CLHI	R5,120	NEXT TO LAST?	FDL13770	
001198I	4280	803C	=0011D8I	1378	BL	U68	NO	FDL13780	
00119CI	4860	EFE2	=000182I	1379	LH	R6,NSLRNA	LOAD BLOCK POINTER	FDL13790	
0011A0I	C560	001F		1380	CLHI	R6,ENDDIR	LAST BLOCK	FDL13800	
0011A4I	4230	802C	=0011D4I	1381	BNE	U64	NO	FDL13810	
0011A8I	41C0	804A	=0011F6I	1382	U65	BAL	RC,SULH56	LOAD R5-R6	FDL13820
0011ACI	41E0	857E	=00172EI	1383	BAL	RE,RDLRN	RE-READ LRM	FDL13830	
0011B0I	2561			1384	LCS	R6,1	LOAD EOD	FDL13840	
0011B2I	4060	EEEE	=000096I	1385	STH	R6,INBUF+124	WRITE EOD	FDL13850	
0011B6I	4060	EEDE	=000098I	1386	STH	R6,INBUF+126	WRITE EOD	FDL13860	
0011BAI	4300	8024	=0011F2I	1387	B	U67	VERIFY	FDL13870	
0011BEI	2541			1388	U63	AIS	R4,1	GET NEXT BLOCK	FDL13880
0011C0I	41C0	8032	=0011F6I	1389	BAL	RC,SULH56	LOAD R5-R6	FDL13890	
0011C4I	41E0	8566	=00172EI	1390	BAL	RE,RDLRN	READ NEXT BLOCK	FDL13900	
0011C8I	2460			1391	LIS	R6,0	LOAD EOY	FDL13910	
0011CAI	4060	EE4C	=00001AI	1392	STH	R6,INBUF	STORE EOY	FDL13920	
0011CEI	4060	EE4A	=00001CI	1393	STH	R6,INBUF+2	STORE EOY	FDL13930	
*0011D2I	2308			1394	B	U67	SKIP	FDL13940	
0011D4I	4850	EF90	=000168I	1395	U64	LH	R5,CSNI	LOAD BIR POINTER	FDL13950
0011D8I	2460			1396	U68	LIS	R6,0	LOAD EOY	FDL13960
0011DAI	4065	EE40	=00001EI	1397	STH	R6,INBUF+4(R5)	WRITE EOY	FDL13970	
0011DEI	4065	EE3E	=000020I	1398	STH	R6,INBUF+6(R5)	WRITE EOY	FDL13980	
0011E2I	41C0	8010	=0011F6I	1399	U67	BAL	RC,SULH56	LOAD R5-R6	FDL13990
0011E6I	41E0	873E	=001928I	1400	BAL	RE,WRLRN	WRITE DIRECTORY	FDL14000	
0011EAI	4840	EFA2	=000190I	1401	U66	LH	R4,TEMSAV	LOAD SEQUENCE NUMBER	FDL14010
0011EEI	41F0	F904	=000AF6I	1402	BAL	RF,CHKPGM	VERIFY	FDL14020	
0011F2I	4300	801C	=001212I	1403	B	EOJ	DONE	FDL14030	
0011F6I	E650	EE20	=00001AI	1404	SULH56	LDAI	R5,INBUF	LOAD LOW	FDL14040
0011FAI	E660	EE9B	=000099I	1405	LDAI	R6,INBUF+127	LOAD HIGH	FDL14050	
0011FEI	030C			1406	BR	RC	RETURN	FDL14060	
001200I	2480			1407	EOD	LIS	R8,0	SET OUTPUT	FDL14070
001202I	E630	87E6	=0019ECI	1408	LDAI	R3,EODMSG	LOAD ADDRESS	FDL14080	
001206I	D320	892D	=001B37I	1409	LB	R2,EODMSGS	LOAD SIZE	FDL14090	
00120AI	41E0	8070	=00127EI	1410	BAL	RD,FINDCON	PRINT	FDL14100	
00120EI	4300	86DE	=0018F0I	1411	B	POUND	RE-START	FDL14110	
001212I	41C0	F238	=00044EI	1412	EOJ	BAL	RC,CLRDIS	CLEAR DISPLAY	FDL14120
001216I	E630	87E0	=0019FAI	1413	LDAI	R3,EOJMSG	LOAD ADDRESS	FDL14130	
00121AI	D320	891C	=001B3AI	1414	LB	R2,EOJMSG	LOAD SIZE	FDL14140	
00121EI	2480			1415	LIS	R8,0	SET OUTPUT	FDL14150	
001220I	41D0	805A	=00127EI	1416	BAL	RD,FINDCON	PRINT	FDL14160	
001224I	4300	86C8	=0018F0I	1417	B	POUND	RE-START	FDL14170	
001228I	E630	8894	=001AC0I	1418	EOV	LDAI	R3,EOVMS	LOAD ADDRESS	FDL14180
00122CI	D320	890A	=001B3AI	1419	LB	R2,EOVMS	LOAD SIZE	FDL14190	
001230I	2480			1420	LIS	R8,0	SET OUTPUT	FDL14200	
001232I	41D0	8048	=00127EI	1421	BAL	RD,FINDCON	PRINT	FDL14210	
001236I	4300	86B6	=0018F0I	1422	B	POUND	RE-START	FDL14220	

00123AI	2420		1423	FIND	LIS	R2,0	CLEAR CHARACTER POINTER	FDL14230
00123CI	41C0 8620 =001860I		1424		BAL	RC,SPCOM	FIND DELIMITER	FDL14240
001240I	2621		1425		AIS	R2,1	INCREMENT PAST	FDL14250
001242I	D332 EF9C =0000E2I		1426		LB	R3,CONIN(R2)	LOAD 1ST CHARACTER	FDL14260
001245I	C530 004F		1427		CLHI	R3,C'0'	O INPUT	FDL14270
*00124AI	23E8		1428		BFC	11,FINDO	OUTPUT DEVICE	FDL14280
00124CI	C530 0049		1429		CLHI	R3,C'I'	I INPUT	FDL14290
*001250I	23E3		1430		BFC	11,FINDI	INPUT DEVICE	FDL14300
001252I	4300 93F4 =00164AI		1431		B	QUEST	INVALID INPUT	FDL14310
001255I	2482		1432	FINDI	LIS	R8,2	SET INPUT FLAG	FDL14320
*001253I	23C2		1433		B	FINDC	GO TO COMMON	FDL14330
00125AI	2480		1434	FINDO	LIS	R8,0	SET OUTPUT FLAG	FDL14340
00125CI	41C0 8500 =001860I		1435	FINDC	BAL	RC,SPCOM	FIND DELIMETER	FDL14350
001250I	2621		1436		AIS	R2,1	INCREMENT PAST	FDL14360
001252I	41E0 832E =001594I		1437		BAL	RE,PACK	PACK + CONVERT DATA	FDL14370
001256I	4058 EF02 =00016CI		1438		STH	R5,CSEQNUMO(R8)	SAVE	FDL14380
00125AI	105C		1439		SRLS	R5,12	SCALE	FDL14390
00126CI	4230 93DA =00164AI		1440		BNZ	QUEST	ERROR	FDL14400
001270I	41E0 83E8 =00165CI		1441		BAL	RE,RDIRECT	FIND IF EXISTS	FDL14410
001274I	0833		1442		LDAR	R3,R3	LOAD RETURNED SEQUENCE #	FDL14420
001276I	4330 FFAE =001228I		1443		BZ	EOV	EOV ENCOUNTERED	FDL14430
00127AI	4300 FF94 =001212I		1444		B	EOJ	DONE	FDL14440
00127EI	C800 2020		1445	FINDCON	LHI	R0,X'2020'	LOAD BLANK	FDL14450
001282I	C810 0048		1446		LHI	R1,72	LOAD COUNT	FDL14460
001286I	2712		1447	FC0	SIS	R1,2	DECREMENT COUNT	FDL14470
001288I	40C1 EE56 =0000E2I		1448		STH	R0,CONIN(R1)	STORE	FDL14480
*00128CI	2033		1449		BNZ	FC0	LOOP	FDL14490
00128EI	D3A0 ED7E =000010I		1450		LB	RA,DEVTYPE	LOAD DEVICE TYPE	FDL14500
001292I	27A1		1451		SIS	RA,1	DECREMENT	FDL14510
*001294I	2134		1452		BNZ	FC1	NOT = 1	FDL14520
001296I	41C8 802A =0012C4I		1453		BAL	RC,PASLA(R8)	PASLA DEVICE(CRT)	FDL14530
00129AI	030D		1454		BR	RD	RETURN	FDL14540
00129CI	27A1		1455	FC1	SIS	RA,1	DECREMENT	FDL14550
*00129EI	2134		1456		BNZ	FC2	NOT=2	FDL14560
0012A0I	41C8 8028 =0012CCI		1457		BAL	RC,CLI(R8)	CURRENT LOOP DEVICE	FDL14570
0012A4I	030D		1458		BR	RD	RETURN	FDL14580
0012A6I	27A1		1459	FC2	SIS	RA,1	DECREMENT	FDL14590
*0012A8I	2134		1460		BNZ	FC4	NOT=3	FDL14600
0012AAI	41C8 801E =0012CCI		1461	FC3	BAL	RC,CLI(R8)	DEFAULT TO TTY	FDL14610
0012AEI	030D		1462		BR	RD	RETURN	FDL14620
0012B0I	27A1		1463	FC4	SIS	RA,1	DECREMENT	FDL14630
*0012B2I	2134		1464		BNZ	FC5	NOT=4	FDL14640
0012B4I	41C8 800C =0012C4I		1465		BAL	RC,PASLA(R8)	PASLA DEVICE(CAROUSEL)	FDL14650
0012B8I	030D		1466		BR	RD	RETURN	FDL14660
0012BAI	27A1		1467	FC5	SIS	RA,1	DECREMENT	FDL14670
*0012BCI	2039		1468		BNZ	FC3	NOT=5	FDL14680
0012BEI	41C8 8012 =0012D4I		1469		BAL	RC,MB(R8)	MICRO-BUS DEVICE	FDL14690
0012C2I	030D		1470		BR	RD	RETURN	FDL14700
0012C4I	43C0 82E4 =0015ACI		1471	PASLA	B	PASLAD	OUT ON PASLA	FDL14710
0012C8I	43C0 F730 =0009FCI		1472		B	PASLAI	IN ON PASLA	FDL14720
0012CCI	4300 F8B0 =000B80I		1473	CLI	B	TTYO	OUT ON CURRENT LOOP	FDL14730
0012D0I	43C0 F72E =000A02I		1474		B	TTYI	IN ON CURRENT LOOP	FDL14740
0012D4I	43C0 F53A =000812I		1475	MB	B	MBO	OUT ON MICRO-BUS	FDL14750
0012D8I	43C0 F6CC =0009A8I		1476		B	MBI	IN ON MICRO-BUS	FDL14760
0012DCI	0888		1477	FINDDRV	LDAR	R8,R8	LOAD I/O FLAG	FDL14770

*0012DEI	2136		1478	BNZ	FD1	INPUT MODE	FDL14780	
0012E0I	4840	EE92 =000176I	1479	LH	R4,DRO	LOAD INPUT DRIVE #	FDL14790	
*0012E4I	CA40	0030	1480	AAI	R4,X'30'	LOAD	FDL14800	
0012E8I	23C5		1481	BS	LEAVE	EXIT	FDL14810	
0012EAI	4840	EE8A =000178I	1482	LH	R4,DRI	LOAD OUTPUT DRIVE #	FDL14820	
*0012EEI	CA40	0030	1483	AAI	R4,X'30'	LOAD	FDL14830	
0012F2I	030C		1484	LEAVE	BR	RETURN	FDL14840	
0012F4I	41C0	F868 =000B60I	1485	FMAXLRN	BAL	RD,RESET	FDL14850	
0012F8I	C840	07D2	1486	LHI	R4,X'7D2'	LOAD MAX GOOD LRN	FDL14860	
0012FCI	4818	EE70 =000170I	1487	FM1	LH	R1,PRECMDO(R8)	FDL14870	
001300I	2421		1488	LIS	R2,1	LOAD READ CMD BITS	FDL14880	
001302I	0612		1489	OAR	R1,R2	MERGE	FDL14890	
001304I	41C0	EEEE =0011F6I	1490	BAL	RC,SULH56	LOAD R5-R6	FDL14900	
001308I	D320	ED0B =000017I	1491	LB	R2,FLPAD	LOAD ADDRESS	FDL14910	
00130CI	9824		1492	WHR	R2,R4	WRITE LRN #	FDL14920	
00130EI	9E21		1493	OCR	R2,R1	ISSUE READ	FDL14930	
001310I	9D23		1494	SSR	R2,R3	SENSE STATUS	FDL14940	
001312I	2081		1495	BTBS	8,1	WAIT FOR BUSY NOT	FDL14950	
001314I	D925	0000	1496	FM2	RH	R2,0(R5)	READ DATA	FDL14960
001318I	2652		1497	AIS	R5,2	BUMP	FDL14970	
00131AI	0565		1498	CLAR	R6,R5	DONE??	FDL14980	
00131CI	2284		1499	BNCS	FM2	NO, LOOP	FDL14990	
00131EI	9E23		1500	SSR	R2,R3	SENSE STATUS	FDL15000	
001320I	C330	0050	1501	THI	R3,X'50'	TEST FOR DEFECTIVE TRACK	FDL15010	
001324I	2126		1502	BTFS	2,AGAIN	TRY NEXT	FDL15020	
001326I	41C0	85DA =001904I	1503	BAL	RD,STOP	STOP	FDL15030	
00132AI	4048	EE4E =00017CI	1504	STH	R4,MAXLRNO(R8)	STORE MAX	FDL15040	
00132EI	030E		1505	BR	RE	RETURN	FDL15050	
001330I	41C0	85D0 =001904I	1506	AGAIN	BAL	RD,STOP	FDL15060	
001334I	C540	079E	1507	CLHI	R4,X'79E'	EXCEEDS MINIMUM	FDL15070	
*001338I	2185		1508	BL	MEDERR	YES	FDL15080	
00133AI	CB40	001A	1509	SHI	R4,26	DECREMENT	FDL15090	
00133EI	43C0	FFBA =0012FCI	1510	B	FM1	GO AGAIN	FDL15100	
001342I	4040	EE36 =00017CI	1511	MEDERR	STH	R4,MAXLRNO	STORE RESULT	FDL15110
001346I	E630	86B4 =0019FEI	1512	LDAI	R3,MEDMSG	LOAD ADDRESS	FDL15120	
00134AI	D320	87ED =001B3BI	1513	LB	R2,MEDMSGS	LOAD SIZE	FDL15130	
00134EI	2480		1514	LIS	R8,0	SET OUTPUT	FDL15140	
001350I	41C0	FF2A =00127EI	1515	BAL	RD,FINDCON	PRINT	FDL15150	
001354I	4300	8598 =0018FOI	1516	B	POUND	RE-START	FDL15160	
001358I	2480		1517	INIT	LIS	R8,0	SET OUTPUT	FDL15170
00135AI	41E0	FF96 =0012F4I	1518	BAL	RE,FMAXLRN	FIND MAXIMUM LRN	FDL15180	
00135EI	41F0	8014 =001376I	1519	BAL	RF,INITDIR	INITIALIZE DIRECTORY	FDL15190	
001362I	41F0	85B2 =001918I	1520	BAL	RF,WRTBOOT	WRITE LRN 5	FDL15200	
001366I	E640	0020	1521	LDAI	R4,STSAV	LOAD INIT VALUE @@@	FDL15210	
00136AI	4040	EE1E =00018CI	1522	STH	R4,NCPDBP	INITIALIZE	FDL15220	
00136EI	4040	EE10 =000182I	1523	STH	R4,NSLRNA	INITIALIZE	FDL15230	
001372I	4300	FE9C =001212I	1524	B	EOJ	PRINT EOJ	FDL15240	
001376I	2440		1525	INITDIR	LIS	R4,0	CLEAR STORAGE	FDL15250
001378I	2450		1526	LIS	R5,0	CLEAR POINTER	FDL15260	
00137AI	4045	EC9C =00001AI	1527	ID1	STH	R4,INBUF(R5)	STORE	FDL15270
00137EI	2652		1528	AIS	R5,2	INCREMENT POINTER	FDL15280	
001380I	C5E0	0080	1529	CLHI	R5,128	DONE	FDL15290	
*001384I	20R5		1530	BTC	11,ID1	LOOP	FDL15300	
001386I	C840	001C	1531	LHI	R4,STDIR	LOAD FIRST LRN @@@	FDL15310	
00138AI	41C0	F7D2 =000B60I	1532	BAL	RD,RESRT	IDLE CHECK	FDL15320	

00138EI	41C0 FE64 =0011F6I	1533	BAL	RC,SULH56	LOAD R5-R6	FDL15330	
001392I	41F0 8592 =001928I	1534	BAL	RE,WRLRN	WRITE FIRST LRN	FDL15340	
001396I	2641	1535	AIS	R4,1	LOAD SECOND LRN	FDL15350	
001398I	41C0 FE5A =0011F6I	1536	BAL	RC,SULH56	LOAD R5-R6	FDL15360	
00139CI	41E0 8588 =001928I	1537	BAL	RE,WRLRN	WRITE SECOND LRN	FDL15370	
0013A0I	2641	1538	AIS	R4,1	LOAD THIRD LRN	FDL15380	
0013A2I	41C0 FE50 =0011F6I	1539	BAL	RC,SULH56	LOAD R5-R6	FDL15390	
0013A6I	41F0 857E =001928I	1540	BAL	RE,WRLRN	WRITE THIRD LRN	FDL15400	
0013AAI	2541	1541	LCS	R4,1	LOAD EOD	FDL15410	
0013ACI	4040 ECE8 =000098I	1542	STH	R4,INBUF+126	STORE	FDL15420	
0013B0I	C840 001F	1543	LHI	R4,ENDDIR	LOAD LAST LRN 222	FDL15430	
0013B4I	41C0 FE3E =0011F6I	1544	BAL	RC,SULH56	LOAD R5-R6	FDL15440	
0013B8I	41E0 856C =001928I	1545	BAL	RE,WRLRN	WRITE LAST LRN	FDL15450	
0013BCI	030F	1546	BR	RF	RETURN	FDL15460	
0013BEI	C810 4000	1547	LHI	R1,X'4000'	LOAD TEST PATTERN	FDL15470	
0013C2I	0A11	1548	AAR	R1,R1	DOUBLE	FDL15480	
*0013C4I	2319	1549	BNM	BIG	32BIT MACHINE	FDL15490	
0013C6I	2412	1550	LIS	R1,2	SET 16 BIT FLAG	FDL15500	
0013C8I	D210 ED60 =00012CI	1551	STB	R1,FLG16	STORE	FDL15510	
0013CCI	E600 8016 =0013E6I	1552	LDAI	RO,SETUPA	SETUP MM TO POINT TO SETUP	FDL15520	
0013D0I	4000 003E	1553	STH	RO,X'3E'	TO REMOVE ANY PENDING MMALF	FDL15530	
*0013D4I	2309	1554	B	SETUPA	GO	FDL15540	
0013D6I	2410	1555	LIS	R1,0	CLEAR 16 BIT FLAG	FDL15550	
0013D8I	D210 ED50 =00012CI	1556	STB	R1,FLG16	STORE	FDL15560	
0013DCI	E600 8006 =0013E6I	1557	LDAI	RO,SETUPA	SETUP MM TO POINT TO SETUP	FDL15570	
0013E0I	4000 003E	1558	STH	RO,X'3E'	TO REMOVE ANY PENDING MMALF	FDL15580	
*0013E4I	2301	1559	B	SETUPA	GO	FDL15590	
0013E4I		1560	IFZ	ADC-2		FDL15600	
		1561	SETUPA	LHI	RO,X'20F0'	LOAD PSW	FDL15610
		1562	EPSR	R3,RO	SWAP	FDL15620	
		1563	GO16	XAR	RO,RO	LOAD PSW CONSTANT	FDL15630
		1564		STH	RO,X'2C'	STORE	FDL15640
		1565		STH	RO,X'30'	STORE	FDL15650
		1566		STH	RO,X'32'	STORE	FDL15660
		1567		STH	RO,X'34'	STORE	FDL15670
		1568		STH	RO,X'38'	STORE	FDL15680
		1569		STH	RO,X'3A'	STORE	FDL15690
		1570		STH	RO,X'3C'	STORE	FDL15700
		1571		STH	RO,X'44'	STORE	FDL15710
		1572		STH	RO,X'4C'	STORE	FDL15720
		1573		LHI	RO,REGSAVA	LOAD SAVE POINTER	FDL15730
		1574		STH	RO,X'22'	STORE TO POINTER	FDL15740
		1575		LDAI	RO,ILLIST	LOAD ADDRESS	FDL15750
		1576		STH	RO,X'36'	STORE	FDL15760
		1577		LDAI	RO,MCHNAL	LOAD ADDRESS	FDL15770
		1578		STH	RO,X'3E'	STORE	FDL15780
		1579		BR	RC	RETURN	FDL15790
		1580		ELSE			FDL15800
0013E6I	C800 20F0	1581	SETUPA	LHI	RO,X'20F0'	LOAD PSW	FDL15810
0013EAI	9530	1582	EPSR	R3,RO	SWAP	FDL15820	
0013ECI	C800 00F0	1583	GO32A	LHI	RO,X'F0'	LOAD PSW CONSTANT	FDL15830
0013FOI	4000 0032	1584		STH	RO,X'32'	STORE	FDL15840
0013F4I	4000 003A	1585		STH	RO,X'3A'	STORE	FDL15850
*0013F8I	2400	1586		LHI	RO,0	LOAD PSW CONSTANT	FDL15860
0013FAI	4000 0030	1587		STH	RO,X'30'	STORE	FDL15870

0013FEI	4000	0034	1588	STH	RO,X'34'	STORE	FDL15880
001402I	4000	0038	1589	STH	RO,X'38'	STORE	FDL15890
001406I	4000	003C	1590	STH	RO,X'3C'	STORE	FDL15900
00140AI	4000	0040	1591	STH	RO,X'40'	STORE	FDL15910
00140EI	E600	8060 =001472I	1592	LDAI	RO,ILLIST	LOAD ADDRESS	FDL15920
001412I	5000	0034	1593	STA	RO,X'34'	STORE	FDL15930
001416I	E600	8064 =00147EI	1594	LDAI	RO,MCHMAL	LOAD ADDRESS	FDL15940
00141AI	5000	003C	1595	STA	RO,X'3C'	STORE	FDL15950
00141EI	F800	0000 1B48I	1596	LI	RO,PSWSAVA	GET ADDRESS	FDL15960
001424I	C400	FF00	1597	NHI	RO,X'FF00'	MAKE X'100' BOUNDARY	FDL15970
001428I	CA00	0100	1598	AHI	RO,X'100'	MAKE > ORIGINAL	FDL15980
00142CI	4000	0084	1599	STH	RO,X'84'	STORE	FDL15990
001430I	F800	0000 1B50I	1600	LI	RO,REGSAVA	GET ADDRESS	FDL16000
001436I	C400	FF00	1601	NHI	RO,X'FF00'	MAKE X'100' BOUNDARY	FDL16010
00143AI	CA00	0108	1602	AHI	RO,X'108'	MAKE > ORIGINAL	FDL16020
00143EI	4000	0086	1603	STH	RO,X'86'	STORE	FDL16030
001442I	F630	8098 =0014DEI	1604	LDAI	R3,RELPROT	LOAD ADDRESS	FDL16040
001446I	5030	0094	1605	STA	R3,X'94'	STORE	FDL16050
00144AI	E630	809C =0014EAI	1606	LDAI	R3,BNDYERR	LOAD ADDRESS	FDL16060
00144EI	5030	00CC	1607	STA	R3,X'CC'	STORE	FDL16070
001452I	E630	80A0 =0014F6I	1608	LDAI	R3,SYSQERR	LOAD ADDRESS	FDL16080
001456I	5030	008C	1609	STA	R3,X'8C'	STORE	FDL16090
00145AI	E630	80A4 =001502I	1610	LDAI	R3,SVCERR	LOAD ADDRESS	FDL16100
00145EI	C840	009C	1611	LHI	R4,X'9C'	LOAD	FDL16110
001462I	2454		1612	LIS	R5,4	BXLE	FDL16120
001464I	C860	00BC	1613	LHI	R6,X'9C'+32	LIMITS	FDL16130
001468I	5034	0000	1614	LCLP	STA R3,0(R4)	STORE	FDL16140
00146CI	C140	FFF8 =001468I	1615	BXLE	R4,LCLP	LOOP	FDL16150
001470I	030C		1616	BR	RC	RETURN	FDL16160
			1617	ENDC			FDL16170
001472I	D320	86C6 =001B3CI	1618	ILLIST	LB R2,ILLMSG	LOAD SIZE	FDL16180
001476I	E630	8594 =001A0EI	1619	LDAI	R3,ILLMSG	LOAD ADDRESS	FDL16190
00147AI	4300	8030 =0014AEI	1620	B	MCHMAL4	RE-ENABLE	FDL16200
	0000	147EI	1621	MCHMAL	EQU *		FDL16210
00147EI	D310	ECAA =00012CI	1622	LB	R1,FLG16	GET FLAG	FDL16220
001482I	0811		1623	LDAR	R1,R1	SET CC	FDL16230
*001484I	2338		1624	BZ	MM32	32 BIT MACHINE	FDL16240
001486I	4810	0038	1625	LH	R1,X'38'	GET OLD PSW	FDL16250
00148AI	C310	0001	1626	THI	R1,X'1'	L FLAG SET??	FDL16260
00148EI	4230	8036 =0014C8I	1627	BNZ	PFAIL	NO, POWER DOWN	FDL16270
*001492I	2307		1628	B	MCHMAL3	POWER UP	FDL16280
001494I	4800	0040	1629	MM32	LH RO,X'40'	GET POSSIBLE REASON CODE	FDL16290
001498I	4230	8036 =0014D2I	1630	BNZ	NEW32	SERIES 32	FDL16300
00149CI	4210	8028 =0014C8I	1631	BTC	1,PFAIL	EARLY POWER FAIL	FDL16310
0014A0I	C800	00F0	1632	MCHMAL3	LHI RO,X'F0'	LOAD NEW PSW	FDL16320
0014A4I	9510		1633	MCHMAL2	EPSR R1,RO	DROP MME INTERRUPT	FDL16330
0014A6I	D320	8692 =001B3CI	1634	LB	R2,MMFMSG	LOAD SIZE	FDL16340
0014AAI	E630	8574 =001A22I	1635	LDAI	R3,MMFMSG	LOAD ADDRESS	FDL16350
0014AEI	2480		1636	MCHMAL4	LIS R8,0	SET OUTPUT	FDL16360
0014B0I	41D0	FDCA =00127EI	1637	BAL	RD,FINDCON	PRINT	FDL16370
0014B4I	C800	20F0	1638	MCHMAL1	LHI RO,X'20F0'	LOAD CONSTANT	FDL16380
0014B8I	9510		1639	EPSR	R1,RO	SWAP PSW	FDL16390
0014BAI	D300	EC6F =00012DI	1640	LB	RO,LDFLG	GET FLAG	FDL16400
0014BEI	0800		1641	LDAR	RO,RO	SET CC	FDL16410
0014C0I	4230	EB3C =000000I	1642	BNZ	STARTL	RE-START LOADER	FDL16420

0014C4I	4300	8428	=0018FOI	1643		B	POUND	RE-START	FDL16430
0014C8I	C800	0A0F		1644	PFAIL	LHI	RO,X'0A0F'	LOAD NEW PSW	FDL16440
0014CCI	1104			1645		SLLS	RO,4	SCALE	FDL16450
0014CEI	9510			1646		EPSR	R1,RO	SET WAIT & ENABLE FOR POWER-UP	FDL16460
*0014D0I	2204			1647		B	PFAIL	BRANCH/LOOP	FDL16470
*0014D2I	2015			1648	NEW32	BM	PFAIL	POWER DOWN	FDL16480
0014D4I	2400			1649		LIS	RO,0	CLEAR	FDL16490
0014D6I	4000	0040		1650		STH	RO,X'40'	STORE	FDL16500
0014DAI	4300	FFC6	=0014A4I	1651		B	MCHMAL2	POWER UP OR OTHER	FDL16510
0014DEI	D320	865B	=001B3DI	1652	RELPROT	LB	R2,RPMSGS	LOAD SIZE	FDL16520
0014E2I	E630	8600	=001A6EI	1653		LDAI	R3,RPMSG	LOAD ADDRESS	FDL16530
0014E6I	4300	FFC4	=0014AEI	1654		B	MCHMAL4	GO TO COMMON	FDL16540
0014EAI	D320	8655	=001B43I	1655	BNDYERR	LB	R2,BNDYMSG	LOAD SIZE	FDL16550
0014EEI	E630	8614	=001B06I	1656		LDAI	R3,BNDYMSG	LOAD ADDRESS	FDL16560
0014F2I	4300	FFB8	=0014AEI	1657		B	MCHMAL4	GO TO COMMON	FDL16570
0014F6I	D320	8649	=001B43I	1658	SYSQERR	LB	R2,SYSQMSG	LOAD SIZE	FDL16580
0014FAI	E630	861A	=001B18I	1659		LDAI	R3,SYSQMSG	LOAD ADDRESS	FDL16590
0014FEI	4300	FFAC	=0014AEI	1660		B	MCHMAL4	GO TO COMMON	FDL16600
001502I	D320	863E	=001B44I	1661	SVCERR	LB	R2,SVCMSG	LOAD SIZE	FDL16610
001506I	E630	8620	=001B2AI	1662		LDAI	R3,SVCMSG	LOAD ADDRESS	FDL16620
00150AI	4300	FFA0	=0014AEI	1663		B	MCHMAL4	GO TO COMMON	FDL16630
00150EI	2420			1664	LIMITS	LIS	R2,0	CLEAR CHARACTER POINTER	FDL16640
001510I	41C0	834C	=001860I	1665		BAL	RC,SPCOM	FIND DELIMITER	FDL16650
001514I	2621			1666		AIS	R2,1	INCREMENT PAST	FDL16660
001516I	D370	EC12	=00012CI	1667		LB	R7,FLG16	LOAD 16 FLAG	FDL16670
00151AI	4020	EC72	=000190I	1668		STH	R2,TEMSAV	SAVE POINTER	FDL16680
00151EI	41E0	8072	=001594I	1669		BAL	RE,PACK	PACK + CONVERT	FDL16690
001522I	0832			1670		LDAR	R3,R2	GET NEW POINTER	FDL16700
001524I	4B30	EC68	=000190I	1671		SH	R3,TEMSAV	FIND DIFFERENCE	FDL16710
001528I	D370	EC00	=00012CI	1672		LB	R7,FLG16	LOAD FLAG	FDL16720
00152CI	0877			1673		LDAR	R7,R7	SET CC	FDL16730
*00152EI	2336			1674		BZ	LIM32	SKIP IF 32 BIT	FDL16740
001530I	C530	0004		1675		CLHI	R3,4	4 CHARACTERS ?	FDL16750
001534I	4220	8112	=00164AI	1676		BTC	2,QUEST	TOO MANY	FDL16760
*001538I	2305			1677		B	LIM2	CONTINUE	FDL16770
00153AI	C530	0006		1678	LIM32	CLHI	R3,6	MORE THAN 6 DIGITS ?	FDL16780
00153EI	4220	8108	=00164AI	1679		BTC	2,QUEST	ERROR	FDL16790
001542I	5057	EBF6	=00013CI	1680	LIM2	STA	R5,LOW(R7)	STORE TO LOW	FDL16800
001546I	41C0	8316	=001860I	1681		BAL	RC,SPCOM	FIND DELIMITER	FDL16810
00154AI	2621			1682		AIS	R2,1	INCREMENT PAST	FDL16820
00154CI	4020	EC40	=000190I	1683		STH	R2,TEMSAV	SAVE POINTER	FDL16830
001550I	41E0	8040	=001594I	1684		BAL	RE,PACK	PACK & CONVERT	FDL16840
001554I	0832			1685		LDAR	R3,R2	GET NEW POINTER	FDL16850
001556I	4B30	EC36	=000190I	1686		SH	R3,TEMSAV	FIND DIFFERENCE	FDL16860
00155AI	D370	EBCE	=00012CI	1687		LB	R7,FLG16	LOAD 16 FLAG	FDL16870
00155EI	0877			1688		LDAR	R7,R7	SET CC	FDL16880
*001560I	2336			1689		BZ	LIM32A	SKIP IF 32 BIT	FDL16890
001562I	C530	0004		1690		CLHI	R3,4	GREATER THAN 4 DIGITS ?	FDL16900
001566I	4220	80E0	=00164AI	1691		BTC	2,QUEST	ERROR	FDL16910
*00156AI	2305			1692		B	LIM3	CONTINUE	FDL16920
00156CI	C530	0006		1693	LIM32A	CLHI	R3,6	GREATER THAN 6 DIGITS ?	FDL16930
001570I	4220	80D6	=00164AI	1694		BTC	2,QUEST	ERROR	FDL16940
001574I	5057	EB08	=000140I	1695	LIM3	STA	R5,HIGH(R7)	STORE TO HIGH	FDL16950
001578I	5B57	EB0C	=00013CI	1696		SA	R5,LOW(R7)	FIND DIFFERENCE	FDL16960
00157CI	4280	F7BC	=000D3CI	1697		BTC	8,CR9	L>H ERROR	FDL16970



001580I	0835		1698	LDAR	R3,R5	LOAD	FDL16980
001582I	41C0	FAB2 =001038I	1699	BAL	RC,D128	DIVIDE	FDL16990
001586I	0822		1700	LDAR	R2,R2	LOAD REMAINDER	FDL17000
*001588I	2332		1701	BZ	LIM1	NO REMAINDER?	FDL17010
00158AI	2631		1702	AIS	R3,1	INCREMENT FOR REMAINDER	FDL17020
00158CI	4030	EBB4 =000144I	1703	LIM1	STH R3,LRNS	SAVE # OF LRNS	FDL17030
001590I	4300	835C =0018FOI	1704	B	POUND	DONE	FDL17040
001594I	2450		1705	PACK	LIS R5,0	CLEAR DATA STORAGE	FDL17050
001596I	D312	EB48 =0000E2I	1706	PK1	LB R1,CONIN(R2)	LOAD DATA	FDL17060
00159AI	41C0	F61A =000BB8I	1707	BAL	RC,CONVERT	CONVERT TO HEX	FDL17070
00159EI	0811		1708	LDAR	R1,R1	LOAD HEX	FDL17080
*0015A0I	2115		1709	BM	PK2	BAD RETURN	FDL17090
0015A2I	1154		1710	SLLS	R5,4	ROTATE DATA	FDL17100
0015A4I	0A51		1711	AAR	R5,R1	ADD IN NEXT DATA	FDL17110
0015A6I	2621		1712	AIS	R2,1	INCREMENT COUNT	FDL17120
*0015A8I	2209		1713	B	PK1	LOOP	FDL17130
0015AAI	030E		1714	PK2	BR RE	RETURN	FDL17140
0015ACI	D310	EA62 =000012I	1715	PASLAO	LB R1,PASAD	LOAD READ ADDRESS	FDL17150
0015B0I	DE10	FB7D =000131I	1716	OC	R1,PASL2	SET CMD2 BYTE	FDL17160
0015B4I	DE10	FB7B =000133I	1717	OC	R1,PASRD	SET READ MODE	FDL17170
0015B8I	9B14		1718	RDR	R1,R4	DUMMY READ	FDL17180
0015BAI	9D14		1719	SSR	R1,R4	SENSE STATUS	FDL17190
0015BCI	2281		1720	BFBS	8,1	WAIT FOR BUSY	FDL17200
0015BEI	D310	FA51 =000013I	1721	LB	R1,PASAD+1	LOAD WRITE ADDRESS	FDL17210
0015C2I	DE10	EB6C =000132I	1722	OC	R1,PASWR	SET WRITE MODE	FDL17220
0015C6I	4300	8036 =001600I	1723	B	PA04	SKIP	FDL17230
0015CAI	D310	FA45 =000013I	1724	PA05	LB R1,PASAD+1	LOAD WRITE ADDRESS	FDL17240
0015CEI	9D14		1725	SSR	R1,R4	SENSE STATUS	FDL17250
0015DOI	2081		1726	BTBS	8,1	BUSY LOOP	FDL17260
0015D2I	DA13	0000	1727	WD	R1,0(R3)	WRITE DATA	FDL17270
0015D6I	2631		1728	AIS	R3,1	INCREMENT POINTER	FDL17280
0015D8I	2721		1729	SIS	R2,1	DECREMENT COUNT	FDL17290
0015DAI	D310	EA34 =000012I	1730	LB	R1,PASAD	LOAD READ ADDRESS	FDL17300
0015DEI	9D14		1731	SSR	R1,R4	SENSE STATUS	FDL17310
0015E0I	218C		1732	BTFS	8,PA03	BUSY = INPUT READY	FDL17320
0015E2I	9B14		1733	RDR	R1,R4	INPUT DATA	FDL17330
0015E4I	C540	0014	1734	CLHI	R4,X*14'	COMPARE TO DC4(STOP)	FDL17340
0015E8I	42B0	800C =0015F8I	1735	BTC	11,PA03	JUNK CHARACTER	FDL17350
0015ECI	9D14		1736	PA02	SSR R1,R4	SENSE STATUS	FDL17360
0015EEI	2081		1737	BTBS	8,1	BUSY LOOP	FDL17370
0015FOI	9B14		1738	RDR	R1,R4	READ DATA	FDL17380
0015F2I	C540	0012	1739	CLHI	R4,X*12'	COMPARE TO DC2(GO)	FDL17390
*0015F6I	20B5		1740	BTC	11,PA02	LOOP UNTIL MATCH	FDL17400
0015F8I	0822		1741	PA03	LDAR R2,R2	LOAD COUNT	FDL17410
0015FAI	4230	FFCC =0015CAI	1742	BNZ	PA05	CONTINUE	FDL17420
0015FEI	030C		1743	BR	RC	RETURN	FDL17430
001600I	D310	EA0F =000013I	1744	PA04	LB R1,PASAD+1	LOAD WRITE ADDRESS	FDL17440
001604I	9D14		1745	SSR	R1,R4	SENSE STATUS	FDL17450
001606I	2081		1746	BTBS	8,1	BUSY LOOP	FDL17460
001608I	244D		1747	LIS	R4,13	LOAD CR	FDL17470
00160AI	9A14		1748	WDR	R1,R4	WRITE DATA	FDL17480
00160CI	9D14		1749	SSR	R1,R4	SENSE STATUS	FDL17490
00160EI	2081		1750	BTBS	8,1	BUSY LOOP	FDL17500
001610I	244A		1751	LIS	R4,10	LOAD LF	FDL17510
001612I	9A14		1752	WDR	R1,R4	WRITE DATA	FDL17520

001614I	9D14		1753	SSR	R1,R4	SENSE STATUS	FDL17530
001616I	2081		1754	BTBS	8,1	BUSY LOOP	FDL17540
001618I	C840	00FF	1755	LHI	R4,X'FF'	LOAD DELETE	FDL17550
00161CI	9A14		1756	WDR	R1,R4	WRITE DATA	FDL17560
00161EI	4300	FFA8 =0015CAI	1757	B	PA05	RETURN	FDL17570
001622I	D310	E9EF =000015I	1758	PRTO LB	R1,LPAD	LOAD ADDRESS	FDL17580
001626I	DE10	0080	1759	OC	R1,X'80'	SET DISABLE	FDL17590
00162AI	9D14		1760	PR1 SSR	R1,R4	SENSE STATUS	FDL17600
00162CI	2081		1761	BTBS	8,1	BUSY LOOP	FDL17610
00162EI	DA13	0000	1762	WD	R1,0(R3)	WRITE DATA	FDL17620
001632I	2631		1763	AIS	R3,1	INCREMENT POINTER	FDL17630
001634I	2721		1764	SIS	R2,1	DECREMENT COUNT	FDL17640
*001636I	2036		1765	BNZ	PR1	LOOP	FDL17650
001638I	243D		1766	LIS	R3,13	LOAD CR	FDL17660
00163AI	9D14		1767	SSR	R1,R4	SENSE STATUS	FDL17670
00163CI	2081		1768	BTBS	8,1	BUSY LOOP	FDL17680
00163EI	9A13		1769	WDR	R1,R3	WRITE DATA	FDL17690
001640I	243A		1770	LIS	R3,10	LOAD LF	FDL17700
001642I	9D14		1771	SSR	R1,R4	SENSE STATUS	FDL17710
001644I	2081		1772	BTBS	8,1	BUSY LOOP	FDL17720
001646I	9A13		1773	WDR	R1,R3	WRITE DATA	FDL17730
001648I	030C		1774	BR	RC	RETURN	FDL17740
00164AI	E630	800C =00165AI	1775	QUEST LDAI	R3,QMSG	LOAD ADDRESS	FDL17750
00164EI	2421		1776	LIS	R2,1	LOAD SIZE	FDL17760
001650I	2480		1777	LIS	R8,0	SET OUTPUT	FDL17770
001652I	41D0	FC28 =00127EI	1778	BAL	RD,FINDCON	PRINT	FDL17780
001656I	4300	8296 =0018F0I	1779	B	POUND	RE-START	FDL17790
00165AI	3F20		1780	QMSG DC	C'?'		FDL17800
00165CI	2400		1781	RDIRECT LIS	R0,0	CLEAR R0	FDL17810
00165EI	C8A0	001B	1782	LHI	RA,STDIRM	INIT RA	FDL17820
001662I	C840	001C	1783	LHI	R4,STDIR	LOAD START LR	FDL17830
001666I	41D0	F4F6 =000B60I	1784	RDLOOP BAL	RD,RESET	IDLE CHECK	FDL17840
00166AI	41C0	F888 =0011F6I	1785	BAL	RC,SULH56	LOAD R5-R6	FDL17850
00166EI	4898	EAF8 =00016CI	1786	LH	R9,CSEQNUMO(R8)	LOAD CURRENT SEQUENCE #	FDL17860
001672I	4818	EAF8 =000170I	1787	LH	R1,PRECMDO(R8)	LOAD PRE-COMMAND	FDL17870
001676I	2421		1788	LIS	R2,1	LOAD READ CMD	FDL17880
001678I	0612		1789	OAR	R1,R2	MERGE CMD	FDL17890
00167AI	D320	E999 =000017I	1790	LB	R2,FLPAD	LOAD ADDRESS	FDL17900
00167EI	9824		1791	WHR	R2,R4	WRITE LRN TO CONTROLLER	FDL17910
001680I	9E21		1792	OCR	R2,R1	ISSUE READ CMD	FDL17920
001682I	26A1		1793	RDIRECT2 AIS	RA,1	INCREMENT CURRENT LRN POINTER	FDL17930
001684I	C5A0	0020	1794	CLHI	RA,STSAV	EXHAUSTED DIRECTORY ?	FDL17940
001688I	4330	8060 =0016ECI	1795	BE	RDIRERR	YES	FDL17950
00168CI	9E23		1796	SSR	R2,R3	SENSE STATUS	FDL17960
00168EI	2081		1797	BTBS	8,1	WAIT FOR BUSY NOT	FDL17970
001690I	D925	0000	1798	RDHL RH	R2,0(R5)	READ 2 BYTES	FDL17980
001694I	26E2		1799	AIS	R5,2	BUMP	FDL17990
001696I	0565		1800	CLAR	R6,R5	DONE??	FDL18000
001698I	2284		1801	BNCS	RDHL	NO, LOOP	FDL18010
00169AI	9D23		1802	SSR	R2,R3	SENSE STATUS	FDL18020
00169CI	4250	804C =0016FCI	1803	BTC	5,RDIRERR	READ ERROR	FDL18030
0016A0I	2450		1804	LIS	R5,0	SETUP	FDL18040
0016A2I	2464		1805	LIS	R6,4	BKLE	FDL18050
0016A4I	C870	007C	1806	LHI	R7,X'7C'	LIMITS	FDL18060
0016A8I	4835	E96E =00001AI	1807	RDIRECT1 LH	R3,INBUF(R5)	LOAD SEQUENCE #	FDL18070

0016ACI	4210	802C	=0016DCI	1808	EM	EOD1	EOD	FDL18080
0016B0I	0833			1809	LDAR	R3,R3	LOAD SEQUENCE #	FDL18090
0016B2I	4330	8012	=0016C8I	1810	BZ	EOV1	EOV	FDL18100
0016B6I	0539			1811	CLAR	R3,R9	MATCH	FDL18110
0016B8I	4330	801A	=0016D6I	1812	BE	MATCH	YES	FDL18120
0016BCI	C150	FFE8	=0016A8I	1813	BXLE	R5,RDIRECT1	LOOP	FDL18130
0016C0I	41C0	FB32	=0011F6I	1814	BAL	RC,SULH56	LOAD R5-R6	FDL18140
0016C4I	4300	FFBA	=001682I	1815	B	RDIRECT2	CONTINUE	FDL18150
0015C8I	2541			1816	EOV1	LCS	R4,1	FDL18160
0016CAI	2430			1817		LIS	R3,0	FDL18170
0015CCI	4818	AAA0	=000170I	1818	EOVEX	LH	R1,PRECMDO(R8)	FDL18180
0015D0I	41D0	8230	=001904I	1819		BAL	RD,STOP	FDL18190
0016D4I	030E			1820		BR	RE	FDL18200
0016D6I	4845	E942	=00001CI	1821	MATCH	LH	R4,INBUF+2(R5)	FDL18210
0016DAI	2207			1822		BS	EOVEX	FDL18220
0016DCI	D300	EA4D	=00012DI	1823	EOD1	LB	RO,LDFLG	FDL18230
0016E0I	0800			1824		LDAR	RO,RO	FDL18240
*0016E2I	203D			1825		BNZ	EOV1	FDL18250
0016E4I	41D0	821C	=001904I	1826		BAL	RD,STOP	FDL18260
0016E8I	4300	FB14	=001200I	1827		B	EOD	FDL18270
0016ECI	0900			1828	RDIRERR	LDAR	RO,RO	FDL18280
0016EEI	C500	0005		1829		CLHI	RO,X'05'	FDL18290
0016F2I	42E0	9012	=001708I	1830		BTC	11,RDIRERR1	FDL18300
0016F6I	2601			1831		AIS	RO,1	FDL18310
0016F8I	4818	EA74	=000170I	1832		LH	R1,PRECMDO(R8)	FDL18320
0016FCI	41D0	8204	=001904I	1833		BAL	RD,STOP	FDL18330
001700I	084A			1834		LDAR	R4,RA	FDL18340
001702I	27A1			1835		SIS	RA,1	FDL18350
001704I	4300	FF5E	=001666I	1836		B	RDL00P	FDL18360
001708I	41C0	FRD0	=0012DCI	1837	RDIRERR1	BAL	RC,FINDDRV	FDL18370
00170CI	D240	8344	=001A54I	1838		STB	R4,RDEMSG+30	FDL18380
001710I	41D0	81F0	=001904I	1839		BAL	RD,STOP	FDL18390
001714I	D300	EA15	=00012DI	1840		LB	RO,LDFLG	FDL18400
001718I	0800			1841		LDAR	RO,RO	FDL18410
00171AI	023E			1842		BNZR	RE	FDL18420
00171CI	E630	8316	=001A36I	1843		LDAI	R3,RDEMSG	FDL18430
001720I	D320	8419	=001B3DI	1844		LB	R2,RDEMSG	FDL18440
001724I	2480			1845		LIS	R8,0	FDL18450
001726I	41D0	FB54	=00127EI	1846		BAL	RD,FINDCON	FDL18460
00172AI	4300	81C2	=0018F0I	1847		B	POUND	FDL18470
00172EI	2400			1848	RDLRN	LIS	RO,0	FDL18480
001730I	D370	E9F8	=00012CI	1849		LB	R7,FLG16	FDL18490
001734I	5057	EA5C	=000194I	1850		STA	R5,R5SAV(R7)	FDL18500
001738I	41D0	F424	=000B60I	1851	RLRNLOOP	BAL	RD,RESET	FDL18510
00173CI	4818	EA30	=000170I	1852		LH	R1,PRECMDO(R8)	FDL18520
001740I	2421			1853		LIS	R2,1	FDL18530
001742I	0612			1854		OAR	R1,R2	FDL18540
001744I	D320	E8CF	=000017I	1855		LB	R2,FLPAD	FDL18550
001748I	9824			1856		WHR	R2,R4	FDL18560
00174AI	9E21			1857		OCR	R2,R1	FDL18570
00174CI	9D23			1858	RLHL	SSR	R2,R3	FDL18580
00174EI	2081			1859		BTBS	8,1	FDL18590
001750I	C870	007E		1860		LHI	R7,126	FDL18600
001754I	D925	0000		1861	RLHL1	RH	R2,0(R5)	FDL18610
001758I	2652			1862		AIS	R5,2	FDL18620

00175AI	2772		1863	SIS	R7,2	DECREMENT	FDL18630
00175CI	2214		1864	BNMS	RLHL1	DONE??	FDL18640
00175EI	0565		1865	CLAR	R6,R5	DONE??	FDL18650
001760I	228A		1866	BNCS	RLHL	NO, LOOP	FDL18660
001762I	9D23		1867	SSR	R2,R3	SENSE STATUS	FDL18670
*001764I	2154		1868	BTC	5,RDLRNE	READ ERROR	FDL18680
001766I	41E0	819A =001904I	1869	BAL	RD,STOP	STOP	FDL18690
00176AI	030F		1870	BR	RE	RETURN	FDL18700
00176CI	C500	0005	1871	RDLRNE	CLHI R0,X'05'	FIVE TIMES?	FDL18710
001770I	4330	8012 =001786I	1872		BE RDLRNE1	YES	FDL18720
001774I	2601		1873	AIS	R0,1	INCREMENT	FDL18730
001776I	41E0	818A =001904I	1874	BAL	RD,STOP	STOP	FDL18740
00177AI	D370	E9AE =00012CI	1875	LB	R7,FLG16	LOAD FLAG	FDL18750
00177EI	5857	EA12 =000194I	1876	LDA	R5,R5SAV(R7)	RESTORE R5	FDL18760
001782I	4300	FFB2 =001738I	1877	B	RLRNLOOP	RETRY	FDL18770
001786I	41E0	817A =001904I	1878	RDLRNE1	BAL RD,STOP	STOP	FDL18780
00178AI	E390	E99F =00012DI	1879	LB	R9,LDFLG	LOAD LOAD FLAG	FDL18790
00178EI	0899		1880	LDAR	R9,R9	SET CC	FDL18800
001790I	023E		1881	BNZR	RE	RETURN	FDL18810
001792I	E630	82C0 =001A56I	1882	LDAI	R3,RDLMSG	LOAD ADDRESS	FDL18820
001796I	D320	83A4 =001B3EI	1883	LB	R2,RDLMSG	LOAD SIZE	FDL18830
00179AI	2480		1884	LIS	R8,0	SET OUTPUT	FDL18840
00179CI	41E0	FADE =00127EI	1885	BAL	RD,FINDCON	PRINT	FDL18850
0017A0I	4300	814C =0018F0I	1886	B	POUND	RESTART	FDL18860
0017A4I	C810	00C0	1887	SETUP	LHI R1,X'CO'	LOAD DISABLE	FDL18870
0017A8I	4820	E9CA =000176I	1888	LH	R2,DRO	LOAD DRIVE #	FDL18880
0017ACI	1124		1889	SLLS	R2,4	SCALE	FDL18890
0017AEI	0612		1890	OAR	R1,R2	MERGE	FDL18900
0017B0I	4010	E9BC =000170I	1891	STH	R1,PRECMDO	STORE	FDL18910
0017B4I	C810	00C0	1892	LHI	R1,X'CO'	LOAD DISABLE	FDL18920
0017B8I	4820	E9BC =000178I	1893	LH	R2,DRI	LOAD DRIVE #	FDL18930
0017BCI	1124		1894	SLLS	R2,4	SCALE	FDL18940
0017BEI	0612		1895	CAR	R1,R2	MERGE	FDL18950
0017C0I	4010	E9AE =000172I	1896	STH	R1,PRECMDI	STORE	FDL18960
0017C4I	030C		1897	BR	RC	RETURN	FDL18970
0017C6I	2420		1898	SEQ	LIS R2,0	CLEAR CHARACTER POINTER	FDL18980
0017C8I	2430		1899		LIS R3,0	CLEAR STORAGE POINTER	FDL18990
0017CAI	41C0	8092 =001860I	1900	BAL	RC,SPCOM	FIND DELIMITER	FDL19000
0017CEI	2621		1901	AIS	R2,1	INCREMENT PAST	FDL19010
0017D0I	41E0	FDC0 =001594I	1902	BAL	RE,PACK	PACK AND CONVERT	FDL19020
0017D4I	4C50	E95E =000136I	1903	STH	R5,SEQNUM	STORE	FDL19030
0017D8I	105C		1904	SRLS	R5,12	SCALE	FDL19040
0017DAI	4230	FE6C =00164AI	1905	BNZ	QUEST	TOO MANY CHARACTERS IN FIELD	FDL19050
0017DEI	41C0	807E =001860I	1906	BAL	RC,SPCOM	FIND DELIMITER	FDL19060
0017E2I	2621		1907	AIS	R2,1	INCREMENT PAST	FDL19070
0017E4I	41E0	FDAC =001594I	1908	BAL	RE,PACK	PACK AND CONVERT	FDL19080
0017E8I	4050	E94C =000138I	1909	STH	R5,P06	STORE	FDL19090
0017ECI	105C		1910	SRLS	R5,12	SCALE	FDL19100
0017EEI	4230	FE58 =00164AI	1911	BNZ	QUEST	TOO MANY CHARACTERS IN FIELD	FDL19110
0017F2I	41C0	806A =001860I	1912	BAL	RC,SPCOM	FIND DELIMITER	FDL19120
0017F6I	2621		1913	AIS	R2,1	INCREMENT PAST	FDL19130
0017F8I	41E0	FD98 =001594I	1914	BAL	RE,PACK	PACK + CONVERT	FDL19140
0017FCI	4050	E93A =00013AI	1915	STH	R5,REVLEV	STORE	FDL19150
001800I	1058		1916	SRLS	R5,8	SCALE	FDL19160
001802I	4230	FE44 =00164AI	1917	BNZ	QUEST	TOO MANY CHARACTERS IN FIELD	FDL19170

001806I	D312 E8D8 =0000E2I	1918	LB	R1,CONIN(R2)	LOAD CHARACTER	FDL19180
00180AI	C510 002E	1919	CLHI	R1,C'.'	PERIOD ?	FDL19190
00180EI	4230 801E =001830I	1920	BNE	SEQ3	NO EXTENSION	FDL19200
001812I	2621	1921	AIS	R2,1	POINT TO EXTENSION CHARACTER	FDL19210
001814I	41E0 FD7C =001594I	1922	BAL	RE,PACK	PACK + CONVERT	FDL19220
001818I	D250 E974 =000190I	1923	STB	R5,TEMSAV	SAVE	FDL19230
00181CI	1054	1924	SRLS	R5,4	SCALE	FDL19240
00181EI	4230 FE28 =00164AI	1925	BNZ	QUEST	MORE THAN ONE CHARACTER	FDL19250
001822I	D350 E96A =000190I	1926	LB	R5,TEMSAV	RE-LOAD	FDL19260
001826I	115C	1927	SLLS	R5,12	SCALE	FDL19270
001828I	4650 E90E =00013AI	1928	OH	R5,REVLEV	MERGE	FDL19280
00182CI	4050 E90A =00013AI	1929	STH	R5,REVLEV	STORE	FDL19290
001830I	41C0 802C =001860I	1930	SEQ3	BAL	RC,SPCOM	FIND DELIMITER
001834I	2621	1931	AIS	R2,1	INCRIMENT PAST	FDL19310
001836I	41C0 F2A6 =000AE0I	1932	BAL	RC,CFFORM	CLEAD FREE FORM BUFFER	FDL19320
00183AI	2430	1933	LIS	R3,0	CLEAR COUNT	FDL19330
00183CI	D312 E8A2 =0000E2I	1934	SEQ1	LB	R1,CONIN(R2)	READ
001840I	C510 000D	1935	CLHI	R1,X'0D'	CR	FDL19340
001844I	4330 8014 =00185CI	1936	BE	SEQ2	YES	FDL19350
001848I	D213 E8FA =000146I	1937	STB	R1,FFORM(R3)	STORE	FDL19360
00184CI	0833	1938	LDAR	R3,R3	LOAD FREE FORM COUNT	FDL19370
00184EI	C530 001E	1939	CLHI	R3,30	DONE	FDL19380
001852I	4330 FDF4 =00164AI	1940	BE	QUEST	TOO MANY CHARACTERS	FDL19390
001856I	2631	1941	AIS	R3,1	ICNRIMENT POINTER	FDL19400
001858I	2621	1942	AIS	R2,1	INCRIMENT POINTER	FDL19410
00185AI	220F	1943	BS	SEQ1	LOOP	FDL19420
00185CI	4300 8090 =0018F0I	1944	SEQ2	B	POUND	FDL19430
001860I	D312 E87E =0000E2I	1945	SPCOM	LB	R1,CONIN(R2)	DONE
001864I	C510 0020	1946	CLHI	R1,X'20'	LOAD CHARACTER	FDL19440
001868I	2336	1947	BES	SPCOM1	BLANK	FDL19450
00186AI	C510 002C	1948	CLHI	R1,X'2C'	YES	FDL19460
00186EI	2333	1949	BES	SPCOM1	COMMA	FDL19470
001870I	2621	1950	AIS	R2,1	YES	FDL19480
001872I	2209	1951	BS	SPCOM	INCRIMENT POINTER	FDL19490
001874I	030C	1952	SPCOM1	BR	RC	FDL19500
001876I	D310 0079	1953	FIOD	LB	R1,X'79'	LOOP
00187AI	C410 0030	1954	NHI	R1,X'30'	RETURN	FDL19510
00187EI	1014	1955	SRLS	R1,4	LOAD BOOT COMMAND	FDL19520
001880I	4330 801E =0018A2I	1956	BZ	BOOT0	REMOVE DRIVE #	FDL19530
001884I	2711	1957	SIS	R1,1	SCALE	FDL19540
001886I	4330 800A =001894I	1958	BZ	BOOT1A	IN=0;OUT=1	FDL19550
00188AI	2711	1959	SIS	R1,1	DECREMENT	FDL19560
00188CI	4330 8020 =0018B0I	1960	BZ	BOOT2	IN=1;OUT=0	FDL19570
001890I	4300 802A =0018BEI	1961	B	BOOT3	IN=2;OUT=3	FDL19580
001894I	2411	1962	BOOT1A	LIS	R1,1	IN=3;OUT=2
001896I	4010 E8DE =000178I	1963	STH	R1,DRI	LOAD ADDRESS	FDL19610
00189AI	2410	1964	LIS	R1,0	DRI=1	FDL19620
00189CI	4010 E8D6 =000176I	1965	STH	R1,DRO	LOAD ADDRESS	FDL19630
0018A0I	030C	1966	BR	RC	DRO=0	FDL19640
0018A2I	2410	1967	BOOT0	LIS	R1,0	RETURN
0018A4I	4010 E8D0 =000178I	1968	STH	R1,DRI	LOAD ADDRESS	FDL19650
0018A8I	2411	1969	LIS	R1,1	DRI=0	FDL19660
0018AAI	4010 E8C8 =000176I	1970	STH	R1,DRO	LOAD ADDRESS	FDL19670
0018AEI	030C	1971	BR	RC	DRO=1	FDL19680
0018B0I	2412	1972	BOOT2	LIS	R1,2	RETURN
					LOAD ADDRESS	FDL19700
						FDL19710
						FDL19720

0018B2I	4010	E8C2	=000178I	1973		STH	R1,DRI	DRI=2	FDL19730
0018B6I	2413			1974		LIS	R1,3	LOAD ADDRESS	FDL19740
0018B8I	4010	E8BA	=000176I	1975		STH	R1,DRO	DRO=3	FDL19750
0018BCI	030C			1976		BR	RC	RETURN	FDL19760
0018BEI	2413			1977	BOOT3	LIS	R1,3	LOAD ADDRESS	FDL19770
0018C0I	4010	E8B4	=000178I	1978		STH	R1,DRI	DRI=3	FDL19780
0018C4I	2412			1979		LIS	R1,2	LOAD ADDRESS	FDL19790
0018C6I	4010	E8AC	=000176I	1980		STH	R1,DRO	DRO=2	FDL19800
0018CAI	030C			1981		BR	RC	RETURN	FDL19810
0018CCI	41C0	EB7E	=00044EI	1982	STARTG	BAL	RC,CLRDIS	CLEAR DISPLAY	FDL19820
0018DOI	41C0	FAEA	=0013BEI	1983		BAL	RC,LCORE	INITIALIZE LOW CORE	FDL19830
0018D4I	41C0	FF9E	=001876I	1984		BAL	RC,FIOD	SET DRO + DRI	FDL19840
0018D8I	41C0	FEC8	=0017A4I	1985		BAL	RC,SETUP	SETUP DRO AND DRI	FDL19850
0018DCI	2410			1986		LIS	R1,0	CLEAR FLAG	FDL19860
0018DEI	D210	E84B	=00012DI	1987		STB	R1,LDFLG	STORE	FDL19870
0018E2I	E630	81DE	=001AC4I	1988		LDAI	R3,TITLE	LOAD ADDRESS	FDL19880
0018E6I	D320	8259	=001B43I	1989		LB	R2,TITLES	LOAD SIZE	FDL19890
0018EAI	2480			1990		LIS	R8,0	SET OUTPUT	FDL19900
0018ECI	41D0	F98E	=00127EI	1991		BAL	RD,FINDCON	PRINT	FDL19910
0018FOI	E630	E836	=00012AI	1992	POUND	LDAI	R3,ASTERISK	LOAD ADDRESS	FDL19920
0018F4I	2421			1993		LIS	R2,1	LOAD SIZE	FDL19930
0018F6I	2480			1994		LIS	R8,0	SET OUTPUT	FDL19940
0018F8I	41D0	F982	=00127EI	1995		BAL	RD,FINDCON	PRINT	FDL19950
0018FCI	2484			1996		LIS	R8,4	SET INPUT	FDL19960
0018FEI	41D0	F97C	=00127EI	1997		BAL	RD,FINDCON	INPUT DATA	FDL19970
*001902I	2200			1998		B	*	NO RETURN	FDL19980
001904I	4818	E868	=000170I	1999	STOP	LH	R1,PRECMDO(R8)	LOAD PRECMD	FDL19990
001908I	2427			2000		LIS	R2,7	LOAD STOP CMD	FDL20000
00190AI	0612			2001		OAR	R1,R2	MERGE	FDL20010
00190CI	D320	E707	=000017I	2002		LB	R2,FLPAD	LOAD ADDRESS	FDL20020
001910I	9E21			2003		OCR	R2,R1	COMMAND	FDL20030
001912I	9D21			2004		SSR	R2,R1	SENSE STATUS	FDL20040
001914I	2221			2005		BFRS	2,1	IDLE NOT LOOP	FDL20050
001916I	030D			2006		BR	RD	RETURN	FDL20060
001918I	2445			2007	WRTBOCT	LIS	R4,5	LOAD LRN FOR BOCT	FDL20070
00191AI	E650	EF3C	=00085AI	2008		LDAI	R5,BOOTST	LOAD LOW	FDL20080
00191EI	E660	F085	=0009A7I	2009		LDAI	R6,ROOTEN32+1	LOAD HIGH	FDL20090
001922I	41E0	8002	=001928I	2010		BAL	RE,WRLRN	WRITE LRN	FDL20100
001926I	03CF			2011		BR	RF	RETURN	FDL20110
001928I	2480			2012	WRLRN	LIS	R8,0	SET OUTPUT	FDL20120
00192AI	2400			2013		LIS	R0,0	CLEAR RETRY COUNT	FDL20130
00192CI	D370	E7FC	=00012CI	2014		LB	R7,FLG16	GET FLAG	FDL20140
001930I	5057	E860	=000194I	2015		STA	R5,RSSAV(R7)	SAVE R5	FDL20150
001934I	41D0	F228	=000860I	2016	WRLRN2	BAL	RD,RESET	IDLE CHECK	FDL20160
001938I	4810	E834	=000170I	2017		LH	R1,PRECMDO	LOAD PRE-CMD	FDL20170
00193CI	2422			2018		LIS	R2,2	LOAD WRITE CMD	FDL20180
00193EI	0612			2019		OAR	R1,R2	MERGE	FDL20190
001940I	D320	E6D3	=000017I	2020		LB	R2,FLPAD	LOAD ADDRESS	FDL20200
001944I	9824			2021		WHR	R2,R4	WRITE LRN TO CONTROLLER	FDL20210
001946I	9E21			2022		OCR	R2,R1	COMMAND	FDL20220
001948I	9D23			2023	WLHL	SSR	R2,R3	SENSE STATUS	FDL20230
00194AI	2081			2024		BTBS	8,1	WAIT FOR BUSY NOT	FDL20240
00194CI	C870	007E		2025		LHI	R7,126	LOAD LOOP COUNT	FDL20250
001950I	D825	0000		2026	WLHL1	WH	R2,0(R5)	WRITE 2 BYTES	FDL20260
001954I	2652			2027		AIS	R5,2	BUMP	FDL20270

001956I	2772		2028	SIS	R7,2	DECREMENT	FDL20280	
001958I	2214		2029	BNMS	WLHL1	DONE??	FDL20290	
00195AI	0565		2030	CLAR	R6,R5	DONE??	FDL20300	
*00195CI	228A		2031	BNC	WLHL	NO, LOOP	FDL20310	
00195EI	9D23		2032	SSR	R2,R3	SENSE STATUS	FDL20320	
*00196OI	2154		2033	BTC	5,WBERR	WRITE ERROR	FDL20330	
001962I	41D0	FF9E =001904I	2034	BAL	RD,STOP	STOP	FDL20340	
001966I	030E		2035	BR	RE	RETURN	FDL20350	
001968I	C500	0005	2036	WBERR	CLHI	RO,X'05'	FDL20360	
00196CI	43B0	800E =00197EI	2037	BFC	11,WBERR1	YES, HARD	FDL20370	
00197OI	2601		2038	AIS	RO,1	INCREMENT COUNT	FDL20380	
001972I	D370	E7B6 =00012CI	2039	LB	R7,FLG16	LOAD FLAG	FDL20390	
001976I	5857	E81A =000194I	2040	LDA	R5,R5SAV(R7)	RESTORE R5	FDL20400	
00197AI	4300	8020 =00199EI	2041	B	WRLRN1	CONTINUE	FDL20410	
00197EI	C540	0020	2042	WBERR1	CLHI	R4,STSAV	LRN MAX 200	FDL20420
001982I	4280	8020 =0019A6I	2043	BL	WRLRN3	DIRECTORY ERROR	FDL20430	
001986I	2480		2044	LIS	R8,0	SET OUTPUT	FDL20440	
001988I	41D0	FF78 =001904I	2045	BAL	RD,STOP	STOP	FDL20450	
00198CI	E630	80D0 =001A6OI	2046	LDAI	R3,RECMG	LOAD ADDRESS	FDL20460	
00199OI	D320	81AB =001B3FI	2047	LB	R2,RECMGSG	LOAD SIZE	FDL20470	
001994I	2480		2048	LIS	R8,0	SET OUTPUT	FDL20480	
001996I	41D0	F8E4 =00127EI	2049	BAL	RD,FINDCON	PRINT	FDL20490	
00199AI	4300	FF52 =0018FOI	2050	B	POUND	RE-START	FDL20500	
00199EI	41D0	FF62 =001904I	2051	WRLRN1	BAL	RD,STOP	STOP	FDL20510
0019A2I	4300	FF8E =001934I	2052	B	WRLRN2	CONTINUE	FDL20520	
0019A6I	41D0	FF5A =001904I	2053	WRLRN3	BAL	RD,STOP	STOP	FDL20530
0019AAI	E630	80CE =001A7CI	2054	LDAI	R3,DIRER	LOAD ADDRESS	FDL20540	
0019AEI	D320	818E =001B4OI	2055	LB	R2,DIRERS	LOAD SIZE	FDL20550	
0019B2I	2480		2056	LIS	R8,0	SET OUTPUT	FDL20560	
0019B4I	41D0	F8C6 =00127EI	2057	BAL	RD,FINDCON	PRINT	FDL20570	
0019B8I	4300	FF34 =0018FOI	2058	B	POUND	RE-START	FDL20580	
0019BCI	454F	4420	2059	EODERR	DC	C'EOD'	FDL20590	
0019COI	454F	5620 4E4F 5420	2060	EOVRTNM	DC	C'EOV NOT FOUND'	FDL20600	
0019C8I	464F	554E 4420						
0019CEI	4C4F	5720 3E20 4849	2061	LGHMSG	DC	C'LOW > HIGH ERROR'	FDL20610	
0019D6I	4748	2045 5252 4F52						
0019DEI	4449	534B 4554 5445	2062	TBIGMSG	DC	C'DISKETTE FULL'	FDL20620	
0019E6I	2046	554C 4C20						
0019ECI	4449	5245 4354 4F52	2063	EODMSG	DC	C'DIRECTORY FULL'	FDL20630	
0019F4I	5920	4655 4C4C						
0019FAI	454F	4A20	2064	EOJMSG	DC	C'E0J'	FDL20640	
0019FEI	4445	4645 4354 4956	2065	MEDMSG	DC	C'DEFECTIVE MEDIA'	FDL20650	
001A06I	4520	4D45 4449 4120						
001A0EI	494C	4C45 4741 4C20	2066	ILLMSG	DC	C'ILLEGAL INSTRUCTION'	FDL20660	
001A16I	494E	5354 5255 4354						
001A1EI	494F	4E20						
001A22I	4D41	4348 494E 4520	2067	MMFMSG	DC	C'MACHINE MALFUNCTION'	FDL20670	
001A2AI	4D41	4C46 554E 4354						
001A32I	494F	4E20						
001A36I	4449	5245 4354 4F52	2068	RDEMSG	DC	C'DIRECTORY READ ERROR ON DRIVE X'	FDL20680	
001A3EI	5920	5245 4144 2045						
001A46I	5252	4F52 204F 4E20						
001A4EI	4452	4956 4520 5820						
001A56I	5245	4144 2045 5252	2069	RDLMSG	DC	C'READ ERROR'	FDL20690	
001A5EI	4F52							

001A60I	5752 4954 4520 4552	2070	RECMSG	DC	C*WRITE ERROR ON OUTPUT DRIVE*	FDL20700
001A68I	524F 5220 4F4E 204F					
001A70I	5554 5055 5420 4452					
001A78I	4956 4520					
001A7CI	4552 524F 5220 4F4E	2071	DIRER	DC	C*ERROR ON DIRECTORY UPDATE*	FDL20710
001A84I	2044 4952 4543 544F					
001A8CI	5259 2055 5044 4154					
001A94I	4520					
001A96I	492F 4F20 4552 524F	2072	LSERRM	DC	C*I/O ERROR ON LOAD*	FDL20720
001A9EI	5220 4F4E 204C 4F41					
001AA6I	4420					
001AA8I	4154 5445 4D50 5420	2073	LERRM	DC	C*ATTEMPT TO OVERLOAD FDLG*	FDL20730
001AB0I	544F 204F 5645 524C					
001AB8I	4F41 4420 4644 4C47					
001AC0I	454F 5620	2074	EOVM	DC	C*EOV*	FDL20740
001AC4I	4644 4C47 2047 454E	2075	TITLE	DC	C*FDLG GENERATOR R01*	FDL20750
001ACCI	4552 4154 4F52 2052					
001AD4I	3031					
001AD6I	4644 4C47 204C 4F41	2076	FOXS	DC	C*FDLG LOADER R01*	FDL20760
001ADEI	4445 5220 5230 3120					
001AE6I	5245 4C4F 4341 5449	2077	RPMSG	DC	C*RELOCATION/PROTECTION INTERRUPT*	FDL20770
001AEEI	4F4E 2F50 524F 5445					
001AF6I	4354 494F 4E20 494E					
001AFEI	5445 5252 5550 5420					
001B06I	424F 554E 4441 5259	2078	BNDYMSG	DC	C*BOUNDARY VIOLATION*	FDL20780
001B0EI	2C56 494F 4C41 5449					
001B16I	4F4E					
001B18I	5359 5354 454D 2051	2079	SYSQMSG	DC	C*SYSTEM Q INTERRUPT*	FDL20790
001B20I	2049 4E54 4552 5255					
001B28I	5054					
001B2AI	5356 4320 4552 524F	2080	SVCMSG	DC	C*SVC ERROR*	FDL20800
001B32I	5220					
001B34I	0C	2081	TOF	DB	X*C*	FDL20810
001B35I	0C	2082	CHKERRS	DB	12	FDL20820
001B36I	26	2083	GOTMSG	DB	38	FDL20830
001B37I	0E	2084	EOVRTNMS	DB	14	FDL20840
001B38I	10	2085	LGHMSG	DB	16	FDL20850
001B39I	0D	2086	TBIGMSG	DB	13	FDL20860
	0000 1B37I	2087	EODMSG	EQU	EOVRTNMS	FDL20870
001B3AI	03	2088	EOJMSG	DB	3	FDL20880
001B3BI	0F	2089	MEDMSG	DB	15	FDL20890
001B3CI	13	2090	ILLMSG	DB	19	FDL20900
	0000 1B3CI	2091	MMFMSG	EQU	ILLMSG	FDL20910
001B3DI	1F	2092	RDEMMSG	DB	31	FDL20920
001B3EI	0A	2093	RDLMSG	DB	10	FDL20930
001B3FI	1B	2094	RECMSG	DB	27	FDL20940
001B40I	19	2095	DIRERS	DB	25	FDL20950
001B41I	11	2096	LSERRMS	DB	17	FDL20960
001B42I	18	2097	LERRMS	DB	24	FDL20970
	0000 1B3AI	2098	EOVMS	EQU	EOJMSG	FDL20980
	0000 1B3DI	2099	RPMSG	EQU	RDEMMSG	FDL20990
001B43I	12	2100	BNDYMSG	DB	18	FDL21000
	0000 1B43I	2101	SYSQMSG	EQU	BNDYMSG	FDL21010
	0000 1B43I	2102	TITLES	EQU	SYSQMSG	FDL21020
001B44I	09	2103	SVCMSG	DB	9	FDL21030



001B45I	0000 1B3AI	2104	EODERRS	EQU	EOJMSG5
	00	2105		DB	0
	0000 1B45I	2106	LNZB	EQU	*-1
001B48I		2107		ALIGN	4
001B48I		2108	PSWSAVA	DS	8
001B50I		2109	REGSAVA	DS	512
001D50I		2110		END	

FDL21040  
FDL21050  
FDL21060  
FDL21070  
FDL21080  
FDL21090  
FDL21100





D516B	0000	05D2I	434	439*					
D516C	0000	05F8I	440	445*					
D516D	0000	05FEI	446	451*					
D516E	0000	0614I	452	457*					
D516F	0000	0626I	458	462*					
D6	0000	0E8AI	1146	1150*					
D7	0000	0FE4I	1151	1248*					
D8	0000	0FA6I	1149	1158*					
D9	0000	0EB2I	1162*	1249					
DERPT	0000	0344I	194	238*	387				
DEVTP	0000	0010I	39*	796	811	1450			
DIRER	0000	1A7CI	2054	2071*					
DIRERS	0000	1B40I	2055	2095*					
DIRP	0000	0174I	86*	320	382	384	388	1036	1048
DISPLD	0000	027AI	134	176*					
DRI	0000	0178I	88*	1482	1893	1963	1968	1973	1978
DRO	0000	0176I	87*	1479	1888	1955	1970	1975	1980
DUPE	0000	0DBEI	853	1086*					
ECHOCOM	0000	0A34I	805	808*					
ENDAD	0000	09A7I	28	637	759*				
ENDDIR	0000	001F	31*	1007	1019	1227	1380	1543	
EOD	0000	1200I	1008	1032	1407*	1827			
EOD1	0000	16DCI	1808	1823*					
EODERR	0000	19BCI	460	496	2059*				
EODERRS	0000	1B3AI	459	495	2104*				
EODMSG	0000	19ECI	1408	2063*					
EODMSGS	0000	1B37I	1409	2087*					
EODPT	0000	033CI	236*	363	372				
EODPTA	0000	04D6I	351	366*					
EOJ	0000	1212I	1053	1105	1244	1403	1412*	1444	1524
EOJMSG	0000	19FAI	430	466	1413	2064*			
EOJMSGS	0000	1B3AI	429	465	1414	2088*	2098	2104	
EOV	0000	1228I	1418*	1443					
EOV1	0000	16C8I	1810	1816*	1825				
EOVDIS	0000	0354I	136	242*					
EOVEX	0000	16CCI	1818*	1822					
EOVM	0000	1AC0I	436	472	1418	2074*			
EOVMS	0000	1B3AI	435	471	1419	2098*			
EOVPT	0000	035CI	244*	361	365	501	502		
EOVPTA	0000	04BEI	350	359*					
EOVRTNM	0000	19C0I	454	490	1055	2060*			
EOVRTNMS	0000	1B37I	453	489	1054	2084*	2087		
ERR27	0000	0B3EI	888	895*					
ERRRDP	0000	034CI	201	223	240*	345	357		
F32	0000	0130I	60*	125	140	228			
F516	0000	012FI	59*	124	225	248	390		
FC0	0000	12B6I	1447*	1449					
FC1	0000	129CI	1452	1455*					
FC2	0000	12A6I	1456	1459*					
FC3	0000	12AAI	1461*	1468					
FC4	0000	12BOI	1460	1463*					
FC5	0000	12BAI	1464	1467*					
FD1	0000	12EAI	1478	1482*					
FFORM	0000	0146I	77*	865	1937				
FIND	0000	123AI	855	1423*					





MEDMSG	0000	1B3BI	1513	2089*													
MM32	0000	1494I	1624	1629*													
MMFMSG	0000	1A22I	1635	2067*													
MMFMSG	0000	1B3CI	1634	2091*													
NCPDRP	0000	018CI	98*	1162	1172	1206	1216	1258	1338	1522							
NEW32	0000	14D2I	1630	1648*													
NEXTI	0000	0166I	79*	1128	1245												
NOECHO	0000	0A5EI	803	818	822	825*											
NOLP	0000	0470I	330	334*													
NSLRN	0000	0180I	92*	973	978	1075	1300	1364									
NSLRNA	0000	0182I	93*	980	992	1021	1037	1332	1345	1370	1379	1523					
CKIN	0000	0BD2I	947*	950													
P06	0000	0138I	70*	1909													
P32	0000	020AI	141*	163	468	474	480	486	492	498							
P516	0000	0364I	138	246*													
P516A	0000	039AI	258*	278	280												
P516B	0000	03D0I	272	274	279*												
P516C	0000	0378I	252*	270	432	438	444	450	456	462							
P516D	0000	03A0I	263	265*													
PACK	0000	1594I	1093	1282	1437	1669	1684	1705*	1902	1908	1914	1922					
PA02	0000	15ECI	1736*	1740													
PA03	0000	15F8I	1732	1735	1741*												
PA04	0000	16C0I	1723	1744*													
PA05	0000	15CAI	1724*	1742	1757												
PASAD	0000	0012I	41*	174	407	798	806	823	1715	1721	1724	1730	1744				
PASCHK	0000	0562I	400	402	407*												
PASECHO	0000	0A2CI	798	802	806*												
PASL2	0000	0131I	61*	1716													
PASLA	0000	12C4I	1453	1465	1471*												
PASLAI	0000	09FCI	788*	1472													
PASLAO	0000	15ACI	143	146	415	467	473	479	485	491	497	1471	1715*				
PASRD	0000	0133I	63*	147	824	1717											
PASREST	0000	0A56I	813	817	823*												
PASWR	0000	0132I	62*	807	1722												
PFALL	0000	14C8I	1627	1631	1644*	1647	1648										
PK1	0000	1596I	1706*	1713													
PK2	0000	15AAI	1709	1714*													
POUND	0000	18FOI	774	830	900	1058	1063	1068	1084	1411	1417	1422	1516	1643	1704		
			1779	1847	1886	1944	1992*	2050	2058								
PR1	0000	162AI	1760*	1765													
PRECMDI	0000	0172I	85*	1896													
PRECMDO	0000	0170I	84*	875	905	1487	1787	1818	1832	1852	1891	1999	2017				
PRTBUF	0000	009AI	52*	290	295	300	305	310	315	377	394	404	414	505	509		
			513	516	520	524	528	532	537	539	542	549	553	557	561		
			565	569	573	577	581	585	589	593	622						
PRTCODE	0000	0318I	210	225*	237	239	241	243	245								
PRTO	0000	1522I	364	371	378	1758*											
PSWSAVA	0000	1348I	1596	2108*													
PURETOP	0000	0000P	2110														
QMSG	0000	165AI	1775	1780*													
QUEST	0000	164AI	860	1096	1284	1289	1292	1357	1431	1440	1676	1679	1691	1694	1775*		
			1905	1911	1917	1925	1940										
RO	0000	0000	12*	123	124	125	126	127	177	178	180	181	182	183	184		
			184	185	185	187	188	191	193	193	209	224	232	232	233		
			236	238	240	242	244	247	248	256	257	259	260	283	285		

		323	324	427	433	439	445	451	457	463	469	475	481	487
		493	595	597	599	601	607	609	611	613	615	617	761	762
		1445	1448	1552	1553	1557	1558	1581	1582	1583	1584	1585	1586	1587
		1588	1589	1590	1591	1592	1593	1594	1595	1596	1597	1598	1599	1600
		1601	1602	1603	1629	1632	1633	1638	1639	1640	1641	1641	1644	1645
		1646	1649	1650	1781	1823	1824	1824	1828	1828	1829	1831	1840	1841
		1841	1848	1871	1873	2013	2036	2038						
P1	0000 0001	13*	114	116	118	120	131	132	148	150	152	153	170	173
		174	178	183	233	257	259	260	261	262	264	265	267	269
		271	273	277	324	595	597	606	609	610	613	614	617	632
		641	643	647	654	655	659	660	664	665	668	670	674	678
		684	685	697	699	701	703	707	711	712	719	720	728	729
		731	733	737	741	742	749	750	760	762	763	765	767	768
		788	790	791	793	795	804	806	807	808	810	819	821	823
		824	861	865	875	877	880	903	905	907	909	910	911	912
		915	916	918	920	926	928	930	932	934	936	938	940	942
		944	946	948	949	1111	1445	1447	1448	1487	1489	1493	1547	1548
		1548	1550	1551	1555	1556	1622	1623	1623	1625	1626	1633	1639	1646
		1706	1708	1708	1711	1715	1716	1717	1718	1719	1721	1722	1724	1725
		1727	1730	1731	1733	1736	1738	1744	1745	1748	1749	1752	1753	1756
		1758	1759	1760	1762	1767	1769	1771	1773	1787	1789	1792	1818	1832
		1852	1854	1857	1887	1890	1891	1892	1895	1896	1918	1919	1934	1935
		1937	1945	1946	1948	1953	1954	1955	1957	1959	1962	1963	1964	1965
		1967	1968	1969	1970	1972	1973	1974	1975	1977	1978	1979	1980	1986
		1987	1999	2001	2003	2004	2017	2019	2022					
P2	0000 0002	14*	115	116	119	120	132	133	135	136	136	139	140	142
		145	150	152	153	154	155	157	159	161	162	164	166	170
		182	250	253	285	362	363	376	393	397	398	403	407	408
		413	429	435	441	447	453	459	465	471	477	483	489	495
		603	633	634	635	654	659	665	666	677	678	683	684	698
		699	710	711	718	719	722	729	740	741	748	749	763	765
		767	768	769	770	772	773	775	775	776	780	781	786	793
		795	810	825	826	828	829	831	836	837	842	845	846	848
		850	852	854	856	858	876	877	878	879	880	881	884	887
		896	902	903	906	907	908	909	911	912	922	988	988	1054
		1059	1064	1080	1086	1088	1089	1092	1275	1276	1279	1281	1328	1328
		1409	1414	1419	1423	1425	1426	1436	1488	1489	1491	1492	1493	1494
		1496	1500	1513	1618	1634	1652	1655	1658	1661	1664	1666	1668	1670
		1682	1683	1685	1700	1700	1706	1712	1729	1741	1741	1764	1776	1788
		1789	1790	1791	1792	1796	1798	1802	1844	1853	1854	1855	1856	1857
		1858	1861	1867	1883	1888	1889	1890	1893	1894	1895	1898	1901	1907
		1913	1918	1921	1931	1934	1942	1945	1950	1989	1993	2000	2001	2002
		2003	2004	2018	2019	2020	2021	2022	2023	2026	2032	2047	2055	
P3	0000 0003	15*	141	144	147	148	195	195	249	252	255	256	359	360
		360	363	366	367	367	370	373	374	374	377	390	391	391
		394	398	399	401	404	408	409	411	414	430	436	442	448
		454	460	466	472	478	484	490	496	601	602	641	647	655
		660	668	674	679	680	681	682	685	701	707	712	714	715
		716	717	720	731	737	742	744	745	746	747	750	764	778
		780	783	784	792	833	836	839	840	862	865	866	872	873
		889	897	920	921	955	959	959	976	977	979	982	984	986
		990	991	1055	1060	1065	1081	1104	1104	1107	1110	1110	1111	1141
		1143	1143	1275	1277	1291	1296	1296	1325	1326	1330	1331	1333	1408
		1413	1418	1426	1427	1429	1442	1442	1494	1500	1501	1512	1592	1604
		1605	1606	1607	1608	1609	1610	1614	1619	1635	1653	1656	1659	1662



			1670	1671	1675	1678	1685	1685	1590	1693	1698	1702	1703	1727	1728
			1762	1763	1766	1769	1770	1773	1775	1796	1802	1807	1809	1809	1811
			1817	1843	1858	1867	1882	1899	1933	1937	1938	1938	1939	1941	1983
			1992	2023	2032	2046	2054								
R4	0000 0004		16*	149	168	172	173	219	246	276	277	279	281	283	288
			289	290	291	293	294	295	296	298	299	300	301	303	304
			305	306	308	309	310	311	313	314	315	316	319	320	326
			329	346	347	349	349	382	383	384	385	388	599	607	611
			615	626	630	631	664	687	688	688	691	693	697	723	728
			796	797	799	801	808	811	812	814	816	819	863	868	873
			874	879	889	893	918	925	928	929	932	933	936	972	973
			978	979	980	983	984	992	995	998	1009	1010	1018	1019	1021
			1022	1023	1025	1027	1028	1031	1037	1042	1048	1051	1071	1074	1075
			1103	1115	1116	1120	1147	1152	1153	1156	1160	1169	1172	1179	1203
			1206	1207	1223	1226	1227	1231	1239	1263	1266	1302	1303	1306	1307
			1312	1313	1318	1319	1320	1332	1333	1334	1335	1338	1345	1347	1362
			1364	1388	1401	1479	1480	1482	1483	1486	1492	1504	1507	1509	1511
			1521	1522	1523	1525	1527	1531	1535	1538	1541	1542	1543	1611	1614
			1615	1718	1719	1725	1731	1733	1734	1736	1738	1739	1745	1747	1748
			1749	1751	1752	1753	1755	1756	1760	1767	1771	1783	1791	1816	1821
			1834	1838	1856	2007	2021	2042							
R5	0000 0005		17*	203	205	216	329	331	332	334	335	636	643	644	645
			650	651	652	653	662	670	671	672	695	703	704	705	724
			725	726	733	734	735	864	881	884	887	926	930	934	964
			964	966	968	968	970	971	972	993	994	995	996	1001	1003
			1004	1013	1015	1017	1022	1024	1025	1026	1028	1030	1031	1033	1038
			1044	1070	1089	1090	1094	1095	1100	1106	1113	1122	1124	1125	1146
			1145	1147	1159	1160	1161	1162	1164	1165	1166	1181	1183	1192	1198
			1201	1210	1215	1217	1218	1221	1222	1242	1243	1245	1246	1248	1283
			1283	1286	1287	1288	1293	1294	1298	1298	1299	1311	1312	1322	1324
			1343	1349	1356	1359	1360	1368	1369	1371	1374	1375	1377	1395	1397
			1398	1404	1438	1439	1496	1497	1498	1526	1527	1528	1529	1612	1680
			1695	1696	1698	1705	1710	1711	1798	1799	1800	1804	1807	1813	1821
			1850	1861	1862	1865	1876	1903	1904	1909	1910	1915	1916	1923	1924
			1926	1927	1928	1929	2008	2015	2026	2027	2030	2040			
R5SAV	0000 0194I		104*	1850	1876	2015	2040								
R6	0000 0006		18*	204	211	212	214	637	638	639	645	663	672	696	705
			727	735	883	885	1039	1045	1119	1125	1126	1128	1182	1187	1188
			1190	1211	1214	1215	1216	1217	1220	1221	1222	1316	1317	1320	1323
			1324	1325	1339	1340	1341	1344	1350	1358	1359	1360	1367	1369	1370
			1371	1379	1380	1384	1385	1386	1391	1392	1393	1396	1397	1398	1405
			1498	1613	1800	1805	1865	2009	2030						
R7	0000 0007		19*	690	694	752	752	981	982	983	1043	1044	1045	1131	1132
			1133	1134	1135	1138	1139	1176	1177	1177	1180	1181	1182	1195	1196
			1196	1209	1210	1211	1234	1235	1236	1250	1251	1251	1253	1254	1321
			1322	1323	1348	1349	1350	1667	1672	1673	1673	1680	1687	1688	1689
			1695	1696	1806	1849	1850	1860	1863	1875	1876	2014	2015	2025	2028
			2039	2040											
R8	0000 0008		20*	190	340	898	905	951	952	953	957	1040	1046	1056	1061
			1066	1082	1097	1102	1137	1163	1173	1204	1208	1241	1261	1265	1285
			1342	1407	1415	1420	1432	1434	1438	1453	1457	1461	1465	1469	1477
			1477	1487	1504	1514	1517	1636	1777	1786	1787	1818	1832	1845	1852
			1884	1990	1994	1996	1999	2012	2044	2048	2056				
R9	0000 0009		21*	198	200	200	202	203	204	220	222	222	225	226	226
			228	229	229	341	343	343	353	355	355	417	420	421	423







