

Internal Flags

Every line of symbolic coding is represented in condensed form by at least five words of storage. Each line is interpreted and condensed as it is read; certain portions go to low core locations and other parts are stored elsewhere. The following five words are always part of a condensed line and are always stored in low core.

<u>Symbol Designation</u>	<u>Use</u>
FI, FJ	2 words of flags
FE	Contains the assembled value of E term and the numeric equivalent of the op code.
OPC1, OPC2	2 words of BCD characters which comprise the op code.

Additional words which may be carried in a condensed line:

<u>Symbol Designation</u>	<u>Use</u>
STL	Symbol table location
ADDR	Address field data
ADDI	Additive field data
COMMENTS	BCD comments with blanks squeezed out, packed 2 characters per word. Blank spaces are coded for restoration on listable output.

Flags indicated by the bit configurations of words FI and FJ:

FI (11←0)

<u>BIT POSITIONS</u>	<u>ONE</u>	<u>ZERO</u>
11	Pseudo-op	Not a pseudo-op
10	Illegal op code	Legal op code
9	Duplicate location symbol	Acceptable location symbol

<u>BIT POSITIONS</u>	<u>PSEUDO-OPS</u>	<u>FLAG VALUE</u>	<u>TYPE OF NORMAL OPS</u>
8,7,6 ↑ ↓ 8,7,6	BLR, BSS	0	N, D, or I
	END	1	F
	EQU	2	B
	ORG	3	R
	PRG	4	Two word op code
	CON	5	No address required
	REM, SUP	6	Blank op code
	BCD, BCDR	7	Numeric op code
8,7,6	FLX, FLXR	7	Numeric op code

<u>BIT POSITIONS</u>	<u>ONE</u>	<u>ZERO</u>
5 4 3 2 }	Leading minus sign in location field	No leading minus sign in location field
	Variable address	Constant address
	Signed address	Unsigned address
	Minus sign	Plus sign
	<u>BIT ARRANGEMENT</u>	<u>INTERPRETATION</u>
1 0 }	00	No address field
	01	Octal number
	10	Decimal number
	11	Location symbol

pertain to address field

FJ (11 ← 0)

<u>BIT POSITIONS</u>	<u>ONE</u>	<u>ZERO</u>
11	Indicates the condensed line will contain a word with a symbol table location (STL)	No STL
10, 9, 8, 7, 6	Contains a number equal to the number of words of comments packed 2 characters per word.	
5	Line has illegal character (produces an x on output listing)	
} 4 3 2 }	Variable address	Constant address
	Signed address	Unsigned address
	Minus sign	Plus sign
	<u>BIT ARRANGEMENT</u>	
} 1 0 }	00	No additive field
	01	Octal number
	10	Decimal number
	11	Location symbol

Condensed Line

A condensed line is represented by:

<u>FLAG</u>	<u>STORED IN LOW CORE</u>	<u>CONTAINED IN A CONDENSED LINE</u>
FI	always	always
FJ	always	always
FE	always	always
STL	always	
OPC1	always	always
OPC2	always	always
ADDR	always	
ADDI	always	
COMMENTS	never	

TABLE A Rules for Character Correspondence

<u>Input</u>	<u>Output</u>	<u>Output</u>
<u>FLEXWRITER CHARACTER</u>	<u>FLX, FLXR</u>	<u>BCD, BCDR</u>
<u>PART I (one to one character correspondence)</u>		
A thru Z	A thru Z	A thru Z
0 thru 9	0 thru 9	0 thru 9
-	-	- (minus)
,	,	,
/	/	/
.	.	.
)))
Blank	Blank	Blank
'	'	*
=	=	=
(((
:	:	\$
+	+	+
<u>PART II (special codes)</u>		
color shift	upper case code	plus zero
double color shift	color shift	double plus zero
<u>PART III (effects of special character combinations)</u>		
,:	tab	, \$
(to terminate a field)	(terminates field)	
..	carriage return	..
(to terminate a line)	(terminates line)	

		REM	AA1.01L OSAS-A		
		REM	REVISED JANUARY 21, 1963 PJD		00010
		CON	ATS AND DGM GENERAL EDIT 10/4/62		00020
0000	0000				
0000	7101	START	JFI	1	00030
0001	0100			BEGIN	00040
0002	0000	PARAM		I/O CONFIG SET BY COMPILER	00050
0003	0000	ENDFLG		7777 END PSUEDO-OP	00060
0004	0000	LORC		CONTAINS LC OR CC	00070
0005	0000	LC		CURRENT PRG OR ORG LINE VALUE	00080
0006	0000	CC		CURRENT CON LINE VALUE	00090
0007	0000	FLEXUL		0 = LOWER CASE	00100
0010	0000	FI		1ST WORD OF FLAGS	00110
0011	0000	FJ		2ND WORD OF FLAGS	00120
0012	0000	FE		CONTENTS OF ASSEMBLED LOCATION	00130
0013	0000	STL		SYMBOL TABLE LOCATION	00140
0014	0000	OPC1		1ST PAIR OF OP-CODE CHARS	00150
0015	0000	OPC2		2ND PAIR OF OP-CODE CHARS	00160
0016	0000	ADDR		ADDRESS FIELD (BIN. OR STL)	00170
0017	0000	ADDI		ADDITIVE FIELD (BIN. OR STL)	00180
0020	0000	DELTA		ASSEMBLED LINE COUNT INCREMENT	00190
0021	0000	L1		SYMBOLIC CONTENTS	00200
0022	0000	L2		OF LOC., ADDR.,	00210
0023	0000	L3		OR ADDI. FIELDS	00220
0024	0000	L4		VALUE OF SYMBOL	00230
0025	0000	L5		2ND PASS COMMENTS FLAG	00240
0026	0000	SUPP		SUPPRESSION CODE	00250
0027	0000	PSUEDO		PSUEDO-OP INDICATOR	00260
0030	0000	LADDR		LOC. OF ADDR IN STORAGE AREA	00270
0031	0000	LFI		LOC. OF FI IN STORAGE AREA	00280
0032	0000	LFE		LOC. OF FE IN STORAGE AREA	00290
0033	0000	ICON		LOC. OF S.V. OF NEXT C.S.	00300
0034	0000	TVAR		LOC. OF 1ST CHAR. OF NEEXT V.S.	00310
0035	0000	SRD1		OUTPUT-TYPE SELECTOR	00320
0036	0000	SRD2		OUTPUT FIELD SELECTOR	00330
0037	0000	SCANEX		SCAN SUBROUTINE EXIT	00340
0040	0000	SIGMA		ADDR + ADDI	00350
0041	0000	TEMPWCT		TEMP STORAGE AREA LOC.	00360
0042	0000	FLEX		RETURN JUMP ENTRY	00370
0043	7101		JFI	1	00380
0044	3357			FLXBCD	00390
0045	0000	BCD		RETURN JUMP ENTRY	00400
0046	7101		JFI	1	00410
0047	3351			BCDFLX	00420
0050	3460	SCANR		SCAN	00430
0051	0000	CASPAS		LOC. OF SCAN ROUTINE	00440
0052	0000	WOCT		ODD = INTERMEDIATE TAPE	00450
0053	7670	CC10	-710	CURRENT STJRG AREA LOC.	00460
0054	7671	CC11	-700	LOC. OF SYMBOLIC INPUT COL. 10	00470
0055	7672	CC12	-690	LOC. OF SYMBOLIC INPUT COL. 11	00480
0056	7673	CC13	-680	LOC. OF SYMBOLIC INPUT COL. 12	00490
0057	0000	INTCON		LOC. OF SYMBOLIC INPUT COL. 13	00500
0060	0000	RELBIT		FLAG FOR INTOUT OR INTIN	00510
0061	0000	CRJCOL		1 = CURR. LINE IS RELOCATABLE	
0062	0000	INPUT		CURRENT INPUT/OUTPUT COLUMN LOCATION	
0063	0000	INTOUT		SYMBOLIC INPUT SUBR.	00530
0064	0000	INTIN		INTERMED. OUTPUT SUBR.	00540
0065	0000	LSTOUT		INTERMED. INPUT SUBR.	00550
0066	0000	BINOUT		LISTABLE OUTPUT SUBR.	00560
0067	0000	INSTOR		BINARY OUTPUT SUBR.	00570
0070	0000	TEM0		START OF STORAGE AREA	00580
				TRANSIENT STORAGE	00590

0071	0000	TEM1				00600
0072	0000	TEM2				00610
0073	0000	TEM3				00620
0074	0000	TEM4				00630
0075	0000	TEM5				00640
0076	0000	TEM6				00650
0077	0000	TEM7				00660
	0027	ECOUNT	EQU	PSUEDO	NO. OF LINES IN ERROR	00670
	0030	K1	EQU	LADDR	ERROR FLAG COUNT	00680
	0031	K2	EQU	LFI	ERROR FLAG COLUMN	00690
	0032	K3	EQU	LFE	ERROR FLAGS	00700
	0037	FRSTIM	EQU	SCANEX	1ST-WORD INDICATOR	00710
	0042	TEMPA	EQU	FLEX	TEMPORARY STORAGE	00720
	0045	TEMPB	EQU	BCD	TEMPORARY STORAGE	00730
	0100		PRG			00740
0100	7500	BEGIN	EXC	4102	SELECT PT READER	
0101	4102					
0102	7720		SLJ2	READST	OPTION TO READ IN SYMBOL TABLE	
0103	0111					
0104	0476		LDN	76	ADDRESS OF BEGIN OF VARIABLES	
0105	4034		STD	TVAR	SAVE IN ADDRESS OF END OF VARIABLES	
0106	0501		LCN	1	ADDRESS OF BEGINNING OF CONSTANTS	
0107	4033		STD	TCON	SAVE IN ADDRESS OF END OF CON TABLE.	
0110	6110		NZF	INIT	UNCONDITIONAL JUMP	
			REM		ROUTINE TO READ IN	
			REM		EXTERNAL SYMBOLS	
0111	7100		READST	JPR	RST	JUMP TO READ IN AND STORE SYMBOL TABLE
0112	3776					
0113	2002		LDD	PARAM	GET PARAMETERS	
0114	0110		LS3		MOVE DOWN INPUT BITS	
0115	0207		LPN	7	SCREEN IT OUT	
0116	6102		NZF	2	TEST FOR PAPER TAPE-	
0117	7700		HLT		STOP TO RELOAD PAPER TAPE	
			REM		SOURCE INPJT	
0120	0405	INIT	LDN	LC	ADDRESS OF CURRENT ORG/PRG VALUE	
0121	4004		STD	LORC	SAVE IN CURRENT LINE VALUE	
0122	0400		LDN	0	CLEAR A	
0123	4003		STD	ENDFLG	CLEAR END PSUEDO-OP FLAG	
0124	4006		STD	CC	SET CURRENT CONS TO 0	
0125	4051		STD	CASPAS	CLEAR INTERMEDIATE FLAG	
0126	4026		STD	SUPP	CLEAR SUPPRESSION FLAG	
0127	0501		LCN	1	LOAD 7776	
0130	4057		STD	INTCON	SET INTERMEDIATE FLAG TO-1	
0131	3222		ADF	SIMEND +3	A=0100	
0132	4005		STD	LC	SET ORG/PRG TO 100	
0133	2067		LDD	INSTOR	LOAD ADDRESS OF STORAGE AREA	
0134	4052		STD	WDCT	SAVE IN CURRENT STORAGE ADJ.	
0135	0140		SBUD		SET BUFFER BANK TO ZERO	
0136	0050		SIDD		SET DIRECT AND INDIRECT TO ZERO	
0137	0407	READ	LDN	FLEXUL	ADDRESS OF FLAG BLOCK	
0140	4077		STD	TEM7	SAVE FOR INDEXING	
0141	0400		LDN	0	CLEAR A	
0142	4177		STI	TEM7	CLEAR FLAG CELL	
0143	5477		ADD	TEM7	STEP TO NEXT	
0144	0725		SBN	L5	SUBTRACT END OF BLOCK	
0145	6504		NZB	4	JUMP UNTIL CLEARED 07 TO 25	
			REM			
0146	0101		PTA		CURRENT ADDRESS FOR RETURN	
0147	7052		JPI	INPUT	GO READ A LINE	
0150	2200	SIMEND	LDC	-79D	LOAD ADDRESS OF COLUMN 2	

0151	7660						
0152	4061	STD	CRDCOL		SAVE AS CURRENT COLUMN		
0153	0101	PTA			CURRENT ADDRESS FOR RETURN		
0154	7050	JPI	SCANR		JUMP TO SCAN LABEL FIELD		
		REM					
0155	4070	STD	TEM0		SAVE TYPE FLAG		
0156	0714	SBN	14		CHECK FOR MINUS SIGN		
0157	6303	NJF	3		JUMP IF NO		
0160	0440	LDN	40		YES, SO BRING IN SPECIAL BIT		
0161	5010	RAD	FI		AND PUT INTO FLAG WORD		
		REM					
0162	2070	LDD	TEM0		LOAD FLAG WORD AGAIN		
0163	0203	LPN	3		SCREEN OUT TYPE BITS		
0164	6000	ZJF	SCNOP		TEST FOR BLANK FIELD		
		REM					
0165	7100	JPR	SEARCH		NO, SO SEARCH SYMBOL TABLE		
0166	3720						
		REM					
0167	6021	ZJF	SSYM		JUMP, IF NOT FOUND		
0170	4013	STD	STL		FOUND, SAVE IN S.T. LOCATION		
0171	2104	LDI	LORC		LOAD CURRENT LINE VALUE		
0172	0021	SIC1			CHANGE TO INSERT VALUE		
0173	4134	STI	TVAR		STORE CURRENT VALUE IN TEMP		
0174	2513	LCI	STL		LOAD COMPL. OF VALUE OF SYMBOL FOUND		
0175	6106	NZF	6		JUMP IF NOT 7777, IE IF ALREADY USED		
0176	2134	LDI	TVAR		WAS 777, OR NOT YET USED AS A LABEL		
0177	4113	STI	STL		SO STORE IN CURRENT AS VALUE		
		REM			(THIS IS WHEN FIRST FOUND IN ADD FIELDS)		
0200	0020	SIC0			RESTORE INDIRECT		
0201	6015	ZJF	SSYM	+6	UNCONDITIONAL		
0202	6114	NZF	SSYM	+6	JUMP TO NEXT		
		REM			*** DUPLICATE LABELS****		
0203	0020	SIC0			RESTORE INDIRECT		
0204	0410	LDN	10		A = 10		
0205	0111	LS6			A = 1000, FLAG FOR DUPLICATE		
0206	5010	RAD	FI		SET DUPLICATE LABEL FLAG		
0207	6107	NZF	SSYM	+6	UNCONDITIONAL		
		REM					
		REM					
0210	2104	SSYM	LDI	LORC	LOAD CURRENT LINE VALUE		
0211	7100	JPR	STSY		AND GO TRANSFER SYMBOL		
0212	3752						
		REM			INTO TABLE.		
0213	2034	LDD	TVAR		LOAD ADDRESS OF NEXT		
0214	0701	SBN	1		BACKUP TO LAST VALUE		
0215	4013	STD	STL		AND SAVE AS CURRENT STL		
0216	0440	LDN	40		A = 40		
0217	0111	LS6			A = 4000, OR		
0220	5011	RAD	FJ		INSERT IN FLAG WORD		
		REM					
0221	0406	SCNOP	LDN	6			
0222	5061	RAD	CRDCOL		MOVE CURRENT COLUMN TO		
0223	7100	JPR	SOPT		JUMP TO TRANSLATE OP CODE		
0224	2223						
0225	0410	LDN	FI			01610	
0226	4042	STD	TEMPA			01620	
0227	0416	LDN	ADDR			01630	
0230	4045	STD	TEMPB			01640	
0231	0101	SCNAD	PTA		RETURN ADDRESS FOR EXIT		
0232	7050	JPI	SCANR		SCAN FIELD		01660

0233	5142		RAI	TEMPA		01670
0234	0203		LPN	3		01680
0235	0303		LSN	3		01690
0236	6112		NZF	STAD	-1	01700
0237	7100		JFI	0		01710
0240	3720			SEARCH		01720
0241	6110		NZF	STAD		01730
0242	0500		LCN	0		01740
0243	7100		JFI	0		01750
0244	3752			STSY		01760
0245	2034		LDD	TVAR		01770
0246	0701		SBN	1		01780
0247	6102		NZF	STAD		01790
0250	2024		LDD	L4		01800
0251	4145	STAD	STI	TEMPB		01810
0252	5461		AOD	CRDCOL		01820
0253	5442		AOD	TEMPA		01830
0254	5445		AOD	TEMPB		01840
0255	0720		SBN	DELTA		01850
0256	6525		NZB	SCNAO		01860
0257	7100		JFI	0		01870
0260	3053			ADSUM	COMPUTE ADJR + ADDI	01880
0261	2427		LCD	PSUEDO		01890
0262	6205		PJF	WICHPS	JP IF PSUEDO-OP	01900
0263	2011	STLQ	LDD	FJ		01910
0264	6221		PJF	LERAY	JP IF NO STL	01920
0265	0021			21	SET INDIRECT BANK	01930
0266	6341		NJF	LORCQ		01940
0267	0707	WICHPS	SBN	7		01950
0270	6016		ZJF	KON		01960
0271	0701		SBN	1		01970
0272	6015		ZJF	PROG		01980
0273	0701		SBN	1		01990
0274	6016		ZJF	ORIG		02000
0275	0701		SBN	1		02010
0275	6513		NZB	STLQ		02020
0277	2040	QUE	LDD	SIGMA		02030
0300	4012		STD	FE		02040
0301	0021			21		02050
0302	4113		STI	STL		02060
0303	2060		LDD	RELBIT		02070
0304	6025		ZJF	KPOA		02080
0305	6255	LERAY	PJF	KBNKO	CONTINUE	02090
0306	0501	KON	ADN	1		02100
0307	0605	PROG	ADN	LC		02110
0310	4004		STD	LORC		02120
0311	6105		NZF	ORIGA		02130
0312	0405	ORIG	LDD	LC		02140
0313	4004		STD	LORC		02150
0314	0400		LDD	0	SETS ORG-PRG COUNTER TO 0 FOR ORG WITH BLANK ADDRESS AND ADDITIVE FIELD	02160
			REM			02170
0315	4104		STI	LORC		02180
0316	2070	ORIGA	LDD	TEM0		02190
0317	6003		ZJF	KPO	JP IN UNSPECIFIED DEFINED OR NOT	02200
0320	2040		LDD	SIGMA		02210
0321	4104		STI	LORC		02220
0322	2104	KPO	LDD	LORC		02230
0323	4104		STI	LORC		02240
0324	4012		STD	FE		02250
0325	0021			21	SET INDIRECT BANK	02260

0326	4113		STI	STL		02270
0327	2004	LORCQ	LDD	LORC		02280
0330	0706		SBN	CC		02290
0331	6131		NZF	RBNK0	JP IF NOT	02300
0332	2013	KPOA	LDD	STL		02310
0333	6027		ZJF	RBNK0	JP IF NO STL	02320
			REM		MOVE CMN 7/27/61	02330
0334	0704	MVSY	SBN	4	OPEN SUBROJTINE	02340
0335	4077		STD	77	77 HAS LOC IN VAR STORE	02350
0336	2033		LDD	TCON		02360
0337	3434		SBD	TVAR		02370
0340	0703		SBN	3		02380
0341	6102		NZF	2		02390
0342	0000		ERR		FULL SYMBOL TABLE	02400
0343	0504		LCN	4		02410
0344	5033		RAD	TCON		02420
0345	4076		STD	76	76 HAS LOC IN CON STORE	02430
0346	5476	AMVSY	ADD	76	MOVE ONE WORD FROM	02440
0347	5477		ADD	77		02450
0350	2177		LDI	77		02460
0351	4176		STI	76	VAR TO CON	02470
0352	0400		LDN	0		02480
0353	4177		STI	77	ZERO VAR	02490
0354	4603		SRF	MVSWCH		02500
0355	6607		PJB	AMVSY		02510
0356	6302		NJF	2		02520
0357	4210	MVSWCH		4210		02530
0360	2076		LDD	76		02540
0361	4177		STI	77		02550
0362	0020	RBNK0		20	RESET INDIRECT BANK	02560
					PRESERVE LOCATIONS	
0363	2052		LDD	WDCT		02570
0364	4031		STD	LFI		02580
0365	4030		STD	LADDR		02590
0366	0601		ADN	1		02600
0367	4076		STD	TEM6		02610
0370	0601		ADN	1		02620
0371	4032		STD	LFE		02630
0372	2010		LDD	FI		02640
0373	0203		LPN	3		02650
0374	6006		ZJF	RBNK01		02660
0375	2011		LDD	FJ		02670
0376	0102			102		02680
0377	0201		LPN	1		02690
0400	0605		ADN	5		02700
0401	5030		RAD	LADDR		02710
0402	7100	RBNK01	JFI	0		02720
0403	3212			MOVE		02730
0404	2052		LDD	WDCT	ROUTINE	02740
0405	4077		STD	TEM7	TO	02750
0406	0701		SBN	1	PACK	02760
0407	4052		STD	WDCT	COMMENTS	02770
0410	0553		LCN	63	CHARACTERS	02780
0411	4061		STD	CRDCOL	INTO	02790
0412	0501	PAKA	LCN	1	STORAGE	02800
					AREA	
0413	4072		STD	TEM2		02810
0414	0471		LDN	TEM1		02820
0415	4074	PAKB	STD	TEM4		02830
0416	5401		ADD	CRDCOL		02840
0417	6037		ZJF	PAKDUN	JP IF CARD DONE	02850
0420	2161		LDI	CRDCOL		02860

0421	4174		STI	TEM4		02870
0422	0720		SDN	ZU		02880
0423	6104		NZF	PAKAWY	JP IF CHAR NON-BLANK	02890
0424	5472		AOD	TEM2		02900
0425	0473		LUN	TEM3		02910
0426	5511		NZB	PAKB		02920
0427	0471	PAKAWY	LUN	TEM1		02930
0430	4075		STD	TEM5		02940
0431	2072		LDD	TEM2		02950
0432	6105		NZF	5		02960
0433	4071		STD	TEM1		02970
0434	2073		LDD	TEM3		02980
0435	4072		STD	TEM2		02990
0436	6102		NZF	2		03000
0437	5474		AOD	TEM4		03010
0440	4600		SXF	0		03020
0441	5252	PAIR		5252		03030
0442	6311		NJF	PAKD		03040
0443	5452		AOD	WDCT		03050
0444	2175		LDI	TEM5		03060
0445	0111			111	LS6	03070
0446	4152	PAKC	STI	WDCT		03080
0447	5475		AOD	TEM5		03090
0450	3474		SBD	TEM4		03100
0451	6511		NZB	PAIR	-1	03110
0452	6440		ZJB	PAKA	JP TO GET NEXT CHAR	03120
0453	2175	PAKD	LDI	TEM5		03130
0454	1552		LSI	WDCT		03140
0455	6507		NZB	PAKC		03150
0456	4715	PAKDUN	SRB	PAIR		03160
0457	5501		PJB	1		03170
0460	5452		AOD	WDCT		03180
0461	3477		SBD	TEM7		03190
0462	0111			111	LS6	03200
0463	5175		RAI	TEM6	INSERT CHAR WORD COUNT INTO FJ	03210
0464	2010		LDD	FI		03220
0465	5303		NJF	TESPSU	JP IF PSUEDO-OP	03230
0466	7101		JFI	1		03240
0467	0732			NONPS		03250
0470	2427	TESPSU	LDD	PSUEDO		03260
0471	3367		ADB	RBNK01		03270
0472	4201		STF	1		03280
0473	7100		JFI		PSUEDO-OP FORK	03290
0474	0511		DX	BCD		03300
0475	0511		DX	FLX		03310
0476	1001		MER	TTY		03320
0477	0770		PUS	SUP		03330
0500	0753		KNB	BNK		03340
0501	1001		MER	REM		03350
0502	1001		MER	CON		03360
0503	1001		MER	PRG		03370
0504	1001		MER	ORG		03380
0505	1001		MER	EQU		03390
0506	0745		DNE	END		03400
0507	0741		SSB	BSS		03410
0510	0741		SSB		3LR	03420
		REM			DCB AND XLF	03430
0511	0201	DX	LPN	1		03440
0512	3202		ADF	LDNZER		03450
0513	4221		STF	CODE		03460

0514	0400	LDNZR	LDN	0		03470
0515	4007		STD	FLEXJL		03480
0516	4152		STI	WDCT		03490
0517	2030		LDD	LADDR		03500
0520	3432		SBD	LFE		03510
0521	6305		NJF	EQUZER		03520
0522	2130		LDI	LADDR		03530
0523	6003		ZJF	EQUZER		03540
0524	2530		LCI	LADDR		03550
0525	6102		NZF	2		03560
0526	0501	EQUZER	LDN	1		03570
0527	4071		STD	TEM1		03580
0530	0552		LDN	500		03590
0531	4070		STD	TEM0		03600
0532	2052		LDD	WDCT		03610
0533	4072		STD	TEM2	STORAGE START ADDRESS.	03620
0534	0000	CODE		0	XLF OR DCB.	03630
0535	6044		ZJF	TOFLEX		03640
0536	2170		LDI	TEM0		03650
0537	7101		JFI	1		03660
0540	0640			CONRET		03670
0541	0000		BLR	40		03680
0601	2170	TOFLEX	LDI	TEM0		03690
0602	4073		STD	TEM3		03700
0603	0733		SBN	33		03710
0604	6103		NZF	3		03720
0605	7101		JFI	1		03730
0606	0715			TBORCR		03740
0607	0737		SBN	37		03750
0610	6126		NZF	PRECON		03760
0611	5470	PLZERO	ADD	TEM0	UPER CASE CHAR.	03770
0612	2170		LDI	TEM0		03780
0613	0772		SBN	72	CHECK FOR DOUBLE ZERO	03790
0614	6012		ZJF	LOD2		03800
0615	0572		ADN	72		03810
0616	7100		JFI	0		03820
0617	0045			BCD		03830
0620	4073		STD	TEM3		03840
0621	0447		LDN	47		03850
0622	4007		STD	FLEXJL		03860
0623	0111		LS6			03870
0624	5073		RAD	TEM3		03880
0625	6114		NZF	CONRET +1		03890
0626	0602	LOD2	ADN	2		03900
0627	4073	STORED	STD	TEM3		03910
0630	0501		LDN	1		03920
0631	5071		RAD	TEM1		03930
0632	6107		NZF	CONRET +1		03940
0633	2073	PRECON	LDD	TEM3		03950
0634	7100		JFI	0	CONVERSION ROUTINE	03960
0635	0045			BCD	BCD TO FLEX.	03970
0636	6102		NZF	2		03980
0637	0404		LDN	4		03990
0640	4073	CONRET	STD	TEM3		04000
0641	5420		ADD	DELTA	INCREMENT CHAR. COUNT	04010
0642	2152	DXLOOP	LDI	WDCT		04020
0643	6023		ZJF	FSTCHR		04030
0644	2073		LDD	TEM3		04040
0645	0111			111	LS6	04050
0646	0277		LPN	77		04060

0647	6011		ZJF	ONECHR		04070
0650	5152		RAI	WDCT		04080
0651	2073		LDD	TEM3		04090
0652	0277		LPN	77		04100
0653	4073		STD	TEM3		04110
0654	5452		ADD	WDCT		04120
0655	0400		LCN	0		04130
0656	4152		STI	WDCT		04140
0657	6416		ZJB	DXLOOP -1		04150
0660	2073	ONECHR	LDD	TEM3		04160
0661	5152		RAI	WDCT		04170
0662	5452	CLRWDI	ADD	WDCT		04180
0663	0400		LCN	0		04190
0664	4152		STI	WDCT		04200
0665	6012		ZJF	TEST		04210
0666	2073	FSTCHR	LDD	TEM3		04220
0667	0111			111	LS6	04230
0670	0277		LPN	77		04240
0671	5003		ZJF	CONTIN		04250
0672	5420		ADD	DELTA	INCREMENT COUNTER	04260
0673	5513		NZB	ONECHR		04270
0674	2073	CONTIN	LDD	TEM3		04280
0675	0111			111	LS6	04290
0676	5152		RAI	WDCT		04300
0677	5470	TEST	ADD	TEM0		04310
0700	6005		ZJF	COLEND		04320
0701	5471		ADD	TEM1		04330
0702	5003		ZJF	3		04340
0703	7101		JFI	1		04350
0704	0534			CODE		04360
0705	2152	COLEND	LDI	WDCT		04370
0706	5002		ZJF	2		04380
0707	5452		ADD	WDCT		04390
0710	2052		LDD	WDCT		04400
0711	3472		SBD	TEM2		04410
0712	4132		STI	LFE		04420
0713	7101		JFI	1		04430
0714	4401			PATCHA		04440
0715	5470	TBORCR	ADD	TEM0	TAB OR CR TEST	04450
0716	2170		LDI	TEM0		04460
0717	0753		SBN	53		04470
0720	5007		ZJF	TAB		04480
0721	0720		SBN	20		04490
0722	5004		ZJF	CR		04500
0723	0501		LCN	1		04510
0724	5070		RAD	TEM0		04520
0725	6572		NZB	PRECON		04530
0726	0504	CR	LCN	4		04540
0727	0651	TAB	ADN	51		04550
0730	7101		JFI	1		04560
0731	0627			STORED		04570
0732	0111	NONPS		111	LS6	04580
0733	0207		LPN	7		04590
0734	0704		SBN	4		04600
0735	6002		ZJF	2		04610
0736	0501		LCN	1		04620
0737	0502		ADN	2		04630
0740	6102		NZF	SSB +1		04640
0741	2040	SSB	LDD	SIGMA		04650
0742	4020		STD	DELTA		04660

0743	5135		NZF	MER		04670
0744	6035		ZJF	MER		04680
0745	0500	DNE	LJN	0		04690
0746	4003		STD	ENDFLG		04700
0747	2040		LDD	SIGMA		04710
0750	4132		STI	LFE		04720
0751	5130		NZF	MER		04730
0752	5027		ZJF	MER		04740
0753	2156	KNB	LDI	CC13	GET	04750
0754	0710		SBN	10	BANK	04760
0755	5203		PJF	3	NUMBER	04770
0756	0610		ADN	10		04780
0757	6607		PJB	DNE	+3	04790
0760	0702		SJN	2		04800
0761	5411		ZJB	DNE	+3	04810
0762	2600	ILLOP	LCF	0		04820
0763	2000			2000	ILLEGAL OP FLAG	04830
0764	1131		LPI	LFI		04840
0765	1702			1702	LSB 02	04850
0766	4131		STI	LFI		04860
0767	5112		NZF	MER		04870
0770	2015	PUS	LDD	OPC2		04880
0771	0203		LPN	3		04890
0772	0703		SBN	3		04910
0773	5411		ZJB	ILLOP		04900
0774	5412		ZJB	ILLOP		04920
0775	4074		STD	TEM4		04930
0776	1026		LPD	SUPP		04940
0777	3474		SBD	TEM4		04950
1000	4026		STD	SUPP		04960
1001	7701	MER		7701	SLS 1, SELECTIVE STOP	04970
1002	7100		JFI	0		04980
1003	2201			TBL		04990
1004	2020		LDD	DELTA		05000
1005	5104		RAI	LORC	INCREMENT LOC. COUNTER	05010
1006	2403		LCD	ENDFLG		05020
1007	5106		NZF	INTQ		05030
1010	2051		LDD	CASPAS		05040
1011	5022		ZJF	PASS2	JP IF NO INTERMEDIATE	05050
1012	0101	NOW		101	PTA	05060
1013	0617		ADN	THEN	-NOW	05070
1014	7053		JPI	INTOUT		05080
1015	2052	INTQ	LDD	WDCT		05090
1016	0574		ADN	600		05100
1017	5212		PJF	THEN		05110
1020	3600		SBF	0		05120
1021	7516			7516		05130
1022	5307		NJF	THEN		05140
1023	5401		LDN	1		05150
1024	4051		STD	CASPAS		05160
1025	0101			101		05170
1025	7053		JPI	INTOUT		05180
1027	2067		LDD	INSTOR		05190
1030	4052		STD	WDCT		05200
1031	7101	THEN	JFI	1		05210
1032	0137			READ		05220
1033	0400	PASS2	LDN	0		05230
1034	7710			7710	SLJ1	05240
1035	1037			PASS2	+4 JP ON SW1 TO REW 1	05250
1035	5004		ZJF	4		05260

1037	7500	EXF	0			05270
1040	1151		1161	REW 1		05280
1041	7700	HLT				05290
1042	7740		7740	SLJ4		05300
1043	1045		PUST	JP ON SW4 TO PUST		05310
1044	6211	PJF	RST2P	+5		05320
1045	7100	PUST	JFI	0		05330
1046	4033		PST			05340
1047	6006	ZJF	RST2P	+5		05350
1050	4026	RST2P	STD	SUPP	ENTER HERE WITH SYMBOL TABLE AND AN INTERMEDIATE TAPE	05360
1051	0401		LDN	1		05370
1052	4051		STD	CASPAS		05380
1053	7100		JFI	0		05390
1054	3776			RST		05400
1055	2002		LDD	PARAM		05410
1056	0277		LPN	77		05420
1057	6104		NZF	4		05430
1060	2200		LDF	0		05440
1061	5252	OUTCOD		5252		05450
1062	6102		NZF	2		05460
1063	0400		LDN	0		05470
1064	4035		STD	SRD1		05480
1065	2026		LDD	SUPP		05490
1066	6014		ZJF	SETT	JP IF NO SUPPRESSIONS	05500
1067	0702		SBN	2		05510
1070	4300		STB	0		05520
1071	2310		LDB	OUTCOD		05530
1072	4035		STD	SRD1		05540
1073	2300		LDB	0		05550
1074	6306		NJF	SETT	JP IF BIN SUPPRESS	05560
1075	4435		SRD	SRD1		05570
1076	2300		LDB	0		05580
1077	6003		ZJF	SETT		05590
1100	0500		LCN	0		05600
1101	4035		STD	SRD1		05610
1102	0402	SETT	LJN	2		05620
1103	5051		RAD	CASPAS		05630
1104	0501	MOROUT	LCN	1		05640
1105	4057		STD	INTCON		05650
1106	4003		STD	ENDFLG		05660
1107	4100		STI	0	SET LINE COUNT	05670
1110	2046			LNS		05680
1111	2067		LDD	INSTOR		05690
1112	4052		STD	WDCT		05700
1113	2263		LDF	EXREG	ZERO	05710
1114	4070		STD	TEMO	BINARY	05720
1115	0400		LDN	0	CARD	05730
1116	4170		STI	TEMO	IMAGE	05740
1117	5470		ADD	TEMO		05750
1120	6503		NZB	3		05760
1121	4300		STB	0	SET FIRST TIME PRINT FLAG	05770
1122	4027		STL	ECOUNT		05780
1123	4006		STD	CC		05790
1124	0405		LJN	LC		05800
1125	4004		STD	LORC		05810
1126	2252		LDF	ENREG	-1	05820
1127	4005		STD	LC		05830
1130	0501	NOEND	LCN	1		05840
1131	4037		STD	FRSTIM	SET 1ST TIME INDICATOR	05850
1132	0400		LDN	0		05860

1133	4041	STD	TEMWCT		05870	
1134	2051	LDD	CASPAS		05880	
1135	0201	LPN	1		05890	
1135	6017	ZJF	ZRO	JP IF NO INTERMEDIATE	05900	
1137	2057	LDD	INTCON		05910	
1140	6307	NJF	RINT		05920	
1141	2052	LDD	WDCT		05930	
1142	0674	ADN	600		05940	
1143	6212	PJF	ZRO		05950	
1144	3600	SbF	0		05960	
1145	7515		7516		05970	
1146	6307	NJF	ZRO		05980	
1147	0101	RINT	101	PTA	05990	
1150	7064	JPI	INTIN		06000	
1151	7700	HLT		WAIT TO POSITION INT. TAPE	06010	
1152	6403	ZJB	3		06020	
1153	2067	LDD	INSTOR		06030	
1154	4052	STD	WDCT		06040	
1155	0407	ZRO	LDN	FLEXJL	06050	
1156	4077	STD	TEM7		06060	
1157	0400	LDN	0	ZERO	06070	
1160	4177	STI	TEM7	BLOCK	06080	
1161	5477	ADD	TEM7	OF	06090	
1162	0721	SBN	L1	LOW	06100	
1163	6504	NZB	4	CORE	06110	
1164	7100	JFI	0		06120	
1165	3212		MOVE		06130	
1165	7100	JFI	0		06140	
1167	3053		ADSUM		06150	
1170	5437	REPEAT	ADD	FRSTIM	BLANK LINE IMAGE	06160
1171	2210	LDF	ENREG		06170	
1172	0105		105	ATE	06180	
1173	1171		REPEAT +1		06190	
1174	2202	LDF	EXREG		06200	
1175	0106		106	ATX	06210	
1175	7557	EXREG	-800		06220	
1177	0420	LDN	20		06230	
1200	0100		100	BLS	06240	
1201	7516	ENREG	-177D		06250	
1202	0421	LDN	L1	BLANK	06260	
1203	4030	STD	K1	FLAG	06270	
1204	0420	LDN	20	CHARACTERS	06280	
1205	4130	STI	K1		06290	
1206	5430	ADD	K1		06300	
1207	0725	SBN	L5		06310	
1210	6504	NZB	4		06320	
1211	2011	LDD	FJ		06330	
1212	0240	LPN	40		06340	
1213	4032	STD	K3	SET ERROR FLAG (X)	06350	
1214	2010	LDD	FI		06360	
1215	0111		111	LS6	06370	
1215	0230	LPN	30	SET ERROR FLAGS (O AND M)	06380	
1217	5032	RAD	K3		06390	
1220	0220	LPN	20		06400	
1221	5154	NZF	STDFE +1	JP IF ILLEGAL OP CODE	06410	
1222	2010	LDD	FI		06420	
1223	0111		111	LS6	06430	
1224	0247	LPN	47		06440	
1225	0730	SBN	30		06450	
1225	5202	PJF	2		06460	

1227	0530		ADN	30		06470
1230	5261		ADF	TINUA		06480
1231	4203		STF	OPFORK		06490
1232	0400		LUN	0		06500
1233	4020		STD	DELTA		06510
1234	7100	OPFORK	JFI			06520
1235	1274			NDORI		06530
1236	1296			EFF		06540
1237	1255			BEE		06550
1240	1317			ARR		06560
1241	1340			TWOP		06570
1242	1305			NOAD		06580
1243	1303			BLOP		06590
1244	1274			NUMOP		06600
1245	1350			BLRSS		06610
1246	1363			NED		06620
1247	1371			EQUAL		06630
1250	1375			ROG		06640
1251	1375			RPG		06650
1252	1375			ONC		06660
1253	1452			REMARK		06670
1254	1413			BCFLTT		06680
1255	0500	BEE	LCN	0		06690
1256	4042	EFF	STD	TEMPA		06700
1257	2010		LDU	FI		06710
1260	0240		LPN	40		06720
1261	5113		NZF	NDORI		06730
1262	0420		LUN	20		06740
1263	1011		LPD	FJ		06750
1264	3010		ADD	FI		06760
1265	3200		LPN	60		06770
1266	5006		ZJF	NDORI		06780
1267	2040		LDU	SIGMA		06790
1270	3504		SBI	LORC		06800
1271	1442			1400	TEMPA LSD	06810
1272	4040		STD	SIGMA		06820
1273	6304		NJF	SERR		06830
1274	0577	NDORI	LCN	77		06840
1275	1040		LPD	SIGMA		06850
1276	5004		ZJF	BLOP	-1	06860
1277	0402	SERR	LUN	2	SET ERROR FLAG (E)	06870
1300	5032		RAD	K3		06880
1301	5104		NZF	STD:E	+1	06890
1302	2012		LDU	FE		06900
1303	1440	BLOP		1400	SIGMA	06910
1304	4012	STD:E	STD	FE		06920
1305	0400		LUN	0		06930
1306	0671		ADN	71		06940
1307	4036		STD	SRD2		06950
1310	5420		ADD	DELTA		06960
1311	7101	TINUA	JFI	1		06970
1312	1504			SETLIN	CONTINUATION	06980
1313	4000	FOURTH		4000		06990
1314	0404	FOUR04		404	LDN4 INSTRUCTION	07000
1315	0000	BITREL				07010
1316	2323	TWO323		2323		07020
1317	2010	ARR	LDU	FI		07030
1320	0240		LPN	40		07040
1321	5522		NZB	SERR		07050
1322	2504		LCI	LORC		07060

1323	5040		RAD	SIGMA		07070
1324	5530		PJB	NDORI		07080
1325	2012		LDD	FE		07090
1326	0111		SHA	11		07100
1327	0501		ADN	1		07110
1330	0760		SBN	60		07120
1331	5302		NJF	2		07130
1332	0603		ADN	3		07140
1333	0660		ADN	60		07150
1334	0111		SHA	11		07160
1335	4012		STD	FE		07170
1336	2440		LDD	SIGMA		07180
1337	5545		NZB	NDORI -2		07190
1340	2037	TWOP	LDD	FRSTIM		07200
1341	6107		NZF	TWOP2		07210
1342	2060		LDD	RELBIT		07220
1343	4326		STB	BITREL		07230
1344	0400		LDN	0		07240
1345	4060		STD	RELBIT		07250
1346	3333	TWOPA	ADB	FOURTH		07260
1347	6541		NZB	STDFE +2		07270
1350	2040	TWOP2	LDD	SIGMA		07280
1351	4012		STD	FE		07290
1352	2335		LDD	BITREL		07300
			REM			07310
1353	4060		STD	RELBIT		07320
1354	0461	TWOP2A	LDN	61		07330
1355	5546		NZB	STDFE +3		07340
	1305	NOAD	EQU	STDFE +1		07350
	1274	NUMOP	EQU	NDORI		07360
1356	2040	BLRSS	LDD	SIGMA		07370
1357	4020		STD	DELTA		07380
1360	0474		LDN	74		07390
1361	4036		STD	SRD2		07400
1362	6551		NZB	TINUA		07410
1363	0500	NED	LDN	0		07420
1364	4003		STD	ENDFLG		07430
1365	0405		LDN	LC		07440
1366	4004		STD	LORC		07450
1367	0436		LDN	36		07460
1370	6507		NZB	BLRSS +3		07470
1371	0430	EQUAL	LDN	30		07480
1372	5111		NZF	RPGA		07490
1373	6517	2P2A	NZB	TWOP2A		07500
1374	6517		NZB	TWOP2A 1		07510
1375	0601	ONC	ADN	1		07520
1376	0605	ROG	ADN	LC		07530
	1376	RPG	EQU	ROG		07540
1377	4004		STD	LORC		07550
1400	2012		LDD	FE		07560
1401	4104		STI	LORC		07570
1402	0434		LDN	34		07580
1403	4036	RPGA	STD	SKD2		07590
1404	2412		LDD	FE		07600
1405	6574		NZB	TINUA		07610
1406	0404		LDN	4		07620
1407	5032		RAD	K3	SET ERROR FLAG (L)	07630
1410	2374		LDD	FOUR04	RESTORE INSTRUCTION SETTING ERROR FLAG	07640
1411	4303		STB	RPGA 3		07650
1412	6505		NZB	5		07660

1413	2014	BCFLTT	LDD	OPC1			07670
1414	3776		SBB	TW0323			07680
			REM				07690
1415	6050		ZJF	REMARK +3	JP IF ITY		07700
1415	0001		NOF1				07710
1417	2037		LDD	FRSTIM			07720
1420	5110		NZF	NOFRST			07730
1421	2011		LDD	FJ			07740
1422	0111			111	LS6		07750
1423	0237		LPN	37			07760
1424	3052		AOD	WDCT			07770
1425	4041		STU	TEMWCT	STORE START ADDRESS		07780
1426	3012		AOD	FE			07790
1427	4241		STF	TERMIN			07800
1430	2015	NOFRST	LDD	OPC2			07810
1431	0277		LPN	77			07820
1432	0751		SBN	51	CHECK FOR R		07630
1433	6035		ZJF	CHMODE	JP IF CHARACTER MODE		07840
1434	2141		LDI	TEMWCT			07850
1435	4012		STD	FE			07860
1436	5441	UPAD	AOD	TEMWCT			07870
1437	3631		SBF	TERMIN			07880
			REM				07890
1440	6005		ZJF	LASTWD	JP IF LAST WORD		07900
1441	2037		LDD	FRSTIM			07910
1442	6474		ZJB	TWOPA	JP IF FIRST WORD		07920
1443	0510		LCN	10			07930
1444	6576		NZB	TWOPA			07940
1445	2012	LASTWD	LDD	FE	CHANGE	OPC2	07950
1446	0277		LPN	77	BCD	WILL BE 6420	07960
1447	3107		NZF	ITSBCD 2	OR	FOR BCD	07970
1450	2015		LDD	OPC2	FLX	IE NEGATIVE	07980
1451	6303		NJF	ITSBCD	ZERO	AND 2720	07990
1452	0404		LDN	4	TO	FOR FLX	08000
1453	5102		NZF	ITSBCD 1	THE	IE POSITIVE	08010
1454	0420	ITSBCD	LDN	20	APPROPRIATE		08020
1455	5012		RAD	FE	BLANK		08030
1456	2037		LDD	FRSTIM			08040
1457	6554		NZB	2P2A			08050
1460	0471		LDN	71	ONE AND ONLY ONE		08060
1461	6555		NZB	2P2A +1			08070
1462	2014	REMARK	LDD	OPC1			08080
1463	3604		SBF	SIX245			08090
			REM				08100
1464	6475		ZJB	NED +4			08110
1465	0410		LDN	10			08120
1466	6576		NZB	NED +5			08130
1467	6245	SIX245		6245	BN		08140
1470	0000	TERMIN					08150
1471	2141	CHMODE	LDI	TEMWCT			08160
1472	0111			111			08170
1473	4141		S11	TEMWCT			08180
1474	0277		LPN	77			08190
1475	4012		STU	FE			08200
1476	3541		SBI	TEMWCT			08210
1477	6441		ZJB	UPAD			08220
1500	4600		SRF	0			08230
1501	5252			5252			08240
1502	6744		NJB	UPAD			08250
1503	56+2		PJB	UPAD +3			08260

1504	2036	SETLIN	LDD	SRD2			08270
1505	0103			103	LS2		08280
1506	0110			110	LS3		08290
1507	4036		STD	SRD2			08300
1510	7100		JFI	0			08310
1511	2201			TBL			08320
1512	5026		ZJF	ERFL			08330
1513	2010		LDD	FI	CHECK RELBIT		08340
1514	0111			111			08350
1515	0247		LPN	47			08360
1516	0706		SBN	6			08370
1517	5013		ZJF	LODZ	2	JP IF BLANK OP	08380
1520	0602		ADN	2			08390
1521	6011		ZJF	LODZ	2	JP IF TWO-WORD OP	08400
1522	0731		SBN	31			08410
1523	6015		ZJF	ERFL			08420
1524	0701		SBN	1			08430
1525	6013		ZJF	ERFL			08440
1526	0704		SBN	4			08450
1527	5011		ZJF	ERFL			08460
1530	0400	LODZ	LDN	0			08470
1531	4060		STD	RELBIT			08480
1532	0577		LCN	77	CHECK CON VALUE		08490
1533	1104		LPI	LORC			08500
1534	5004		ZJF	4			08510
1535	2004		LDD	LORC			08520
1536	0705		SBN	LC			08530
1537	5032		RAU	K3	SET ERROR FLAG (C)		08540
1540	0421	ERFL	LDN	L1			08550
1541	4031		STD	K2			08560
1542	0505		LCN	5			08570
1543	4030		STD	K1			08580
1544	2037		LDD	FRSTIM			08590
1545	6171		NZF	SARDI			08600
1546	2200		LDF	0			08610
1547	2205	-	LDF	ERRTAB	-GETERR INITIALIZE TABLE LOOK-UP		08620
1550	4212		STF	GETERR			08630
1551	4432		SRD	K3			08640
1552	2032	GETER	LDD	K3			08650
1553	0114			114	RS1		08660
1554	4032		STD	K3			08670
1555	5020		ZJF	UVFLG			08680
1556	0201		LPN	1			08690
1557	5006		ZJF	GETERR +3			08700
1560	5430		ADD	K1			08710
1561	5214		PJF	UVFLG			08720
1562	2205	GETERR	LDF	ERRTAB			08730
1563	4131		STI	K2			08740
1564	5431		ADD	K2			08750
1565	5703		A0B	GETERR			08760
1566	6514		NZB	GETER			08770
1567	0063	ERRTAB		63	C		08780
1570	0055			65	E		08790
1571	0043			43	L		08800
1572	0044			44	M		08810
1573	0046			46	O		08820
1574	0027			27	X		08830
1575	0410	UVFLG	LDN	FI			08840
1576	4074		STD	TEM4			08850
1577	0416		LDN	ADDR			08860

1600	4075		STU	TEM5		08870
1601	2174	UVFLGA	LDI	TEM4		08880
1602	0203		LPN	3		08890
1603	0703		SBN	3		08900
1604	3115		NZF	RSTOR		08910
1605	2175		LDI	TEM5		08920
1606	7100		JFI	0	THIS SUBROUTINE CHANGES	08930
1607	3177			LOOKUP	INDIRECT BANK TO 1	08940
1610	0201		LPN	1		08950
1611	6011		ZJF	RSTOR	JP IF CST	08960
1612	2577		LCI	TEM7		08970
1613	6107		NZF	RSTOR		08980
1614	5430		ADD	K1		08990
1615	6205		PJF	RSTOR		09000
1616	0424	UORV	LUN	24	U OR V	09010
1617	0020			20	RESTORE INDIRECT BANK	09020
1620	4131		STI	K2		09030
1621	5431		ADD	K2		09040
1622	0020	RSTOR		20	RESTORE INDIRECT BANK	09050
1623	5705		A0B	UORV		09060
1624	5474		A0B	TEM4		09070
1625	5475		A0B	TEM5		09080
1626	0720		SBN	DELTA		09090
1627	5526		NZB	UVFLGA		09100
1630	0502		LUN	2		09110
1631	5313		RAB	UORV	RESTORE UORV TO U	09120
1632	2030		LDD	K1		09130
1633	0504		ADN	4		09140
1634	6302		NJF	2		09150
1635	5427		A0B	ECOUNT	INCREMENT ERROR LINE COUNT	09160
1636	4435	SARD1	SRD	SRD1		09170
1637	6214		PJF	PRNT		09180
1640	2036		LDD	SRD2		09190
1641	0110			110	LS3	09200
1642	4036		STU	SRD2		09210
1643	2037		LDD	FRSTIM		09220
1644	5105		NZF	SKIPPR		09230
1645	2011		LDD	FJ		09240
1646	0111			111	LS6	09250
1647	0237		LPN	37		09260
1650	5052		RAD	WDCT	MOVE PAST COMMENTS WORDS	09270
1651	7101	SKIPPR	JFI	1	JUMP TO SEE IF THERE WILL BE	09280
1652	2065			TESRD1	ANY BINARY OUTPUT	09290
1653	2200	PRNT	LDF	0		09300
1654	7524			-171D		09310
1655	4061		STU	CRDCOL		09320
1656	4436		SRD	SRD2		09330
1657	6204		PJF	PRNTA		09340
1660	2104		LDI	LORC		09350
1661	7100		JFI	0		09360
1662	4262			OWZ	OUTPUT OCTAL LOC.	09370
1663	0406	PRNTA	LUN	6		09380
1664	5061		RAD	CRDCOL		09390
1665	4436		SRD	SRD2		09400
1666	6204		PJF	PRNTB		09410
1667	2012		LDD	FE		09420
1670	7100		JFI	0		09430
1671	4262			OWZ	OUTPUT OCTAL CONTENTS	09440
1672	4436	PRNTB	SRD	SRD2		09450
1673	6303		NJF	PRNTC		09460

1674	7101		JFI	1		09470
1675	2040			PRLINE		09480
1676	0406	PRNTC	LON	6		09490
1677	5061		RAD	CRDCOL		09500
1700	2010		LDD	FI		09510
1701	0240		LPN	40	-SIGN IN LOC FIELD	09520
1702	5002		ZJF	2		09530
1703	4161		STI	CRDCOL		09540
1704	5461		AOD	CRDCOL		09550
1705	2013		LDD	STL		09560
1706	6003		ZJF	3		09570
1707	7100		JFI	0		09580
1710	4074			ENTSYM	ENTER LOC. SYMBOL	09590
1711	0407		LON	7		09600
1712	5061		RAD	CRDCOL		09610
1713	0414		LON	OPC1		09620
1714	4070		STD	TEM0		09630
1715	2170	STOROP	LDI	TEM0	STORE OP CODE	09640
1716	0111			111	LS6	09650
1717	7661			7600	CRDCOL HWI	09660
1720	5461		AOD	CRDCOL		09670
1721	2170		LDI	TEM0		09680
1722	7661			7600	CRDCOL HWI	09690
1723	5461		AOD	CRDCOL		09700
1724	5470		AOD	TEM0		09710
1725	0716		SBN	OPC2	+1	09720
1726	5511		NZB	STOROP		09730
1727	5461		AOD	CRDCOL		09740
1730	0410		LON	FI		09750
1731	4074		STD	TEM4		09760
1732	0416		LON	ADDR		09770
1733	4075		STD	TEM5		09780
1734	2174	LOOPAD	LDI	TEM4		09790
1735	0103			103	LS2	09800
1736	0260		LPN	60		09810
1737	0370			370	LSN 70	09820
1740	0530		ADN	30		09830
1741	7661			7600	CRDCOL HWI, SET SIGN COLUMN	09840
1742	5461		AOD	CRDCOL		09850
1743	2174		LDI	TEM4		09860
1744	0203		LPN	3		09870
1745	5011		ZJF	CONVER	+1 JP IF NO FIELD	09880
1746	3200		ADF	0		09890
1747	2213	-	LDF	CONTAB	-ADRIF	09900
1750	4201		STF	1		09910
1751	2200	ADRIF	LDF	0		09920
1752	4203		STF	CONVER		09930
1753	2175		LDI	TEM5		09940
1754	7100		JFI	0		09950
1755	0000	CONVER				09960
1756	0407		LON	7		09970
1757	5061		RAD	CRDCOL		09980
1760	5474		AOD	TEM4		09990
1761	5475		AOD	TEM5		10000
1762	0720		SBN	DELTA		10010
1763	5527		NZB	LOOPAD		10020
1764	5004	CONTAB	ZJF	COMENT		10030
1765	4271			ONZ		10040
1766	4305			DEC		10050
1767	4074			ENTSYM		10060

1770	2200	COMENT	LJF	0		10070
1771	7575			-1300		10080
1772	4061		STD	CRDCOL		10090
1773	2411		LCD	FJ		10100
1774	0111			111	LS6	10110
1775	0237		LPN	37		10120
1776	0737		SBN	37		10130
1777	6041		ZJF	PRLINE		10140
2000	4076		STD	TEM6	SET COUNT	10150
2001	4077		STD	TEM7	SET SWITCH	10160
2002	0471	ENTREM	LUN	TEM1		10170
2003	4070		STD	TEM0		10180
2004	2152		LDI	WDCT		10190
2005	0111			111	LS6	10200
2005	0277		LPN	77		10210
2007	4071		STD	TEM1		10220
2010	2152		LDI	WDCT		10230
2011	0277		LPN	77		10240
2012	4072		STD	TEM2		10250
2013	2077	SWITT	LDD	TEM7	TEST SWITCH	10260
2014	5020		ZJF	SPASES		10270
2015	2170		LDI	TEM0		10280
2016	5005		ZJF	RENT		10290
2017	0720		SBN	20		10300
2020	4077		STD	TEM7		10310
2021	5004		ZJF	RENT	+1	10320
2022	0620		ADN	20		10330
2023	4151		STI	CRDCOL	STORE CHARACTER	10340
2024	5461	RENT	AOD	CRDCOL		10350
2025	5470		AOD	TEM0		10360
2026	0773		SBN	TEM3		10370
2027	6514		NZB	SWITT		10380
2030	5452		AOD	WDCT		10390
2031	5476		AOD	TEM6		10400
2032	6530		NZB	ENTREM		10410
2033	6005		ZJF	PRLINE		10420
2034	2170	SPASES	LDI	TEM0		10430
2035	5061		RAD	CRDCOL		10440
2036	4077		STD	TEM7		10450
2037	6513		NZB	RENT		10460
2040	2200	PRLINE	LJF	0		10470
2041	7516			-1770		10480
2042	4031		STD	K2		10490
2043	0421		LDN	L1		10500
2044	4070		STD	TEM0		10510
2045	5600		AOF	0		10520
2046	0000	LNS			PRINT LINE COUNTER	10530
2047	6105		NZF	LNSA		10540
2050	0574		LCN	74		10550
2051	4303		STB	LNS		10560
2052	0401		LDN	1	SET PAGE EJECT	10570
2053	4131		STI	K2		10580
2054	5431	LNSA	AOD	K2		10590
2055	2170		LDI	TEM0		10600
2056	4131		STI	K2		10610
2057	5470		AOD	TEM0		10620
2060	0725		SBN	L5		10630
2061	5505		NZB	LNSA		10640
2062	7701			7701	SELECTIVE STOP	10650
2063	0101			101	PTA	10660

2064	7055		JPI	LSTOUT		10670
2065	4435	TESRD1	SRD	SRD1		10680
2066	6205		PJF	IFBIN		10690
2067	2036		LDD	SRD2		10700
2070	0110			110	LS3	10710
2071	4036		STD	SRD2		10720
2072	6124		NZF	ADVLC		10730
2073	4436	IFBIN	SRD	SRD2		10740
2074	6203		PJF	3		10750
2075	7100		JFI	0		10760
2075	4210			DUMPBW	DUMP BINARY IMAGE	10770
2077	4436		SRD	SRD2		10780
2100	6211		PJF	QEBW		10790
2101	2403		LCD	ENDFLG		10800
2102	6003		ZJF	3		10810
2103	2600		LCF	0		10820
2104	2000			2000		10830
2105	3200		ADF	0		10840
2105	4005	BIFLAG		4005		10850
2107	7100		JFI	0		10860
2110	4237			BORE		10870
2111	4436	QEBW	SRD	SRD2		10880
2112	6204		PJF	ADVLC		10890
2113	2305		LDB	BIFLAG		10900
2114	7100		JFI	0		10910
2115	4126			EBW	ENTER WORD INTO BIN IMAGE	10920
2116	2020	ADVLC	LDD	DELTA	ADVANCE LINE COUNTER	10930
2117	5104		RAI	LORC		10940
2120	7701			7701	SELECTIVE STOP	10950
2121	4436		SRD	SRD2	TEST FOR REPEAT	10960
2122	6203		PJF	3	JP IF NO REPEAT	10970
2123	7101		JFI	1		10980
2124	1170			REPEAT		10990
2125	2041		LDD	TEMWCT	SET C(WOCT) - C(TEMWCT)	11000
2126	6002		ZJF	2	IF BCD OR FLX PSUEDO-OP	11010
2127	4052		STD	WDCT	IS ENCOUNTERED	11020
2130	2403		LCD	ENDFLG		11030
2131	6003		ZJF	3	JP IF END	11040
2132	7101		JFI	1	RETURN IF NO END	11050
2133	1130			NOEND		11060
2134	2002		LDD	PARAM		11070
2135	0277		LPN	77		11080
2136	6110		NZF	DONE		11090
2137	2026		LDD	SUPP		11100
2140	0203		LPN	3		11110
2141	6105		NZF	DONE		11120
2142	4435		SRD	SRD1		11130
2143	6303		NJF	DONE		11140
2144	7101		JFI	1		11150
2145	1104			MOROUT		11160
2146	2027	DONE	LDD	ECOUNT		11170
2147	6002		ZJF	2		11180
2150	0000		ERR		ERROR STOP	11190
2151	7700		HLT		FINAL STOP	11200
2152	2002		LDD	PARAM		11210
2153	0207		LPN	7		11220
2154	0701		SBN	1		11230
2155	6103		NZF	3		11240
2156	7500		EXF	0		11250
2157	1154			1154		11260

2160	2002	LDD	PARAM			11270
2161	0270	LPN	70			11280
2162	0710	SBN	10			11290
2163	6103	NZF	3			11300
2164	7500	EXF	0			11310
2165	1153		1153	REW3		11320
2166	2002	LDD	PARAM			11330
2167	0110		110			11340
2170	0207	LPN	7			11350
2171	0701	SBN	1			11360
2172	5105	NZF	PFSTOP			11370
2173	7710		7710	SLJ1		11380
2174	2177		PFSTOP			11390
2175	7500	EXF	0			11400
2176	1151		1151			11410
2177	7700	PFSTOP	HLT	POST FINAL STOP		11420
2200	7101	JFI	1			11430
2201	0000	TBL				11440
2202	2010	LDD	FI			11450
2203	0111		111	LS6		11460
2204	0706	SBN	6	ROUTINE		11470
2205	5505	NZB	TBL	-1	TO	11480
2206	2011	LDD	FJ		TJST	11490
2207	6707	NJB	TBL	-1	FOR	11500
2210	0237	LPN	37		BLANK	11510
2211	5511	NZB	TBL	-1	LINE	11520
2212	4020	STD	DELTA			11530
2213	2202	LDF	LDZERO			11540
2214	4036	STD	SR02			11550
2215	0400	LDZERO	LDN	0		11560
2216	6416	ZJB	TBL	-1		11570

REM
 REM TEM0-ADDRESS OF OP CODE TABLE
 REM
 REM TEM1-OP CODE IN LOWER 6
 REM
 REM TEM2- FI FLAG BITS
 REM
 REM TEM3- GO SWITCH FOR RELATIVES
 REM
 REM TEM4-LENGTH OF JUMP OP TABLE
 REM
 REM TEM5-LENGTH OF OP CODE PAIRS
 REM TABLE
 REM
 REM TEM6- SINGLE CHARACTER
 REM CONVERT
 REM
 REM TEM7- SAVE 2 CHARACTERS,
 REM CONVERT ONE AT A TIME
 REM
 REM
 REM ANNOTATED 24 JAN 1972 - BHP
 REM

2217	2072	OPEX	LDD	TEM2	LOAD FLAG BITS
2220	0111		LS6		MOVE TO TOP OF WORD
2221	5010		RAU	FI	AND STORE IN FLAG WORD
2222	7101		JFI	1	EXIT
2223	0000	SOPT			ENTRY/RETURN ADDRESS
2224	2153		LDI	CC10	LOAD 1ST OP CODE CHARACTER

2225	0111		LS6		MOVE TO TOP OF WORD
2226	1554		SCI	CC11	MERGE IN 2ND CHAR.
2227	4014		STD	OPC1	AND SAVE IN 1ST FLAG WORD
			REM		
2230	2155		LUI	CC12	LOAD 3RD CHAR
2231	0111		LS6		MOVE TO TOP
2232	1556		SCI	CC13	MERGE IN 4TH CHAR.
2233	4015		STD	OPC2	AND SAVE IN 2ND WORD FLAG
			REM		
2234	3414		SBD	OPC1	SUBTRACT 1/2 CHAR FROM 3/4
2235	6107		NZF	SOPTA	TEST FOR EQUAL
2236	4027		STD	PSUEDO	YES, CLEAR PSEUDO-OP FLAG
2237	2153		LUI	CC10	LOAD 1ST AGAIN
2240	0720		SBN	20	TEST FOR A BLANK
2241	6103		NZF	SOPTA	IF NO, TREAT AS NORMAL OP
			REM		YES, SO AT LEAST 2 BLANKS
2242	0406		LUN	6	FLAG BITS FOR BLANK OP CODE
2243	6523		NZB	OPEX +1	UNCONDITIONAL TO EXIT
			REM		
2244	2200	SOPTA	LDC	PSUOT	LOAD ADDRESS OF START OF PSEUDO TABLE
2245	2515				
2246	4070		STD	TEM0	SAVE FOR INDEXING
2247	0517		LCN	17	COMPLEMENT OF LENGTH OF TABLE
2250	4027		STD	PSUEDO	SAVE AS A COUNTER
2251	0400		LUN	0	CLEAR A
2252	4072		STD	TEM2	CLEAR FLAG ASSEMBLER FI BITS
			REM		
2253	5427	SOPTB	ADD	PSUEDO	STEP LENGTH COUNTER
2254	2014		LDD	OPC1	LOAD 1ST WORD
2255	1570		SCI	TEM0	TOGGLE FROM TABLE PSEUDO
2256	5134		NZF	SOPA	JUMP FOR NO MATCH
2257	5470		ADD	TEM0	MATCH, NOW TRY SECOND WORD
2260	2170		LUI	TEM0	LOAD 2ND WORD FROM TABLE
2261	1555		SCI	CC12	TOGGLE WITH 3RD CHAR.
2262	0277		LPN	77	SCREEN OUT FLAG BITS
2263	5130		NZF	SOPA +1	JUMP IF NO MATCH
2264	0577		LCN	77	MATCH, CREATE 7700 MASK
2265	1170		LPI	TEM0	AND MASK OUT FLAG BITS
2266	5203		PJF	3	JUMP FOR PSEUDO-OP/SHA
2267	4012		STD	FE	OTHERWISE, SAVE OP CODE
2270	6551		NZB	OPEX	AND EXIT
			REM		
2271	3200		ADC	2000	INCREASE FLAG TO 4XXX FOR PSEUDOS
2272	2000				
2273	6752		NJB	OPEX +2	JUMP AND EXIT FI PSEUDO-OP
2274	3702		SBB	2	WAI OR SHA, RESTORE FLAG
2275	6506		NZB	6	JUMP, IF SHA
			REM		
2276	7700		HLT		WAI CODE - WAIT FOR INPUT
			REM		
2277	6011		ZJF	RESWAI	JUMP, IF MORE INPUT
			REM		SIMULATED END FROM OPERATOR
2300	0405		LUN	65	LOAD E
2301	4153		STI	CC10	STORE INTO OP CODE
2302	0445		LUN	45	LOAD N
2303	4154		STI	CC11	STORE INTO OP CODE
2304	0464		LUN	64	LOAD D
2305	4155		STI	CC12	STORE INTO OP CODE
2306	7101		JFI	1	NOW PRETEND END CARD WAS
2307	0150			SIMEND	READ

2310	7101	RESWAI	JFI	1	RESUMED AFTER WAI
2311	0137			READ	- GO READ ANOTHER CARD -
			REM		
			REM		
2312	5470	SOPA	ADD	TEM0	NO MATCH ON 1ST - STEP ADDRESS
2313	5470		ADD	TEM0	NO MATCH ON 2ST - STEP ADDRESS
2314	3500		SBC	FORWOP	SUBTRACT BEGINNING OF OP CODE TABLE
2315	2665				
2316	6743		NJB	SOPTB	JUMP IF NOT FINISHED WITH PSEUDOS
			REM		
2317	6102		NZF	2	JUMP IF ALREADY INTO BASIC TABLE
2320	5472		ADD	TEM2	1ST NON-PSEUDO, CHANGE FLAG TO 01
			REM		
2321	0706		SBN	6	CHECK LENGTH OF FORWOP TABLE
2322	6547		NZB	SOPTB	JUMP TO KEEP SCANNING TO END
			REM		
2323	0501		LCN	1	LOAD MINUS 1
2324	4073		STD	TEM3	GO FLAG FOR RELATIVE INSTRJC.
2325	0504		LCN	4	LOAD MINUS 4
2326	4074		STD	TEM4	STORE AS OP CODE INCREMENT
2327	0510		LCN	10	LOAD MINUS 10
2330	4075		STD	TEM5	STORE AS TABLE LENGTH
			REM		
			REM		START SCAN FOR ADDRESSING
			REM		MODE
			REM		
2331	2155		LBI	CC12	LOAD 3RD DIGIT OF OP CODE
2332	0722		SBN	22	SUBTRACT AN S
2333	6044		ZJF	3RDS	JUMP IF S (22)
2334	0722		SBN	22	(44)
2335	6047		ZJF	3RDM	JUMP IF M
2336	0701		SBN	1	(45)
2337	6047		ZJF	3RDN	JUMP IF N
2340	0704		SBN	4	(51)
2341	6040		ZJF	3RDR	JUMP IF R
2342	0711		SBN	11	(62)
2343	6026		ZJF	3RDB	JUMP IF B
2344	0701		SBN	1	(63)
2345	6022		ZJF	3RDC	JUMP IF C
2346	0701		SBN	1	(64)
2347	6010		ZJF	3RDD	JUMP IF D
2350	0702		SBN	2	(66)
2351	6011		ZJF	3RDF	JUMP IF F
2352	0703		SBN	3	(71)
2353	6141		NZF	3RDON -1	JUMP IF NOT I
			REM		
2354	4072	3RDI	STD	TEM2	FOUND AN I, STORE 0 PARAMETER
2355	0411		LDN	11	INDIRECT/MEMORY 1ST OP
2356	6117		NZF	3RDOP	UNCONDITIONAL
			REM		
2357	4072	3RDD	STD	TEM2	D, STORE 0 IN FI OP BITS
2360	0410		LDN	10	DIRECT FLAG/FIRST DIRECT OP
2361	6114		NZF	3RDOP	UNCONDITIONAL
			REM		
2362	5473	3RDF	ADD	TEM3	SET GO SWITCH(RELATIVE)
2363	0401		LDN	1	FORWARD FLAG
2364	4072		STD	TEM2	STORE IN FI OP BITS
2365	0412		LDN	12	1ST FORWARD OP CODE
2366	6107		NZF	3RDOP	UNCONDITIONAL

2367	0404	3RDC	REM LDN	4		FI BITS FOR CONSTANT
2370	5504		NZB REM	3RDF	2	UNCONDITIONAL
2371	5473	3RDB	AOD	TEM3		SET GO SWITCH(RELATIVE)
2372	0402		LDN	2		
2373	4072		STD	TEM2		FI BITS FOR BACKWARD
2374	0413		LDN	13		FIRST BACKWARD OP CODE
2375	4071	3RDOP	STD	TEM1		SAVE AS STARTING OP
2376	6117		NZF REM	3RDON		UNCONDITIONAL JUMP
2377	0405	3RDS	LDN	5		FI BITS FOR SPECIFIC
2400	5505		NZB REM	3RDB	2	UNCONDITIONAL
2401	5473	3RDR	AOD	TEM3		SET GO SWITCH(RELATIVE)
2402	0403		LDN	3		BITS (FLAG)
2403	6517		NZB REM	3RDF	2	UNCONDITIONAL
2404	0404	3RDM	LDN	4		FI BITS FOR MEMORY MODE
2405	6531		NZB REM	3RDI		UNCONDITIONAL
2406	4072	3RDN	STD	TEM2		CLEAR FI BITS
2407	0507		LCN	7		LOAD MINUS 7
2410	4074		STD	TEM4		SET INCREMENT
2411	0402		LDN	2		FIRST NO ADDRESS OP CODE
2412	4071		STD	TEM1		SAVE AS FIRST OP CODE
2413	6103		NZF REM	3RDON	1	UNCONDITIONAL
2414	6140		NZF REM	NOTI		PATCH TO GO TO NOTEX
2415	0502	3RDON	LCN	2		LOAD MINUS 2
2416	5075		RAD REM	TEM5		SET TABLE LENGTH (-6 FOR N, -12 FOR OTHERS)
2417	2014	NORMOP	LDD	OPC1		LOAD CHARACTERS 1 AND 2
2420	1570		SCI	TEM0		TOGGLE WITH PAIRS
2421	6036		ZJF	FOWND		JUMP FOR COMPARE
2422	5470		AOD	TEM0		STEP TABLE ADDRESS
2423	3600		SBC	OPAIRS +2		SUBTRACT ADDRESS OF LS PAIR
2424	2675					
2425	6406		ZJB REM REM	NORMOP		JUMP FOR LS; SPECIAL CASE SINCE SAME AS SC.
2426	2474		LCD REM REM REM	TEM4		LOAD OP CODE INCREMENT (-1 FOR N MODE, -4 FOR OTHERS)
2427	5071		RAD	TEM1		BUMP OP CODE
2430	5475		AOD	TEM5		STEP TABLE LENGTH
2431	6512		NZB REM	NORMJP		TRY AGAIN UNTIL FINISHED
2432	5473		AOD	TEM3		STEP GO SWITCH (NOW 0 FOR NONRELATIVE)
2433	6016		ZJF REM	EXOP		JUMP FOR NON-RELATIVE MODE
2434	2072		LDD	TEM2		RELATIVE MODE, PICK UP FI
2435	0702		SBN	2		SUBTRACT BACKWARD FLAG
2436	6002		ZJF REM	2		JUMP FOR BACKWARD
2437	0504		LCN	4		FORWARD, LOAD-4 OR RELATIVE
2440	0664		ADN REM	64		OP CODE START IN A 60 FOR FORWARD/RELATIVE

2441	4071		REM		64 FOR BACKWARD
			STD	TEM1	SAVE AS OP CODE
			REM		
2442	2914	JMPOP	LDD	OPC1	LOAD 1ST 2 CHARS OF OP
2443	1570		SCI	TEM0	TOGGLE FROM TABLE
2444	5013		ZJF	FOWND	JUMP FOR COMPARE
2445	5470		ADD	TEM0	STEP TABLE ADDRESS
2446	5471		ADD	TEM1	STEP OP CODE
2447	5474		ADD	TEM4	STEP TABLE LENGTH
2450	5506		NZB	JMPOP	IF NOT FINISHED, TRY AGAIN
			REM		
2451	2014	EXOP	LDD	OPC1	GET 1ST TWO AGAIN
2452	3500		SBC	6527	SUBTRACT EX
2453	6527				
			REM		
2454	5110	NOTI	NZF	NOTEX	JUMP IF NOT EX; LINK TO NOTEX
			REM		
2455	0475		LDN	75	FUNCTION, SO LOAD OP CODE
2456	5102		NZF	2	UNCONDITIONAL
			REM		
			REM		
			REM		NO CHECK WAS MADE FOR
			REM		ERRORS OF TYPE EXB, EXI,
			REM		EXM AND SO ON. TEMP2
			REM		SHOULD BE CHECKED
			REM		BEFORE LOADING 75 CODE.
			RLM		
			REM		
			REM		OP CODE FOWND
			REM		
2457	2071	FOWND	LDD	TEM1	LOAD OP CODE
2460	0111		LSB		MOVE INTO POSITION
2461	4012		STD	FE	PUT INTO FLAG WORD
2462	7101	OPRET	JFI	1	AND EXIT
2463	2217			OPEX	
			REM		
			REM		NOT IN BASIC, SO NOW UNIQUES
			REM		
2464	2200	NOTEX	LDC	UNIQOT	LOAD ADDRESS OF UNIQUE OP CODES
2465	2712				
2466	4070		STD	TEM0	SAVE IN ADDRESS SWITCH
2467	0405		LDN	5	NO ADDRESS NEEDED FLAG
2470	4072	UNIQ	STD	TEM2	SAVE AS TYPE OF OP
			REM		
2471	2014		LDD	OPC1	GET FIRST OP CODE PAIR
2472	1570		SCI	TEM0	TOGGLE FROM TABLE
2473	6051		ZJF	JSOP +2	JUMP FOR MATCH
2474	0403		LDN	3	NO, SO STEP TABLE
2475	5070		RAD	TEM0	BY 3 FOR NEXT ENTRY
2475	3500		SBC	UNQDOT	MINUS ADDRESS OF LAST SINGLE
2477	3036				
2500	5707		NJB	UNIQ +1	LOOP UNTIL FINISHED WITH SINGLES
			REM		
2501	0725		SBN	25	SUBTRACT LENGTH OF DOUBLE TABLE
			REM		
			REM		SHOULD BE 22, ACTUAL LENGTH+1
			REM		
2502	5003		ZJF	3	JUMP IF OP TABLE RUN OUT

2503	0404		REM			
2504	6314		LDN	4		NO, NOW IN DOUBLES, FLAG FOR 2 WORDS AND SCAN AGAIN
			NZB	UNIQ		
			REM			
2505	2014		LJD	OPC1		TABLE EMPTY, NOFIND, LOAD AGAIN
2506	3600		SBC	2243		SUBTRACT AN SL
2507	2243					
2510	6017		ZJF	BADOP	+2	JUMP FOR SL
			REM			
2511	3600		SBC	4122	-2243	EFFECTIVELY SUBTRACT A JS
2512	1657					
2513	6027		ZJF	JSOP		JUMP FOR JS
			REM			
2514	2014		LDU	OPC1		NO, LOAD 1ST 2 AGAIN
2515	7100		JPR	OCTDIG		GO CHECK FOR OCTAL OP
2516	2571					
2517	6306		NJF	BADOP		JUMP FOR NON-NUMERIC
			REM			
2520	0111		LS6			NUMERIC, MOVE TO TOP OF A
2521	4012		STD	FE		STORE AS F
2522	0407		LDN	7		LOAD NUMERIC OP FLAG
2523	7101		JFI	1		AND EXIT
2524	2220			OPEX	+1	
			REM			
2525	0420	BADOP	LDN	20		ILLEGAL OP FLAG
2526	6503		NZB	3		AND EXIT
			REM			
2527	2155		LDI	CC12		1ST 2 ARE SL, LOAD 3
2530	0741		SBN	41		SUBTRACT A J
2531	6504		NZB	BADOP		EXIT IF NOT SLJ-ILLEGAL
			REM			
2532	2156		LDI	CC13		SLJ, LOAD 4TH
2533	0111		LS6			MOVE TO TOP OF A
2534	7100	SEEF	JPR	OCTDIG		GO CONVERT TO OCTAL
2535	2571					
2536	6711		NJB	BADOP		JUMP FOR NON-NUMERIC-ILLEGAL
			REM			
2537	1600		SCC	7700		MASK IN F BITS (77)
2540	7700					
2541	6560		NZB	OPRET	-1	AND EXIT
			REM			
2542	2015	JSOP	LDU	OPC2		1ST 2 ARE JS, LOAD 2ND TWO
2543	6507		NZB	SEEF		GO CONVERT, AND EXIT
			REM			
			REM			FOUND COMPARE ON 1ST
			REM			TWO CHARACTERS OF UNIQUES.
			REM			
			REM			
2544	5470		ADD	TEM0		STEP TABLE TO NEXT CHAR.
2545	2155		LDI	CC12		LOAD 3RD CHAR
2546	1570		SCI	TEM0		TOGGLE FROM TABLE
2547	6003		ZJF	3		JUMP FOR COMPARE
2550	0402		LDN	2		NO, STEP TABLE TONEXT
2551	6554		NZB	UNIQ	+5	AND CONTINUE SEARCH
			REM			
2552	5470		ADD	TEM0		STEP FOR VALUE, ALL 3 COMPARED
2553	3600		SBC	UNQSOT		SUBTRACT END OF (X) TYPE TABLE
2554	2756					
2555	6303		NJF	3		JUMP FOR (X) TYPE
			REM			

2555	0400		LDN	0	CLEAR A-(SINGLE/DOUBLE TYPE)
2557	6005		ZJF	5	UNCONDITIONAL
			REM		
2560	2156		LDI	CC13	LOAD DIGIT - (X) TYPE
2561	7100		JPK	OCTDIG	GO CONVERT
2562	2571				
2563	6735		NJB	BADOP	JUMP FOR ILLEGAL, NO DIGIT
			REM		
2564	1570		SCI	TEM0	MERGE IN OP CODE BITS
2565	7101		JFI	1	AND EXIT
2566	2461			OPRET -1	
			REM		
			REM		SUBROUTINE TO CONVERT TWO
			REM		BCD CHARACTERS TO OCTAL.
			REM		WILL EXIT WITH NEGATIVE ZERO
			REM		IF NON-NUMERIC OR 8 OR 9
			REM		CHARACTERS.
			REM		
2567	0500	NONNUM	LCN	0	BAD CHARACTER, LOAD NEGATIVE ZERO
2570	7101		JFI	1	AND EXIT
2571	0000	OCTDIG			ENTRY POINT, EXIT ADDRESS
2572	4077		STD	TEM7	SAVE BOTH CHARACTERS
2573	0277		LPN	77	SCREEN OUT LSD
2574	0712		SBN	12	SUBTRACT BCD 0
2575	5402		ZJB	2	JUMP AND SAVE ZERO
2576	0502		ADN	2	TEST FOR 8 OR LARGER
2577	5510		PJB	NONNUM	JUMP FOR NOT 0-7
2600	2077		LDD	TEM7	LOAD BOTH AGAIN
2601	0111		LS6		MOVE MSD TO A LOWER
2602	0277		LPN	77	SCREEN OUT MSD
2603	0110		LS3		MOVE TO 2ND OCTAL POSITION
2604	4077		STD	TEM7	SAVE WHILE TESTING
2605	3600		SBC	120	SUBTRACT BCD ZERO
2606	0120				
2607	5403		ZJB	3	JUMP IF ZERO, AND STORE
2610	0620		ADN	20	NOW TEST, IF OUT 8 OR GREATER
2611	5522		PJB	NONNUM	JUMP IF NOT 0-7
2612	2076		LDD	TEM6	LOAD CONVERTED LSD
2613	1477		LSD	TEM7	MERGE IN CONVERTED MSD
2614	6624		PJB	OCTDIG -1	AND JUMP UNCONDITIONALLY
			REM		
			REM		OP CODE TABLES
			REM		
2615	2661	PSUOT		2661	WA, PSUEDO-OP TABLE
2616	0071			71	I
2617	6243			6243	BL
2620	2051			2051	R
2621	5222			6222	BS
2622	2022			2022	S
2623	6545			6545	EN
2624	2164			2164	D
2625	6550			6550	EQ
2626	2224			2224	U
2627	4651			4651	OR
2630	2367			2367	G
2631	4751			4751	PR
2632	2467			2467	G
2633	6346			6346	CO
2634	2545			2545	N
2635	5165			5165	RE

2635	2644		2644	M
2637	6245		6245	BN
2640	2642		2642	K
2641	2224		2224	SU
2642	2647		2647	P
2643	2323		2323	TT
2644	2730		2730	Y
2645	6643		6643	FL
2646	2727		2727	X
2647	6263		6263	BC, LAST PSEUDO-OP
2650	2764		2764	D
2651	2270	NDIOP	2270	SH TABLE OF
2652	0151		161	A ONE WORD
2653	4147		4147	JP INSTRUCTIONS
2654	7071		7071	I WITHOUT
2655	2241		2241	SJ D OR I
2656	7722		7722	S FIELDS
2657	4623		4623	OT
2660	7445		7445	N
2661	7026		7026	HW
2662	7671		7671	I
2663	7043		7043	HL
2664	7723		7723	T
2665	4166	FORWOP	4166	JF TWO WORD OPS,
2666	7171		7171	I 2ND WORD IS
2667	7145		7145	IN FORWARD
2670	7247		7247	P
2671	4624		4624	OU
2672	7323		7323	T
2673	4347	OPAIRS	4347	LP MAIN LINE
2674	2263		2263	SC -BASIC
2675	4322		4322	LS INSTRUCTIONS-
2676	4364		4364	LU
2677	4363		4363	LC
2700	6164		6164	AD
2701	2262		2262	SB
2702	2223		2223	ST
2703	2251		2251	SR
2704	5161		5161	RA
2705	6146		6146	AO
2706	3141	JUMPOP	3141	ZJ RELATIVE JUMP
2707	4531		4531	NZ INSTRUCTIONS
2710	4741		4741	PJ TABLE
2711	4541		4541	NJ
2712	2251	UNIQOT	2251	SR UNIQUE OP CODES
2713	0041		41	J - 4 CHARACTER
2714	0010		10	OP CODES-
2715	2271		2271	SI
2716	0063		63	C
2717	0020		20	
2720	7151		7151	IR
2721	0041		41	J
2722	0030		30	
2723	2264		2264	SD
2724	0063		63	C
2725	0040		40	
2726	6451		6451	DR
2727	0041		41	J
2730	0050		50	
2731	2271		2271	SI

2732	0054	64	D
2733	0050	60	
2734	5163	6163	AC
2735	0041	41	J
2736	0070	70	
2737	4546	4546	NO
2740	0047	47	P
2741	0000	0	
2742	2262	2262	SB
2743	0024	24	U
2744	0140	140	
2745	2223	2223	ST
2746	0047	47	P
2747	0150	150	
2750	2223	2223	ST
2751	0055	65	E
2752	0160	160	
2753	2243	2243	SL
2754	0022	22	
2755	7700	7700	
2756	4723	4723	PT UNIQUE OPS
2757	0051	61	A TABLE
2760	0101	101	- 3 CHARACTERS-
2761	4322	4322	LS
2762	0001	1	1
2763	0102	102	
2764	4322	4322	LS
2765	0002	2	2
2766	0103	103	
2767	6362	6362	CB
2770	0053	63	C
2771	0104	104	
2772	6523	6523	ET
2773	0061	61	A
2774	0107	107	
2775	4322	4322	LS
2776	0003	3	3
2777	0110	110	
3000	4322	4322	LS
3001	0006	6	6
3002	0111	111	
3003	4424	4424	MV
3004	0023	23	T
3005	0112	112	
3006	4424	4424	MU
3007	0070	70	H
3010	0113	113	
3011	5122	5122	RS
3012	0001	1	1
3013	0114	114	
3014	5122	5122	RS
3015	0002	2	2
3016	0115	115	
3017	6371	6371	CI
3020	0043	43	L
3021	0120	120	
3022	6323	6323	CT
3023	0061	61	A
3024	0130	130	
3025	7145	7145	IN

3026	0061			61		A	
3027	7600			7600			
3030	4623			4623		OT	
3031	0061			61		A	
3032	7677			7677			
3033	6551			6551		ER	
3034	0051			51		R	
3035	0000			0			
3036	6243	UNQDOT		6243		BL	UNIQUE OPS TABLE
3037	0022			22		S	-TWO WORD OPS-
3040	0100			100			
3041	6123			6123		AT	
3042	0065			65		E	
3043	0105			105			
3044	6123			6123		AT	
3045	0027			27		X	
3046	0106			106			
3047	4147			4147		JP	
3050	0051			51		R	
3051	7100			7100			
3052	7152			7162		IB	
3053	0071			71		I	
3054	7200			7200			
3055	7152			7162		IB	
3056	0046			46		0	
3057	7300			7300			
3060	3074	ADJN	ADD	TEM4			15770
3061	4070		STD	TEM0			15780
3062	7101		JFI	ADSUM			15790
3063	0000	ADSUM				RETURN, 0=NONE, -=UND, +=D	15800
3064	0500		LCN	0		ZERO (MINUS)	15810
3065	4070		STD	TEM0		UNDEFINED INDICATOR	15820
3066	4074		STD	TEM4		EXISTENCE INDICATOR	15830
3067	4060		STD	RELBIT		RELOCATION BIT	15840
3070	0400		LCN	0			15850
3071	4040		STD	SIGMA			15860
3072	0410		LCN	FI			15870
3073	4071		STD	TEM1			15880
3074	0416		LCN	ADDR			15890
3075	4072		STD	TEM2			15900
3076	2010		LDD	FI			15910
3077	0111			111		LS6	15920
3100	0247		LPN	47			15930
3101	0704		SBN	4			15940
3102	6006		ZJF	ADSUMA -2		JP IF TWO-WORD OP	15950
3103	0702		SBN	2			15960
3104	6004		ZJF	ADSUMA -2		JP IF BLANK OP	15970
3105	0734		SBN	34			15980
3106	6002		ZJF	ADSUMA -2		JP IF EQU	15990
3107	0501		LCN	1			16000
3110	0501		ADN	1			16010
3111	4075		STD	TEM5		SET RELBIT MASK	16020
3112	2171	ADSUMA	LDI	TEM1			16030
3113	0204		LPN	4			16040
3114	6002		ZJF	2			16050
3115	0500		LCN	0			16060
3116	4073		STD	TEM3		SET SIGN MASK	16070
3117	2171		LDI	TEM1			16080
3120	0203		LPN	3			16090
3121	6024		ZJF	ADSUMC		JP IF NO FIELD	16100

3122	0303		LSN	3		16110	
3123	0136		NZF	ADSUMD	JP IF NUMERIC	16120	
3124	2172		LDI	TEM2		16130	
3125	7100		JFI	0		16140	
3126	3177			LOOKJP	RETURN FROM LOOKUP WITH	16150	
3127	0201		LPN	1	LOC OF SYMBOL VALUE IN A		
3130	6234		PJF	ADSUMZ		16170	
3131	5450		ADD	RELBIT		16180	
3132	2577		LCI	TEM7	CHECK FOR UNDEFINED	16190	
3133	6102		NZF	2	JP IF NOT UNDEF	16200	
3134	4070		STD	TEM0		16210	
3135	2177		LDT	TEM7		16220	
3136	0020			20		16230	
3137	1473	ADSUMB	LSU	TEM3	APPLY SIGN	16240	
3140	4040		STD	SIGMA		16250	
3141	2200		LDF	0		16260	
3142	5040		RAD	SIGMA		16270	
3143	4303		STB	ADSUMB	1	16280	
3144	5474		ADD	TEM4		16290	
3145	5471	ADSUMC	ADD	TEM1		16300	
3146	5472		ADD	TEM2		16310	
3147	0720		SBN	DELTA		16320	
3150	0536		NZB	ADSUMA		16330	
3151	3060		ADD	RELBIT		16340	
3152	1075		LPD	TEM5		16350	
3153	4060		STD	RELBIT	SET RELBIT	16360	
3154	2353		LDB	ADSUM	+6	16370	
3155	4315		STB	ADSUMB	1	RESTORE STORE	16380
3156	2470		LCD	TEM0		16390	
3157	6677		PJB	ADUN		16400	
3160	6777		NJB	ADUN	+1	16410	
3161	2172	ADSUMD	LDI	TEM2		16420	
3162	5523		NZB	ADSUMB		16430	
3163	6424		ZJB	ADSUMB		16440	
3164	6427	ADSUMZ	ZJB	ADSUMB	-2	16450	
3165	2051		LDD	CASPAS		16460	
3166	0702		SBN	2		16470	
3167	6736		NJB	ADSUMB	-6	16480	
3170	0420		LDN	20		16490	
3171	0020			20		16500	
3172	5171		RA1	TEM1		16510	
3173	0021			21		16520	
3174	6543		NZB	ADSUMB	-6	16530	
			REM		LOOKUP SYMBOL TABLE VALUE	16540	
3175	2077		LDD	TEM7		16550	
3176	7101		JFI	LOOKUP		16560	
3177	0000	LOOKUP			RETURN WITH STL IN A-REG	16570	
3200	4077		STD	TEM7		16580	
3201	0701		SBN	1		16590	
3202	4076		STD	TEM6		16600	
3203	0021			21		16610	
3204	2176		LDI	TEM6		16620	
3205	5510		NZB	LOOKUP	-2	16630	
3206	2177		LDI	TEM7		16640	
3207	4077		STD	TEM7		16650	
3210	5513		NZB	LOOKUP	-2	16660	
3211	7101	MOVRET	JFI	1		16670	
3212	0000	MOVE			RETURN ROUTINE	16680	
3213	0502		LCN	2	TO	16690	
3214	4077		STD	TEM7		16700	

3215	2051		LDD	CASPAS	MOVE		16710
3216	0206		LPN	6	FLAGS		16720
3217	6007		ZJF	MOVEA	AND		16730
3220	2602		LCF	2	ASSOCIATED		16740
3221	4200		STF	0	WORDS		16750
3222	7734			FLEXUL -WDCT	TO		16760
3223	5210		RAF	MOVEB	STORAGE		16770
3224	2702		LCB	2	AREA		16780
3225	5207		RAF	MOVEB 1			16790
3226	5477	MOVEA	AOD	TEM7			16800
3227	6417		ZJB	MOVRET -1			16810
3230	0410		LUN	FI			16820
3231	4007		STD	FLEXUL			16830
3232	4045		STD	TEMP3			16840
3233	2107	MOVEB	LDI	FLEXUL			16850
3234	4152		STI	WDCT			16860
3235	5452		AOD	WDCT			16870
3236	5407	MOVEC	AOD	FLEXJL			16880
3237	0713		SBN	STL			16890
3240	5104		NZF	4			16900
3241	2011		LDD	FJ			16910
3242	6604		PJB	MOVEC			16920
3243	6710		NJB	MOVEB			16930
3244	0703		SBN	3			16940
3245	6712		NJB	MOVEB			16950
3246	0701		SBN	1			16960
3247	6303		NJF	3			16970
3250	6533		NZB	MOVE 3			16980
3251	5445		AOD	TEMP3			16990
3252	2145		LDI	TEMP3			17000
3253	0203		LPN	3			17010
3254	5521		NZB	MOVEB			17020
3255	6417		ZJB	MOVEC			17030
3256	7101		JFI	1			17040
3257	0000	LEADER					17050
3260	7500		EXF	0	PUNCH		17060
3261	4104			4104	PAPER		17070
3262	2202		LOF	2	TAPE		17080
3263	4845		STD	TEMP3	LEADER		17090
3264	7400		OTN	0			17100
3265	5445		AOD	TEMP3			17110
3266	5502		NZB	2			17120
3267	6411		ZJB	LEADER -1			17130
			REM				
			REM		FLEX BCD CONVERTER		17140
			REM				
			REM		BLO 8/15/61		17150
			REM				
			REM		FLEX CODE IN UPPER 6		
			REM		BCD IN LOWER 6		
			REM				
3270	4650	PLUS		4660			17160
3271	4213	EQUALS		4213			17170
3272	5434	LPAREN		5434			17180
3273	5053	DOLCOL		5053			17190
3274	4454	APOAST		4454			17200
3275	5612	X0		5612			17210
3276	7401	X1		7401			17220
3277	7002	X2		7002			17230
3300	6403	X3		6403			17240

3301	5234	X4	5204		17250
3302	5605	X5	6605		17260
3303	7206	X6	7206		17270
3304	5007	X7	6007		17280
3305	3310	X8	3310		17290
3306	3711	X9	3711		17300
3307	3061	A	3061		17310
3310	2362	B	2362		17320
3311	1663	C	1663		17330
3312	2264	D	2264		17340
3313	2065	E	2065		17350
3314	2666	F	2666		17360
3315	1367	G	1367		17370
3316	0570	H	570		17380
3317	1471	I	1471		17390
3320	3241	J	3241		17400
3321	3642	K	3642		17410
3322	1143	L	1143		17420
3323	0744	M	744		17430
3324	0645	N	645		17440
3325	0346	O	346		17450
3326	1547	P	1547		17460
3327	3550	Q	3550		17470
3330	1251	R	1251		17480
3331	2422	S	2422		17490
3332	0123	T	123		17500
3333	3424	U	3424		17510
3334	1725	V	1725		17520
3335	3126	W	3126		17530
3336	2727	X	2727		17540
3337	2530	Y	2530		17550
3340	2131	Z	2131		17560
3341	0420	BLANK	420		17570
3342	5240	MINUS	5240		17580
3343	4421	SLASH	4421		17590
3344	4273	PERIOD	4273		17600
3345	4633	COMMA	4633		17610
3346	5474	RPAREN	5474		17620
3347	0272	CS+0	272	COLOR SHIFT = PLUS ZERO	17630
3350	0000	ENOTAB	0		17640
3351	4207	BCDFLX	STF	CHARAC	17650
3352	0401		LON	1	17660
3353	4233		STF	SWITCH	SET SWITCH TO NOP
3354	2273		LDF	SHIFTA	
3355	4240		STF	SHIFT	SET SHIFT TO LS6
3356	5122		NZF	ADDADD -1	
3357	4200	FLXBCD	STF	0	17700
3360	0000	CHARAC			17710
3361	0757		SUN	57	17720
3362	5004		ZJF	STOFLA	TEST LOWER CASE CODE
3363	0510		ADN	10	17740
3364	5106		NZF	SETSWC	TEST UPER CASE CODE
3365	0401		LJN	1	17760
3366	4007	STOFLA	STD	FLEXUL	SET FLAG
3367	5470		AUD	TEM0	
3370	7101		JF1	1	17790
3371	0534			CODE	17800
3372	2255	SETSWC	LDF	SHIFTA	SET SWITCH TO LS6
3373	4213		STF	SWITCH	
3374	0401		LUN	1	17830
					17840

3375	4220	STF	SHIFT	SET SHIFT TO NOP	17850	
3376	2007	LDD	FLEXUL		17860	
3377	6002	ZJF	ADDADD	TEST LOWER CASE	17870	
3400	0505	LCN	5	SET ADDRESS TO UPPER CASE	17880	
3401	3200	ADDADD	ADF	SET ADDRESS	17890	
3402	3275		X0		17900	
3403	4076	STD	TEM6		17910	
3404	2176	BFSTNK	LDI	TEM6	17920	
3405	6046	ZJF	TSTSWC	ERROR	17930	
3406	0030	SWITCH		LEFT SHIFT 6 OR NOP	17940	
3407	1727	SCB	CHARAC		17950	
3410	0277	LPN	77		17960	
3411	6003	ZJF	FOUND	EQUALITY	17970	
3412	5476	ADD	TEM6	ADD TO TABLE ADDRESS	17980	
3413	6507	NZB	BFSTNK		17990	
3414	2176	FOUND	LDI	LOAD TABLE ITEM	18000	
3415	0000	SHIFT	TEM6	SHIFT 6 OR NOP	18010	
3416	0277	LPN	77	MASK	18020	
3417	4077	STD	TEM7		18030	
3420	2303	LDB	SHIFT		18040	
3421	0701	SBN	1		18050	
3422	6103	NZF	TSTADD	TEST BCD OR FLEX	18060	
3423	2077	LDD	TEM7		18070	
3424	7042	JPI	FLEX	RETURN FLEX	18080	
3425	2076	TSTADD	LDD	TEM6	18090	
3426	3724	SBB	ADDADD +1	TEST IF ONE OF U.C. ENTRIES	18100	
3427	6311	NJF	UPFLAG		18110	
3430	2007	LDD	FLEXUL	TEST FLAG	18120	
3431	6012	ZJF	CHALOW		18130	
3432	2352	LDB	CHARAC	TEST IF SPECIAL U.C.	18140	
3433	6316	NJF	ENDER		18150	
3434	0400	LDN	0		18160	
3435	4007	STD	FLEXUL		18170	
3436	0457	LDN	57	EMIT LOWER CASE	18180	
3437	6110	NZF	SHIFTA		18190	
3440	2007	UPFLAG	LDD	FLEXUL	TEST FLAG	18200
3441	6110	NZF	ENDER		18210	
3442	6003	ZJF	CHALOW +2		18220	
3443	2363	CHALOW	LDB	CHARAC	TEST IF SPECIAL U.C.	18230
3444	6205	PJF	ENDER		18240	
3445	0447	LDN	47	EMIT UPPER CASE	18250	
3446	4007	STD	FLEXUL		18260	
3447	0111	SHIFTA	LS6		18270	
3450	5077	RAD	TEM7		18280	
3451	2077	ENDER	LDD	TEM7	18290	
3452	7045	JPI	BCD	RETURN BCD	18300	
3453	2336	TSTSWC	LDB	SHIFT	18310	
3454	3705	SBB	SHIFTA		18320	
3455	6403	ZJB	ENDER +1		18330	
3456	0400	LDN	0		18340	
3457	7042	JPI	FLEX		18350	
	0111	LS6	EQ0	111	18360	
		REM				
		REM		OSAS-A SCAN WRITTEN 7/28/61		
		REM				
		REM		COMMENTS ADDED 1/10/72		
		REM				
3460	0502	SCAN	ADN	2	MAKE RETURN ADDRESS	
3461	4037		STD	SCANEX	AND SAVE IN EXIT	

3462	0506		LCN	6	NUMBER OF DIGITS IN FIELD
3463	4076		STD	KSCAN	SAVE IN CHARACTER COUNT FLAG
3464	0507		LCN	7	MAXIMUM LENGTH OF FIELD
3465	4040		STD	ISCAN	SAVE IN CHARACTERS PROCESSED
3466	0421		LUN	L1	ADDRESS OF CONTENTS OF FIELD
3467	4041		STD	JSCAN	SAVE IN PROCESSED OUTPUT FLAG
3470	0470		LDN	70	ADDRESS OF START OF TEMP.
3471	4077		STD	NUSCAN	SAVE IN ADDRESS OF DIGITS FLAG
3472	0400		LDN	0	CLEAR A
3473	4024		STD	L4	CLEAR VALUE OF SYMBOL TYPE
3474	4274		STF	FLGSCN	CLEAR FLAG
3475	0501		LCN	1	LOAD -1
3475	4240		STF	DSWSCN	STORE IN D CHAR. FLAG
3477	4270		STF	CNTSCN	STORE IN TRAILING BLANK FLAG
			REM		END OF INITIATE
			REM		
			REM		START SCAN BY SUPPRESSING
			REM		LEADING BLANKS
			REM		
3500	2161	BSCAN	LUI	CRDCOL	LOAD 1ST CHARACTER OF FIELD
3501	0720		SBN	20	SUBTRACT A BLANK
3502	5106		NZF	CSCAN	TEST FOR BLANK
3503	5461		ADD	CRDCOL	YES, SO CHECK NEXT COLUMN
3504	5440		ADD	ISCAN	STEP CHARACTERS PROCESSED FLAG
3505	5505		NZB	BSCAN	TEST FOR END OF FIELD
			REM		IF NO, GO CHECK NEXT
3505	2252	BSCAN1	LUF	FLGSCN	YES, FIELD ALL BLANKS
3507	7037		JPI	SCANEX	SO EXIT WITH A=0
			REM		
			REM		A NOW HAS FIRST NON-BLANK
			REM		-20, AND CRDCOL HAS ADDRESS
			REM		OF THAT COLUMN.
			REM		
			REM		SO START TO TEST FIELD
			REM		FOR 1ST CHAR = + OR-
			REM		
3510	0720	CSCAN	SBN	20	-40 OR MINUS SIGN
3511	6104		NZF	CSCAN0	TEST FOR MINUS
3512	0414		LDN	14	YES, PUT BIT FLAG IN A
3513	5255		RAF	FLGSCN	AND STORE IN FIELD TYPE
3514	6105		NZF	CSCAN1	UNCONDITIONAL, SUPPRESS BLANKS
			REM		
3515	0720	CSCAN0	SBN	20	-60 OR PLUS SIGN
3516	6106		NZF	CSCAN2	TEST FOR PLUS
3517	0410		LDN	10	YES, PUT BIT FLAG IN A
3520	5250		RAF	FLGSCN	AND STORE IN FIELD TYPE
			REM		
			REM		END OF SIGN TEST.
			REM		NOW SUPPRESS BLANKS
			REM		AFTER SIGN.
			REM		
3521	5461	CSCAN1	ADD	CRDCOL	STEP TO NEXT COLUMN
3522	5440		ADD	ISCAN	AND CHARACTERS PROCESSED FLAG
3523	6415		ZJB	BSCAN1	JUMP TO EXIT IF ONLY SIGN
			REM		CHARACTER IN FIELD
3524	2161	CSCAN2	LUI	CRDCOL	LOAD NEXT COLUMN
3525	0720		SBN	20	SUBTRACT A BLANK
3525	5405		ZJB	CSCAN1	JUMP TO NEXT CHAR. IF A BLANK
			REM		
			REM		END OF TEST FOR SIGN

			REM						
			REM						NOW SCAN FOR NUMERICS
			REM						AND D CHARACTER
			REM						
3527	0505	DSCAN	ADN	6					NOT BLANK, BACK UP TO -12
3530	5003		ZJF	3					JUMP IF NUMERIC 0 (12)
3531	6207		PJF	ESCAN					JUMP IF G. THAN 12, IE SYMBOLIC
3532	0612		ADN	12					NUMERIC, SO RESTORE
3533	4177		STI	NUSCAN					STORE VALUES AT 70 ONWARDS,
			REM						ONE CHARACTER PER LOCATION
3534	5477		AOD	NUSCAN					STEP TO NEXT LOCATION
3535	6105		NZF	ESCAN1					UNCONDITIONAL
3536	0000	DSWSCN							D FLAG = -1 UNTIL A D IS FOUND
3537	2525	SWTSCN		2525					UPPER/LOWER FLAG FOR PACKING
			REM						
			REM						TEST FOR D CHARACTER
			REM						
3540	0752	ESCAN	SBN	52					-64 OR BCD 0
3541	5003		ZJF	GSCAN					JUMP IF WAS A D
			REM						
3542	2304	ESCAN1	LDB	DSWSCN					LOAD D SWITCH
3543	6302		NJF	HSCAN					JUMP IF NO D YET
			REM						
3544	5706	GSCAN	AOB	USWSCN					SET D SWITCH
			REM						
3545	4706	HSCAN	SRB	SWTSCN					LOAD/SHIFT UPPER/LOWER FLAG
3546	6205		PJF	EVNSCN					JUMP FOR LOWER
3547	2161		LDI	CRDCOL					LOAD CURRENT CHARACTER
3550	0111		LS6						MOVE TO UPPER 6 BITS
3551	4141		STI	JSCAN					SAVE IN L1/2/3
3552	6104		NZF	KSCNY1					UNCONDITIONAL JUMP
			REM						
			REM						PACK INTO LOWER 6 BITS
			REM						
3553	2161	EVNSCN	LDI	CRDCOL					LOAD CURRENT CHARACTER
3554	5141		RAI	JSCAN					PACK INTO LOWER BITS
3555	5441		AOD	JSCAN					STEP TO L2 AND L3
			REM						
3556	5476	KSCNY1	AOD	KSCAN					SET CHARACTERS PACKED FLAG
3557	5021		ZJF	SCNFLG					JUMP IF 6TH ONE JUST STORED
3560	5461	EYSCAN	AOD	CRDCOL					NOT YET, SO NEXT COLUMN
3561	5440		AOD	ISCAN					STEP CHARACTERS PROCESSED FLAG
3562	6007		ZJF	PCKSCN					JUMP IF 7TH WAS HANDLED
3563	2161		LDI	CRDCOL					OTHERWISE, LOAD NEXT CHAR.
3564	0720		SBN	20					SUBTRACT A BLANK
3565	5405		ZJB	EYSCAN					JUMP, TO SUPPRESS EMBEDDED
			REM						BLANKS OR TRAILING BLANKS
			REM						
			REM						
3566	6537		NZB	DSCAN					NOT A BLNK, SO START
			REM						TEST SEQUENCE AGAIN
			REM						
3567	0000	CNTSCN							-1 PLUS COUNT OF TRAILING BL.
3570	0000	FLGSCN							
			REM						
			REM						FIELD NOW SCANNED.
			REM						MAKE CERTAIN 6 CHARS
			REM						WERE STORED IN L1/2/3
			REM						
3571	5702	PCKSCN	AOB	CNTSCN					STEP COUNT OF BLANKS
3572	0501		LCN	1					A=-1

3573	4040	STD	ISCAN	BACK UP ONE CHARACTER
3574	5061	RAD	CRDCOL	AND ONE COLUMN
3575	0420	LUN	20	LOAD A DUMMY BLANK
3576	4161	STI	CRDCOL	AND STORE IN LAST COLUMN
3577	5532	NZD	HSCAN	THEN GO PROCESS DUMMY BLANK
		REM		
		REM		ENTER HERE WHEN 6 CHARS,
		REM		NOT COUNTING SIGN AND BLANKS,
		REM		HAVE BEEN PACKED INTO L1/2/3.
		REM		
3600	5461	SCNFLG	ADD	STEP CURRENT COLUMN
3601	5440	ADD	ISCAN	AND COUNT OF PROCESSED CHARS
3602	5002	ZJF	2	CHECK FOR 7TH
3603	5461	ADD	CRDCOL	NO, STEP CURRENT AGAIN
		REM		-THIS IS CASE OF 1ST 6 ARE
		REM		SYMBOLIC, SO FINISHED ANYWAY
3604	0470	LUN	70	ADDRESS OF 1ST NUMERIC
3605	0777	SBN	NUSCAN	MINUS ADDRESS OF CURRENT NUMERIC
3606	5037	ZJF	SYMSCN	EQUALS NUMBER OF DIGITS COMPL.
		REM		JUMP IF ALL ALPHAS.
3607	0604	ADN	4	TEST FOR 4 OR LESS NUMERIC
3610	6335	NJF	SYMSCN	JUMP, IF MORE THAN 4
		REM		
		REM		NOW PROCESS TYPES OF FIELDS
		REM		
3611	3722	SBB	CNTSCN	SUBTRACT TRAILING BLANKS -1
		REM		AND TEST FOR EQUAL TO 6
		REM		MINUS NUMBER OF NUMERIC.
		REM		IE, IS FIELD ALL NUMERIC OR
		REM		DOES IT HAVE AN ALPHA.
3612	6317	NJF	OCTSCN	JUMP FOR ALL NUMERIC OR OCTAL
3613	6132	NZF	SYMSCN	JUMP FOR MORE THAN ONE ALPHA.
3614	2356	LDB	DSWSCN	ONLY 1 ALPHA, LOAD U SWITCH
3615	6130	NZF	SYMSCN	CHECK FOR MORE THAN ONE D
		REM		
		REM		DECIMAL FIELD
		REM		
3616	2277	LDF	DSHFT	LOAD MUT INSTRUCTION
3617	4245	STF	SFTSCN	SAVE IN CONVERT ROUTINE
3620	0574	LCN	74	LOAD - 74
3621	3077	ADD	NUSCAN	ADD TO LAST NUMERIC ADDRESS + 1
3622	5104	NZF	4	JUMP FOR LESS THAN 4 CHARS
3623	2470	LDI	70	4 CHARS, LOAD COMPL OF FIRST
3624	0604	ADN	4	ADD 4 TO SEE IF G. THAN 4000
3625	5320	NJF	SYMSCN	JUMP IF GREATER THAN 4000
		REM		
3626	0402	LUN	2	LOAD DECIMAL BIT FLAG
3627	5337	RAB	FLGSCN	MASK INTO FIELD TYPE FLAG
3630	6123	NZF	NUMERC	UNCONDITIONAL TO CONVERT
		REM		
		REM		OCTAL FIELD
		REM		
3631	2263	OCTSCN	LDF	LOAD LS3 INSTRUCTION
3632	4232	STF	SFTSCN	SAVE IN CONVERT ROUTINE
3633	0470	LUN	70	ADDRESS OF FIRST NUMERIC
3634	4040	STD	ISCAN	REUSE ISCAN AS A TEMP
3635	0407	OASCAN	LUN	7
				OCTAL 7 OR LARGEST OCTAL
3636	3540	SBI	ISCAN	SUBTRACT CURRENT CHAR.
3637	6306	NJF	SYMSCN	IF G. THAN 7, THEN DECIMAL
		REM		FIELD WITHPUT D. TREAT AS

3640	5440		REM		SYMBOLIC.
3641	3477		ADD	ISCAN	STEP TO NEXT CHARACTER
3642	6505		SBD	NUSCAN	SUBTRACT ADDRESS OF LAST
3643	5753		NZB	OASCAN	IF NOT FINISHED, TRY NEXT
3644	6107		A0B	FLGSCN	OCTAL - MASK IN FLAG BIT
			NZF	NUMERC	AND JUMP TO CONVERT
			REM		
			REM.		SYMBOLIC FIELD
			REM		
3645	2355	SYMSCN	LDB	FLGSCN	LOAD TYPE FLAG
3646	0274		LPN	74	SCREEN OUT SIGN BITS
3647	0603		ADN	3	ADD IN TYPE BITS
3650	7037		JPI	SCANEX	AND EXIT
			REM		
3651	2351	OTNUMR	LDB	FLGSCN	LOAD TYPE FLAG
3652	7037		JPI	SCANEX	AND EXIT
			REM		
			REM		CONVERT ROUTINE
			REM		
3653	0467	NUMERC	LDN	67	FIRST CHARACTER ADDRESS -1
3654	4040		STD	ISCAN	REUSE FOR TEMP
3655	0501		LCN	1	LOAD -1
3656	5077		RAU	NUSCAN	BACK UP COUNTER TO LAST
3657	5440	NASCAN	ADD	ISCAN	STEP CHARACTER ADDRESS
3660	3477		SBD	NUSCAN	SUBTRACT LAST CHAR ADDRESS
3661	4041		STD	JSCAN	AND SAVE AS NO. OF SHIFTS
3662	6006	NBSCAN	ZJF	ADDSCN	JUMP IF NO SHIFTS=LAST
3663	2140	NBSCN1	LDI	ISCAN	LOAD CURRENT CHARACTER
3664	0001	SFTSCN	NOPI		MUT/LS3 DEPENDING ON TYPE
3665	4140		STI	ISCAN	STORE BACK INTO NUMERIC
3666	5441		ADD	JSCAN	STEP SHIFT COUNT
3667	6504		NZB	NBSCN1	JUMP UNTIL SHIFT FINISHED
			REM		
3670	2140	ADDSCN	LDI	ISCAN	LOAD FINAL SHIFTED VALVE
3671	5024		RAU	L4	ADD INTO VALVE
3672	6315		NJF	SGNBOX	CHECK SIGN
3673	5003		ZJF	MINZER	TEST FOR SPECIAL ZERO
3674	2076		LDD	KSCAN	LOAD SIGN FLAG, 0 = + BEFORE
3675	6530		NZB	SYMSCN	IF CHANGED, OVERFLOW-TREAT AS SYMBOLIC
3676	2076	MINZER	LDD	KSCAN	LOAD SIGN FLAG, 0=+ BEFORE
3677	5011		ZJF	SGNBOX +1	IF SIGN DIDN'T CHANGE, DO NEXT
3700	0500		LCN	0	LOAD 7777
3701	4024		STD	L4	SPECIAL CASE, SAVE IN VALUE
3702	2200		LDC	400	SET LDN 0 TO ELIMINATE FLAG WITH
3703	0400				
			REM		EQU 7777
3704	4100		STM	RPGA +3	SAVE IN MAIN
3705	1400				
3706	5535		NZB	OTNUMR	AND EXIT
			REM		
			REM		MONITOR SIGN FOR OVERFLOW
			REM		KSCAN = 0 ON ENTRY
3707	5476	SGNBOX	ADD	KSCAN	SIGN BIT CHANGED TO NEGATIVE, FLAG
3710	2040		LDD	ISCAN	LOAD CURRENT ADDRESS
3711	3477		SBD	NUSCAN	SUBTRACT LAST CHAR ADDRESS
3712	5533		NZB	NASCAN	CHECK FOR LAST CHAR PROCESSED
3713	6442		ZJB	OTNUMR	EXIT IF YES
			REM		
			REM		
3714	0110	OSHFT	LS3		INSTRUCTION FOR SHIFT ROUTINE

3715	0112	DSHFT	MUT			SAME AS ABOVE
	0040	ISCAN	EQU			COUNT OF CHARACTERS PROCESSED
	0075	KSCAN	EQU			NUMBER OF PACKED CHARACTERS
	0041	JSCAN	EQU			ADDRESS OF PACKED OUTPUT
	0077	NUSCAN	EQU			TEM7
			REM			
			REM			NO TEST HAS BEEN MADE FOR
			REM			SPECIAL CASE OF D EMBEDDED
			REM			WITHIN AN ALL NUMERIC
			REM			FIELD. EXAMPLED 42D3
			REM			
			REM			OSAP-A SEARCH CMN 7/31/61
			REM			
			REM			ANNOTATED BHP 17 JAN 72
			REM			
			REM			ROUTINE SCANS VARIABLE AND
			REM			CONSTANT FIELD TO COMPARE
			REM			WITH CURRENT LABEL/ADDRESS/
			REM			OR ADDITIVE FIELD.
			REM			
	3716		PRG			
3716	2070	LDSRCH	LDD	CTSRCH		LOAD FLAG/CURRENT ADDRESS
3717	7101	OTSRCH	JFI	1		AND EXIT
3720	0000	SEARCH				ENTRY POINT FOR SEARCH
3721	0475		LDN	75		START OF VARIABLE -1
3722	4070		STD	CTSRCH		SAVE IN LOOP ADDRESS
3723	0420	ASRCH	LDN	20		L1 - 1
3724	4071		STD	CLSRCH		SAVE IN SEARCHED-FOR FLAG
			REM			
3725	5470	BSRCH	AOD	CTSRCH		STEP VARIABLE FIELD ADDRESS
3726	5471		AOD	CLSRCH		STEP L1 TO L2 AND L3
3727	0724		SBN	24		TEST FOR L4
3730	6412		ZJB	LDSRCH		JUMP IF YES, 1E SYMBOL FOUND
			REM			
3731	2070		LDD	CTSRCH		LOAD ADDRESS OF NEXT VARIABLE
3732	6413		ZJB	OTSRCH		TEST FOR END OF MEMORY
3733	3434		SBD	TVAR		NO, SO TEST FOR END OF
3734	6104		NZF	CSRCH		VARIABLES.
			REM			YES, SWITCH SCAN TO CONSTANTS
3735	2033		LDD	TCON		LOAD ADDRESS OF START OF CON
3736	4070		STD	CTSRCH		AND SAVE IN FIELD ADDRESS
3737	6514		NZB	ASRCH		UNCONDITIONAL TO NOW SEARCH
			REM			THE CONSTANTS.
			REM			
3740	2171	CSRCH	LDI	CLSRCH		LOAD L1/L2/L3
3741	0021		SIC1			CHANGE INDIRECT BANK
3742	3570		SBI	CTSRCH		AND SUBTRACT CURRENT TABLE VALVE
3743	0020		SIC0			RESTORE INDIRECT BANK
3744	6417		ZJB	BSRCH		TEST FOR EQUALITY
3745	0424		LDN	24		NO, TEST FOR L4
3746	3471		SBD	CLSRCH		A HAS LENGTH UNCHECKED
3747	5070		RAD	CTSRCH		ADD TO VARIABLE ADDRESS TO
			REM			SKIP REST OF THAT VARIABLE
3750	5525		NZB	ASRCH		UNCONDITIONAL TO TEST
			REM			NEXT VARIABLE.
			REM			
	0070	CTSRCH	EQU	TEM0		ADDRESS OF VARIABLE/CONSTANT
	0071	CLSRCH	EQU	TEM1		ADDRESS OF L1/L2/L3
			REM			

			REM		ON EXIT, A= ADDRESS OF 4TH WORD	
			REM		FOR FIND, OR 0 FOR NO FIND	
			REM			
			REM		ROUTINE TO STORE A VARIABLE	
			REM		INTO TABLES, (SYMBOL)	
			REM			
			REM		CMN 7/27/61	
			REM			
			REM		BHP - ANNOTATED 21 JAN 1972	
			REM			
			PRC			
	3751					
	3751	7101	OTSTYS	JFI	1	EXIT TO CALLER
	3752	0000	STSY			ENTRY / RETURN ADDRESS
	3753	4024		STD	L4	SAVE VALUE OF LABEL
	3754	2034		LDU	TVAR	ADDRESS OF NEXT VARIABLE
	3755	3433		SBD	TCON	MINUS ADDRESS OF NEXT CONSTANT
	3756	0503		ADN	3	NEED AT LEAST 4 CELLS
	3757	6102		NZF	2	TEST TO SEE IF AT LEAST 4
			REM			
	3760	0000		ERR		NO - SYMBOL TABLE FULL -
			REM			
			REM			IRRECOVERABLE ERROR
			REM			
	3761	0421		LJN	L1	ADDRESS OF CURRENT SYMBOL
	3762	4077		STD	TEM7	SAVE FOR INDEXING
	3763	2177	ASTSY	LUI	TEM7	LOAD CURRENT WORD
	3764	0021		SIC1		CHANGE BANKS TO SYMBOL TABLE
	3765	4134		STI	TVAR	AND STORE CURRENT
	3766	0020		SIC0		RESTORE INDIRECT
	3767	5434		ADD	TVAR	STEP TO NEXT CELL
	3770	5477		ADD	TEM7	STEP TO L2/L3/L4
	3771	0725		SBN	25	SUBTRACT L5
	3772	6507		NZB	ASTSY	JUMP IF LESS THAN 4 WORDS STORED
EU	3773	6400		ZJB	OTSTYS	4WORDS, SO EXIT
			REM			
			REM			SYMBOL TABLE BIOCTAL LOAD
			REM			CMN 8/8/61
			REM			REVISED BHP - SEPT. 71
			REM			
			PRG			
	3774					
	3774	0020	OTSYLD	SIC0		RESTORE INDIRECT BANK
	3775	7101		JFI	RST	EXIT JUMP
	3776	0000	RST			ENTRY - FROM JPR INSTR.
	3777	0021		SIC1	1	SYMBOL TABLE IS IN BANK 1
	4000	0476		LDN	76	LOAD FWA OF CON TABLE
	4001	4070		STD	TEM0	70 CONTAINS SECOND CORE LOC
	4002	7500		EXC	4102	SELECT PT READER
	4003	4102				
	4004	7600		INA		
	4005	6401		ZJB	1	THROW AWAY LEADER
			REM			THROW AWAY 1ST FRAME
	4006	7600	SYMRED	INA		
	4007	0111		LS6		MOVE TO UPPER CHARACTER
	4010	4170		STI	TEM0	SAVE IN 76
	4011	0201		LPN	1	SCREEN OUT 7TH LEVEL
	4012	4071		STD	TEM1	AND SAVE IN 71
	4013	7600		INA		
	4014	7670		HWI	TEM0	STORE LOWER CHARACTER

4015	2071		REM		7TH LEVEL OVER WRITTEN
4016	6104		LDD	TEM1	GET 7TH LEVEL BIT FLAG
			NZF	TCONRD	
			REM		
4017	5470	REDADD	ADD	TEM0	STEP TO STORE NEXT WORD
4020	6424		ZJR	OTSYLD	TEST FOR END OF BANK
4021	5513		NZB	SYMRED	NO, THEN READ NEXT WORD
			REM		
4022	2070	TCONRD	LDD	TEM0	GET LAST ADDRESS USED
4023	4034		STD	TVAR	SAVE AS LAST VARIABLE
4024	2170		LDI	TEM0	GET LAST WORD STORED
4025	4070		STD	TEM0	PUT INTO TEM0
4026	4033		STD	TCON	AND TCON AS 1ST ADDRESS
4027	5510		NZB	REDADD	VJP TO NEXT ADDRESS
			REM		
			REM		7TH LEVEL MEANS END
			REM		OF VARIABLE TABLE AND
			REM		BEGINNING OF CONSTANT
			REM		TABLE. (THE WORD WITH 7TH LEVEL
			REM		PUNCH ALSO HAS ADDRESS FOR
					START (LOWER) ADDRESS OF CONSTANTS
			REM		
			REM		
			REM		
			REM		SYMBOL TABLE BIOCTAL DUMP
			PRG		CMN 8/8/61
					ANNOTATED BHP 9/71
	4030				
4030	7100	OTSYDP	JPR	LEADER	PUNCH TRAILER AFTER SYMTABLE
4031	3257				
4032	7101		JFI	1	EXIT
4033	0000	PST			ENTRY POINT VIA A JPR
4034	0475		LON	75	VARIABLE TABLE BEGIN- 1
4035	4070		STD	TEM0	SET UP TRANSFER
4036	7100		JPR	LEADER	PUNCH 6 INCH LEADER
4037	3257				
4040	0477		LON	77	COUNTER
4041	4075		STD	TEM5	FOR INDIRECT LOOP
4042	4076		STD	TEM6	OUTPUT LOC FOR UPPER
4043	4077		STD	TEM7	OUTPUT LOC FOR LOWER
4044	7477		OTN	77	1ST FRAME-USED ONLY FOR FLAG
4045	6112		NZF	SYMCHK	UJP
			REM		
			REM		PUNCH WAS SELECTED IN LEADER
			REM		
4046	0021	SYMLOP	SIC1		SYMBOL TABLE IS IN BANK 1
4047	2170		LDI	TEM0	PICKUP WORD
4050	0020		SIC0		RESTORE BANK
4051	7675		HWI	TEM5	SAVE LOWER 6 IN LOC 77
4052	0111		LS6		MOVE UPPER TO LOWER
4053	0277		LPN	77	SCREEN OUT UPPER 6
4054	4076	SYMRET	STD	TEM6	AND STORE UPPER 6 IN LOC 76
4055	7315		JUT	SYMADD	OUTPUT BLOCK 76 TO 77
4056	0100			100	LWA+1
			REM		
4057	5470	SYMCHK	ADD	TEM0	STEP ADDRESS (START AT 76)
4060	6430		ZJB	OTSYDP	EXIT FOR END OF BANK
4061	1434		SCD	TVAR	NO- THEN CHECK FOR END
4062	5514		NZB	SYMLOP	OF VARIABLE TABLE

4063	2033		LDD	TCON	YES, ADDRESS OF BEGINNING OF CON	
4064	4070		STD	TEM0	NOW SET UP CONTABLE LOADS	
4065	7675		HWI	TEM5	LOWER OF ADDRESS TO 77	
4066	0111		LS6		MOVE UPPER TO LOWER	
4067	0277		LPN	77	SCREEN OUT UPPER	
4070	3312		ADB	SYMCHK -1	ADD IN 7TH LEVEL SIGNIFYING	
			REM		START OF CON TABLE	
4071	6515		NZB	SYMRET	AND GO PUNCH	
4072	0076	SYMADD		76	FWA OF OUTPUT BLOCK	
			REM			
			REM		ENTER SYMBOL	21200
			REM		CMN 8/18/61	21210
			REM			
	4073		PRG			21220
4073	7101	OTETSY	JFI	1		21230
4074	0000	ENTSYM			RETURN JUMP	21240
4075	0703		SBN	3		21250
4076	4070		STD	70		21260
4077	2061		LDD	CRDCOL		21270
4100	4071		STD	71		21280
4101	0021	ENSMLP		21	SET INDIRECT	21290
4102	2170		LDI	70		21300
4103	6105		NZF	5		21310
4104	0403		LDN	3		21320
4105	5070		RAD	70		21330
4106	2170		LDI	70		21340
4107	6512		NZB	ENTSYM 1		21350
4110	0020			20	RESTORE INDIRECT	21360
4111	4073		STD	73		21370
4112	0111		SHA	11		21380
4113	7671			7671	HWI IN CRDCOL	21390
4114	5471		AOD	71		21400
4115	2073		LDD	73		21410
4116	7671			7671	HWI IN CRDCOL	21420
4117	5470		AOD	70		21430
4120	5471		AOD	71		21440
4121	4603		SRF	ENSMSW		21450
4122	6621		PJB	ENSMLP		21460
4123	6730		NJB	OTETSY		21470
4124	4444	ENSMSW		4444		21480
			REM		ENTER BINARY WORD	21490
			REM		CMN 8/9/61	21500
	4125		PRG			21510
4125	7101	OUTEBW	JFI	1		21520
4126	0000	EBW			RETURN JUMP	21530
4127	4256		STF	CELEBW		21540
4130	2100		LDI	0		21550
4131	7657			COL1		21560
4132	6125		NZF	AEBW		21570
4133	2104	INTEBW	LDI	LORC	FIRST DATA WORD	21580
4134	4100		STI	0		21590
4135	7660			COL1 1	FIRST WORD ADDRESS	21600
4136	2247		LDF	CELEBW		21610
4137	4100		STI	0		21620
4140	7657	COLADB		COL1		21630
4141	2200		LDF	0		21640
4142	7662			COL1 3	SET RELOC BITS	21650
4143	4220		STF	SHCTB1	COUNTER	21660
4144	4222		STF	SHCTB2		21670
4145	4250		STF	SHCTB3		21680

4146	2200		LDF	0			21690
4147	7670			COL1	90		21700
4150	4226		STF	WRDCTB		SET WORD COUNT	21710
4151	2004		LDD	LORC			21720
4152	0706		SBN	CC			21730
4153	6104		NZF	AEBW			21740
4154	0401		LDN	1	= 1		21750
4155	4100		STI	0			21760
4156	7667			COL1	80		21770
4157	0410	AEBW	LDN	10			21780
4160	5100		RAI	0			21790
4161	7657			COL1			21800
4162	4500	RELEBW	SRI	0			21810
4163	0000	SHCTB1					21820
4164	1460		LSD	RELBIT			21830
4165	4100		STI	0			21840
4166	0000	SHCTB2					21850
4167	4617		SRF	EBWSWH			21860
4170	5204		PJF	BEBW			21870
4171	5706		AOB	SHCTB1			21880
4172	5704		AOB	SHCTB2			21890
4173	5622		AOB	SHCTB3			21900
4174	2012	BEBW	LDC	FE			21910
4175	4100		STI	0			21920
4176	0000	WRDCTB					21930
4177	5701		AOB	WRDCTB			21940
4200	6553		NZB	OUTEBW			21950
4201	7100		JF1	0			21960
4202	4210			DUMPBW			21970
4203	0401		LDN	1			21980
4204	5504		NZB	4			21990
4205	0000	CELEBW					22000
4206	4000	EBWSWH		4000			22010
4207	7101	OTDPBW	JFI	1		DUMP BINARY WORD	22020
4210	0000	DUMPBW				RETURN JUMP	22030
4211	2100		LUI	0			22040
4212	7657			COL1			22050
4213	6404		ZJB	OTDPBW			22060
4214	4500		SRI	0		RESTORE RELOCATION BITS	22070
4215	0000	SHCTB3					22080
4216	4710		SRB	EBWSWH			22090
4217	6603		PJB	3			22100
4220	2360	CHKSUM	LDB	COLAUB		COMPUTE CHECKSUM	22110
4221	4204		STF	CT1EBW			22120
4222	0400		LDN	0			22130
4223	4306		STB	SHCTB3			22140
4224	2100	LP1EBW	LDI	0			22150
4225	0000	CT1EBW					22160
4226	5311		RAB	SHCTB3			22170
4227	5702		AOB	CT1EBW			22180
4230	6504		NZB	LP1EBW			22190
4231	2314		LDB	SHCTB3			22200
4232	4100		STI	0			22210
4233	7661			COL1	2		22220
4234	2202		LDF	2		PUNCH CARD	22230
4235	7056		JPI	BINOJT			22240
4236	4205			OTDPBW	-2		22250
4237	0000	BORE				BANK OR END CARD	22260
4240	4100		STI	0		RETURN JUMP	22270
4241	7657			COL1			22280

4242	2303		LDB	JORE		22290
4243	4333		STB	JUMPBW		22300
4244	2012		LDD	FE		22310
4245	4100		STI	0		22320
4246	7650			COL1 1		22330
4247	6427		ZJB	CHKSUM		22340
4250	5330		NZB	CHKSUM		22350
	7657	COL1	EQU	7657		22360
			REM			
			REM		NUMERIC CONVERSION	22370
			REM			
			REM		CMN 8/15/61	22380
			REM			
	4251		PRG			22390
4251	0412	ZXQBL8	LDN	12		22400
4252	4151		STI	CRDCOL		22410
4253	5451		AOD	CRDCOL		22420
4254	4605		SRF	CVTSWC		22430
4255	5604		PJB	ZXQBL8		22440
4256	0504		LCN	4		22450
4257	5061		RAD	CRDCOL		22460
4260	7102		JFI	2		22470
4261	4210	CVTSWC		4210		22480
4262	0000	ONZ			OCTAL WITH LEADING ZEROES	22490
4263	5412		ZJB	ZXQBL8		22500
4264	4070		STD	70		22510
4265	2303		LDB	ONZ		22520
4266	4217		STF	DEC		22530
4267	0412		LDN	12		22540
4270	5105		NZF	OCTSUP		22550
4271	0000	ONZ			OCTAL WITHOUT LEADING ZEROES	22560
4272	4070		STD	70		22570
4273	2302		LDB	ONZ		22580
4274	4211		STF	DEC		22590
4275	0400		LDN	0		22600
4276	4071	OCTSUP	STJ	71		22610
4277	0420		LDN	20		22620
4300	4073		STD	73		22630
4301	2200		LDF	0		22640
4302	3627	-	SBF	THSOCT -CVTEST		22650
4303	5112		NZF	CNTNUM		22660
4304	7101	DECOUT	JFI	1	DECIMAL NUMBER	22670
4305	0000	DEC			RETURN JUMP	22680
4306	4070		STD	70		22690
4307	0464		LDN	64		22700
4310	4073		STD	73		22710
4311	0400		LDN	0		22720
4312	4071		STD	71		22730
4313	2200		LDF	0		22740
4314	3633	-	SBF	THSDEC -CVTEST		22750
4315	4222	CNTNUM	STF	CVTEST		22760
4316	2061	CVTNUM	LDD	CRDCOL		22770
4317	4072		STD	72	72 STORE COUNTER	22780
4320	2070		LDD	70		22790
4321	5041		ZJF	ZERCVT		22800
4322	6307		NJF	NEGNUM		22810
4323	0400		LDN	0		22820
4324	4172		STI	72		22830
4325	2200	POSNUM	LDF	0		22840
4326	6304		NJF	4		22850

4327	4211		STF	TESTSG		22860
4330	6106		NZF	CVTLP1		22870
4331	2200	NEGNUM	LDI	0		22880
4332	6236		PJF	SGNCHG -TESTSG		22890
4333	4205		STF	TESTSG		22900
4334	0400	CVTLOP	LDN	0	ZERO CELL	22910
4335	4172		STI	72		22920
4336	2070	CVTLP1	LDI	70		22930
4337	3627	CVTEST	SBF	THSOCT		22940
4340	6304	TESTSG	NJF	SIGNIF		22950
4341	4070		STD	70		22960
4342	5572		AOI	72	STEP COUNTER	22970
4343	6505		NZB	CVTLP1		22980
4344	2172	SIGNIF	LDI	72		22990
4345	6104		NZF	SIGDIG	SIGNIFICANT DIGIT	23000
4346	2071		LDI	71		23010
4347	6305		ZJF	CVTSTP	SUPPRESS LEADING ZERO	23020
4350	4172		STI	72		23030
4351	5472	SIGDIG	AOI	72		23040
4352	0412		LDN	12		23050
4353	4071		STD	71		23060
4354	5715	CVTSTP	AOB	CVTEST		23070
4355	4774		SRB	CVTSWC		23080
4356	6622		PJF	CVTLOP		23090
4357	2073		LDI	73	73 CONTAINS LAST FIGURE	23100
4360	4172	ZERNUM	STI	72		23110
4361	6555		NZB	DECOU		23120
4362	0412	ZERCVT	LDN	12		23130
4363	4172		STI	72		23140
4364	5472		AOI	72		23150
4365	5505		NZB	ZERNUM -1		23160
4366	1000	THSOCT		1000		23170
4367	0100			100		23180
4370	0010			10		23190
4371	0001			1		23200
4372	1750	THSDEC		10000		23210
4373	0144			1000		23220
4374	0012			100		23230
4375	0001			10		23240
4376	4070	SGNCHG	STI	70		23250
4377	5572		AOI	72		23260
4400	6553		NZB	POSNUM		23270
4401	2156	PATCHA	LDI	CC13		23280
4402	0751		SBN	51		23290
4403	6003		ZJF	3		23300
4404	2132		LDI	LFE		23310
4405	4020		STD	DELTA		23320
4406	7101		JFI	1		23330
4407	1001			MER		23340
			SUPB			
			REM			
	0000		END			23350