



	REM	SUPB		
0100	7101	ARITHA	JFI	1
0101	0536			AKITHY
0102	7101	ACOITK	JFI	1
0103	3467			JSRTN
0104	7101	SASSJP	JFI	1
0105	2536			SASSEM
0106	0000	FERASE	E5S	21D
0133	0000	ERASE	E5S	36D
0177	0020	POTEG	SIC0	
0200	7101		JFI	1
0201	7700	GETOP	HLT	
0202	4033		STD	EAPLOC
0203	0601		ADN	1
0204	4037		STD	PARLOC
0205	2030		LDD	SUBSWT
0206	6003		ZJF	POTEGB
0207	0020		SIC0	
0210	6102		NZF	POTEG0
0211	0021	POTEGB	SIC1	
0212	2137	POTEG0	LDI	PARLOC
0213	4051		STD	VARLOC
0214	2133		LDI	EAPLOC
0215	4032		STD	EAP
0216	0207		LPN	7
0217	6103		NZF	POTEGR
0220	7101		JFI	1
0221	0352			GETOPA
0222	4013	POTEGR	STD	MODE
0223	0203		LPN	3
0224	0303		LSN	3
0225	6103		NZF	GETOPZ
0226	2137		LDI	PARLOC
0227	6525		NZB	GETOP 1
0230	0502	GETOPZ	LCN	2
0231	3013		ADD	MODE
0232	0203		LPN	3
0233	0601		ADN	1
0234	4013		STD	MODE
0235	6105		NZF	POTEGC
0236	7700	POTEG0	HLT	
0237	4037		STD	PARLOC
0240	2302		LDB	POTEG0
0241	4340		STB	GETOP
0242	0400	POTEGC	LDN	0
0243	4045		STD	TEMP3
0244	2013		LDD	MODE
0245	0102		SHA	2
0246	0701		SBN	1
0247	0203		LPN	3
0250	4077		STD	TEMP77
0251	2037		LDD	PARLOC
0252	4076		STD	TEMP76
0253	2027		LDD	STOSWT
0254	6013		ZJF	POTEGB
0255	6307		NJF	POTEGB -3
0256	2003		LDD	FLPACC
0257	4015		STD	OPRAND
0260	2004		LDD	FLPACC 1

RESET INDIRECT BANK  
RETURN TO MAIN PROGRAM

LOC, OF VARLIST VALUE

LOC, OF OPERAND VALUE

VARIABLE LOC.

0 VALUES

EFFECTIVE ADDRESS RACK  
YES

SUBROUTINE TYPE  
TYPE 3 OR 7  
YES

CALCULATE MODE

MODE = 1 OR 4

CALCULATE  
TRUE  
MODE

SEE ASSIGN,INIT,AND INCUR

0261	4016	STD	OPRAND	1
0262	2005	LDD	FLPACC	2
0263	4017	STD	OPRAND	2
0264	0500	LCN	0	
0265	4045	STD	TEMP3	
0266	6114	NZF	PUTEGI	
0267	2200	POTEGH	LDF	0
0270	4015	POTEG9	STD	OPRAND
0271	4204	STF	CMBNEC	
0272	2477	LCD	TEMP77	
0273	4043	STD	TEMP1	
0274	2176	CMBNED	LDI	TEMP76
0275	4015	CMBNEC	STD	OPRAND
0276	5476	AOD	TEMP76	
0277	5702	AOR	CMBNEC	
0300	5443	AOD	TEMP1	
0301	6505	NZB	CMBNED	
0302	2014	POTEGI	LDD	MODEA
0303	6021	ZJF	POTGJA	
0304	0205	LPN	5	
0305	3413	SBD	MODE	
0306	6016	ZJF	POTGJA	
0307	1445	LSD	TEMP3	
0310	0020	SIC0		
0311	6204	PJF	CMBNEY	
0312	2206	LDF	CMBNEX	
0313	7101	JFI	1	
0314	1557		XCONV	
0315	2203	CMBNEY	LDF	CMBNEX
0316	7101	JFI	1	
0317	1507		FLCONV	
0320	0321	CMBNEX	POTEGJ	
0321	2030	POTEGJ	LDD	SUBSWT
0322	6102	NZF	POTGJA	
0323	0021	SIC1		
0324	2027	POTGJA	LDD	STOSWT
0325	6103	NZF	POTEGD	
0326	7101	POTEGP	JFI	1
0327	0177		PUTEG	
0330	2200	POTEGD	LDF	0
0331	2015	LDD	OPER	
0332	4206	STF	PUTEGE	
0333	2200	LDF	0	
0334	4003	STD	FLPACC	
0335	4206	STF	POTEGF	
0336	2477	LCD	TEMP77	
0337	4043	STD	TEMP1	
0340	2015	POTEGE	LDD	OPER
0341	4176	STI	TEMP76	
0342	0400	LDN	0	
0343	4003	POTEGF	STD	FLPACC
0344	5704	AOR	PUTEGE	
0345	5702	AOR	PUTEGF	
0346	5476	AOD	TEMP76	
0347	5443	AOD	TEMP1	
0350	6510	NZF	PUTEGE	
0351	6423	ZJF	POTEGP	
0352	0403	GETOPA	LDN	3
0353	4040	STD	COUNT	
0354	2151	GETOPX	LDI	VARLOC

STORAGE ADDRESS

OPERAND LIST COUNTER  
OPERAND  
TO OPERAND STORAGE  
INCREASE  
LOCATERS

MORE WORDS TO STORE  
NO -- MODE OF ARITH

MODE OF NUMBER

NO -- FLO. TO FIX CONVERSION  
YES -- GET RETURN ADD,

FLOATING TO FIX CONVERSION  
GET RETURN ADDRESS

FIXED TO FLT. CONVERTS.

STORE OPTION

PRESET CELL

PRESET CELL

STORAGE LOOP COUNTER  
OPERAND  
TO STORAGE

ZERO ACCUMULATOR

INCREASE COUNTERS

MORE WORDS TO STORE

Q COUNTER  
VARLIST LOCATION

0355	0203	LPN	3		
0356	0303	LSN	3		FORMAL PARAMETER TYPE
0357	6105	VZF	GETOPW		TYPE 3 OR 7
0360	5451	AOD	VARLOC		YES
0361	2151	LDI	VARLOC		GET NEW VARLIST LOCN
0362	4051	STD	VARLOC		
0363	6507	NZF	GETOPX		
0364	2151	GETOPW LDI	VARLOC		
0365	4013	STD	MODE		SET MODE INDICATOR
0366	2051	LDD	VARLOC		OPERAND LOC.
0367	0703	SBN	3		
0370	4031	STD	DIMLOC		3RD, DIMENSION LOC.
0371	2032	GETOPC LDD	EAP		
0372	0110	SHA	10		
0373	0207	LPN	7		THIS INDICE PRESENT
0374	6111	NZF	GETOPB		DIMENSION ZERO
0375	2032	LDD	EAP		YES
0376	0110	SHA	10		SHIFT Q VALUES
0377	4032	STD	EAP		
0400	0501	LCN	1		
0401	5040	RAD	QCOUNT		REDUCE Q COUNTER
0402	5431	AOD	DIMLOC		INCREASE DIMENSION LOCATER
0403	3451	SBD	VARLOC		
0404	6513	NZB	GETOPC		MORE DIMENSIONS TO CHECK
0405	0400	GETOPB LDN	0		
0406	4042	STD	SAVSUM		CLEAR SUM CELL
0407	2003	LDD	FXPACC		
0410	4041	STD	SAVACC		SAVE ACCUMULATOR
0411	0400	GETOPD LDN	0		
0412	4003	STD	FXPACC		CLEAR INTEGER ACCUMULATOR
0413	2032	LDD	EAP		GET E.A. PACK
0414	6204	PJF	GETOPF		C BIT SET
0415	5437	AOD	PARLOC		YES -- INCREASE PAR. LOCATER
0416	2137	LDI	PARLOC		GET VALUE OF C
0417	4003	STD	FXPACC		TO INTEGER ACC.
0420	4432	GETOPF SRD	EAP		SHIFT E.A. PACK
0421	6227	PJF	GETOPG		I BIT SET
0422	5437	AOD	PARLOC		YES -- INCR. PAR. LOCATER
0423	4043	STD	TEMP1		
0424	2143	GETOPH LDI	TEMP1		VARLIST TYPE
0425	4043	STD	TEMP1		
0426	2143	LDI	TEMP1		
0427	0203	LPN	3		
0430	0703	SBN	3		SUBROUTINE TYPE
0431	6103	NZF	GETOPI		SUB. TYPE
0432	5443	AOD	TEMP1		YES -- OPERAND LOCATION
0433	6507	NZB	GETOPH		
0434	5443	GETOPI AOD	TEMP1		OPERAND LOC.
0435	2143	LDI	TEMP1		
0436	4015	STD	XOPRND		STORE IN OPERAND CELL
0437	2003	LDD	FXPACC		INTEGER ACC.
0440	6006	ZJF	GETOPK		ACC. LOADED
0441	2204	LDF	GETOPJ		YES -- GET RETURN ADDRESS
0442	4025	GETOPO STD	SFINI		
0443	7101	JFI	1		
0444	1315		XM		INTEGER MULTIPLY
0445	0450	GETOPJ	GETOPG		RETURN ADDRESS
0446	2015	GETOPK LDD-	XOPRND		VALUE OF I
0447	4003	STD	FXPACC		TO ACC.
0450	4432	GETOPG SRD	EAP		SHIFT E.A. PACK

0451	6204		FJF	GETOPL	D BIT SET
0452	5437		AOD	PARLOC	YES -- INCRS. PAR LOCATER
0453	2137		LDI	PARLOC	GET VALUE OF D
0454	5003		HAD	FXPACC	SUM TO INTEGER ACC.
0455	0501	GETOPL	LCN	1	SUM - 1
0456	5003		HAD	FXPACC	ACCUMULATE SUM
0457	5042		HAD	SAVSUM	
0460	4003		STD	FXPACC	
0461	0501		LCN	1	
0462	5040		HAD	DCOUNT	NO. OF DIMENSIONS COUNTER
0463	6014		ZJF	GETOPM	LAST DIMENSION CHECKED
0464	5431		AOD	DIMLOC	NO -- INCREASE DIMEN. LOCATION
0465	2131		LDI	DIMLOC	
0466	4015		STD	XUPRND	DIMENSION
0467	2202		LDF	GETOPN	RETURN ADDRESS
0470	6526		NZH	GETOPQ	
0471	0472	GETOPN		GETOPR	RETURN ADDRESS
0472	2003	GETOPR	LOD	FXPACC	
0473	4042		STD	SAVSUM	STORE SUM
0474	4432		SRD	EAP	SHIFT E. A. PACK
0475	7101		JFI	1	REPEAT LOOP FOR
0476	0411			GETOPQ	NEXT DIMENSION
0477	2042	GETOPM	LDD	SAVSUM	
0500	4003		STD	FXPACC	TOTAL SUM
0501	5431		AOD	DIMLOC	LOC. OF NUMBER MODE
0502	2131		LDI	DIMLOC	
0503	0102		SHA	2	
0504	0701		SBN	1	
0505	0203		LPN	3	TRUE MODE VALUE
0506	4015		STD	XUPRND	MODE TO OPERAND
0507	2202		LDF	GETUPS	RETURN ADDRESS
0510	6546		NZH	GETOPQ	MODE TIMES SUM
0511	0512	GETOPS		GETOPT	RETURN ADDRESS
0512	5403	GETOPT	AOD	FXPACC	TOTAL + 1
0513	5031		HAD	DIMLOC	
0514	2041		LDD	SAVACC	
0515	4003		STD	FXPACC	RESTORE ACC.
0516	2031		LDD	DIMLOC	VARIABLE LOC.
0517	4037		STD	PARLOC	TO LOC OF VALUE
0520	7101		JFI	1	TRANSF. TO STORE
0521	0242			POTEGC	OPERAND ROUTINE
0522	5410	ARITH	AOD	LUCC	INCREASE LOCATION COUNTER
0523	4007		STD	ARINTL	SET INITIAL ADDRESS
0524	2510		LCI	LUCC	NEG. OF OPERAND MODIFIER
0525	0103		LS2		TO LOW ORDER BITS
0526	0203		LPN	3	
0527	3250		ADF	ARITHZ	CALCULATE MODEA LIST LOC.
0530	4043		STD	TEMP1	
0531	2143		LDI	TEMP1	
0532	4014		STD	MUDEA	MODE OF ARITH. INDICATOR
0533	2110		LDI	LUCC	
0534	0277		LPN	7/	NO. OF OPERANDS
0535	5010		HAD	LUCC	LOCATION OF 1ST OPERATION
0536	5410	ARITHY	AOD	LUCC	
0537	2110	ARITHB	LDI	LUCC	GET NEXT OPERATION WORD
0540	0217		LPN	1/	MASK OFF OP CODE
0541	4011		STD	LUCC0	
0542	3261		ADF	JFI1	
0543	4212		STF	ROUTE	
0544	2110		LDI	LUCC	GET NEXT OPERATION WORD

0545	0103		LS2			
0546	4043		STD	TEMP1		
0547	0203		LPN	3	OPERAND MODIFIER	
0550	4035		STD	LUCC2		
0551	2043		LDD	TEMP1		
0552	0111		LS6			
0553	0277		LPN	77	RELATIVE OPERAND LOC.	
0554	4036		STD	LUCC8		
0555	7101	ROUTE	JFI	1	JUMP TO SWITCHBOARD	
0556	0576			TILT	INVALID	
0557	0576			TILT	OPERATION	
0560	0576			TILT	CODES	
0561	0720			SNOP	NO OPER. TEST	
0562	0724			RELTR	RELATIVE TRANSFER	
0563	0607			DROP	DROP OUT ROUTINE	
0564	0624			COMBNE	ADD	
0565	0624			COMBNE	SUBTRACT	
0566	0624			COMBNE	MULTIPLY	
0567	0624			COMBNE	DIVIDE	
0570	0661			CMBNEZ	POWER	
0571	0735			LOCTRP	LOCAL TRANSF. ON PLUS	
0572	0744			LOCTRZ	LOCAL TRANSF. ON ZERO	
0573	0753			STRGE	STORE	
0574	0756			TRANS	TRANSF. TO SUBROUTINE	
0575	1010			FINIS	END	
0576	0000	TILT	ERR			
0577	0577	ARITHZ		MDEALS -1	MODE ARITH, LIST	
0600	0006	MDEALS		6	FLOATING MODE INDICATOR	
0601	0013			11D		
0602	0001			1	INTEGER MODE	
0603	0604	TSILMO		OMLIST	OPERAND MODE LIST	
0604	0007	OMLIST		ARINTL		
0605	0133			ERASE		
0606	0106			FERASE		
0607	2010	DROP	REM	LDD	DROP OUT ROUTINE	
0610	0601			ADN	CURRENT LOCATION	
0611	4211			STF	PLUS ONE	
0612	2110			LDI	TO JUMP COMMAND	
0613	6203			PJF	DROP OUT BACKWARD	
0614	2436			LCD	YES -> GET NEG. OF OPERAND	
0615	6102			NZF		
0616	2036	DROPB	LDD	LUCC8	GET VALUE OF OPERAND	
0617	0701	DROPC	S&N	1		
0620	5010		KAD	LUCC		
0621	7101		JFI	1		
0622	0000	DROPA		0	EXIT TO 160 LOCATION	
0623	7101	JFI1	JFI	1		
0624	0400		REM		ARITHMETIC ROUTINES	
0625	4027	COMBNE	LDN	0		
0626	2035	COMBNEV	STD	STOSWT	SET SWITCH FOR GETOP	
0627	3324		LDD	LUCC2	OPERAND MODIFIER	
0630	4044		ADN	TSILMO	GET PROPER OPERAND LIST	
0631	2144		STD	TEMP2		
0632	4044		LDI	TEMP2		
0633	2035		STD	TEMP2		
0634	6104		LDD	LUCC2	OP. MOD.	
0635	2036		NZF	COMBNEV	NORMAL STORAGE	
0636	3144		LDD	LUCC8	RELATIVE LOC.	
			ADI	TEMP2	PLUS STARTING LOC.	

0637	6112		NZF	CMBNEM	
0640	2014	CMBNEL	LDD	MODEA	
0641	0205		LPN	5	MODE OF ARITHMETIC TO MODE OF NUMBER
0642	4013		STD	MODE	
0643	2036		LDD	LUCC8	
0644	0701		SBN	1	RELATIVE LOC.
0645	4045		STD	TEMP3	
0646	0102		SHA	2	
0647	3045		ADD	TEMP3	
0650	3044		ADD	TEMP2	TIMES THREE PLUS INITIAL LOC.
0651	4044	CMBNEM	STD	TEMP2	
0652	2035		LDD	LUCC2	GET OPERAND MODIFIER NORMAL STORAGE LOC, OF OPERAND LOC.
0653	6137		NZF	CMBNEH	
0654	2144		LDI	TEMP2	
0655	7100		JPR	GETOP	
0656	0201				
0657	2027	CMBNER	LDD	STOSWT	
0660	6151		NZF	RELTRD	STORE OPTION
0661	2011	CMBNEZ	LDD	LOCC0	
0662	0707		SBN	7	
0663	3014		ADD	MODEA	
0664	3341		ADB	JFI1	CALC. ARITH SUB. ADDRESS
0665	4205		STF	CMBNEE	
0666	2231		LDF	SNOP	-1
0667	4026		STD	CNFINI	
0670	2242		LDF	RELTRV	RETURN ADDRESS
0671	4025		STD	SFINI	
0672	7101	CMBNEE	JFI	1	
0673	1307			XA	INTEGER ADD
0674	1312			XAN	INTEGER SUBTRACT
0675	1315			XM	INTEGER MULTIPLY
0676	1335			XU	INTEGER DIVIDE
0677	1414			PWR	INTEGER POWER
0700	1625		SFADD		FLOATING ADD
0701	1521		SFSUB		FLOATING SUBTRACT
0702	1631		SFMLT		FLOATING MULTIPLY
0703	1636		SFDIV		FLOATING DIVIDE
0704	0750		TRANSB		FLOATING POWER
0705	1447		INCLOR		INCLUSIVE OR
0706	1454		COMPLY		COMPLEMENT
0707	1457		LOGPRD		LOGICAL PRODUCT
0710	1463		EXCLOR		EXCLUSIVE OR
0711	1467		SHIFTR		SHIFT ACCUMULATOR
0712	2044	CMBNEH	LDD	TEMP2	
0713	7100		JPR	PUTEGO	
0714	0236				
0715	7101		JFI	1	
0716	0657			CMBNER	
0717	3075			CNFIN	
0720	2024	SNOP	LDD	SNOPSW	
0721	6102		NZF	SNOPA	SWITCH SET NO DO SKIP
0722	5410		AOD	LUCC	
0723	6106	SNOPA	NZF	RELTRD	RELATIVE TRANSFER
			WEM		
0724	2110	RELTR	LDI	LUCC	
0725	6206		PJF	RELTRB	TRANSFER FORWARD
0726	2436		LCD	LUCC8	
0727	0701	RELTRC	SBN	1	
0730	5010		KAD	LUCC	PLUS CORR. LOC. COUNTER
0731	7101	RELTRD	JFI	1	

0732	0100	RELTRV		ARITHA
0733	2036	RELTRB	LDD	LUCCB
0734	6605		PJH	RELTRC
			REM	
0735	2003	LOCTRP	LDD	FXPACC
0736	4043		STD	TEMP1
0737	2110	LCTRPZ	LOI	LUCC
0740	0102		SHA	?
0741	1443		LSD	TEMP1
0742	6711		NJH	RELTRD
0743	6617		PJH	RELTR
			REM	
0744	2003	LOCTRZ	LDD	FLPACC
0745	6104		NZF	LCTRZA
0746	0401	LCTRZB	LDN	1
0747	4043	LCTRZC	STD	TEMP1
0750	6511		NZB	LCTRPZ
0751	0501	LCTRZA	LCN	1
0752	6503		NZB	LCTRZC
			REM	
0753	2014	STRGE	LDD	MUDEA
0754	7101		JFI	1
0755	0625			CMBNEV
			REM	
0756	2110	TRANS	LDI	LUCC
0757	6322		NJF	TRANSA
0760	2010	TRANSB	LDD	LUCC
0761	4021		STD	STOTRA
0762	0500		LCN	0
0763	4030		STD	SUBSWT
0764	2036		LDD	LUCCB
0765	3007		ADD	ARINTL
0766	4043		STD	TEMP1
0767	2143		LDI	TEMP1
0770	0601		ADN	1
0771	4043		STD	TEMP1
0772	0021		SIC1	
0773	2143		LDI	TEMP1
0774	0020		SIC0	
0775	4010	TRANSC	STD	LUCC
0776	2007		LDD	ARINTL
0777	4006		STD	ARINT1
1000	7001		JPI	LCON
1001	0400	TRANSA	LDN	0
1002	4030		STD	SUBSWT
1003	2021		LDD	STOTRA
1004	4010		STD	LUCC
1005	2006		LDD	ARINT1
1006	4007		STD	ARINTL
1007	6556		NZB	RELTRD
			REM	
1010	5410	FINIS	AOD	LUCC
1011	7001		JPI	LCON
1012	2003	IF	LDD	ACC
1013	6304		NJF	MINUS
1014	6002		ZJF	ZERO
1015	5410	PLUS	AOD	LUCC
1016	5410	ZERO	AOD	LUCC
1017	0400	MINUS	LDN	0
1020	4003		STD	ACC

TRANS. FOR NEXT OPERATION  
OPERAND VALUE

TRANSFER PLUS  
SIGN OF ACCUMULATOR

GET PLUS OR MINUS TRANSF. BIT  
LOGICAL SUM SIGN BIT  
TRANSFER TO BE EXECUTED  
YES

TRANSFER ZERO  
CHECK 1ST ACC. WORD  
WORD ZERO  
YES - GET PLUS SIGN BIT

GET MINUS SIGN BIT

STORAGE ROUT.

TRANS. TO ARITHMETIC  
SUBROUTINE  
TRANSFER ROUT.  
NEXT WORD  
RETURN TRANSFER  
NO  
RETURN ADDRESS

SET SUBROUTINE SWITCH

PLUS INITIAL LOC.

STORE TRANSFER ADDRESS

RESET SWITCH  
RETURN ADDRESS

TRANSFER  
END ROUTINE

EXPRESSION NEGATIVE  
EXPRESSION POSITIVE

ZERO  
OUT



ACCUMULATOR

1

1021	4004		STD	ACC
1022	5410	TRA	AOD	LUCC
1023	0400	TRAA	LDN	0
1024	4027		STD	STOSWT
1025	2110		LDI	LUCC
1026	7100		JPR	GETOP
1027	0201			
1030	2015		LDD	XOPRND
1031	4010		STD	LUCC
1032	7001		JPI	LCON
1033	5410	TRAI	AOD	LUCC
1034	0400		LDN	0
1035	4027		STD	STOSWT
1036	2110		LDI	LUCC
1037	7100		JPR	GETOP
1040	0201			
1041	2015		LDD	XOPRND
1042	5010		RAD	LUCC
1043	6520		NZB	TRAA
1044	0400	ASSIGN	LDN	
1045	4027		STD	STOSWT
1046	5410	ASSGNB	AOD	LUCC
1047	5410		AOD	LUCC
1050	2110	ASSGNC	LDI	LUCC
1051	7100		JPR	GETOP
1052	0201			
1053	2027		LDD	STOSWT
1054	6105		NZF	ASSGNA
1055	0501		LCN	1
1056	4027		STD	STOSWT
1057	5010		RAD	LUCC
1060	6510		NZB	ASSGNC
1061	5410	ASSGNA	AOD	LUCC
1062	6114		NZR	INITE
1063	0400	INIT	LDN	
1064	4027		STD	STOSWT
1065	5410	INITA	AOD	LUCC
1066	2110		LDI	LUCC
1067	7100		JPR	GETOP
1070	0201			
1071	2027		LDD	STOSWT
1072	6104		NZF	INITB
1073	0501		LCN	1
1074	4027		STD	STOSWT
1075	6510		NZB	INITA
1076	5410	INITB	AOD	LUCC
1077	7001		JPI	LCON
1100	0400	INCR	LDN	
1101	4027		STD	STOSWT
1102	5410	INCRA	AOD	LUCC
1103	2110	INCRE	LDI	LUCC
1104	7100		JPR	GETOP
1105	0201			
1106	2027		LDD	STOSWT
1107	6122		NZF	INCRB
1110	2015		LDD	XOPRND
1111	4016	INCR	STD	10
1112	5701		AOD	1
1113	1600		LSF	
1114	4021		STD	21

OPERAND LOCATION

SET LOCATION COUNTER  
RETURN TO CONTROL ROUTINE  
INCREASE LOCATION COUNTER

VARLIST TYPE FORI

LL(N)

DO I=I1,I2,I3

INIT  
I1  
I

INCR  
I  
I2  
I3  
RETADD

1115	6513		NZB	INCHA	
1116	0503		LCN	3	
1117	5306		RAB	INCRC	
1120	2016		LDD	16	
1121	5015		RAD	XOPRND	1+13
1122	3417		SBD	17	
1123	6002		ZJF	2	
1124	6643		PJR	ASSGNA	
1125	0502		LCN	2	
1126	4027		STD	STOSWT	
1127	5010		RAD	LUCC	
1130	6525		NZB	INCRE	
1131	0403	INCRB	LDN	3	
1132	5010		RAD	LUCC	
1133	2110		LDI	LUCC	
1134	4010		STD	LUCC	
1135	7001		JPI	LCON	
1136	2010	STOP	LDD	LUCC	
1137	0601		ADN	1	NEXT LOC. ADDRESS
1140	4043		STD	R1	TEMP. STORAGE
1141	2143	STOPA	LDI	R1	VALUE OF N TO ACC.
1142	7700		HLT		HALT PROGRAM
1143	7001		JPI	LCON	RETURN TO CONTROL
1144	5410	PAUSE	AOD	LUCC	INCREASE LOC. COUNTER
1145	4043		STD	R1	TEMP. STORAGE
1146	5410		AOD	LUCC	INCREASE LOC. COUNTER
1147	6506		NZB	STOPA	
1150	5410	PAUSS	AOD	LUCC	INCR. LOC. COUNTER
1151	4043		STD	TEMP1	
1152	5410		AOD	LUCC	INCREASE LOCATION COUNTER
1153	2110		LDI	LUCC	VALUE OF N
1154	7700		HLT		HALT COMPUTER
1155	4003		STD	ACC	
1156	0401		LDN	1	
1157	4027		STD	STOSWT	
1160	2143		LDI	TEMP1	
1161	7100		JPR	GETOP	
1162	0201				
1163	5410		AOD	LUCC	INCREASE LOCATION COUNTER
1164	7001		JPI	LCON	RETURN
1165	0423	FAULT	LDN	SWT1	
1166	4044	FAULT1	STD	R2	
1167	2144		LDI	R2	
1170	6113		NZF	FAULT3	
1171	5410		AOD	LUCC	
1172	5410	FAULT2	AOD	LUCC	
1173	2110		LDI	LUCC	
1174	4043		STD	R1	
1175	5443		AOD	R1	
1176	0021		SIC1		
1177	2143		LDI	R1	
1200	4010		STD	LUCC	
1201	0020		SIC0		
1202	7001		JPI	LCON	
1203	0400	FAULT3	LDN	0	FF ON & SET
1204	4144		STI	R2	TO ZERO
1205	6413		ZJR	FAULT2	
1206	0422	CHKDIV	LDN	SWT	
1207	6521		NZB	FAULT1	
1210	0400	NOCL	LDN	0	

1211	4014	STD	MODEA	
1212	2110	LDI	LUCC	
1213	3223	ADF	NUCLA	
1214	4201	STF	1	
1215	7101	JFI	1	
1216	1237		CALL	
1217	1063		INIT	
1220	1100		INCR	
1221	0522		AMITH	
1222	1012		IF	
1223	1022		TRA	
1224	1033		TRAI	
1225	1136		STOP	
1226	1144		PAUSE	
1227	1150		PAUSS	
1230	1044		ASSIGN	
1231	1276		RETURN	
1232	1165		FAULT	
1233	1206		CHKDIV	
1234	3104		IO	
1235	3201		IUC	
1236	7100	NOCLA	JFI	0
1237	5410	CALL	AOD	LUCC
1240	2110		LDI	LUCC
1241	4043		STD	R1
1242	5443		AOD	R1
1243	0021		SIC1	
1244	2143		LDI	R1
1245	4043		STD	R1
1246	5410		AOD	LUCC
1247	0020		SIC0	
1250	2510		LCI	LUCC
1251	0600		ADN	0
1252	6015		ZJF	CALL2
1253	4044		STD	R2
1254	5443	CALL1	AOD	R1
1255	0020		SIC0	
1256	2143		LDI	R1
1257	4045		STD	R3
1260	5445		AOD	R3
1261	5410		AOD	LUCC
1262	2110		LDI	LUCC
1263	0021		SIC1	
1264	4145		STI	R3
1265	5444		AOD	R2
1266	6512		NZB	CALL1
1267	5402	CALL2	AOD	RETBUF
1270	5410		AOD	LUCC
1271	0020		SIC0	
1272	4102		STI	RETBUF
1273	5443		AOD	R1
1274	4010		STD	LUCC
1275	7001		JPI	LCON
1276	2102	RETURN	LDI	RETBUF
1277	4010		STD	LUCC
1300	0501		LCN	1
1301	5002		KAD	RETBUF
1302	7001		JPI	LCON
1303	0000	RETURN1	BSS	4
			REH	

LL(NAME)

LOCN OF SR N  
TO R1

-N TO R2  
SR PARA LIST

LOC. OF RETURN  
TO RETURN BUF

ADDITION ROUTINE

1307	2015	XA	LDD	XUPRND	OPERAND
1310	5003		HAD	FXPACC	PLUS ACCUM.
1311	7025		JPI	SFINI	RETURN
			KEM		SUBTRACT ROUTINE
1312	2415	XAN	LCD	XUPRND	NEG. OF OPERAND
1313	5003		RAD	FXPACC	PLUS ACCUM.
1314	7025		JPI	SFINI	RETURN
			KEM		MULTIPLY ROUTINE
1315	2003	XM	LDD	FXPACC	
1316	4045		STD	TEMP3	MULTIPLIER
1317	0400		LDN	0	
1320	4003		STD	FXPACC	0 TO ACC.
1321	2212	XMA	LDF	R4ST	YES -- MPY, MASK
1322	1045		LPD	TEMP3	
1323	6003		ZJF	XMB	BIT OF MULTIPLIER SET
1324	2015		LDD	XUPRND	YES -- GET SHIFTED MULTIPLICAND
1325	5003		HAD	FXPACC	PLUS PREVIOUS RESULTS
1326	4415	XMB	SRD	XUPRND	SHIFT MULTIPLICAND
1327	4604		SRF	R4ST	SHIFT MULTIPLIER MASK
1330	0701		SBN	1	
1331	6510		NZB	XMA	MORE BITS TO MULTIPLY
1332	7025		JPI	SFINI	RETURN
1333	0001	R4ST		1	
1334	4000	SNBIT		4000	
			REM		DIVIDE ROUTINE
1335	2015	XD	LDD	XUPRND	DIVISOR
1336	4047		STD	R5	TO INITIAL REMAINDER
1337	2003		LDD	FXPACC	
1340	0600		ADN	0	MINUS ZERO CHECK
1341	6007		ZJF	XDY	
1342	4045		STD	TEMP3	DIVIDEND
1343	0400		LDN	0	
1344	4003		STD	FXPACC	ZERO ACCUMULATOR
1345	2015		LDD	XUPRND	
1346	6103		NZF	XDF	DIVISOR ZERO
1347	5422		AOD	SWT	YES--SET DIVIDE CHECK
1350	7025	XDY	JPI	SFINI	RETURN
1351	1445	XDF	LSD	TEMP3	
1352	4044		STD	TEMP2	SIGN OF QUOTIENT
1353	2015		LDD	XUPRND	DIVISOR
1354	6203		PJF	XDZ	JUMP FOR POS, DIVISOR
1355	2415		LCD	XUPRND	NEG. OF DIVISOR
1356	4015		STD	XUPRND	CHANGE TO POS. VALUE
1357	4043	XDZ	STD	TEMP1	
1360	2445		LCD	TEMP3	NEG. OF DIVIDEND
1361	6302		NJF	XDR	NEGATIVE DIVISOR
1362	4045		STD	TEMP3	YES -- CHANGE TO POS. VALUE
1363	2327	XDB	LDR	SNBIT	4000
1364	4046		STD	TEMP4	PARTIAL SUM
1365	2045	XDC	LDD	TEMP3	NUMERATOR
1366	3415		SBD	XUPRND	DENOMINATOR
1367	6305		NJF	XDD	NUMERATOR LARGER THAN DENOM.
1370	4047		STD	R5	YES -- STORE NEW SUM
1371	4415		SRD	XUPRND	2 TIMES DENOM
1372	4446		SRD	TEMP4	DOUBLE PARTIAL SUM
1373	6506		NZB	XDC	
1374	2740	XDD	LCB	SNBIT	
1375	1046		LPD	TEMP4	PARTIAL SUM
1376	5003		HAD	FXPACC	PLUS TOTAL SUM
1377	6427		ZJB	XDY	

1474	4003		STD	FXACC	
1475	0400		LDN	0	
1476	3550		SBI	TEMP6	
1477	6007		ZJF	SHFTRX	
1500	6302		NJF	2	
1501	0714		SBN	12D	
1502	4015		STD	XUPRND	
1503	4403	SHIFT	SRD	FXPACC	
1504	5415		AOD	XUPRND	
1505	6502		NZB	SHIFT	
1506	7025	SHFTRX	JPI	SPINI	
1507	4245	FLCONV	STF	RINX	
1510	0445		LDN	45	
1511	4034		STD	EXP	
1512	0446		LDN	A2	
1513	4053		STD	ACT	
1514	2231		LDF	XFIND	
1515	4064		STD	SEXTX	
1516	2230		LDF	RTN	
1517	4026		STD	CNFINI	
1520	0400		LDN	0	
1521	4017		STD	OP	+2
1522	4047		STD	A1	
1523	4046		STD	A2	
1524	4044		STD	A4	
1525	4043		STD	A5	
1526	4062		STD	FAC	
1527	2015		LDD	OP	
1530	4040		STD	SIGN	
1531	6202		PJF	2	
1532	2415		LCD	OP	
1533	4045		STD	A3	
1534	2045		LDD	A3	
1535	3620		SBF	FLCON2	
1536	6304		NJF	4	
1537	4045		STD	A3	
1540	5446		AOD	A2	
1541	6505		NZB	5	
1542	2040		LDD	SIGN	
1543	7101		JFI	1	
1544	2014			SJFLX	
1545	2410	XFIND		FIND	
1546	1547	RTN		BRACK	
1547	2046	BRACK	LDD	A2	
1550	4015		STD	OP	
1551	2045		LDD	A3	
1552	4016		STD	OP	1
1553	7101		JFI	1	
1554	0000	RTNX			
1555	1750	FLCON2		1000D	
1556	4000	H1		4000	
1557	4240	XCONV	STF	XCONVZ	
1560	0400		LDN	0	
1561	4004		STD	ACC	1
1562	4005		STD	ACC	2
1563	4017		STD	OPRAND	2
1564	2015		LDD	OPRAND	
1565	1307		LPB	H1	
1566	1607		LSF	SXTEEN	
1567	4003		STD	ACC	

RETURN ADDRESS

ADD 16000 (OR SUBTRACT)

1570	2203		LDF	3		
1571	4025		STD	SFINI		
1572	7102		JFI	2		
1573	1576			XCONVA		
1574	1625			SFADD		
1575	2260	SXTEEN		2260		16,000
1576	2004	XCONVA	LDD	ACC	+1	SECOND WORD
1577	1221		LPF	XCONV2		
1600	4015		STD	XUPRND		
1601	2004		LDD	ACC	+1	
1602	6203		PJF	XCONVB		+2000
1603	2326		LDB	FLCON2		10000
1604	6104		NZF	XCONVC		
1605	0102	XCONVB	SHA	2		
1606	6204		PJF	XCONVD		
1607	0400		LDN	0		
1610	3333	XCONVC	ADR	FLCON2		
1611	5015		RAD	XUPRND		
1612	2003	XCONVD	LDI	ACC		FIRST WORD
1613	6203		PJF	3		
1614	2415		LCD	XUPRND		
1615	4015		STD	XUPRND		
1616	7101		JFI	1		
1617	0000	XCONVZ				
1620	1777	XCONV2		1777		
1621	2015	SFSUB	HEM	SUP		3 WORD FLT PRELIM 15-1-62
1622	6003		LDD	SFADD		SUBTRACT
1623	1643		ZJF	S4TH		
1624	4015		LSF	SUP		
1625	2242	SFADD	STD	SJ1		
1626	4064		LDF	SEXTX		
1627	0401		STD	1		
1630	6211		LDN	SASK		
1631	2237	SFMLT	PJF	SJ2		
1632	4064		LDF	SEXTX		
1633	0400		STD	0		
1634	4062		LDN	FAC		
1635	6004		STD	SASK		
1636	2233	SFDIV	ZJF	SJ3		
1637	4064		LDF	SEXTX		
1640	0501		STD	1		
1641	4050	SASK	LCN	SFLAG		IS ACCUMULATOR ZERO
1642	2003		STD	SACC		YES
1643	6130		LDD	SISTOV		IF MULTIPLY, IS THERE OVERFLOW
1644	2050		NZF	SFLAG		YES, SIGNAL OVERFLOW
1645	6105		LDD	SKAT		IF DIVIDE NOT BY ZERO, LEAVE
1646	2015		LDD	SUP		OTHERWISE, OVERFLOW
1647	0237		LPN	37		PUT OPERAND IN ACCUMULATOR
1650	6006		ZJF	SMVOP		SET NO OP FLAG
1651	6114		NZF	SLVE		
1652	6204	SKAT	PJF	SMVOP		
1653	2015		LDD	SUP		
1654	6034		ZJF	SUVY		
1655	6110		NZF	SLVE		
1656	2015	SMVOP	LDD	SOP		
1657	4003		STD	SACC		
1660	5424		ADD	SNOPSW		
1661	2016		LDD	SUP	1	
1662	4004		STD	SACC	1	

1663	2017		LDD	SUP	2	
1664	4005		STD	SACC	2	
1665	7025	SLVE	JPI	SFINI		EXIT FROM ROUTINE
1666	4000	S4TH		4000		
1667	2023	SJ1		SADDR		
1670	3015	SJ2		MPY		
1671	2606	SJ3		ENTHYD		
1672	3740	SJOV		3/40		
1673	0237	STSTOV	LPN	37		TEST FOR OVERFLOW
1674	6407		ZJB	SLVE		
1675	2015	SLOKOP	LDD	SUP		TEST OPERAND FOR ZERO
1676	6117		NZF	STSTD		
1677	2050		LDD	SFLAG		
1700	6310		MJF	SDVY		
1701	4024		STD	SNOPSW		SET NO OP FLAG
1702	6515		NZB	SLVE		
1703	0400	SCLA	LDN	0		
1704	4003		STD	SACC		
1705	4004		STD	SACC	1	
1706	4005		STD	SACC	2	
1707	6422		ZJB	SLVE		
1710	0401	SDVY	LDN	1		SIGNAL DIVIDE FAULT
1711	4022		STD	SDVFLT		
1712	2320	SMOVF	LDR	SJOV		
1713	4003		STD	SACC		
1714	6527		NZB	SLVE		
1715	0237	STSTD	LPN	3/		
1716	6104		NZF	SDISAS		
1717	2050		LDD	SFLAG		
1720	6715		NJB	SCLA		
1721	6643		PJB	SMVOP		
1722	0446	SDISAS	LDN	SA2		DISASSEMBLE ACCUMULATOR
1723	4053		STD	SACT		
1724	0403		LDN	SACC		
1725	4051		STD	SDIS		
1726	0434		LDN	SEXP		
1727	4056		STD	SIEMP		
1730	2151	SPLIT	LDI	SDIS		
1731	0237		LPN	37		SPLIT OFF LEADING DIGIT(S) AND
1732	0102		SHA	2		
1733	0102		SHA	2		
1734	4153		STI	SACT		
1735	2151		LDI	SDIS		STORE EXPONENT
1736	0110		SHA	10		
1737	0110		SHA	10		
1740	0102		SHA	2		
1741	0277		LPN	77		
1742	4156		STI	SIEMP		
1743	5456		AOD	SIEMP		
1744	5451		AOD	SDIS		
1745	2151		LDI	SDIS		SPLIT MIDDLE WORD
1746	1226		LPF	SMSK2		
1747	0102		SHA	2		
1750	0102		SHA	2		
1751	5153		RAI	SACT		
1752	0501		LCN	1		
1753	5053		KAD	SACT		
1754	2620		LCF	SMSK2		
1755	1151		LPI	SDIS		
1756	4153		STI	SACT		

1757	0501		LCN	1	
1760	5053		KAD	SACT	
1761	5451		AOD	SUIS	
1762	2151		LDI	SUIS	TRANSFER LAST WORD
1763	4153		STI	SACT	
1764	4611		SRF	S4TP	
1765	6313		NJF	SFORN	
1766	0415		LDN	SUP	
1767	4051		STD	SUIS	DISASSEMBLE OPERAND
1770	0433		LDN	C1	
1771	4053		STD	SACT	
1772	6642		PJB	SPLIT	
1773	4000	S4THO		4000	
1774	6000	SMSK2		6000	
1775	5252	SWTP		5252	
1776	1750	STHD		1000D	
1777	0144	SHNDD		100D	
2000	2003	SFORN	LDD	SACC	SIGNAL WHETHER SIGNS AGREE
2001	4036		STD	SIGNA	
2002	0400		LDN	0	
2003	4047		STD	A1	
2004	4024		STD	SNOPSW	CLEAR NO OP FLAG
2005	0412		LDN	10D	
2006	4017		STD	SIEM	
2007	0401		LDN	1	
2010	4020		STD	SUNE	
2011	2015		LDD	SUP	
2012	4037		STD	SIGNB	
2013	1403		LSD	SACC	
2014	1321	SJFLX	LPB	S4THO	
2015	4040		STD	SSIGN	
2016	2320		LDB	STHD	
2017	4015		STD	SIHOU	
2020	2321		LDR	SHNDD	
2021	4016		STD	SHUND	
2022	7064		JPI	SEXTX	GO TO SUBROUTINE 3 WORD FLT ADD 1+4=62 INITIALIZE
2023	0400	SADDR	LDN	0	
2024	4062		STD	FAC	
2025	4050		STD	HIGH	
2026	4051		STD	TMOVE	
2027	2254		LDF	XARTH	
2030	4063		STD	MLTX	
2031	2434		LCD	EXP	FIND HIGHER
2032	5035		KAD	EXPB	
2033	6016		ZJF	EUX	
2034	6305		NJF	REST	
2035	5034		KAD	EXP	
2036	2035		LDD	EXPB	
2037	4050		STD	HIGH	
2040	6202		PJF	SC	
2041	1643	REST	LSF	SFLIP	
2042	0710	SC	SBN	10	EXPONENT RANGE LIMIT
2043	6317		NJF	ADJUST	
2044	6014		ZJF	JSSIGN	
2045	2240		LDF	XSASS	
2046	4024		STD	SNOPSW	SET NO OP FLAG
2047	4275	CHOOS	STF	PLACX	
2050	6137		NZF	PLCE	
2051	2033	EQX	LDD	C1	EXPONENTS EQUAL



2052	3446		SBU	A2
2053	6303		NJF	3
2054	0401		LDN	1
2055	4050		STD	HIGH
2056	2225	LODE	LDF	XARTH
2057	6510		NZB	CH00S
2060	0500	JSSIGN	LCN	0
2061	4024		STD	SNOPSW
2062	0610	ADJST	ADN	10
2063	0703		SBN	3
2064	6305		NJF	5
2065	4056		STD	STEMP
2066	5451		AOD	TMOVE
2067	2056		LDD	STEMP
2070	6605		PJB	5
2071	0603		ADN	3
2072	4062		STD	FAC
2073	6415		ZJB	LODE
2074	2462		LCD	FAC
2075	5034		RAD	EXP
2076	2062		LDD	FAC
2077	0701		SBN	1
2100	4062		STD	FAC
2101	2205		LDF	XMLT
2102	6533		NZB	CH00S
2103	2303	XARTH		SARITH
2104	7777	SFLIP		7777
2105	2536	XSASS		SASSEM
2106	2151	XMLT		MLT
2107	2050	PLCE	LDD	HIGH
2110	6021		ZJF	CUO
2111	2044		LDD	A4
2112	4003		STD	B3
2113	2045		LDD	A3
2114	4004		STD	B2
2115	2046		LDD	A2
2116	4005		STD	B1
2117	0431		LDN	C3
2120	4054	REPLC	STD	HGHER
2121	2154		LDI	HGHER
2122	4044		STD	A4
2123	5454		AOD	HGHER
2124	2154		LDI	HGHER
2125	4045		STD	A3
2126	5454		AOD	HGHER
2127	2154		LDI	HGHER
2130	4046		STD	A2
2131	0400	COO	LDN	0
2132	4047		STD	A1
2133	4043		STD	A3
2134	2050	SGNF	LDD	HIGH
2135	6003		ZJF	3
2136	2037		LDD	SIGNB
2137	6102		NZB	2
2140	2036		LDD	SIGNA
2141	1205		LPF	SJ4TH
2142	4040		STD	SSIGN
2143	7101		JFL	1
2144	0000	PLACX		
2145	5252	SSWCH		5252

SHIFT HIGHER (FAC)\*TIMES

FIND SIGN OF ANSWER

2146	4000	SJ4TH	LDN	4000
2147	0403	PLACE	RJ	RJ
2150	6530		NZB	REPLC
2151	2047	MLT	LDD	A1
2152	0112		SHA	12
2153	4047		STD	A1
2154	4444		SRD	A4
2155	4064		STD	SK3
2156	4445		SRD	AJ
2157	4065		STD	SK2
2160	4446		SRD	A2
2161	4066		STD	SK1
2162	4444	REP	SRD	A4
2163	3642		SBF	2THOU
2164	6303		NJF	3
2165	4044		STD	A4
2166	5445		AOD	AJ
2167	4445		SRD	AJ
2170	3635		SBF	2THOU
2171	6303		NJF	3
2172	4045		STD	AJ
2173	5446		AOD	A2
2174	4446		SRD	A2
2175	3630		SBF	2THOU
2176	6310		NJF	SUCH
2177	4046		STD	A2
2200	2333		LDB	SSWCH
2201	6203		PJF	3
2202	0404		LDN	4
2203	6202		FJF	2
2204	0402		LDN	2
2205	5747		KAD	A1
2206	4741	SUCH	SRB	SSWCH
2207	6625		PJH	REP
2210	2064		LDD	SK3
2211	5044		KAD	A4
2212	3613		SBF	2THOU
2213	6313		NJF	LESS2
2214	4044		STD	A4
2215	3415		SBD	THOU
2216	6304		NJF	4
2217	4044		STD	A4
2220	0403		LDN	3
2221	6102		NZF	AD
2222	0402		LDN	2
2223	5045	AD	KAD	AJ
2224	6106		NZF	NXT
2225	3720	2THOU		2000D
2226	3015	LESS2	ADD	THOU
2227	6303		NJF	3
2230	4044		STD	A4
2231	5445		AOD	AJ
2232	2065	NXT	LDD	SK2
2233	5045		KAD	AJ
2234	3707		SBB	2THOU
2235	6312		NJF	LES2
2236	4045		STD	AJ
2237	3415		SBD	THOU
2240	6304		NJF	4
2241	4045		STD	AJ

2242	0403		LDN	3
2243	6102		NZF	2
2244	0402		LDN	2
2245	5046		HAD	A2
2246	6105		NZF	NX
2247	3015	LES2	ADD	TMOU
2250	6303		NJF	3
2251	4045		STD	A3
2252	5446		AOD	A2
2253	2066	NX	LDD	SR1
2254	5046		HAD	A2
2255	3730		SBB	2THOU
2256	6312		NJF	LS2
2257	4046		STD	A2
2260	3415		SBD	TMOU
2261	6304		NJF	4
2262	4046		STD	A2
2263	0403		LDN	3
2264	6102		NZF	2
2265	0402		LDN	2
2266	5047		HAD	A1
2267	6105		NZF	5
2270	3015	LS2	ADD	TMOU
2271	6303		NJF	3
2272	4046		STD	A2
2273	5447		AOD	A1
2274	2062		LDD	FAC
2275	6005		ZJF	LEV
2276	0701		SBN	1
2277	4062		STD	FAC
2300	7101		JFI	1
2301	2151	X2MLT		MLT
2302	7063	LEV	JPI	MLTX
2303	2051	SARITH	LDD	TMOVE
2304	6002		ZJF	2
2305	0501		LCN	1
2306	0644		ADN	A4
2307	4053		STD	ACT
2310	2050		LDD	HIGH
2311	6003		ZJF	3
2312	0403		LDN	R3
2313	6102		NZF	2
2314	0431		LDN	C3
2315	4055		STD	LOWER
2316	0603		ADN	3
2317	4225		STF	PUSH
2320	2051		LDD	TMOVE
2321	0702		SBN	2
2322	6302		NJF	2
2323	5455		AOD	LOWER
2324	2036		LDD	SIGNA
2325	1437		LSD	SIGNB
2326	6317		NJF	SUB
2327	2155	ADDER	LDI	LOWER
2330	5153		HAI	ACT
2331	3415		SBD	TMOU
2332	6305		NJF	AUDAC
2333	4153		STF	ACT
2334	5453		AOD	ACT
2335	5553		AGI	ACT

ADD ROUTINE

2336	6102		NZF	2	
2337	5453	AODAC	AOD	ACT	
2340	5455		AOD	LOWER	
2341	3603		SBF	PUSH	
2342	6513		NZB	AUDER	
2343	6031		ZJF	WHAT	
2344	0000	PUSH			
2345	2555	SUB	LCI	LOWER	SUBTRACT ROUTINE
2346	5153		HAI	ACT	
2347	6210		PJF	INC	
2350	3015	STRAT	ADD	THOU	
2351	4153		STI	ACT	
2352	5453		AOD	ACT	
2353	0501		LCN	1	
2354	5153		HAI	ACT	
2355	6103		NZF	3	
2356	6002		ZJF	2	
2357	5453	INC	AOD	ACT	
2360	5455		AOD	LOWER	
2361	3715		SBB	PUSH	
2362	6715		NJB	SUB	
2363	2053		LDD	ACT	
2364	0747		SBN	A1	
2365	6107		NZF	WHAT	
2366	2153		LDI	ACT	
2367	6217		PJF	RUN	
2370	0400		LDN	0	
2371	4050		STD	HIGH	
2372	7101		JFI	1	
2373	2147	XPLACE		PLACE	
2374	2153	WHAT	LDI	ACT	
2375	6725		NJB	STRAT	
2376	3415		SBD	THOU	
2377	6307		NJF	RUN	
2400	4153		STI	ACT	
2401	5453		AOD	ACT	
2402	5553		AOI	ACT	
2403	6507		NZB	WHAT	
2404	0132	NINTY		90D	
2405	0764	FIVE		500D	
2406	0447	RON	LDN	A1	FIND FIRST SIGNIFICANT WORD
2407	4053		STD	ACT	
2410	2153	FIND	LDI	ACT	
2411	6107		NZF	SHOW	
2412	0501		LCN	1	
2413	5053		HAD	ACT	
2414	0743		SBN	A5	
2415	6605		PJB	FIND	
2416	7101		JFI	1	
2417	2536	SXASS		SASSEM	
2420	0446	SHOW	LDN	A2	
2421	4054		STD	LET	
2422	2153		LDI	ACT	
2423	0712		SBN	12	
2424	6202		PJF	2	
2425	5454		AOD	LET	
2426	2053		LDD	ACT	
2427	4055		STD	GET	
2430	3454		SBD	LET	
2431	6362		NJF	DIFER	
					MUST HAVE AT LEAST 8 SIG DIGS IF NOT) MOVE TO A1

2432	2153	SHOW2	LDI	ACT	IS LEADING WORD NORMALIZED
2433	3416		SBD	(100)	NORM LEADING WORD
2434	6241		PJF	FAC2	
2435	3J31		ADB	NINTY	
2436	6344		NJF	FAC1	
2437	0503	ROUND	LCN	3	ROUND AT FOURTH WORD
2440	5053		KAD	ACT	
2441	2734		LCB	FIVE	ROUND ANSWER, MOVE AND EXIT
2442	3153		ADI	ACT	
2443	6J11		NJF	MUVTS	
2444	5453		AOD	ACT	
2445	5553		AOI	ACT	
2446	3415	DIVEX	SBD	THOU	ENTRY TO PROPAGATE ROUND WITH (A4) IN ACC
			REM		
2447	6305		NJF	5	
2450	4153		STI	ACT	
2451	5453		AOD	ACT	
2452	5553		AOI	ACT	
2453	6505		NZB	5	
2454	2047	MOVTS	LDD	A1	
2455	6012		ZJF	OUT	
2456	0403		LDN	3	
2457	5034		KAD	EXP	
2460	2045		LDD	A3	MOVE
2461	4044		STD	A4	
2462	2046		LDD	A2	
2463	4045		STD	A3	
2464	2047		LDD	A1	
2465	4046		STD	A2	
2466	2046		LDD	A2	
2467	3416	OUT	SBD	(100)	
2470	6104		NZF	4	
2471	5434		AOD	EXP	
2472	0412		LDN	12	
2473	4046		STD	A2	
2474	6142		NZF	SASSEM	
2475	0401	FAC2	LDN	1	SHIFT ACC TWICE
2476	4062		STD	FAC	
2477	5453		AOD	ACT	
2500	0502		LCN	2	
2501	6102		NZF	2	
2502	0501	FAC1	LCN	1	MULTIPLY BY TEN
2503	5034		KAD	EXP	
2504	2204		LDF	XROUND	
2505	4063		STD	MLTX	
2506	7101		JFI	1	
2507	2151	X3MLT		MLT	
2510	2437	XROUND		RUUND	
2511	7777	SJFLP		7777	
2512	6760	SHOW2R	NJB	SHOW2	
2513	4056	DIFER	STD	STEMP	- NUMBER OF WOR-SHIFTS
2514	1703		LSB	SJFLP	
2515	5053		KAD	ACT	SIGNAL SIGNIFICANT WORD
2516	2456		LCD	STEMP	
2517	0102		SHA	2	
2520	1707		LSB	SJFLP	
2521	3056		ADD	STEMP	
2522	5034		FAU	EXP	CHANGE EXP
2523	2155	UP	LDI	GET	MOVE ACC
2524	4154		STI	LET	

## DESTRUCTIVE TRANSFER

2525	0400	LDN	0	
2526	4155	STI	GET	
2527	0501	LCN	1	
2530	5054	RAD	LET	
2531	0501	LCN	1	
2532	5055	RAD	GET	
2533	0743	SBN	A3	
2534	6611	PJB	UP	
2535	6723	NJB	SHOW2R	
2536	2046	SASSEM	LDD	A2
2537	6036	ZJF	SZERO	
2540	0203	LPN	3	
2541	0110	SHA	10	
2542	0110	SHA	10	
2543	0110	SHA	10	
2544	0102	SHA	2	
2545	5045	RAD	A3	
2546	2046	LDD	SA2	
2547	0102	SHA	2	
2550	0110	SHA	10	
2551	0110	SHA	10	
2552	0110	SHA	10	
2553	0277	LPN	77	
2554	3040	ADD	SIGN	
2555	4046	STD	A2	
2556	0577	LCN	77	
2557	1034	LPD	SEXP	
2560	6315	NJF	SZERO	
2561	6006	ZJF	SJOT1	
2562	2220	LDF	SUVFNO	
2563	3040	ADD	SIGN	
2564	4046	STD	A2	
2565	4023	STD	SWT1	
2566	7026	JPI	CNFINI	
2567	2034	SJOT1	LDD	EXP
2570	0110	SHA	10	
2571	0102	SHA	2	
2572	0102	SHA	2	
2573	5046	RAD	A2	
2574	6105	NZF	SBYE	
2575	0400	SZERO	LDN	0
2576	4046	STD	A2	
2577	4045	STD	A3	
2600	4044	STD	A4	
2601	7026	SBYE	JPI	CNFINI
2602	3740	SUVFNO		3740
		REM		
2603	5434	NFIXEX	ADD	NEXPA
2604	6251	PJF		NSUBTR
2605	6350	NJF		NSUBTR
2606	0453	ENTRYD	LDN	NU3
2607	4050	STD		NUQUOT
2610	2435	LCD		NEXP
2611	0640	ADN		32D
2612	5034	RAD		NEXPA
2613	2225	LDF		NLTST
2614	4063	NMLTX	STD	MLTX
2615	0400	LDN		0
2616	4051	STD		NU
2617	4062	STD		FAC

OR DO RS2 ON THE A

-3- WORD FLOATING DIVIDE  
INCREASE EXPONENTADDRESS OF QUOTIENT  
FOR INDIRECT ADDRESSING  
CREATE CORRECT  
EXPONENT FOR  
QUOTIENT

Q=0

2620	0503	LCN	3	I=3 WORDS
2621	4052	STD	N-1)	OF QUOTIENT
2622	5653	AOF	NCHNG	ONLY 2 DIGITS IN 1ST WD
2623	2046	LDD	NA2	IF REMAINDER IS
2624	3433	SBD	NC1	LESS THAN DIVISOR
2625	6311	NJF	NSHIFT	MODIFY EXPONENT
2626	6523	NZB	NFIXEX	OTHERWISE MULTIPLY
2627	2045	LDD	NA3	REMAINDER BY 10
2630	3432	SBD	NC2	
2631	6305	NJF	NSHIFT	
2632	6527	NZB	NFIXEX	
2633	2044	LDD	NA4..	
2634	3431	SBD	NC3	
2635	6632	PJB	NFIXEX	
2636	7101	NSHIFT	JFI	LEFT SHIFT
2637	2151	NMLT	MLT	1 DECIMAL PLACE
2640	2642	NLTST	NTEST	
2641	2021	NENDER	LDD	NONE
2642	2046	NTEST	LDD	NA2
2643	3433		SBD	NC1
2644	6334		NJF	NSTEP
2645	6110		NZF	NSUBTR
2646	2045		LDD	NA3
2647	3432		SBD	NC2
2650	6330		NJF	NSTEP
2651	6104		NZF	NSUBTR
2652	2044		LDD	NA4
2653	3431		SBD	NC3
2654	6324		NJF	NSTEP
2655	2431	NSURTR	LCD	NC3
2656	5044		KAD	NA4
2657	6205		PJF	5
2660	3015		ADD	NTHOU
2661	4044		STD	NA4
2662	0501		LCN	1
2663	5045		KAD	NA3
2664	2432		LCD	NC2
2665	5045		KAD	NA3
2666	6205		PJF	5
2667	3015		ADD	NTHOU
2670	4045		STD	NA3
2671	0501		LCN	1
2672	5046		KAD	NA2
2673	2433		LCD	NC1
2674	5046		KAD	NA2
2675	2016	NCHNG	LDD	NHUND
2676	5051		KAD	NU
2677	6635		PJB	NTEST
2700	5703	NSTEP	A08	NCHNG
2701	1740		LSB	NENDER
2702	6544		NZB	NSHIFT
2703	0503		LCN	3
2704	5307		KAB	NCHNG
2705	2051		LDD	NU
2706	4150		STI	NQUOT
2707	0400		LDN	0
2710	4051		STD	NU
2711	5450		A08	NQUOT
2712	5452		A08	N-1)
2713	6555		NZB	NSHIFT

I=3 WORDS  
 OF QUOTIENT  
 ONLY 2 DIGITS IN 1ST WD  
 IF REMAINDER IS  
 LESS THAN DIVISOR  
 MODIFY EXPONENT  
 OTHERWISE MULTIPLY  
 REMAINDER BY 10

LEFT SHIFT  
 1 DECIMAL PLACE

TEST CONSTANT  
 IF REMAINDER IS  
 LESS THAN DIVISOR  
 INCREASE COUNTER  
 OTHERWISE SUBTRACT  
 DIVISOR FROM  
 REMAINDER

SUBTRACT DIVISOR  
 FROM REMAINDER  
 KEEPING MOD 1000

INCREASE QUOTIENT  
 BY 100,10, OR 1

NEXT POWER OF 10  
 THROUGH 1  
 UNFINISHED, BACK TO SHIFT  
 RESTORE INCREMENT  
 TO 100  
 STORE WORD I  
 OF QUOTIENT  
 Q=0

I=I+1  
 I LEQ 3, BACK TO SHIFT

ROUND OR NOT

2714	4446	SRD	NA2
2715	3433	SBD	NC1
2716	6302	NJF	2
2717	5455	AOD	NU1
2720	2054	LDD	NU2
2721	4045	STD	NA3
2722	2053	LDD	NU3
2723	4046	STD	NA2
2724	0444	LDN	NA4
2725	4053	STD	NACT
2726	2055	LDD	NU1
2727	4044	STD	NA4
2730	7101	JFI	1
2731	2446	NDIVEX	DIVEX
		REM	
2732	4054	MCNG1	STD MP3
2733	5455		AOD MP2
2734	6213		PJF MRET1
2735	4055	MCNG2	STD MP2
2736	5456		AOD MP1
2737	6213		PJF MRET2
2740	4457	MSHIFT	SRD MP0
2741	4456		SRD MP1
2742	4455		SRD MP2
2743	4454		SRD MP3
2744	3415		SBD MTHOU
2745	6613		PJ8 MCNG1
2746	2055		LDD MP2
2747	3415	MRET1	SBD MTHOU
2750	6613		PJ8 MCNG2
2751	2056		LDD MP1
2752	3415	MRET2	SBD MTHOU
2753	6303		NJF MWORK
2754	4056		STD MP1
2755	5457		AOD MP0
2756	4450	MWORK	SRD MLIER
2757	6223		PJF MSTEP
2760	2031		LDD MC3
2761	5054		KAD MP3
2762	3415		SBD MTHOU
2763	6303		NJF MINC1
2764	4054		STD MP3
2765	5455		AOD MP2
2766	2032	MINC1	LDD MC2
2767	5055		KAD MP2
2770	3415		SBD MTHOU
2771	6303		NJF MINC
2772	4055		STD MP2
2773	5456		AOD MP1
2774	2033	MINC	LDD MC1
2775	5056		KAD MP1
2776	3415		SBD MTHOU
2777	6303		NJF MSTEP
3000	4056		STD MP1
3001	5457		AOD MP0
3002	5451	MSTEP	AOD MCOUNT
3003	6543		NZB MSHIFT
3004	6037		ZJF MZERO
3005	4051	MENTRY	STD MCOUNT
3006	0400		LDN 0

Q TO A

#3# WORD FLOATING MULTIPLY



3007	4057		STD	MP0	
3010	4056		STD	MP1	
3011	4055		STD	MP2	
3012	4054		STD	MP3	
3013	6435		ZJB	M=ORK	
3014	3024	MLBACK		MBACK	
3015	2035	MPY	LDD	EXPB	
3016	0740		SBN	32D	
3017	5034		KAD	EXP	
3020	2304		LDB	MLBACK	
3021	4063		STD	MLTX	
3022	7101		JFI	1	
3023	2151	MMLT		MLT	
3024	4041	MBACK	STD	MA7	
3025	4042		STD	MA6	
3026	4043		STD	MA5	
3027	0502		LCN	2	
3030	4053		STD	MOUND	
3031	0444		LDN	MA4	
3032	4052		STD	MAC(J)	
3033	4444		SRD	MA4	
3034	6202		FJF	MBOH	
3035	4445		SRD	MA3	
3036	4050	MBOH	STD	MLIER	
3037	2225		LDF	MSTRTR	
3040	4206		STF	MLOOP	
3041	0512	MCNT	LCN	10D	
3042	6535		NZB	MENTRY	
3043	4152	MZERO	STI	MAC(J)	
3044	0503		LCN	3	
3045	5052		RAD	MAC(J)	
3046	2000	MLOOP	LDD		
3047	5152		RAI	MAC(J)	
3050	3415		SBD	MTHOU	
3051	6214		PJF	MCARRY	
3052	5452		AOD	MAC(J)	
3053	5705	MCOMUN	AOD	MLOOP	
3054	1607		LSF	MTERMN	
3055	6507		NZB	MLOOP	
3056	5453		AOD	MOUND	
3057	6722		NJB	MBOH	-1
3060	6111		NZF	MDONE	
3061	4446		SRD	MA2	
3062	6624		FJB	MBOH	
3063	2060	MTERMN	LDD	MP0	1
3064	2054	MSTRTR	LDD	MP3	
3065	4152	MCARRY	STI	MAC(J)	
3066	5452		AOD	MAC(J)	
3067	5552		AOI	MAC(J)	
3070	6615		PJB	MCOMUN	
3071	0446	MDONE	LDN	MA2	
3072	4053		STD	MACT	
3073	7101		JFI	1	
3074	2420	MSHOW		SHOW	
3075	2046	CNFIN	LDD	A2	
3076	4003		STD	ACC	
3077	2045		LDD	A3	
3100	4004		STD	ACC	1
3101	2044		LDD	A4	
3102	4005		STD	ACC	2

3103	7025		JPI	SPINI	
			REM		NEW IOC
3104	5410	10	AOD	LUCC	
3105	2110		LDI	LUCC	
3106	0703		SBN	3	
3107	4052		STD	KTTYPE	1,2,3,4=I,O,R,P
3110	6224		PJF	KT104	INPUT OR OUTPUT
3111	0601		ADN	1	
3112	6107		NZF	7	
3113	7564		EXF	KT102	
3114	7303		OUT	3	
3115	3121			KT105	1
3116	6112		NZF	JSJ30	
3117	3120			KT105	
3120	0100	KT105		100	
3121	7546		EXF	KT103	
3122	7210		INP	10	
3123	3134			KT106	1
3124	2207		LDF	KT106	
3125	6403		ZJB	3	
3126	3706		SBB	KT105	
3127	6505		NZB	5	
3130	5410	JSJ30	AOD	LUCC	
3131	6141		NZF	JSJ50	
3132	3133			KT106	
3133	0000	KT106		0	
3134	5410	KT104	AOD	LUCC	
3135	2110		LDI	LUCC	
3136	4057		STD	KTTEM1	
3137	0021		SIC1		
3140	5457		AOD	KTTEM1	
3141	2157		LDI	KTTEM1	
3142	4060		STD	KTIFOR	LOCN FORMAT LIST
3143	0020		SIC0		
3144	5410		AOD	LUCC	
3145	2110		LDI	LUCC	
3146	4057		STD	KTTEM1	
3147	2052		LDD	KTTYPE	
3150	6103		NZF	3	
3151	2227		LDF	SIXTF	
3152	6102		NZF	2	
3153	0401		LDN	1	
3154	4053		STD	KTROUT	
3155	0401		LDN	1	INITIALIZE
3156	4061		STD	KTI	FORMAT OPU COUNTER
3157	5410		AOD	LUCC	
3160	2052	JSSWT	LDD	KTTYPE	
3161	6107		NZF	JSPUN	
3162	7505		EXF	5	READ
3163	7600		INA		SCAN
3164	0745		SBN	45	THRU
3165	6502		NZB	2	CR
3166	6004		ZJF	4	
3167	4102	KT103		4102	
3170	7507	JSPUN	EXF	KT102	
3171	7445		OTN	45	CR
3172	0400	JSJ50	LDN	0	
3173	4054		STD	KTCL	
3174	4055		STD	KICM	
3175	4056		STD	KICN	

3176	7001	KTIO1	JPI	LCON	
3177	4104	KTIO2		4104	PUNCH SELECT CODE
3200	0525	SIXTF		525	
3201	2056	IOC	LDD	KTCN	
3202	6722		NJB	JSSWT	
3203	5410		AOD	LUCC	
3204	2110		LDI	LUCC	
3205	4062		STD	KIMAXJ	
3206	0401		LDN	1	
3207	4063		STD	KTJ	
3210	5410		AOD	LUCC	LOCC NOW AT 1ST OPND
3211	2052	KTIOC1	LDD	KITYPE	
3212	6267		PJF	KTIOCB..	READ PUNCH
3213	0601		ADN	1	
3214	0277		LPN	77	
3215	4027		STD	STOSWT	
3216	6003		ZJF	3	
3217	0403		LDN	ACC	
3220	6102		NZF	2	
3221	0415		LDN	OP	
3222	4057		STD	KITEM1	
3223	0400		LDN	0	
3224	4054		STD	KTCL	
3225	2110		LDI	LUCC	
3226	7100		JPR	GETOP	
3227	0201				
3230	2027	KTIOC3	LDD	STOSWT	
3231	6032		ZJF	KTIOC5	
3232	7600		INA		INPUT
3233	0110		SHA	10	
3234	0110		SHA	10	
3235	4157		STI	KITEM1	
3236	7600		INA		
3237	5157		HAI	KITEM1	
3240	2013	KTIOC8	LDD	MODE	
3241	0701		SBN	1	
3242	6005		ZJF	KTIOC4	
3243	5457		AOD	KITEM1	
3244	5454		AOD	KTCL	
3245	0303		LSN	3	
3246	6516		NZB	KTIOC3	
3247	2027	KTIOC4	LDD	STOSWT	
3250	6004		ZJF	4	
3251	2110		LDI	LUCC	
3252	7100		JPR	GETOP	
3253	0201				
3254	5410		AOD	LUCC	
3255	5463		AOD	KTJ	
3256	0701		SBN	1	
3257	1462		LSD	KIMAXJ	
3260	6547		NZB	KTIOC1	
3261	7001		JPI	LCON	EXIT
3262	0000	JSIOSW			
3263	2157	KTIOC5	LDI	KITEM1	OUTPUT
3264	0277		LPN	77	
3265	3213		ADF	KTIOC9	
3266	4210		STF	KTIOC7	
3267	2157		LDI	KITEM1	
3270	0110		SHA	10	
3271	0110		SHA	10	

3272	0277		LPN	77
3273	3205		ADF	KTIOC9
3274	4201		STF	KTIUC6
3275	7400	KTIOC6	OTN	
3276	7400	KTIOC7	OTN	
3277	6537		NZF	KTIUC8
3300	7400	KTIOC9	OTN	0
3301	0021	KTIOC8	SIC1	
3302	2160		LDI	KTLFOR
3303	0277		LPN	77
3304	4065		STD	KIF2
3305	1560		LSI	KTLFOR
3306	0110		SHA	10
3307	0110		SHA	10
3310	4064		STD	KTF1
3311	2060		LDD	KTLFOR
3312	0601		ADN	1
3313	4057		STD	KITEM1
3314	2157		LDI	KITEM1
3315	4066		STD	KIF3
3316	0020		SIC0	
3317	2064		LDD	KIF1
3320	0701		SBN	1
3321	6112		NZF	JSJ2
3322	2052		LDD	KITYPE
3323	6105		NZF	JSJ1
3324	7600		INA	
3325	0745		SBN	45
3326	6502		NZF	2
3327	6002		ZJF	2
3330	7445	JSJ1	OTN	45
3331	7101	KTIOCR	JFI	1
3332	3524			KTIOCA
3333	0706	JSJ2	SBN	6
3334	6154		NZF	KICB1
3335	0021		SIC1	
3336	2465		LDD	KTF2
3337	4065		STD	KTF2
3340	2052	JSJ3	LDD	KITYPE
3341	6023		ZJF	JSJ5
3342	2166		LDI	KIF3
3343	0277		LPN	77
3344	3217		ADF	JSC1
3345	4210		STF	10
3346	2166		LDI	KTF3
3347	0110		SHA	10
3350	0110		SHA	10
3351	0277		LPN	77
3352	3211		ADF	JSC1
3353	4201		STF	1
3354	7400		OTN	
3355	7400		OTN	
3356	5466	JSJ4	AOD	KTF3
3357	5465		AOD	KIF2
3360	6520		NZF	JSJ3
3361	0020		SIC0	
3362	6431		ZJH	KTIOCR
3363	7400	JSC1	OTN	
3364	2221	JSJ5	LDF	21
3365	4160		STI	KIF3

FOL W/ KTIOCB

ONLY BY READ, PUNCH  
AND IS OVERLAID WITH  
OBJECT CODE IF NEITHER  
EXISTS

/

READ

RETURN TO A

H

PUNCH H

3366	7600	JSJ6	INA		
3367	6401		ZJB	1	
3370	0747		SBN	47	
3371	6103		NZF	3	
3372	2214		LDF	14	
3373	6506		NZB	JSJ5	1
3374	0710		SBN	10	57
3375	6103		NZF	3	
3376	2211		LDF	11	
3377	6504		NZB	4	
3400	0720		SBN	20	
3401	6413		ZJB	JSJ6	
3402	0677		ADN	77	
3403	5166		KAI	KTF3	
3404	6526		NZB	JSJ4	
3405	5700			5700	
3406	4700			4700	
3407	5700			5700	
3410	0703	KTCB1	SBN	3	12
3411	6122		NZF	KTCB2	
3412	2466		LCD	KTF3	X
3413	4066		STD	KTF3	
3414	2052		LDD	KTTYPE	
3415	6114		NZF	JSJ7	
3416	7600		INA		READ X
3417	6401		ZJB	1	
3420	0747		SBN	47	
3421	6403		ZJB	3	
3422	0710		SBN	10	
3423	6405		ZJB	5	
3424	0720		SBN	20	
3425	6407		ZJB	7	
3426	5466		AOD	KTF3	
3427	6476		ZJB	KTIOCR	
3430	6515		NZB	15	
3431	7404	JSJ7	OTN	4	
3432	6504		NZB	4	
3433	0692	KTCB2	ADN	2	10
3434	6250		PJF	KTCB3	
3435	2063		LDD	KIJ	
3436	3462		SBD	KTMXJ	
3437	6003		ZJF	3	
3440	6302		NJF	2	
3441	7001		JPI	LCON	
3442	2052		LDD	KTTYPE	
3443	0701		SBN	1	
3444	0277		LPN	77	
3445	4027		STD	STOSWT	
3446	6033		ZJF	3	
3447	0403		LDN	ACC	
3450	6102		NZF	2	
3451	0415		LDN	OP	
3452	4070		STD	KIDATA	
3453	5463		AOD	KIJ	UP J
3454	2065		LDD	KTF2	
3455	6103		NZF	3	
3456	2066		LDD	KTF3	
3457	4065		STD	KIF2	
3460	2052		LDD	KTTYPE	
3461	6004		ZJF	4	

3462	2110		LDI	LUCC	
3463	7100		JPR	GETOP	
3464	0201				
3465	2053		LDD	KTROUT	
3466	0011		SRJ1		
3467	2052	JSRTN	LDD	KITYPE	
3470	6112		NZF	JSIOCA	
3471	2046		LDD	A2	
3472	4003		STD	ACC	
3473	2045		LDD	A3	
3474	4004		STD	ACC	1
3475	2044		LDD	A4	
3476	4005		STD	ACC	2
3477	2110		LDI	LUCC	
3500	7100		JPR	GETOP	
3501	0201				
3502	5410	JSIOCA	AOD	LUCC	
3503	6121		NZF	KTIOCA	
3504	6155	KTCB3	NZF	KTIOCC	
3505	2066		LDD	KTF3	
3506	0701		SBN	1	
3507	6107		NZF	KTCB4	
3510	2065		LDD	KTF2	
3511	0701		SBN	1	
3512	4054		STD	KICL	
3513	2055		LDD	KTCM	
3514	6026		ZJF	KTIOCE	
3515	6120		NZF	KTIOCD	
3516	2066	KTCR4	LDD	KTF3	
3517	4067	JSJ4C	STD	KTHM	
3520	4055		STD	KTCM	
3521	2065		LDD	KTF2	
3522	0701		SBN	1	
3523	4056		STD	KTCN	
3524	2054	KTIOCA	LDD	KICL	
3525	6006		ZJF	JSJ41	
3526	0501		LCN	1	
3527	5054		KAD	KTCL	
3530	7101	KTCA1	JFI	1	
3531	3301			KTIOCB	
3532	6514	KTCB4R	NZB	KTCB4	
3533	2055	JSJ41	LDD	KTCM	
3534	6004		ZJF	4	
3535	0501	KTIOCD	LCN	1	
3536	5055		KAD	KTCM	
3537	6203		PJF	KTIOCE	
3540	2056		LDD	KTCN	
3541	6105		NZF	5	
3542	5461	KTIOCE	AOD	KTI	
3543	0402		LDN	2	
3544	5060		RAD	KTLFOR	
3545	6515		NZB	KTCA1	
3546	0501		LCN	1	
3547	5056		KAD	KTCN	
3550	2067		LDD	KIHM	
3551	4055		STD	KTCM	
3552	0102		SHA	2	
3553	4057		STD	KITEM1	
3554	2457		LCD	KITEM1	
3555	5060		KAD	KILFOR	

TO END  
REPEAT

3556	2467	LCD	KIHM
3557	5061	KAD	KTI
3560	6634	PJR	KTIUCA
3561	0501	KTIOCC LCN	1
3562	4056	STD	KICN
3563	0021	SIC1	
3564	0501	KTCC1 LCN	1
3565	5061	KAD	KTI
3566	0502	LCN	2
3567	5060	KAD	KTLFOR
3570	2160	LDI	KTLFOR
3571	0110	SHA	10
3572	0110	SHA	10
3573	0277	LPN	77
3574	0710	SBN	10
3575	6511	NZB	KIACC1
3576	2160	LDI	KTLFOR
3577	0277	LPN	77
3600	4065	STD	KIF2
3601	0701	SBN	1
3602	6516	NZB	KTCC1
3603	2060	LDD	KTLFOR
3604	0601	ADN	1
3605	4057	STD	KITEM1
3606	2157	LDI	KITEM1
3607	4066	STD	KTF3
3610	0020	SIC0	
3611	2063	LDD	KTJ
3612	3482	SBD	KIMAXJ
3613	6212	FJF	KTCC3
3614	2052	KTCC2 LDD	KITYPE
3615	6105	NZF	5
3616	7600	INA	
3617	0745	SBN	45
3620	6502	NZB	2
3621	6002	ZJF	2
3622	7445	DTN	45
3623	0401	LDN	1
3624	6572	NZB	KTCB4R
3625	6102	KTCC3 NZF	2
3626	6412	ZJB	KTCC2
3627	7001	JPI	LCON
		REM	
		CON	1
	0001	LCON	NOCL
0001	1210	RETRUF	RETURN1 -1
0002	1302	ACC	BSS 3
0003	0000	ARINT1	
0006	0000	ARINTL	
0007	0000	LOCC	
0010	0000	LOCC0	
0011	0000	LOCVAR	
0012	0000	MODE	
0013	0000	MODEA	
0014	0000	OPER	BSS 4
0015	0000	STOTRA	
0021	0000	SWT	
0022	0000	SWT1	
0023	0000	SNOPSW	
0024	0000	SFINI	
0025	0000		

LOW CORE FOR C INTERPRETER

NON-ZERO FOR LJB, SUBR,

0026	0000	CNFINI		
0027	0000	STOSWT		
0030	0000	SUBSWT		
0031	0000	C3		
0032	0000	C2		
0033	0000	C1		
0034	0000	GETOPE		
0035	0000	LOCC2		
0036	0000	LOCC8		
0037	0000	PARLOC		
0040	0000	QCOUNT		
0041	0000	A7		
0042	0000	A6		
0043	0000	A5		
0044	0000	A4		
0045	0000	A3		
0046	0000	A2		
0047	0000	A1		
0050	0000	TEMP6		
0051	0000	VARLOC		
0052	0000	S3		
0053	0000	S4		
0054	0000	S5		
0055	0000	S6		
0056	0000	S7		
0057	0000	S8		
0060	0000	S9		
0061	0000	S10		
0062	0000	FAC		
0063	0000	MLTX		
0064	0000	SR3		
0065	0000	SR2		
0066	0000	SR1		
0067	0000	KTHM		
0070	0000	KTDATA		
0071	0000	WID		
0072	0000	DFCCT		
0073	0000	DIGCT		
0074	0000	NCONF		
0075	0000	STORD		
0076	0000	EXPF		
0077	0000	PLACCT		
	0052	KTIYPE	EQU	S3
	0053	KTROUT	EQU	S4
	0054	KTCL	EQU	S5
	0055	KTCM	EQU	S6
	0056	KTCN	EQU	S7
	0057	KTIEM1	EQU	S8
	0060	KTLFOR	EQU	S9
	0061	KTI	EQU	S10
	0062	KTMXJ	EQU	FAC
	0063	KTJ	EQU	MLTX
	0064	KTF1	EQU	SR3
	0065	KTF2	EQU	SR2
	0066	KTF3	EQU	SR1
	0034	EXP	EQU	GETOPE
	0040	SIGN	EQU	QCOUNT
	0064	FUNCD	EQU	KTF1
	0066	WIDI	EQU	KIF3
	0065	WIDF	EQU	KIF2



0066	DECF	EQU	KTF3	
0033	EAPLOC	EQU	C1	
0032	EAP	EQU	C2	
0031	DIMLOC	EQU	C3	
0042	SAVSUM	EQU	A6	
0003	FXPACC	EQU	ACC	
0041	SAVACC	EQU	A7	
0043	TEMP1	EQU	A5	
0015	XOPRND	EQU	OPER	
0044	TEMP2	EQU	A4	
0045	TEMP3	EQU	A3	
0015	OPRAND	EQU	OPER	
0003	FLPACC	EQU	ACC	
0043	R1	EQU	A5	
0044	R2	EQU	A4	
0045	R3	EQU	A3	
0046	R4	EQU	A2	
0047	R5	EQU	A1	
0046	TEMP4	EQU	A2	
0047	TEMP5	EQU	A1	
0003	FXACC	EQU	ACC	
0053	ACT	EQU	S4	
0064	SEXTX	EQU	SK3	
0015	OP	EQU	OPER	
0015	SOP	EQU	OPER	
0050	SFLAG	EQU	TEMP6	
0003	SACC	EQU	ACC	
0022	SDVFLT	EQU	SWT	
0053	SACT	EQU	S4	
0051	SDIS	EQU	VARLOC	
0034	SEXP	EQU	EXP	
0056	STEMP	EQU	S7	
0015	STHOU	EQU	OPER	
0016	SHUND	EQU	OPER	+1
0017	STEN	EQU	OPER	+2
0015	THOU	EQU	OPER	
0020	SONE	EQU	OPER	+3
0050	HIGH	EQU	TEMP6	
0051	TMOVE	EQU	VARLOC	
0003	B3	EQU	ACC	
0004	B2	EQU	ACC	1
0005	B1	EQU	ACC	2
0054	HGHER	EQU	S5	
0054	HIGHER	EQU	S5	
0055	LOWER	EQU	S6	
0054	LET	EQU	S5	
0016	(100)	EQU	OPER	1
0055	GET	EQU	LET	+1
0045	SA3	EQU	A3	
0044	SA4	EQU	A4	
0034	NEXPA	EQU	EXP	
0050	NQUOT	EQU	TEMP6	
0051	NO	EQU	VARLOC	
0052	N-1)	EQU	S3	
0046	NA2	EQU	A2	
0033	NC1	EQU	C1	
0045	NA3	EQU	A3	
0032	NC2	EQU	C2	
0044	NA4	EQU	A4	
0031	NC3	EQU	C3	

0020	NONE	EQU	SUNE
0015	NTHOU	EQU	STHOU
0016	NHUND	FQU	SHUND
0055	NQ1	EQU	S6
0054	NQ2	EQU	S5
0053	NQ3	EQU	S4
0053	NACT	EQU	ACT
0053	MACT	EQU	ACT
0054	MP3	EQU	S5
0055	MP2	EQU	S6
0056	MP1	EQU	S7
0057	MP0	EQU	S8
0015	MTHOU	EQU	STHOU
0050	MLIER	EQU	TEMP6
0031	MC3	EQU	C3
0032	MC2	FQU	C2
0033	MC1	FQU	C1
0051	MCOUNT	EQU	VARLOC
0041	MA7	EQU	A7
0042	MA6	EQU	A6
0043	MA5	EQU	A5
0044	MA4	EQU	A4
0045	MA3	EQU	A3
0052	MAC(J)	EQU	SJ
0053	MOUND	EQU	S4
0046	MA2	FQU	A2
0046	SA2	EQU	A2
0035	EXPR	EQU	LUCC2
0035	NEXP	EQU	EXP8
0036	SIGNA	EQU	LUCC8
0037	SIGNB	EQU	PARLOC
0040	SSIGN	EQU	SIGN
0076	TEMP76	EQU	76
0077	TEMP77	EQU	77
0000	0000	ORG	0
0000	7103	JFI	3
0000	0003	ORG	3
0003	3630		RKSWB
0004	7564	EXF	LUDER1
0005	7600	INA	
0006	6401	ZJB	1
0007	0277	SETLD	LPN 77
0010	0620	ADN	20
0011	4201	STF	1
0012	0020	SIC0	
0013	7600	INA	
0014	0277	LPN	77
0015	0111	LS6	
0016	4067	STD	KEEP
0017	7600	INA	
0020	0277	LPN	77
0021	5067	RAD	KEEP
0022	7600	READLD	INA
0023	6106	NZF	PARITY
0024	7600	INA	
0025	7600	INA	
0026	6517	NZB	SETLD
0027	7101	JFI	1
0030	0133		ERASE
0031	4241	PARITY	STF PARCHR

0032	0277		LPN	77
0033	4233		STF	CHR
0034	0110		SHA	10
0035	0340		LSN	40
0036	1630		LSF	CHR
0037	4234		SIF	SUM
0040	0102		SHA	2
0041	1632		LSF	SUM
0042	0102		SHA	2
0043	1630		LSF	SUM
0044	0240		LPN	40
0045	0102		SHA	2
0046	1620		LSF	CHR
0047	1623		LSF	PARCHR
0050	6002		ZJF	2
0051	0000		ERR	
0052	4617		SXF	LODER2
0053	6206		PJF	PART1
0054	2212		LDF	CHR
0055	1567		LSI	KEEP
0056	4167		STI	KEEP
0057	5467		AOD	KEEP
0060	6536		NZB	READLD
0061	2205	PART1	LDF	CHR
0062	0111		LS6	
0063	4167		STI	KEEP
0064	6542		NZB	READLD
0065	6443		ZJB	READLD
0066	0000	CHR		
0067	0000	KEEP		
0070	4102	LODER1		4102
0071	5252	LODER2		5252
0072	0000	PARCHR		
0073	0000	SUM		
	0133		ORG	ERASE
0133	0021	LODER3	SIC1	
0134	0505		LCN	5
0135	4010		STD	LUCC
0136	2110		LDI	LUCC
0137	4010		STD	LUCC
0140	0400		LDN	0
0141	4003		STD	FLPACC
0142	4004		STD	FLPACC
0143	4005		STD	FLPACC
0144	4022		STD	SWT
0145	4023		STD	SWT1
0146	4027		STD	STOSWT
0147	4030		STD	SUBSWT
0150	0020		SIC0	
0151	7700		HLT	
0152	7001		JPI	LCON
	3630		ORG	KTCC3
	0074	R1R	EQU	74
	0075	R2R	EQU	75
	0076	R3R	EQU	76
3630	0401	RKSWB	LDN	1
3631	4074		STD	R1R
3632	2200		LDC	JSPUNC
3633	3652			
3634	4075		STD	R2R

3635	2200		LDC	JSACO	1
3636	4747				
3637	4076		STD	RJR	
3640	2175	RKSWB1	LDI	R2R	
3641	0021		SIC1		
3642	4174		ST1	R1R	
3643	0020		SIC0		
3644	5474		AOD	R1R	
3645	5475		AOD	R2R	
3646	1476		LSD	RJR	
3647	6507		NZB	RKSWB1	
3650	7101		JFI	1	
3651	0004			4	

AC PUNCH 5 APRIL 62

	0120	BUFE	EQU	120	
	0122	ENDRUF	EQU	BUFE	2
	0110	BUF	EQU	110	
	0065	RKWD	EQU	KTF2	
	0035	RKLET	EQU	LUCC2	
	0071	FILLER	EQU	71	
	0072	CONSWT	EQU	72	
	0073	NUM	EQU	73	
	0074	KEEP1	EQU	74	
	0075	KEEP2	EQU	75	
	0076	KEEP3	EQU	76	
	0077	SGNEXP	EQU	77	
3652	2064	JSPUNC	LDD	FUNCD	
3653	0705		SBN	5	
3654	6312		ZJR	ACON	
3655	6162		NZR	RNINIT	
3656	0577	TWOC	LCN	77	
3657	1015		LPD	OPRAND	
3660	0110		SHA	10	
3661	0110		SHA	10	
3662	3217		ADF	OUTINS	
3663	4201		STF	1	
3664	0000			0	
3665	6104		NZF	POUT	
3666	2066	ACON	LDD	KTF3	
3667	0201		LPN	1	
3670	6412		ZJB	TWOC	
3671	2015	POUT	LDD	OPRAND	1 CHAR PER WORD
3672	0277		LPN	77	
3673	3206		ADF	OUTINS	
3674	4201		STF	1	
3675	0000			0	
3676	2202		LDF	2	NO OP IN BASIC
3677	0010		SRJ0		
3700	0102			AC0ITK	EXIT
3701	7400	OUTINS	OTN	0	FETCH 32
			REM		
3702	1777	C1777		1777	
3703	2170	FETCH	LDI	KIDATA	
3704	4040		STD	SIGN	
3705	0237		LPN	37	
3706	4074		STD	KEEP1	
3707	1570		LSI	KIDATA	
3710	0110		SHA	10	
3711	0110		SHA	10	
3712	0102		SHA	2	

3713 0277  
 3714 0740  
 3715 4077  
 3716 6202  
 3717 2477  
 3720 4034  
 3721 5470  
 3722 2170  
 3723 1521  
 3724 4075  
 3725 1570  
 3726 5074  
 3727 0102  
 3730 0102  
 3731 4074  
 3732 5470  
 3733 2170  
 3734 4076  
 3735 6025  
 3736 6124  
  
 3737 2266  
 3740 4225  
 3741 2260  
 3742 4035  
 3743 0474  
 3744 4073  
 3745 0601  
 3746 4256  
 3747 2064  
 3750 0703  
 3751 4072  
 3752 0701  
 3753 6304  
 3754 0502  
 3755 5210  
 3756 6271  
 3757 0402  
 3760 5244  
 3761 6556  
  
 3762 0400  
 3763 4240  
 3764 2173  
 3765 3600  
 3766 6304  
 3767 4173  
 3770 5633  
 3771 6505  
 3772 2231  
 3773 3240  
 3774 4201  
 3775 0000  
 3776 4135  
 3777 5435  
 4000 5713  
 4001 1631  
 4002 6520  
 4003 2173  
 4004 4217

LPN 77  
 SBN 40  
 STD SGNEXP  
 PJF 2  
 LCD SGNEXP  
 STD EXP  
 AOD KIDATA  
 LDI KIDATA  
 LPR C1777  
 STD KEEP2  
 LSI KIDATA  
 RAD KEEP1  
 SHA 2  
 SHA 2  
 STD KEEP1  
 AOD KIDATA  
 LDI KIDATA  
 STD KEEP3  
 ZJF NUMCON  
 NZF NUMCON  
 REM  
 LDR INSTE  
 STR RED  
 LDR RUFAD2  
 STD RKLET  
 LDN KEEP1  
 STD NUM  
 ADN 1  
 STR DEND  
 LDD FUNCD  
 SBN 3  
 STD CUNSWT  
 SBN 1  
 NJF 4  
 LCN 2  
 HAR RED  
 PJF INMODR  
 LDN 2  
 HAR DEND  
 NZR FETCH  
 REM  
 LON 0  
 INTENT STF VALUE  
 RKREP LDI NUM  
 RED SBF 0  
 NJF 4  
 STI NUM  
 AOF VALUE  
 NZB RKREP  
 PUT LDR VALUE  
 ADF GETINS  
 STF 1  
 COMB  
 STI RKLET  
 AOD RKLET  
 AOR RED  
 LSF NEND  
 NZB NUMCON  
 LDI NUM  
 STF VALUE

SIGN OF EXPONENT

ABSOLUTE VALUE OF EXPONENT

ENTRY

INITIALIZE FETCH FOR 1 WORD

\*1)0)1)3 FLAGS F,E,I,O

SET FETCH FOR 3 WORDS

NUMCON 31

4005	2221	LDF	INSTF
4006	4321	STB	RED
4007	5473	AOD	NUM
4010	3614	SBF	DEND
4011	6717	NJB	PUT
4012	2211	LDR	VALUE
4013	3221	ADR	LSTINS
4014	4201	STF	1
4015	0000	EXEC	
4016	4135	STI	RKLET
4017	5435	AOD	RKLET
4020	6131	NZR	ECON
		REM	

END OF NUMBERS

CONST 22

4021	0110	BUFAD2	BUF
4022	6640	NUMCR	PJB
4023	0000	VALUE	NUMCON
4024	0000	DEND	
4025	3644	-INSTE	SBF
4026	3642	-INSTF	SBF
4027	1750	TAB1	TABE
4030	0144		TAB1
4031	0012	TABF	1750
4032	3645	-NEND	144
4033	2240	-GETINS	12
4034	2220	-LSTINS	SBF
4035	0056	TAB2	NEND
4036	0074		TAB2
4037	0070		TAB2
4040	0064		56
4041	0062		74
4042	0066		70
4043	1072		64
4044	0060		62
4045	0033		66
4046	0037		72
			60
			33
			37

-RED  
-RED  
-RED  
-RED  
-COMB  
-EXEC

1  
2  
3  
4  
5  
6  
7  
8  
9

4047	6271	INMODR	PJF
4050	6566	INTENR	NZR
			REM

E CONVERSION 27

4051	2072	ECON	LDD
4052	6145		NZF
4053	2326	FXOVR	LDR
4054	4367		STB
4055	0434		LDN
4056	4073		STD
4057	0601		ADN
4060	4334		STR
4061	4633		SRF
4062	6640		PJR
4063	2065		LDD
4064	0706		SBN
4065	3466		SBD
4066	4071		STD
4067	6064		ZJR
4070	6163		NZR
4071	7442	EOUT	OTN
4072	2245		LDF
4073	3066		ADD
4074	4202		STF
4075	7342		OUT

INMODE  
NUMCON  
CONSWT  
FCON  
INSTE  
RED  
EXP  
NUM  
1  
DEND  
ESWT  
NUMCR  
WIDF  
6  
DECF  
FILLER  
FILL  
42  
BUFAD  
DECF  
TERME  
BUFAD

4076	0000	TERME		
4077	7420	EXPOUT	OTN	20
4100	2077		LDD	SGNEXP
4101	6202		PJF	2
4102	7452		OTN	52
4103	6302		NJF	2
4104	7404		OTN	4
4105	7306		OUT	BUFADE
4106	0122			ENDBUF
4107	2202	NZFINI	LDF	2
4110	0010		SRJO	
4111	0102			ACOITK
4112	6542	INTENS	NZR	INTENR
4113	0120	BUFADE		HUFE
4114	5252	ESWT		5252
4115	7420	EPUN	OTN	20
4116	6425	EOUTR	ZJR	EOUT
			REM	
4117	6233	FCON	PJR	ICONR1
4120	2077		LDD	SGNEXP
4121	6203		PJF	TSWID
4122	2065		LDD	WIDF
4123	6106		NZF	SUB2
4124	2034	TSWID	LDD	EXP
4125	0711		SBN	11
4126	6207		PJF	GOECON
4127	2065		LDD	RAWID
4130	3434		SBD	EXP
4131	0702	SUB2	SBN	2
4132	3466		SBD	DECF
4133	4071		STD	FILLER
4134	6217		PJF	FILL
4135	5472	GOECON	AOD	CONSWT
4136	6463		ZJB	FXOVR
4137	0110	BUFAD		HUF
			REM	
4140	2064	INMODE	LDD	FUNCD
4141	0706		SBN	6
4142	6076		ZJR	OCNR1
4143	2170		LDI	KIDATA
4144	4040		STD	SIGN
4145	6073		ZJR	OCNR1
4146	6202		PJF	2
4147	2570		LCI	KIDATA
4150	4074		STD	KEEP1
4151	6537		NZR	INTENS
4152	6163	ICONR1	NZR	ICONR4
			REM	
4153	2040	FILL	LDD	SIGN
4154	6302		NJF	2
4155	5471		AOD	FILLER
4156	2071		LDD	FILLER
4157	6207		PJF	SPACER
4160	2465	FTOOSM	LCD	WIDF
4161	4071		STD	FILLER
4162	7427		OTN	27
4163	5471		AOD	FILLER
4164	6503		NZB	3
4165	6044		ZJF	FINI22
4166	6005	SPACER	ZJF	TSGN

NO OP IN BASIC

FIXED CONVERSION 21

INMODE 11

FILL 20

FIELD TOO SMALL

4167	7404		OTN	4
4170	0501		LCN	1
4171	5071		HAD	FILLER
4172	6503		NZB	3
			REM	
4173	2040	TSGN	LDD	SIGN
4174	6202		PJF	2
4175	7452		OTN	52
4176	2072	OUTSWT	LDD	CONSWT
4177	6461		ZJR	EOUTR
4200	6237		PJR	IOUTR
4201	2342	FXOUT	LDR	BUFAD
4202	4273		STF	BGNAD
4203	2271		LDR	BUFADF
4204	4240		STF	FTERM1
4205	4256		STF	FTERM2
4206	2077		LDD	SGNEXP
4207	4035		STD	RALET
4210	6103		NZF	3
4211	7442		OTN	42
4212	6016		ZJF	PUNPER
4213	6226		PJF	POSEXP
4214	7442		OTN	42
4215	2066		LDD	DECF
4216	6013		ZJR	FINIZ2
4217	3434		SBD	EXP
4220	6202		PJF	2
4221	5034		RAD	EXP
4222	2434		LCD	EXP
4223	4071		STD	FILLER
4224	7456		OTN	56
4225	5471		AOD	FILLER
4226	6502		NZB	2
4227	2434		LCD	EXP
4230	3066	PUNPER	ADD	DECF
4231	6071	FINIZ2	ZJR	FINIZ3
4232	3241		ADF	BUFAD1
4233	4230		STF	FTERM2
4234	6126		NZF	FOUT2
4235	6141	ICONR4	NZR	ICON
4236	6663	FILLR1	PJR	FILL
4237	6267		IOUTR	IOUT
4240	6272	OCONR1	PJR	OCON
4241	0710	POSEXP	SBN	10
4242	5202		HAF	FTERM1
4243	7330		OUT	BUFAD1
4244	0000	FTERM1		
4245	7442		OTN	42
4246	4227		STF	BGNAD
4247	3625		SBR	BUFADF
4250	6304		NJF	4
4251	2066		LDD	DECF
4252	4035		STD	RALET
4253	6211		PJF	OUTSP
4254	3066		ADD	DECF
4255	4035		STD	RALET
4256	6202		PJF	2
4257	5204		RAF	FTERM2
4260	2066		LDD	DECF
4261	6041		ZJF	FINIZ3

PUNCH I SIGN OF ANSWER 6

FIXED CONVERSION OUT

ZERO EXPONENT

POSITIVE EXPONENT  
NEGATIVE EXPONENT

REPLACE EXP BY DEC WID

COUNTER FOR LEADING ZEROES



4262	7313	FOUT2	OUT	BGNAD
4263	0000	FTERM2		
4264	2035	OUTSP	LDD	RKLET
4265	6035		ZJF	FINIZ3
4266	6373		NJF	FINI
4267	7404		OTN	4
4270	0501		LCN	1
4271	5035		HAD	RKLET
4272	6605		PJB	5
4273	0110	BUFAD1		BUF
4274	0120	BUFADF		BUFE
4275	0000	BGNAD		
4276	2303	ICON	REM	
4277	4073		LDR	BUFAD1
4300	6102		STD	NUM
4301	5473		NZF	2
4302	2173		AOD	NUM
4303	0756		LDI	NUM
4304	6403		SBN	56
4305	2073		ZJB	3
4306	4223		LDD	NUM
4307	3065		STR	BGNAD3
4310	3617		ADD	RKWID
4311	0701		SBR	TERMI
4312	4071		SBN	1
4313	6655	FILLR2	STD	FILLER
4314	2465		PJR	FILLR1
4315	4071		LCD	RKWID
4316	2040		STD	FILLER
4317	6204		LDD	SIGN
4320	7452		PJF	CHBUF
4321	5471		OTN	52
4322	6037	FINIZ3	AOD	FILLER
4323	2071	CHBUF	ZJR	FINI
4324	3203		LDD	FILLER
4325	4204		ADR	TERMI
4326	7303	IOUT	STR	BGNAD3
4327	0114	TERMI	OUT	BGNAD3
4330	6131		BUF	4
4331	0000	BGNAD3	NZF	FINI
4332	2465	OCN	REM	
4333	0604		LCD	RKWID
4334	4071		ADN	4
4335	6306		STD	FILLER
4336	6010		NJR	SPOUT
4337	4636		ZJR	OCTCON
4340	0501		SXF	OSWT
4341	5071		LCN	1
4342	6604		HAD	FILLER
4343	7404	SPOUT	PJB	4
4344	5471		OTN	4
4345	6502		AOD	FILLER
4346	2170	OCTCON	NZR	2
4347	0110		LDI	KTDATA
4350	4170		SHA	10
4351	0207		STI	KTDATA
4352	3222		LRN	7
4353	4201		ADR	LUCOM
			STF	1

EXTRA SPACES NEEDED

INTEGER CONVERSION

LOOK FOR LST NONZERO DIGIT

LOC OF LST WORD TO PUNCH

OCTAL CONVERSION 40

PUT OUT LEADING DIGITS

PUNCH SPACES

4354	0000	LOD		0
4355	4201		STF	1
4356	0000			0
4357	4616		SRR	OSWT
4360	6612		PJB	OCTCON
4361	2202	FINI	LDF	2
4362	0010		SRJO	
4363	0102			ACOITK
4364	7456	OTAB	OTN	56
4365	7474		OTN	74
4366	7470		OTN	70
4367	7464		OTN	64
4370	7462		OTN	62
4371	7466		OTN	66
4372	7472		OTN	72
4373	7460		OTN	60
4374	2210	-LDCOM	LDF	OTAB
4375	4210	OSWT		4210
				-LOD
4376	2064	READ	HEM	
4377	0705		LDD	FUNCD
4400	6145		SBN	5
4401	2065	ACONV	NZF	DECODR
4402	0703		LDD	KTF2
4403	6310		SBN	3
4404	7600		NJF	10
4405	6401		INA	
4406	0777		ZJB	1
4407	6403		SBN	77
4410	0501		ZJB	3
4411	5065		LCN	1
4412	6511		RAD	KTF2
4413	0601		NZB	ACONV
4414	6124		ADN	1
4415	7600		NZF	KTR4
4416	6401		INA	
4417	0777		ZJB	1
4420	6403		SBN	77
4421	0677		ZJB	3
4422	0110		ADN	77
4423	0110		SHA	10
4424	4057		SHA	10
4425	7600	KTR2	STD	KITEM1
4426	6401		INA	
4427	0777		ZJB	1
4430	6403		SBN	77
4431	0677		ZJB	3
4432	5057		ADN	77
4433	2057	KTR3	RAD	KITEM1
4434	4046		LDD	KITEM1
4435	2202		STD	A2
4436	0010		LDF	2
4437	0102		SRJO	
4440	0400	KTR4		ACOITK
4441	4057		LDN	0
4442	2065		STD	KITEM1
4443	6410		LDD	KTF2
4444	6517		ZJB	KTR3
4445	6164	DECDR	NZB	KTR2
4446	5471	INUP	NZF	DECOD
			AOD	WID

NO OP IN BASIC

AC READ 18 APRIL 62

W=2

4447	6036		ZJF	ENDFLR	
4450	7600	IN	INA		
4451	6401		ZJB	1	
4452	0777		SBN	77	
4453	6403		ZJB	3	
4454	0677		ADN	77	
4455	4276		STF	CHAR	
4456	0720		SBN	20	E
4457	6112		NZF	TSPER	
4460	0501	ESIG	LCN	1	
4461	4076		STD	EXPF	
4462	2471	ECNT	LCD	WID	
4463	5077		FAD	PLACCT	
4464	0434		LDN	EXP	
4465	4075		STD	STORD	
4466	0400		LDN	0	
4467	4265		STF	KCNSWT	SIGNAL INTEGER CONVERSION
4470	6422		ZJB	INUP	
4471	0722	TSPER	SBN	22	PERIOD
4472	6104		NZF	TSSL	
4473	2071		LDD	WID	
4474	4072		STD	DECCT	- NO. OF CHARS PRIOR.
4475	6527		NZB	INUP	
4476	0702	TSSL	SBN	2	/
4477	6107		NZF	TSPLUS	
4500	2076		LDD	EXPF	
4501	6103		NZF	3	
4502	2471		LCD	WID	F TYPE CONVERSION
4503	5073		KAD	DIGCT	
4504	0400		LDN	0	
4505	6063	ENDFLR	ZJF	ENDFLQ	
4506	0702	TSPLUS	SBN	2	
4507	6427		ZJB	ESIG	
4510	0701		SBN	1	UC
4511	6441		ZJB	IN	
4512	0703		SBN	3	
4513	6112		NZF	TSLC	
4514	2073		LDD	DIGCT	
4515	6005		ZJF	SIGMIN	
4516	5476		AOD	EXPF	
4517	6535		NZB	ECNT	
4520	5476		AOD	EXPF	
4521	6553	INUPR6	NZB	INUP	
4522	2233	SIGMIN	LDF	4TH	
4523	4040		STD	SIGN	
4524	6556	INUPR5	NZB	INUP	
4525	0705	TSLC	SBN	5	LC
4526	6456	INR	ZJB	IN	
4527	6142		NZF	DIGCON	
4530	6452	INUPR1	ZJB	INUP	RELAY
4531	0601	DECOD	ADN	1	
4532	4222		STF	KCNSWT	
4533	6326		NJR	RKFCON	
4534	2465	KINIT	LCD	WIDF	
4535	4071		STD	WID	WIDTH FOR I,O CONV
4536	0446		LDN	A2	
4537	4075		STD	STORD	
4540	0401		LDN	1	
4541	4077		STD	PLACCT	
4542	0400		LDN	0	

4543	4073	STD	DIGCT
4544	4076	STD	EXPF
4545	4034	STD	EXP
4546	4046	STD	A2
4547	4045	STD	A3
4550	4044	STD	A4
4551	4040	STD	SIGN
4552	6424	ZJB	INR
4553	0000	CHAR	
4554	0000	KCN SWT	
4555	4000	4TH	4000
4556	6201	BRXSW1	PJF 1
4557	7356	BRXSW3	7356
4560	6537	INUPR7	NZB INUPR6
4561	2066	RKFCN	LDD DECF
4562	4072		STD DECCT
4563	2305		LDB BRXSW1
4564	4275		STF BMANX
4565	2306		LDB BRXSW3
4566	4256		STF SWTD
4567	6533		NZB KINIT
4570	6041	ENDFLO	ZJF ENDRQ
4571	2315	DIGCON	LDB KCN SWT
4572	6214		PJF TSTDIG
4573	2073	TSSIG	LDD DIGCT
4574	6106		NZF AUDIG
4575	2322		LDB CHAR
4576	0704		SBN 4
4577	6447	INUPR2	ZJB INUPR1
4600	0752		SBN 52
4601	6402		ZJB INUPR2
4602	5473	AODIG	AOD DIGCT
4603	0711		SBN 11
4604	6405		ZJB INUPR2
4605	6661		FJB INUPR5
4606	0400	TSTDIG	LDN 0
4607	4233		STF KVALUE
4610	2233		LDF LSDT
4611	4205		STF DTAB
4612	2337		LDB CHAR
4613	0704		SBN 4
4614	6016		ZJF TSCONS
4615	2342	DTST	LDB CHAR
4616	0000	DTAB	0
4617	6013		ZJF TSCONS
4620	5702		AOB DTAB
4621	5621		AUF KVALUE
4622	0712		SBN 100
4623	6506		NZB DIST
4624	0501		LCN 1
4625	5073		RAD DIGCT
4626	0404		LUN 4
4627	4354		STB CHAR
4630	6535		NZB TSSIG
4631	6056	ENDRQ	ZJF ENDFL
4632	2356	TSCONS	LDB KCN SWT
4633	6112		NZF TSINTC
4634	2175		LQJ SFORD
4635	0112		MUT
4636	3204		ADF KVALUE

CONSTANT

SP

LSF TO TABLE

ILLEGAL CHAR, REPLACE BY 4  
DECREASE SIG DIG COUNT

INTEGER CONVERSION

4637	4175		STI	STORD	
4640	6441		ZJB	INUPR2	
4641	6561		INUPR8	NZB	INUPR7
4642	0000		KVALUE		
4643	1657	-LSDT	LSF	TABLE	-DTAB
4644	0000		SWTD	0	
4645	6312		TSINTC	NJF	FLTCON
4646	2175		LDI	STORD	OCTAL CONVERSION
4647	0110		SHA	10	
4650	3306		ADB	KVALUE	
4651	4175	PUTSTO	STI	STORD	
4652	6511		NZB	INUPR8	
4653	2311		LDB	KVALUE	
4654	6455		ZJB	INUPR2	
4655	0500		LCN	0	
4656	6705		NJB	PUTSTO	7777
4657	5602	FLTCON	AOF	BRANX	
4660	2316	NEWD	LDB	KVALUE	
4661	6200	BRANX	PJF	0	
4662	0112	XHND	MUT		
4663	0112		MUT		
4664	5175	RKCOMB	KAI	STORD	
4665	4721		SRB	SWTD	
4666	6725	OUTD	NJB	INUPR8	
4667	0501		LCN	1	
4670	5075		RAD	STORD	
4671	2203		LDF	BRXSWT	
4672	4311		STB	BRANX	=PJF01
4673	6713		NJB	NEWD	
4674	6201	BRXSWT		6201	
4675	0056	TABLE		56	0
4676	0074			74	1
4677	0070			70	2
4700	0064			64	3
4701	0062			62	4
4702	0066			66	5
4703	0072			72	6
4704	0060			60	7
4705	0033			33	8
4706	0037			37	9
4707	2064	ENDFL	LDD	FUNCD	
4710	0704		SBN	4	
4711	6310		NJF	DOFLT	
4712	6105		NZF	5	
4713	2040		LDD	SIGN	
4714	6203		PJF	3	
4715	2446		LCD	A2	
4716	4046		STD	A2	
4717	2227		LDF	JSACO	
4720	0010		SRJ0		
4721	2476	DOFLT	LCD	EXPF	
4722	0600		ADN	0	
4723	6303		NJF	3	
4724	2034		LDD	EXP	
4725	6202		PJF	2	
4726	2434		LCD	EXP	
4727	0640		ADN	40	
4730	4034		STD	EXP	
4731	2072		LDD	DECCT	
4732	6204		PJF	4	

4733	3077	ADD	PLACCT
4734	6303	NJF	3
4735	6002	ZJF	2
4736	2472	LCD	DECCT
4737	3073	ADD	DIGCT
4740	5034	KAD	EXP
4741	2205	LDF	JSACO
4742	4026	STD	CNFINI
4743	2202	LDF	2
4744	0010	SKJO	
4745	0104		SASSJP
4746	0102	JSACO	ACDITK
	0000	END	

Address	Code	Label	Value	Description	Symbol
0400	0400	REM		FIXED INTERPRETER 15 NOV 1963 MIXED	MNIN0001
	0000	ORG	400		NIN0002
	0000		0		NIN0003
	0000	BNK0			NIN0004
0001	0001	REM		LOW CORE IN INTERPRETER 13 SEP 62	NIN0005
	0000	CON	1		NIN0006
		MACC			NIN0007
		REM		SEMI-PERMANENT STORAGE DURING I/O	NIN0008
		CON	4		NIN0009
0004	0004	SEOF		END OF FORMAT SIGNAL	NIN0010
0005	0000	SHFLAG		HOLLERITH FLAG	NIN0011
0006	0000	SBRECT			NIN0012
	0001	CON	1		NIN0013
0001	0000	WMI			NIN0014
0002	0000	WLO			NIN0015
	0001	CON	1		NIN0016
0001	0000	ACC	BSS		NIN0017
	0001	ACCJ	EQU	ACC	NIN0018
	0001	TACC	EQU	ACC	NIN0019
0004	0000	ACC1	BSS		NIN0020
0007	0000	ACC2	BSS		NIN0021
0012	0000	ACC3	BSS		NIN0022
0015	0000	INDXRG	BSS	2	NIN0023
				MUST FOLLOW ACC3	NIN0024
0017	0000	OP	BSS	4	NIN0025
	0017	OPER	EQU	OP	NIN0026
	0017	OPJ	EQU	OP	NIN0027
0023	0000	BNK		OBJECT CODE LOCATOR	NIN0028
0024	0000	LOCC			NIN0029
0025	0000	EOFFLG		END OF FILE FLAG	NIN0030
0026	0000	FRSTWD			NIN0031
0027	0000	BOPCD		CURRENT OP CODE	NIN0032
	0027	SOPPC	EQU	BOPCD	NIN0033
0030	0000	BOPSW			NIN0034
0031	0000	ENSLOC	BSS	2	NIN0035
				BNK + ADDRESS START OF FUNCTION ERASIBLE	NIN0036
0033	0000	BMTLOC			NIN0037
	0033	BWDSAV	EQU	BRTLOC	NIN0038
0034	0000	ZBNK		DATA BANK COUNTER	NIN0039
	0034	BTEMPA	EQU	ZBNK	NIN0040
0035	0000	ZLOCC		DATA LOCC	NIN0041
	0035	BTEMPB	EQU	ZLOCC	NIN0042
0036	0000	ZIR		DATA INDEX REGISTER	NIN0043
	0036	BTEMPC	EQU	ZIR	NIN0044
0037	0000	SBUF		COUNTS CHARS IN BUFFER	NIN0045
0040	0000	SWAY		EQUIPMENT USED	NIN0046
0041	0000	STIP		FORMAT CONTROL CHARACTER	NIN0047
0042	0000	SWID		WIDTH OF FORMAT FIELD	NIN0048
0043	0000	SDEC		DECIMAL PT SPEC	NIN0049
0044	0000	SREP1		REPEAT SPEC FOR ONE FIELD	NIN0050
0045	0000	SIF		FORMAT COUNTER	NIN0051
0046	0000	SFORMF		% 0 FLAGS DATA CALL	NIN0052
0047	0000	SPANCT		PARENS COUNTERS ZERO= 50F	NIN0053
0050	0000	SQUK			NIN0054
0051	0000	SLOCLP		INFITE REPEAT LEFT PARENS	NIN0055
0052	0000	SWINSW			NIN0056
0053	0000	SWTCON		SWITCHBOARD INTERRUPT	NIN0057
0054	0000	FWNK		START OF FORMAT	NIN0058
0055	0000	FLOCC		START OF FOMAT	NIN0059
0056	0000	WSIGN			
0057		CON	57		

0057	0000	TEMP1							NINT0060
0060	0000	TEMP2							NINT0061
0061	0000	TEMP3							NINT0062
0062	0000	TEMP4							NINT0063
0063	0000	TEMP5							NINT0064
			REM				TEMPORARY DURING FORMAT CONTROL		NINT0065
			CON	57					NINT0066
0057	0000	SCHAR					CHARACTER IN FORMAT		NINT0067
0060	0000	TSAV					TEMP COUNTER IN INIEGER OUT		NINT0068
0061	0000	TIN							NINT0069
0062	0000	SHCNT					TEMP HOLLERITH COUNTER		NINT0070
			CON	57					NINT0071
0057	0000	WEXP							NINT0072
0060	0000	EXPF							NINT0073
0061	0000	DECCY							NINT0074
0062	0000	PLACCT							NINT0075
0063	0000	NUM							NINT0076
0064	0000	KEEP1							NINT0077
0065	0000	KEEP2							NINT0078
0066	0000	KEEP3							NINT0079
0067	0000	CANSWT							NINT0080
0070	0000	SENEXP							NINT0081
0071	0000	BCNT							NINT0082
0072	0000	SDECLG							NINT0083
0073	0000	WLET							NINT0084
0074	0000	WID							NINT0085
0075	0000	SAC					USED IN A CONVERSION IN AND OUT		NINT0086
			CON	57					NINT0087
			REM				TEMPORARY LOCATIONS		NINT0088
0057	0000	BWORD							NINT0089
0060	0000	BWD11							NINT0090
0061	0000	BWD12							NINT0091
0062	0000	BWD21							NINT0092
0063	0000	BWD22							NINT0093
0064	0000	BTEMP1							NINT0094
0065	0000	BTEMP2							NINT0095
0066	0000	BTEMP3							NINT0096
0067	0000	BTEMP4							NINT0097
0070	0000	BITFLP							NINT0098
0071	0000	COUNT							NINT0099
			CON	70					NINT0100
0070	0000	NUMBEG							NINT0101
0071	0000	L(CH)							NINT0102
0072	0000	WDIGCT							NINT0103
0073	0000	STORD							NINT0104
0074	0000	SNBOOL							NINT0105
			CON	72					NINT0106
0072	0000	LOC(,)							NINT0107
0073	0000	LOC(E)							NINT0108
0074	0000	VEX							NINT0109
0075	0000	VINSIG							NINT0110
0076	0000	STEM							NINT0111
			CON	76					NINT0112
0076	0000	VQUO							NINT0113
			CON	76					NINT0114
0076	0000	VLATEM							NINT0115
			CON	76					NINT0116
0076	0000	VTEM							NINT0117
0200		SBUF AD	EQU	200					NINT0118
0023		BANK	EQU	BNK					NINT0119



0200	ENASE	EQU	SBUFAD		NIN+0120	
0073	KTDATA	EQU	WLET		NIN+0121	
0072	DIGCT	EQU	WDIGCT		NIN+0122	
		REM		EQU TABLE	NIN+0123	
0370	TBUF	EQU	SBUFAD	170	TEMP BUY STORAGE FOR CONV	NIN+0124
0037	WFET	EQU	SBUF		NIN+0125	
0041	FUNCD	EQU	STIP		NIN+0126	
0042	WIDF	EQU	SWID		NIN+0127	
0043	DECF	EQU	SDEC		NIN+0128	
0037	WBUF	EQU	SBUF		NIN+0129	
0061	WDECCT	EQU	DECCT		NIN+0130	
0060	WEXPF	EQU	EXPF		NIN+0131	
0073	WSTORD	EQU	STORD		NIN+0132	
0066		CON	BTEMP3		NIN+0133	
0066	0000	CMN1		TEMPORARY STORAGE-UP B=BOX	NIN+0134	
0067	0000	CMN2			NIN+0135	
0370	0000	MLTSMC		MULTIPLY OR ADD SWITCH UP B=BOX	NIN+0136	
0071	0000	ENDFLG		END SWITCH UP B=BOX	NIN+0137	
0072	0000	UPL0CC		LOCATION OF UP-SUBROUTINE	NIN+0138	
0073	0000	BOXADD		LOCATION OF B=BOX UP B=BOX	NIN+0139	
074	0000	DELSAV	BSS	2	NIN+0140	
	0073	BOXLOC	EQU	BOXADD	NIN+0141	
	0060	BWRD11	EQU	BWD11	NIN+0142	
	0061	BWRD12	EQU	BWD12	NIN+0143	
	0062	BWRD21	EQU	BWD21	NIN+0144	
	0063	BWRD22	EQU	BWD22	NIN+0145	
	0100	VECTOR	EQU	100	NIN+0146	
	0020	XVAD	EQU	20	INTEGER ADD IN MACRO SWITCHBOARD	NIN+0147
	0021	XVISUB	EQU	21	INTEGER SUBTRACT IN MACRO SWITCHBOARD	NIN+0148
	0022	XVINT	EQU	22	INTEGER MULTIPLY	NIN+0149
	0022	SVINT	EQU	22	NIN+0150	
	0023	XVDIV	EQU	23	NIN+0151	
	0102	XSF0RM	EQU	102	NIN+0152	
	0144	XWIN	EQU	144	NIN+0153	
	0100	BOOLJ	EQU	100	NIN+0154	
	0200		ORG	200	NIN+0155	
		REM			NIN+0156	
0200	0555		BMACSM	EXTERNAL SYMBOL TABLE FOR MODULES	NIN+0157	
		REM		ASSUMED TO BE 360	NIN+0158	
				FORMAT 3	NIN+0159	
0201	0770		BINTAD		NIN+0160	
0202	4065		STRANS		NIN+0161	
0203	4071		SDATRY		NIN+0162	
0204	4122		STLDW		NIN+0163	
0205	4132		TSTLDD		NIN+0164	
		REM		MIN 5	NIN+0165	
		REM		SET PT 5	NIN+0166	
0206	0554		BMCRET	ASSUMED 554	NIN+0167	
0207	0652		DVFLT		NIN+0168	
210	0644		OVFLW		NIN+0169	
		REM		LOCATION OF I/O FUNCTIONS ARE AT 100 +	NIN+0170	
		REM		7, FLEX-TYPE, 170 LENGTH	NIN+0171	
		REM		10, READ 163, LENGTH 162	NIN+0172	
		REM		11, WRITE 163, LENGTH 157	NIN+0173	
		REM		12, READ 088, LENGTH 216	NIN+0174	
		REM		13, WRITE 523, LENGTH 210	NIN+0175	
		REM		14, WRITE 1612, LENGTH 40	NIN+0176	
		REM		READ 1607, LENGTH 164	NIN+0177	
		REM		WRITE 1607, LENGTH 164	NIN+0178	
0000	0000	CON	0		NIN+0179	
0000	6346	BUD	6	CONTRL		

0001	4523								
0002	5143								
0003	4521								
0004	0001			SBIQX	2				NINT018
0005	7777			1					NINT018
	0400			7777					NINT018
	0400		ORG	400					NINT018
0400	2024	ARITH	LDD	LOCC					NINT018
0401	7701		SLS1						NINT018
0402	2023		LDD	BANK					NINT018
0403	4201		STR	ARITHB					NINT018
0404	0020	ARITHB	SICQ			RESET INDIRECT BANK			NINT018
0405	5424		AOD	LOCC		INCR LOCATION COUNTER			NINT018
0406	6103		NZR	ARITHA		BANK CHANGE			NINT019
0407	7100		JPR	ARTHSD		YES			NINT019
0410	0526								
0411	2124	ARITHA	LUI	LOCC					NINT019
0412	0111		LS6			OPER TO LOW ORDER BITS			NINT019
0413	0277		LPN	77					NINT019
0414	4027	SMTB	STD	BOPCD					NINT019
0415	3200		ADC	7101					NINT019
0416	7101								
0417	4201								
0420	7101	ARITHC	STP	ARITHC	1				NINT019
0421	0533		JFI	1					NINT019
0421	0533			BOC00		HALT AND PROCEED			NINT019
0422	0540			BOC01		DROP OUT/TRANSFER TO MACRO			NINT020
0423	1032			BOC02		TRANSFER/RETURN TRANSFER			NINT020
0424	1107			BOC03		RELATIVE TRANSFER FORWARD			NINT020
0425	1107			BOC04		RELATIVE TRANSFER BACKWARD			NINT020
0426	1123			BOC05		POS, JUMP FORWARD			NINT020
0427	1123			BOC06		POS, JUMP BACKWARD			NINT020
0430	1126			BOC07		NEG, JUMP FORWARD			NINT020
0431	1126			BOC10		NEG, JUMP BACKWARD			NINT020
0432	1131			BOC11		ZERO JUMP FORWARD			NINT020
0433	1131			BOC12		ZERO JUMP BACKWARD			NINT020
0434	1136			BOC13		NON-ZERO FORWARD			NINT021
0435	1136			BOC14		NON-ZERO BACKWARD			NINT021
0436	1742			BOC15		STORE ACCN			NINT021
0437	1747			BOC16		ADD ACCN			NINT021
0440	1747			BOC17		SUB ACCN			NINT021
0441	1747			BOC20		MPY ACCN			NINT021
0442	1747			BOC21		DIV ACCN			NINT021
0443	2026			BOC22		INV, DIV ACCN			NINT021
0444	2057			BOC23		LOAD ACCN			NINT021
0445	2172			BOC24		STO FUNC, ERASE			NINT021
0446	2172			BOC25		ADD FUNC, ERASE			NINT022
0447	2172			BOC26		SUB FUNC, ERASE			NINT022
0450	2172			BOC27		MPY FUNC, ERASE			NINT022
0451	2172			BOC30		DIV FUNC, ERASE			NINT022
0452	2172			BOC31		IDV FUNC, ERASE			NINT022
0453	2172			BOC32		LOAD/LOAD + CONVERT FUNC. ERASE			NINT022
0454	2172			BOC33		LOAD NEG. FUNC. ERASE			NINT022
0455	2225			BOC34		LOAD NEG. AND CONV. FUNC. ERASE			NINT022
0456	2140			BOC35		STORE ERASE			NINT022
0457	2140			BOC36		ADD ERASE			NINT022
0460	2140			BOC37		SUB ERASE			NINT023
0461	2140			BOC40		MPY ERASE			NINT023
0462	2140			BOC41		DIV ERASE			NINT023
0463	2140			BOC42		IDV ERASE			NINT023
0464	2140			BOC43		LOAD ERASE			NINT023
0465	1143			BOC44		MODIFY ERASE COUNTER			NINT023

0466	1176		BOC45	STORE/RESTORE PSUEBO ABCS	NINT0231
0467	1236		BOC46	ONE WORD OPTION	NINT0231
0470	1171		BOC47	TRANSFER ON INDEX	NINT0231
0471	1103		BOC50	TRANSFER TO POWER	NINT0231
0472	2444		BOC51	STORE	NINT0241
0473	2332		BOC52	FL. ADD	NINT0241
0474	2332		BOC53	FL. SUB	NINT0241
0475	2332		BOC54	FL. MPY	NINT0241
0476	2332		BOC55	FL. DIV	NINT0241
0477	2346		BOC56	FL. INV. DIV	NINT0241
0500	2332		BOC57	INT. ADD	NINT0241
0501	2332		BOC60	INT. SUB	NINT0241
0502	2332		BOC61	INT. MPY	NINT0241
0503	2332		BOC62	INT. DIV.	NINT0241
0504	2346		BOC63	INT. INV. DIV	NINT0241
0505	2352		BOC64	LOAD	NINT0251
0506	2352		BOC65	LOAD NEGATIVE	NINT0251
0507	2352		BOC66	REPLACE ADD	NINT0251
0510	2412		BOC67	LOAD AND FL. CONV.	NINT0251
0511	2442		BOC70	LOAD NEG. AND FL. CONV.	NINT0251
0512	2476		BOC71	NORMAL BOOLEAN	NINT0251
0513	2511		BOC72	FUNC. ERASE BOOLEAN	NINT0251
0514	2525		BOC73	BOOLEAN SHIFT	NINT0251
0515	1350		BOC74	LOAD INDEX REGISTER	NINT0251
0516	2677		BOC75	3-WORD COMMAND	NINT0260
0517	1401		BOC76	UP B-BOX/GO TO	NINT0261
0520	7700	ARTSBA	REM HLT	ADD LOCC SUBR.	NINT0261
0521	2301		LUR	RETURN ADDRESS.	NINT0261
0522	4204		STR	ARTSBA	NINT0261
0523	5424		ADD	ARTHSB	SET RETURN ADDRESS
0524	6003		ZJR	LOCC	INCREMENT LOC. COUNTER
0525	7101	ARTSBZ	JFI	ARTSBC	BANK CHANGE NECESSARY
0526	7700	ARTHSB	HLT	1	NO
0527	5423	ARTSBC	ADD	BANK	YES
0530	4201		STF	ARTSB	
0531	0020	ARTSBB	SIC0		INCREASE BANK SETTING
0532	6505		NZB	ARTSBZ	
0533	2124	BOC00	REM		HALT AND PROCEED
0534	0277		LDI	LOCC	DISPLAY OCTAL NUMBER
0535	7700		LPN	77	
0536	7101	BOC00A	HLT		
0537	0400		JFI	1	
0540	2124	BOC01	REM	ARITH	DROP OUT/TRANSFER TO MACRO
0541	0277		LDI	LOCC	
0542	6114		LPN	77	RELATIVE MACRO ADDRESS
0543	2023		NZR	BMCSWB	DROP OUT
0544	0710		LDD	BANK	YES
0545	4202		SBN	10	
0546	5424		STF	BOC01C	PRESET SRJ COMMAND
0547	0010	BOC01C	ADD	LOCC	
0550	0404	RETDRP	SRJ0		
0551	3033		LUN	4	
0552	4024		ADD	BRTLOC	RETURN LOC. - 1
0553	6515		STD	LOCC	SET LOCATION COUNTER
0554	7101	BMCRET	JFI	1	MACRO SWITCHBOARD
0555	7700	BMACSW	HLT		

0556	3200	BMCSWB	ADC	7100		NIN+0296
0557	7100					
0560	4201		STF	BMCSWA	SET SWITCHBOARD	NIN+0297
561	7101	BMCSWA	JFI	1		NIN+0298
0562	3044			INCR	1	NIN+0299
0563	3224			RETURN	2	NIN+0300
0564	0653			IF	3	NIN+0301
565	0626			IFOV	4	NIN+0302
566	0645			IFDVCK	5	NIN+0303
0567	0610			IFSNSE	6	NIN+0304
0570	0710			CMPTD	7	NIN+0305
0571	3732			IOI	10	NIN+0306
572	3734			IOO	11	NIN+0307
573	4171			IOY	12	NIN+0308
0574	4326			SFADD	13	NIN+0309
0575	4322			SFSUB	14	NIN+0310
576	4332			SFHLT	15	NIN+0311
577	4337			SFDIV	16	NIN+0312
0600	4337			SFDIV	17	NIN+0313
0601	3234			VADD	20	NIN+0314
0602	3230			VISUB	21	NIN+0315
603	3334			VINTML	22	NIN+0316
604	3453			VINTDV	23	NIN+0317
0605	3453			VINTDV	24	NIN+0318
0606	5532			FLCONV	25	NIN+0319
607	5645			XCONV	26	NIN+0320
			REM		IF SENSE SWITCH	NIN+0321
0610	7100	IFSNSE	JPR	ARTSBA	INCREMENT LOC, COUNTER	NIN+0322
0611	0520					
0612	2124		LBI	LOCC		NIN+0323
613	0110		LSJ			NIN+0324
614	0270		LPN	70	SENSE SWITCH NO.	NIN+0325
0615	3200		ADC	7700		NIN+0326
0616	7700					
0617	4202		STR	IFSNsA	SEL, JUMP COMMAND	NIN+0327
620	0477		LDN	77		NIN+0328
0621	7700	IFSNsA	SLJO	IFSNsB	SENSE SWITCH SET	NIN+0329
0622	0624					
0623	0400		LDN	0	NO	NIN+0330
624	4211	IFSNsB	STR	IFOVC		NIN+0331
625	6207		PJR	IFOVB		NIN+0332
			REM		IF OVERFLOW TEST	NIN+0333
0626	2216	IFOV	LDR	OVFLW	OVERFLOW SWITCH	NIN+0334
0627	4206		STR	IFOVC		NIN+0335
630	0400		LDN	0		NIN+0336
631	4213		STR	OVFLW	ZERO SWITCH	NIN+0337
0632	7100	IFOVD	JPR	ARTSBA		NIN+0338
0633	0520					
634	2200	IFOVB	LDF	0		NIN+0339
635	0000	IFOVC				NIN+0340
0636	0277		LPN	77		NIN+0341
0637	6002		ZJR	IFOVA	SWITCH SET	NIN+0342
0640	0500		LCN	0	YES	NIN+0343
641	4057	IFOVA	STD	BWORD	SET TEST CELL	NIN+0344
642	0600		ADN	0		NIN+0345
0643	6021		ZJR	IFA		NIN+0346
0644	0000	OVFLW				NIN+0347
			REM		IF DIVIDE CHECK TEST	NIN+0348
645	2205	IFDVCK	LDR	DVFLT	DIVIDE CHECK SWITCH	NIN+0349
0646	4311		STR	IFOVC		NIN+0350

0647	0400		LDN	0						NIN70351
0650	4202		STR	DVFLT			ZERO SWITCH			NIN70352
0651	6417		ZJR	IFOVD						NIN70353
0652	0000	DVFLT								NIN70354
0653	2001	IF	REM				IF ALGEBRAIC TEST			NIN70355
0654	6305		LDD	ACC			ACCUMULATOR			NIN70356
0655	6104		NJR	IFF			JUMP FOR NEGATIVE			NIN70357
0656	2002		NZR	IFF			JUMP FOR POSITIVE			NIN70358
0657	6002		LDD	ACC	1					NIN70359
0660	6002		ZJR	IFF			JUMP FOR ZERO			NIN70360
0661	0401		LDN	1			SET FOR POSITIVE			NIN70361
0662	4057	IFF	STD	BWORD			TO TEST CELL			NIN70362
0663	7100	IFD	JPR	ARTSBA			INCREMENT LOC, COUNTER			NIN70363
0664	0520									
0664	2124	IFA	LDI	LOCC						NIN70364
0665	4060		STD	BWD11			SAVE BANK SETTINGS			NIN70365
0666	0503		LCN	3						NIN70366
0667	4064		STD	BTEMP1			PRESET COUNTER			NIN70367
0670	2057		LDD	BWORD			TEST WORD			NIN70368
0671	6003		ZJR	IFC						NIN70369
0672	6206		PJR	IFE						NIN70370
0673	5464		AOD	BTEMP1			DECREASE COUNTER			NIN70371
0674	5464	IFC	AOD	BTEMP1			DECREASE COUNTER			NIN70372
0675	6103		NZR	IFE						NIN70373
0676	7100	IFB	JPR	ARTSBA			INCREMENT LOC, COUNTER			NIN70374
0677	0520									
06700	2060	IFE	LDD	BWD11						NIN70375
0701	0110		LS3				SHIFT BANK SETTINGS			NIN70376
0702	4060		STD	BWD11						NIN70377
0703	5464		AOD	BTEMP1						NIN70378
0704	6506		NZR	IFB			COUNTER DEPLETED			NIN70379
0705	2060		LDD	BWD11			YES -- GET BANK SETTING			NIN70380
0706	7101		JFI	1						NIN70381
0707	1405			BOC76D						NIN70382
0710	7100	CMPTD	JPR	ARTSBA			COMPUTED GO TO			NIN70383
0711	0520						INCREMENT LOC, COUNTER			NIN70384
0712	2124	CMPTDA	LDI	LOCC			B(I)			NIN70385
0713	0207		LPN	7						NIN70386
0714	4060		STD	BWD11						NIN70387
0715	7100		JPR	ARTSBA			INCREMENT LOC, COUNTER			NIN70388
0716	0520									
0717	2124		LDI	LOCC			A(I)			NIN70389
0720	4061		STD	BWD12						NIN70390
0721	0720		SBN	20						NIN70391
0722	6207		PJR	CMPTDF			FUNCTION ERASE LOCATION			NIN70392
0723	2060		LDD	BWD11			MAYBE			NIN70393
0724	6105		NZR	CMPTDF			BANK ZERO			NIN70394
0725	0101		PTA				YES -- FUNC, ERASE			NIN70395
0726	0604		ADN	4			CALCULATE RETURN ADDRESS			NIN70396
0727	7100		JPR	BSUBCY			GET ABS, ERASE LOC			NIN70397
0730	2165									
0731	0400	CMPTDF	LDN	0			INCREMENT ERASE			NIN70398
0732	4062		STD	BWD21			LOC, BY 1 FOR			NIN70399
0733	0401		LDN	1			THE INTEGER			NIN70400
0734	4063		STD	BWD22			PORTION			NIN70401
0735	7100		JPR	BINTAD						NIN70402
0736	0770									
0737	2461		LCD	BWD12						NIN70403
0740	6103		NZR	CMPTDG						NIN70404

0741	4061		STD	BWD12		NINT0405
0742	5460		AOD	BWD11		NINT0406
0743	2060	CMPTDG	LDD	BWD11		NINT0407
1744	0620		ADN	20		NINT0408
0745	4201		STR	CMPTDB	SET F.E. BANK SETTING	NINT0409
0746	0020	CMPTDB	SIC0		SET INDIRECT BANK	NINT0410
0747	2161		LDI	BWD12	VALUE OF 1	NINT0411
0750	0102		LS1		TIMES 2	NINT0412
0751	0701		SNB	1	MINUS 1	NINT0413
0752	4061		STD	BWD12		NINT0414
0753	5024		RAD	LOCC	INCREMENT LOCATION COUNTER	NINT0415
0754	3461		SBD	BWD12		NINT0416
0755	1424		LSD	LOCC		NINT0417
0756	1461		LSD	BWD12		NINT0418
0757	0201		LPN	1	OVERFLOW BIT CHECK	NINT0419
0760	1600		LSC	7776	-1 = NO OVERFLOW, -0 = OVERFLOW	NINT0420
0761	7776					
0762	5023		RAD	BANK	DECREASE BANK SETTING	NINT0421
0763	7100		JPR	ARTHSB	SET BANK SETTING	NINT0422
0764	0526					
0765	7101	CMPTDE	JFI	1		NINT0423
0766	1404			80C76C		NINT0424
			REM		15-BIT ADDER	NINT0425
0767	7101	BNTADZ	JFI	1		NINT0426
0770	7700	BINTAD	MCT		RETURN ADDRESS	NINT0427
0771	2062		LDD	BWD21		NINT0428
0772	5060		RAD	BWD11	ADD 3-BIT QUANTITIES	NINT0429
0773	2063		LDD	BWD22		NINT0430
0774	3061		ADD	BWD12	ADD 12-BIT QUANTITIES	NINT0431
0775	4057		STD	BWORD		NINT0432
0776	1463		LSD	BWD22		NINT0433
0777	1461		LSD	BWD12		NINT0434
1000	0202		LPN	1	OVERFLOW TEST BIT	NINT0435
1001	6011		ZJR	BNTADA	DID OVERFLOW OCCUR	NINT0436
1002	2057		LDD	BWORD	YES	NINT0437
1003	6104		NZR	BNTADB	WAS ZERO GENERATED	NINT0438
1004	0500		LCN	0	YES	NINT0439
1005	4057		STD	BWORD	REPLACE WITH 7777	NINT0440
1006	6304		NJR	BNTADA		NINT0441
1007	0501	BNTADB	LCN	1		NINT0442
1010	5057		RAD	BWORD	DECREMENT 12-BIT QUANTITY	NINT0443
1011	5460		AOD	BWD11	INCREMENT 3-BIT QUANTITY	NINT0444
1012	2060	BNTADA	LDD	BWD11		NINT0445
1013	0207		LPN	7		NINT0446
1014	4060		STD	BWD11	MASK OFF 3-BITS	NINT0447
1015	2057		LDD	BWORD		NINT0448
1016	4061		STD	BWD12	12-BIT QUANTITY TO STORAGE	NINT0449
1017	7101		JFI	1		NINT0450
1020	0767			BNTADZ		NINT0451
			REM		TRANSFER/RETURN TRANSFER	NINT0452
1021	1021	BRETLC		B2RTBF *1		NINT0453
1022	0000	B2RTBF	BSS	8D		NINT0454
1032	2124	B0C02	LDI	LOCC		NINT0455
0033	0020	B0C02B	SIC0			NINT0456
1034	0277		LPN	77	SUBROUTINE TRANSFER ADDRESS	NINT0457
1035	6123		NZF	B0C02A	RETURN TRANSFER	NINT0458
1036	2315		LUR	BRETLC	LIST ADDRESS	NINT0459
1037	4065		STD	BTEMP2		NINT0460
040	2165		LDI	BTEMP2	LO 12 BITS OF RETURN LOCC	NINT0461
1041	4024		STD	LOCC	RESTORE LOCATION COUNTER	NINT0462

1042	0501	LCN	1		NIN+0463
1043	5322	RAR	BREYLC		NIN+0464
1044	4065	STD	BTEMP2		NIN+0465
1045	2165	LDI	BTEMP2	HI 3 BITS OF RETURN LOCC	NIN+0466
1046	0701	SBN	1	DECREMENT BANK SETTING	NIN+0467
1047	4023	STD	BANK		NIN+0468
1050	7100	JPR	ARTHSB	SET INDIRECT BANK	NIN+0469
1051	0526				
1052	0501	LCN	1		NIN+0470
1053	5332	RAR	BREYLC		NIN+0471
1054	2124	LDI	LOCC		NIN+0472
1055	6244	PJR	BOC03B	TRANSFER POWER COMMAND	NIN+0473
1056	7101	JFI	1	YES	NIN+0474
1057	2342		BOC52E		NIN+0475
1060	4064	BOC02A	STD	BTEMP1	NIN+0476
1061	5740	AOR	BREYLC		NIN+0477
1062	4065	STD	BTEMP2		NIN+0478
1063	2023	LDD	BANK	SAVE RETURN LOCATION	NIN+0479
1064	4165	STI	BTEMP2	HI 3 BITS OF RETURN LOCC	NIN+0480
1065	5744	AOR	BREYLC		NIN+0481
1066	4065	STD	BTEMP2		NIN+0482
1067	2024	LDD	LOCC		NIN+0483
1070	4165	STI	BTEMP2	LO 12 BITS OF RETURN LOCC	NIN+0484
1071	2064	LDD	BTEMP1		NIN+0485
1072	0677	ADN	77	LIB, FUNC, SWITCHBOARD	NIN+0486
1073	4024	STD	LOCC		NIN+0487
1074	2124	LDI	LOCC	LIB, FUNC, LOC,	NIN+0488
1075	0201	LPN	1	LIB, FUNC, BANK SETTING	NIN+0489
1076	0620	ADN	20		NIN+0490
1077	4100	STM	BOC76A	BANK SETTING COMMAND	NIN+0491
1100	1416				
1101	7101	JFI	1		NIN+0492
1102	1412		BOC76B	GO TO ROUTINE	NIN+0493
				TRANSFER TO POWER	NIN+0494
1103	2124	BOC50	REM	LOCC	NIN+0495
1104	0203	LDI	3	RELATIVE POWER LOCATION	NIN+0496
1105	0646	ADN	38D		NIN+0497
1106	6653	PJR	BOC02B		NIN+0498
		REM		RELATIVE TRANSFERS	NIN+0499
1107	2124	BOC03	LDI	LOCC	NIN+0500
1110	0277	LPN	77	RELATIVE TRANSFER ADDRESS	NIN+0501
1111	4064	STD	BTEMP1		NIN+0502
1112	2427	LCD	BOPCD		NIN+0503
1113	0201	LPN	1		NIN+0504
1114	6002	ZJF	BOC03A	EVEN NUMBERED COMMANDS	NIN+0505
1115	0500	LCN	0	YES	NIN+0506
1116	1464	BOC03A	LSD	BTEMP1	NIN+0507
1117	0701	SBN	1	MINUS 1	NIN+0508
1120	5024	RAD	LOCC	TRANSFER LOC	NIN+0509
1121	7101	BOC03B	JFI	1	NIN+0510
122	0400		ARITH		NIN+0511
	1107	BOC04	EQU	BOC03	NIN+0512
1123	2001	BOC05	LDD	ACC	NIN+0513
1124	6703	NJB	BOC03B	JUMP REQUIRED	NIN+0514
1125	6616	PJB	BOC03	YES	NIN+0515
	1123	BOC06	EQU	BOC05	NIN+0516
1126	2001	BOC07	LDD	ACC	NIN+0517
1127	6606	PJR	BOC03B	JUMP REQUIRED	NIN+0518
1130	6721	NJR	BOC03	YES	NIN+0519
	1126	BOC10	EQU	BOC07	NIN+0520

1131	2001	BOC11	LDD	ACC			NINT0521
1132	6511		NZB	BOC03B		JUMP REQUIRED	NINT0521
1133	2002		LDD	ACC	1	MAYBE	NINT0521
1134	6513		NZR	BOC03B		JUMP REQUIRED	NINT0521
1135	6426		ZJB	BOC03		YES	NINT0521
	1131	BOC12	EQV	BOC11			NINT0521
1136	2001	BOC13	LDD	ACC			NINT0521
1137	6530		NZR	BOC03		JUMP REQUIRED	NINT0521
1140	2002		LDD	ACC	1	MAYBE	NINT0529
1141	6532		NZR	BOC03		JUMP REQUIRED	NINT0530
1142	6421		ZJR	BOC03B		NO	NINT0531
	1136	BOC14	EQV	BOC13			NINT0532
			REM			MODIFY ERASE COUNTER SUBR	NINT0533
1143	2124	BOC44	LDI	LOCC			NINT0534
1144	0240		LPN	40		INCREMENT INDICATOR	NINT0535
1145	6122		NZF	BOC44A		INCREMENT	NINT0536
1146	4065	BOC44C	STD	BTEMP2		YES	NINT0537
1147	2124		LDI	LOCC			NINT0538
1150	0237		LPN	37			NINT0539
1151	1465		LSD	BTEMP2			NINT0540
1152	4064		STD	BTEMP1		REL, ERS, LOC.	NINT0541
1153	0102		LSI				NINT0542
1154	5064		RAD	BTEMP1		TIMES THREE	NINT0543
1155	5032		RAD	ERSLOC	1	ABSOLUTE ERASABLE ADDRESS	NINT0544
1156	3464		SBD	BTEMP1			NINT0545
1157	1464		LSD	BTEMP1			NINT0546
1160	1432		LSD	ERSLOC	1		NINT0547
1161	1465		LSD	BTEMP2			NINT0548
1162	0201		LPN	1		1 FOR CARRY -- 0 FOR NO CARRY	NINT0549
1163	1465		LSD	BTEMP2			NINT0550
1164	5031		RAD	ERSLOC		NEW BANK SETTING	NINT0551
1165	7101	BOC44D	JFI	1			NINT0552
1166	0400			ARITH			NINT0553
1167	0500	BOC44A	LCN	0		DECREMENT	NINT0554
1170	6722		NJB	BOC44C			NINT0555
			REM			TRANSFER ON INDEX	NINT0556
1171	5416	BOC47	ADD	INDXR0	1		NINT0557
1172	6605		PJR	BOC44D		RETURN OR CONTINUE	NINT0558
1173	5427		ADD	BOPCD		RETURN	NINT0559
1174	7101		JFI	1			NINT0560
1175	1107			BOC03			NINT0561
			REM			STORE/RESTORE PSEUDO-ACCS	NINT0562
1176	7100	BOC45	JPR	BSUBCY		DETERMINE ERASE LOG.	NINT0563
1177	2165						
1200	2060	BOC45H	LDD	BWD11			NINT0564
1201	0620		ADN	20			NINT0565
1202	4214		STR	BOC45F		SET SIC COMMAND	NINT0566
1203	2200		LDF	0			NINT0567
1204	2007		LDD	ACC2			NINT0568
1205	4214		STR	BOC45C		PRESET LOAD COMMAND	NINT0569
1206	2200		LDF	0			NINT0570
1207	4007		STD	ACC2			NINT0571
1210	4223		STR	BOC45G		PRESET STORE COMMAND	NINT0572
1211	0510		LCN	8D			NINT0573
1212	4065		STD	BTEMP2		LOOP COUNTER	NINT0574
1213	2124		LDI	LOCC			NINT0575
1214	0240		LPN	40			NINT0576
1215	4066		STD	BTEMP3			NINT0577
1216	0020	BOC45F	SIC0				NINT0578
1217	2066		LDD	BTEMP3			NINT0579



1220	6112		NZF	BOC45A	STORE OPTION	NINT0580
1221	2007	BOC45C	LDD	ACC2	YES -- ACCN	NINT0581
1222	4161		STI	BWD12	TO ERASABLE	NINT0582
1223	5702		AOB	BOC45C		NINT0583
1224	5461	BOC45D	AOD	BWD12		NINT0584
1225	6102		NZF	BOC45E	ZERO LOCATION	NINT0585
1226	5710		AOR	BOC45F	YES -- INCR, BANK SETTING	NINT0586
1227	5465	BOC45E	AOD	BTEMP2		NINT0587
1230	6512		NZB	BOC45F	MORE WORDS TO SHIFT	NINT0588
1231	6043		ZJR	BOOLB	NO -- EXIT	NINT0589
1232	2161	BOC45A	LDI	BWD12	ERASABLE	NINT0590
1233	4007	BOC45G	STD	ACC2	TO ACCN	NINT0591
1234	5701		AOB	BOC45G		NIN_0592
1235	6511		NZB	BOC45D		NINT0593
			REM		ONE WORD OPTION	NINT0594
1236	2124	BOC46	LDI	LOCC		NINT0595
1237	0240		LPN	40		NINT0596
1240	6151		NZR	CHGSN	CHANGE SIGN	NINT0597
1241	2524		LCI	LOCC		NINT0598
1242	0204		LPN	4		NINT0599
1243	6133		NZR	CNVAC		NINT0600
			REM		LOAD LOCATION	NINT0601
1244	4060	BLDLOC	STD	BWD11	SET 15 BIT	NINT0602
1245	0403		LDN	3	ADDER REGISTERS	NINT0603
1246	4061		STD	BWD12		NINT0604
1247	2023		LDD	BANK		NINT0605
1250	4062		STD	BWD21		NINT0606
1251	2024		LDD	LOCC		NINT0607
1252	4063		STD	BWD22		NINT0608
1253	7100		JPR	BINTAD	15-BIT ADD	NINT0609
1254	0770					
1255	2461		LCD	BWD12		NINT0610
1256	6103		NZR	BLDLCA		NINT0611
1257	4061		STD	BWD12		NINT0612
1260	5460		AOD	BWD11		NINT0613
1261	7100	BLDLCA	JPR	FEZRO		NINT0614
1262	3020					
1263	2060		LDD	BWD11	LOCATION - 4	NINT0615
1264	4124		STI	LOCC	TO FE0	NINT0616
1265	5424		AOD	LOCC		NINT0617
1266	2061		LDD	BWD12		NINT0618
1267	4124		STI	LOCC		NINT0619
1270	2063		LDD	BWD22		NINT0620
1271	4024		STD	LOCC	RESTORE LOCC	NINT0621
1272	2062		LDD	BWD21		NINT0622
1273	4023		STD	BANK	RESTORE BANK	NINT0623
1274	7101	BOOLB	JFI	1		NINT0624
1275	0400			ARITH		NINT0625
			REM		CONVERT ACCUMULATOR SUBR.	NINT0626
1276	7100	CNVAC	JPR	ACCDPR	ACC TO OPER	NINT0627
1277	2766					
1300	2124		LDI	LOCC		NINT0628
1301	0201		LPN	1		NINT0629
1302	0625		ADN	25		NINT0630
1303	7100		JPR	BHCDRV	GO TO MACRO SWITCHBOARD	NINT0631
1304	3024					
1305	7100		JPR	BOPACC	OPER TO ACC	NINT0632
1306	3000					
1307	2124		LDI	LOCC		NINT0633
1310	6120		NZR	CHGSNE		NINT0634

Address	Offset	OpCode	Register	Value	Comment	Label
1311	2001	CHGSN	REM LUD	ACC		NIN70635
1312	6103		NZF	3		NIN70636
1313	2002		LDD	ACC	1	NIN70637
1314	6013		ZJF	CHGSNG		NIN70638
1315	2124		LUI	LOCC		NIN70639
1316	0202		LPN	2		NIN70640
1317	6013		ZJR	CHGSNA		NIN70641
1320	2124		LDI	LOCC		NIN70642
1321	0201		LPN	1		NIN70643
1322	6121		NZR	CHGSNH		NIN70644
1323	2200	CHGSNF	LDC	4000		NIN70645
1324	4000				YES	NIN70646
1325	1401		LSD	ACC		NIN70647
1326	4001	CHGSND	STD	ACC		NIN70648
1327	2124	CHGSNG	LUI	LOCC		NIN70649
1330	7101	CHGSNE	JFI	1		NIN70650
1331	2342			BOC52E		NIN70651
1332	2124	CHGSNA	LUI	LOCC		NIN70652
1333	0204		LPN	4		NIN70653
1334	0110		LS3			NIN70654
1335	0111		LS6			NIN70655
1336	1401		LSD	ACC		NIN70656
1337	6610		PJR	CHGSNG		NIN70657
1340	2124		LUI	LOCC		NIN70658
1341	0201		LPN	1		NIN70659
1342	6417		ZJR	CHGSNF		NIN70660
1343	2402	CHGSNH	LCD	ACC	1	NIN70661
1344	4002		STD	ACC	1	NIN70662
1345	2401		LDB	ACC		NIN70663
1346	7101		JFI	1		NIN70664
1347	1326			CHGSND		NIN70665
1350	2124	BOC74	REM LDI	LOCC		NIN70666
1351	0217		LPN	17		NIN70667
1352	0620		ADN	20		NIN70668
1353	4212		STR	BOC740		NIN70669
1354	7100		JPR	ARTSBA		NIN70670
1355	0520					NIN70671
1356	2207		LDF	BOC740		NIN70672
1357	0210		LPN	10		NIN70673
1360	6003		ZJR	BOC744		NIN70674
1361	2524		LCI	LOCC		NIN70675
1362	6314		NJF	BOC74C		NIN70676
1363	2124	BOC74A	LUI	LOCC		NIN70677
1364	4057		STD	BWORD		NIN70678
1365	0027	BOC74B	SIC7			NIN70679
1366	2157		LPI	BWORD		NIN70680
1367	4015		STD	INDXRG		NIN70681
1370	5457		AOD	BWORD		NIN70682
1371	6104		NZF	4		NIN70683
1372	5705		A0B	BOC74B		NIN70684
1373	4201		STF	1		NIN70685
1374	0027		SIC7			NIN70686
1375	2157		LPI	BWORD		NIN70687
1376	4016	BOC74C	STD	INDXRG +1		NIN70688
1377	7101		JFI	1		NIN70689
1400	0400			ARITH		NIN70690
1401	2124	BOC76	REM LDI	LOCC		NIN70691
					GO TO SUBROUTINE	NIN70692

1402	0250		LPN	50	NO	NIN70693
1403	6116		NZR	UP	UP B-BOX	NIN70694
1404	2124	BOC76C	LDI	LOCC		NIN70695
1405	0207	BOC76D	LPN	7	BANK SETTING	NIN70696
1406	0620		ADN	20		NIN70697
1407	4207		STR	BOC76A		NIN70698
1410	7100		JPR	ARTSBA	INCREMENT LOC, COUNTER	NIN70699
1411	0520					
1412	2124	BOC76B	LDI	LOCC		NIN70700
1413	4024		STD	LOCC	RESET NEW LOCATION	NIN70701
1414	2202		LDR	BOC76A		NIN70702
1415	4023		STD	BANK	NEW BANK SETTING	NIN70703
1416	0020	BOC76A	SIC0		RESET INDIRECT BANK	NIN70704
1417	7101		JFI	1		NIN70705
1420	0411			ARITHA		NIN70706
			REM		UP(I) COMMAND	NIN70707
			REM		UPDATE ALL B-BOXES INVOLVING	NIN70708
			REM		THE INTEGER VARIABLE (I)	NIN70709
1421	0240	UP	LPN	40		NIN70710
1422	6103		NZR	UPA	STORE COMMAND	NIN70711
423	7101		JFI	1		NIN70712
424	2447			BOC51A		NIN70713
1425	2124	UPA	LDI	LOCC	ASSUME INDIRECT BANK=B(LOCC)	NIN70714
1426	0207		LPN	7	CREATE AN INSTRUCTION	NIN70715
1427	0620		ADN	20		NIN70716
1430	4215		STF	UPL0DI	SIC(BANK OF UP-SUBROUTINE)	NIN70717
1431	4270		STF	UPL0D	AND INITIALIZE BANK SETTINGS	NIN70718
1432	5424		AOD	LOCC		NIN70719
1433	6104		NZF	4		NIN70720
434	5423		AOD	BANK		NIN70721
435	4201		STF	1		NIN70722
1436	0027		SIC7			NIN70723
1437	2524		LDI	LOCC		NIN70724
1440	6103		NZF	3		NIN70725
441	7101	UPZ	JFI	1	-0=NO UP-SUBROUTINE	NIN70726
442	0400			ARITH		NIN70727
1443	2124		LDI	LOCC	GET ADDRESS OF UP-SUBROUTINE	NIN70728
1444	4072		STD	UPL0CC	KEEP CURRENT IN UPL0CC	NIN70729
1445	0027	UPL0DI	SIC7			NIN70730
446	2172		LDI	UPL0CC	GET ADDRESS OF CURRENT VALUE	NIN70731
1447	4227		STF	REALI	OF INTEGER	NIN70732
1450	5472		AOD	UPL0CC		NIN70733
1451	6104		NZF	4		NIN70734
452	5647		AOD	UPL0D		NIN70735
453	4201		STF	1		NIN70736
1454	0027		SIC7			NIN70737
1455	2172		LDI	UPL0CC		NIN70738
1456	4066		STD	CMN1	TEMPORARY STORAGE	NIN70739
457	2217		LDF	REALI		NIN70740
1460	6216		PJF	REALI		NIN70741
1461	2066		LUD	CMN1		NIN70742
1462	0102		LS1			NIN70743
463	5066		RAD	CMN1	MULT BY 3 TO GET ERASABLE	NIN70744
464	3032		AOD	ERSLOC +1		NIN70745
1465	1432		SCD	ERSLOC +1		NIN70746
1466	1466		SCD	CMN1		NIN70747
1467	0201		LPN	1		NIN70748
470	3031		AOD	ERSLOC		NIN70749
471	3205		AOD	REALI		NIN70750
1472	0227		LPN	27		NIN70751

1473	4203	STF	REALI		COMPUTE BANK SETTING	NINT0752
1474	2032	LDD	ERSLOC	+1		NINT0753
1475	5066	RAD	CMN1			NINT0754
1476	0027	REALI	SIC7			NINT0755
1477	2166	LDI	CMN1		MOVE CURRENT VALUE OF I	NINT0756
1500	4001	STD	ACCJ		TO INTEGER ACCUMULATOR	NINT0757
1501	2466	LCD	CMN1		IF FIRST WORD OF I IS IN-0	NINT0758
1502	6106	NZF	TSTONE		CHANGE BANK	NINT0759
1503	4066	STD	CMN1			NINT0760
1504	5706	AOB	REALI			NINT0761
1505	4201	STF	1			NINT0762
1506	0027	SIC7				NINT0763
1507	6105	NZF	LOAIN			NINT0764
1510	5466	TSTONE	CMN1		IF FIRST WORD OF I IS IN -1	NINT0765
1511	6103	NZF	LOAIN		SET CMN1=-0	NINT0766
1512	0500	LCN	0			NINT0767
1513	4066	STD	CMN1			NINT0768
1514	2166	LOAIN	LDI	CMN1		NINT0769
1515	4002	STD	ACCJ	+1		NINT0770
1516	5472	AOD	UPL0CC			NINT0771
1517	6102	NZF	UPILOD			NINT0772
1520	5601	AOB	1			NINT0773
1521	0027	UPILOD	SIC7			NINT0774
1522	2172	LDI	UPL0CC		BRING OLD VALUE OF I TO	NINT0775
1523	4017	STD	OP		INTEGER OPERAND REGISTER	NINT0776
1524	2001	LDD	ACCJ		REPLACE OLD VALUE OF I BY NEW	NINT0777
1525	4172	STI	UPL0CC			NINT0778
1526	5472	AOD	UPL0CC			NINT0779
1527	6104	NZF	4			NINT0780
1530	5707	AOB	UPILOD			NINT0781
1531	4201	STF	1			NINT0782
1532	0027	SIC7				NINT0783
1533	2172	LDI	UPL0CC			NINT0784
1534	4020	STD	OP	+1		NINT0785
1535	2002	LDD	ACCJ	+1		NINT0786
1536	4172	STI	UPL0CC			NINT0787
1537	0421	LON	21		INTEGEN SUBTRACT=21	NINT0788
1540	7100	JPR	BHCDRV		GO TO MACRO SWITCHBOARD	NINT0789
1541	3024					NINT0790
1542	2001	LDD	ACCJ			NINT0791
1543	4070	STD	MLT5WC			NINT0792
1544	4074	STD	DELSAV		SAVE INCREMENT	NINT0793
1545	2002	LDD	ACCJ	+1		NINT0794
1546	4075	STD	DELSAV	+1		NINT0795
1547	0701	SBN	1			NINT0796
1550	6002	ZJF	BBOXER	+2		NINT0797
1551	4070	SETMPY	STD	MLT5WC	0=ADD, OTHERWISE MULTIPLY	NINT0798
1552	2331	LDB	UPILOD			NINT0799
1553	4204	STF	UPILOD1			NINT0800
1554	5472	BBOXER	AOD	UPL0CC		NINT0801
1555	6102	NZF	2			NINT0802
1556	5601	AOB	1			NINT0803
1557	0027	UPILOD1	SIC7			NINT0804
1560	2172	LDI	UPL0CC			NINT0805
1561	4071	STD	ENDFLG			NINT0806
1562	0207	LPN	7			NINT0807
1563	0620	ADN	20			NINT0808
1564	4211	STF	LODBOX		SET BANK SETTINGS FOR	NINT0809
1565	4067	STD	CMN2		B-BOX MANIPULATIONS	NINT0810
1566	5472	AOD	UPL0CC			NINT0810

1567	6104	NZF	4		NINT0811
1570	5711	AOB	UPILD1		NINT0812
571	4201	STP	1		NINT0813
572	0027	SIC7			NINT0814
1573	2172	LDI	UPLOCC		NINT0815
1574	4073	STD	BOXADD		NINT0816
1575	0027	LODBOX	SIC7	MOVE 6 WORDS TO LOW CORE	NINT0817
576	2173	LDI	BOXADD		NINT0818
577	4060	STD	BWRD11		NINT0819
1600	5473	AOD	BOXADD		NINT0820
1601	6104	NZF	4		NINT0821
602	5705	AOB	LODBOX		NINT0822
603	4201	STP	1		NINT0823
1604	0027	SIC7			NINT0824
1605	2173	LDI	BOXADD	MOVE CURRENT B-BOX TO	NINT0825
1606	4061	STD	BWRD12	BWRD11, BWRD12	NINT0826
607	2071	LDD	ENDFLG		NINT0827
610	0110	LS3			NINT0828
1611	0207	LPN	7	GET POSITION OF I IN	NINT0829
1612	4066	STD	CHN1	B-BOX	NINT0830
613	5473	AOD	BOXADD		NINT0831
614	6104	NZF	4		NINT0832
1615	5720	AOB	LODBOX		NINT0833
1616	4201	STP	1		NINT0834
1617	0027	SIC7			NINT0835
620	2173	LDI	BOXADD		NINT0836
621	4062	STD	BWRD21		NINT0837
1622	2466	LCD	CHN1		NINT0838
1623	4064	STD	BTEMP1	SHIFT	NINT0839
1624	2062	LDD	BWRD21	B(F???)	NINT0840
625	0110	LS3		TO	NINT0841
1626	4062	STD	BWRD21	LOW-ORDER	NINT0842
1627	5464	AOD	BTEMP1	3 BITS	NINT0843
1630	6504	NZB	4	AND	NINT0844
631	2062	LDD	BWRD21	STORE	NINT0845
632	0207	LPN	7	IN	NINT0846
1633	4062	STD	BWRD21	BWRD21	NINT0847
1634	2066	LDD	CHN1		NINT0848
1635	5073	RAD	BOXADD		NINT0849
636	3466	SBD	CHN1		NINT0850
637	1466	SCD	CHN1		NINT0851
1640	1473	SCD	BOXADD		NINT0852
1641	0201	LPN	1		NINT0853
1642	6004	ZJF	4		NINT0854
643	5746	AOB	LODBOX		NINT0855
1644	4201	STP	1		NINT0856
1645	0027	SIC7			NINT0857
1646	2173	LDI	BOXADD		NINT0858
647	4063	STD	BWRD22		NINT0859
650	2070	LDD	MLTSHC		NINT0860
1651	6041	ZJF	ADDUM		NINT0861
1652	2062	LDD	BWRD21		NINT0862
1653	0102	LS1			NINT0863
654	4001	STD	ACCJ		NINT0864
655	2063	LDD	BWRD22		NINT0865
1656	6205	PJF	5		NINT0866
1657	5401	AOD	ACCJ		NINT0867
660	2063	LDD	BWRD22		NINT0868
661	1200	UPMASK	LPC	3777	NINT0869
1662	3777				

1663	4002		STD	ACCJ	+1			NINT0870
1664	2074		LDD	DELSAV		MOVE INCREMENT TO OPERAND		NINT0871
1665	4017		STD	OP		REGISTER FOR INTEGER MULTIPLY		NINT0872
1666	2075		LDD	DELSAV	+1			NINT0873
1667	4020		STD	OP	+1			NINT0874
1670	0422		LUN	22		INTEGER MULTIPLY=2R		NINT0875
1671	7100		JPR	BMCDRV		GO TO MACRO SWITCHBOARD		NINT0876
1672	3024							
1673	2002		LDD	ACCJ	+1			NINT0877
1674	6203		PJF	3				NINT0878
1675	1313		LPB	UPMASK	+1			NINT0879
1676	0601		AUN	1		ADJUST FOR 2S COMPLEMENT		NINT0880
1677	4063		STD	BWRD22				NINT0881
1700	2001		LDD	ACCJ				NINT0882
1701	0114		RS1					NINT0883
1702	0207		LPN	7				NINT0884
1703	4062		STD	BWRD21				NINT0885
1704	2001		LDD	ACCJ				NINT0886
1705	0201		LPN	1				NINT0887
1706	6004		ZJF	ADDUM				NINT0888
1707	2725		LCB	UPMASK	+1			NINT0889
1710	1463		LSD	BWRD22				NINT0890
1711	4063		STD	BWRD22				NINT0891
1712	7100	ADDUM	JPR	BINTAD		ADD INCREMENT TO OLD VALUE		NINT0892
1713	0770							
1714	2067		LDD	GMN2				NINT0893
1715	4201		STF	1				NINT0894
1716	0027	RSTRBX	SIC7			OF B-BOX		NINT0895
1717	0502		LCN	2				NINT0896
1720	3466		SBD	GMN1				NINT0897
1721	5073		RAD	BOXLOC		RESTORE B-BOX		NINT0898
1722	2060		LDD	BWRD11				NINT0899
1723	4173		STI	BOXLOC				NINT0900
1724	5473		AOD	BOXLOC				NINT0901
1725	6104		NZF	4				NINT0902
1726	5710		AOD	RSTRBX				NINT0903
1727	4201		STF	1				NINT0904
1730	0027		SIC7					NINT0905
1731	2061		LDD	BWRD12				NINT0906
1732	4173		STI	BOXLOC				NINT0907
1733	2071		LDD	ENDFLG				NINT0908
1734	0270		LPN	70				NINT0909
1735	6003		ZJF	3				NINT0910
1736	7101		JFI	1				NINT0911
1737	0400			ARITH				NINT0912
1740	7101		JFI	1				NINT0913
1741	1554			BBOXER				NINT0914
			REM			ACCN ARITHMETIC		NINT0915
			REM					NINT0916
			REM			STORE COMMAND		NINT0917
1742	2124	BOC15	LDI	LOCC				NINT0918
1743	0203		LPN	3				NINT0919
1744	0110		LS3			SHIFT ACCN BITS		NINT0920
1745	7101		JFI	1		STORE ACCN SUBROUTINE		NINT0921
1746	2107			BSUBA				NINT0922
			REM			ARITHMETIC COMMANDS		NINT0923
1747	2124	BOC16	LDI	LOCC				NINT0924
1750	0203		LPN	3		ACCN INDICATOR		NINT0925
1751	6046		ZJR	BOC16H				NINT0926
1752	0702		SBN	2		NO		NINT0927

1753	6021	ZJR	BOC16C		JUMP FOR ACC2	NIN70928
1754	6210	PJR	BOC16E		JUMP FOR ACC3	NIN70929
755	2004	LDD	ACC1		ACC1 TO OPERAND REGISTER	NIN70930
1756	4017	STD	OPER			NIN70931
757	2005	LDD	ACC1	1		NIN70932
1760	4020	STD	OPER	1		NIN70933
1761	2006	LDD	ACC1	2		NIN70934
1762	4021	STD	OPER	2		NIN70935
763	7110	JFI	BOC16B			NIN70936
764	2012	BOC16E LDD	ACC3		ACC3 TO OPERAND REGISTER	NIN70937
1765	4017	STD	OPER			NIN70938
1766	2013	LDD	ACC3	1		NIN70939
1767	4020	STD	OPER	1		NIN70940
770	2014	LDD	ACC3	2		NIN70941
771	4021	STD	OPER	2		NIN70942
1772	7101	JFI	1			NIN70943
1773	2002	BOC16G	BOC16F			NIN70944
774	2007	BOC16C LDD	ACC2		ACC2 TO OPERAND REGISTER	NIN70945
775	4017	STD	OPER			NIN70946
1776	2010	LDD	ACC2	1		NIN70947
1777	4020	STD	OPER	1		NIN70948
2000	2011	LDD	ACC2	2		NIN70949
001	4021	STD	OPER	2		NIN70950
2002	2124	BOC16F LDI	LOCC			NIN70951
2003	0204	LPN	4			NIN70952
2004	6002	ZJF	BOC16D		INTEGER MODE	NIN70953
2005	0405	LDN	5		YES	NIN70954
006	3027	BOC16D ADD	BOPCD		OP, CODE	NIN70955
2007	0703	SHN	3			NIN70956
2010	7100	JPR	BMCDRV		GO TO MACRO SWITCHBOARD	NIN70957
2011	3024					
2012	2124	BOC16B LDI	LOCC			NIN70958
013	0230	LPN	30		ACCN STORE BITS	NIN70959
2014	6173	NZR	BSUBA		STORE NECESSARY	NIN70960
2015	7101	BOC16I JFI	1			NIN70961
2016	0400					NIN70962
017	2124	BOC16H LDI	LOCC			NIN70963
2020	0240	LPN	40		OPTION BIT	NIN70964
2021	6417	ZJR	BOC16P		OPER, REG, ALREADY SET	NIN70965
2022	7100	JPR	ACCOPR		NO -- ACC TO OPER	NIN70966
2023	2766					
024	7101	JFI	1			NIN70967
2025	2002		BOC16F			NIN70968
1747		BOC17 EQU	BOC16			NIN70969
1747		BOC20 EQU	BOC16			NIN70970
1747		BOC21 EQU	BOC16			NIN70971
2026	2017	BOC22 LDD	OPER		SAVE OPERAND REGISTER	NIN70972
2027	4064	STD	BTEMP1			NIN70973
2030	2020	LDD	OPER	1		NIN70974
2031	4065	STD	BTEMP2			NIN70975
032	2021	LDD	OPER	2		NIN70976
2033	4066	STD	BTEMP3			NIN70977
2034	7100	JPR	ACCOPR		ACC, TO OPER,	NIN70978
2035	2766					
2036	2124	LDI	LOCC			NIN70979
037	0203	LPN	3		ACCN INDICATOR	NIN70980
2040	6015	ZJR	BOC22A		BOTH REGISTERS SET	NIN70981
2041	4064	STD	BTEMP1		NO -- LOAD ACCUMULATOR	NIN70982
2042	0102	LS1				NIN70983
043	3064	ADD	BTEMP1			NIN70984

2044	0601		ADN	ACC1	-3	ABSOLUTE ACCN LOC,	NINT0985
2045	4061	BOC22B	STD	BWD12			NINT0986
146	0020		SICO				NINT0987
147	2200		LDC	BOC16F		RETURN ADDRESS	NINT0988
2050	2002						
2051	4100		STM	52SBA			NINT0989
2052	2554						
153	7101		JFI	1			NINT0990
054	2635			52SBBA			NINT0991
2055	0464	BOC22A	LDN	BTEMP1		LOC. OF OPER. CONTENTS	NINT0992
2056	6511		NZR	BOC22B			NINT0993
			REM			LOAD COMMAND	NINT0994
157	2124	BOC23	LDI	LOCC			NINT0995
2060	0203		LPN	3		ACCN INDICATOR	NINT0996
2061	6023		ZJR	BOC23D			NINT0997
2062	4064		STD	BTEMP1			NINT0998
163	0102		LS1				NINT0999
164	3064		ADD	BTEMP1		TIMES THREE	NINT1000
2065	3200		ADP	0			NINT1001
2066	2001		LDD	ACC1	-3		NINT1002
2067	4205		STF	BOC23A		PRESET LOAD ADDRESSES	NINT1003
170	0601		ADN	1			NINT1004
2071	4205		STF	BOC23B			NINT1005
2072	0601		ADN	1			NINT1006
2073	4205		STF	BOC23C			NINT1007
174	2004	BOC23A	LDD	ACC1		LOAD	NINT1008
175	4001		STD	ACC		ACCUMULATOR	NINT1009
2076	2005	BOC23B	LDD	ACC1	1		NINT1010
2077	4002		STD	ACC	1		NINT1011
2100	2006	BOC23C	LDD	ACC1	2		NINT1012
101	4003	BOC23E	STD	ACC	2		NINT1013
102	7101		JFI	1			NINT1014
2103	0400			ARITH			NINT1015
2104	4001	BOC23D	STD	ACC		ZERO ACC	NINT1016
105	4002		STD	ACC	1		NINT1017
106	6405		ZJR	BOC23E			NINT1018
			REM			STORE INTO ACCN SUMR.	NINT1019
2107	0720	BSUBA	SWN	20			NINT1020
2110	6020		ZJR	BSUBAD		JUMP FOR ACC2	NINT1021
111	6210		PJR	BSUBAC		JUMP FOR ACC 3	NINT1022
112	2001		LDD	ACC		ACC TO ACC 1	NINT1023
2113	4004		STD	ACC1			NINT1024
2114	2002		LDD	ACC	1		NINT1025
2115	4005		STD	ACC1	1		NINT1026
116	2003		LDD	ACC	2		NINT1027
2117	4006		STD	ACC1	2		NINT1028
2120	7117		JFI	BSUBAB			NINT1029
2121	2001	BSUBAC	LDD	ACC		ACC TO ACC3	NINT1030
122	4012		STD	ACC3			NINT1031
123	2002		LDD	ACC	1		NINT1032
2124	4013		STD	ACC3	1		NINT1033
2125	2003		LDD	ACC	2		NINT1034
2126	4014		STD	ACC3	2		NINT1035
127	7110		JFI	BSUBAB			NINT1036
130	2001	BSUBAD	LDD	ACC		ACC TO ACC2	NINT1037
2131	4007		STD	ACC2			NINT1038
2132	2002		LDD	ACC	1		NINT1039
2133	4010		STD	ACC2	1		NINT1040
134	2003		LDD	ACC	2		NINT1041
2135	4011		STD	ACC2	2		NINT1042



2136	7101		JFI	1					NINT1043
2137	0400	BSUBAB	REM	ARITH		RETURN ADDRESS			NINT1044
			REM			ERASABLE ARITHMETIC			NINT1045
140	0735	BOC35	SWN	35					NINT1046
2141	4214		STR	BOC35A		SET SWITCHBOARD			NINT1047
2142	2124		LDI	LOCC					NINT1048
2143	0217		LPN	17					NINT1049
44	4061		STD	BWD12		REL. ERASE LOC.			NINT1050
145	0102		LSI						NINT1051
2146	3200		ADC	ERASE	-3				NINT1052
2147	0175								
150	5061		RAD	BWD12		ABSOLUTE ERASE LOC.			NINT1053
151	0400		LUN	0					NINT1054
2152	4060		STD	BWD11		0 TO UPPER 3 BITS			NINT1055
2153	0511		LCN	11					NINT1056
2154	5027		RAD	BOPCD		REDUCE OPERATION			NINT1057
155	7101	BOC35A	JFI	1					NINT1058
156	2232			BOC24A		STORE			NINT1059
2157	2244			BOC25A		ADD			NINT1060
2160	2244			BOC25A		SUB			NINT1061
161	2244			BOC25A		MPY			NINT1062
162	2244			BOC25A		DIV			NINT1063
4163	2261			BOC31A		IDV			NINT1064
2164	2265			BOC32A		LOAD			NINT1065
	2140	BOC36	EQU	BOC35					NINT1066
	2140	BOC37	EQU	BOC35					NINT1067
	2140	BOC40	EQU	BOC35					NINT1068
	2140	BOC41	EQU	BOC35					NINT1069
	2140	BOC42	EQU	BOC35					NINT1070
	2140	BOC43	EQU	BOC35					NINT1071
			REM			FUNCTION ERASE ARITHMETIC			NINT1072
			REM						NINT1073
			REM			ERASE LOC. SUBR.			NINT1074
2165	7700	BSUBCY	HLT			RETURN ADDRESS			NINT1075
166	2301		LDR	BSUBCY					NINT1076
167	4224		STR	BSUBCX		STORE RETURN ADDRESS			NINT1077
2170	2252		LDR	BOC24B					NINT1078
2171	6102		NZR	BSUBCH		SET SWITCHBOARD			NINT1079
2172	0723	BOC24	SWN	23					NINT1080
173	4217	BSUBCH	STR	BSUBCA		SET SWITCHBOARD			NINT1081
174	2124		LDI	LOCC					NINT1082
2175	0237	BSUBCZ	LPN	37		RELATIVE ERASABLE LOC.			NINT1083
2176	4067	BSUBCV	STD	BTEMP4		TIMES THREE			NINT1084
177	0102		LSI						NINT1085
200	5067		RAD	BTEMP4		TIMES THREE			NINT1086
2201	3032		ADD	ERSLOC	1	ABSOLUTE ERASABLE ADDRESS			NINT1087
2202	4061		STD	BWD12		LO 12-BIT ERASE ADDRESS			NINT1088
2203	4057		STD	BWORD					NINT1089
204	4033		STD	BWDSAV					NINT1090
205	1467		LSD	BTEMP4					NINT1091
2206	1432		LSD	ERSLOC	1				NINT1092
2207	0201		LPN	1		1 FOR CARRY -- 0 FOR NO CARRY			NINT1093
2210	3031		ADD	ERSLOC		ERASABLE BANK SETTING			NINT1094
211	4060		STD	BWD11		H1 3-BIT ERASE ADDRESS			NINT1095
2212	7101	BSUBCA	JFI	1					NINT1096
2213	0000	BSUBCX		0					NINT1097
2214	2232			BOC24A		STORE			NINT1098
215	2244			BOC25A		ADD			NINT1099
216	2244			BOC25A		SUB			NINT1100
2217	2244			BOC25A		MPY			NINT1101

2220	2244		BOC25A	DIV	NIN71102
2221	2261		BOC31A	IDV	NIN71103
222	2265		BOC32A	LOAD	NIN71104
223	2265		BOC32A	LOAD NEG.	NIN71105
2224	2314		BOC34A	LOAD AND CONVERT	NIN71106
2225	0723	BOC34	SBN	23	NIN71107
2226	4314		STR	BSUBCA	NIN71108
227	2124		LDI	LOCC	NIN71109
230	0217		LPN	17	NIN71110
2231	6633		PJR	BSUBCV	NIN71111
			REM		NIN71112
232	2124	BOC24A	LDI	LOCC	NIN71113
233	0240		LPN	40	NIN71114
2234	0111		LS6		NIN71115
2235	0102		LS1		NIN71116
2236	0703		SBN	3	NIN71117
237	4071		STD	COUNT	NIN71118
240	7100		JPR	75SUB	NIN71119
2241	2730				
2242	7101	BOC24B	JFI	1	NIN71120
243	0400			ARITH	NIN71121
			REM		NIN71122
2244	0400	BOC25A	LDN	0	NIN71123
2245	7100	BOC25C	JPR	75SUB	NIN71124
2246	2730			LOAD OPER	
247	2124	BOC25B	LDI	LOCC	NIN71125
250	0240		LPN	40	NIN71126
2251	6002		ZJF	BOC25D	NIN71127
2252	0405		LDN	5	NIN71128
2253	0712	BOC25D	SBN	12	NIN71129
254	3027		ADD	BOPCD	NIN71130
2255	7100		JPR	BHCDRV	NIN71131
2256	3024			GO TO MACRO SWITCHBOARD	
2257	7101	BOC25G	JFI	1	NIN71132
260	0400	BOC25F		ARITH	NIN71133
261	7100	BOC31A	JPR	ACGOPR	NIN71134
2262	2766			ACC TO OPER	
2263	0416		LDN	OPER -ACC	NIN71135
2264	6517		NZR	BOC25C	NIN71136
			REM		NIN71137
2265	0416	BOC32A	LDN	OPER -ACC	NIN71138
2266	7100		JPR	75SUB	NIN71139
2267	2730			LOAD ACC	
2270	2027	BOC32C	LDD	BOPCD	NIN71140
271	0732		SBN	32	NIN71141
2272	6020		ZJR	BOC32B	NIN71142
2273	2001		LDD	ACC	NIN71143
2274	6103		NZF	3	NIN71144
275	2002		LDD	ACC 1	NIN71145
276	6014		ZJR	BOC32B	NIN71146
2277	2124		LDI	LOCC	NIN71147
2300	0240		LPN	40	NIN71148
2301	6005		ZJR	BOC32D	NIN71149
302	2402		LDD	ACC 1	NIN71150
2303	4002		STD	ACC 1	NIN71151
2304	0500		LGN	0	NIN71152
2305	6303		NJR	BOC32E	NIN71153
306	2200	BOC32D	LDC	4000	NIN71154
307	4000			BIT FLIP	
2310	1401	BOC32E	LS0	ACC	NIN71155

2311	4001		STD	ACC					NINT1156
2312	7101	BOC32B	JFI	1	ARITH				NINT1157
2313	0400		REM			LOAD AND CONVERT FUNC. ERASE			NINT1158
2314	0400	BOC34A	LDN	0					NINT1159
2315	7100		JPR	75SUB		LOAD			NINT1160
2316	2730								NINT1161
317	2124		LDI	LOCC					NINT1162
320	0240		LPN	40		MODE BIT			NINT1163
2321	6002		ZJR	BOC34B		NEGATIVE LOAD			NINT1164
2322	0500		LCN	0		YES			NINT1165
2323	4070	BOC34B	STD	BITFLP		SET MODE SWITCH			NINT1166
324	2124		LDI	LOCC					NINT1167
325	0220		LPN	20		DESTINATION BIT			NINT1168
2326	6002		ZJR	BOC34C		ACC DESTINATION			NINT1169
2327	0430		LDN	30		NO -- OPER DESTINATION			NINT1170
330	4026	BOC34C	STD	FRSTWD					NINT1171
331	6266		PJR	BOC67D					NINT1172
	2172	BOC25	EQU	BOC24					NINT1173
	2172	BOC26	EQU	BOC24					NINT1174
	2172	BOC27	EQU	BOC24					NINT1175
	2172	BOC30	EQU	BOC24					NINT1176
	2172	BOC31	EQU	BOC24					NINT1177
	2172	BOC32	EQU	BOC24					NINT1178
	2172	BOC33	EQU	BOC24					NINT1179
			REM			2 WORD ARITH			NINT1180
332	0400	BOC92	LDN	0		LOAD OPERAND INDICATOR			NINT1181
2333	7100	BOC32A	JPR	52SBA					NINT1182
2334	2554								
2335	2027	BOC52B	LDD	BOPCD		OPERATOR CODE			NINT1183
336	0737		SHN	37					NINT1184
337	7100	BOC52D	JPR	BHCDRV		GO TO MACRO SWITCHBOARD			NINT1185
2340	3024								
2341	2026	BOC52C	LDD	FRSTWD		1ST WORD			NINT1186
2342	0230	BOC52E	LPN	30					NINT1187
343	6075		ZJR	BOC67C		ACCN STORAGE			NINT1188
2344	7101		JFI	1		YES			NINT1189
2345	2107			BSUBA		STORE ACC IN ACCN			NINT1190
	2332	BOC53	EQU	BOC52					NINT1191
	2332	BOC54	EQU	BOC52					NINT1192
	2332	BOC55	EQU	BOC52					NINT1193
2346	7100	BOC56	JPR	ACCOPR		ACC, TO OPER,			NINT1194
2347	2766								
2350	0416		LDN	OPER	ACC	LOAD ACCUMULATOR INDICATOR			NINT1195
351	6516		NZR	BOC52A					NINT1196
	2332	BOC57	EQU	BOC52					NINT1197
	2332	BOC60	EQU	BOC52					NINT1198
	2332	BOC61	EQU	BOC52					NINT1199
	2332	BOC62	EQU	BOC52					NINT1200
	2346	BOC63	EQU	BOC56					NINT1201
2352	0416	BOC64	LDN	OPER	ACC	LOAD ACCUMULATOR INDICATOR			NINT1202
2353	7100		JPR	52SBA					NINT1203
2354	2554								
355	2027		LDD	BOPCD					NINT1204
356	0764		SHN	64					NINT1205
2357	6416		ZJR	BOC52C		LOAD NEGATIVE COMMAND			NINT1206
2360	2026		LDD	FRSTWD		YES			NINT1207
2361	0210		LPN	30					NINT1208
362	6007		ZJR	BOC64D		LOAD CONSTANT COMMAND			NINT1209
2363	2124		LDI	LOCC		YES -- 15 BITS TO ACC			NINT1210

2364	4002		STD	ACC	1	LO 12 BITS		NINT1211
2365	2026		LDD	FRSTWD				NINT1212
366	0207		LPN	7				NINT1213
367	4001		STD	ACC		HI 3 BITS		NINT1214
2370	6220		PJR	BOC64B				NINT1215
2371	2001	BOC64D	LDD	ACC				NINT1216
372	6103		NZF	3				NINT1217
373	2002		LDD	ACC	1			NINT1218
2374	6014		ZJR	BOC64B		ZERO ACCUMULATOR		NINT1219
2375	2027		LDD	BOPCD		NO		NINT1220
2376	0765		SBN	65				NINT1221
377	6005		ZJR	BOC64A		INTEGER LOAD		NINT1222
400	2402		LCD	ACC	1	YES		NINT1223
2401	4002		STD	ACC	1			NINT1224
2402	0500		LCN	0				NINT1225
2403	6103		NZR	BOC64C				NINT1226
104	2200	BOC64A	LDC	4000				NINT1227
405	4000							
2406	1401	BOC64C	LSD	ACC		CHANGE ACC SIGN		NINT1228
2407	4001		STD	ACC				NINT1229
410	7101	BOC64B	JFI	1				NINT1230
411	0400			ARITH				NINT1231
	2352	BOC65	EQU	BOC64				NINT1232
	2352	BOC66	EQU	BOC64				NINT1233
2412	0400	BOC67	LON	0				NINT1234
113	4070	BOC67A	STD	BITFLP				NINT1235
414	0600		ADN	0				NINT1236
2415	7100		JPR	92SBA		LOAD ACC INDICATOR		NINT1237
2416	2554							
417	2017	BOC67D	LDD	OPER		COMPLEMENT OPER. IF NEG.		NINT1238
420	1470		LSD	BITFLP		CHANGE SIGN IF NECESSARY		NINT1239
2421	4017		STD	OPER				NINT1240
2422	2020		LDD	OPER	1			NINT1241
2423	1470		LSD	BITFLP				NINT1242
424	4020		STD	OPER	1			NINT1243
425	0425		LON	25				NINT1244
2426	7100		JPR	BHCDRV		GO TO MACRO SWITCHBOARD		NINT1245
2427	3024							
2430	2026		LDD	FRSTWD				NINT1246
431	0230		LPN	30				NINT1247
2432	6004		ZJF	BOC67B		JUMP FOR LOAD WORKING ACC		NINT1248
2433	0730		SBN	30				NINT1249
2434	6573		NZR	BOC52C		PSEUDO ACC STORAGE		NINT1250
435	6003		ZJR	BOC67C		LEAVE IN OPER. REGISTER		NINT1251
436	7100	BOC67B	JPR	BOPACC		OPER TO ACC		NINT1252
2437	3000							
2440	7101	BOC67C	JFI	1				NINT1253
2441	0400			ARITH				NINT1254
442	0500	BOC70	LCN	0		SET TO COMPL. OPERAND		NINT1255
2443	6530		NZR	BOC67A				NINT1256
2444	2124	BOC51	LDI	LOCC				NINT1257
2445	0220		LPN	20				NINT1258
446	6113		NZR	CONVST		CONVERT COMMAND		NINT1259
447	2124	BOC51A	LDI	LOCC		NO		NINT1260
2450	0114		RS1					NINT1261
2451	0115		RS2					NINT1262
2452	0201		LPN	1		0 FOR FLOAT -- 1 FOR INTEGER		NINT1263
453	0703		SBN	3				NINT1264
454	4071		STD	COUNT		SET NO. OF WORDS COUNT		NINT1265
2455	7100		JPR	92SBA		STORE OPERAND		NINT1266

2456	2554		JFI	1					
2457	7101								NINT1267
2460	0400				ARITH				NINT1268
2461	7100	CONVST	JPR		ACCOPR	ACC, TO OPER			NINT1269
2462	2766								
2463	2124		LDI		LOCC				NINT1270
2464	0114		RS1						NINT1271
2465	0115		RS2						NINT1272
2466	0201		LPN	1		0 FOR FLOAT -- 1 FOR INTEGEM			NINT1273
2467	0625		ADN	25					NINT1274
2470	7100		JPR		BHCDRV	GO TO MACRO SWITCHBOARD			NINT1275
2471	3024								
2472	7100		JPR		BOPACC				NINT1276
2473	3000								
2474	7101		JFI	1					NINT1277
2475	2447				BOC51A				NINT1278
			REM			BOOLEAN OPERATIONS			NINT1279
476	0400	BOC71	LDN	0		LOAD OPER OPTION			NINT1280
2477	7100		JPR		52SBA				NINT1281
2500	2554								
2501	2026	BOC71A	LDD		FRSTWD				NINT1282
302	0114		RS1						NINT1283
303	0115		RS2						NINT1284
2504	0203		LPN	3		OPTION BITS			NINT1285
2505	0770		SWN	70					NINT1286
2506	5027		RAD		BOPCD	CALCULATE REL. MACRO LOC.			NINT1287
307	7101		JFI	1					NINT1288
2510	0100				BOOLJ	TRANSFER TO BOOLEAN SWITCH			NINT1289
2511	2124	BOC72	LDI		LOCC				NINT1290
2512	4026		STD		FRSTWD	SAVE OPTION BITS			NINT1291
313	7100		JPR		ARTSBA	INCREMENT LOC. COUNTER			NINT1292
314	0520								
2515	7100	BOC72A	JPR		BSUBCY	LOCATION CALCULATION			NINT1293
2516	2165								
2517	0400		LDN	0					NINT1294
320	7100		JPR		75SUB	LOAD OPER OPTION			NINT1295
2521	2730								
2522	0501		LCN	1					NINT1296
2523	5027		RAD		BOPCD	REDUCE OP CODE			NINT1297
524	6523		NZR		BOC71A				NINT1298
325	0402	BOC73	LDN	2					NINT1299
2526	5027		RAD		BOPCD	INCREASE OP CODE			NINT1300
2527	2124		LDI		LOCC				NINT1301
2530	0210		LPN	10		OPERAND BIT			NINT1302
331	6433		ZJR		BOC71	JUMP FOR 2-WORD			NINT1303
332	6521		NZR		BOC72	JUMP FOR FUNC, ERASE			NINT1304
			REM			2-WORD COMMAND DECODING			NINT1305
2533	2161	52S88B	LDI		BWD12	LOAD OPERAND			NINT1306
2534	4017	52S88B	STD		OPER				NINT1307
335	5461		AOD		BWD12				NINT1308
2536	2161		LDI		BWD12				NINT1309
2537	4020		STD		OPER	1			NINT1310
2540	5461		AOD		BWD12				NINT1311
341	2161		LDI		BWD12				NINT1312
342	4021		STD		OPER	2			NINT1313
2543	2061	52S88B	LDD		BWD12	TERMINAL LOCATION			NINT1314
2544	0115		RS2						NINT1315
2545	6103		NZR		52SBAZ	LOCATION CHANGED BANKS			NINT1316
346	7101		JFI	1		YES			NINT1317
2547	2647				52S880				NINT1318

2550	2023	52SBAZ	LDD	BANK		NINT1319
2551	4201		STF	1		NINT1320
2552	0020		SICO		RESET BANK SETTING	NINT1321
2553	7101		JFI	1		NINT1322
2554	7700	52SBA	HLT		RETURN ADDRESS	NINT1323
2555	4030		STD	BOPSW		NINT1324
2556	2124		LDI	LOCC	1ST WORD LOCC.	NINT1325
2557	4026		STD	FRSTWD		NINT1326
2560	0207		LPN	7		NINT1327
2561	4060		STD	BWD11	BANK SETTING	NINT1328
2562	5424		AOD	LOCC	INCREASE LOCATION COUNTER	NINT1329
2563	6103		NZR	52SBAK	END OF BANK	NINT1330
2564	7100		JPR	ARTHSB	YES -- INCR, BANK SETTING	NINT1331
2565	0526					
2566	2124	52SBAK	LDI	LOCC	2ND WORD LOCC.	NINT1332
2567	4061		STD	BWD12	ABSOLUTE OPERAND LOCATION	NINT1333
2570	4057		STD	BWORD		NINT1334
2571	2026		LDD	FRSTWD		NINT1335
2572	0240		LPN	40		NINT1336
2573	6007		ZJR	52SBB		NINT1337
2574	2015		LDD	INDXRG	YES	NINT1338
2575	4062		STD	BWD21	I, R, M, 3 BITS	NINT1339
2576	2016		LDD	INDXRG	1	NINT1340
2577	4063		STD	BWD22	I, R, LO-12 BITS	NINT1341
2600	7100		JPR	QINTAD	15-BIT ADD ROUTINE	NINT1342
2601	0770					
2602	2060	52SBB	LDD	BWD11	BANK SETTING	NINT1343
2603	0620		ADN	20		NINT1344
2604	4201		STR	52SBB0		NINT1345
2605	0020	52SBB0	SICO		SET INDIRECT BANK	NINT1346
2606	2030		LDD	BOPSW	OPTION SWITCH	NINT1347
2607	6454		ZJR	52SBB0	JUMP FOR LOAD OPER OPTION	NINT1348
2610	6225		PJR	52SBB0	JUMP FOR LOAD ACC OPTION	NINT1349
2611	2200		LDF	0		NINT1350
2612	2001		LDD	ACC		NINT1351
2613	4201		STR	52SBB0	PRESET LOAD COMMAND	NINT1352
2614	2001	52SBB0	LDD	ACC	STORE	NINT1353
2615	4161		STI	BWD12		NINT1354
2616	5471		AOD	COUNT		NINT1355
2617	6447	52SBBY	ZJR	52SBAZ	MORE WORDS TO STORE	NINT1356
2620	5704		AOR	52SBB0	YES -- INCR, LOAD LOC	NINT1357
2621	2461		LDD	BWD12		NINT1358
2622	6006		ZJR	52SBB0	LOC, 7/77	NINT1359
2623	5461		AOD	BWD12	NO -- INCR. LOCATION	NINT1360
2624	6510		NZR	52SBB0	ZERO LOC.	NINT1361
2625	0500		LCN	0	YES	NINT1362
2626	4061		STD	BWD12	REPLACE WITH LOC, 1777	NINT1363
2627	6513		NZR	52SBB0		NINT1364
2630	4061	52SBB0	STD	BWD12	CHANGE 7777 TO 0000	NINT1365
2631	5724		AOR	52SBB0	INCREASE BANK SETTING	NINT1366
2632	4201		STF	1		NINT1367
2633	0020		SICO			NINT1368
2634	6520		NZR	52SBB0		NINT1369
2635	2161	52SBA	LDI	BWD12	LOAD ACCUMULATOR	NINT1370
2636	4001		STD	ACC		NINT1371
2637	5461		AOD	BWD12		NINT1372
2640	2161		LDI	BWD12		NINT1373
2641	4002		STD	ACC	1	NINT1374
2642	5461		AOD	BWD12		NINT1375
2643	2161		LDI	BWD12		NINT1376

2644	4003		STD	ACC	2				NINT1377
645	7101		JFI	1					NINT1378
646	2543			52SBBN					NINT1379
2647	2342	52SBB0	LDR	52SBB0					NINT1380
650	4207		STR	52SBBH			PRESET BANK SETTING		NINT1381
651	2430		LCD	BOPSW			0 FOR OPER, OPER-ACC FOR ACU		NINT1382
2652	3200	52SBB1	ADP	0					NINT1383
2653	4017		STD	OPER					NINT1384
654	4205		STR	52SBBJ			SET STORE COMMAND		NINT1385
655	0503		LCN	3					NINT1386
2656	4071		STD	COUNT					NINT1387
2657	0020	52SBBH	SIC0				SET INDIRECT BANK		NINT1388
2660	2157	52SBBK	LDI	BWORD			OPERAND		NINT1389
661	4017	52SBBJ	STD	OPER			TO REGISTER		NINT1390
662	5471		AOD	COUNT					NINT1391
2663	6444		ZJR	52SBBY			MORE WORDS TO STORE		NINT1392
2664	5703		AOR	52SBBJ			INCREMENT STORE ADDRESS		NINT1393
2665	2457		LCD	BWORD					NINT1394
666	6006		ZJR	52SBBL			LOC, 7777		NINT1395
2667	5457		AOD	BWORD			NO		NINT1396
2670	6510		NZR	52SBBK			LOC, 0000		NINT1397
2671	0500		LCN	0			YES		NINT1398
672	4057		STD	BWORD			CHANGE TO 7777		NINT1399
673	6513		NZR	52SBBK					NINT1400
2674	4057	52SBBL	STD	BWORD			ZERO LOCATION		NINT1401
2675	5716		AOR	52SBBH			INCREMENT BANK SWITCH		NINT1402
2676	6517		NZR	52SBBH					NINT1403
677	2124	BOC75	REM				3-WORD FUNCTION ERASABLE		NINT1404
2700	4026		LDI	LOCC					NINT1405
2701	0207		STD	FRSTWD			FIRST WORD OF COMMAND		NINT1406
2702	4060		LPN	7					NINT1407
703	7100		STD	BWD11			UPPER 3 BITS		NINT1408
2704	0520		JPR	ARTSBA			INCREMENT LOC, COUNTER		NINT1409
2705	2124	BOC75B	LDI	LOCC					NINT1410
2706	4061		STD	BWD12			LOWER 12 BITS		NINT1411
707	2026		LDD	FRSTWD					NINT1412
710	0220		LPN	20					NINT1413
2711	6007		ZJR	BOC75C			INDEX REGISTER NEEDED		NINT1414
2712	2015		LDD	INDXRG			YES		NINT1415
2713	4062		STD	BWD21			LOAD INDEX REG.		NINT1416
714	2016		LDD	INDXRG	1				NINT1417
2715	4063		STD	BWD22					NINT1418
2716	7100		JPR	BINTAD			15-BIT ADD		NINT1419
2717	0770								NINT1420
720	2060	BOC75C	LDD	BWD11			SHIFT REGISTERS		NINT1421
721	4220		STR	75SUBC					NINT1422
2722	2061		LDD	BWD12					NINT1423
2723	4221		STR	75SUBD					NINT1424
2724	5600		AOF	0			SET THREE WORD SWITCH		NINT1425
725	0000	75SHT		0					NINT1426
2726	7101		JFI	1					NINT1427
2727	0400			ARITH					NINT1428
2730	7700	75SUB	HLT				SAVE LOAD/STORE INDICATOR		NINT1429
2731	4030		STD	BOPSW					NINT1430
732	2305		LDR	75SHT					NINT1431
2733	6024		ZJR	75SUBA			3-WORD COMMAND		NINT1432
2734	0420		LDN	20					NINT1433
2735	5060		RAD	BWD11			FUNC, ERASE N BANK SETTING		NINT1434
736	4201		STF	75SUBB					NINT1435

2737	0020	72SUBB	SIC0						NIN-1435
740	2200		LDF	0					NIN-1436
741	0000	72SUBC							NIN-1437
2742	4062		STD	BWD21					NIN-1438
2743	2200		LDF	0					NIN-1439
2744	0000	72SUBD							NIN-1440
745	4063		STD	BWD22					NIN-1441
746	2161		LDI	BWD12					NIN-1442
2747	4060		STD	BWD11					NIN-1443
2750	5461		ADD	BWD12					NIN-1444
751	2181		LDI	BWD12					NIN-1445
752	4061		STD	BWD12					NIN-1446
2753	7100		JPR	BINYAD			YES -- 15-BIT ADD		NIN-1447
2754	0770								
2755	0400		LDN	0					NIN-1448
756	4331		STR	75SMT			RESET 3-WORD SWITCH		NIN-1449
757	0020	72SUBA	SIC0						NIN-1450
2760	2330		LDR	75SUB					NIN-1451
2761	4100		STM	52SBA			SET RETURN ADDRESS		NIN-1452
2762	2554								
763	7101		JFI	1					NIN-1453
2764	2602			52SBB					NIN-1454
			REM				ACC TO OPERAND		NIN-1455
2765	7101	ACCPA	JFI	1					NIN-1456
766	7700	ACCOPR	HMT				RETURN ADDRESS		NIN-1457
767	2001		LDD	ACC			STORE ACCUMULATOR		NIN-1458
2770	4017		STD	OPER			IN OPERAND		NIN-1459
2771	2002		LDD	ACC	1				NIN-1460
2772	4020		STD	OPER	1				NIN-1461
773	2003		LDD	ACC	2				NIN-1462
774	4021		STD	OPER	2				NIN-1463
2775	7101		JFI	1					NIN-1464
2776	2765			ACCPA					NIN-1465
			REM				OPER TO ACC		NIN-1466
777	7101	BOPACZ	JFI	1					NIN-1467
3000	7700	BOPACC	HMT				RETURN ADDRESS		NIN-1468
3001	2017		LDD	OPER			OPER TO ACC		NIN-1469
3002	4001		STD	ACC					NIN-1470
003	2020		LDD	OPER	1				NIN-1471
004	4002		STD	ACC	1				NIN-1472
3005	2021		LDD	OPER	2				NIN-1473
3006	4003		STD	ACC	2				NIN-1474
007	7101		JFI	1					NIN-1475
010	2777			BOPACZ			EXIT		NIN-1476
			REM				F.E.O CALCULATION		NIN-1477
3011	0620	FEZROA	ADN	20			BANK OF F.E. 0		NIN-1478
3012	4023		STD	BANK					NIN-1479
013	4201		STF	1					NIN-1480
014	0020		SIC0				SET INDIRECT BANK		NIN-1481
3015	2032		LDD	ERSLOC	1		ABS, ADDRESS OF F.E.0		NIN-1482
3016	4024		STD	LOCC					NIN-1483
3017	7101		JFI	1					NIN-1484
020	7700	FEZRO	HMT				RETURN ADDRESS		NIN-1485
3021	2031		LDD	ERSLOC					NIN-1486
3022	6611		PJR	FEZROA					NIN-1487
3023	7101	BMCVYZ	JFI	1					NIN-1488
024	7700	BMCQRV	HMT				RETURN ADDRESS		NIN-1489
025	7100		JPR	BMACSW			GO TO MACRO SWITCHBOARD		NIN-1490
3026	0555								
3027	2023		LDD	BANK					NIN-1491



3030	4201		STF	1				NINT1492
031	0020		SIC0		RESET	INDIRECT	BANK	NINT1493
032	6507		NZR	8MCDVZ				NINT1494
			REM		INCR	MACRO-FORMAT	IS	NINT1495
			REM		TRM	INCR		NINT1496
			REM				1, M4*(M1-M2)/M3	NINT1497
			REM				2.	NINT1498
			REM				1, M3	NINT1499
			REM				2.	NINT1500
			REM		SICB(Z),	SICB(I)		NINT1501
			REM			A(I)		NINT1502
			REM			A(Z)		NINT1503
3033	0406	ENDING	LDN	6				NINT1504
3034	5024		RAD	LOCC				NINT1505
3035	0706		SBN	6				NINT1506
036	1424		SCD	LOCC				NINT1507
037	0201		LPN	1				NINT1508
3040	6002		ZJF	2				NINT1509
3041	5423		AOD	BANK	LENGTH IS 163 OCTAL			NINT1510
042	7101		JFI	1	TIMING IS (EXCLUDING SWITCHBOARD)			NINT1511
043	0400			ARITH	812, 80, MICROSECONDS			NINT1512
3044	5424	INCR	AOD	LOCC				NINT1513
3045	6104		NZF	4	GET THE FIRST WORD OF M4			NINT1514
3046	5423		AOD	BANK				NINT1515
047	4201		STF	1				NINT1516
050	0027		SIC7					NINT1517
3051	2023		LDD	BANK				NINT1518
3052	4225		STF	1STBNK				NINT1519
053	2124		LDI	LOCC	POSITIVE TEST ON FIRST WORD			NINT1520
054	6621		PJB	ENDING				NINT1521
055	5424		AOD	LOCC				NINT1522
3056	6105		NZF	3				NINT1523
3057	0500		LCN	0	REPLACE			NINT1524
060	4024		STD	LOCC	REPLACE			NINT1525
061	5616		AOF	1STBNK	REPLACE			NINT1526
3062	5423		AOD	BANK				NINT1527
3063	5524		AOF	LOCC	INCREASE 2ND WORD BY 1			NINT1528
3064	6313		NJF	1STBNK	IF 1 THIS WAS A MULT OF 2048			NINT1529
065	3200		ADC	3777	IF 0 SET UP FOR NEXT 2848			NINT1530
066	3777							NINT1531
3067	4124		STI	LOCC				NINT1532
3070	2024		LDD	LOCC				NINT1533
071	0701		SBN	1				NINT1534
072	4057		STD	TEMP1				NINT1535
3073	5557		AOF	TEMP1	INCREASE 1ST WORD BY 1			NINT1536
3074	6103		NZF	1STBNK				NINT1537
3075	0500		LCN	0	IF FIRST WORD WAS 1776 SET			NINT1538
076	4157		STI	TEMP1	IT TO 7777			NINT1539
077	0027	1STBNK	SIC7		INSERT			NINT1540
3100	5424	M3LOAD	AOD	LOCC				NINT1541
3101	6104		NZF	4	MOVE M3 TO LOCATIONS			NINT1542
3102	5423		AOD	BANK	TEMP1, TEMP2			NINT1543
103	4201		STF	1				NINT1544
3104	0027		SIC7					NINT1545
3105	2124		LDI	LOCC				NINT1546
3106	4057		STD	TEMP1				NINT1547
107	5424		AOD	LOCC				NINT1548
110	6103		NZF	3				NINT1549
3111	0500		LCN	0	REPLACE			NINT1550
3112	4024		STD	LOCC	REPLACE			NINT1550

3113	2124		LDI	LOCC		NINT1551
3114	4060		STD	TEMP2		NINT1552
115	5424		AOD	LOCC		NINT1553
116	6003		ZJF	3		NINT1554
3117	0701		SHN	1		NINT1555
3120	6104		NZF	4		NINT1556
121	5423		AOD	BANK		NINT1557
22	4201		STF	1		NINT1558
123	0027		SIC7			NINT1559
3124	2124		LDI	LOCC		NINT1560
3125	4061		STD	TEMP3		NINT1561
126	0227		LPN	27		NINT1562
127	4253		STF	1BANK	SET BANK OF FIRST WORD	NINT1563
3130	5424		AOD	LOCC		NINT1564
3131	6104		NZF	4		NINT1565
3132	5423		AOD	BANK		NINT1566
133	4201		STF	1		NINT1567
134	0027		SIC7			NINT1568
3135	2124		LDI	LOCC		NINT1569
3136	4062		STD	TEMP4	GET ADDRESS OF 1	NINT1570
137	2061		LDD	TEMP3		NINT1571
140	6214		PJF	10K		NINT1572
3141	2062		LDD	TEMP4		NINT1573
3142	0102		LS1			NINT1574
3143	5062		RAD	TEMP4	MULT BY 3 TO GET ERASABLE	NINT1575
144	3032		ADD	ERSLOC	+1	NINT1576
145	1432		SCD	ERSLOC	+1	NINT1577
3146	1462		SCD	TEMP4		NINT1578
3147	0201		LPN	1		NINT1579
3150	3031		ADD	ERSLOC		NINT1580
51	5231		RAF	1BANK		NINT1581
152	2032		LDD	ERSLOC	+1	NINT1582
3153	5062		RAD	TEMP4		NINT1583
3154	2226	10K	LDF	1BANK		NINT1584
155	4214		STF	2BANK		NINT1585
156	2462		LCD	TEMP4		NINT1586
3157	6104		NZF	4		NINT1587
3160	4063		STD	TEMP5	ADDRESS OF 2ND WORD	NINT1588
3161	5610		AOF	2BANK		NINT1589
162	6106		NZF	INCR1		NINT1590
163	2062		LDD	TEMP4		NINT1591
3164	0601		ADN	1		NINT1592
3165	6102		NZF	2		NINT1593
166	0500		LCN	0		NINT1594
167	4063		STD	TEMP5		NINT1595
3170	2060	INCR1	LDD	TEMP2		NINT1596
3171	0027	2BANK	SIC7			NINT1597
3172	5163		RAI	TEMP5		NINT1598
173	6205		PJF	2WORD		NINT1599
174	1200		LPC	3777		NINT1600
3175	3777					
3176	4163		STI	TEMP5		NINT1601
177	5457		AOD	TEMP1		NINT1602
180	2057	2WORD	LDD	TEMP1		NINT1603
3201	6003		ZJF	GOTOZ		NINT1604
3202	0027	1BANK	SIC7			NINT1605
3203	5162		RAI	TEMP4		NINT1606
204	5424	GOTOZ	AOD	LOCC		NINT1607
205	6102		NZF	2		NINT1608
3206	5423		AOD	BANK		NINT1609

3207	2023		LDD	BANK					NINT1610
210	4201		STF	1					NINT1611
211	0027		SIC7						NINT1612
212	2124		LDD	LOCC					NINT1613
3213	4024		STD	LOCC					NINT1614
3214	2061		LDD	TEMP3					NINT1615
215	0111		LS6						NINT1616
216	0227		LPN	27					NINT1617
3217	4023		STD	BANK					NINT1618
3220	4201		STF	1					NINT1619
221	0027		SIC7						NINT1620
222	7101		JFI	1					NINT1621
223	0411			ARITHA					NINT1622
3224	7100	RETURN	REM		RETURN MACRO				NINT1623
225	3020		JPR	FEZRO	CALCULATE ERASE LOG.				NINT1624
226	7101		JFI	1					NINT1625
3227	1404			80C76C	GO TO ROUTINE				NINT1626
					INTEGER ADD 21 AUGUST				NINT1627
3230	2417	VISUB	REM	OP					NINT1628
231	4017		LDD	OPJ					NINT1629
232	2420		STD	OP	1				NINT1630
3233	4020		STD	OPJ	1				NINT1631
3234	2017	VADD	LDD	OP	INTEGER ADD				NINT1632
235	5001		RAD	ACCJ					NINT1633
236	2002		LDD	ACCJ	1				NINT1634
3237	1420		LSD	OP	1				NINT1635
3240	6320		NJF	VSUBT	DO SUBTRACTION				NINT1636
3241	2020	VADDRT	LDD	OP	ADD ROUTINE				NINT1637
242	5002		RAD	ACCJ	1				NINT1638
243	1420		LSD	OP	1				NINT1639
3244	6213		PJF	VTSTOV	NO CARRY				NINT1640
3245	2002		LDD	ACCJ	1	CORRECT SIGN OF LOW ORDER			NINT1641
3246	1600		LSF	0					NINT1642
247	4000	V4TH		4000					NINT1643
3250	4002		STD	ACCJ	1				NINT1644
3251	2001		LDD	ACCJ					NINT1645
3252	6303		NJF	3					NINT1646
253	5401		AOD	ACCJ					NINT1647
254	6103		NZF	VTSTOV					NINT1648
3255	0701		SNB	1					NINT1649
3256	4001		STD	ACCJ					NINT1650
3257	7154	VTSTOV	JFI	VADXT1					NINT1651
260	2020	VSUBT	LDD	OP	1	SUBTRACT			NINT1652
261	5002		RAD	ACCJ	1				NINT1653
3262	1401		LSD	ACCJ					NINT1654
3263	6604		PJB	VTSTOV	EXIT				NINT1655
264	2002		LDD	ACCJ	1				NINT1656
265	6104		NZF	4					NINT1657
3266	0500		LCN	0	PUT IN NEGATIVE ZERO				NINT1658
3267	4002		STD	ACCJ	1				NINT1659
3270	6711		NJB	VTSTOV	EXIT				NINT1660
271	2001		LDD	ACCJ					NINT1661
272	6104		NZF	VNZHI					NINT1662
3273	0500		LCN	0					NINT1663
3274	4001		STD	ACCJ					NINT1664
3275	6716		NJB	VTSTOV	EXIT				NINT1665
276	6310	VNZHI	NJF	VNEGRE					NINT1666
3277	0701		SNB	1	POSITIVE RESULT				NINT1667
3300	4001		STD	ACCJ					NINT1668

3301	2002		LDD	ACCJ	1	LOW ORDER NEVER 7737	NINT1669
3302	1733		LSB	V4TH			NINT1670
303	0601		AUN	1			NINT1671
304	4002		STD	ACCJ	1		NINT1672
3305	7126		JFI	VADXT1			NINT1673
3306	0601	VNEGRE	ADN	1		NEG RESULT	NINT1674
3307	4001		STD	ACCJ			NINT1675
310	6103		NZF	3			NINT1676
3311	0500		LON	0			NINT1677
3312	4001		STD	ACCJ			NINT1678
3313	2002		LDD	ACCJ	1		NINT1679
314	0701		SNB	1			NINT1680
315	1746		LSB	V4TH			NINT1681
3316	4002		STD	ACCJ	1		NINT1682
3317	7114		JFI	VADXT1			NINT1683
			REM			INTEGER MULTIPLY 21 AUGUST	NINT1684
320	2262	VXT	LDR	VISION			NINT1685
3321	6211		PJF	VADXT1	-1		NINT1686
3322	2001		LDD	ACC			NINT1687
3323	6103		NZF	3		CHECK FOR ZERO TO PREVENT	NINT1688
3324	2002		LDD	ACC	1	MINUS ZERO	NINT1689
325	6005		ZJF	VADXT1	-1		NINT1690
3326	2401		LCD	ACCJ			NINT1691
3327	4001		STD	ACCJ			NINT1692
3330	2402		LDD	ACCJ	1		NINT1693
331	4002		STD	ACCJ	1		NINT1694
332	7101		JFI	1			NINT1695
3333	0554	VADXT1		BHCRET			NINT1696
3334	2001	VINTML	LDD	ACCJ			NINT1697
3335	1417		LSD	OP			NINT1698
336	4244		STR	VISION			NINT1699
3337	6210		PJF	VSAME			NINT1700
3340	2001		LDD	ACCJ		SIGNS DIFFER	NINT1701
3341	6214		PJF	VXOP			NINT1702
342	2402		LCD	ACCJ	1		NINT1703
343	4002		STD	ACCJ	1		NINT1704
3344	2401		LCD	ACCJ		NEGATIVE ACC	NINT1705
3345	4001		STD	ACCJ			NINT1706
3346	6213		PJR	VFINHR			NINT1707
347	2001	VSAME	LDD	ACCJ			NINT1708
3350	6211		PJR	VFINHR			NINT1709
3351	2402		LCD	ACCJ	1	FLIP ACC	NINT1710
3352	4002		STD	ACCJ	1		NINT1711
3353	2401		LCD	ACCJ			NINT1712
354	4001		STD	ACCJ			NINT1713
3355	2417	VXOP	LCD	OP		FLIP OP	NINT1714
3356	4017		STD	OP			NINT1715
3357	2420		LCD	OP	1		NINT1716
360	4020		STD	OP	1		NINT1717
3361	2001	VFINMR	LDD	ACCJ		FIND MULTIPLIER	NINT1718
3362	6024		ZJF	VSAVR			NINT1719
3363	4221		STR	VM1			NINT1720
3364	2017		LDD	OP			NINT1721
365	6005		ZJF	VLDC			NINT1722
3366	0020	VXTQ	SICO				NINT1723
3367	4100		STM	OVFLW		FLAG OVERFLOW	NINT1724
3370	0644						
3371	6551		NZR	VXT			NINT1725
372	2002	VLDC	LDD	ACCJ	1		NINT1726
3373	4210		STR	VM2			NINT1727

3374	2020		LDD	OP	1			NIN+1728
3375	6117		NZF	VSMO				NIN+1729
3376	0400	VZERO	LDN	0				NIN+1730
3377	4001		STD	ACCJ				NIN+1731
3400	4002		STD	ACCJ	1			NIN+1732
3401	6447		ZJR	VADXT1	-1			NIN+1733
3402	0000	VISIGN						NIN+1734
3403	0000	VM2						NIN+1735
3404	0000	VM1						NIN+1736
3405	0000	VHLTR						NIN+1737
3406	2017	VSAVR	LDD	OP				NIN+1738
3407	4303		STR	VM1				NIN+1739
3410	2020		LDD	OP	1			NIN+1740
3411	4306		STR	VM2				NIN+1741
3412	2002		LDD	ACCJ	1			NIN+1742
3413	6415		ZJB	VZERO				NIN+1743
3414	4307	VSMO	STR	VHLTR				NIN+1744
3415	0400		LDN	0				NIN+1745
3416	4001		STD	ACCJ				NIN+1746
3417	4002		STD	ACCJ	1			NIN+1747
3420	2313		LDR	VHLTR				NIN+1748
3421	6107		NZF	VFIN				NIN+1749
3422	2315	VSTAR	LDR	VHLTR			SHIFT MULTIPLIER	NIN+1750
3423	0114		R51					NIN+1751
3424	6103		NZF	3				NIN+1752
3425	7101		JFI	1			END OF MULTIPLY	NIN+1753
3426	3320			VXT				NIN+1754
3427	4322		STR	VHLTR				NIN+1755
3430	0201	VFIN	LDN	1				NIN+1756
3431	6011		ZJF	VDM				NIN+1757
3432	2327		LDR	VM2				NIN+1758
3433	5002		RAD	ACCJ	1			NIN+1759
3434	6204		PJF	VNOO				NIN+1760
3435	1211		LPP	VJ777				NIN+1761
3436	4002		STD	ACCJ	1			NIN+1762
3437	5401		AOD	ACCJ				NIN+1763
3440	2334	VNOO	LDR	VM1				NIN+1764
3441	5001		RAD	ACCJ				NIN+1765
3442	4736	VDM	SRR	VM1			DOUBLE MULTIPLICAND	NIN+1766
3443	4740		SRR	VM2				NIN+1767
3444	6622		PJB	VSTAR				NIN+1768
3445	1200		LPP	0				NIN+1769
3446	3777	VJ777		3777				NIN+1770
3447	4344		STB	VM2				NIN+1771
3450	5744		AOR	VM1				NIN+1772
3451	6627		PJB	VSTAR				NIN+1773
3452	6764		NJR	VXT0				NIN+1774
3453	0020	VINTDV	REM				INTEGER DIVIDE	NIN+1775
3454	2100		SIC0					NIN+1776
3455	0555		LDM	0HACSM				NIN+1777
3456	4273		STR	VDIVEX				NIN+1778
3457	2001		LDD	ACC.			DETERMINE SIGN OF ANSWER.	NIN+1779
3460	1417		LSD	OP				NIN+1780
3461	4244		STR	SDIGN				NIN+1781
3462	2001		LDD	ACC				NIN+1782
3463	6202		PJF	2				NIN+1783
3464	2401		LCD	ACC			FLIP ACC TO OBTAIN MAGNITUDE	NIN+1784
3465	4234		STR	VJ3				NIN+1785
3466	2002		LDD	ACC	1			NIN+1786

3467	6202	PJF	2			NINT1787
3470	2402	LCD	ACC	1		NINT1788
171	4231	STR	VJ4			NINT1789
472	2017	LDD	OP			NINT1790
3473	6107	NZF	VTSNEG			NINT1791
3474	2020	LDD	OP	1		NINT1792
475	6105	NZF	VTSNEG			NINT1793
76	0401	LDN	1			NINT1794
3477	4100	SYM	DVFLT		FLAG DIVIDE CHECK	NINT1795
3500	0652					
3501	6127	NZR	VENDIV			NINT1796
502	6305	VTSNEG NJF	5			NINT1797
503	2417	LCD	OP		MAKE OPERAND NEGATIVE	NINT1798
3504	4017	STD	OP			NINT1799
3505	2420	LCD	OP	1		NINT1800
3506	4020	STD	OP	1		NINT1801
507	0400	LDN	0		INITIALIZE	NINT1802
3510	4001	STD	ACC			NINT1803
3511	4002	STD	ACC	1		NINT1804
3512	4214	STR	XSACCJ			NINT1805
513	4214	STR	XSACCJ	1		NINT1806
514	2200	LDC	XSACCJ			NINT1807
3515	3526					
3516	4076	STD	VQOO		FLAG HIGH OR LOW PART OF QUOTIENT	NINT1808
3517	6174	NZR	VFIRS			NINT1809
520	0000	VQOOB			KEEPER OF CURRENT QUOTIENT BIT	NINT1810
521	0000	VJ3				NINT1811
3522	0000	VJ4				NINT1812
3523	4000	4TH	4000			NINT1813
524	2000	2TH	2000			NINT1814
525	0000	SDIGN				NINT1815
3526	0000	XSACCJ	BSS	2		NINT1816
3530	2002	VENDIV LDD	ACC	1	SAVE LOWER PART OF REMAINDER	NINT1817
3531	4022	STD	OP	3		NINT1818
532	2305	LDR	SDIGN			NINT1819
533	6211	PJF	VMV			NINT1820
3534	2306	LDR	XSACCJ			NINT1821
3535	6103	NZF	3			NINT1822
3536	2307	LDR	XSACCJ	1		NINT1823
537	6005	ZJF	VMV			NINT1824
3540	2712	LDR	XSACCJ			NINT1825
3541	4001	STD	ACC			NINT1826
3542	2713	LDR	XSACCJ	1		NINT1827
543	6104	NZF	4			NINT1828
544	2316	VMV LDR	XSACCJ			NINT1829
3545	4001	STD	ACC			NINT1830
3546	2317	LDR	XSACCJ	1		NINT1831
3547	4002	STD	ACC	1		NINT1832
550	7101	JFI	1			NINT1833
3551	7777	VDIVEX	7777			NINT1834
3552	4401	SHIFTY SRD	ACCJ		FOUR WORD LEFT SHIFT OF DIVIDEND	NINT1835
3553	4402	SRD	ACCJ	1		NINT1836
3554	1731	LSR	4TH			NINT1837
555	6303	NJF	3			NINT1838
3556	4002	STD	ACCJ	1		NINT1839
3557	5401	AOD	ACCJ			NINT1840
3560	4737	SHR	VJ3			NINT1841
561	1736	LSR	4TH			NINT1842
562	6303	NJF	3			NINT1843
3563	4342	STR	VJ3			NINT1844

3564	5402		ADD	ACCJ	1		NIN71845
3565	4743		SRR	VJ4			NIN71846
3566	1743		LSR	4TH			NIN71847
3567	6303		NJF	3			NIN71848
3570	4346		STR	VJ4			NIN71849
3571	5750		AOR	VJ3			NIN71850
572	2001	VCOMP	LDD	ACCJ		COMPARE NEW DIVIDEND AND DIVISOR	NIN71851
573	3017		AUD	OP			NIN71852
3574	6307		NJR	VMOVO		DIVIDEND LESS THAN DIVISOR	NIN71853
3575	6020		ZJF	VEQHI			NIN71854
576	0420	VDIFER	LDN	XVAD			NIN71855
577	7100		JPR	BHACSW			NIN71856
3600	0555						
3601	2361	VUQUO	LDR	VQUOB		ENTER A 1 BIT IN QUOTIENT	NIN71857
3602	5176		RAI	VQUO			NIN71858
603	2363	VMOVO	LDR	VQUOB		RIGHT SHIFT QUOTIENT BIT KEEPER	NIN71859
504	0114		RS1				NIN71860
3605	4365	VSTOB	STR	VQUOB			NIN71861
3606	6534		NZR	SHIFY			NIN71862
3607	5476	VNXBIT	AOD	VQUO		OP STORAGE OF QUOTIENT	NIN71863
510	3600		SBC	XSACCJ	2		NIN71864
611	3530						
3612	6462		ZJR	VENDIV		END OF DIVIDE	NIN71865
3613	2367	VFIRS	LDR	2TH			NIN71866
614	6507		NZB	VSTOB			NIN71867
515	2002	VEQHI	LDD	ACCJ	1		NIN71868
3616	3020		ADD	OP	1		NIN71869
3617	6714		NJR	VMOVO			NIN71870
3620	6622		PJR	VDIFER			NIN71871
521	0200	SBUFP		SBUFAD		170 PARAMETER LIST	NIN71872
622	0000	UNIT				TAPE UNIT NUMBER	NIN71873
3623	0000	SLENG				LENGTH OF RECORD	NIN71874
3624	7101	SEL					NIN71875
3625	0000	SELLOC	JFI	1		UP LOCC AND SET BNK CORRECTLY	NIN71876
526	5424		AOD	LOCC			NIN71877
3627	6102		NZF	2			NIN71878
3630	5423		AUD	BNK			NIN71879
3631	2023		LDD	BNK			NIN71880
632	4201		STF	1			NIN71881
633	0000			0			NIN71882
3634	6510		NZB	SEL			NIN71883
3635	0000		ERR			PARITY ERROR ON BINARY READ, RERUN	NIN71884
3636	6134	SHVTAP	NZF	RWEOF			NIN71885
537	0501		LCN	1		BACKSPACE	NIN71886
640	7100		JPR	STRANS		BACKSPACE ONE RECORD	NIN71887
3641	4065						
3642	5437		AOD	SBUF		SIGNAL READ	NIN71888
643	7100		JPR	STRANS		READ ONE RECORD TO FIND MODE	NIN71889
544	4065						
3645	6312		NJF	SBCDBK		BCD RECORD ENCOUNTERED	NIN71890
3646	6003		ZJF	3			NIN71891
3647	7101		JFI	1			NIN71892
650	4226			SBERR			NIN71893
651	2137		LDI	SBUF		BINARY RECORD, FIND NUMBER OF RECORDS	NIN71894
3652	0115		RS2				NIN71895
3653	0115		RS2				NIN71896
3654	1600		LSF	0			NIN71897
655	7777			7777			NIN71898
3656	7123		JFI	SBTXR			NIN71899
3657	2100	SBCDBK	LDM	SBUFAD	1		NIN71900





3754	0110	LS3				NIN†195
3755	0207	LPN	7			NIN†195
756	4100	STI	0	FLAG TAPE UNIT		NIN†195
757	3622		UNIT	MUST BE IN FIXED CORE		NIN†195
3760	2200	SPLUG	LDF	0		NIN†195
3761	7053	JPI	SWTCON			NIN†196
3762	4100	STI	0	PLUG ARITH SWITCHBOARD		NIN†196
763	0414		SWTB			NIN†196
3764	2200	LDF	0			NIN†196
3765	4074		SWINT			NIN†196
3766	4053	STD	SWTCON			NIN†196
767	0400	LDN	0	INITIALIZATION		NIN†196
770	4046	STD	SFORMF			NIN†196
3771	4100	STM	SDATRY			NIN†196
3772	4071					NIN†196
3773	4044	STD	SREP1			NIN†196
774	4005	STD	SHFLAQ			NIN†197
3775	4047	STD	SPARCT			NIN†197
3776	4045	STD	SIF			NIN†197
3777	4273	STR	STSMT			NIN†197
000	4273	STR	SLDSWT			NIN†197
001	2200	LDF	0			NIN†197
4002	0200		SBUFAD			NIN†197
4003	4037	STD	SBUF			NIN†197
4004	4004	STD	SEOF			NIN†197
005	2200	LDF	0			NIN†197
006	2525		2525			NIN†198
4007	4050	STD	SQUIK			NIN†198
4010	7100	JPR	SELOCC			NIN†198
011	3625					NIN†198
012	2124	LDI	LOCC			NIN†198
4013	4055	STD	FLOCC			NIN†198
4014	4035	STD	ZLOCC			NIN†198
4015	2052	LDD	SBINSH			NIN†198
016	6765	NJR	SBINRR			NIN†198
017	2040	LDD	SWAY			NIN†198
4020	6204	PJF	SIOX			NIN†198
4021	0400	LDN	0			NIN†199
4022	7100	JPR	STRANS			NIN†199
023	4065					NIN†199
024	7101	SIOX	JFI	1		NIN†199
4025	0400					NIN†199
4026	0000	TROUTE	ARITH	NUMBER OF SUBROUTINE		NIN†199
				CONNECTOR TO I/O SUBROUTINES		NIN†199
027	2037	REB	SBUF			NIN†199
4030	3604	LDD	SBUF10			NIN†199
4031	6107	SHR	STLNG			NIN†199
4032	0420	NZF	20			NIN†199
033	4100	LDN	0			NIN†199
034	0200	STI	0	BEGINNING OF BUFFER		NIN†200
4035	4100	SBUF10	SBUFAD			NIN†200
4036	0201	STM	SBUFAD	1		NIN†200
037	0402					NIN†200
040	4100	LDN	2			NIN†200
4041	3623	STLNG	STN	FLAG BUFFER LENGTH (MAYBE PSEUDO)		NIN†200
4042	2506					NIN†200
4043	4037	LDB	SBUF10	RESET BUFFER TO START		NIN†200
044	2316	STD	SBUF			NIN†200
045	0677	LDR	TROUTE			NIN†200
4046	4076	SWASER	ADN	77		NIN†200
		SETJMP	STD	STEM		NIN†200

4047	2200		LDF	0	LOCATION OF PARAMETER	NIN72010
4050	3621			SBUFF	LIST TO 77	NIN72011
51	4077		STD	77		NIN72012
52	0101		PTA		RETURN ADDRESS	NIN72013
4053	0611		ADN	11	TO 75	NIN72014
4054	4075		STD	75		NIN72015
4055	2176		LDI	STEM	BANK 0 IF EVEN	NIN72016
56	0201		LPN	1	BANK 1 IF ODD	NIN72017
57	0610		ADN	10	CONSTRUCT BANK JUMP	NIN72018
4060	4202		STF	SJUMP		NIN72019
4061	2176		LUI	STEM	LOCATION OF I/O ROUTINE	NIN72020
62	0010	SJUMP	SRJ0			NIN72021
63	2077		LDD	77	RETURN HERE. PUT ANYTHING	NIN72022
			REM		WHICH SHOULD BE IN A	NIN72023
			REM		IN LOC. 77	NIN72024
4064	7101		JFI	1	ENTRY FOR TRANSMITTING RECORD, - SETS	NIN72025
65	0000	STRANS			PSEUDO LENGTH, + ORDINARY READ OR WRITE	NIN72026
66	0020		SIC0			NIN72027
4067	6727		NJB	STLNG		NIN72028
4070	6641		PJB	SBUFF		NIN72029
71	0000	SDATRY				NIN72030
72	0000	STSWT				NIN72031
73	0000	SLDSWT				NIN72032
4074	4027	SWINT	REM		ARITH SWITCHBOARD INTERRUPT	NIN72033
75	0775		STD	SBOPC	OR CODE	NIN72034
76	6065		SBN	75	3 WORD IDENTIFIER	NIN72035
4077	2027		ZJF	SLDXT	GO TO NEXT SWITCHBOARD INTERRUPT	NIN72036
4100	0724		LDD	SBOPC		NIN72037
101	6003		SBN	24	STORE ERASE, 24	NIN72038
02	0725		ZJR	STINT		NIN72039
103	6117		SBN	25	NORMAL STORE, 25	NIN72040
4104	4311	STINT	NZR	STLDM		NIN72041
4105	2040		STR	SLDSMT		NIN72042
106	6234		LDD	SWAY		NIN72043
07	5715		PJR	SMTBR	NO DATA CALLED FOR	NIN72044
4110	6032		AQR	STSWT	TEST + CLEAR ST DISABLE	NIN72045
4111	2004		ZJR	SMTBR	NO DATA, STORE CANCELLED	NIN72046
4112	6005		LDD	SEOF	NO DATA, STORE CANCELLED	NIN72047
113	2045		ZJF	5		NIN72048
114	6003		LDD	SIF	FIRST ENTRY TO 23, NO FORM! YET	NIN72049
4115	7100		ZJF	3		NIN72050
4116	4065		JPR	STRANS		NIN72051
117	0501	SDATC	LCN	1	FLAG DATA COMMAND ENCOUNTERED	NIN72052
20	4327		STR	SDATRY		NIN72053
4121	6325		NJR	SGOFOR		NIN72054
4122	0401	STLDM	LUN	1		NIN72055
4123	4331		STR	STSWT		NIN72056
124	2331		LDR	SLDSMT		NIN72057
125	6005		ZJF	TSTLDD		NIN72058
4126	2004	SLOAD	LDD	SEOF		NIN72059
4127	6117		NZF	SGOFOR		NIN72060
4130	4335		STR	SLDSMT		NIN72061
31	6412		ZJR	SDATC		NIN72062
4132	2027	TSTLDD	LDD	SBOPC		NIN72063
4133	0732		SBN	32	LOAD ERASE, 32	NIN72064
4134	6003		ZJF	SLDSET		NIN72065
135	0732		SBN	32	LD, 64	NIN72066
136	6104		NZF	SMTBR	NO DATA	NIN72067
4137	0501	SLDSET	LCN	1		NIN72068

4140	4345		STR	SLDSWT	SET LD SWITCH	NIN72069
4141	4347		STR	STSWT		NIN72070
4142	2046	SMTBR	LDD	SFORMF		NIN72071
4143	6320		NJF	SLDEXT		NIN72072
4144	2044		LDD	SREP1		NIN72073
4145	6316		NJF	SLDEXT		NIN72074
4146	2052	SGOFOR	LDD	SBINSH		NIN72075
4147	6343		NJR	SBIN		NIN72076
4150	2200		LDF	0		NIN72077
4151	7103		JFI	3		NIN72078
4152	4077		STD	77		NIN72079
4153	7101		JFI	1		NIN72080
4154	0077			77		NIN72081
4155	5764	SHTRTN	AOR	SDATRY		NIN72082
4156	6104		NZF	4		NIN72083
4157	7100		JPR	STRANS		NIN72084
4160	4065					
4161	4201		STP	1		NIN72085
4162	5446		AOD	SFORMF		NIN72086
4163	2023	SLDEXT	LDD	BNK		NIN72087
4164	4201		STP	1		NIN72088
4165	0000			0		NIN72089
4166	2027		LDD	SBOPC		NIN72090
4167	7101		JFI	1		NIN72091
4170	0415			SMTB 1		NIN72092
4171	0020	IOT	SICO			NIN72093
4172	2052		LDD	SBINSH	SECOND ENTRY TO I O CONTROL	NIN72094
4173	6376		NJR	SBINTR		NIN72095
4174	2040		LDD	SWAY		NIN72096
4175	6307		NJF	SCOMEX		NIN72097
4176	2037		LDD	SBUF		NIN72098
4177	3600		SBF	0		NIN72099
4200	0200			SBUFAD		NIN72100
4201	6003		ZJF	SCOMEX		NIN72101
4202	7100		JPR	STRANS		NIN72102
4203	4065					
4204	2200	SCOMEX	LDF	0		NIN72103
4205	4027		STD	SBOPC		NIN72104
4206	4100		STI	0		NIN72105
4207	0414			SMTB		NIN72106
4210	7101		JFI	1		NIN72107
4211	0400			ARITH		NIN72108
4212	0020	SHIN	SICO		BINARY READ AND WRITE	NIN72109
4213	2037		LDD	SBUF		NIN72110
4214	3600		SBF	0		NIN72111
4215	0370			SBUFAD 170		NIN72112
4216	6332		NJF	STWY		NIN72113
4217	2040		LDD	SWAY		NIN72114
4220	6203		PJF	3		NIN72115
4221	2006		LDD	SBRECT		NIN72116
4222	6145		NZF	SLDREL =1		NIN72117
4223	7100		JPR	STRANS		NIN72118
4224	4065					
4225	6002			2		NIN72119
4226	0000	SBERR	ERR		END OF FILE OR PARY ERROR (* OR -)	NIN72120
4227	2040		LDD	SWAY		NIN72121
4230	6323		NJR	SBRED		NIN72122
4231	0400		LUN	0	SIGNAL NOT FINAL RECORD	NIN72123
4232	4137		STI	SBUF		NIN72124
4233	5437		AOD	SBUF		NIN72125

4234	5406		AOD	SBRECT					NIN72126
4235	2001	SBWRT	LDD	ACC		WRITE	WINARY		NIN72127
4236	4137		STJ	SBUF					NIN72128
4237	5437		AOD	SBUF					NIN72129
4240	2002		LDD	ACC	1				NIN72130
4241	4137		STJ	SBUF					NIN72131
4242	5437		AOD	SBUF					NIN72132
4243	2003		LDD	ACC	2				NIN72133
4244	4137		STJ	SBUF					NIN72134
4245	5437		AOD	SBUF					NIN72135
4246	7101		JFI	1					NIN72136
4247	4132			TSTLDD		LOOK FOR LD INSTRUCTION	BEFORE EXIT		NIN72137
4250	2040	STWY	LDD	SWAY					NIN72138
4251	6614		PJR	SBWRT					NIN72139
4252	6304		NJR	SBREED					NIN72140
4253	2137	SBRED	LDI	SBUF		READ FIRST WORD	OF RECORD		NIN72141
4254	4006		STD	SBRECT					NIN72142
4255	5437		AOD	SBUF					NIN72143
4256	2137	SBREED	LDI	SBUF		READ	BINARY		NIN72144
4257	4001		STD	ACC					NIN72145
4260	5437		AOD	SBUF					NIN72146
4261	2137		LDI	SBUF					NIN72147
4262	4002		STD	ACC	1				NIN72148
4263	5437		AOD	SBUF					NIN72149
4264	2137		LDI	SBUF					NIN72150
4265	4003		STD	ACC	2				NIN72151
4266	5437		AOD	SBUF					NIN72152
4267	7101		JFI	1					NIN72153
4270	4163	SLDREL		SLDEXT					NIN72154
4271	2055	SBINTR	LDD	FLOCC					NIN72155
4272	0702		SNB	2					NIN72156
4273	6224		PJF	SBIOX					NIN72157
4274	2040		LDD	SWAY					NIN72158
4275	6211		PJF	SBWRIT					NIN72159
4276	2006		LDD	SBRECT					NIN72160
4277	6120		NZR	SBIOX		LAST RECORD	ALREADY READ		NIN72161
4300	5437	SBRRR	AOD	SBUF		SIGNAL READ			NIN72162
4301	7100		JPR	STRANS		READ TO LAST RECORD			NIN72163
4302	4065								
4303	2137		LDI	SBUF					NIN72164
4304	6404		ZJB	SBRRR					NIN72165
4305	6112		NZR	SBIOX					NIN72166
4306	5406	SBWRIT	AOD	SBRECT					NIN72167
4307	0110		LS3						NIN72168
4310	0102		LS1						NIN72169
4311	0317		LSN	17					NIN72170
4312	4100		STM	SBUFAD					NIN72171
4313	0200								
4314	7100	SBTX	JPR	STRANS					NIN72172
4315	4065								
4316	6570		NZR	SBERR					NIN72173
4317	7101	SBIOX	JFI	1					NIN72174
4320	4204			SCOMEX					NIN72175
4322		SFSUB	EQU	SBIOX	3				NIN72176
4326		SFADD	EQU	SFSUB	4				NIN72177
4332		SFMLT	EQU	SFSUB	10				NIN72178
4337		SFDIV	EQU	SFSUB	15				NIN72179
5532		FCONV	EQU	SFSUB	1210				NIN72180
5645		XCONV	EQU	SFSUB	1323				NIN72181
			SUPB						
			END						NIN72182

6000