

GAP 0 2281 SYMBOLS PERMITTED

ELI

BASIC COMPILER

GAP 1 1183 SYMBOLS PERMITTED

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ST2 05340 00000
4BIT 003642ABS 002510APF 004720ARCTAN025443ARER1 023247ARER 023247 00010
ARITH 022624ARP 006140ARR 004721ART120022700ARTH11022670ARTH12022672 00020
ARTH13022711ARTH15022722ARTH17022654ARTH18022716ARTH1 022637ARTH21022756 00030
ARTH22023042ARTH23023044ARTH24023050ARTH25023026ARTH26023024ARTH27023076 00040
ARTH28023105ARTH29023146ARTH2 022656ARTH30023140ARTH31023155ARTH32023163 00050
ARTH33023176ARTH3 022666ARTH40023562ARTH4 022744ARTH50023267ARTH51023304 00060
ARTH52023316ARTH5 023255ARTH60023470ARTH61023452ARTH62023366ARTH63023375 00070
ARTH64023404ARTH65023373ARTH66023413ARTH67023417ARTH68023460ARTH68023350 00100
ARTH6 023333ARTH70023471ARTH71023504ARTH72023544ARTH73023512ARTH74023510 00110
ARTH75023537ARTH 004726ARUL 004725ARU 006366ATANF 002603BASEZ 002346 00120
BASS 006216BDC11 027174BDC14 027115BDC15 027201BDC16 027127BDC17 027124 00130
BDC1 027167BDC2 027040BDC30 303114BDC3 027047BDC40 303134BDC42 003136 00140
BDC43 103140BDC44 003142BDC45 003143BDC46 003144BDC47 003145BDC48 003146 00150
BDC49 003147BDC4 027064BDC50 003150BDC54 003151BDC55 003152BDC56 103154 00160
BDC57 103156BDC5 027172BDC61 006232BDC62 006233BDC63 006234BDC6 027055 00170
BDC9 027054BDCAR6306236BDC4 027020BDCOVF027213BDEGL 005042BL20 002670 00200
BL2 003631BL32 002700BLANKS002700BLCR 003632BLEOM 002677BL 002671 00210
CON2 023715CON3 024017CON4 023731CON5A 023750CON5B 024004CON5 024012 00220
CON6 024010CON8 024027CONHIT023766CON 023713COSF 025664COS 002614 00240
CRLF 002701CPT 002672CTEM 304734CXTEM 004736D12 030055D13 030066 00250
DATA1 020711DATA1 020722DATA2 020741DATA3 020750DATA4 021040DATA5 020751 00260
DATA6 020757DATA7 021014DATAI 007175DATAJ 007174DATAN 007136DATA 020701 00270
DCHCK 021022DEF2 021127DEF 021043DEFT 004737DEND 007176DIM2 021244 00300
DIM3 021200DIMER2021253DIMER 021252DIMLOC003475DIMMOV103652DIM 021133 00310
DIMX 007636DLOC 002714DPNT 007601DREAD 002716DREC 007177D 307200 00320
DS 017764DVDC 001743DVNUM003171DWRITE002715E12 030055E13 030066 00330
E14 030105EEXP2 026127ELJC 003634EMPSTRO22466ENDER 021274ENDF 005024 00340
ENDL 004740END 021254ENTIRE004002ERO 027727ER10 030031ER11 030042 00350
ER1 027733ER2 027746ER3 027756ER4 027762ER5 027777ER6 030006 00360
ER7 030014ER8 030022ER9 030025ERIN 003630ERMov 105012ERR10 025025 00370
ERR20 025036ERR2 025047ERR30 025061ERR33 025051ERR44 025054ERR5 025056 00400
ERROR 024760ER 007135E 004100EX32 002727EXC 301400EXIR 005634 00410
EXLN 004741EXL 306522EXN10 002723EXN11 003204EXN1 002724EXN22 003226 00420
EXN2 003164EXN30 003246EXN31 003247EXN3 003165EXN5 003167EXN6 003170 00430
EXN7 003171EXOEND002660EXGLCC002703EXON 004001EXO 004100EXP2 002617 00440
EXPR1 002403EXPR2 002376EXPR 002372EXP 002622EXPS 006217EXPSUB026111 00450
EXPZ 002365EXSLA 002702EXSRA 002705EXULOC003476EXU 306004FILL2 002673 00460
FILL 002676FIXMIN102654FLT10 024136FLT12 024224FLT13 024215FLT20 024227 00470
FLT21 024245FLT22 024244FLT23 024250FLT24 024253FLT25 024333FLT26 024263 00500
FLT27 024324FLT28 024343FLT29 024316FLT2 024067FLT30 024356FLT3 024074 00510
FLT4 024116FLT5 024173FLT6 024110FLT70 024312FLT72 024302FLT73 024306 00520
FLT74 024275FLT80 024362FLT81 024367FLT82 024203FLT8 024161FLT9 024152 00530
FLTA 004760FLTC 004742FLTD 004743FLTER 024164FLTE 004744FLTEX 024211 00540
FLTM 103522FLTN 004745FLTR 104746FLT 024040FLTS 004752FLTT 304754 00550
FLTW 303500FLTX 304756FLTY 003524FMONE 302656FN 005000FNTLOC003477 00560
FNTMOV103650FNT 007602FONE 301400FOR1 021450FOR2 021450FOR3 021450 00570
FOR4 021450FOR5 021400FOR6 021365FOR7 021405FOR8 021450FOR9 021451 00600
FORM11026536FORM12026541FORM13026557FORM14026571FORM20026607FORM21026620 00610
FORM26026467FORM27026521FORM28026516FORM2 026524FORM30026662FORM31026652 00620
FORM40026675FORM4 026576FORM5 026550FORM6 026623FORM71026713FORM72026721 00630
FORM73026724FORM7 026543FORM8 026626FORM9 026672FORMAT026431FORML 026433 00640
```

FOR	021277F	005200FXVIND	301636FZB	002675FZERO	301402GG1	021460	00650
GG2	021461GLOC	003465GN	005001G01	021547G021	021534G02	021500	00660
G03	021546GOER	021546G0	021454G	0067501CHK1	3062561CHKEX	027016	00670
ICHKL	0026361CHXR	0062551F1	0217161F20	0220161F21	0220251F22	022034	00700
IF2	0217211F30	0216431F31	0216221F32	0216171F33	0216451F34	021646	00710
IF35	0216321F36	0216401F4	0217161F50	0220041F5	0217501F6	021730	00720
IF7	0217371F8	0217161FF1	0215651FF2	0215661F	0215611FT	005002	00730
IME	003643INC01	027371INC02	027375INC0	027363INC1	027412INC2	027417	00740
INC3	027421INCALL	001701INCON	002641INCONV	027356INDONE	001707INLOC	002704	00750
INP1	022053INP2	022073INP3	022077INP	027433INP	022046INPUT8	020241	00760
INRET	027441INST2	024414INST3	024400INST8	024416INST	024372INSTT	005003	00770
INT2	002425INT3	002427INT4	002457INT5	002467INT6	002465INT7	002506	01000
INT8	002503INTARG3	007070INTCHK	026766INTEXP	007072INTF	007073INT	002414	01010
IR3	005005IRLOC	003466IRN	0050061R	005004L12	000011L13	000017	01020
LAB10	027612LAB11	027621LAB12	027630LAB13	027637LAB14	027646LAB15	027655	01030
LAB16	027664LAB19	027673LAB1	027521LAB20	027702LAB21	027711LAB23	027720	01040
LAB2	027530LAB3	027537LAB4	027546LAB5	027555LAB6	027564LAB7	027573	01050
LAB8	027602LDCCN1	105004LDX01	002706LENGTH	004003LET1	022116LETER	022136	01060
LET	022103LIST11	020222LIST1	020204LIST3	020143LIST6	020173LISTER	020231	01070
LLOC	003467LNSUB	026261LOAD	005000LOG2	026263LOGARG	307070LOGB2	002630	01100
LOGBE	002625LOG	002516LOGT	006230LOGXR	006212L	005060M3	003470	01110
MAR	003474MAT10	002075MAT11	002102MAT12	002104MAT13	002111MAT1	002130	01120
MAT20	002113MAT2	002212MAT4	002207MAT5	002156MAT6	002167MATA	307120	01130
MATB	307122MATC	307124MAT	107116MATTA	007130MATTB	007132MATT	007126	01140
MEXP	002707MIN	002725MOP	003662MOVDS	103660MSTAB	102732MSXR	006254	01150
MTEMP	106252N11	003204N12	003205N13	003207N15	003210	003210	01160
N16	003211N17	003212N18	003213N19	003223N1	003163N20	003224	01170
N21	003225N22	003226N242	003640N24	003230N25	003231N26	003232	01200
N28	003244N2	003164N30	003246N31	003247N32	003250N36	003326	01210
N37	003327N38	003330N39	003331N3	003165N40	003332N41	003333	01220
N44	003336N4	003166N50	003344N51	003345N52	003346N55	003351	01230
N59	003355N5	003167N60	003462N61	003357N62	003360N6	003170	01240
N7	003171N8	003172N9	003173NEXT1	022303NEXT2	022304NEXT3	022240	01250
NEXT4	022245NEXT	022141NINF	002652NM2	002713NM6	003636NM8	003635	01260
NN	005007N	006450NXT1	0221460200	0027120400	00271106000	003633	01270
OFLNUM	003172ONE	003163OUT50	001452OUT52	002661OUT53	002663OUT54	002665	01300
OUTPUT	001406PEPR	002237PER	002667PINF	302650PLIST	007170PLOC	003464	01310
POP	002244POW1	002303POW2	002331POW3	002322POW5	002317POWA	306222	01320
POWB	306220POWER	002254POWEX1	002370POWEX	002367POWSPB	003627POWXR	006215	01330
PRT10	022435PRT12	022426PRT2	022352PRT30	022321PRT32	022371PRT3	022370	01340
PRT40	022470PRT41	022474PRT4	022377PRT50	022364PRT5	022347PRT6	022366	01350
PRT7	022406PRT8	022411PRT8	022512PRT8	022511PRT	022307PRTX	022314	01360
P	007724PUSH	002227PUT	003664Q2A	023631Q2C	023643Q2E	023645	01370
Q2EX	023641Q2F	023647Q2I	023672Q2L	023674Q2R	023676Q2S	023700	01400
Q2T	023711Q31A	023213Q31	023211Q32	023220Q33	023231Q34	023223	01410
Q35	023237Q3	023203QARS	003552QATN	003553QOOS	003554QDE	020455	01420
QDI	020466QD	020437QE	020477QEXP	003555QF	020510QG	020521	01430
QINT	003556QI	020525QL1G	003557QL	020546QN	020557QP	020575	01440
QRND	003560QR	020620Q	020403QOSIN	003561QOSR	003562QS	020644	01450
QTAN	003563QT	020662READ1	022547READ	022513READX	005010READZ2	003516	01460
READZ3	003517PEADZ	003520RELOC	003623REM	022550RET2	022564RETER	002057	01470
RET	022555RM1	002022RMP	002054RMES	001757RND1	306246RNDK	103160	01500
RND	102544RST	006260RUN10	025231RUN1	025136RUN25	025124RUN2	025245	01510
RUN3	025433RUN5A	025412RUN5	025342RUN62	025166RUN63	025226RUN64	025172	01520

RUN6A	025337RUN6	025260RUN7	025145RUN8	025151RUN9	025237RUN	025064	01530
/2102	307072/2105	002766/2107	002707/2108	307070/2109	002770/2110	007074	01540
/2111	002726/2112	025641/2202	307070/2203	302772/2205	307072/2207	007076	01550
/2208	007077/2209	101402/2210	007100/2211	007101/2212	002707/2213	025722	01560
/2214	026073/2215	025732/2216	102766/2217	026107/2218	002774/2219	025773	01570
/2220	025756/2221	025766/2222	125771/2223	025764/2224	101400/2225	102656	01600
/2226	026001/2227	102776/2228	126010/2230	307074/2231	026023/2232	103000	01610
/2233	026037/2234	026055/2235	003012/2236	026062/2238	026106/2302	307070	01620
/2303	007100/2304	002707/2306	007076/2307	007077/2308	007101/2309	025466	01630
/2310	307072/2311	101402/2312	125511/2313	003013/2314	025501/2315	103036	01640
/2316	307074/2317	025612/2318	102776/2319	025526/2323	025551/2324	103014	01650
/2325	025565/2326	103034/2327	125604/5106	301400/5107	307076/5112	107072	01660
/5113	003112/5114	107074/5115	126400/5117	303076/5120	101402/5121	026330	01670
/5123	003075/5124	026346/5127	126366/5138	307070/5143	307102/5144	303110	01700
/5145	103104/5146	303100/5147	303102/5148	103106/5152	307100/6100	026133	01710
/6101	026142/6104	101402/6105	307070/6109	307074/6111	303050/6113	303042	01720
/6118	303046/6119	007102/6120	126233/6121	003040/6124	026173/6126	026206	01730
/6127	026242/6128	307076/6131	126231/6132	026240/6134	007072/6136	003041	01740
/6141	002724/6149	303052/6152	303074S2	003262S3	003362SAVLEN	005023	01750
SIGN	002657SINF	025665SIN	002611SIXTY	002730SQF2	025621SQF	002606	01760
SQR	002557SQRXR	006212SQT	307072S	003162START	020012STOP1	022576	01770
STOP2	022602STOP	022566STY3	005011TAN	002572TEMP	306150TEN	003203	02000
TENT	002717TEST2	002065TEST3	002072TEST	002063TFLAG	007107TIMCHK	022615	02010
TIME	004000TOP	017777TRAN2	020301TRAN3	020274TRAN4	020317TRAN5	020321	02020
TRANS	020271TRANS	020244TRAP	001720TREF	007141TRP1	001746TRPBR	103644	02030
TRPLOC	100205TRFST	306250TRPXR	006213T	005030TWO	003164UFLNUM	003173	02040
UFL	001734ULOC	005014UNFL1	006224UNFL2	006225UNFL3	006226UNFLT8	003113	02050
UPRIT	002710U	000000UX	006000VAR10	024421VAR11	024445VAR13	024465	02060
VAR1	024565VAR20	024574VAR21	024603VAR22	024612VAR23	024623VAR24	024643	02070
VAR25	024632VAR26	024713VAR27	024704VAR28	024675VAR2	024471VAR30	024744	02100
VAR31	024733VAR32	024525VAR3	024473VAR4	024531VAR7	005016VARER1	024537	02110
VARER2	024701VARER	024537VARLOC	003463VARMOV	103646VAR	024542VARTAB	0017326	02120
VART	005015VAVAIL	005022VCMOV	103654VC	004720VINIT	003641VLAST	003464	02130
WAI	007137WORD	306240WORK	001400WS	006176XR00	000000XR01	000001	02140
XR02	000000XR03	000000XR10	100004XR12	000006XR13	000007XR21	000011	02150
XTEM	005633YCRT2	001575YCRT3	001625YCRT4	003247YCRT5	002676YCRT9	001607	02160
YCRT8	001564YCRT	001572YIND	006214YINDT	006227YINT10	027312YINT12	027331	02170
YINT2	027242YINT3	027232YINT4	027250YINT5	027302YINT6	027256YINT7	027257	02200
YINT8	027304YINT9	027271YINT	027225YLAB	001651YLABXR	007104YODD	007140	02210
YSHT	001630YTAB2	001521YTAB3	001543YTAB4	001553YTAB6	001556YTAB	001477	02220
YTIME	002216YTLAS	027510YTSKP	027504YTST	002644YTSTUP	027444YUF2	026750	02230
YUNF	002633YUNFU	026742ZAP	003534ZBARM	003606ZBARN	003610ZBARP	003605	02240
ZBARZ	003607ZERU	003571ZBZ	002674ZCOX	003621ZCRTB	003570ZCRT	003567	02250
ZDLO	003471ZER0	002726ZFAD1	003617ZFAD	003601ZFDV	003473ZFLD	003574	02260
ZFLDT	003575ZFMF	003472ZFST	003576ZFSTT2	003600ZFSTT	003577ZFUS1	003620	02270
ZFSU	003602ZFSUT2	003604ZFSUT	003603ZINCL	003665ZINCON	003666ZINDN	003667	02300
ZLAB	003564ZMOV	003663ZNP	003611ZPOP	003623ZPUSH		003622	02310
ZRET	003573ZSHT	003637ZSPB0	003613ZSPB1	003572ZSTWR	003624ZTAB	003566	02320
ZTIM	003616ZTST2	003615ZTST	003614ZUNF	003565			02330
END OF PASS 1							

REM			BASIC COMPILER	BAS00010
REM			*****	00020
REM			TELEBASIC REV. 1	00030
REM			BASIC AND TEACH COMBINED	00040
REM			8 FEB 65	00050
REM			3	00060
REM			ON TAPE 13	00070
REM			*****	00080
REM			PRIMARY MEMORY ALLOCATION	00090
REM			COMPILE TIME STORAGE ALLOCATION	00100
REM			*****	00110
REM			USE OF INDEX GROUPS	00120
REM			GROUP 0 IS THE STANDARD GROUP AND IS USED	00130
REM			BY ALMOST EVERYTHING.	00140
REM			GROUP 1 IS USED BY PRINT AND INPUT. IT	00150
REM			IS NOT PRESERVED.	00160
REM			GROUP 4 IS FREQUENTLY DESTROYED BY DATA	00170
REM			RUN-TIME USE OF INDEX GROUPS	00180
REM			GROUP 0 ALMOST EVERYTHING	00190
REM			GROUP 1-- REAL TIME INPUT	00200
REM			GROUP 2-- XR21 IS USED BY POP AND PUSH AND MUST B	00210
REM			PRESERVED THROUGHOUT RUN-TIME	00220
REM			GROUP 4--DESTROYED BY DISK USE	00230
REM				00240
00205	TRPLOC	EQO 205	TRAP INDEX GROUP 33	00250
01400	WORK	EQO 1400	CONSTANTS AND SOME RUN-TIME SUBROUTINES	00260
04000		LOC 4000	SAVE AREA	00270
04000	TIME	BSS 1	ADJUSTED STARTING TIME	00280
04001	EXON	BSS 1	OUTPUT BUFFER POINTER	00290
04002	ENTIRE	BSS 1	COMBINED LENGTH OF TESTED AND TESTER	00300
04003	LENGTH	BSS 1	LENGTH OF SOURCE PROGRAM (MOD 64)	00310
06000	UX	EQO 6000	PICK UP SOURCE HERE	00320
04100		LOC 4100	COMPILE TIME USE OF 4100 TO BEGINNING OF EXL	00330
04100	E	BSS 400	ERROR MESSAGE OUTPUT BUFFER	00340
04720	VC	BSS 72	WORKING STORAGE	00350
05030	T	BSS 24	TEMPORARY STORAGE	00360
05060	L	BSS 80	LINE TRANSLATION BUFFER	00370
05200	F	BSS 480	FIRST ORDERS OF INSTRUCTIONS	00380
REM			FIRST WORD--BINARY LINE NO.	00390
REM			SECOND WORD--LOCATION	00400
06140	APP	BSS 150	ARITH ROUTINE OBJECT BUFFER	00410
06360	ARU	BSS 50	ARITH ROUTINE WORKING SRTOE	00420
06450	N	BSS 42	USED TO COMPILE FOR STATEMENTS	00430
REM			WORD TRIPLES	00440
REM			WORD 1--LOC OF INDEX VARIABLE	00450
REM			WORD 2--LOC OF INTERIOR OF LOOP	00460
REM			WORD3--LOC OF RUNTIME STORE	00470
REM				00480
REM			RUN-TIME USE OF AREA BETWEEN 4100 AND EXL	00490
04100		LOC 4100		00500
04100	EXO	BSS 860	OUTPUT BUFFER	00510
05634	EXIR	BSS 104	TEMP STORE FOR FOR LOOPS. 4 WORDS PER LOOP	00520
06004	EXU	BSS 100	TEMP STORE FOR ARITHMETIC STATEMENTS	00530
06150	TEMP	BSS 22	TEMP STORE FOR STANDARD ROUTINES (SIN,ETC)	00540

06176	WS	BSS	50	WORKING STORAGE FOR RUNTIME ROUTINES	00550
06260	RST	EQU	*	STACK OF RETURN ADDRESS FOR GOSUBS	00560
		REM			00570
		REM			00580
06522		ORG	N+42	REST OF 6K AREA USED IN COMMON BY COMPILE AND RUN	00590
06522	EXL	BSS	150	GENERATED CONSTANTS	00600
06750	G	BSS	80	GO-TABLE	00610
		REM		DURING RUN BRANCHES, DURING COMPILE	00620
		REM		BINARY LINE NO.S	00630
07070	B	BSS	42	COMMUNICATION BETWEEN COMPILE AND RUN	00640
07142		BSS	22	UNUSED (HELD TO FORCE DATA TO MOD 64)	00650
07170	PLIST	BSS	4	FILE CONTROL LIST FOR DATA I/O	00660
07174	DATAJ	BSS	1	REGION POINTER (RANGE 0-255)	00670
07175	DATAI	BSS	1	BUFFER POINTER (RANGE 0-127)	00680
07176	DEND	BSS	1	LAST RECORD OF DATA	00690
07177	DREC	BSS	1	LAST READ RECORD (NEXT TO BE PROCESSED)	00700
07200	D	BSS	256	DATA REGION	00710
07600		BSS	1	RESERVED FOR DISK PARITY ERRORS	00720
07601	DPNT	BSS	1	CURRENT DATA RECORD	00730
07602	FNT	BSS	28	FUNCTION DEFINITION TRANSFER TABLE	00740
07636	DIMX	BSS	54	DIMENSION TABLE, WORD PAIRS--	00750
		REM		WORD 1--ABS LOC OF 1ST ELEMENT	00760
		REM		WORD 2-- # OF COL AT 8B9	00770
		REM		# OF ROWS AT 819	00780
07724	P	EQU	*	OBJECT AND VARIABLE AREA	00790
17326	VARTAB	EQU	17326	SYMBOL TABLE, DESTROYED AT RUN TIME	00800
17764	DS	EQU	17764	\$ VARIABLE PORTION OF SYMBOL TABLE	00810
17777	TOP	EQU	17777	TOP OF LOWER MEMORY	00820
		REM		*****	00830
		REM		*****	00840
		REM		HEADING FOR TIME SHARING EXECUTIVE	00850
20000	20000	LOC	20000	THIS LOCATION IS FILLED IN BY THE EXEC	00860
20001	2600012	DEC	0	INITIAL ENTRY POINT	00870
20002	3777777	BRU	START	BRANCH TO CLEANUP IF SCRATCH DISK IS USED	00880
20003	3777777	DEC	-1	SAVED FOR FUTURE COMPATIBILITY	00890
20004	0222162	DEC	-1	SYSTEM NAME	00900
20005	0000000	ALF	BAS	OVERLAY NUMBER	00910
20006	0001400	DEC	0	TO LOCATION FOR INITIAL MOVE	00920
20007	3775400	DEC	WORK	THIS MAY WORDS	00930
20010	0031400	DEC	-1280	FROM THIS LOCATION	00940
20011	0070002	OCT	31400	COMPILER INITIALIZATION	00950
		OCT	70002		00960
		NAM			00970

COMPILER INITIALIZATION

000002

20012	2506016	START	EJT		00980
			SET PBK	AVOID INTERRUPT UNTIL LENGTH AND ENTIRE	00990
			REM	ARE PICKED UP	01000
20013	2506013		SXG 0	MAIN INDEX GROUP	01010
20014	1003644		DLD TRPBR	INITIALIZE TRAP LOCATIONS	01020
20015	1300206		DST TRPLOC+1		01030
20016	0300205		STA TRPLOC		01040
			REM	THE NEXT DOZEN INSTRUCTIONS DETERMINE FROM	01050
			REM	THE SIGN OF LENGTH WHETHER THIS IS A TEACH	01060
			REM	OR BASIC RUN. LENGTH HAS A MINUS SIGN	01070
			REM	TACKED ON IF THE PROGRAM IS TO BE TEACH.	01080
20017	0004003		LDA LENGTH	LENGTH OF SOURCE OR PROGRAM TO BE TESTED PART	01090
20020	2511000		SRD 0	SAVE THE SIGN IN Q	01100
20021	2002657		EXT SIGN		01110
20022	0300001		STA XR01	HOLD IN XR UNTIL MEMORY HAS BEEN CLEARED	01120
20023	2512200		SLD 0	GET BACK THE SIGN BIT	01130
20024	2510023		SR4 19	SET A TO -1 OR 0 DEPENDING ON SIGN BIT	01140
20025	0300002		STA XR02	HOLD IN INDEX UNTIL 6K AREA IS CLEANED UP	01150
20026	2516002		BNZ		01160
20027	2600032		BRU **3		01170
20030	0000001		LDA XR01	LENGTH OF SOURCE IF THIS IS BASIC	01180
20031	2600033		BRU **2		01190
20032	0004002		LDA ENTIRE	LENGTH OF PROG TO BE TESTED AND TESTER	01200
20033	2512006		SLA 6		01210
20034	2506015		SET PST	JOHN CAN NOW FUDGE UP THE SAV AREA	01220
20035	2504522		NEG		01230
20036	2504004		LQA	GET READY FOR MOV	01240
20037	0103463		ADD VARLOC	GIVES TO ADDRESS	01250
20040	0300003		STA XR03	POINTS TO BEGINNING OF SOURCE PROGRAM	01260
20041	2406000		MOV UX	MOVE SOURCE PROGRAM UP	01270
20042	0002726		LDA ZERO		01280
20043	0304100		STA E		01290
20044	0306000		STA UX		01300
20045	0003633		LDA 06000	LOCATION OF SOURCE UPON ENTRY	01310
20046	2504032		ADD		01320
20047	2504004		LQA	TO ADDRESS FOR MOV	01330
20050	0200003		SUB XR03	SUBTRACT STARTING LOC OF RELOCATED SOURCE	01340
20051	2504005		XAR		01350
20052	2406000		MOV UX	ZERO FROM 6000 TO START OF SOURCE	01360
20053	1003656		DLD CLNMOV		01370
20054	2404100		MOV E	ZERO FROM 4100 TO 6000	01380
20055	3100010		SET NFLPOINT		BAS01390
20056	3500004		RIM		01400
20057	3200001		SET NTPMODE	DO NOT ENTER TRAP UNTIL RUN TIME	01410
			NAM	SOURCE PROGRAM INPUT AND TRANSLATION	01420

SOURCE PROGRAM INPUT AND TRANSLATION

000003

20060	2504202	EJT		01430
20061	0304000	LAC	START COUNTING TIME	01440
20062	0003170	STA TIME		01450
20063	2512006	LDA N6	INITIALIZE TIME REFERENCE	01460
20064	0307141	SLA 6		01470
20065	0002726	STA TREF		01480
20066	0304001	LDA ZERO		01490
20067	0307135	STA EXON		01500
20070	0317326	STA ER		01510
20071	0307602	STA VARTAB		01520
20072	0304720	STA FNT		01530
20073	1003654	STA VC		01540
20074	2404720	DLJ VCMOV	ZERO COMPILE WORKING STORAGE	01550
20075	1003650	MOV VC		01560
20076	2407602	DLJ FNTMOV	ZERO FUNCTION TRANSFER TABLE	01570
20077	1003646	MOV FNT		01580
20100	2417326	DLJ VARMOV	ZERO SYMBOL TABLE	01590
20101	0002725	MOV VARTAB		01600
20102	0307636	LDA MIN		BAS01610
20103	1003652	STA DIMX		01620
20104	2407636	DLJ DIMMOV	SET DIMX TABLE TO -1	01630
20105	0003641	MOV DIMX		01640
20106	0305022	LDA VINIT	INITIALIZE AVAILABLE SPACE POINTER	01650
20107	1765014	STA VAVAIL		01660
20110	1747107	STX ULOC 3	INITIALIZE POINTER TO BEGINNING OF SOURCE	01670
20111	0002715	STX TFLAG 2	INIT TEACH FLAG	01680
20112	0307170	LDA DWRITE	INIT PLIST	01690
20113	0002714	STA PLIST		01700
20114	0102712	LDA DLOC		01710
20115	0307171	ADD 0200		01720
20116	2504022	STA PLIST+1		01730
20117	0307173	LDA	SET READ/WRITE INDICATOR TO SUCCESSFUL	01740
20120	2504002	STA PLIST+3		01750
20121	0307175	LDZ	INIT VARIOUS DATA POINTERS	01760
20122	0307174	STA DATAI		01770
20123	0307601	STA DATAJ		01780
20124	0003626	STA DPNT		01790
20125	0317777	LDA ZNOP	SET NOP AT INTERFACE	01800
20126	0003171	STA TOP		01810
20127	2504522	LDA N7	INITIALIZE COMP TIME OUT BUFF POINTEER	01820
20130	2504004	NEG		01830
20131	0002703	LQA		01840
20132	2504032	LDA EXOLOG	INITIALIZE MOV CON FOR COMP TIME ERRORS	01850
20133	1305012	ADD		01860
20134	0005014	DST ERMV		01870
20135	0305042	LDA ULCC	INITAILIZE BEGINNING OF LINE POINTER	01880
20136	1725023	STA REGL		01890
20137	0603163	STX SAVLEN 1	SAVE THE LENGTH OF PROG TO BE TESTED FOR TEA	01900
20140	0622726	LX ONE 0	INITIALIZE INDEX REGISTERS	01910
20141	0642726	LX ZERO 1		01920
		LDY ZERO 2		BAS01930
		REM	INITIALIZE COMPILER WORKING STORAGE	01940
		REM	MOVE CHARACTERS OF ONE LINE OF SOURCE	01950
		REM	TO THE L-REGION, ONE CHARACTER PER	01960

	REM	WORD.	01970
	REM	PERFORM CHARACTER TRANSLATION	01980
	REM	DELETE BLANKS	01990
	REM	STOP ON CARRIAGE RETURN	02000
	REM	AFTER INITIAL ENTRY TO LIST ALL SUCCESSIVE	02010
	REM	ENTRIES ARE MADE TO LIST1.	02020
	REM	XREG USE -	02030
	REM	XR0 - CHARACTER POINTER FOR U	02040
	REM	XR1 - SPB	02050
	REM	XR2 - L-REGION POINTER	02060
	REM	XR3 - U-REGION POINTER	02070
			02080
20142	1725031	STX T+1 1	
20143	0060000	LIST3 LDA U 3	BAS02090
20144	2510014	SRA 12	BAS02100
20145	0305030	STA T	BAS02110
20146	1400001	INX 1 0	BAS02120
20147	0720244	SPB TRANS 1	02130
20150	0345060	STA L 2	BAS02140
20151	1440001	INX 1 2	BAS02150
20152	0060000	LDA U 3	02160
20153	2510006	SRA 6	BAS02170
20154	2003470	EXT M3	BAS02180
20155	0305030	STA T	BAS02190
20156	1400001	INX 1 0	BAS02200
20157	0720244	SPB TRANS 1	02210
20160	0345060	STA L 2	BAS02220
20161	1440001	INX 1 2	BAS02230
20162	0060000	LDA U 3	02240
20163	2003470	EXT M3	BAS02250
20164	0305030	STA T	BAS02260
20165	0603163	LDX ONE 0	BAS02270
20166	1460001	INX 1 3	BAS02280
20167	0720244	SPB TRANS 1	02290
20170	0345060	STA L 2	BAS02300
20171	1440001	INX 1 2	BAS02310
20172	2600143	BRU LIST3	BAS02320
20173	0005030	LIST6 LDA T	BAS02330
20174	0345060	STA L 2	BAS02340
20175	0000002	LDA 2	BAS02350
20176	0203163	SUP ONE	BAS02360
20177	0304740	STA ENDL	BAS02370
20200	0625031	LDX T+1 1	02380
20201	1765005	STX IR3 3	BAS02390
20202	0607107	LDX TFLAG 0	02400
20203	2600323	BRU COMP	BAS02410
20204	0603163	LIST1 LDX ONE 0	02420
20205	0005005	LDA IR3	02430
20206	0305042	STA BEGL	02440
20207	0300003	STA XR03	02450
20210	0002726	LDA ZERO	02460
20211	0304720	STA AFF	02470
20212	0005014	LDA ULOC	02480
20213	0100003	ADD XR03	02490
20214	0203464	SUP PLOC	02500

SECOND CHARACTER OF WORD
 3RD CHARACTER
 SET UP FLAG FOR EASY ACCESS
 SET CHAR POINT TO FIRST CHAR
 SAVE POINTER TO FIRST WORD OF LINE
 INIT WORD POINTER
 CHECK FOR OBJECT OVERLAPPING SOURCE

SOURCE PROGRAM INPUT AND TRANSLATION

000005

20215	0200001	SUB XR01		02510
20216	2514001	BMI		02520
20217	2600241	BRU INPUT8		02530
20220	0642726	LDX ZERO	2	02540
20221	2600142	BRU LIST3-1		02550
20222	0005023	LIST11 LDA SAVLEN		02560
20223	2512006	SLA 6		02570
20224	0105014	ADD ULOC		02580
20225	0305005	STA IR3		02590
20226	2504022	LD0		02600
20227	0305004	STA IR		02610
20230	2600204	BRU LIST1		02620
20231	1005012	LISTER DLD ERM0V		02630
20232	2427621	MOV LAB11		02640
20233	0005012	LDA ERM0V		02650
20234	0103171	ADD N7		02660
20235	0305012	STA ERM0V		02670
20236	0003163	LDA ONE		02680
20237	0307135	STA ER		02690
20240	2605064	BRU RUN		02700
20241	1005012	INPUT8 DLD ERM0V		02710
20242	2427655	MOV LAB15		02720
20243	2605061	BRU ERR30		02730
		REM		02740
		REM		02750
		REM		02760
		REM		02770
		REM		02780
20244	0004720	TRANS LDA APF		02790
20245	2514001	BMI		02800
20246	2600301	BRU TRAN2		02810
20247	1725035	STX T+5	1	02820
20250	0625030	LDX T	1	02830
20251	0023262	LDA S2	1	02840
20252	0625035	LDX T+5	1	02850
20253	2516001	BPL		02860
20254	2620001	BRU 1	1	02870
20255	0103205	ADD N12		02880
20256	2514002	BZE		02890
20257	2600274	BRU TRAN3		02900
20260	0103223	ADD N19		02910
20261	2514002	BZE		02920
20262	2600173	BRU LIST6		02930
20263	0103207	ADD N14		02940
20264	2514002	BZE		02950
20265	2600267	BRU ++2		02960
20266	2620003	BRU 3	1	02970
20267	0625031	LDX T+1	1	02980
20270	2600231	BRU LISTER		02990
20271	0625031	LDX T+1	1	03000
20272	1765005	STX IR3	3	03010
20273	2602136	BRU LETER		03020
20274	0002725	TRAN3 LDA MIN		03030
20275	0204720	SUB APF		03040

ENTERED AFTER FIRST END INSTRUCTION
COMPUTE STARTING LOCATION OF TESTER

SET UP INDEXES FOR LIST

CONTINUE PROCESSING INSTRUCTIONS

TRANS IS THE SUBROUTINE USED BY LIST
TO PERFORM CHARACTER TRANSLATION
CHARACTERS ARE TRANSLATED THROUGH TABLE
S2.

Sub 11
Sub 11 from T
Sub link up character
Sub 11
Char + return
Sub 12
=0 not met
Sub 19

000006

20276	0304720		STA	APF					03050
20277	0003205		LDA	N12					03060
20300	2620001		BRU	1	1				03070
20301	0005030	TRAN2	LDA	T					03080
20302	2103205		CAB	N12					03090
20303	2620001		BRU	1	1	>			03100
20304	2600317		BRU	TRAN4					03110
20305	2103244		CAR	N28		<			03120
20306	2620001		BRU	1	1				03130
20307	2600274		BRU	TRAN3					03140
20310	2103247		CAR	N31					03150
20311	2620001		BRU	1	1				03160
20312	2600271		BRU	TRAN6					03170
20313	2103462		CAR	N60					03180
20314	2620001		BRU	1	1				03190
20315	2600321		BRU	TRAN5					03200
20316	2620001		BRU	1	1				03210
20317	0003357	TRAN4	LDA	N61					03220
20320	2620001		BRU	1	1				03230
20321	0003360	TRAN5	LDA	N62					03240
20322	2620001		BRU	1	1				03250
			REM				x**		03260
			REM						03270
			REM				*****		03280
			REM				THE COMP ROUTINE		03290
			REM				CHECKS FOR LINE NO.S OVER 6 DIGITS		03300
			REM				BUILDS THE F-TABLE AND CHECKS FOR TOO		03310
			REM				MANY LINES IN PROGRAM - 241.		03320
			REM				PLACES FIRST LETTER OF INSTRUCTION IN		03330
			REM				XR3 IN PREPARATION FOR INDEXED BRANCH		03340
			REM				PLACES SECOND LETTER OF INSTRUCTION IN		03350
			REM				A REGISTER		03360
			REM				XREG USE --		03370
			REM				XR0 - NOT USED		03380
			REM				XR1 - P-REGION POINTER		03390
			REM				XR2 - L-REGION POINTER		03400
			REM				XR3 - INDEXED BRANCH TO Q-JUMP TABLE		03410
20323	0642726	COMP	LDX	ZERO	2				03420
20324	0764372		SPR	INST	3				03430
20325	2604416		BRU	INST8					03440
20326	0417777		BXL	1	0				03450
20327	2600337		BRU	COMP1			IF THIS IS A BASIC PROGRAM THEN		03460
20330	2504004		LQA				SKIP THIS FUDGING AROUND		03470
20331	0005024		LDA	ENDF			HANG ON TO LINE NO.		03480
20332	2514001		RMI						03490
20333	2600337		BRU	++4					03500
20334	0557773		BXH	5	2		LINE # NO LONGER THAN 4 DIGITS FOR PTBT		03510
20335	2604416		BRU	INST8					03520
20336	2504001		LAC				GET BIN. LINE NO. BACK IN A		03530
20337	0557772	COMP1	BXH	6	2		ALLOW 5 DIG IN TESTER OR REGULAR BASIC		03540
20340	2604416		BRU	INST8					03550
20341	0665000		LDX	FN	3				03560
20342	0365200		STA	F	3				03570
20343	0327725		STA	P+1	1		STORE LINE NO. IN OBJECT PROG		03580
20344	0000001		LDA	1					03590

SOURCE PROGRAM INPUT AND TRANSLATION

000007

20345	0365201	STA F+1	3
20346	0103572	ADD ZSPB1	
20347	0103464	ADD PLOC	
20350	0103164	ADD TWO	
20351	0327724	STA P	1
20352	0003624	LDA ZSTWR	
20353	0327726	STA P+2	1
20354	0045060	LDA L	2
20355	2103247	CAR N31	
20356	2600360	BRU **2	
20357	2600204	BRU LIST1	
20360	1420003	INX 3	1
20361	1460002	INX 2	3
20362	1765000	STX FN	3
20363	0577037	BRX 481	3
20364	2600241	BRU INPUT8	
20365	0300003	STA 3	
20366	1440001	INX 1	2
20367	0063162	LDA S	3
20370	2514001	RMI	
20371	2600402	BRU COMP2	
20372	0203203	SUR TEN	
20373	2514001	RMI	
20374	2600402	BRU COMP2	
20375	0102710	ADD UPBIT	
20376	0300003	STA 3	
20377	0045060	LDA L	2
20400	1440001	INX 1	2
20401	2660405	BRU Q	3
20402	1005012	COMP2 DLD ERMV	
20403	2427546	MOV LAB4	
20404	2604760	BRU ERROR	
		NAM	

GENERATE *SPB **2,1 *

STORE IN OBJECT PROG
STORE A *STX WAI,1 * IN OBJECT

INCREMENT OBJECT POINTER

COMPILATION OF INSTRUCTIONS

03590
03600
03610
03620
03630
03640
03650
BAS03660
03670
03680
03690
03700
03710
03720
03730
03740
BAS03750
BAS03760
BAS03770
BAS03780
BAS03790
BAS03800
BAS03810
BAS03820
03830
BAS03840
BAS03850
BAS03860
BAS03870
03880
03890
03900
03910

000008.

```

THE FOLLOWING ROUTINES DECODE AND COMPILE
INSTRUCTIONS, LINE AT A TIME.
*****
THE Q-JUMP TABLE IS ENTERED FROM COMP
ACCORDING TO THE FIRST LETTER OF AN
INSTRUCTION.
A JUMP IS MADE TO THE APPROPRIATE DECODING
ROUTINE.
03920
03930
03940
03950
03960
03970
03980
03990
04000
BAS04010
BAS04020
04030
BAS04040
BAS04050
BAS04060
BAS04070
BAS04080
BAS04090
BAS04100
BAS04110
BAS04120
BAS04130
BAS04140
BAS04150
BAS04160
BAS04170
BAS04180
BAS04190
04200
BAS04210
BAS04220
BAS04230
BAS04240
BAS04250
BAS04260
04270
04280
04290
04300
04310
04320
04330
04340
04350
04360
BAS04370
BAS04380
BAS04390
BAS04400
BAS04410
BAS04420
BAS04430
BAS04440
BAS04450

```

COMPILATION OF INSTRUCTIONS

000009

20450	1440001		INX 1	2		BAS04460
20451	0203212		SUB N17			BAS04470
20452	2516002		RNZ			BAS04480
20453	2600402		BRU COMP2			BAS04490
20454	2600701		BRU DATA			BAS04500
20455	0103166	QDE	ADD N4			04510
20456	2516002		RNZ			04520
20457	2600402		BRU COMP2			04530
20460	0045060		LDA L	2		04540
20461	1440001		INX 1	2		04550
20462	0203226		SUB N22			04560
20463	2516002		RNZ			04570
20464	2600402		BRU COMP2			04580
20465	2601043		BRU DEF			04590
20466	0203172	QDI	SUB N8			BAS04600
20467	2516002		RNZ			BAS04610
20470	2600455		BRU QDE			04620
20471	0045060		LDA L	2		BAS04630
20472	1440001		INX 1	2		BAS04640
20473	0203326		SUB N36			BAS04650
20474	2516002		RNZ			BAS04660
20475	2600402		BRU COMP2			BAS04670
20476	2601133		BRU DIM			BAS04680
20477	0203327	QE	SUB N37			BAS04690
20500	2516002		RNZ			BAS04700
20501	2600402		BRU COMP2			BAS04710
20502	0045060		LDA L	2		BAS04720
20503	1440001		INX 1	2		BAS04730
20504	0203224		SUB N20			BAS04740
20505	2516002		RNZ			BAS04750
20506	2600402		BRU COMP2			BAS04760
20507	2601254		BRU END			BAS04770
20510	0203330	QF	SUB N38			BAS04780
20511	2516002		RNZ			BAS04790
20512	2600402		BRU COMP2			BAS04800
20513	0045060		LDA L	2		BAS04810
20514	1440001		INX 1	2		BAS04820
20515	0203333		SUB N41			BAS04830
20516	2516002		RNZ			BAS04840
20517	2600402		BRU COMP2			BAS04850
20520	2601277		BRU FOR			BAS04860
20521	0203330	QG	SUB N38			BAS04870
20522	2516002		RNZ			BAS04880
20523	2600402		BRU COMP2			BAS04890
20524	2601454		BRU GO			BAS04900
20525	2103226	QI	CAR N22		CHECK FOR F	04910
20526	2600402		BRU COMP2			04920
20527	2601561		BRU IF			04930
20530	2103327		CAR N37		CHECK FOR N	04940
20531	2600402		BRU COMP2			04950
20532	2600534		BRU **2			04960
20533	2600402		BRU COMP2			04970
20534	0045060		LDA L	2	CHECK NEXT THREE LETTERS FOR PUT	04980
20535	2512006		SLA 6			04990

COMPILATION OF INSTRUCTIONS

000010

20536	0145061		ADD L+1	2		05000
20537	2512006		SLA 6			05010
20540	0145062		ADD L+2	2		05020
20541	1440003		INX 3	2		05030
20542	2103664		CAR PUT			05040
20543	2600402		BRU COMP2			05050
20544	2602046		BRU INP			05060
20545	2600402		BRU COMP2			05070
20546	0203225	QL	SUR N21			BAS05080
20547	2516002		BNZ			BAS05090
20550	2600402		BRU COMP2			BAS05100
20551	0045060		LDA L	2		BAS05110
20552	1440001		INX 1	2		BAS05120
20553	0203345		SUR N51			BAS05130
20554	2516002		BNZ			BAS05140
20555	2600402		BRU COMP2			BAS05150
20556	2602103		BRU LET			BAS05160
20557	0203225	QN	SUR N21			BAS05170
20560	2516002		BNZ			BAS05180
20561	2600402		BRU COMP2			BAS05190
20562	0045060		LDA L	2		BAS05200
20563	1440001		INX 1	2		BAS05210
20564	0203351		SUR N55			BAS05220
20565	2516002		BNZ			BAS05230
20566	2600402		BRU COMP2			BAS05240
20567	0045060		LDA L	2		BAS05250
20570	1440001		INX 1	2		BAS05260
20571	0203345		SUR N51			BAS05270
20572	2516002		BNZ			BAS05280
20573	2600402		BRU COMP2			BAS05290
20574	2602141		BRU NEXT			BAS05300
20575	0203333	QP	SUR N41			BAS05310
20576	2516002		BNZ			BAS05320
20577	2600402		BRU COMP2			BAS05330
20600	0045060		LDA L	2		BAS05340
20601	1440001		INX 1	2		BAS05350
20602	0203231		SUR N25			BAS05360
20603	2516002		BNZ			BAS05370
20604	2600402		BRU COMP2			BAS05380
20605	0045060		LDA L	2		BAS05390
20606	1440001		INX 1	2		BAS05400
20607	0203327		SUR N37			BAS05410
20610	2516002		BNZ			BAS05420
20611	2600402		BRU COMP2			BAS05430
20612	0045060		LDA L	2		BAS05440
20613	1440001		INX 1	2		BAS05450
20614	0203345		SUR N51			BAS05460
20615	2516002		BNZ			BAS05470
20616	2600402		BRU COMP2			BAS05480
20617	2602307		BRU FRT			BAS05490
20620	0203225	QP	SUR N21			BAS05500
20621	2516002		BNZ			BAS05510
20622	2600402		BRU COMP2			BAS05520
20623	0045060		LDA L	2		BAS05530

COMPILATION OF INSTRUCTIONS

000011.

20624	1440001		INX 1	2		BAS05540
20625	0203345		SUR N51			BAS05550
20626	2514002		BZF			BAS05560
20627	2602564		BRU RET2			05570
20630	0103210		ADD N15			05580
20631	2514002		BZF			05590
20632	2602550		BRU REM			05600
20633	0103223		ADD N19			05610
20634	2516002		BNZ			BAS05620
20635	2600402		BRU COMP2			BAS05630
20636	0045060		LDA L	2		BAS05640
20637	1440001		INX 1	2		BAS05650
20640	0203224		SUR N20			BAS05660
20641	2516002		BNZ			BAS05670
20642	2600402		BRU COMP2			BAS05680
20643	2602513		BRU READ			BAS05690
20644	0203345	QS	SUR N51			BAS05700
20645	2516002		BNZ			BAS05710
20646	2600402		BRU COMP2			BAS05720
20647	0045060		LDA L	2		BAS05730
20650	1440001		INX 1	2		BAS05740
20651	0203330		SUR N38			BAS05750
20652	2516002		BNZ			BAS05760
20653	2600402		BRU COMP2			BAS05770
20654	0045060		LDA L	2		BAS05780
20655	1440001		INX 1	2		BAS05790
20656	0203331		SUR N39			BAS05800
20657	2516002		BNZ			BAS05810
20660	2600402		BRU COMP2			BAS05820
20661	2602566		BRU STOP			BAS05830
20662	0417777	QT	RXL 1	0	NOT LEGAL IN REGULAR BASIC	05840
20663	2600402		BRU COMP2			05850
20664	2512006		SLA 6		CHECK FOR TIME INSTRUCTION IN TEACH	05860
20665	0145060		ADD L	2	PACK NEXT 3 CHARACTERS IN LINE	05870
20666	2512006		SLA 6			05880
20667	0145061		ADD L+1	2		05890
20670	1440002		INX 2	2	INCREMENT LINE POINTER	05900
20671	2103643		CAR IME		CHECK THESE LETTERS	05910
20672	2600402		BRU COMP2		ILLEGAL INSTRUCTION	05920
20673	2600675		BRU **2			05930
20674	2600402		BRU COMP2		ILLEGAL INSTRUCTION	05940
20675	0005024		LDA ENDF			05950
20676	2514002		BZF COMP2		ILLEGAL FOR TESTED PROGRAM	05960
20677	2600402					
20700	2602615		BRU TIMCHK		OK TO PROCESS	05970

COMPILATION OF INSTRUCTIONS

000012

20701	0000001	DATA	EJT			05980
20702	0203165		LDA XR01		OVERWRITE LINE NO.	05990
20703	0300001		SUB N3			06000
20704	0417777		STA XR01			06010
20705	2600711		BXL 1	0	ALLOW DATA IN REGULAR BASIC	06020
20706	0005024		BRU DAT1			06030
20707	2514002		LDA ENDF		DO NOT ALLOW DATA IN TESTED PROGRAM	06040
20710	2600204		BZE			06050
20711	2506033		BRU LIST1		GO COMPIL NEXT LINE	06060
20712	0607175	DATA1	SXG 1		DISK POINTERS ARE IN GROUP 1	06070
20713	0647174		LDX DATA1	0	WORDS IN BUFFER	06080
20714	0667601		LDX DATAJ	2	INDEX RELATIVE TO D	06090
20715	0577730		LDX DPNT	3	RECORD CURRENTLY IN MEMORY	06100
20716	2601014		BXW 40	3	TOO MUCH DATA	06110
20717	2600757		BRU DATA7		GET OUT	06120
20720	2506013		BRU DATA6		START BY LOOKING FOR A CARRIAGE RETURN	06130
20721	0662720		SXG 0		CONVERT NUMBER IN GROUP 0	06140
20722	0045060	DATA1	LDX ZERO	3	COUNT CHARACTERS ACCUMULATED	06150
20723	2103355		LDA L	2	LOOK AT NEXT CHARACTER	06160
20724	2600726		CAR N59		CHECK FOR COMMA	06170
20725	2600741		BRU **2			06180
20726	0364760		BRU DATA2			06190
20727	0000002		STA FLTA	3	SAVE FOR FLT ROUTINE	06200
20730	1440001		LDA XR02		CHECK FOR END OF LINE	06210
20731	2104740		INX 1	2		06220
20732	2600735		CAR ENDL			06230
20733	2600750		BRU **3			06240
20734	2600750		BRU DATA3			06250
20735	1460001		BRU DATA3			06260
20736	0577760		INX 1	3		06270
20737	2601040		BXW 16	3	NO MORE THAN 16 CHAR PER NUMBER	06280
20740	2600722		BRU DATA4		ILLEGAL CONSTANT	06290
20741	1440001	DATA2	BRU DATA1		ACCUMULATE ANOTHER CHARACTER	06300
20742	0000003		INX 1	2	ENTER AFTER COMMA	06310
20743	2514002		LDA XR03		SKIP CONSECUTIVE COMMAS	06320
20744	2600722		BZE			06330
20745	0203165		BRU DATA1			06340
20746	0304745		SUR ONE		SET UP CHARACTER COUNT FOR FLT	06350
20747	2600751		STA FLTN			06360
20750	1764745	DATA3	BRU DATA5			06370
20751	0764040	DATA5	STX FLTN	3	ENTERED AT END OF LINE	06380
20752	2601040		SPR FLT	3	GO CONVERT NUMBER TO NFLPOINT	06390
20753	2506033		BRU DATA4		ERROR RETURN	06400
20754	3347200		SXG 1		GET BACK TO POINTERS	06410
20755	1400002		FST 0	2	GET RID OF CONVERTED NUMBER	06420
20756	1440002		INX 2	0		06430
20757	2506013	DATA6	INX 2	2		06440
20758	0045060		SXG 0		CHECK FOR CARRIAGE RETURN	06450
20759	2103247		LDA L	2		06460
20760	2600764		CAR N31			06470
20761	2601014		BRU **2			06480
20762	2506033		BRU DATA7			06490
20763	0417600		SXG 1			06500
20764			PXL 128	0	IF BUFFER NOT FULL GO PICK UP NUMBER	06510

COMPILATION OF INSTRUCTIONS

000013

20766	2600720	BRU DATA1-2			06520
20767	0721022	SPR DCHEK	1	ELSE GET READY TO WRITE OUT BUFFER LOAD	06530
20770	0000007	LDA XR13		PUT RECORD NUMBER IN PLIST	06540
20771	0102657	ADD SIGN			06550
20772	0307172	STA PLIST+2			06560
20773	0007171	LDA PLIST+1		FLIP BUFFERS	06570
20774	2002711	EXT 0400			06580
20775	0102712	ADD 0200			06590
20776	0307171	STA PLIST+1			06600
20777	0003167	LDA N5		CALL DISK I/O ROUTINE	06610
21000	2506113	SXG 4			06620
21001	0720000	SPR 8192	1		06630
21002	0007170	DEC PLIST			06640
21003	2506015	SET PST			06650
21004	2506033	SXG 1			06660
21005	1460002	INX 2	3	BUMP RECORD NUMBER	06670
21006	0577730	BRW 40	3	CRUMP IF THAT WAS THE LAST AVAIL RECORD	06680
21007	2601014	BRU DATA7			06690
21010	0602726	LDX ZERO	0	RESET BUFFER POINTER	06700
21011	0557400	BRW 256	2	RESET D INDEX IF OUT OF RANGE	06710
21012	0642726	LDX ZERO	2		06720
21013	2600720	BRU DATA1-2		BUFFER WORK ALL DONE - GO GET NEXT NUMBER	06730
21014	2506033	DATA7 SXG 1		CLOSE OUT	06740
21015	1707175	STX DATA1	0		06750
21016	1747174	STX DATAJ	2		06760
21017	1767601	STX DPNT	3		06770
21020	2506013	SXG 0			06780
21021	2600204	BRU LIST1			06790
21022	0007173	DCHEK LDA PLIST+3		CHECK FLAG WORD	06800
21023	2514000	ROD			06810
21024	2620001	BRU 1	1	EVERYTHING PERFECT	06820
21025	2514002	RZF			06830
21026	2601022	BRU DCHEK		IF OP NOT COMPLETED WAIT FOR IT	06840
21027	2506113	SXG 4		OTHERWISE I MUST HAVE BEEN CRUMPED BECAUSE OF	06850
21030	0003164	LDA N2		TOO MANY TASKS. SO INTERMEDIATE OUTPUT TO	06860
21031	0720000	SPR 8192	1	LET THINGS STRAIGHTEN OUT	06870
21032	0003167	LDA N5		THEN REQUEST OP AGAIN	06880
21033	0720000	SPR 8192	1		06890
21034	0007170	DEC PLIST			06900
21035	2506015	SET PST			06910
21036	2506033	SXG 1			06920
21037	2601022	BRU DCHEK		WAIT AND HOPE	06930
21040	1005012	DATA4 OLD ERM OV			06940
21041	2427530	MOV LAB2		*ILLEGAL CONSTANT*	06950
21042	2604760	BRU ERROR		GO TO ERROR BOOKKEEPING ROUTINE	06960
		NAM		COMPILATION OF DEF	06970

COMPIlation OF DEF

000014

21043	0045060	DEF	EJT	
21044	0203226		LDA L	2
21045	2516002		SUR N22	
21046	2601127		RNZ	
21047	1440001		BRU DEF2	
21050	0045060		INX 1	2
21051	0203327		LDA L	2
21052	2516002		SUR N37	
21053	2601127		RNZ	
21054	0000001		BRU DEF2	
21055	0203165		LDA XR01	
21056	0300001		SUR N3	
21057	0003476		STA XR01	
21060	0103344		LDA EXULOC	
21061	0303476		ADD N50	
21062	1440001		STA EXULOC	
21063	0045060		INX 1	2
21064	0300003		LDA L	2
21065	0063162		STA 3	
21066	0203203		LDA S	3
21067	2514001		SUR TEN	
21070	2601127		RNZ	
21071	0300003		BRU DEF2	
21072	1724737		STA 3	
21073	1420001		STX DEFT	1
21074	0003571		INX 1	1
21075	0103464		LDA ZBRU	
21076	0100001		ADD PLOC	
21077	0367602		ADD 1	
21100	1440002		STA FNT	3
21101	0002725		INX 2	2
21102	0305041		LDA MIN	
21103	0764542		STA T+9	
21104	2601127		SPR VAR	3
21105	1440001		BRU DEF2	
21106	0045060		INX 1	2
21107	0203207		LDA L	2
21110	2516002		SUR N14	
21111	2601127		RNZ	
21112	1440001		BRU DEF2	
21113	0762624		INX 1	2
21114	2601127		SPR ARITH	3
21115	0664737		BRU DEF2	
21116	0003571		LDX DEFT	3
21117	0103464		LDA ZBRU	
21120	0103164		ADD PLOC	
21121	0100001		ADD TWO	
21122	0367724		ADD 1	
21123	0003476		STA P	3
21124	0203344		LDA EXULOC	
21125	0303476		SUR N50	
21126	2602555		STA EXULOC	
21127	0003476	DEF2	BRU RET	
			LDA EXULOC	

BACK OFF OBJECT POINTER TO OVERWRITE
LINE NUMBER

06980
06990
07000
07010
07020
07030
07040
07050
07060
07070
07080
07090
07100
07110
07120
07130
07140
07150
07160
07170
07180
07190
07200
07210
07220
07230
07240
07250
07260
07270
07280
07290
07300
07310
07320
07330
07340
07350
07360
07370
07380
07390
07400
07410
07420
07430
07440
07450
07460
07470
07480
07490
07500
07510

COMPILATION OF DEF

000015

21130 0203344
21131 0303476
21132 2602136

SUB N50
STA EXULOC
BRU LETER
NAM

DIMENSION STATMENTS

07520
07530
07540
07550

DIMENSION STATEMENTS

000016

21133	0000001	DIM	EJT			07560
21134	0203165		LDA XR01		BACK OFF OBJECT POINTER	07570
21135	0300001		SUB N3			07580
21136	0045060		STA XR01			07590
21137	0300003		LDA L	2	GET VARIABLE TO BE DIMENSIONED	07600
21140	0063162		STA 3			BAS07610
21141	2103326		LDA S	3		BAS07620
21142	2601151		CAR N36		CHECK FOR \$ ARRAY	07630
21143	2601145		BRU ++7		NOT \$	07640
21144	2601151		BRU ++2			07650
21145	0005024		BRU ++5			07660
21146	2514002		LDA ENDF		PERMIT \$ ONLY IN TESTER	07670
21147	2604537		RZE VARER		ILLEGAL VARIABLE	07680
21150	0003326		LDA N36		RESTORE A REG	07690
21151	0203203		SUB TEN			BAS07700
21152	2514001		RMI			BAS07710
21153	2601252		BRU DIMER			BAS07720
21154	2512001		SLA 1			BAS07730
21155	0300003		STA 3			BAS07740
21156	0103163		ADD ONE			BAS07750
21157	0305030		STA T			BAS07760
21160	1440001		INX 1	2		BAS07770
21161	0045060		LDA L	2		BAS07780
21162	0203357		SUB N61			BAS07790
21163	2516002		RNZ			BAS07800
21164	2601252		BRU DIMER			BAS07810
21165	1440001		INX 1	2		BAS07820
21166	0764372		SPR INST	3		BAS07830
21167	2601252		BRU DIMER			BAS07840
21170	0103163		ADD ONE			07850
21171	0305031		STA T+1			BAS07860
21172	0045060		LDA L	2		BAS07870
21173	0203355		SUB N59			BAS07880
21174	2514002		RZE			BAS07890
21175	2601244		BRU DIM2			BAS07900
21176	0003163		LDA ONE			BAS07910
21177	0305032		STA T+2			BAS07920
21200	0045060	DIM3	LDA L	2		BAS07930
21201	0203360		SUB N62			BAS07940
21202	2516002		RNZ			BAS07950
21203	2601252		BRU DIMER			BAS07960
21204	1440001		INX 1	2		BAS07970
21205	0665030		LDX T	3		07980
21206	0005031		LDA T+1			07990
21207	2512011		SLA 9			08000
21210	0105032		ADD T+2			08010
21211	0367636		STA DIMX	3		08020
21212	0005032		LDA T+2			BAS08030
21213	2504006		MAD			BAS08040
21214	1505031		MPY T+1			BAS08050
21215	2504005		XAD			BAS08060
21216	2512001		SLA 1			BAS08070
21217	2504522		NEG		CALCULATE NEW AVAILABLE SPACE POINTER	08080

DIMENSION STATEMENTS

000017

21220	0105022	ADD	VAVAIL			08090
21221	0305022	STA	VAVAIL			08100
21222	0103164	ADD	TWO		COMPUTE FIRST LOCATION OF ARRAY	08110
21223	0367635	STA	DIMX-1	3	STORE IN FIRST WORD OF PAIR	08120
21224	0203464	SUR	PLOC		CHECK FOR BLATANT OVERFLOW	08130
21225	2514001	RMI				08140
21226	2601253	BRU	DIMER2			BAS08150
21227	0045060	LDA	L	2		BAS08160
21230	0203247	SUR	N31			BAS08170
21231	2514002	RZE				BAS08180
21232	2600204	BRU	LIST1			BAS08190
21233	0203244	SUR	N28			BAS08200
21234	2516002	RNZ				BAS08210
21235	2601252	BRU	DIMER			BAS08220
21236	1440001	INX	1	2		BAS08230
21237	0045060	LDA	L	2		BAS08240
21240	0203247	SUR	N31			BAS08250
21241	2514002	RZE				BAS08260
21242	2600204	BRU	LIST1			BAS08270
21243	2601136	BRU	DIM+3		LOOP IF NO CARRIAGE RETURN	08280
21244	1440001	DIM2	INX 1	2		BAS08290
21245	0764372	SPR	INST	3		BAS08300
21246	2601252	BRU	DIMER			BAS08310
21247	0103163	ADD	ONE			08320
21250	0305032	STA	T+2			BAS08330
21251	2601200	BRU	DIM3			BAS08340
21252	2602136	DIMER	BRU LETER			08350
21253	2604701	DIMER2	BRU VARER2			08360
		NAM			END STATEMENT	08370

END STATEMENT

000018

21254	0000001	END	EJT			08380
21255	0203165		LDA XR01		BACK OFF OBJECT POINTER	08390
21256	0300001		SUR N3			08400
21257	0665005		STA XR01			08410
21260	0060000		LDX IR3	3	CHECK FOR END IS NOT LAST	08420
21261	0202677		LDA U	3		08430
21262	2516002		SUR BLEOM			08440
21263	2601274		RNZ ENDER			08450
21264	0417777		BXL 1	0	IN REGULAR BASIC GO SET UP FOR RUN-TIME	08460
21265	2605064		RRU RUN			08470
21266	0005024		LDA ENDF			08480
21267	2514001		BMI RUN		AFTER SECOND END SET UP TO RUN	08490
21270	2605064					
21271	2504102		LMO		AFTER FIRST END SET UP TO COMPILE TESTER	08500
21272	0305024		STA ENDF			08510
21273	2600222		RRU LIST11			08520
21274	1005012	ENDER	DLN ERMV		END IS NOT LAST	08530
21275	2427612		MOV LAB10			08540
21276	2600233		BRU LISTER+2			08550
			NAM		FOR STATEMENTS	08560

FOR STATEMENTS

000019

21277	0003163	FOR	EJT		08570
21300	0305041		LDA ONE		08580
21301	0764421		STA T+9		08590
21302	2601450		SPR VAR10	3	08600
21303	0665007		BRU FOR1		08610
21304	0577731		LDX NN	3	08620
21305	2601451		RXH 39	3	08630
21306	0005031		BRU FOR9		08640
21307	0366450		LDA T+1		08650
21310	0005006		STA N	3	08660
21311	2102722		LDA IRN		08670
21312	2504012		CAR TENT+3		08680
21313	2601315		NOP		08690
21314	2601451		BRU **2		08700
21315	0366452		BRU FOR9		08710
21316	0103466		STA N+2	3	08720
21317	0305032		ADD IRLOC		BAS08730
21320	0103164		STA T+2		BAS08740
21321	0305033		ADD TWO		BAS08750
21322	0005006		STA T+3		BAS08760
21323	0103166		LDA IRN		08770
21324	0305006		ADD N4		08780
21325	0045060		STA IRN		08790
21326	0203207		LDA L	2	BAS08800
21327	2516002		SUP N14		BAS08810
21330	2601450		RNZ		BAS08820
21331	1440001		BRU FOR2		BAS08830
21332	0762624		INX 1	2	BAS08840
21333	2601450		SPR ARITH	3	BAS08850
21334	0003576		BRU FOR3		BAS08860
21335	0105031		LDA ZFST		BAS08870
21336	0327724		ADD T+1		BAS08880
21337	1420001		STA P	1	BAS08890
21340	0045060		INX 1	1	BAS08900
21341	0203345		LDA L	2	BAS08910
21342	2516002		SUP N51		08920
21343	2601450		RNZ		08930
21344	1440001		BRU FOR4		08940
21345	0045060		INX 1	2	08950
21346	0203330		LDA L	2	08960
21347	2516002		SUP N38		08970
21350	2601450		RNZ		BAS08980
21351	1440001		BRU FOR4		BAS08990
21352	0762624		INX 1	2	BAS09000
21353	2601450		SPR ARITH	3	BAS09010
21354	0003576		BRU FOR3		BAS09020
21355	0105032		LDA ZFST		BAS09030
21356	0327724		ADD T+2		BAS09040
21357	1420001		STA P	1	BAS09050
21360	0000002		INX 1	1	BAS09060
21361	0204740		LDA 2		BAS09070
21362	2514001		SUP ENDL		BAS09080
21363	2601400		RMT		BAS09090
			BRU FOR5		BAS09100

DECIMAL 100, RUN TIME CONSTANT

FOR STATEMENTS

000020

21364	0665007		LDX NN	3	09110
21365	1460001	FOR6	INX 1	3	09120
21366	0003574		LDA ZFLD		09130
21367	0105031		ADD T+1		09140
21370	0327724		STA P	1	09150
21371	1420001		INX 1	1	09160
21372	0000001		LDA 1		09170
21373	1420001		INX 1	1	09180
21374	0366450		STA N	3	09190
21375	1460002		INX 2	3	09200
21376	1765007		STX NN	3	09210
21377	2600204		BRU LIST1		09220
21400	0045060	FOR5	LDA L	2	BAS09230
21401	0203355		SUB N59		BAS09240
21402	2516002		BNZ		BAS09250
21403	2601405		BRU FOR7		BAS09260
21404	1440001		INX 1	2	BAS09270
21405	0045060	FOR7	LDA L	2	BAS09280
21406	0203344		SUB N50		BAS09290
21407	2516002		BNZ		BAS09300
21410	2601450		BRU FOR8		BAS09310
21411	1440001		INX 1	2	09320
21412	0045060		LDA L	2	09330
21413	0203345		SUB N51		09340
21414	2516002		BNZ		09350
21415	2601450		BRU FOR8		09360
21416	1440001		INX 1	2	09370
21417	0045060		LDA L	2	09380
21420	0203225		SUB N21		09390
21421	2516002		BNZ		09400
21422	2601450		BRU FOR8		09410
21423	1440001		INX 1	2	09420
21424	0045060		LDA L	2	09430
21425	0203331		SUB N39		09440
21426	2516002		BNZ		09450
21427	2601450		BRU FOR8		09460
21430	1440001		INX 1	2	09470
21431	0762624		SPP ARITH	3	BAS09480
21432	2601450		BRU FOR3		BAS09490
21433	0045060		LDA L	2	09500
21434	0203247		SUB N31		09510
21435	2516002		BNZ		09520
21436	2602136		BRU LETER		09530
21437	0003576		LDA ZFST		BAS09540
21440	0105033		ADD T+3		BAS09550
21441	0327724		STA P	1	09560
21442	1420001		INX 1	1	09570
21443	0665007		LDX NN	3	09580
21444	0066450		LDA N	3	09590
21445	2504040		CHS		09600
21446	0366450		STA N	3	09610
21447	2601365		BRU FOR6		BAS09620
21450	2602136	FOR1	BRU LETEP		09630
	21450	FOR2	BRU FOR1		09640

FOR STATEMENTS

000021

	21450	FOR3	EQU FOR1
	21450	FOR4	EQU FOR1
	21450	FOR8	EQU FOR1
21451	1005012	FOR9	DLN ERMQV
21452	2427673		MOV LAB19
21453	2604760		BRU ERROR
			NAM

GOTO AND GOSUB

09650
09660
09670
09680
09690
09700
09710

21454	0417777	GO	EJT			09720
21455	2601460		RXL 1	0	IN REGULAR BASIC SET UP NOP FOR	09730
21456	0003616		RRU GG1		INTERRUPTIBILITY	09740
21457	2601461		LDA ZTIM		IN TEACH SET UP INF LOOP CATCHER	09750
21460	0003626	GG1	RRU GG2			09760
21461	0327724	GG2	LDA ZNOP			09770
21462	1420001		STA P	1		09780
21463	0045060		INX 1	1		09790
21464	0203344		LDA L	2		09800
21465	2514002		SUR N50			BAS09810
21466	2601547		BZE			BAS09820
21467	0203163		RRU GO1			BAS09830
21470	2516002		SUR ONE			BAS09840
21471	2601546		RNZ			BAS09850
21472	1440001		RRU GOER			BAS09860
21473	0045060		INX 1	2		BAS09870
21474	0203330		LDA L	2		BAS09880
21475	2516002		SUR N38			BAS09890
21476	2601546		RNZ			BAS09900
21477	1440001		RRU GOER			BAS09910
21500	0045060	G02	INX 1	2		BAS09920
21501	2103336		LDA L	2	CHECK FOR *	09930
21502	2601504		CAR N44			09940
21503	2601534		RRU **2		NOT *	09950
21504	0764372		RRU G021		CHECK TO SEE IF STAR IS LEGAL	09960
21505	2601546		SPR INST	3	NORMAL PATH	09970
21506	0305031		RRU G03			BAS09980
21507	2102720		STA T+1			BAS09990
21510	2601515		CAR TENT+1		MAKE SURE TESTED CANNOT GET TO TESTER	10000
21511	2601512		RRU **5		NO PROBLEM	10010
21512	0005024		RRU **1			10020
21513	2514002		LDA ENDF			10030
21514	2604415		RZE INST8		ILLEGAL NUMBER IF USED BY TESTED PROGRAM	10040
21515	0045060		LDA L	2		10050
21516	0203247		SUR N31			10060
21517	2516002		RNZ			10070
21520	2602136		RRU LETER			10080
21521	0665001		LDX GN	3		BAS10090
21522	0005001		LDA GN			BAS10100
21523	0103465		ADD GLOC			BAS10110
21524	0103571		ADD ZBRU			BAS10120
21525	0327724		STA P	1		BAS10130
21526	0005031		LDA T+1			10140
21527	0366750		STA G	3		BAS10150
21530	1460001		INX 1	3		BAS10160
21531	1765001		STY GN	3		BAS10170
21532	1420001		INX 1	1		BAS10180
21533	2600204		RRU LIST1			BAS10190
21534	0417777	G021	RXL 1	0	NOT LEGAL IN REG BASIC	10200
21535	2604416		RRU INST8			10210
21536	0005024		LDA ENDF		CHECK FOR LEGAL IN TEACH	10220
21537	2514002		RZE INST8		ILLEGAL NUMBER FOR TESTED PROGRAM	10230
21540	2604415					

21541	0003571	LDA ZBRU	FOR TESTER CONSTRUCT *BRU P*	10240
21542	0103464	ADD PLOC		10250
21543	0327724	STA P	PLACE IN OBJECT	10260
21544	1420001	INX 1		10270
21545	2600204	BRU LIST1	PROCESS NEXT LINE	10280
21546	2600402	BRU COMP2		10290
	21546	EQU GOER		10300
21547	1440001	INX 1		BAS10310
21550	0045060	LDA L		BAS10320
21551	0203346	SUB N52		10330
21552	1440001	INX 1		10340
21553	2516002	BNZ		BAS10350
21554	2601546	BRU GOER	ST UP SPB TO PUSH DOWN RETURN	BAS10360
21555	0003622	LDA ZPUSH		10370
21556	0327724	STA P		10380
21557	1420001	INX 1		10390
21560	2601477	BRU GO2-1	IF STATEMENTS	BAS10400
		NAM		10410

IF STATEMENTS

000024

21561	0417777	IF	EJT				10420
21562	2601565		RXL 1	0		INSERT NOP IN REGULAR BASIC	10430
21563	0003616		BRU IFF1				10440
21564	2601566		LDA ZTIM			SET UP SPB TO LOOP STOPPER IN TEACH	10450
21565	0003626	IFF1	BRU IFF2				10460
21566	0327724		LDA ZNOP				10470
21567	1420001	IFF2	STA P	1			10480
21570	0762624		INX 1	1			10490
21571	2601716		SPR ARITH	3			10500
21572	0003577		BRU IF1			BAS10510	
21573	0327724		LDA ZFSTT			BAS10520	
21574	1420001		STA P	1		BAS10530	
21575	0045060		INX 1	1		BAS10540	
21576	0203207		LDA L	2			10550
21577	2514002		SUP N14				10560
21600	2601643		RZF				10570
21601	0203211		BRU IF30				10580
21602	2514002		SUB N16				10590
21603	2601622		RZF				10600
21604	0203211		BRU IF31				10610
21605	2516002		SUP N16				10620
21606	2601716		RNZ				10630
21607	1440001		BRU IF4				10640
21610	0045060		INX 1	2			10650
21611	0203207		LDA L	2			10660
21612	2516002		SUP N14				10670
21613	2601617		RNZ				10680
21614	0003167		BRU IF32				10690
21615	0305002		LDA N5				10700
21616	2601645		STA IFT				10710
21617	0003164	IF32	BRU IF33				10720
21620	0305002		LDA TWO				10730
21621	2601646		STA IFT				10740
21622	1440001	IF31	BRU IF34				10750
21623	0045060		INX 1	2			10760
21624	0203207		LDA L	2			10770
21625	2516002		SUP N14				10780
21626	2601632		RNZ				10790
21627	0003165		BRU IF35				10800
21630	0305002		LDA N3				10810
21631	2601645		STA IFT				10820
21632	0203250	IF35	BRU IF33				10830
21633	2516002		SUP N32				10840
21634	2601640		RNZ				10850
21635	0003166		BRU IF36				10860
21636	0305002		LDA N4				10870
21637	2601645		STA IFT				10880
21640	0003163	IF36	BRU IF33				10890
21641	0305002		LDA ONE				10900
21642	2601646		STA IFT				10910
21643	0002726	IF30	BRU IF34				10920
21644	0305002		LDA ZERO				10930
21645	1440001	IF33	STA IFT				10940
			INX 1	2			10950

IF STATEMENTS

000025

21646	0762624	IF34	SPR ARITH	3	10960
21647	2601716		BRU IF1		BAS10970
21650	0003600		LDA ZFSIT2		BAS10980
21651	0327724		STA P	1	BAS10990
21652	1420001		INX 1	1	BAS11000
21653	0045060		LDA L	2	11010
21654	0203355		SUR N59		11020
21655	2514002		BZE		11030
21656	1440001		INX 1	2	11040
21657	0045060		LDA L	2	11050
21660	0203345		SUR N51		11060
21661	2516002		BNZ		11070
21662	2602136		BRU LETER		11080
21663	1440001		INX 1	2	11090
21664	0045060		LDA L	2	11100
21665	0203230		SUR N24		11110
21666	2516002		BNZ		11120
21667	2602136		BRU LETER		11130
21670	1440001		INX 1	2	11140
21671	0045060		LDA L	2	11150
21672	0203225		SUR N21		11160
21673	2516002		BNZ		11170
21674	2602136		BRU LETER		11180
21675	1440001		INX 1	2	11190
21676	0045060		LDA L	2	11200
21677	0203327		SUR N37		11210
21700	2516002		BNZ		11220
21701	2602136		BRU LETER		11230
21702	1440001		INX 1	2	11240
21703	0005002		LDA IFT		11250
21704	2103163		CAR ONE		11260
21705	2601721		BRU IF2		11270
21706	2601737		BRU IF7		11280
21707	2103165		CAR N3		11290
21710	2602016		BRU IF20		11300
21711	2601730		BRU IF6		11310
21712	0203166		SUR N4		11320
21713	2514002		BZE		11330
21714	2602025		BRU IF21		11340
21715	2602034		BRU IF22		11350
21716	1005012	IF4	DLD ERM OV		11360
21717	2427564		MOV LAP6		11370
21720	2604760		BRU ERROR		11380
	21716	IF8	EQU IF4		11390
	21716	IF1	EQU IF4		11400
21721	0003603	IF2	LDA ZFSUT		BAS11410
21722	0327724		STA P	1	BAS11420
21723	1420001		INX 1	1	BAS11430
21724	0003607		LDA ZBARZ		BAS11440
21725	0327724		STA P	1	BAS11450
21726	1420001		INX 1	1	BAS11460
21727	2601750		BRU IF5		BAS11470
21730	0003603	IF6	LDA ZFSUT		BAS11480
21731	0327724		STA P	1	BAS11490

IF STATEMENTS

000026

21732	1420001		INX 1	1		BAS11500
21733	0003605		LDA ZBARP			BAS11510
21734	0327724		STA P	1		BAS11520
21735	1420001		INX 1	1		BAS11530
21736	2601750		BRU IF5			BAS11540
21737	0003575	IF7	LDA ZFLDT			BAS11550
21740	0327724		STA P	1		BAS11560
21741	1420001		INX 1	1		BAS11570
21742	0003604		LDA ZFSUT2			BAS11580
21743	0327724		STA P	1		BAS11590
21744	1420001		INX 1	1		BAS11600
21745	0003606		LDA ZBARM			BAS11610
21746	0327724		STA P	1		BAS11620
21747	1420001		INX 1	1		BAS11630
21750	0045060	IF5	LDA L	2	CHECK FOR * AFTER THEN	11640
21751	2103336		CAR N44			11650
21752	2601754		BRU **2		NO	11660
21753	2602004		BRU IF50		YES	11670
21754	0764372		SPR INST	3	CONVERT LINE NO. TO BINARY	11680
21755	2601716		BRU IF8			BAS11690
21756	0305030		STA T			BAS11700
21757	2102720		CAR TENT+1		DONT LET TESTED PROG USE LINE NO.S THIS BIG	11710
21760	2601765		BRU **5		NO SWEAT	11720
21761	2601762		BRU **1			11730
21762	0005024		LDA ENDF			11740
21763	2514002		BZF INST8		ILLEGAL NUMBER FOR TESTED PROGRAM	11750
21764	2604416					
21765	0045060		LDA L	2		11760
21766	0203247		SUR N31			11770
21767	2516002		BNZ			11780
21770	2602136		BRU LETER			11790
21771	0005001		LDA GN			BAS11800
21772	0300003		STA 3			BAS11810
21773	0103465		ADD GLOC			BAS11820
21774	0103571		ADD ZBRU			BAS11830
21775	0327724		STA P	1		BAS11840
21776	1420001		INX 1	1		BAS11850
21777	0005030		LDA T			BAS11860
22000	0366750		STA G	3		11870
22001	1460001		INX 1	3		11880
22002	1765001		STX GN	3		11890
22003	2600204		BRU LIST1			11900
22004	0417777	IF50	BXL 1	0	* NOT A LEGAL ADDRESS IN REG BASIC	11910
22005	2604416		BRU INST8			11920
22006	0005024		LDA ENDF		CHECK FOR LEGAL OCCURRENCE IN TEACH	11930
22007	2514002		BZF INST8		ILLEGAL NUMBER FOR TESTED PROG	11940
22010	2604416					
22011	0003571		LDA ZBRU		COMPILE *BRU P* FOR TESTER	11950
22012	0103464		ADD PLOC			11960
22013	0327724		STA P	1	PUT IN OBJECT	11970
22014	1420001		INX 1	1		11980
22015	2600204		BRU LIST1		DONE WITH THIS LINE	11990
22016	0003603	IF20	LDA ZFSUT			12000
22017	0327724		STA P	1		12010

IF STATEMENTS

000027

22020	1420001		INX 1	1
22021	0003606		LDA ZBARM	
22022	0327724		STA P	1
22023	1420001		INX 1	1
22024	2601750		BRU IF5	
22025	0003603	IF21	LDA ZFSUT	
22026	0327724		STA P	1
22027	1420001		INX 1	1
22030	0003610		LDA ZBARN	
22031	0327724		STA P	1
22032	1420001		INX 1	1
22033	2601750		BRU IF5	
22034	0003575	IF22	LDA ZFLDT	
22035	0327724		STA P	1
22036	1420001		INX 1	1
22037	0003604		LDA ZFSUT2	
22040	0327724		STA P	1
22041	1420001		INX 1	1
22042	0003605		LDA ZBARP	
22043	0327724		STA P	1
22044	1420001		INX 1	1
22045	2601750		BRU IF5	
			NAM	

REAL TIME INPUT COMMAND

12020
12030
12040
12050
12060
12070
12080
12090
12100
12110
12120
12130
12140
12150
12160
12170
12180
12190
12200
12210
12220
12230
12240

			EJT			12250
			REM	ROUTINE FOR COMPILING INPUT STATEMENTS		12260
			REM	THE FOLLOWING CODING IS GENERATED		12270
			REM	SPB INCALL,1 GO TO EXEC FOR INPUT		12280
			REM	THE NEXT 2 INSTRUCTIONS ARE REPEATED AS		12290
			REM	OFTEN AS NECESSARY TO CONVERT ALL		12300
			REM	INPUT AND STORE IT.		12310
			REM	SPB INCONV,1 FLOAT THE NEXT NUMBER		12320
			REM	FST ARG (ARRAY ELEMENTS GENERATE		12330
			REM	ENOUGH CODING TO LOCATE THE		12340
			REM	ELEMENT.)		12350
			REM	SPB INDONE,1 CHECK TO MAKE SURE THAT		12360
			REM	ALL NUMBERS INPUT HAVE		12370
			REM	FOUND A HOME.		12380
				SET UP CALL AND INITIALIZATION		12390
22046	0003665	INP	LDA ZINCL			12400
22047	0327724		STA P	1		12410
22050	2504102		LMO		SET FLAG FOR STORE IN VAR	12420
22051	0305041		STA T+9			12430
22052	1420001		INX 1	1		12440
22053	0003666	INP1	LDA ZINCON		SET UP SPB TO CONVERT	12450
22054	0327724		STA P	1		12460
22055	1420001		INX 1	1		12470
22056	0764542		SPR VAR	3	GO GENERATE STORE	12480
22057	2602136		BRU LETER		ERROR RETURN	12490
22060	0045060		LDA L	2	CHECK FOR COMMA	12500
22061	2103355		CAR N59			12510
22062	2602073		BRU INP2		MIGHT BE END OF LINE CHECK FOR CR	12520
22063	2602065		BRU ++2			12530
22064	2602136		BRU LETER			12540
22065	1440001		INX 1	2	THERE MAY BE ANOTHER FIELD. CHECK FOR CR	12550
22066	0045060		LDA L	2		12560
22067	2103247		CAR N31			12570
22070	2602053		BRU INP1		PROCESS NEXT VARIABLE	12580
22071	2602077		BRU INP3		DONE	12590
22072	2602053		BRU INP1			12600
22073	2103247	INP2	CAR N31			12610
22074	2602136		BRU LETER			12620
22075	2602077		BRU INP3		DONE	12630
22076	2602136		BRU LETER		ERROR MESSAGE IS *INCORRECT FORMAT*	12640
22077	0003667	INP3	LDA ZINDN		SET UP SPB TO CHECK FOR DONE	12650
22100	0327724		STA P	1		12660
22101	1420001		INX 1	1		12670
22102	2600204		BRU LIST1			12680
			NAM		LET STATEMENT	

LET STATEMENT

000029

22103	1745031	LET	EUT	
22104	1440001		STX T+1	2
22105	0045060		INX 1	2
22106	0203207		LDA L	2
22107	2514002		SUB N14	
22110	2602116		BZE	
22111	0000002		BRU LET1	
22112	0204740		LDA 2	
22113	2516001		SUB ENDL	
22114	2602136		BPL	
22115	2602104		BRU LETER	
22116	1440001	LET1	BRU LET+1	
22117	0762624		INX 1	2
22120	2602136		SPR ARITH	3
22121	0045060		BRU LETER	
22122	0203247		LDA L	2
22123	2516002		SUB N31	
22124	2602136		RNZ	
22125	0645031		BRU LETER	
22126	0002725		LDX T+1	2
22127	0305041		LDA MIN	
22130	0764542		STA T+9	
22131	2602136		SPR VAR	3
22132	0045060		BRU LETER	
22133	0203207		LDA L	2
22134	2514002		SUB N14	
22135	2600204		BZE	
22136	1005012	LETER	BRU LIST1	
22137	2427602		DLO ERMov	
22140	2604760		MOV LAR8	
			BRU ERROR	
			NAM	

NEXTSTATEMENT (SEE FOR)

12690
 BAS12700
 BAS12710
 BAS12720
 BAS12730
 BAS12740
 BAS12750
 BAS12760
 BAS12770
 BAS12780
 BAS12790
 BAS12800
 BAS12810
 BAS12820
 BAS12830
 12840
 12850
 12860
 12870
 BAS12880
 BAS12890
 BAS12900
 BAS12910
 BAS12920
 12930
 12940
 12950
 BAS12960
 12970
 12980
 12990
 13000

NEXTSTATEMENT [SEE FOR]

000030

22141	0417777	NEXT	EJT				13010
22142	2602146		SXL 1	0	DO NOT PUT IN LOOP CATCHER IN REG BASIC		13020
22143	0003616		BRU NXT1				13030
22144	0327724		LDA ZTIM		FOR TEACH		13040
22145	1420001		STA P	1			13050
22146	2504022	NXT1	INX 1	1			13060
22147	0305041		LDA				13070
22150	0764421		STA T+9				13080
22151	2602303		SPR VAR10	3			13090
22152	0005007		BRU NEXT1				13100
22153	2514002		LDA NN				13110
22154	2602304		RZE				13120
22155	0203165		BRU NEXT2				13130
22156	0300003		SUR N3				13140
22157	0066450		STA 3				13150
22160	0305030		LDA N	3			13160
22161	2514001		STA T				13170
22162	2504040		BMI				13180
22163	0205031		CHS				13190
22164	2516002		SUR T+1				13200
22165	2602304		BNZ				13210
22166	1765007		BRU NEXT2				13220
22167	1460001		STX NN	3			13230
22170	1725032		INX 1	3			13240
22171	0066450		STX T+2	1			13250
22172	0300001		LDA N	3			13260
22173	0003571		STA 1				13270
22174	0103464		LDA ZBRU				13280
22175	0103165		ADD PLOC				13290
22176	0105032		ADD N3				13300
22177	0327724		ADD T+2				13310
22200	0625032		STA P	1			13320
22201	0066451		LDX T+2	1			13330
22202	0103466		LDA N+1	3			13340
22203	0305032		ADD IRLOC				BAS13350
22204	0103164		STA T+2				BAS13360
22205	0305033		ADD TWO				BAS13370
22206	0003574		STA T+3				BAS13380
22207	0105031		LDA ZFLD				BAS13390
22210	0327724		ADD T+1				BAS13400
22211	1420001		STA P	1			BAS13410
22212	0005030		INX 1	1			BAS13420
22213	2516001		LDA T				13430
22214	2602220		BPL				13440
22215	0003601		BRU ++4				13450
22216	0105033		LDA ZFAD				13460
22217	2602221		ADD T+3				13470
22220	0003617		BRU ++2				13480
22221	0327724		LDA ZFAD1				13490
22222	1420001		STA P	1			BAS13500
22223	0003576		INX 1	1			BAS13510
22224	0105031		LDA ZFST				BAS13520
22225	0327724		ADD T+1				BAS13530
			STA P	1			BAS13540

NEXTSTATEMENT [SEE FOR]

000031

22226	1420001		INX 1	1
22227	0003602		LDA ZFSU	
22230	0105032		ADD T+2	
22231	0327724		STA P	1
22232	1420001		INX 1	1
22233	0005030		LDA T	
22234	2514001		BMI	
22235	2602240		BRU NEXT3	
22236	0003615		LDA ZTST2	
22237	2602245		BRU NEXT4	
22240	0005033	NEXT3	LDA T+3	
22241	0103163		ADD ONE	
22242	0327724		STA P	1
22243	1420001		INX 1	1
22244	0003614		LDA ZTST	
22245	0327724	NEXT4	STA P	1
22246	1420001		INX 1	1
22247	0066450		LDA N	3
22250	0103163		ADD ONE	
22251	0103571		ADD ZBRU	
22252	0103464		ADD PLOC	
22253	0327724		STA P	1
22254	1420001		INX 1	1
22255	0003574		LDA ZFLD	
22256	0105031		ADD T+1	
22257	0327724		STA P	1
22260	1420001		INX 1	1
22261	0005030		LDA T	
22262	2514001		BMI	
22263	2602266		BRU ++3	
22264	0003620		LDA ZFSU1	
22265	2602270		BRU ++3	
22266	0003602		LDA ZFSU	
22267	0105033		ADD T+3	
22270	0327724		STA P	1
22271	1420001		INX 1	1
22272	0003576		LDA ZFST	
22273	0105031		ADD T+1	
22274	0327724		STA P	1
22275	1420001		INX 1	1
22276	0045060		LDA L	2
22277	0203247		SUB N31	
22300	2516002		RNZ	
22301	2602136		BRU LETER	
22302	2600204		BRU LIST1	
22303	2602136	NEXT1	BRU LETER	
22304	1005012	NEXT2	LDL ERMV	
22305	2427702		MOV LAB20	
22306	2604760		BRU ERROR	
			NAM	

BAS13550
 BAS13560
 BAS13570
 BAS13580
 BAS13590
 13600
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 BAS13740
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 BAS13990
 14000
 14010
 14020
 14030
 14040

PRINT STATEMENTS

PRINT STATEMENTS

000032

22307	0417777	PRT	EJT				14050
22310	2602314		BXL 1	0		PRINT IS ALWAYS OK IN REG BAS	14060
22311	0005024		BRU PRTX				14070
22312	2514002		LDA ENDF			IN TEACH SKIP PRINT IN TESTED PROGRAM	14080
22313	2600204		BZE LIST1				14090
22314	0045060	PRTX	LDA L	2			14100
22315	0203247		SUR N31				14110
22316	2516002		BNZ				14120
22317	2602321		BRU PRT30				14130
22320	2602364		BRU PRT50				14140
22321	0045060	PRT30	LDA L	2			14150
22322	0203247		SUR N31				BAS14160
22323	2514002		BZE				BAS14170
22324	2602352		BRU PRT2				BAS14180
22325	0203244		SUR N28				BAS14190
22326	2514002		BZE				BAS14200
22327	2602370		BRU PRT3				BAS14210
22330	0045060		LDA L	2			14220
22331	0203205		SUR N12				14230
22332	2514002		BZE				BAS14240
22333	2602377		BRU PRT4				BAS14250
22334	0203163		SUR ONE				14260
22335	2516002		BNZ				14270
22336	2602341		BRU ++3				14280
22337	0003637		LDA ZSHT				14290
22340	2602371		BRU PRT32				14300
22341	0762624		SPR ARITH	3			BAS14310
22342	2602511		BRU PRTER				BAS14320
22343	0003565		LDA ZUNF				BAS14330
22344	0327724		STA P	1			BAS14340
22345	1420001		INX 1	1			BAS14350
22346	2602321		BRU PRT30				14360
22347	1420001	PRT5	INX 1	1			BAS14370
22350	1440001		INX 1	2			BAS14380
22351	2602321		BRU PRT30				14390
22352	0000002	PRT2	LDA 2				14400
22353	0203163		SUR ONE				14410
22354	0300002		STA 2				14420
22355	0045060		LDA L	2			14430
22356	1440001		INX 1	2			14440
22357	0203205		SUR N12				14450
22360	2514002		BZE				14460
22361	2602364		BRU PRT50				14470
22362	0003567		LDA ZCRT				14480
22363	2602365		BRU ++2				14490
22364	0003570	PRT50	LDA ZCRTB				14500
22365	0327724		STA P	1			14510
22366	1420001	PRT6	INX 1	1			BAS14520
22367	2600204		BRU LIST1				BAS14530
22370	0003566	PRT3	LDA ZTAB				BAS14540
22371	0327724	PRT32	STA P	1			14550
22372	0000002		LDA 2				BAS14560
22373	0204740		SUR ENDL				BAS14570

PRINT STATEMENTS

000033

22374	2516001	BPL			BAS14580
22375	2602366	BRU PRT6			BAS14590
22376	2602347	BRU PRT5			BAS14600
22377	1440001	PRT4 INX 1	2		BAS14610
22400	1725032	STX T+2	1	SAVE OBJECT POINTER	14620
22401	0000001	LDA XR01			14630
22402	2516000	BEV		IF PRESENT COUNTER IS EVEN	14640
22403	1420001	INX 1	1	INCREMENT BY 4	14650
22404	1420003	INX 3	1	OTHERWISE INCREMENT BY 3	14660
22405	0660001	LDX XR01	3	INITIALIZE XR03	14670
22406	0002726	PRT7 LDA ZERO			BAS14680
22407	0300000	STA 0			BAS14690
22410	0327724	STA P	1		14700
22411	0045060	PRT8 LDA L	2	GET NEXT CHARACTER	14710
22412	0203205	SUR N12			14720
22413	2514002	RZF			BAS14730
22414	2602470	BRU PRT40			BAS14740
22415	0027724	LDA P	1	PACK THIS CHARACTER INTO THE STRING	14750
22416	2512006	SLA 6			BAS14760
22417	0145060	ADD L	2		BAS14770
22420	0327724	STA P	1		14780
22421	0517776	RXH 2	0		BAS14790
22422	2602426	BRU PRT12			BAS14800
22423	1400001	INX 1	0		BAS14810
22424	1440001	INX 1	2		BAS14820
22425	2602411	BRU PRT8			BAS14830
22426	0000002	PRT12 LDA 2			BAS14840
22427	0204740	SUR ENDL			BAS14850
22430	2516001	BPL			BAS14860
22431	2602512	BRU PRT81			BAS14870
22432	1420001	INX 1	1	INCREMENT OBJECT POINTER	14880
22433	1440001	INX 1	2		BAS14890
22434	2602406	BRU PRT7			BAS14900
22435	0000001	PRT10 LDA XR01		LOAD FINAL VALUE OF OBJECT POINTER	14910
22436	0200003	SUR XR03		SUBTRACT INITIAL VALUE	14920
22437	2514002	RZF			14930
22440	2602466	BRU EMPSTR		IF DIFF ZERO THEN STRING IS EMPTY	14940
22441	2504522	NEG			14950
22442	0367723	STA P-1	3	STORE LENGTH OF STRING IN OBJECT	14960
22443	0000003	LDA XR03		GET BEGINNING ADDRESS OF STRING	14970
22444	0103464	ADD PLOC		MAKE ADDRESS ABSOLUTE	14980
22445	2367722	ORV P-2	3	STORE IN OBJECT	14990
22446	0000001	LDA XR01		LOAD NEXT LOCATION IN OBJECT	15000
22447	0103464	ADD PLOC		MAKE ABSOLUTE	15010
22450	0103571	ADD ZBRU		MAKE INTO A BRANCH	15020
22451	2506033	SXG 1		I NEED ANOTHER INDEX GROUP	15030
22452	0625032	LDX T+2	1	GET LOCATION WHERE WE STARTED	15040
22453	0327724	STA P	1	PUT BRANCH AROUND STRING IN OBJECT	15050
22454	2506013	SXG 0		BACK TO NORMAL INDEXING	15060
22455	0000003	LDA XR03			15070
22456	0203164	SUR TWO		CALCULATE LOCATION OF CODE WORDS	15080
22457	0103464	ADD PLOC			15090
22460	0103471	ADD ZDLD		FORM LOAD	15100
22461	0327724	STA P	1	STORE AFTER STRING IN OBJECT	15110

PRINT STATEMENTS

000034

22462	0003564	LDA ZLAB		GET *SPB YLAB,1*	15120
22463	0327725	STA P+1	1	SOTRE	15130
22464	1420002	INX 2	1	INCREMENT OBJECT POINTER	15140
22465	2602350	BRU PRT5+1		DONE WITH THIS LABEL	15150
22466	0625032	EMPSTR LDX T+2	1	RESTORE OBJECT POINTER AND EXIT	15160
22467	2602350	BRU PRT5+1			15170
22470	2504002	PRT40 LDZ		ZERO OUT LOCATION WHERE LENGTH AND NO.	15180
22471	0367722	STA P-2	3	OF FILLS IS STORED	15190
22472	0417777	BXL 1	0	IF NO FILLS THEN SKIP	15200
22473	2602435	BRU PRT10			BAS15210
22474	0027724	PRT41 LDA P	1		15220
22475	2512006	SLA 6			BAS15230
22476	0102676	ADD FILL		FILL OUT LAST WORD WITH FILLS	15240
22477	0327724	STA P	1		15250
22500	0067722	LDA P-2	3	STORE NUMBER OF FILLS AT B15	15260
22501	0103642	ADD 4BIT			15270
22502	0367722	STA P-2	3	STORE IN STRING HEADER	15280
22503	1400001	INX 1	0		BAS15290
22504	0517775	RXH 3	0		BAS15300
22505	2602507	BRU ++2			BAS15310
22506	2602474	BRU PRT41			BAS15320
22507	1420001	INX 1	1	STEP WORD COUNTER [OBJECT POINTER]	15330
22510	2602435	BRU PRT10			BAS15340
22511	2603247	PRTER BRU ARER			15350
22512	2602136	PRTER1 BRU LETER			15360
22513	0002725	READ LDA MIN			BAS15370
22514	0305010	STA READX			BAS15380
22515	0003520	LDA READZ			BAS15390
22516	0327724	STA P	1		BAS15400
22517	1420001	INX 1	1		BAS15410
22520	0003516	LDA READZ2		FETCH [FLD D,2]	15420
22521	0327724	STA P	1		BAS15430
22522	1420001	INX 1	1		BAS15440
22523	0003517	LDA READZ3			BAS15450
22524	0327724	STA P	1		BAS15460
22525	1420001	INX 1	1		BAS15470
22526	0002725	LDA MIN			BAS15480
22527	0305041	STA T+9			BAS15490
22530	0764542	SP= VAR	3		BAS15500
22531	2602547	BRU READ1			BAS15510
22532	0045060	LDA L	2		15520
22533	0203355	SUB N59			15530
22534	2516002	BN7			15540
22535	2602544	BRU ++7			15550
22536	1440001	INX 1	2		15560
22537	0045060	LDA L	2		15570
22540	0203247	SUB N31			15580
22541	2514002	RZE			15590
22542	2600204	BRU LIST1			15600
22543	2602515	BRU READ+2			15610
22544	0103244	ADD N28			15620
22545	2514002	RZE			15630
22546	2600204	BRU LIST1			15640
22547	2602136	READ1 BRU LETER			15650

PRINT STATEMENTS

000035

NAM

REM, RET, STOP, AND TIME

15660

22550	0000001	REM	EJT		15670
22551	0203165		LDA XR01	BACK OFF OBJECT POINTER	15680
22552	0300001		SUR N3		15690
22553	2600204		STA XR01		15700
22554	0367722		BRU LIST1	COMPILE NEXT LINE	15710
22555	0002706	RET	STA P-2		15720
22556	0327724		LDA LDX01		15730
22557	1420001		STA P		BAS15740
22560	0003573		INX 1		BAS15750
22561	0327724		LDA ZRET		BAS15760
22562	1420001		STA P		BAS15770
22563	2600204		INX 1		BAS15780
22564	0003623	RET2	BRU LIST1		BAS15790
22565	2602561		LDA ZPOP	SET UP SPB TO POP UP RETURN AND RETURN	15800
22566	0000001	STOP	BRU RET2-3		15810
22567	0203165		LDA XR01	BACK OFF OBJECT POINTER	15820
22570	0300001		SUR N3		15830
22571	0417777		STA XR01		15840
22572	2602576		BXL 1	ONLY 1 END IN REG BASIC	15850
22573	0005024		BRU STOP1		15860
22574	2514002		LDA ENDF		15870
22575	2602602		BZF		15880
22576	0003611	STOP1	BRU STOP2		15890
22577	0327724		LDA ZOUT	SET UP BRU OUTPUT	15900
22600	1420001		STA P		BAS15910
22601	2600204		INX 1		BAS15920
22602	0665001	STOP2	BRU LIST1		BAS15930
22603	0005001		LDX GN	COMPILE STOP IN TESTED AS GOTO 10000	15940
22604	0103465		LDA GN		15950
22605	0103571		ADD GLOC		15960
22606	0327724		ADD ZBRU		15970
22607	1420001		STA P	STORE A *BRU G+GN* IN OBJECT	15980
22610	0002720		INX 1		15990
22611	0366750		LDA TENT+1		16000
22612	1460001		STA G	STORE A 10000 IN G+GN	16010
22613	1765001		INX 1	INCREMENT GO TABLE POINTER	16020
22614	2600204		STX GN		16030
			BRU LIST1	COMPILE NEXT LINE	16040
22615	0764372	REM	REM		16050
22616	2604416	TIMCHK	SPB INST	CONVERT COUNT OF SECONDS TO BINARY	16060
22617	2504006		BRU INST8		16070
22620	1503170		MAQ		16080
22621	2504005		MPY N6	CONVERT TO SIXTHS	16090
22622	0307141		XAQ		16100
22623	2600204		STA TREF	SET UP REFERENCE	16110
			BRU LIST1	DONE WITH THIS LINE	16120
			NAM	COMPILE TIME GENERAL PURPOSE ROUTINES	16130

COMPILE TIME GENERAL PURPOSE ROUTINES

000037

		EJT	
		REM	
22624	1704721	ARITH STX ARR	0
22625	1724722	STX ARR+1	1
22626	1764724	STX ARR+3	3
22627	0002725	LDA MIN	
22630	0306366	STA ARU	
22631	0002726	LDA ZERO	
22632	0300001	STA 1	
22633	0304725	STA ARUL	
22634	0305041	STA T+9	
22635	0300000	STA 0	
22636	1744730	STX ARTP+2	2
22637	0045060	ARTH1 LDA L	2
22640	0300003	STA 3	
22641	0063362	LDA S3	3
22642	2102726	CAR ZERO	
22643	2602656	BRU ARTH2	
22644	2602654	BRU ARTH17	
22645	2103164	CAR TWO	
22646	2602670	BRU ARTH11	
22647	2602672	BRU ARTH12	
22650	2103166	CAR N4	
22651	2602711	BRU ARTH13	
22652	2602722	BRU ARTH15	
22653	2602700	BRU ART120	
22654	1440001	ARTH17 INX 1	2
22655	2602637	BRU ARTH1	
22656	0000000	ARTH2 LDA 0	
22657	2516002	BNZ	
22660	2603247	BRU ARER	
22661	0045060	LDA L	2
22662	0304726	STA ARTP	
22663	1744727	STX ARTP+1	2
22664	0003247	LDA N31	
22665	0345060	STA L	2
22666	0644730	ARTH3 LDX ARTP+2	2
22667	2602744	BRU ARTH4	
22670	1400001	ARTH11 INX 1	0
22671	2602654	BRU ARTH17	
22672	0000000	ARTH12 LDA 0	
22673	0203163	SUB ONE	
22674	0300000	STA 0	
22675	2514001	BMI	
22676	2603247	BRU ARER	
22677	2602654	BRU ARTH17	
22700	1440001	ART120 INX 1	2
22701	0045060	LDA L	2
22702	0203230	SUB N24	
22703	2514002	RZF	
22704	2602716	BRU ARTH18	
22705	0203207	SUB N14	
22706	2514002	RZF	
22707	2602716	BRU ARTH18	

ARITH COMPILES ARITHMETIC EXPRESSIONS

16140
16150
BAS16160
BAS16170
BAS16180
BAS16190
BAS16200
BAS16210
BAS16220
BAS16230
BAS16240
BAS16250
BAS16260
BAS16270
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BAS16400
BAS16410
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BAS16450
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BAS16470
BAS16480
BAS16490
BAS16500
BAS16510
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BAS16540
BAS16550
BAS16560
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BAS16590
16600
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16620
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16660
16670

22710	2602637	BRU ARTH1			16680
22711	0000000	ARTH13 LDA 0			BAS16690
22712	2514002	BZF			BAS16700
22713	2602656	BRU ARTH2			BAS16710
22714	1440001	INX 1	2		BAS16720
22715	2602637	BRU ARTH1			BAS16730
22716	0000002	ARTH13 LDA 2			BAS16740
22717	0203163	SUB ONE			BAS16750
22720	0300002	STA 2			BAS16760
22721	2602656	BRU ARTH2			BAS16770
22722	1440001	ARTH13 INX 1	2		BAS16780
22723	0045060	LDA L	2		BAS16790
22724	0203345	SUB N51			BAS16800
22725	2516002	BNZ			BAS16810
22726	2602637	BRU ARTH1			BAS16820
22727	1440001	INX 1	2		16830
22730	0045060	LDA L	2		16840
22731	0203225	SUB N21			16850
22732	2516002	BNZ			16860
22733	2602740	BRU **5			16870
22734	0000002	LDA 2			16880
22735	0203164	SUB TWO			16890
22736	0300002	STA 2			16900
22737	2602656	BRU ARTH2			16910
22740	0000002	LDA 2			16920
22741	0203163	SUB ONE			16930
22742	0300002	STA 2			16940
22743	2602637	BRU ARTH1			16950
22744	1744730	STX ARTP+2	2		BAS16960
22745	0002726	LDA ZERO			BAS16970
22746	0304731	STA ARTP+3			BAS16980
22747	0045060	LDA L	2		BAS16990
22750	0203357	SUB N61			BAS17000
22751	2514002	BZF			BAS17010
22752	2602755	BRU **3			BAS17020
22753	0602726	LDX ZERO	0		BAS17030
22754	2602756	BRU **2			BAS17040
22755	0603163	LDX ONE	0		BAS17050
22756	1440001	ARTH21 INX 1	2		BAS17060
22757	0045060	LDA L	2		BAS17070
22760	0300003	STA 3			17080
22761	0063162	LDA S	3		17090
22762	2516001	BPL			17100
22763	2602756	BRU ARTH21			17110
22764	2103635	CAR NM6			17120
22765	2602756	BRU ARTH21			17130
22766	2603050	BRU ARTH24			17140
22767	2103636	CAR NM6			17150
22770	2603044	BRU ARTH23			17160
22771	2603042	BRU ARTH22			17170
22772	0517777	RXH 1	0		17180
22773	2602756	BRU ARTH21			17190
22774	0103164	ADD TWO			17200
22775	2514001	RMI			17210

COMPILE TIME GENERAL PURPOSE ROUTINES

000039

22776	2603026	BRU ARTH25		17220
22777	0000002	LDA 2		BAS17230
23000	0203163	SUR ONE		BAS17240
23001	0300002	STA 2		BAS17250
23002	0045060	LDA L	2	BAS17260
23003	0203225	SUR N21		BAS17270
23004	2514002	BZE		BAS17280
23005	2603010	BRU **3		BAS17290
23006	1440001	INX 1	2	BAS17300
23007	2603026	BRU ARTH25		BAS17310
23010	0000002	LDA 2		BAS17320
23011	0203163	SUR ONE		BAS17330
23012	0300002	STA 2		BAS17340
23013	0045060	LDA L	2	BAS17350
23014	0203203	SUR TEN		BAS17360
23015	2514001	BMI		BAS17370
23016	2603024	BRU ARTH26		BAS17380
23017	0203212	SUR N17		BAS17390
23020	2514002	BZE		BAS17400
23021	2603024	BRU ARTH26		BAS17410
23022	1440002	INX 2	2	BAS17420
23023	2603026	BRU ARTH25		BAS17430
23024	1440002	ARTH24 INX 2	2	BAS17440
23025	2602756	BRU ARTH21		BAS17450
23026	0045060	ARTH25 LDA L	2	BAS17460
23027	0300003	STA 3		BAS17470
23030	0063162	LDA S	3	BAS17480
23031	0103172	ADD N8		BAS17490
23032	2510001	SRA 1		BAS17500
23033	0204731	SUR ARTP+3		BAS17510
23034	2514001	BMI		BAS17520
23035	2602756	BRU ARTH21		BAS17530
23036	0104731	ADD ARTP+3		BAS17540
23037	0304731	STA ARTP+3		BAS17550
23040	1744732	STX ARTP+4	2	BAS17560
23041	2602756	BRU ARTH21		BAS17570
23042	1400001	ARTH22 INX 1	0	BAS17580
23043	2602756	BRU ARTH21		BAS17590
23044	0000000	ARTH23 LDA 0		BAS17600
23045	0203163	SUR ONE		BAS17610
23046	0300000	STA 0		BAS17620
23047	2602756	BRU ARTH21		BAS17630
23050	0004731	ARTH24 LDA ARTP+3		BAS17640
23051	2514002	BZE		BAS17650
23052	2603076	BRU ARTH27		BAS17660
23053	0644732	LDX ARTP+4	2	BAS17670
23054	0004725	LDA ARUL		BAS17680
23055	0103163	ADD ONE		BAS17690
23056	0304725	STA ARUL		BAS17700
23057	0300003	STA 3		BAS17710
23060	0000002	LDA 2		BAS17720
23061	0103163	ADD ONE		BAS17730
23062	0366366	STA ARU	3	BAS17740
23063	0000003	LDA 3		17750

23064	2512001	SLA 1		BAS17760
23065	0103476	ADD EXULOC		BAS17770
23066	0304723	STA ARR+2		BAS17780
23067	0045060	LDA L	2	BAS17790
23070	0300003	STA 3		BAS17800
23071	0002726	LDA ZERO		BAS17810
23072	0263162	SUB S	3	BAS17820
23073	0102710	ADD UPRIT		17830
23074	0300003	STA 3		BAS17840
23075	2663203	BRU Q3	3	BAS17850
23076	0644730	APTH27 LDX ARTP+2	2	BAS17860
23077	0045060	LDA L	2	BAS17870
23100	0203357	SUB N61		BAS17880
23101	2516002	BNZ		BAS17890
23102	2603105	BRU ARTH28		BAS17900
23103	1440001	INX 1	2	BAS17910
23104	2602744	BRU ARTH4		BAS17920
23105	0045060	ARTH28 LDA L	2	BAS17930
23106	0300003	STA 3		BAS17940
23107	0063162	LDA S	3	BAS17950
23110	0203203	SUB TEN		BAS17960
23111	2514001	RMI		BAS17970
23112	2603146	BRU ARTH29		BAS17980
23113	1440001	INX 1	2	BAS17990
23114	0045060	LDA L	2	BAS18000
23115	0203357	SUB N61		BAS18010
23116	2514002	BZF		BAS18020
23117	2603333	BRU ARTH6		BAS18030
23120	0045060	LDA L	2	BAS18040
23121	0300003	STA 3		BAS18050
23122	0063162	LDA S	3	BAS18060
23123	0203203	SUB TEN		BAS18070
23124	2514001	RMI		BAS18080
23125	2603140	BRU ARTH30		BAS18090
23126	1440002	INX 2	2	18100
23127	1744730	STX ARTP+2	2	18110
23130	0045060	LDA L	2	18120
23131	0203357	SUB N61		18130
23132	2516002	BNZ		18140
23133	2603247	BRU ARER		18150
23134	0000002	LDA 2		18160
23135	0203164	SUB TWO		18170
23136	0300002	STA 2		18180
23137	2603562	BRU ARTH40		BAS18190
23140	0000002	ARTH30 LDA 2		BAS18200
23141	0203163	SUB ONE		BAS18210
23142	0300002	STA 2		BAS18220
23143	0764421	SPR VAR10	3	BAS18230
23144	2603247	BRU ARER		BAS18240
23145	2603255	BRU ARTH5		BAS18250
23146	0063162	ARTH29 LDA S	3	BAS18260
23147	0103163	ADD ONE		BAS18270
23150	2516002	BNZ		BAS18280
23151	2603155	BRU ARTH31		BAS18290

COMPILE TIME GENERAL PURPOSE ROUTINES

000041:

23152	1440001		INX 1	2
23153	1744730		STX ARTP+2	2
23154	2603077		BRU ARTH27+1	
23155	0103163	ARTH31	ADD ONE	
23156	2514002		BZE	
23157	2603163		BRU ARTH32	
23160	0763713		SPR CON	3
23161	2603247		BRU ARER	
23162	2603255		BRU ARTH5	
23163	1440001	ARTH32	INX 1	2
23164	0003534		LDA ZAR	
23165	0326140		STA ARP	1
23166	1420001		INX 1	1
23167	0003535		LDA ZAR+1	
23170	0326140		STA ARP	1
23171	1420001		INX 1	1
23172	0003536		LDA ZAR+2	
23173	0326140		STA ARP	1
23174	1420001		INX 1	1
23175	2602744		BRU ARTH4	
23176	0004723	ARTH33	LDA ARP+2	
23177	0103572		ADD ZSPB1	
23200	0326140		STA ARP	1
23201	1420001		INX 1	1
23202	2602666		BRU ARTH3	
23203	2603204	Q3	BRU **1	
23204	2603211		BRU Q31	
23205	2603220		BRU Q32	
23206	2603231		BRU Q33	
23207	2603223		BRU Q34	
23210	2603237		BRU Q35	
23211	0004723	Q31	LDA ARR+2	
23212	0103601		ADD ZFAD	
23213	0326140	Q31A	STA ARP	1
23214	1420001		INX 1	1
23215	0003247		LDA N31	
23216	0345060		STA L	2
23217	2602666		BRU ARTH3	
23220	0004723	Q32	LDA ARR+2	
23221	0103602		ADD ZFSU	
23222	2603213		BRU Q31A	
23223	0004723	Q34	LDA ARR+2	
23224	0103473		ADD ZFDV	
23225	0326140		STA ARP	1
23226	1420001		INX 1	1
23227	0003621		LDA ZCQX	
23230	2603213		BRU Q31A	
23231	0004723	Q33	LDA ARR+2	
23232	0103472		ADD ZFMP	
23233	0326140		STA ARP	1
23234	1420001		INX 1	1
23235	0003537		LDA ZAR+3	
23236	2603213		BRU Q31A	
23237	0003627	Q35	LDA PCWSPB	

\$\$\$\$\$ IN 225 SET UP XAQ, MAQ A (BACKWARDS)

Q35 HANDLES THE UP ARROW OPERATOR

BAS18300
 BAS18310
 BAS18320
 BAS18330
 BAS18340
 BAS18350
 BAS18360
 BAS18370
 BAS18380
 BAS18390
 BAS18400
 BAS18410
 BAS18420
 BAS18430
 BAS18440
 BAS18450
 BAS18460
 BAS18470
 BAS18480
 BAS18490
 BAS18500
 BAS18510
 BAS18520
 BAS18530
 BAS18540
 BAS18550
 BAS18560
 BAS18570
 BAS18580
 BAS18590
 BAS18600
 BAS18610
 BAS18620
 BAS18630
 BAS18640
 BAS18650
 BAS18660
 BAS18670
 BAS18680
 BAS18690
 BAS18700
 BAS18710
 BAS18720
 18730
 18740
 18750
 BAS18760
 BAS18770
 BAS18780
 BAS18790
 BAS18800
 BAS18810
 BAS18820
 18830

COMPILE TIME GENERAL PURPOSE ROUTINES

000042

		REM		A**B IS COMPILED AS A (FLD A), MAQ A,	18840
		REM		FLD B, SPB POWER 1	18850
23240	0326140	STA ARP	1		18860
23241	0033574	LDA ZFLD			18870
23242	0104723	ADD ARR+2			18880
23243	0326141	STA ARP+1	1		18890
23244	0033537	LDA ZAR+3		MAQA	18900
23245	1420002	INX 2	1		18910
23246	2603213	BRU Q31A			18920
23247	0604721	ARER LDX ARR	0		BAS18930
23250	0624722	LDX ARR+1	1		BAS18940
23251	0664724	LDX ARR+3	3		BAS18950
23252	1005012	OLD ERMov			18960
23253	2427537	MOV LAB3			18970
23254	2604760	BRU ERROR			18980
23255	0664725	ARTH5 LDX ARUL	3		BAS18990
23256	0045060	LDA L	2		19000
23257	0203360	SUR N62			19010
23260	2516002	BNZ			19020
23261	2603264	BRU **3			19030
23262	1440001	INX 1	2		19040
23263	2603256	BRU **5			19050
23264	0103247	ADD N31			19060
23265	2516002	BNZ			19070
23266	2603247	BRU ARER			19080
23267	0066366	ARTH50 LDA ARU	3		BAS19090
23270	2514001	RMI			BAS19100
23271	2603304	BRU ARTH51			BAS19110
23272	0300002	STA 2			BAS19120
23273	0002725	LDA MIN			BAS19130
23274	0366366	STA ARU	3		BAS19140
23275	0000003	LDA 3			BAS19150
23276	2512001	SLA 1			BAS19160
23277	0103476	ADD EXULOC			BAS19170
23300	0103576	ADD ZFST			BAS19180
23301	0326140	STA ARP	1		BAS19190
23302	1420001	INX 1	1		BAS19200
23303	2602744	BRU ARTH4			BAS19210
23304	0000003	ARTH51 LDA 3			BAS19220
23305	0203163	SUR ONE			BAS19230
23306	0300003	STA 3			BAS19240
23307	2516001	BPL			BAS19250
23310	2603267	BRU ARTH50			BAS19260
23311	0000001	LDA 1			BAS19270
23312	0203163	SUR ONE			BAS19280
23313	0300003	STA 3			BAS19290
23314	0604721	LDX ARR	0		BAS19300
23315	0624722	LDX ARR+1	1		BAS19310
23316	0066140	ARTH52 LDA ARP	3		BAS19320
23317	0327724	STA P	1		BAS19330
23320	1420001	INX 1	1		BAS19340
23321	0000003	LDA 3			BAS19350
23322	0203163	SUR ONE			BAS19360
23323	0300003	STA 3			BAS19370

COMPILE TIME GENERAL PURPOSE ROUTINES

000043

23324	2516001		BPL			BAS19380
23325	2603316		BRU ARTH52			BAS19390
23326	0664724		LDX ARR+3	3		BAS19400
23327	0644727		LDX ARTP+1	2		BAS19410
23330	0004726		LDA ARTP			BAS19420
23331	0345060		STA L	2		BAS19430
23332	2660002		BRU 2	3		BAS19440
23333	0063152	ARTH6	LDA S	3		BAS19450
23334	0203203		SUB TEN			BAS19460
23335	2103232		CAR N26		CHECK FOR \$	19470
23336	2603350		BRU ARTH6B			19480
23337	2603341		BRU ++2		YES	19490
23340	2603350		BRU ARTH6B			19500
23341	0007107		LDA TFLAG		\$ ALWAYS ILLEGAL IN REGULAR BASIC	19510
23342	2514002		BZE			19520
23343	2604465		BRU VAR13			19530
23344	0005024		LDA ENDF			19540
23345	2514002		BZE VAR13		ILLEGAL VARIABLE FOR TESTED PROGRAM	19550
23346	2604465					
23347	0003232		LDA N26		RESTORE AREG	19560
23350	2512001	ARTH69	SLA 1		MULTIPLY BY 2	19570
23351	0300003		STA 3			BAS19580
23352	0103475		ADR DIMLOC			BAS19590
23353	0304733		STA ARTP+5			BAS19600
23354	0067636		LDA DIMX	3		BAS19610
23355	2514001		BMI			BAS19620
23356	2603470		BRU ARTH60			BAS19630
23357	1460001		INX 1	3		BAS19640
23360	0067636		LDA DIMX	3		BAS19650
23361	2003474		EXT MAR			BAS19660
23362	0203163		SUB ONE			19670
23363	2514002		BZE			BAS19680
23364	2603452		BRU ARTH61			BAS19690
23365	0602726		LDX ZERO	0		BAS19700
23366	0045060	ARTH62	LDA L	2		BAS19710
23367	0203357		SUB N61			BAS19720
23370	2516002		BNZ			BAS19730
23371	2603375		BRU ARTH63			BAS19740
23372	1400001		INX 1	0		BAS19750
23373	1440001	ARTH65	INX 1	2		BAS19760
23374	2603366		BRU ARTH62			BAS19770
23375	0203163	ARTH63	SUB ONE			BAS19780
23376	2516002		BNZ			BAS19790
23377	2603404		BRU ARTH64			BAS19800
23400	0000000		LDA 0			BAS19810
23401	0203163		SUB ONE			BAS19820
23402	0300000		STA 0			BAS19830
23403	2603373		BRU ARTH65			BAS19840
23404	0103165	ARTH64	ADD N3			BAS19850
23405	2514002		BZE			BAS19860
23406	2603413		BRU ARTH66			BAS19870
23407	0103244		ADD N28			BAS19880
23410	2514002		BZE			BAS19890
23411	2603247		BRU ARER			BAS19900

COMPILE TIME GENERAL PURPOSE ROUTINES

000044

23412	2603373	BRU ARTH65		BAS19910
23413	0000000	ARTH66 LDA 0		BAS19920
23414	0203163	SUB ONE		BAS19930
23415	2516002	BNZ		BAS19940
23416	2603373	BRU ARTH65		BAS19950
23417	0003247	ARTH67 LDA N31		BAS19960
23420	0345060	STA L	2	BAS19970
23421	0004725	LDA ARUL		BAS19980
23422	0103163	ADD ONE		BAS19990
23423	0304725	STA ARUL		BAS20000
23424	0300003	STA 3		BAS20010
23425	0000002	LDA 2		BAS20020
23426	0103163	ADD ONE		BAS20030
23427	0366366	STA ARU	3	BAS20040
23430	0000003	LDA 3		BAS20050
23431	2512001	SLA 1		BAS20060
23432	0103476	ADD EXULOC		BAS20070
23433	0304723	STA ARP+2		BAS20080
23434	0003543	LDA ZAP+7		BAS20090
23435	0326140	STA ARP	1	BAS20100
23436	1420001	INX 1	1	BAS20110
23437	0004733	LDA ARTP+5		BAS20120
23440	0103471	ADD ZDL		BAS20130
23441	0326140	STA ARP	1	BAS20140
23442	1420001	INX 1	1	BAS20150
23443	0003546	LDA ZAP+10		BAS20160
23444	0326140	STA ARP	1	BAS20170
23445	1420001	INX 1	1	BAS20180
23446	0004723	LDA ARR+2		BAS20190
23447	0103471	ADD ZDL		BAS20200
23450	0326140	STA ARP	1	BAS20210
23451	2603460	BRU ARTH68		BAS20220
23452	0003542	ARTH61 LDA ZAP+6		BAS20230
23453	0326140	STA ARP	1	BAS20240
23454	1420001	INX 1	1	BAS20250
23455	0004733	LDA ARTP+5		BAS20260
23456	0103471	ADD ZDL		BAS20270
23457	0326140	STA ARP	1	BAS20280
23460	1420001	ARTH65 INX 1	1	BAS20290
23461	0003547	LDA ZAP+11		BAS20300
23462	0326140	STA ARP	1	BAS20310
23463	1420001	INX 1	1	BAS20320
23464	0004730	LDA ARTP+2		BAS20330
23465	0103164	ADD TWO		BAS20340
23466	0300002	STA 2		BAS20350
23467	2602744	BRU ARTH4		BAS20360
23470	0602726	ARTH60 LDZ ZERO	0	20370
23471	0045060	ARTH70 LDA L	2	BAS20380
23472	0203360	SUB N62		BAS20390
23473	2516002	BNZ		BAS20400
23474	2603504	BRU ARTH71		BAS20410
23475	0000000	LDA 0		BAS20420
23476	0203163	SUB ONE		BAS20430
23477	0300000	STA 0		BAS20440

COMPILE TIME GENERAL PURPOSE ROUTINES

000045

23500	2514002	BZE			BAS20450
23501	2603544	BRU ARTH72			BAS20460
23502	1440001	INX 1	2		BAS20470
23503	2603471	BRU ARTH70			BAS20480
23504	0103163	ARTH71 ADD ONE			BAS20490
23505	2516002	BNZ			BAS20500
23506	2603512	BRU ARTH73			BAS20510
23507	1400001	INX 1	0		BAS20520
23510	1440001	ARTH74 INX 1	2		BAS20530
23511	2603471	BRU ARTH70			BAS20540
23512	0103164	ARTH73 ADD TWO			BAS20550
23513	2516002	BNZ			BAS20560
23514	2603537	BRU ARTH75			BAS20570
23515	0000000	LDA 0			BAS20580
23516	0203163	SUR ONE			BAS20590
23517	2516002	BNZ			BAS20600
23520	2603537	BRU ARTH75			BAS20610
23521	0003204	LDA N11			20620
23522	2512011	SLA 9			20630
23523	0103204	ADD N11			20640
23524	0367637	STA DIMX+1	3	STORE SUBSCRIPT INFO	20650
23525	0005022	LDA VAVAIL		UPDATE VAVAIL	20660
23526	0203640	SUR N242			20670
23527	0303022	STA VAVAIL			20680
23530	0103164	ADD TWO		COMPUTE LOCATION OF ARRAY	20690
23531	0367636	STA DIMX	3	CHECK FOR BLATANT OVERFLOW	20700
23532	0003464	LDA VLAST			20710
23533	0205022	SUR VAVAIL			20720
23534	2516001	RPL			20730
23535	2603247	BRU ARER1			BAS20740
23536	2603417	BRU ARTH67			BAS20750
23537	0045060	ARTH75 LDA L	2		BAS20760
23540	0203247	SUR N31			BAS20770
23541	2514002	BZE			BAS20780
23542	2603247	BRU ARER			BAS20790
23543	2603510	BRU ARTH74			BAS20800
23544	0003204	ARTH72 LDA N11			20810
23545	2512011	SLA 9			BAS20820
23546	0103163	ADD ONE			BAS20830
23547	0367637	STA DIMX+1	3	STORE SUBSCRIPT INFO	20840
23550	0005022	LDA VAVAIL		COMPUTE NEW VAVAIL	20850
23551	0203226	SUR N22			20860
23552	0305022	STA VAVAIL		ADJUST AVAILABLE SPACE POINTER	20870
23553	0103164	ADD TWO		COMPUTE LOCATION OF BEGINNING OF ARRAY	20880
23554	0367636	STA DIMX	3	STORE IN ARRAY TABLE	20890
23555	0003464	LDA VLAST		CHECK FOR BLATANT OVERFLOW	20900
23556	0205022	SUR VAVAIL			20910
23557	2516001	RPL ARER			20920
23560	2603247				
23561	2603452	BRU ARTH61			20930
	23247	ARER1 EQU ARER			BAS20940
23562	1440001	ARTH40 INX 1	2		BAS20950
23563	0045060	LDA L	2		BAS20960
23564	0300003	STA 3			BAS20970

COMPILE TIME GENERAL PURPOSE ROUTINES

000046

23565	0063162	LDA S	3	BAS20980
23566	0203203	SUR TEN		BAS20990
23567	2514001	BMI		BAS21000
23570	2603247	BRU ARER		BAS21010
23571	0000002	LDA 2		BAS21020
23572	0203164	SUR TWO		BAS21030
23573	0300002	STA 2		BAS21040
23574	0045060	LDA L	2	BAS21050
23575	0203212	SUR N17		BAS21060
23576	2514002	BZE		BAS21070
23577	2603631	BRU Q2A		BAS21080
23600	0203164	SUR TWO		BAS21090
23601	2514002	BZE		BAS21100
23602	2603643	BRU Q2C		BAS21110
23603	0203164	SUR TWO		BAS21120
23604	2514002	BZE		BAS21130
23605	2603645	BRU Q2E		BAS21140
23606	0203163	SUR ONE		21150
23607	2514002	BZE		21160
23610	2603647	BRU Q2F		21170
23611	0203165	SUR N3		21180
23612	2514002	BZE		21190
23613	2603672	BRU Q2I		21200
23614	0203203	SUR TEN		21210
23615	2514002	BZF		BAS21220
23616	2603674	BRU Q2L		BAS21230
23617	0203170	SUR N6		BAS21240
23620	2514002	BZE		BAS21250
23621	2603676	BRU Q2R		BAS21260
23622	0203203	SUR TEN		BAS21270
23623	2514002	BZE		BAS21280
23624	2603711	BRU Q2T		BAS21290
23625	0103163	ADD ONE		BAS21300
23626	2514002	BZE		BAS21310
23627	2603700	BRU Q2S		BAS21320
23630	2603247	BRU ARER		BAS21330
23631	1440001	Q2A INX 1	2	BAS21340
23632	0045060	LDA L	2	BAS21350
23633	0203213	SUR N18		BAS21360
23634	2514002	BZE		BAS21370
23635	2603640	BRU ++3		BAS21380
23636	0003553	LDA QATN		BAS21390
23637	2603641	BRU Q2EX		BAS21400
23640	0003552	LDA QABS		BAS21410
23641	0304723	Q2EX STA ARP+2		BAS21420
23642	2603176	BRU ARTH33		BAS21430
23643	0003554	Q2C LDA QCOS		BAS21440
23644	2603641	BRU Q2EX		BAS21450
23645	0003555	Q2E LDA QEXP		BAS21460
23646	2603641	BRU Q2EX		BAS21470
23647	1440002	Q2F INX 2	2	21480
23650	0045060	LDA L	2	21490
23651	0300003	STA 3		21500
23652	0063162	LDA S	3	21510

COMPILE TIME GENERAL PURPOSE ROUTINES

000047

23653	0203203		SUB TEN		21520
23654	2514001		BMI		21530
23655	2603247		BRU ARER		21540
23656	0300003		STA 3		21550
23657	0067602		LDA FNT	3	21560
23660	2516002		BNZ		21570
23661	2603664		BRU **3		21580
23662	0002725		LDA MIN		21590
23663	0367602		STA FNT	3	21600
23664	0000003		LDA 3		21610
23665	0103477		ADD FNTLOC		21620
23666	0103613		ADD ZSPB0		21630
23667	0326140		STA ARP	1	21640
23670	1420001		INX 1	1	21650
23671	2602666		BRU ARTH3		21660
23672	0003556	Q2I	LDA QINT		21670
23673	2603641		BRU Q2EX		21680
23674	0003557	Q2L	LDA QLOG		21690
23675	2603641		BRU Q2EX		BAS21700
23676	0003560	Q2R	LDA QRND		BAS21710
23677	2603641		BRU Q2EX		BAS21720
23700	1440001	Q2S	INX 1	2	BAS21730
23701	0045060		LDA L	2	BAS21740
23702	0203231		SUB N25		BAS21750
23703	2514002		RZE		BAS21760
23704	2603707		BRU **3		BAS21770
23705	0003562		LDA QSQR		BAS21780
23706	2603641		BRU Q2EX		BAS21790
23707	0003561		LDA QSIN		BAS21800
23710	2603641		BRU Q2EX		BAS21810
23711	0003563	Q2T	LDA QTAN		BAS21820
23712	2603641		BRU Q2EX		BAS21830

			EJT			21840
			REM		CON USES FLT TO CONVERT CONSTANTS TO	21850
			REM		NORMALIZED FLOATING POINT AND	21860
			REM		SAVES THEM IN THE EXL REGION	21870
			REM		LATEST CHANGE CHECKS TO AVOID DUPLICATION	21880
			REM		OF CONSTANTS	21890
23713	1765040	CON	STX T+8	3		BAS21900
23714	0662726		LDX ZERO	3		BAS21910
23715	0045060	CON2	LDA L	2		BAS21920
23716	0203203		SUB TEN			BAS21930
23717	2514001		BMI			BAS21940
23720	2604012		BRU CON1			BAS21950
23721	0203212		SUB N17			BAS21960
23722	2514002		BZE			BAS21970
23723	2604012		BRU CON1			BAS21980
23724	0045060		LDA L	2		BAS21990
23725	0203225		SUB N21			BAS22000
23726	2514002		BZE			BAS22010
23727	2604017		BRU CON3			BAS22020
23730	2603734		BRU CON5			BAS22030
23731	0000002	CON4	LDA 2			BAS22040
23732	0203163		SUB ONE			BAS22050
23733	0300002		STA 2			BAS22060
23734	0000003	CON5	LDA 3			BAS22070
23735	2514002		BZE			22080
23736	2603247		BRU ARER			22090
23737	0203163		SUB ONE			BAS22100
23740	0304745		STA FLTN			BAS22110
23741	0764040		SPR FLT	3		BAS22120
23742	2604010		BRU CON6			BAS22130
23743	0664741		LDX EXLN	3	LOAD XR03 WITH CONSTANT TABLE POINTER	22140
23744	1764736		STX CXTEM	3	SAVE LAST LOCATION OF TABLE	22150
23745	3366522		FST EXL	3	STORE CONSTANT AT END OF TABLE	22160
23746	1066522		DL0 EXL	3	LOAD TARGET NUMBER	22170
23747	0662726		LDX ZERO	3	RESET INDEX	22180
23750	2266522	CON5A	DCB EXL	3	SEARCH TABLE	22190
23751	2603753		BRU **2			22200
23752	2603766		BRU CONHIT		UNDER PRESENT SYSTEM NEGATIVE CONSTANTS	22210
			REM		ARE NEVER STORED IN THE EXL TABLE,	22220
			REM		WHEN THIS IS FIXED THE ABOVE BRU CONHIT	22230
			REM		SHOULD BE CHANGED TO A BRU**3 TO CHECK	22240
			REM		THE SIGN OF THE MANTISSA (DAMN DCB)	22250
23753	1460002		INX 2	3	NOT FOUND	22260
23754	2603750		BRU CON5A			22270
23755	1066522		DL0 EXL	3	LOAD POSSIBLE HIT	22280
23756	2504005		XAO			22290
23757	2516001		BPL		COMPARE SIGNS WITH TARGET	22300
23760	2603764		BRU **4			22310
23761	2516721		BAR BPL	7		22320
23762	2604004		BRU CON5B		FALSE ALARM	22330
23763	2603766		BRU **3		POSITIVE FIND	22340
23764	2514721		BAR RMI	7		22350
23765	2604004		BRU CON5B		FALSE ALARM	22360
23766	0000003	CONHIT	LDA XR03		LOAD LOCATION OF HIT	22370

COMPILE TIME GENERAL PURPOSE ROUTINES

000049

23767	0204736	SUB CXTEM	COMPARE WITH LAST LOCATION OF TABLE	22380
23770	2516002	BNZ **5	NOT NECESSARY TO INCREMENT POINTER	22390
23771	2603775			
23772	0004741	LDA EXLN	INCREMENT POINTER	22400
23773	0103164	ADD TWO		22410
23774	0304741	STA EXLN		22420
23775	0000003	LDA XR03	GENERATE FLOATING LOAD	22430
23776	0103467	ADD LLOC		22440
23777	0103574	ADD ZFLD		22450
24000	0326140	STA ARP	STORE IN ARITH COMPILING AREA	22460
24001	1420001	INX 1	STEP ARITH OBJECT POINTER	22470
24002	0665040	LDX T+8	RESOTRE EXIT	22480
24003	2660002	BRU 2	EXIT	22490
24004	3304734	CON5B FST CTEM	RESTORE ARG TO AX	22500
24005	1004734	OLD CTEM		22510
24006	1460002	INX 2		22520
24007	2603750	BRU CON5A		22530
24010	0665040	CON6 LDX T+8	BAS22540	
24011	2660001	BRU 1	BAS22550	
24012	0045060	CON1 LDA L	BAS22560	
24013	0364760	STA FLTA	BAS22570	
24014	1440001	INX 1	BAS22580	
24015	1460001	INX 1	BAS22590	
24016	2603715	BRU CON2	BAS22600	
24017	1440001	CON3 INX 1	BAS22610	
24020	0045060	LDA L	BAS22620	
24021	0203332	SUB N40	BAS22630	
24022	2514002	BZE	BAS22640	
24023	2603731	BRU CON4	BAS22650	
24024	0003225	LDA N21	BAS22660	
24025	0364760	STA FLTA	BAS22670	
24026	1460001	INX 1	BAS22680	
24027	0045060	CON8 LDA L	BAS22690	
24030	0364760	STA FLTA	BAS22700	
24031	1440001	INX 1	BAS22710	
24032	1460001	INX 1	BAS22720	
24033	0045060	LDA L	BAS22730	
24034	0203203	SUB TEN	BAS22740	
24035	2514001	BMI	BAS22750	
24036	2604027	BRU CON8	BAS22760	
24037	2603734	BRU CON5	BAS22770	

COMPILE TIME GENERAL PURPOSE ROUTINES

000050

			EJT		22780
			REM	CON CONVERTS BCD NUMBERS TO NFLPOINT	22790
24040	1000000	FLT	DLD 0		22800
24041	1304746		DST FLTR		22810
24042	1000002		DLD 2		22820
24043	1304750		DST FLTR+2		22830
24044	3500004		RIN		22840
24045	0002726		LDA ZERO		22850
24046	0300001		STA 1		22860
24047	0300002		STA 2		22870
24050	0300003		STA 3		22880
24051	0304742		STA FLTC		22890
24052	0304743		STA FLTD		22900
24053	0304752		STA FLTS		22910
24054	0304756		STA FLTX		22920
24055	0304757		STA FLTX+1		22930
24056	0004760		LDA FLTA		22940
24057	0203211		SUR N16		22950
24060	2514002		BZE		22960
24061	2604067		BRU FLT2		22970
24062	0203211		SUR N16		22980
24063	2516002		BNZ		22990
24064	2604074		BRU FLT3		23000
24065	0002725		LDA MIN		23010
24066	0304752		STA FLTS		23020
24067	1003522	FLT2	DLD FLTM		23030
24070	2404761		MOV FLTA+1		23040
24071	0004745		LDA FLTN		23050
24072	0203163		SUR ONE		23060
24073	0304745		STA FLTN		23070
24074	0064760	FLT3	LDA FLTA	3	23080
24075	0203203		SUR TEN		23090
24076	2514001		RMI		23100
24077	2604116		BRU FLT4		23110
24100	0203212		SUR N17		23120
24101	2516002		BNZ		23130
24102	2604136		BRU FLT10		23140
24103	0004743		LDA FLTD		23150
24104	2516002		BNZ		23160
24105	2604164		BRU FLTER		23170
24106	0002725		LDA MIN		23180
24107	0304743		STA FLTD		23190
24110	0000003	FLT6	LDA 3		23200
24111	0204745		SUR FLTN		23210
24112	2516001		SPL		23220
24113	2604136		BRU FLT10		23230
24114	1460001		INX 1	3	23240
24115	2604074		BRU FLT3		23250
24116	1440001	FLT4	INX 1	2	23260
24117	0557766		BXH 10	2	23270
24120	2604164		BRU FLTER		23280
24121	0004743		LDA FLTD		23290
24122	2514001		RMI		23300
24123	1420001		INX 1	1	23310

COMPILE TIME GENERAL PURPOSE ROUTINES

000051

24124	1004756		DLB FLTX		23320
24125	2512202		SLD 2		23330
24126	1104756		DAD FLTX		23340
24127	2512201		SLD 1		23350
24130	1304756		DST FLTX		23360
24131	0064760		LDA FLTA	3	23370
24132	2504006		MAQ		23380
24133	1104756		DAD FLTX		23390
24134	1304756		DST FLTX		23400
24135	2604110		BRU FLT6		23410
24136	0002726	FLT10	LDA ZERO		23420
24137	0200001		SUB 1		23430
24140	0304742		STA FLTC		23440
24141	1004756		DLB FLTX		23450
24142	2514002		BZF		23460
24143	2604161		BRU FLT8		23470
24144	2513223		DNO 19		23480
24145	0304756		STA FLTX		23490
24146	0000000		LDA 0		23500
24147	0103223		ADD N19		23510
24150	0300000		STA 0		23520
24151	0004756		LDA FLTX		23530
24152	2511010	FLT9	SRD 8		23540
24153	1304756		DST FLTX		23550
24154	0000000		LDA 0		23560
24155	2512013		SLA 11		23570
24156	0104756		ADD FLTX		23580
24157	0304756		STA FLTX		23590
24160	2604173		BRU FLT5		23600
24161	2504005	FLT8	XAQ		23610
24162	2513223		DNO 19		23620
24163	2604152		BRU FLT9		23630
24164	1004746	FLTR	DLB FLTR		23640
24165	1300000		DST 0		23650
24166	1004750		DLB FLTR+2		23660
24167	1300002		DST 2		23670
24170	3500004		RIN		23680
24171	3100001		SET TRPMODE		23690
24172	2660001		BRU 1	3	23700
24173	2504012	FLT5	NOP		23710
24174	0004742		LDA FLTC		23720
24175	2516002		BNZ		23730
24176	2604362		BRU FLT80		23740
24177	0000003		LDA 3		BAS23750
24200	0204745		SUB FLTN		BAS23760
24201	2516001		BPL		BAS23770
24202	2604211		BRU FLTEX		BAS23780
24203	0064760	FLT82	LDA FLTA	3	23790
24204	0203225		SUB N21		23800
24205	2516002		RNZ		23810
24206	2604164		BRU FLTR		23820
24207	1460001		INX 1	3	BAS23830
24210	2604227		BRU FLT20		BAS23840
24211	0004752	FLTEX	LDA FLTS		BAS23850

COMPILE TIME GENERAL PURPOSE ROUTINES

000052

24212	2514001	BMI			BAS23860
24213	2604224	BRU FLT12			BAS23870
24214	3004756	FLD FLTX			BAS23880
24215	1004746	FLT13 DLD FLTR			23890
24216	1300000	DST 0			23900
24217	1004750	DLD FLTR*2			23910
24220	1300002	DST 2			23920
24221	3500004	RIN			23930
24222	3100001	SET TRPMODE			23940
24223	2660002	BRU 2	3		BAS23950
24224	3001402	FLT12 FLD FZERO			23960
24225	3204756	FSU FLTX			BAS23970
24226	2604215	BRU FLT13			BAS23980
24227	0064760	FLT20 LDA FLTA	3		BAS23990
24230	0203203	SUR TEN			BAS24000
24231	2514001	BMI			BAS24010
24232	2604245	BRU FLT21			BAS24020
24233	0064760	LDA FLTA	3		BAS24030
24234	0203211	SUR N16			BAS24040
24235	2514002	BZE			BAS24050
24236	2604244	BRU FLT22			BAS24060
24237	0064760	LDA FLTA	3		BAS24070
24240	0203250	SUR N32			BAS24080
24241	2514002	BZE			BAS24090
24242	2604250	BRU FLT23			BAS24100
24243	2604164	BRU FLTER			BAS24110
24244	1460001	FLT22 INX 1	3		BAS24120
24245	0002726	FLT21 LDA ZERO			BAS24130
24246	0304753	STA FLTS+1			BAS24140
24247	2604253	BRU FLT24			BAS24150
24250	0002725	FLT23 LDA MIN			BAS24160
24251	0304753	STA FLTS+1			BAS24170
24252	1460001	INX 1	3		BAS24180
24253	0000003	FLT24 LDA 3			BAS24190
24254	0204745	SUR FLTN			BAS24200
24255	2514001	BMI			BAS24210
24256	2604333	BRU FLT25			BAS24220
24257	2516002	BNZ			24230
24260	2604164	BRU FLTER			24240
24261	0064760	LDA FLTA	3		BAS24250
24262	0304744	STA FLTE			BAS24260
24263	0000003	FLT26 LDA 3			BAS24270
24264	0204745	SUR FLTN			BAS24280
24265	2514001	BMI			BAS24290
24266	2604164	BRU FLTER			BAS24300
24267	0004753	LDA FLTS+1			24310
24270	2514002	BZE			24320
24271	2604302	BRU FLT72			24330
24272	0004742	LDA FLTC			24340
24273	0204744	SUR FLTE			24350
24274	0304744	STA FLTE			24360
24275	2514001	FLT74 BMI			24370
24276	2604306	BRU FLT73			24380
24277	0002726	LDA ZERO			24390

COMPILE TIME GENERAL PURPOSE ROUTINES

000053

24300	0304753		STA FLTS+1		24400
24301	2604312		BRU FLT70		24410
24302	0004742	FLT72	LDA FLTC		24420
24303	0104744		ADD FLTE		24430
24304	0304744		STA FLTE		24440
24305	2604275		BRU FLT74		24450
24306	2504522	FLT73	NEG		24460
24307	0304744		STA FLTE		24470
24310	0002725		LDA MIN		24480
24311	0304753		STA FLTS+1		24490
24312	0662726	FLT70	LDX ZERO	3	24500
24313	1001400		DLD EXC		BAS24510
24314	1304754		DST FLTT		BAS24520
24315	0004744		LDA FLTE		BAS24530
24316	2516000	FLT29	BEV		BAS24540
24317	2604324		BRU FLT27		BAS24550
24320	3004754		FLD FLTT		BAS24560
24321	3100002		MAQ	A	BAS24570
24322	3563500		FMP FLTW	3	BAS24580
24323	3304754		FST FLTT		BAS24590
24324	0577764	FLT27	BXM 12	3	BAS24600
24325	2604343		BRU FLT28		BAS24610
24326	1460002		INX 2	3	BAS24620
24327	0004744		LDA FLTE		BAS24630
24330	2510001		SRA 1		BAS24640
24331	0304744		STA FLTE		BAS24650
24332	2504316		BRU FLT29		BAS24660
24333	0064760	FLT25	LDA FLTA	3	BAS24670
24334	2512002		SLA 2		BAS24680
24335	0164760		ADD FLTA	3	BAS24690
24336	2512001		SLA 1		BAS24700
24337	1460001		INX 1	3	BAS24710
24340	0164760		ADD FLTA	3	BAS24720
24341	0304744		STA FLTE		BAS24730
24342	2604263		BRU FLT26		BAS24740
24343	0004753	FLT28	LDA FLTS+1		BAS24750
24344	2514001		BMI		BAS24760
24345	2604356		BRU FLT30		BAS24770
24346	3004756		FLD FLTX		BAS24780
24347	3100002		MAQ	A	BAS24790
24350	3200001		SET NTPMODE		24800
24351	3504754		FMP FLTT		BAS24810
24352	3304756		FST FLTX		BAS24820
24353	2514725		BAR 000	7	24830
24354	2604164		BRU FLTER		24840
24355	2604211		BRU FLTEX		BAS24850
24356	3004756	FLT30	FLD FLTX		BAS24860
24357	3604754		FDV FLTT		BAS24870
24360	3304756		FST FLTX		BAS24880
24361	2604211		BRU FLTEX		BAS24890
24362	0000003	FLT80	LDA 3		24900
24363	0204745		SUB FLTN		24910
24364	2516001		BPL		24920
24365	2604367		BRU FLT81		24930

TURN OFF TRAP INTERRUPT

CONSTANT OUT OF RANGE
GENERATE ERROR RETURN

COMPILE TIME GENERAL PURPOSE ROUTINES

000054

24366	2604203		BRU FLT82
24367	0004742	FLT81	LDA FLTC
24370	0304744		STA FLTE
24371	2604275		BRU FLT74

24940
24950
24960
24970

COMPILE TIME GENERAL PURPOSE ROUTINES

000055

			EJT	
			REM	
			REM	
24372	0045060	INST	LDA L	2
24373	0203203		SUB TEN	
24374	2516001		BPL	
24375	2604416		BRU INST8	
24376	0103203		ADD TEN	
24377	0305003		STA INSTT	
24400	1440001	INST3	INX 1	2
24401	0045060		LDA L	2
24402	0203203		SUB TEN	
24403	2516001		BPL	
24404	2604414		BRU INST2	
24405	0005003		LDA INSTT	
24406	2512002		SLA 2	
24407	0105003		ADD INSTT	
24410	2512001		SLA 1	
24411	0145060		ADD L	2
24412	0305003		STA INSTT	
24413	2604400		BRU INST3	
24414	0005003	INST2	LDA INSTT	
24415	2660002		BRU 2	3
24416	1005012	INST8	DLD ERMV	
24417	2427555		MOV LAB5	
24420	2604760		BRU ERROR	

INST CONVERTS BCD INTEGERS TO SINGLE
WORD LENGTH BINARY INTEGERS

24980
24990
25000
BAS25010
BAS25020
BAS25030
25040
BAS25050
BAS25060
BAS25070
BAS25080
BAS25090
BAS25100
BAS25110
BAS25120
BAS25130
BAS25140
BAS25150
BAS25160
BAS25170
BAS25180
BAS25190
BAS25200
25210
25220
25230

		EJT			25240
		REM			25250
		REM			25260
		REM			25270
24421	1765011	VAR10	STX STX3	3	25280
24422	0045060		LDA L	2	BAS25290
24423	0300003		STA 3		BAS25300
24424	0063162		LDA S	3	BAS25310
24425	2514001		BMI		BAS25320
24426	2604537		BRU VARER		BAS25330
24427	0203203		SUB TEN		BAS25340
24430	2514001		BMI		BAS25350
24431	2604537		BRU VARER		BAS25360
24432	0305040		STA T+8		BAS25370
24433	2103232		CAR N26		25380
24434	2604444		BRU VAR11-1		25390
24435	2604436		BRU **1		25400
24436	0007107		LDA TFLAG		25410
24437	2514002		BZE		25420
24440	2604465		BRU VAR13		25430
24441	0005024		LDA ENDF		25440
24442	2514002		BZE VAR13		25450
24443	2604465				
24444	1440001		INX 1	2	BAS25460
24445	0004740	VAR11	LDA ENDL		BAS25470
24446	0200002		SUB 2		BAS25480
24447	2514001		BMI		BAS25490
24450	2604471		BRU VAR2		BAS25500
24451	0045060		LDA L	2	BAS25510
24452	0203203		SUB TEN		BAS25520
24453	2516001		BPL		BAS25530
24454	2604471		BRU VAR2		BAS25540
24455	0045060		LDA L	2	BAS25550
24456	0305037		STA T+7		BAS25560
24457	1440001		INX 1	2	BAS25570
24460	0045060		LDA L	2	25580
24461	0203203		SUB TEN		25590
24462	2514001		BMI		25600
24463	2604537		BRU VARER		25610
24464	2604473		BRU VAR3		BAS25620
24465	0604721	VAR13	LDX ARR	0	25630
24466	0624722		LDX ARR+1	1	25640
24467	0664724		LDX ARR+3	3	25650
24470	2604537		BRU VARER		25660
24471	0003203	VAR2	LDA TEN		BAS25670
24472	0305037		STA T+7		BAS25680
24473	0005040	VAR3	LDA T+8		BAS25690
24474	2504004		LQA		25700
24475	0005037		LDA T+7		25710
24476	1503204		MPY N11		BAS25720
24477	2504001		LAQ		25730
24500	0300003		STA XR03		25740
24501	0077326		LDA VARTAB	3	25750
24502	2516002		RNZ		25760

VAR DETERMINES THE VALIDITY AND LOCATION
OF VARIABLES AND GENERATES A FLOATING
LOAD OR STORE DEPENDING ON A FLAG
ENTERED FROM FOR WITH T+9 SET TO 1.

CHECK FOR \$

\$ NEVER LEGAL IN REGULAR BASIC

ILLEGAL VARIABLE

RESTORE XR S SAVED BY ARITH

ILLEGAL VARIABLE

CHECK TO SEE IF ALREADY DEFINED

COMPILE TIME GENERAL PURPOSE ROUTINES

000057

24503	2604511	BRU **6		ALREADY DEFINED	25770
24504	0005022	LDA VAVAIL		DEFINE NOW	25780
24505	0377326	STA VARTAB	3	STORE DEF IN TABLE	25790
24506	0203164	SUB TWO		DECREMENT AVAIL SPACE POINTER	25800
24507	0305022	STA VAVAIL		RESET A TO LOCATION OF VARIABLE	25810
24510	0103164	ADD TWO			25820
24511	0305040	STA T+8			BAS25830
24512	0005041	LDA T+9			BAS25840
24513	2514001	RMI			BAS25850
24514	2604531	BRU VAR4			BAS25860
24515	2516002	BNZ			25870
24516	2604525	BRU VAR32			25880
24517	0003574	LDA ZFLD			BAS25890
24520	0105040	ADD T+8			BAS25900
24521	0326140	STA ARP	1		BAS25910
24522	1420001	INX 1	1		BAS25920
24523	0665011	LDX STX3	3		BAS25930
24524	2660002	BRU 2	3		BAS25940
24525	0005040	LDA T+8			25950
24526	0305031	STA T+1			25960
24527	0665011	LDX STX3	3		25970
24530	2660002	BRU 2	3		25980
24531	0003576	LDA ZFST			BAS25990
24532	0105040	ADD T+8			BAS26000
24533	0327724	STA P	1		BAS26010
24534	1420001	INX 1	1		BAS26020
24535	0665016	LDX VAR7	3		BAS26030
24536	2660002	BRU 2	3		BAS26040
24537	1005012	VARER DLD ERM0V			26050
24540	2427573	MOV LAB7			26060
24541	2604760	BRU ERROR			26070
24542	1705015	VAR STX VART	0		26080
24543	1765016	STX VART+1	3		BAS26090
24544	0045060	LDA L	2		BAS26100
24545	0300003	STA 3			BAS26110
24546	0063162	LDA S	3		BAS26120
24547	0203203	SUB TEN			BAS26130
24550	2514001	RMI			BAS26140
24551	2604537	BRU VARER1			BAS26150
24552	0305040	STA T+8			BAS26160
24553	2103232	CAR N26		CHECK FOR \$	26170
24554	2604565	BRU VAR1		YES	26180
24555	2604557	BRU **2			26190
24556	2604565	BRU VAR1			26200
24557	0007107	LDA TFLAG		\$ NOT LEGAL IN REGULAR BASIC	26210
24560	2514002	BZE			26220
24561	2604537	BRU VARER			26230
24562	0005024	LDA ENDF			26240
24563	2514002	BZE VARER		ILLEGAL VARIABLE FOR TESTED PROG	26250
24564	2604537				
24565	1440001	VAR1 INX 1	2		26260
24566	0045060	LDA L	2		BAS26270
24567	0203357	SUB N61			BAS26280
24570	2514002	BZE			BAS26290

COMPILE TIME GENERAL PURPOSE ROUTINES

000058

24571	2604574		BRU VAR20		BAS26300
24572	0665016		LDX VART+1	3	BAS26310
24573	2604445		BRU VAR11		BAS26320
	24537	VARER1	EQU VARER		26330
24574	0603163	VAR20	LDX ONE	0	BAS26340
24575	0002726		LDA ZERO		BAS26350
24576	0305036		STA T+6		BAS26360
24577	1745017		STX VART+2	2	BAS26370
24500	0003550		LDA ZAR+12		BAS26380
24601	0327724		STA P	1	BAS26390
24602	1420001		INX 1	1	BAS26400
24603	1440001	VAR21	INX 1	2	BAS26410
24604	0045060		LDA L	2	BAS26420
24605	0203357		SUP N61		BAS26430
24606	2516002		BNZ		BAS26440
24607	2604612		BRU VAR22		BAS26450
24610	1400001		INX 1	0	BAS26460
24611	2604603		BRU VAR21		BAS26470
24612	0203163	VAR22	SUP ONE		BAS26480
24613	2516002		BNZ		BAS26490
24614	2604623		BRU VAR23		BAS26500
24615	0000000		LDA 0		BAS26510
24616	0203163		SUP ONE		BAS26520
24617	0300000		STA 0		BAS26530
24620	2514002		BZE		BAS26540
24621	2604643		BRU VAR24		BAS26550
24622	2604603		BRU VAR21		BAS26560
24623	0103165	VAR23	ADD N3		BAS26570
24624	2514002		BZE		BAS26580
24625	2604632		BRU VAR25		BAS26590
24626	0103244		ADD N28		BAS26600
24627	2514002		BZE		BAS26610
24630	2604537		BRU VARER1		BAS26620
24631	2604603		BRU VAR21		BAS26630
24632	0000000	VAR25	LDA 0		BAS26640
24633	0203163		SUP ONE		BAS26650
24634	2516002		BNZ		BAS26660
24635	2604603		BRU VAR21		BAS26670
24636	0002725		LDA MIN		BAS26680
24637	0305036		STA T+6		BAS26690
24640	0003247		LDA N31		BAS26700
24641	0345060		STA L	2	BAS26710
24642	2604603		BRU VAR21		BAS26720
24643	0003247	VAR24	LDA N31		BAS26730
24644	0345060		STA L	2	BAS26740
24645	0000002		LDA 2		BAS26750
24646	0103163		ADD ONE		BAS26760
24647	0305020		STA VART+3		BAS26770
24650	0005040		LDA T+8		BAS26780
24651	2512001		SLA 1		BAS26790
24652	0300003		STA 3		BAS26800
24653	0103475		ADD DIMLOC		BAS26810
24654	0305021		STA VART+4		BAS26820
24655	0667636		LDA DIMX	3	BAS26830

COMPILE TIME GENERAL PURPOSE ROUTINES

000059

24656	2516001	BPL			BAS26840
24657	2604713	BRU VAR26			BAS26850
24660	0005036	LDA T+6			BAS26860
24661	2514001	BMI			BAS26870
24662	2604704	BRU VAR27			BAS26880
24663	0003204	LDA N11			26890
24664	2512011	SLA 9			BAS26900
24665	0103163	ADD ONE			BAS26910
24666	0367637	STA DIMX+1	3	STORE SUBSCRIPT INFORMATION	26920
24667	0005022	LDA VAVAIL		CALCULATE NEW VALUE OF VAVAIL	26930
24670	0203226	SUR N22			26940
24671	0305022	STA VAVAIL			26950
24672	0103164	ADD TWO		CALCULATE LOCATION OF ARRAY	26960
24673	0367636	STA DIMX	3	STORE IN TABLE	26970
24674	1460002	INX 2	3		26980
24675	0003464	VAR28 LDA VLAST		CHECK FOR BLATANT OVERFLOW	BAS26990
24676	0205022	SUR VAVAIL			27000
24677	2514001	BMI			27010
24700	2604713	BRU VAR26			BAS27020
24701	1005012	VARER2 DLD ERMOV			27030
24702	2427521	MOV LAB1			27040
24703	2604760	BRU ERROR			27050
24704	0003204	VAR27 LDA N11			27060
24705	2512011	SLA 9			27070
24706	0103204	ADD N11			27080
24707	0367637	STA DIMX+1	3	COMPUTE NEW POINTER AND LOCATION FOR	27090
24710	0005022	LDA VAVAIL		STANDARD 10X10 ARRAY [11X11]	27100
24711	0203540	SUR N242			27110
24712	2604671	BRU VAR28-4			27120
24713	0645017	VAR26 LDX VART+2	2		BAS27130
24714	1440001	INX 1	2		BAS27140
24715	0762624	SPR ARITH	3		BAS27150
24716	2604537	BRU VARER1			BAS27160
24717	0003547	LDA ZAR+11			BAS27170
24720	0327724	STA P	1		BAS27180
24721	1420001	INX 1	1		BAS27190
24722	0005036	LDA T+6			BAS27200
24723	2514001	BMI			BAS27210
24724	2604744	BRU VAR30			BAS27220
24725	0005021	LDA VART+4			BAS27230
24726	0103471	ADD ZDLD			BAS27240
24727	0327724	STA P	1		BAS27250
24730	1420001	INX 1	1		BAS27260
24731	0003544	LDA ZAR+8			BAS27270
24732	0327724	STA P	1		BAS27280
24733	1420001	VAR31 INX 1	1		BAS27290
24734	0045060	LDA L	2		27300
24735	0203247	SUR N31			27310
24736	2516002	RNZ			27320
24737	2604537	BRU VARER			27330
24740	0645020	LDX VART+3	2		BAS27340
24741	0605015	LDX VART	0		BAS27350
24742	0665016	LDX VART+1	3		BAS27360
24743	2660002	BRU 2	3		BAS27370

COMPILE TIME GENERAL PURPOSE ROUTINES

000060

24744	1440001	VAR30	INX 1	2
24745	0762624		SPR ARITH	3
24746	2604537		BRU VARER1	
24747	0003551		LDA ZAR+13	
24750	0327724		STA P	1
24751	1420001		INX 1	1
24752	0005021		LDA VART+4	
24753	0103471		ADD ZDLD	
24754	0327724		STA P	1
24755	1420001		INX 1	1
24756	0003545		LDA ZAR+9	
24757	2604732		BRU VAR31-1	

BAS27380
 BAS27390
 BAS27400
 BAS27410
 BAS27420
 BAS27430
 BAS27440
 BAS27450
 BAS27460
 BAS27470
 BAS27480
 BAS27490

		EJT			27500
		REM			27510
		REM			27520
24760	0665012	ERROR	LDA ERMOV	3	27530
24761	1460007		INX 7	3	27540
24762	0003630		LDA ERIN		27550
24763	0360000		STA 0	3	27560
24764	0005060		LDA L		27570
24765	2512014		SLA 12		27580
24766	0305030		STA T		27590
24767	0005061		LDA L+1		27600
24770	0203203		SUB TEN		27610
24771	2516001		BPL		27620
24772	2605047		BRU ERR2		27630
24773	0005061		LDA L+1		27640
24774	2512006		SLA 6		27650
24775	0105030		ADD T		27660
24776	0305030		STA T		27670
24777	0005062		LDA L+2		27680
25000	0203203		SUB TEN		27690
25001	2516001		BPL		27700
25002	2605051		BRU ERR33		27710
25003	0005062		LDA L+2		27720
25004	0105030		ADD T		27730
25005	0360001		STA 1	3	27740
25006	0005063		LDA L+3		27750
25007	0203203		SUB TEN		27760
25010	2516001		BPL		27770
25011	2605054		BRU ERR44		27780
25012	0005063		LDA L+3		27790
25013	2512014		SLA 12		27800
25014	0305030		STA T		27810
25015	0005064		LDA L+4		27820
25016	0203203		SUB TEN		27830
25017	2516001		BPL		27840
25020	2605056		BRU ERR5		27850
25021	0005064		LDA L+4		27860
25022	2512006		SLA 6		27870
25023	0105030		ADD T		27880
25024	0103247		ADD N31		27890
25025	0360002	ERR10	STA 2	3	27900
25026	1460003		INX 3	3	27910
25027	1765012		STX ERMOV	3	27920
25030	0007135		LDA ER		27930
25031	0103163		ADD ONE		27940
25032	0307135		STA ER		27950
25033	2103203		CAR TEN		27960
25034	2600204		BRU LIST1		27970
25035	2504012		NOP		27980
25036	0003247	ERR20	LDA N31		27990
25037	0303247		STA YCRT4		28000
25040	0000003		LDA 3		28010
25041	0203634		SUB ELOC		28020
25042	0304001		STA EXON		28030

ERROR DOES THE NECESSARY BOOKKEEPING
FOR THE OUTPUT OF ERROR MESSAGES,

COMPILE TIME GENERAL PURPOSE ROUTINES

000062

25043	0002672		LDA CRT		28040
25044	0304100		STA EX0		28050
25045	0622726		LDX ZERO	1	28060
25046	2621406		BRU OUTPUT	1	28070
25047	0003631	ERR2	LDA BL2		28080
25050	2605052		BRU **2		28090
25051	0002671	ERR33	LDA BL		28100
25052	0105030		ADD T		28110
25053	0360001		STA 1	3	28120
25054	0002672	EPR44	LDA CRT		28130
25055	2605025		BRU ERR10		28140
25056	0003632	ERR5	LDA BLCR		28150
25057	0105030		ADD T		28160
25060	2605025		BRU ERR10		28170
25061	0665012	ERR30	LDX ERM0V	3	28180
25062	1460007		INX 7	3	28190
25063	2605036		BRU ERR20		28200

			EJT			28210
			REM		RUN PERFORMS THE NECESSARY CHECKS TO	28220
			REM		MAKE SURE THAT THE ENTIRE SOURCE PROGRAM	28230
			REM		COMPILED CORRECTLY. INITIALIZES RUN-	28240
			REM		TIME AREAS AND TRANSFERS TO THE OBJECT	28250
			REM		PROGRAM.	28260
25064	0645001	RUN	LDX GN	2		28270
25065	0557657		BXH 81	2		28280
25066	2600241		BRU INPUT8			28290
25067	0644741		LDX EXLN	2		28300
25070	0557551		BXH 151	2	CHECK FOR TOO MANY CONSTANTS	28310
25071	2600241		BRU INPUT8			28320
25072	0647601		LDX DPNT	2	CHECK FOR TOO MUCH DATA	28330
25073	0457730		BXL 40	2		28340
25074	2605100		BRU **4			28350
25075	1005012		DLN ERM0V			28360
25076	2427664		MOV LAB16			28370
25077	2605061		BRU ERR30			28380
25100	0005007		LDA NN			28390
25101	2514002		BZE			28400
25102	2605112		BRU **8			28410
25103	1005012		DLN ERM0V			28420
25104	2427711		MOV LAB21			28430
25105	0005012		LDA ERM0V			28440
25106	0103171		ADD N7			28450
25107	0305012		STA ERM0V			28460
25110	0003163		LDA ONE			28470
25111	0307135		STA ER			28480
25112	0003464		LDA PLOC			28490
25113	0100001		ADD 1			28500
25114	0205022		SUR VAVAIL		CHECK FOR PROGRAM TOO LONG	28510
25115	2514001		BMI			28520
25116	2605122		BRU **4			28530
25117	1005012		DLN ERM0V			28540
25120	2427720		MOV LAB23			28550
25121	2605061		BRU ERR30			28560
25122	0642726		LDX ZERO	2		28570
25123	0662726		LDX ZERO	3		28580
25124	0067602	RUN25	LDA FNT	3		28590
25125	0103163		ADD ONE			28600
25126	2514002		BZE			28610
25127	2605433		BRU RUN3			28620
25130	1460001		INX 1	3		28630
25131	0477746		BXL 26	3		28640
25132	2605124		BRU RUN25			28650
25133	0005001		LDA GN			BAS28660
25134	2514002		BZE			BAS28670
25135	2605245		BRU RUN2			BAS28680
25136	0000002	RUN1	LDA 2			BAS28690
25137	0205001		SUR GN			BAS28700
25140	2516001		RPL			BAS28710
25141	2605245		BRU RUN2			BAS28720
25142	0046750		LDA G	2		BAS28730
25143	0305030		STA T			28740

COMPILE TIME GENERAL PURPOSE ROUTINES

000064

25144	0662726		LDX ZERO	3	28750
25145	0065200	RUN7	LDA F	3	28760
25146	2105030		CAB T		28770
25147	2605231		BRU RUN10		28780
25150	2605237		BRU RUN9		28790
25151	1005012	RUN8	DL0 ERM0V		28800
25152	2427646		MOV LAB14		28810
25153	0005012		LDA ERM0V		28820
25154	0103170		ADD N6		28830
25155	0305012		STA ERM0V		28840
25156	0007135		LDA ER		28850
25157	0103163		ADD ONE		28860
25160	0307135		STA ER		28870
25161	1602726		LDX ZERO	0	28880
25162	0046750		LDA G	2	28890
25163	2504006		MAN		28900
25164	1725030		STX T	1	28910
25165	0623163		LDX ONE	1	28920
25166	1622717	RUN62	DVD TENT	1	28930
25167	2514002		SZE		28940
25170	2605226		BRU RUN63		28950
25171	1400001		INX 1	0	28960
25172	0325030	RUN64	STA T	1	28970
25173	0002726		LDA ZERO		28980
25174	1420001		INX 1	1	28990
25175	0437772		BXL 6	1	29000
25176	2605166		BRU RUN62		29010
25177	0625012		LDX ERM0V	1	29020
25200	0002673		LDA FILL2		29030
25201	0105031		ADD T+1		29040
25202	2512006		SLA 6		29050
25203	0105032		ADD T+2		29060
25204	0320000		STA 0	1	29070
25205	0005033		LDA T+3		29080
25206	2512006		SLA 6		29090
25207	0105034		ADD T+4		29100
25210	2512006		SLA 6		29110
25211	0105035		ADD T+5		29120
25212	0320001		STA 1	1	29130
25213	0002672		LDA CRT		29140
25214	0320002		STA 2	1	29150
25215	1420003		INX 3	1	29160
25216	1725012		STX ERM0V	1	29170
25217	0625030		LDX T	1	29180
25220	1440001		INX 1	2	29190
25221	0007135		LDA ER		29200
25222	0203203		SUR TEN		29210
25223	2514001		BMI		29220
25224	2605136		RRU RUN1		29230
25225	2605245		RRU RUN2		29240
25226	0417777	RUN63	BXL 1	0	29250
25227	0002676		LDA FILL		29260
25230	2605172		BRU RUN64		29270
25231	1460002	RUN10	INX 2	3	29280

COMPILE TIME GENERAL PURPOSE ROUTINES

000065

25232	0000003		LDA 3		29290
25233	0205003		SUB FN		29300
25234	2514001		BMI		29310
25235	2605145		BRU RUN7		29320
25236	2605151		BRU RUN8		29330
25237	0065201	RUN9	LDA F+1	3	29340
25240	0103571		ADD ZBRU		BAS29350
25241	0103464		ADD PLOC		BAS29360
25242	0346750		STA G	2	BAS29370
25243	1440301		INX 1	2	BAS29380
25244	2605136		BRU RUN1		BAS29390
25245	0003611	RUN2	LDA ZOUT		29400
25246	0327724		STA P	1	29410
25247	0005010		LDA READX		29420
25250	2516001		BPL		29430
25251	2605342		BRU RUN5		29440
25252	0007175		LDA DATAI		29450
25253	2516002		BNZ		29460
25254	2605260		BRU RUN6		29470
25255	1005012		DLN ERM0V		29480
25256	2427630		MOV LAP12		29490
25257	2605061		BRU ERR30		29500
25260	0307136	RUN6	STA DATAN		29510
25261	0002713		LDA NM2		29520
25262	0307175		STA DATAI		29530
25263	0007601		LDA DPNT		29540
25264	0307176		STA DEND		29550
25265	2103164		CAR TWO		29560
25266	2605337		BRU RUN6A		29570
25267	2605337		BRU RUN6A		29580
25270	2506033		SXG 1		29590
25271	0721022		SPR DCHEK	1	29600
25272	0007176		LDA DEND		29610
25273	0102657		ADD SIGN		29620
25274	0307172		STA PLIST+2		29630
25275	0007171		LDA PLIST+1		29640
25276	2002711		EXT 0400		29650
25277	0102712		ADD 0200		29660
25300	0307171		STA PLIST+1		29670
25301	2506113		SXG 4		29680
25302	0003167		LDA N5		29690
25303	0720000		SPR 8192	1	29700
25304	0007170		DEC PLIST		29710
25305	2506015		SET PST		29720
25306	2506033		SXG 1		29730
25307	0721022		SPR DCHEK	1	29740
25310	0002715		LDA DREAD		29750
25311	0307170		STA PLIST		29760
25312	0002714		LDA DLOC		29770
25313	0307171		STA PLIST+1		29780
25314	2504002		LDZ		29790
25315	2504040		CHS		29800
25316	0307172		STA PLIST+2		29810
25317	0003167		LDA N5		29820

STORE BRANCH TO OUTPUT IN OBJECT

CHECK FOR READ STATEMENT

NO READ INST

CHECK TO MAKE SURE DATA WAS INPUT

NO DATA

TERMINAL ERROR

WORD AFTER LAST ENTRY IN LAST DATA RECORD

SET LAST RECORD

IF ZERO OR TWO THEN DONT READ IN AGAIN

ELSE WRITE OUT LAST RECORD AND READ IN FIRST

CHECK LAST DISK OP

GO WRITE

WAIT FOR WRITE TO BE COMPLETED

CHANGE PLIST TO READ AND INITIALIZE

1ST READ WILL BRING IN 256 WORDS

COMPILE TIME GENERAL PURPOSE ROUTINES

000066

25320	2506113	SXG 4			29830
25321	0720000	SPR 8192	1	BRING IN 1ST 2 RECORDS	29840
25322	0007170	DEC PLIST			29850
25323	2506015	SET PST			29860
25324	2506033	SXG 1			29870
25325	0721022	SPR DCHEK	1		29880
25326	0007170	LDA PLIST		CHANGE TO READ ONLY 1 RECORD	29890
25327	0203164	SUR N2			29900
25330	0307170	STA PLIST			29910
25331	0007171	LDA PLIST*1			29920
25332	2002711	EXT 0400			29930
25333	0102712	ADD 0200			29940
25334	0307171	STA PLIST*1			29950
25335	0003164	LDA N2			29960
25336	2506013	SXG 0			29970
25337	0307177	STA DREC	RUN6A		29980
25340	2504002	LDZ			29990
25341	0307601	STA DPNT			30000
25342	0007135	LDA ER	RUN5		BAS30010
25343	2514002	BZE			30020
25344	2605347	BRU **3			30030
25345	0665012	LDY ERMV	3		30040
25346	2605036	BRU ERR20			30050
25347	0007107	LDA TFLAG		THERE ARE NO \$ VAR TO INIT IN REG	30060
25350	2514002	BZE		BASIC	30070
25351	2605412	BRU RUN5A			30080
25352	1003660	DLB MOVDS		INITIALIZE \$ VARIABLES	30090
25353	2417764	MOV DS		PICK UP THE DOLLAR SIGN PART OF THE SYM TAB	30100
25354	0622726	LDY ZERO	1		30110
25355	3001402	FLD FZERO			30120
25356	0024720	LDA VC	1	PICK UP ENTRY FROM SYMBOL TABLE	30130
25357	2514002	BZE **4		SKIP IF NOT ASSIGNED	30140
25360	2605363				
25361	0300002	STA XR02		SET UP XR FOR STORE	30150
25362	3340000	FST 0	2	ZERO ONE VARIABLE	30160
25363	1420001	INX 1	1		30170
25364	0437765	PXL 11	1	GO THRU ALL \$ VARIABLES	30180
25365	2605356	BRU **7			30190
25366	0007723	LDA DIMX+53		ZERO \$ ARRAY	30200
25367	2514001	RMI			30210
25370	2605412	BRU RUN5A		SKIP IF \$ ARRAY NOT USED	30220
25371	2511011	SRO 9		DETERMINE NO. OF ELEMENTS	30230
25372	2504005	XAO			30240
25373	2510011	SRA 9		IMPLICIT MPY BY 2 AT THIS STEP	30250
25374	0305030	STA T			30260
25375	2504002	LDZ			30270
25376	1505030	MPY T			30280
25377	2504001	LAD		NUMBER OF ELEMENTS*2	30290
25400	2504032	ADD		SET UP MOV	30300
25401	2504522	NEG			30310
25402	2504004	LQA			30320
25403	0667726	LDY DIMX+56	3		30330
25404	3360000	FST 0	3	ZERO FIRST ELEMENT TO PRIME THE MOV	30340
25405	0600003	LDA XR03		LOCATION OF FIRST ELEMENT OF ARRAY	30350

COMPILE TIME GENERAL PURPOSE ROUTINES

000067

25406	2506016	SET PBK			30360
25407	2705411	STQ **2		CONSTRUCT THE MOV	30370
25410	2504032	ADD		TO ADDRESS	30380
25411	2400000	MOV --		#### CONSTRUCTED	30390
25412	2506015	SET PST			30400
25413	0642726	LDX ZERO	2		30410
25414	0603464	LDX PLOC	0		30420
25415	0623464	LDX PLOC	1		30430
25416	0662726	LDX ZERO	3		30440
25417	0003625	LDA RELOC			BAS30440
25420	0306260	STA RST		INITIALIZE RETURN STACK TO ERROR TRAP	30450
25421	2504022	LDO		INITAILIZE RETURN STACK POINTER	30460
25422	0300011	STA XR21			30470
25423	2504002	LDZ			30480
25424	0306214	STA YIND		SET NO. OF WORDS IN LINE TO ZERO	30490
25425	0307140	STA YODD		INIT ODD CHARACTER COUNTER	30500
25426	1002544	DLD RND		INITIALIZE RANDOM	30510
25427	1306246	DST RND1			30520
25430	3500004	RIN			30530
25431	3100001	SET TRPMODE		ENTER TRAP	30540
25432	2647724	RRU P	2		30550
25433	1005012	DLD ERMV			30560
25434	2427637	MOV LAB13			30570
25435	0005012	LDA ERMV			30580
25436	0103171	ADD N7			30590
25437	0305012	STA ERMV			30600
25440	0003163	LDA ONE			30610
25441	0307135	STA ER			30620
25442	2605136	BRU RUN1			30630
		NAM		RUN-TIME, UPPER MEM. ARITHMETIC SUBROUTINES	30640
					30650

		EJT				30660
		REM			CD225D2.010 - FL-PT ARCTAN - AAU.	BAS30670
		REM			GENERAL ELECTRIC CO COMP DEPT. PHX.	BAS30680
		REM			COR 7 AUG 62.	BAS30690
		REM			141 SOURCE LANGUAGE CARDS.	BAS30700
25443	0627070	ARCTAN	LDX B	1		30710
25444	3307070		FST /2302			30720
25445	1007070		DLN /2302			BAS30730
25446	2510013		SRA 11			BAS30740
25447	0307100		STA /2303		STORE EXPONENT	BAS30750
25450	0007070		LDA /2302			BAS30760
25451	2002707		EXT /2304		MASK OFF EXPONENT	BAS30770
25452	2512200		SLD 0			BAS30780
25453	2514002		RZE			BAS30790
25454	2620001		RRU 1	1	RETURN WITH ZERO ANS.	BAS30800
25455	1707076		STX /2306	0		30810
25456	1747077		STX /2307	2		BAS30820
25457	0307101		STA /2308		SAVE FOR SIGN TEST AT END	BAS30830
25460	2516001		RPL		IS MANT PLUS	BAS30840
25461	2605466		RRU /2309		YES	BAS30850
25462	1307072		DST /2310		STORE MANT.	BAS30860
25463	1001402		DLN /2311		NEGATIVE MANT.	BAS30870
25464	1207072		DSU /2310		MAKE IT POS.	BAS30880
25465	2002707		EXT /2304		PUT ON LEADING ZEROS	BAS30890
25466	2512206	/2309	SLD 6			BAS30900
25467	1307072		DST /2310			BAS30910
25470	0007100		LDA /2303			BAS30920
25471	2514001		RMI		IS EXP NEGATIVE	BAS30930
25472	2605511		RRU /2312		YES FO TO /2312	BAS30940
25473	0300002		STA 2		POSITIVE EXP	BAS30950
25474	0457743		RXL 29	2	IS EXP LESS THAN 29	BAS30960
25475	2605501		RRU /2314			BAS30970
25476	1003036		DLN /2315		NO RETURN WITH PI/2 AS ANS	BAS30980
25477	1307074		DST /2316			BAS30990
25500	2605572		RRU /2325+5			BAS31000
25501	1002776	/2314	DLN /2318			BAS31010
25502	2551000		SRL 0	2		BAS31020
25503	1307074		DST /2316			BAS31030
25504	1107072		DAD /2310			BAS31040
25505	1307070		DST /2302		X+1	BAS31050
25506	1007072		DLN /2310			BAS31060
25507	1207074		DSU /2316			BAS31070
25510	2605526		RRU /2319			BAS31080
25511	2504522	/2312	NEG		MAKE EXP POS	BAS31090
25512	0300002		STA 2		PUT IN X2 FOR SHIFT	BAS31100
25513	0457770		RXL 8	2	IS EXP 8 OR MORE	BAS31110
25514	2605517		RRU **3			BAS31120
25515	3307074		FST /2316		YES RETURN WITH ARG AS ANS STILL IN	BAS31130
25516	2605513		RRU /2317+1			BAS31140
25517	1007072		DLN /2310			BAS31150
25520	2551000		SRL 0	2		BAS31160
25521	1307072		DST /2310			BAS31170
25522	1102776		DAD /2318			BAS31180
25523	1307070		DST /2302		X+1	BAS31190

25524	1007072	DLN /2310		BAS31200
25525	1202776	DSU /2318		BAS31210
25526	1307072	/2319 DST /2310		BAS31220
25527	3500010	SET FIXPOINT		BAS31230
25530	3100002	MAQ	A	BAS31240
25531	3100002	MAQ	A	BAS31250
25532	3007072	FLD /2310		BAS31260
25533	3607070	FDV /2302		BAS31270
25534	3307072	FST /2310		BAS31280
25535	3100002	MAQ	A	BAS31290
25536	3507072	FMP /2310		BAS31300
25537	1007072	DLN /2310		BAS31310
25540	2511002	SRD 2		BAS31320
25541	1307072	DST /2310		BAS31330
25542	1001402	DLN /2311		BAS31340
25543	1307074	DST /2316		BAS31350
25544	0300002	STA 2		BAS31360
25545	3307070	FST /2302		BAS31370
25546	1007070	DLN /2302		BAS31380
25547	2511002	SRD 2		BAS31390
25550	1307070	DST /2302		BAS31400
25551	1007074	/2323 DLN /2316		BAS31410
25552	2512202	SLD 2		BAS31420
25553	1143014	DAD /2324	2	BAS31430
25554	1307074	DST /2316		BAS31440
25555	3007074	FLD /2316		BAS31450
25556	3100002	MAQ	A	BAS31460
25557	0557762	RXW 14	2	BAS31470
25560	2605566	RRU /2325		BAS31480
25561	3507070	FMP /2302		BAS31490
25562	1440002	INX 2	2	BAS31500
25563	3307074	FST /2316		BAS31510
25564	2605551	RRU /2323		BAS31520
25565	3507072	/2325 FMP /2310		BAS31530
25566	3307074	FST /2316		BAS31540
25567	1007074	DLN /2316		BAS31550
25570	2512202	SLD 2		BAS31560
25571	1103034	DAD /2326		BAS31570
25572	2513237	DNO 31		BAS31580
25573	2511010	SRD 6		BAS31590
25574	1307074	DST /2316		BAS31600
25575	0007101	LDA /2308		BAS31610
25576	2516001	RPL		BAS31620
25577	2605604	RRU /2327		BAS31630
25600	1001402	DLN /2311		BAS31640
25601	1207074	DSU /2316		BAS31650
25602	2002707	EXT /2304		BAS31660
25603	1307074	DST /2316		BAS31670
25604	1001402	/2327 DLN /2311		BAS31680
25605	0000000	LDA 000		BAS31690
25606	0203013	SUB /2313		BAS31700
25607	2511010	SRD 8		BAS31710
25610	2504005	XAD		BAS31720
25611	2307074	ORY /2316		BAS31730

ANS FIXED POINT

SHIFT OVER

IS ANS POS OR NEG

ARC TAN ANS IS POS

ANS IS NEG

PUT ON EXPONENT

25612	3100010	/2317	SET NFLPOINT	
25613	3100002		MAQ	A
25614	3100002		MAQ	A
25615	3007074		FLD /2316	
25616	0647077		LDX /2307	2
25617	0607076		LDX /2306	0
25620	2620001		RRU 1	1
			REM	
			REM	
			REM	
			REM	
25621	3307072	SQF2	FST /2102	
25622	0627070		LDX 8	1
25623	1007072		DLB /2102	
25624	2002707		EXT /2107	
25625	2514002		BZE	
25626	2620001		RRU 1	1
25627	0202707		SUR /2107	
25630	2511001		SRD 1	
25631	1307070		DST /2108	
25632	0007072		LDA /2102	
25633	2002770		EXT /2109	
25634	0202707		SUR /2107	
25635	2510001		SRA 1	
25636	2307070		ORV /2108	
25637	1727074		STX /2110	1
25640	0622726		LDX /2111	1
25641	3100002	/2112	MAQ	A
25642	3100002		MAQ	A
25643	3007072		FLD /2102	
25644	3607070		FDV /2108	
25645	3107070		FAD /2108	
25646	1420001		INX 1	1
25647	3307070		FST /2108	
25650	0007070		LDA /2108	
25651	0102707		ADD /2107	
25652	0307070		STA /2108	
25653	0437774		BXL 4	1
25654	2605641		RRU /2112	
25655	3100002		MAQ	A
25656	3100002		MAQ	A
25657	3007070		FLD /2108	
25660	0627074		LDX /2110	1
25661	2514003		ROV	
25662	2605663		RRU **1	
25663	2620001		RRU 1	1
			REM	
			REM	
			REM	
			REM	
25664	3102772	COSF	FAD /2203	
25665	3307072	SINF	FST /2205	

LAST CARD - CD225D2.010
 CD225D2.006 - FL-PT SQUARE ROOT - AAU.
 GENERAL ELECTRIC CO COMP DEPT. PHX.
 11 JAN 62.
 48 SOURCE LANGUAGE CARDS.

ADD ONE TO EXP

ADD ONE TO EXP

SUBTRACT ONE FROM EXPONENT

LAST CARD - CD225D2.006
 CD225D2.008 - FL-PT SIN/COS - AAU.
 GENERAL ELECTRIC CO COMP DEPT. PHX.
 REV 9 FEB 62.
 181 SOURCE LANGUAGE CARDS.

BAS31740
 BAS31750
 BAS31760
 BAS31770
 BAS31780
 31790
 BAS31800
 BAS31810
 BAS31820
 BAS31830
 BAS31840
 BAS31850
 31860
 31870
 31880
 BAS31890
 BAS31900
 BAS31910
 BAS31920
 BAS31930
 BAS31940
 BAS31950
 BAS31960
 BAS31970
 BAS31980
 BAS31990
 BAS32000
 BAS32010
 BAS32020
 BAS32030
 BAS32040
 BAS32050
 BAS32060
 BAS32070
 BAS32080
 BAS32090
 BAS32100
 BAS32110
 BAS32120
 BAS32130
 BAS32140
 BAS32150
 BAS32160
 BAS32170
 32180
 BAS32190
 BAS32200
 BAS32210
 BAS32220
 BAS32230
 BAS32240
 BAS32250
 32260
 32270

25666	0627070	LDX B	1		32280
25667	2514722	BAR BZE	7	IS THE ARGUMENT ZERO	BAS32280
25670	2620001	BRU 1	1	YES RETURN	BAS32300
25671	3007072	FLD /2205			32310
25672	3500005	CQX			32320
25673	3602772	FDV /2203			BAS32330
25674	1747076	STX /2207	2		BAS32340
25675	1707077	STX /2208	0		32350
25676	0001402	LDA /2209		ZERO OUT SIGN TEST WORD	BAS32360
25677	0307100	STA /2210			BAS32370
25700	3307070	FST /2202			BAS32380
25701	1007070	DLD /2202			BAS32390
25702	2510013	SRA 11			BAS32400
25703	0307101	STA /2211		SAVE EXPONENT OF ARG	BAS32410
25704	0007070	LDA /2202			BAS32420
25705	2002707	EXT /2212		SEPERATE OFF MANT.	BAS32430
25706	2512200	SLD 0		PUT CORRECT SIGN ON A REG.	BAS32440
25707	1307070	DST /2202			BAS32450
25710	2516001	RPL		IS THE MANT POS	BAS32460
25711	2605722	BRU /2213		YES GO TO BSC1	BAS32470
25712	0002707	LDA /2212		NEG. MANT.	BAS32480
25713	2307070	ORY /2202			BAS32490
25714	1001402	DLD /2209			BAS32500
25715	1207070	DSU /2202			BAS32510
25716	1307070	DST /2202		MAKENEG.MANT POS.	BAS32520
25717	0007100	LDA /2210		SET SIGN INDICATOR NEG	BAS32530
25720	2504040	CHS			BAS32540
25721	0307100	STA /2210			BAS32550
25722	0007101	LDA /2211		IS EXP NEG	BAS32560
25723	2514001	RMI			BAS32570
25724	2606073	BRU /2214		YES	BAS32580
25725	0300002	STA 2			BAS32590
25726	0457744	RXL 28	2		BAS32600
25727	2605732	BRU /2215			BAS32610
25730	1002766	DLD /2216		EXP IS TOO LARGE	BAS32620
25731	2606107	BRU /2217			BAS32630
25732	1007070	DLD /2202			BAS32640
25733	2552200	SLD 0	2		BAS32650
25734	0307072	STA /2205			BAS32660
25735	2512206	SLD 6		SHIFT POINT LEFT SIX	BAS32670
25736	2002774	EXT /2218		1400000	BAS32680
25737	1307070	DST /2202			BAS32690
25740	0007072	LDA /2205			BAS32700
25741	2511013	SRD 11		STORE NUMBER OF QUADRANTS PASSED	BAS32710
25742	0307101	STA /2211		IN EXPASC	BAS32720
25743	1007070	DLD /2202			BAS32730
25744	2516002	RNZ			BAS32740
25745	2605773	BRU /2219			BAS32750
25746	2504005	XAO		IS LOWER PART ZERO	BAS32760
25747	2516002	RNZ			BAS32770
25750	2605773	BRU /2219			BAS32780
25751	0007101	LDA /2211		WHAT QUAD ARE WE IN	BAS32790
25752	2514000	ROR			BAS32800
25753	2605756	BRU /2220		1 OR 3	BAS32810

25754	1001402		DLN /2209
25755	2606107		BRU /2217
25756	2510001	/2220	SRA 1
25757	2514000		RON
25760	2605766		BRU /2221
25761	0007100		LDA /2210
25762	2514001		RM1
25763	2605771		BRU /2222
25764	1001400	/2223	DLN /2224
25765	2606107		BRU /2217
25766	0007100	/2221	LDA /2210
25767	2514001		RM1
25770	2605764		BRU /2223
25771	1002656	/2222	DLN /2225
25772	2606107		BRU /2217
25773	0007101	/2219	LDA /2211
25774	2516000		REV
25775	2606001		BRU /2226
25776	1002776		DLN /2227
25777	1207070		DSU /2202
26000	1307070		DST /2202
26001	0007101	/2226	LDA /2211
26002	2510001		SRA 1
26003	2516000		REV
26004	2606010		BRU /2228
26005	0007100		LDA /2210
26006	2504040		CHS
26007	0307100		STA /2210
26010	3500010	/2228	SET FIXPOINT
26011	3007070		FLD /2202
26012	3100002		MAQ A
26013	3507070		FMP /2202
26014	1001402		DLN /2209
26015	1307074		DST /2230
26016	0300002		STA 2
26017	3307072		FST /2205
26020	1007072		DLN /2205
26021	2512202		SLD 2
26022	1307072		DST /2205
26023	1007074	/2231	DLN /2230
26024	2512202		SLD 2
26025	1143000		DAD /2232 2
26026	1307074		DST /2230
26027	3007074		FLD /2230
26030	3100002		MAQ A
26031	0557770		RXW 8 2
26032	2606037		BRU /2233
26033	3507072		FMP /2205
26034	1440002		INX 2 2
26035	3307074		FST /2230
26036	2606023		BRU /2231
26037	3507070	/2233	FMP /2202
26040	3307074		FST /2230
26041	1007074		DLN /2230

ZERO IS ANS -3 OR 183

IS THIS QUAD 3

YES

NO

WAS ORIGINAL ARG MINUS

YES

+1 IS ANS

270 DEGREES

ORIGINAL ARG WAS MINUS SO ANS IS +1

ARG IS IN QUAD 1 OR 3

ARG IS IN QUAD 2 OR 4

1. - ARG

ARE WE IN QUAD 3 OR 4

NO

YES CHANGE SIGN OF INDICATOR WORD

HAVE ALL CONSTANTS BEEN ADDED IN

LAST TERM

BAS32820
BAS32830
BAS32840
BAS32850
BAS32860
BAS32870
BAS32880
BAS32890
BAS32900
BAS32910
BAS32920
BAS32930
BAS32940
BAS32950
BAS32960
BAS32970
BAS32980
BAS32990
BAS33000
BAS33010
BAS33020
BAS33030
BAS33040
BAS33050
BAS33060
BAS33070
BAS33080
BAS33090
BAS33100
BAS33110
BAS33120
BAS33130
BAS33140
BAS33150
BAS33160
BAS33170
BAS33180
BAS33190
BAS33200
BAS33210
BAS33220
BAS33230
BAS33240
BAS33250
BAS33260
BAS33270
BAS33280
BAS33290
BAS33300
BAS33310
BAS33320
BAS33330
BAS33340
BAS33350

26042	2512203	SLD 3			BAS33360
26043	2513237	DND 31			BAS33370
26044	2511010	SKD 8			BAS33380
26045	1307070	DST /2202		ANS	BAS33390
26046	0007100	LDA /2210			BAS33400
26047	2516001	RPL			BAS33410
26050	2606055	RRU /2234			BAS33420
26051	1001402	DLN /2209		IF NEG G NEGATE ANS	BAS33430
26052	1207070	DSU /2202			BAS33440
26053	2002707	EXT /2212			BAS33450
26054	1307070	DST /2202			BAS33460
26055	0000000	/2234 LDA 000			BAS33470
26056	0203012	SUP /2235			BAS33480
26057	2512013	SLA 11			BAS33490
26060	2307070	DRY /2202		PUT EXP ON ANS	BAS33500
26061	0001402	LDA /2209		SET UP FOR NORMAL RETURN	BAS33510
26062	0607077	/2236 LDX /2208 0			33520
26063	3100010	SET NFLPOINT			BAS33530
26064	3500005	COX			33540
26065	0647076	LDX /2207 2			BAS33550
26066	3007070	FLD /2202			BAS33560
26067	2514003	ROV		TURN OFF OVERFLOW	BAS33570
26070	2606071	RRU ++1			BAS33580
26071	2512001	SLA 1		URNS ON OVERFLOW IF THERE IS AN ERROR	BAS33590
26072	2620001	RRU 1 1			BAS33600
26073	2504522	/2214 NEG		NEG EXP	BAS33610
26074	0300002	STA 2			BAS33620
26075	0557767	RX4 9 2		IS EXPONENT LESS THAN -9	BAS33630
26076	2606106	RRU /2236		EXP TOO SMALL	BAS33640
26077	1007070	DLN /2202			BAS33650
26100	2512206	SLD 6			BAS33660
26101	2551000	SRD 0 2			BAS33670
26102	1307070	DST /2202		LINE UP FRACTION PART	BAS33680
26103	0001402	LDA /2209		PUT ZERO IN FOR QUAD COUNT	BAS33690
26104	0307131	STA /2211			BAS33700
26105	2605773	RRU /2219			BAS33710
26106	1007072	/2238 DLN /2205		ANS IS ARG FOR SMALL EXP	BAS33720
26107	1307070	/2217 DST /2202			BAS33730
26110	2606062	SRU /2236		RETURN	BAS33740
		REM		LAST CARD - CD225D2.008	BAS33750
		REM			33760
		REM		CD225D2.012 - FL-PT EXPONENTIAL - AAU.	33770
		REM		GENERAL ELECTRIC CO COMP DEPT, PHX.	33780
		REM		COR 4 APR 63.	33790
		REM		179 SOURCE-LANGUAGE CARDS.	33800
26111	0627070	EXPSU= LDX 5 1			33810
26112	3307070	FST /6105			33820
26113	2514722	RAP RZF 7			33830
26114	2606133	RRU /6100		ARGUMENT IS 0	33840
26115	3201400	FSU FONE			33850
26116	2516722	RAP RNZ 7			33860
26117	2606122	RRU ++3			33870
26120	3003050	FLD /6111		ARGUMENT IS 1	33880
26121	2620001	RRU 1 1			33890

26122	3007070	FLD /6105			33900
26123	3100002	MAC	A		33910
26124	3503042	FMP /6113		MULTIPLY BY 1/LN2	33920
26125	3307070	FST /6105			33930
26126	2606142	BRU /6101			33940
26127	0627070	EEXP2 LDY B	1		33950
26130	3307070	FST /6105			33960
26131	2516722	BAR BNZ	7		33970
26132	2606135	BRU **3			33980
26133	3001400	/6100 FLD FONE		ARGUMENT IS 0	33990
26134	2620001	BRU 1	1		34000
26135	3201400	FSD FONE			34010
26136	2516722	BAR BNZ	7		34020
26137	2606142	BRU **3			34030
26140	3003046	FLD /6118		ARGUMENT IS 1	34040
26141	2620001	BRU 1	1		34050
26142	1727072	/6101 STX /6134	1		34060
26143	0007070	LDA /6105			34070
26144	2510013	SRA 11			34080
26145	0307102	STA /6119			34090
26146	1007070	DLB /6105			34100
26147	2512210	SLD 8			34110
26150	1307074	DST /6109			34120
26151	2516001	RPL			34130
26152	2606156	BRU **4			34140
26153	1001402	DLB /6104			34150
26154	1207074	DSD /6109			34160
26155	1307074	DST /6109			34170
26156	0007102	LDA /6119			34180
26157	2516001	RPL			34190
26160	2606173	BRU /6124			34200
26161	2504522	NEG			34210
26162	0300003	STA XRO3			34220
26163	0103040	ADD /6121			34230
26164	2516001	RPL			34240
26165	2606133	BRU /6100		ANSWER IS CLOSE TO 1	34250
26166	2504002	LDZ			34260
26167	0307102	STA /6119			34270
26170	1007074	DLB /6109			34280
26171	2571000	SRD 0	3		34290
26172	2606206	BRU /6126			34300
26173	0003041	/6124 LDA /6136			34310
26174	0207102	SUB /6119			34320
26175	2514001	RMI			34330
26176	2606240	BRU /6132			34340
26177	0667102	LDY /6119	3		34350
26200	0007074	LDA /6109			34360
26201	2504006	MAC			34370
26202	2572200	SLD 1	3		34380
26203	0307102	STA /6119			34390
26204	1007074	DLB /6109			34400
26205	2572200	SLD 0	3		34410
26206	0726242	/6126 SPR /6127	1		34420
26207	1307074	DST /6109			34430

26210	0007102	LDA /6119	34440
26211	0102724	ADD /6141	34450
26212	0307102	STA /6119	34460
26213	0007074	LDA /6109	34470
26214	2504006	MAQ	34480
26215	0007102	LDA /6119	34490
26216	2511010	SRD 8	34500
26217	1307076	DST /6128	34510
26220	1007074	DLR /6109	34520
26221	2511010	SRD 8	34530
26222	0007077	LDA /6128+1	34540
26223	1307074	DST /6109	34550
26224	0007071	LDA /6105+1	34560
26225	2514001	RMI	34570
26226	2606233	RRU /6120	34580
26227	3007074	FLD /6109	34590
26230	3100010	SET NFLPOINT	34600
26231	0627072	/6131 LDX /6134 1	34610
26232	2620001	RRU 1 1	34620
26233	3500005	/6120 CQY	34630
26234	3001400	FLD FONE	34640
26235	3100010	SET NFLPOINT	34650
26236	3607074	FDV /6109	34660
26237	2606231	RRU /6131	34670
26240	3001402	/6132 FLD FZERO	34680
26241	2606230	RRU /6131-1	34690
26242	1307076	/6127 DST /6128	34700
26243	3500010	SET FIXPOINT	34710
26244	0662726	LDX ZERO 3	34720
26245	3200005	CAY	34730
26246	3163052	FAD /6149 3	34740
26247	3110002	MAQ A	34750
26250	3507076	FMP /6128	34760
26251	3307100	FST /6128+2	34770
26252	1007100	DLR /6128+2	34780
26253	1460002	INX 2 3	34790
26254	0477756	RXL 16 3	34800
26255	2606246	RRU /6127+4	34810
26256	2511001	SRD 1	34820
26257	0103074	ADD /6152	34830
26260	2620001	RRU 1 1	34840
		REM	34850
		REM	34860
		REM	34870
		REM	34880
		REM	34890
		REM	34900
26261	2504002	LNSUB LDR	34910
26262	2606264	RRU **2	34920
26263	2504102	LOG2 LMD	34930
26264	0627070	LDX R 1	34940
26265	0306236	STA LOGT	34950
26266	2504002	LDR	34960
26267	0307075	STA /5114+1	34970

LAST CARD - CD225D2.012

CD225D2.014 - FLOATING-POINT LOG 2,E,10 AAU,
GENERAL ELECTRIC CO COMP DEPT, PHX,
19 JAN 62,
146 SOURCE-LANGUAGE CARDS.

26270	3500010	SET FIXPOINT	
26271	3307070	FST /5138	
26272	3201400	FSU /5106	
26273	3307076	FST /5107	
26274	1000000	DL0 0	
26275	1307072	DST /5112	
26276	0007070	LDA /5138	
26277	2003112	EXT /5113	
26300	0307074	STA /5114	
26301	1007070	DL0 /5138	
26302	2512210	SLD 8	
26303	0766400	SPR /5115	3
26304	2511006	SRD 6	
26305	1107074	DAD /5114	
26306	1307070	DST /5138	
26307	0006230	LDA LOGT	
26310	2514001	RMI	
26311	2606316	RRU ++5	
26312	3007070	FLD /5138	
26313	3100002	MAQ	A
26314	3503076	FMP /5117	
26315	3307070	FST /5138	
26316	2504102	LMQ	
26317	0306230	STA LOGT	
26320	1007070	DL0 /5138	
26321	2516001	RPL	
26322	2606330	RRU /5121	
26323	1307070	DST /5138	
26324	2504002	LDZ	
26325	0306230	STA LOGT	
26326	1001402	DL0 /5120	
26327	1207070	DSU /5138	
26330	2513210	/5121 DND 8	
26331	1307070	DST /5138	
26332	0000000	LDA 0	
26333	2516002	BNZ	
26334	2606346	RRU /5124	
26335	1007070	DL0 /5138	
26336	2513233	DND 27	
26337	1307070	DST /5138	
26340	0000000	LDA 0	
26341	2516002	BNZ	
26342	2606345	RRU ++3	
26343	2504006	MAQ	
26344	2606365	RRU /5127-1	
26345	0103075	ADD /5123	
26346	0307074	/5124 STA /5114	
26347	0006230	LDA LOGT	
26350	2514001	RMI	
26351	2606355	RRU ++4	
26352	1001402	DL0 /5120	
26353	1207070	DSU /5138	
26354	1307070	DST /5138	
26355	0007070	LDA /5138	
			34980
			34990
			35000
			35010
			35020
			35030
			35040
			35050
			35060
			35070
			35080
			35090
			35100
			35110
			35120
			35130
			35140
			35150
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			35170
			35180
			35190
			35200
			35210
			35220
			35230
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			35260
			35270
			35280
			35290
			35300
			35310
			35320
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			35340
			35350
			35360
			35370
			35380
			35390
			35400
			35410
			35420
			35430
			35440
			35450
			35460
			35470
			35480
			35490
			35500
			35510

26356	2504006	MAQ		35520
26357	0007074	LDA /5114		35530
26360	2511010	SRD 8		35540
26361	1307076	DST /5107		35550
26362	1007070	DLN /5138		35560
26363	2511010	SRD 8		35570
26364	0007077	LDA /5107+1		35580
26365	1307070	DST /5138		35590
26366	1007072	DLN /5112	/5127	35600
26367	1300000	DST 0		35610
26370	3100002	MAQ	A	35620
26371	3100002	MAQ	A	35630
26372	3100010	SET NFLPOINT		35640
26373	3107070	FAD /5138		35650
26374	2514003	ROV		35660
26375	2606376	BRU **1		35670
26376	3100010	SET NFLPOINT		35680
26377	2620001	BRU 1	1	35690
26400	3500010	SET FIXPOINT	/5115	35700
26401	2511001	SRD 1		35710
26402	1307102	DST /5143		35720
26403	1103110	DAD /5144		35730
26404	1307076	DST /5107		35740
26405	3007102	FLN /5143		35750
26406	3203110	FSD /5144		35760
26407	3607076	FDV /5107		35770
26410	3307100	FST /5152		35780
26411	3100002	MAQ	A	35790
26412	3507100	FMP /5152		35800
26413	3307076	FST /5107		35810
26414	1007076	DLN /5107		35820
26415	2511002	SRD 2		35830
26416	1103104	DAD /5145		35840
26417	1307076	DST /5107		35850
26420	3003102	FLN /5147		35860
26421	3607076	FDV /5107		35870
26422	3103100	FAD /5146		35880
26423	3100002	MAQ	A	35890
26424	3507100	FMP /5152		35900
26425	3307076	FST /5107		35910
26426	1007076	DLN /5107		35920
26427	1103106	DAD /5148		35930
26430	2660001	BRU 1	3	35940
		REV		35950
		NAV		35960

EXIT INTERNAL SUBROUTINE
 LAST CARD - CD225D2.014
 RUN-TIME,UPPER MEM. SERVICE ROUTINES

		EJT			35970
		REM			35980
		REM			35990
26431	0622726	FORMAT	LDX ZERO	1	36000
26432	0642726		LDX ZERO	2	36010
26433	0046240	FORML	LDA WORD	2	36020
26434	2511014		SRD 12		36030
26435	0326150		STA TEMP	1	36040
26436	0002726		LDA ZERO		36050
26437	2512206		SLD 6		36060
26440	0326151		STA TEMP+1	1	36070
26441	0002726		LDA ZERO		36080
26442	2512206		SLD 6		36090
26443	0326152		STA TEMP+2	1	36100
26444	1420003		INX 3	1	36110
26445	1440001		INX 1	2	36120
26446	0457773		RXL 5	2	36130
26447	2606433		BRU FORML		36140
26450	0006165		LDA TEMP+13		36150
26451	2512002		SLA 2		36160
26452	0106165		ADD TEMP+13		36170
26453	2512001		SLA 1		36180
26454	0106166		ADD TEMP+14		36190
26455	0306167		STA TEMP+15		36200
26456	0006160		LDA TEMP+8		36210
26457	2504005		XAQ		36220
26460	0002671		LDA RL		36230
26461	0306160		STA TEMP+8		36240
26462	2504005		XAQ		36250
26463	0203167		SUR EXN5		36260
26464	2514001		RMI		36270
26465	2606521		BRU FORM27		36280
26466	0623170		LDX EXN6	1	36290
26467	0026151	FORM24	LDA TEMP+1	1	36300
26470	2504032		ADD		36310
26471	0326151		STA TEMP+1	1	36320
26472	0202723		SUR EXN10		36330
26473	2514001		RMI		36340
26474	2606521		BRU FORM27		36350
26475	0002726		LDA ZERO		36360
26476	0326151		STA TEMP+1	1	36370
26477	0000001		LDA 1		36380
26500	2504112		SBD		36390
26501	0300001		STA 1		36400
26502	2516002		RNZ		36410
26503	2606467		BRU FORM26		36420
26504	2504022		LDO		36430
26505	0306152		STA TEMP+2		36440
26506	0006164		LDA TEMP+12		36450
26507	0202727		SUR EX32		36460
26510	2514002		BZE		36470
26511	2606516		BRU FORM28		36480
26512	0026167		LDA TEMP+15		36490
26513	2504032		ADD		36500

FORMAT PLACES THE BCD REPRESENTATION OF
FLOATING POINT NUMBERS IN THE OUTPUT AREA

26514	0306167	STA TEMP+15		36510
26515	2606521	BRU FORM27		36520
26516	0006167	FORM28 LDA TEMP+15		36530
26517	2504112	SBO		36540
26520	0306167	STA TEMP+15		36550
26521	0006167	FORM27 LDA TEMP+15		36560
26522	2516002	BNZ		36570
26523	2606576	BRU FORM4		36580
26524	0623170	FORM2 LDX EXN6	1	36590
26525	0026151	LDA TEMP+1	1	36600
26526	2516002	BNZ		36610
26527	2606713	BRU FORM71		36620
26530	0002671	LDA RL		36630
26531	0326151	STA TEMP+1	1	36640
26532	0000001	LDA 1		36650
26533	2504112	SBO		36660
26534	0300001	STA 1		36670
26535	2606525	BRU FORM2+1		36680
26536	0622726	FORM11 LDX ZERO	1	36690
26537	2506016	SET PSK		36700
26540	0664001	LDX EXON	3	36710
26541	0026150	FORM12 LDA TEMP	1	36720
26542	2512006	SLA 6		36730
26543	0126151	ADD TEMP+1	1	36740
26544	2512006	SLA 6		36750
26545	0126152	ADD TEMP+2	1	36760
26546	0364100	STA EXC	3	36770
26547	1420003	INX 3	1	36780
26550	1460001	INX 1	3	36790
26551	0437767	BXL 9	1	36800
26552	2606541	BRU FORM12		36810
26553	0537763	BXH 13	1	36820
26554	2606557	BRU FORM13		36830
26555	1420002	INX 2	1	36840
26556	2606541	BRU FORM12		36850
26557	0006166	FORM13 LDA TEMP+14		36860
26560	2512006	SLA 6		36870
26561	0102671	ADD RL		36880
26562	2512006	SLA 6		36890
26563	0102671	ADD RL		36900
26564	0364100	STA EXO	3	36910
26565	1460001	INX 1	3	36920
26566	1764001	STX EXON	3	36930
26567	0006214	LDA YIND		36940
26570	0103167	ADD EXN5		36950
26571	0306214	FORM14 STA YIND		36960
26572	2506015	SET PST		36970
26573	0646225	LDX UNFL2	2	36980
26574	0626226	LDX UNFL3	1	36990
26575	2620001	BRU 1	1	37000
26576	0006164	FORM4 LDA TEMP+12		37010
26577	0202727	SUR EX32		37020
26600	2514002	RZE		37030
26601	2606650	BRU FORM5		37040

26602	0006167	LDA TEMP+15		37050
26603	0203171	SUB EXN7		37060
26604	2516001	RPL		37070
26605	2606623	BRU FORM6		37080
26606	0622726	LDX ZERO	1	37090
26607	0026152	FORM20 LDA TEMP+2	1	37100
26610	0326151	STA TEMP+1	1	37110
26611	0006167	LDA TEMP+15		37120
26612	2504112	SBO		37130
26613	0306167	STA TEMP+15		37140
26614	2514002	BZE		37150
26615	2606620	BRU FORM21		37160
26616	1420001	INX 1	1	37170
26617	2606607	BRU FORM20		37180
26620	0002667	FORM21 LDA PER		37190
26621	0326152	STA TEMP+2	1	37200
26622	2606524	BRU FORM2		37210
26623	0006167	FORM6 LDA TEMP+15		37220
26624	2504112	SBO		37230
26625	0306167	STA TEMP+15		37240
26626	0006152	FORM8 LDA TEMP+2		37250
26627	0306151	STA TEMP+1		37260
26630	0002667	LDA PER		37270
26631	0306152	STA TEMP+2		37280
26632	0006167	LDA TEMP+15		37290
26633	2504006	MAQ		37300
26634	1602723	DVD EXN10		37310
26635	2514002	BZE		37320
26636	2606643	BRU FORM7		37330
26637	0306165	STA TEMP+13		37340
26640	2504005	XAG		37350
26641	0306166	STA TEMP+14		37360
26642	2606536	BRU FORM11		37370
26643	2504005	FORM7 XAG		37380
26644	0306165	STA TEMP+13		37390
26645	0002671	LDA BL		37400
26646	0306166	STA TEMP+14		37410
26647	2606536	BRU FORM11		37420
26650	0623171	FORM5 LDX EXN7	1	37430
26651	0642726	LDX ZERO	2	37440
26652	0026150	FORM31 LDA TEMP	1	37450
26653	2516002	BNZ		37460
26654	2606662	BRU FORM30		37470
26655	1440001	INX 1	2	37480
26656	0000001	LDA 1		37490
26657	2504112	SBO		37500
26660	0300001	STA 1		37510
26661	2606652	BRU FORM31		37520
26662	0000002	FORM31 LDA 2		37530
26663	0206167	SUB TEMP+15		37540
26664	2516001	SPL		37550
26665	2606672	BRU FORM9		37560
26666	0006167	LDA TEMP+15		37570
26667	2504032	ADD		37580

26670	0306167		STA TEMP+15		37590
26671	2606626		BRU FORM8		37600
26672	0622726	FORM9	LDX ZERO	1	37610
26673	0006152		LDA TEMP+2		37620
26674	2504005		XAO		37630
26675	0026153	FORM40	LDA TEMP+3	1	37640
26676	2504005		XAO		37650
26677	0326153		STA TEMP+3	1	37660
26700	1420001		INX 1	1	37670
26701	0437773		BXL 5	1	37680
26702	2606675		BRU FORM40		37690
26703	0002726		LDA ZERO		37700
26704	0306152		STA TEMP+2		37710
26705	0006167		LDA TEMP+15		37720
26706	2504112		SBO		37730
26707	0306167		STA TEMP+15		37740
26710	2514002		RZE		37750
26711	2606524		BRU FORM2		37760
26712	2606672		BRU FORM9		37770
26713	0537777	FORM71	RXH 1	1	37780
26714	2606721		BRU FORM72		37790
26715	0002726		LDA ZERO		37800
26716	0306151		STA TEMP+1		37810
26717	0002667		LDA PER		37820
26720	0306152		STA TEMP+2		37830
26721	0622726	FORM72	LDX ZERO	1	37840
26722	2506016		SET PBK		37850
26723	0664001		LDX EXON	3	37860
26724	0026150	FORM73	LDA TEMP	1	37870
26725	2512006		SLA 6		37880
26726	0126151		ADD TEMP+1	1	37890
26727	2512006		SLA 6		37900
26730	0126152		ADD TEMP+2	1	37910
26731	0364100		STA EXG	3	37920
26732	1420003		INX 3	1	37930
26733	1460001		INX 1	3	37940
26734	0437767		BXL 9	1	37950
26735	2606724		BRU FORM73		37960
26736	1764001		STX EXON	3	37970
26737	0006214		LDA YIND		37980
26740	0103165		ADD EXN3		37990
26741	2606571		BRU FORM14		38000
		REM			38010
		REM			38020
		REM			38030
		REM			38040
		REM			38050
		REM			38060
		REM			38070
		REM			38080
		REM			38090
26742	1766224	YUNFU	STX UNFL1	3	38100
26743	1766225		STX UNFL2	2	38110
26744	3306240		FST WORD		38120
26745	0726766		SPR INTCHK	1	

NUMERIC OUTPUT ROUTINE -- YUNF
 THE UNFLOAT ROUTINE CALLS INTCHK, YINT
 AND BDCA AS SUBROUTINES. THE NUMBER TO BE
 OUTPUT IS IN AX UPON ENTRY TO YUNF
 AND IS PLACED IN BCD FORMAT IN THE OUT-
 PUT AREA. FORMATTING IS AUTOMATICALLY
 DONE BY YINT OR BY FORMAT FOR INTEGERS AND
 FLOATING POINT NUMBERS RESPECTIVELY

26746	2606750	BRU YUF2			38130
26747	2607225	BRU YINT		INTEGER OUTPUT ROUTINE	38140
26750	1006240	YUF2 DLD WORD		FLOATING POINT OUTPUT	38150
26751	0727020	SPR 9DCA	1		38160
26752	0006244	LDA WORD+4			BAS38170
26753	2512001	SLA 1			BAS38180
26754	2504005	XAQ			BAS38190
26755	0006243	LDA WORD+3			BAS38200
26756	2511014	SRD 12			BAS38210
26757	2512014	SLA 12			BAS38220
26760	0103113	ADD UNFLT8			BAS38230
26761	0306243	STA WORD+3			BAS38240
26762	2504005	XAQ			BAS38250
26763	2510001	SRA 1			BAS38260
26764	0306244	STA WORD+4			BAS38270
26765	2606431	BRU FORMAT			38280
		REM		INTCHK CHECKS TO SEE WHETHER THE AX CONTAINS	38290
		REM		AN INTEGER. IF IT DOES, AN INSTRUCTION IS	38300
		REM		SKIPPED ON EXIT. OTHERWISE A NORMAL EXIT	38310
		REM		OCCURS, AX IS UNCHANGED	38320
26766	1726255	INTCHK STX ICHXR	1		38330
26767	0626255	LDX ICHXR	1	LOWER MEMORY ENTRY	38340
26770	3306256	FST ICHK1			38350
26771	1006256	DLD ICHK1			38360
26772	2514001	RMI			38370
26773	2620001	BRU 1	1	INTEGER CANNOT HAVE NEGATIVE EXPONENT	38380
26774	2510013	SRA 11			38390
26775	2103246	CAR EXN30			38400
26776	2607001	BRU ++3			38410
26777	2607001	BRU ++2		NUMBER LARGER THAN 2EXP30 IS NOT CONSIDERED	38420
27000	2620001	BRU 1	1	AN INTEGER	38430
27001	0300001	STA XR01		LOAD INDEX REGISTER 1	38440
27002	0306257	STA ICHK1+1		YINT NEEDS THIS INFORMATION	38450
27003	0006256	LDA ICHK1			38460
27004	2532200	SLD 0	1	SHIFT OUT INTEGRAL PART	38470
27005	2002707	EXT MEXP		MASK OFF EXPONENT PART	38480
27006	2516002	BNZ			38490
27007	2607016	BRU ICHKEX		NOT AN INTEGER	38500
27010	2504005	XAQ			38510
27011	2002657	EXT SIGN		MASK OFF SIGN OF MANTISSA	38520
27012	2516002	BNZ			38530
27013	2607016	BRU ICHKEX		NOT AN INTEGER	38540
27014	0626255	LDX ICHXR	1	RESTORE EXIT	38550
27015	2620002	BRU 2	1		38560
27016	0626255	ICHKEY LDX ICHXR	1		38570
27017	2620001	BRU 1	1	NON-INTEGER EXIT	38580

RUN-TIME UPPER MEN. SERVICE ROUTINES

27020	3100010	BDC2	EJT						38590
27021	1726232		SET NFLPOINT						BAS38600
27022	1746233		STX BDC61	1		SAVE			BAS38610
27023	0663134		STX BDC62	2		CONTENTS			BAS38620
27024	1766234		LDX BDC40	3		SET FLAG FOR NEG EXP TO ZERO			BAS38630
27025	1306236		STX BDC63	3		OF INDEX REGISTERS			BAS38640
27026	3100002		DST BDCARG						BAS38650
27027	2504005		MAQ	A		CLEAR AX			BAS38660
27030	2514001		XAQ						BAS38670
27031	2607167		RMI			SIGN OF MANTISSA			BAS38680
27032	3106236		BRU BDC1			NEGATIVE MANTISSA			BAS38690
27033	0003142		FAD BDCARG			NORMALIZE			BAS38700
27034	2516720		LDA BDC44			SPACE AND DECIMAL POINT			BAS38710
27035	2607034		BAR BAN	7					BAS38720
27036	2514724		BRU +-1						BAS38730
27037	3003134		RAP BUF	7					BAS38740
27040	3306236	BDC2	FLD BDC40						BAS38750
27041	0306240		FST BDCARG			NORMALIZED ABSOLUTE VALUE			BAS38760
27042	1006236		STA WORD			MANTISSA FLAG INTO WORD			BAS38770
27043	2516001		DLB BDCARG			LOAD ABSOLUTE NORMALIZED NUMBER			BAS38780
27044	2607047		RPL			TEST SIGN OF EXPONENT			BAS38790
27045	2504522		BRU BDC3						BAS38800
27046	0663146		NEG			ABSOLUTE VALUE OF EXPONENT			BAS38810
27047	1766243	BDC3	LDX BDC48	3		SET FLAG FOR			BAS38820
27050	2510013		STX WORD+3	3		NEGATIVE EXPONENT			BAS38830
27051	2504006		SRA 11			ISOLATE EXPONENT			BAS38840
27052	1503136		MAQ						BAS38850
27053	0306244		MPY BDC42			BASE 10 EXPONENT			BAS38860
27054	0643134	BDC9	STA WORD+4			P, TENTATIVE BASE TEN EXPONENT			BAS38870
27055	1440002	BDC6	LDX BDC40	2		SET COUNTER			BAS38880
27056	2516000		INX 2	2					BAS38890
27057	2607064		REV			EXAMINE BINARY ESTIMATE OF			BAS38900
27060	0477777		RRU BDC4			BASE 10 EXPONENT BIT BY BIT			BAS38910
27061	2607172		RXL 1	3		APPLY POWER OF 10 TO BDC ARG			BAS38920
27062	3100002		RRU BDC5			DIVIDE ON POSITIVE EXPONENT			BAS38930
27063	3543114		MAQ	A		MULTIPLY ON NEGATIVE			BAS38940
27064	2510001	BDC4	FMP BDC30	2					BAS38950
27065	2516002		SRA 1			IS FIRST ROUND OF			BAS38960
27066	2607055		BNZ			SCALING DONE			BAS38970
27067	3306236		RRU BDC6			NOT YET DONE			BAS38980
27070	1006236		FST BDCARG						BAS38990
27071	0103151		DLB BDCARG						BAS39000
27072	1203140		ADD BDC54			8V			BAS39010
27073	2514001		DSU BDC43			8V+.8			BAS39020
27074	2607174		RMI						BAS39030
27075	1006236		RRU BDC11			V LESS THAN .1			BAS39040
27076	1203114		DLB BDCARG			V GR OR EQUAL .1			BAS39050
27077	2516001		DSU BDC30						BAS39060
27100	2607174		RPL			V GR OR EQUAL 1			BAS39070
27101	0006244		RRU BDC11			V LESS THAN 1			BAS39080
27102	2514002		LDA WORD+4			IS DEC EXP ZERO			BAS39090
27103	0306243		RZE			IF SO, SET ITS SIGN TO ZERO			BAS39100
27104	1006236		STA WORD+3			ISOLATE EXPONENT OF V			BAS39110
			DLB BDCARG						BAS39120

27105	2510013	SRA 11	FOR SHIFT	BAS39130
27106	2504522	NEG	TO FIX	BAS39140
27107	0103150	ADD BDC50	POINT IN	BAS39150
27110	0622710	LDX UPBIT 1		39160
27111	2506016	SET PBK		39170
27112	0327115	STA BDC14 1	MANTISSA	39180
27113	0006236	LDA BDCARG	RESTORE MANTISSA	BAS39190
27114	2512210	SLD 8	DELETE EXPONENT	BAS39200
27115	0000000	DEC 0	###FIX POINT IN MANTISSA	39210
27116	2506015	SET PST		39220
27117	2514003	ROV	RESET OVERFLOW	BAS39230
27120	2607121	BRU **1		BAS39240
27121	1103154	DAD BDC56	ROUND	BAS39250
27122	2514003	ROV		BAS39260
27123	2607213	BRU BDCQVF		BAS39270
27124	0767203	SPR BDC15+2 3	GET FIRST BCD DIGIT	BAS39280
27125	0106240	ADD WORD	COMBINE WITH SIGN AND DEC POINT	BAS39290
27126	0306240	STA WORD		BAS39300
27127	0643134	LDX BDC40 2	GETS	BAS39310
27130	0767201	SPR BDC15 3	TWO	BAS39320
27131	2512006	SLA 6	WORDS	BAS39330
27132	0346241	STA WORD+1 2	OF	BAS39340
27133	0767201	SPR BDC15 3	DIGITS	BAS39350
27134	0146241	ADD WORD+1 2	IN	BAS39360
27135	2512006	SLA 6	BCD	BAS39370
27136	0346241	STA WORD+1 2	REPRESENTATION	BAS39380
27137	0767201	SPR BDC15 3	AND STORES	BAS39390
27140	0146241	ADD WORD+1 2	THEM	BAS39400
27141	0346241	STA WORD+1 2	IN	BAS39410
27142	1440001	INV 1 2	WORD+1, WORD+2.	BAS39420
27143	0457776	BXL 2 2		BAS39430
27144	2607130	BRU BDC16+1		BAS39440
27145	0767201	SPR BDC15 3	LAST DIGIT OF MANTISSA	BAS39450
27146	2512014	SLA 12	ROOM FOR SIGN OF EXPONENT	BAS39460
27147	0103145	ADD BDC47	ADD SPACE	BAS39470
27150	0206243	SUR WORD+3	CHANGE SPACE TO MINUS IF NEG EXP.	BAS39480
27151	0306243	STA WORD+3		BAS39490
27152	0006244	LDA WORD+4	DECIMAL EXPONENT	BAS39500
27153	2504006	MAQ		BAS39510
27154	1603144	DVD BDC46	DIVIDE BY TEN TO GET LEADING	BAS39520
27155	0106243	ADD WORD+3	DIGIT	BAS39530
27156	0306243	STA WORD+3		BAS39540
27157	2504005	XAC	SECOND	BAS39550
27160	2512014	SLA 12	DIGIT	BAS39560
27161	0103147	ADD BDC49	OF	BAS39570
27162	0306244	STA WORD+4	EXPONENT	BAS39580
27163	0626232	LDX BDC61 1		BAS39590
27164	0646233	LUX BDC62 2		BAS39600
27165	0666234	LDX BDC63 3		BAS39610
27166	2620001	RRU 1 1		BAS39620
27167	3206236	BDC1 FSU BDCARG	NORMALIZE AND CHANGE SIGN	BAS39630
27170	0003143	LDA BDC45	MINUS AND DECIMAL POINT	BAS39640
27171	2607040	BRU BDC2		BAS39650
27172	3603114	BDC5 FDV BDC30 2		BAS39660

27173	2607064		RRU BDC4			BAS39670
27174	2504022	BDC11	LDO		INCREASE BASE TEN EXPONENT	BAS39680
27175	0106244		ADD WORD+4		BY ONE	BAS39690
27176	0306244		STA WORD+4			BAS39700
27177	2504022		LDO		GO TO SCALE ONCE MORE	BAS39710
27200	2607054		RRU BDC9			BAS39720
27201	1006236	BDC15	DLD BDCARG			BAS39730
27202	2512204		SLD 4			BAS39740
27203	2511001		SRD 1			BAS39750
27204	1306236		DST BDCARG			BAS39760
27205	2511002		SRD 2			BAS39770
27206	1106236		DAD BDCARG			BAS39780
27207	1306236		DST BDCARG			BAS39790
27210	2504006		MAQ		NUMBER	BAS39800
27211	2512204		SLD 4		IN A	BAS39810
27212	2660001		RRU 1	3		BAS39820
27213	0006243	BDCOV	LDA WORD+3		EXPONENT FLAG	BAS39830
27214	2516002		RNZ		NEGATIVE	BAS39840
27215	0003152		LDA BDC55		IF SO, SUBTRACT	BAS39850
27216	2504032		ADD		ONE FROM EXPONENT	BAS39860
27217	0106244		ADD WORD+4		IF NOT, ADD ONE	BAS39870
27220	0306244		STA WORD+4			BAS39880
27221	2514002		RZE		IS NEW EXPONENT ZERO	BAS39890
27222	0306243		STA WORD+3		IF SO, SET SIGN PLUS	BAS39900
27223	1003156		DLD BDC57			BAS39910
27224	2607124		RRU BDC17			BAS39920
			REM		LAST CARD CD22502.008	BAS39930
			REM		YINT IS ENTERED FROM YUNF. IT CONVERTS	39940
			REM		A FLOATING POINT INTEGER TO BCD	39950
			REM		AND PLACES IT IN THE OUTPUT AREA.	39960
			REM		THE NUMBER TO BE OUTPUT IS IN THE AX AND	39970
			REM		IN LOCATION WORD WHEN THE PROGRAM IS	39980
			REM		ENTERED. THE EXPONENT OF THIS NUMBER IS	39990
			REM		CONTAINED RIGHT JUSTIFIED IN LOCATION	40000
			REM		ICHK1+1	40010
27225	0662724	YINT	LDX EXN1	3		40020
27226	2514721		BAR BMI	7	IF NUMBER TO BE OUTPUT IS NEGATIVE	40030
27227	2607242		RRU YINT2			40040
27230	0002671		LDA BL			40050
27231	0306150		STA TEMP			40060
27232	0003246	YINT3	LDA EXN30			40070
27233	0206257		SUB ICHK1+1		SUBTRACT EXPONENT	40080
27234	0305633		STA XTEM			40090
27235	0625633		LDX XTEM	1		40100
27236	1006240		DLD WORD			40110
27237	2002707		EXT MEXP			40120
27240	2531000		SRD 0	1		40130
27241	2607250		RRU YINT4			40140
27242	3200005	YINT2	CAY		\$\$\$\$\$	40150
27243	3206240		FSD WORD		FORM ABSOLUTE VALUE	40160
27244	3306240		FST WORD			40170
27245	0002727		LDA EX32		MINUS SIGN	40180
27246	0306150		STA TEMP			40190
27247	2607232		RRU YINT3			40200

		REM		TO OUTPUT AN INTEGER UP TO 30 BITS LONG	40210
		REM		ENTER AT YINT4 WITH THE INTEGER RIGHT	40220
		REM		JUSTIFIED IN A AND Q, INDEX REGISTER 3	40230
		REM		SET TO 1 AND THE OCTAL FOR THE	40240
		REM		SIGN (20,40, OR 60) STORED RIGHT	40250
		REM		JUSTIFIED IN LOCATION TEMP.	40260
		REM		THIS ROUTINE WORKS IN ANY INDEX GROUP AND	40270
		REM		LEAVES THE RESULT IN THE OUTPUT REGION.	40280
27250	1602717	YINT4	DVD TENT	SAVE QUOTIENT AND REMAINDER	40290
27251	1306240		DST WORD		40300
27252	2514002		BZE		40310
27253	2607302		BRU YINT5		40320
27254	0642726		LDX ZERO 2		40330
27255	2504006		MAC		40340
27256	0622724	YINT6	LDX EXN1 1		40350
27257	0002726	YINT7	LDA ZERO		40360
27260	1622717		DVD TENT 1		40370
27261	2514002		BZE		40380
27262	2607304		BRU YINT8		40390
27263	0366150		STA TEMP 3		40400
27264	1745633		STX XTEM 2		40410
27265	0005633		LDA XTEM		40420
27266	2516000		REV		40430
27267	1440001		INX 1 2		40440
27270	1460001		INX 1 3		40450
27271	1420001	YINT9	INX 1 1		40460
27272	0437772		BXL 6 1		40470
27273	2607257		BRU YINT7		40480
27274	0557776		BXH 2 2		40490
27275	2607312		BRU YINT10		40500
27276	0006241		LDA WOPD+1	REMAINDER FROM DIVISION	40510
27277	2504006		MAC		40520
27300	1440002		INX 2 2		40530
27301	2607256		BRU YINT6		40540
27302	0643164	YINT5	LDY EXN2 2		40550
27303	2607256		BRU YINT6		40560
27304	0366150	YINT8	STA TEMP 3		40570
27305	1745633		STX XTEM 2		40580
27306	0005633		LDA XTEM		40590
27307	2514000		ROD		40600
27310	1460001		INX 1 3		40610
27311	2607271		BRU YINT9		40620
27312	0577776	YINT10	BXL 2 3		40630
27313	2607317		BRU ++4		40640
27314	0002726		LDA ZERO	SUPPLY ZERO IF ALL ZERO	40650
27315	0366150		STA TEMP 3		40660
27316	1460001		INX 1 3		40670
27317	0002671		LDA RL		40680
27320	0366150		STA TEMP 3		40690
27321	0366151		STA TEMP+1 3		40700
27322	1460002		INX 2 3		40710
27323	0366150		STA TEMP 3		40720
27324	0366151		STA TEMP+1 3		40730
27325	1766167		STX TEMP+15 3		40740

27326	0622726	LDX ZERO	1	40750
27327	2506016	SET PBK		40760
27330	0664001	LDX EXON	3	40770
27331	0026150	YINT12 LDA TEMP	1	40780
27332	2512006	SLA 6		40790
27333	0126151	ADD TEMP+1	1	40800
27334	2512006	SLA 6		40810
27335	0126152	ADD TEMP+2	1	40820
27336	0354100	STA EXO	3	40830
27337	0006214	LDA YIND		40840
27340	2504032	ADD		40850
27341	0306214	STA YIND		40860
27342	1420003	INX 3	1	40870
27343	1460001	INX 1	3	40880
27344	1725633	STX XTEM	1	40890
27345	0005633	LDA XTEM		40900
27346	0206167	SUB TEMP+15		40910
27347	2514001	RMT		40920
27350	2607331	BRU YINT12		40930
27351	1764001	STX EXON	3	40940
27352	2506015	SET PST		40950
27353	0646225	LDX UNFL2	2	40960
27354	0626226	LDX UNFL3	1	40970
27355	2620001	BRU 1	1	40980

27417	2504102	INC2	LMO		CARRIAGE RETURN SETS ERROR FLAG	41530
27420	0300004		STA XR10			41540
27421	0000006	INC3	LDA XR12		BOTH COMMA AND CARRIAGE RETURN TERMINATE	41550
27422	2504112		SBO		ACCUMULATION OF CHARACTERS AND SEND THE	41560
27423	0304745		STA FLTN		ROUTINE TO CONVERT.	41570
27424	2514001		BMI INPER		THERE MUST BE AT LEAST ONE CHARACTER	41580
27425	2607433					
27426	2506013		SXG 0			41590
27427	0764040		SPR FLT	3	GO CONVERT. RESULT IS LEFT IN AX.	41600
27430	2607432		BRU INPER-1		ERROR RETURN	41610
27431	2620001		RRU 1	1	RETURN TO OBJECT PROGRAM.	41620
27432	2506033		SXG 1			41630
27433	2504002	INPER	LDZ		SET FLAG TO SKIP OUTPUTTING OF LINE NO.	41640
27434	2504004		LQA			41650
27435	0003206		LDA N13		MESSAGE NUMBER	41660
27436	0622704		LDX INLOC	1	SET UP RETURN FROM RMES	41670
27437	0642726		LDY ZERO	2	SET UP TO GET TO LOW MEM	41680
27440	2641757		BRU RMES	2		41690
27441	2506013	INRET	SXG 0		RETURN HERE	41700
27442	0627137		LDX WAI	1	GET RETURN TO BEGINNING OF STATEMENT	41710
27443	2620003		BRU 3	1		41720

		EJT				41730
		REM			YTST CONTROLS THE READING OF DATA	41740
27444	0627070	YTSUP	LDX R	1	SET UP RETURN	41750
27445	0007601		LDA DPNT		CHECK TO SEE IF WORKING ON LAST RECORD	41760
27446	2107176		CAR DEND			41770
27447	2607451		BRU **2			41780
27450	2607510		BRU YTLAS			41790
27451	0007175		LDA DATAI			41800
27452	0103164		ADD TWO		CHECK TO SEE IF BUFFER EXHAUSTED	41810
27453	0307175		STA DATAI			41820
27454	2102712		CAR 0200			41830
27455	2620001		BRU 1	1	OK TO READ	41840
27456	2504002		LDZ		RESET BUFFER POINTER	41850
27457	0307175		STA DATAI			41860
27460	2506033		SXG 1			41870
27461	0721022		SPB DCHEK	1	CHECK LAST DISK OP	41880
27462	0007177		LDA DREC		LAST READ RECORD BECOMES CURRENT RECORD	41890
27463	0307601		STA DPNT			41900
27464	2107176		CAR DEND		IF LAST READ RECORD IS LAST RECORD DONOT REA	41910
27465	2607467		BRU **2			41920
27466	2607504		BRU YTSKP			41930
27467	0103164		ADD TWO		BUMP RECORD NUMBER IN PLIST	41940
27470	0307177		STA DREC			41950
27471	0102657		ADD SIGN			41960
27472	0307172		STA PLIST+2			41970
27473	0007171		LDA PLIST+1		FLIP BUFFERS	41980
27474	2002711		EXT 0400			41990
27475	0102712		ADD 0200			42000
27476	0307171		STA PLIST+1			42010
27477	0003167		LDA N3		GO READ	42020
27500	2506113		SXG 4			42030
27501	0720000		SPB 8192	1		42040
27502	0007170		DEC PLIST			42050
27503	2506015		SET PST			42060
27504	2506013	YTSKP	SXG 0			42070
27505	0557400		RXW 256	2	IF POINTER HAS GONE HIGH RESET	42080
27506	0642726		LDX ZERO	2		42090
27507	2620001		BRU 1	1	NOW READY TO READ	42100
27510	0007175	YTLAS	LDA DATAI		GO SLOWLY IN LAST BUFFER LOAD	42110
27511	0103164		ADD TWO			42120
27512	0307175		STA DATAI			42130
27513	2107136		CAR DATAN			42140
27514	2620001		BRU 1	1	STILL NOT FINISHED	42150
27515	2504102		LMO		SEND *OUT OF DATA IN XXX* AND TERMINATE	42160
27516	2504006		MAQ			42170
27517	0622726		LDX ZERO	1		42180
27520	2621757		BRU RMES	1		42190
		NAM			COMPILE TIME ERROR MESSAGES	42200

COMPILE TIME ERROR MESSAGES

27521	0243144	LAB1	EJT	42210
27522	0254562		ALF DIM	42220
27523	0314645		ALF ENS	42230
27524	0606346		ALF IOM	42240
27525	0466043		ALF TO	42250
27526	0215127		ALF O L	42260
27527	0256060		ALF ARG	42270
27530	0314343	LAB2	ALF E	42280
27531	0252721		ALF ILL	42290
27532	0436023		ALF EGA	42300
27533	0464562		ALF L C	42310
27534	0632145		ALF ONS	42320
27535	0636060		ALF TAN	42330
27536	0606060		ALF T	42340
27537	0314343	LAB3	ALF	42350
27540	0252721		ALF ILL	42360
27541	0436026		ALF EGA	42370
27542	0465144		ALF L F	42380
27543	0644321		ALF ORM	42390
27544	0606060		ALF ULA	42400
27545	0606060		ALF	42410
27546	0314343	LAB4	ALF	42420
27547	0252721		ALF ILL	42430
27550	0436031		ALF EGA	42440
27551	0456263		ALF L I	42450
27552	0516423		ALF NST	42460
27553	0633146		ALF RUC	42470
27554	0456060		ALF TIC	42480
27555	0314343	LAB5	ALF N	42490
27556	0252721		ALF ILL	42500
27557	0436060		ALF EGA	42510
27560	0456444		ALF L	42520
27561	0222551		ALF NUM	42530
27562	0606060		ALF BER	42540
27563	0606060		ALF	42550
27564	0314343	LAB6	ALF	42560
27565	0252721		ALF ILL	42570
27566	0436051		ALF EGA	42580
27567	0254321		ALF L F	42590
27570	0633146		ALF ELA	42600
27571	0456060		ALF TIO	42610
27572	0606060		ALF N	42620
27573	0314343	LAB7	ALF	42630
27574	0252721		ALF ILL	42640
27575	0436060		ALF EGA	42650
27576	0652151		ALF L	42660
27577	0312122		ALF VAR	42670
27600	0432560		ALF IAR	42680
27601	0606060		ALF LE	42690
27602	0314523	LAB8	ALF	42700
27603	0465151		ALF INC	42710
27604	0252363		ALF ORP	42720
27605	0606026		ALF ECT	42730
			ALF F	42740

COMPILE TIME ERROR MESSAGES

27606	0465144	ALF ORM	42750
27607	0216360	ALF AT	42760
27610	0606060	ALF	42770
27611	0606060	ALF	42780
27612	0254524	LAB10 ALF END	42790
27613	0603162	ALF IS	42800
27614	0604546	ALF NO	42810
27615	0636043	ALF T L	42820
27616	0216263	ALF AST	42830
27617	0606060	ALF	42840
27620	0606037	OCT 0606037	42850
27621	0454660	LAB11 ALF NO	42860
27622	0254524	ALF END	42870
27623	0603145	ALF IN	42880
27624	0626351	ALF STR	42890
27625	0642363	ALF UCT	42900
27626	0314545	ALF ION	42910
27627	0606037	OCT 0606037	42920
27630	0454660	LAB12 ALF NO	42930
27631	0242163	ALF DAT	42940
27632	0216060	ALF A	42950
27633	0606060	ALF	42960
27634	0606060	ALF	42970
27635	0606060	ALF	42980
27636	0606037	OCT 0606037	42990
27637	0644524	LAB13 ALF UND	43000
27640	0252631	ALF EFI	43010
27641	0452524	ALF NED	43020
27642	0602664	ALF FU	43030
27643	0452363	ALF NCT	43040
27644	0314645	ALF ION	43050
27645	0606037	OCT 0606037	43060
27646	0644524	LAB14 ALF UND	43070
27647	0252631	ALF EFI	43080
27650	0452524	ALF NED	43090
27651	0604564	ALF NU	43100
27652	0442225	ALF MBE	43110
27653	0516060	ALF R	43120
27654	0606037	OCT 0606037	43130
27655	0475146	LAB15 ALF PRO	43140
27656	0275121	ALF GRA	43150
27657	0446063	ALF M T	43160
27660	0464360	ALF OO	43170
27661	0434645	ALF LON	43180
27662	0276060	ALF S	43190
27663	0606037	OCT 0606037	43200
27664	0634646	LAB16 ALF TOO	43210
27665	0604464	ALF MU	43220
27666	0233060	ALF CH	43230
27667	0242163	ALF DAT	43240
27670	0216360	ALF A	43250
27671	0606060	ALF	43260
27672	0606037	OCT 0606037	43270
27673	0634546	LAB19 ALF TOO	43280

COMPILE TIME ERROR MESSAGES

27674	0606044		ALF M	43290
27675	0214570		ALF ANY	43300
27676	0606043		ALF L	43310
27677	0464647		ALF OOP	43320
27700	0626060		ALF S	43330
27701	0606060		ALF	43340
27702	0454663	LAB20	ALF NOT	43350
27703	0604421		ALF MA	43360
27704	0632330		ALF TCH	43370
27705	0252460		ALF ED	43380
27706	0663163		ALF WIT	43390
27707	0306026		ALF H F	43400
27710	0465160		ALF OR	43410
27711	0264651	LAB21	ALF FOR	43420
27712	0606631		ALF WI	43430
27713	0633046		ALF THO	43440
27714	0646360		ALF UT	43450
27715	0452567		ALF NEX	43460
27716	0636060		ALF T	43470
27717	0606037		DCT 0606037	43480
27720	0236463	LAB23	ALF CUT	43490
27721	0604751		ALF PR	43500
27722	0462751		ALF OGR	43510
27723	0214460		ALF AM	43520
27724	0465160		ALF OR	43530
27725	0243144		ALF DIM	43540
27726	0623337		DCT 0623337	43550
			NAM	43560

RUN-TIME ERROR MESSAGES

RUN-TIME ERROR MESSAGES

000094

			REJ
			REM
	27727	ERO	EQU *
			REM
27727	0466463		ALF OUT
27730	0604626		ALF OF
27731	0602421		ALF DA
27732	0632160		OCT 632160
	27733	ER1	EQU *
			REM
27733	0625064		ALF SQU
27734	0215125		ALF ARE
27735	0605146		ALF RO
27736	0466360		ALF OT
27737	0462660		ALF OF
27740	0452527		ALF NEG
27741	0216331		ALF ATI
27742	0652560		ALF VE
27743	0456444		ALF NUM
27744	0222551		ALF BER
27745	0607777		OCT 607777
	27746	ER2	EQU *
			REM
27746	0434627		ALF LOG
27747	0604626		ALF OF
27750	0604525		ALF NE
27751	0272163		ALF GAT
27752	0316525		ALF IVE
27753	0604564		ALF NU
27754	0442225		ALF MBE
27755	0516077		OCT 516077
	27756	ER3	EQU *
			REM
27756	0434627		ALF LOG
27757	0604626		ALF OF
27760	0607125		ALF ZE
27761	0514660		ALF RO
	27762	ER4	EQU *
			REM
27762	0475146		ALF PRO
27763	0275121		ALF GRA
27764	0446046		ALF M O
27765	0652551		ALF VER
27766	0606331		ALF TI
27767	0442560		ALF ME
27770	0433144		ALF LIM
27771	0316333		ALF IT.
27772	0606325		ALF TE
27773	0626360		ALF ST
27774	0212246		ALF ASO
27775	0516325		ALF RTE
27776	0246077		OCT 246077
	27777	ER5	EQU *
			REM

RUNTIME ERROR MESSAGES

OUT OF DATA

SQUARE ROOT OF NEGATIVE NUMBER

LOG OF NEGATIVE NUMBER

LOG OF ZERO

PROGRAM OVER TIME LIMIT, TEST ABORTED.

RETURN BEFORE GOSUB

43570
43580
43590
43600
43610
43620
43630
43640
43650
43660
43670
43680
43690
43700
43710
43720
43730
43740
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43770
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43790
43800
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43860
43870
43880
43890
43900
43910
43920
43930
43940
43950
43960
43970
43980
43990
44000
44010
44020
44030
44040
44050
44060
44070
44080
44090
44100

RUN-TIME ERROR MESSAGES

27777	0512563		ALF RET		44110
30000	0645145		ALF URN		44120
30001	0602225		ALF BE		44130
30002	0264651		ALF FOR		44140
30003	0256027		ALF E G		44150
30004	0466264		ALF OSU		44160
30005	0226077		OCT 226077		44170
	30006	EP6	EQU *		44180
			REM	SUBSCRIPT ERROR	44190
30006	0626422		ALF SUB		44200
30007	0622351		ALF SCR		44210
30010	0314763		ALF IPT		44220
30011	0602551		ALF EP		44230
30012	0514651		ALF ROR		44240
30013	0607777		OCT 607777		44250
	30014	EP7	EQU *		44260
			REM	DIVISION BY ZERO	44270
30014	0243165		ALF DIV		44280
30015	0316231		ALF ISI		44290
30016	0464560		ALF ON		44300
30017	0227060		ALF BY		44310
30020	0712551		ALF ZER		44320
30021	0466077		OCT 466077		44330
	30022	EP8	EQU *		44340
			REM	OVERFLOW	44350
30022	0466525		ALF OVE		44360
30023	0512543		ALF RFL		44370
30024	0466660		ALF OW		44380
	30025	EP9	EQU *		44390
			REM	UNDERFLOW	44400
30025	0644524		ALF UND		44410
30026	0255126		ALF ERF		44420
30027	0434666		ALF LOW		44430
30030	0607777		OCT 607777		44440
	30031	EP10	EQU *		44450
			REM	ZERO TO A NEGATIVE POWER	44460
30031	0712551		ALF ZER		44470
30032	0466063		ALF O T		44480
30033	0466021		ALF O A		44490
30034	0604525		ALF NE		44500
30035	0272163		ALF GAT		44510
30036	0316525		ALF IVE		44520
30037	0604743		ALF PO		44530
30040	0662551		ALF WER		44540
30041	0607777		OCT 607777		44550
	30042	EP11	EQU *		44560
			REM	ABSOLUTE VALUE RAISED TO POWER	44570
30042	0212262		ALF ABS		44580
30043	0464364		ALF OLU		44590
30044	0632560		ALF TE		44600
30045	0652143		ALF VAL		44610
30046	0642560		ALF UE		44620
30047	0512131		ALF PAI		44630
30050	0622524		ALF SED		44640

RUN-TIME ERROR MESSAGES

000096

30051	0606346	ALF TO	44650
30052	0604746	ALF PO	44660
30053	0662551	ALF WER	44670
30054	0607777	OCT 607777	44680
	30055	EQU *	44690
		REM	44700
		GOSUBS NESTED TOO DEEPLY	44710
30055	0274662	ALF GOS	44720
30056	0642262	ALF UBS	44730
30057	0604525	ALF NE	44740
30060	0626325	ALF STE	44750
30061	0246063	ALF D T	44760
30062	0464660	ALF OO	44770
30063	0242525	ALF DEE	44780
30064	0474370	ALF PLY	44790
30065	0607777	OCT 607777	44800
	30066	EQU *	44810
		REM	44820
		INPUT DATA NOT IN CORRECT FORMAT, RETYPE IT.	44830
30066	0314547	ALF INP	44840
30067	0646360	ALF UT	44850
30070	0242163	ALF DAT	44860
30071	0216045	ALF A N	44870
30072	0466360	ALF OT	44880
30073	0314560	ALF IN	44890
30074	0234651	ALF CDR	44900
30075	0512523	ALF REC	44910
30076	0636026	ALF T F	44920
30077	0465144	ALF ORM	44930
30100	0216333	ALF AT.	44940
30101	0605125	ALF RE	44950
30102	0637047	ALF TYP	44960
30103	0256031	ALF E I	44970
30104	0633360	ALF T.	44980
	30105	EQU *	
		NAM	
		RUN-TIME, LOWER MEMORY. OUTPUT ROUTINES	

		EJT		44990
	01400	ORG WORK		45000
01400	0006000	EXC OCT 0006000		45010
01401	0000000	OCT 0000000		BAS45020
01402	0000000	OCT 0000000		BAS45030
01403	0000000	OCT 0000000		BAS45040
01404	0000000	DEC 0		BAS45050
01405	0000000	DEC 0		BAS45060
01406	0721564	OUTPUT SPR YCRTB 1		45070
01407	0721564	SPR YCRTB 1		45080
01410	2506016	SET PBK		45090
01411	0002661	LDA OUT52		45100
01412	0364100	STA EXO 3		45110
01413	0002662	LDA OUT52+1		45120
01414	0364101	STA EXO+1 3		45130
01415	1460002	INX 2 3		45140
01416	2504202	LAC		45150
01417	0103165	ADD EXN3		45160
01420	0204000	SUR TIME		45170
01421	2504006	MAC		45180
01422	1603170	DVD EXN6		45190
01423	2504006	MAC		45200
01424	1602730	DVD SIXTY		45210
01425	2514002	RZE		45220
01426	2601452	BRU OUT50		45230
01427	2504005	XAC		45240
01430	0306150	STA TEMP		45250
01431	0002726	LDA ZERO		45260
01432	1602723	DVD EXN10		45270
01433	2514002	RZE		45280
01434	0002671	LDA BL		45290
01435	0102670	ADD BL20		45300
01436	2512006	SLA 6		45310
01437	0306151	STA TEMP+1		45320
01440	2504005	XAC		45330
01441	0106151	ADD TEMP+1		45340
01442	0364100	STA EXO 3		45350
01443	0002663	LDA OUT53		45360
01444	0364101	STA EXO+1 3		45370
01445	0002664	LDA OUT53+1		45380
01446	0364102	STA EXO+2 3		45390
01447	1460003	INX 3 3		45400
01450	0006150	LDA TEMP		45410
01451	2504005	XAC		45420
01452	0002726	OUT50 LDA ZERO		45430
01453	1602723	DVD EXN10		45440
01454	2514002	RZE		45450
01455	0002671	LDA BL		45460
01456	0102670	ADD BL20		45470
01457	2512006	SLA 6		45480
01460	0306150	STA TEMP		45490
01461	2504005	XAC		45500
01462	0106150	ADD TEMP		45510
01463	0364100	STA EXO 3		45520

01464	0002665		LDA OUT54		45530
01465	0364101		STA EXO+1	3	45540
01466	0002666		LDA OUT54+1		45550
01467	0364102		STA EXO+2	3	45560
01470	0002701		LDA CRLF		45570
01471	0364103		STA EXO+3	3	45580
01472	1460004		INX 4	3	45590
01473	0002677		LDA BLEOM		45600
01474	0364100		STA EXO	3	45610
01475	2504002		LDZ		45620
01476	2617777		BRU TOP		45630
01477	1726224	YTAB	STX UNFL1	1	45640
01500	0761636		SPP FXYIND	3	45650
01501	2506016		SET PSK		45660
01502	0664001		LDY EXON	3	45670
01503	2514002		BZE YTAB2		45680
01504	2601521				
01505	2504004		LQA		45690
01506	0002675		LDA FZR		45700
01507	0364100		STA EXO	3	45710
01510	1460001		INX 1	3	45720
01511	1764001		STX EXON	3	45730
01512	2504001		LAQ		45740
01513	2103164		CAP N2		45750
01514	2601517		RRU ++3		45760
01515	0002674		LDA ZBZ		45770
01516	2601520		RRU ++2		45780
01517	0002673		LDA FILL2		45790
01520	2364077		ORV EXO-1	3	45800
01521	0006214	YTAB2	LDA YIND		45810
01522	2504006		MAQ		45820
01523	1603167		DVD N5		45830
01524	0203166		SUR N4		45840
01525	2514002		BZE YTAB4		45850
01526	2601553				
01527	2516001		BPL YCRT2		45860
01530	2601575				
01531	2504001		LAQ		45870
01532	2514002		BZE YTAB6		45880
01533	2601556				
01534	0203167		SUR N5		45890
01535	2504004		LQA		45900
01536	0206214		SUR YIND		45910
01537	2504522		NEG		45920
01540	0306214		STA YIND		45930
01541	0002700		LDA BLANKS		45940
01542	2504005		XAQ		45950
01543	2514002	YTAB3	BZE YTAB6		45960
01544	2601556				
01545	2504005		XAQ		45970
01546	0364100		STA EXO	3	45980
01547	1460001		INX 1	3	45990
01550	2504005		XAQ		46000
01551	2504032		ADD		46010

\$\$\$\$\$TERMINAL EXIT\$\$\$\$\$

TABBED OUTPUT ROUTINE

UPDATE YIND

OUTPUT POINTER

YODD IS IN A. IF ZERO THEN SKIP

HOLD ONTO YODD

FILL-ZERO-BLANK

SET WORD WITH ONE BLANK IN OUTPUT

INCREMENT OUTBUF POINTER

UPDATE EXON

GET BACK YODD

ONLY ONE BLANK NEEDED

ZERO BLANK ZERO

ZERO-FILL-ZERO

PUT IN EITHER BLANK OR FILL

NO. OF WORDS IN LINE

SET UP DIVIDE

DIVIDE BY NO. OF WORDS TO TAB POSITION

SUBTRACT NO. OF TAB POSITIONS

SPECIAL CASE

IF ALL TAB POSITIONS FILLED NEW LINE

FETCH NO. OF WORDS INTO PRESENT TAB POS

ON THE STOP

NEGATIVE OF NO. OF WORDS NEEDED TO FILL

HOLD ON TO THIS NUMBER

COMPUTE NEW VALUE OF YIND

MAKE SUM POSITIVE

SET UP TO FILL OUT TO NEXT TAB

CARRIAGE IS AT THE TAB (SO TO SPEAK)

PUT THE BLANKS IN A

OUTPUT ONE WORD OF BLANKS

INCREMENT OUTBUF POINTER

GET BACK NO. OF WORDS NEEDED TO FILL OUT

TO TAB DECREMENT

01552	2601543		BRU YTAB3	
01553	2504005	YTAB4	XAG	
01554	2516002		BNZ	
01555	2601575		BRU YCRT2	
01556	0626224	YTAB6	LDX UNFL1	1
01557	1764001		STX EXON	3
01560	2506015		SET PST	
01561	2504002		LDZ	
01562	0307140		STA YODD	
01563	2620001		BRU 1	1
01564	0002700	YCRT8	LDA BL32	
01565	2506016		SET PBK	
01566	0664001		LDX EXON	3
01567	0364100		STA EXC	3
01570	1460001		INX 1	3
01571	1764001		STX EXON	3
01572	1726224	YCRT	STX UNFL1	1
01573	2506016		SET PBK	
01574	0664001		LDX EXON	3
01575	1765633	YCRT2	STX XTEM	3
01576	0005633		LDA XTEM	
01577	2514002		RZF	
01600	2601625		BRU YCRT3	
01601	2504112		SBO	
01602	0305633		STA XTEM	
01603	0665633		LDX XTEM	3
01604	0064100		LDA EXC	3
01605	2002673		EXT YCRT5	
01606	0103247		ADD YCRT4	
01607	0364100	YCRT9	STA EXC	3
01610	1460001		INX 1	3
01611	0002726		LDA ZERO	
01612	0306214		STA YIND	
01613	1765633		STX XTEM	3
01614	0005633		LDA XTEM	
01615	0202660		SUR EXOEND	
01616	2514001		BMI	
01617	2601556		BRU YTAB6	
01620	2504002		LDZ	
01621	0307140		STA YODD	
01622	2506016		SET PBK	
01623	2504022		LDO	
01624	2617777		BRU TOP	
01625	0002672	YCRT3	LDA CRT	
01626	0304100		STA EXC	
01627	2601610		BRU YCRT9+1	
01630	0761636	YSHT	SPR FXYIND	3
01631	0006214		LDA YIND	
01632	0203226		SUR EXN22	
01633	2514001		BMI	
01634	2620001		BRU 1	1
01635	2601572		BRU YCRT	
01636	0007140	FXYIND	LDA YODD	
01637	2514002		RZF	

LOOP UNTIL TABSTOP IS HIT

TABBING RESETS ODD CHARACTER COUNTER

RESET ODD CHARACTER COUNTER

INTERMEDIATE OUTPUT

UPDATE YIND TO INCLUDE ODD CHARACTERS

GET NO. OF FILLS STORED IN OUTBUF
IF NONE RETURN

46020
46030
46040
46050
46060
46070
46080
46090
46100
46110
46120
46130
46140
46150
46160
46170
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46310
46320
46330
46340
46350
46360
46370
46380
46390
46400
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46500
46510
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46530
46540
46550

RUN-TIME, LOWER MEMORY, OUTPUT ROUTINES

000100

01640	2660001	BRU 1	3		46560
01641	2504006	MAQ		SET UP DIVIDE	46570
01642	1603165	DVD N3		DETERMINE WHOLE NUMBER OF WORDS OVER	46580
		REM		ACTUAL THAT YIND HAS BEEN SET TO	46590
01643	0206214	SUR YIND			46600
01644	2504522	NEG		DECREMENT YIND ACCORDINGLY	46610
01645	0306214	STA YIND			46620
01646	2504001	LAQ		REMAINDER OF DIVISION	46630
01647	0307140	STA YODD		NEW VALUE OF YODD	46640
01650	2660001	BRU 1	3	RETURN	46650
01651	1707104	STY YLABXR	0	PROTECT ZERO FROM THE MOV	46660
01652	0305633	STA XTEM		HANG ON TO LOCATION OF MESSAGE	46670
01653	2510017	SRA 15		PICK OUT COUNT OF FILLS IN MESSAGE	46680
01654	0107140	ADD YODD		INCREMENT YODD	46690
01655	0307140	STA YODD			46700
01656	0005633	LDA XTEM		DIG OUT LOCATION OF MESSAGE	46710
01657	2003662	EXT MOP		MASK OFF OP CODE BITS	46720
01660	0103663	ADD ZMOV		CONSTRUCT A MOV	46730
01661	2506016	SET PBK			46740
01662	0301665	STA **3			46750
01663	0004001	LDA EXCN			46760
01664	0102703	ADD EXOLOC		SET MOVE TO ADDRESS	46770
01665	2400000	MOV 0		### CONSTRUCTED	46780
01666	2504001	LAQ		GET LENGTH OF MOVE	46790
01667	2504522	NEG			46800
01670	2504004	LQA			46810
01671	0106214	ADD YIND			46820
01672	0306214	STA YIND		ADD LENTH TO LINE POINTER	46830
01673	2504001	LAQ			46840
01674	0104001	ADD EXON		ADD LENGTH TO OUT BUFF POINTER	46850
01675	0304001	STA EXON			46860
01676	2506015	SET PST			46870
01677	0607104	LDX YLABXR	0		46880
01700	2620001	BRU 1	1	EXIT	46890
		NAM		RUN-TIME, LOWER MEMORY, SERVICE ROUTINES	46900

		EJT							46910
		REM							46920
		REM							46930
01701	1001402	INCALL	DLD FZERO			INCALL GOES TO THE EXECUTIVE FOR INPUT AND			46940
01702	1300004		DST XR10			INITIALIZES THE INCONV ROUTINE.			46950
01703	0307140		STA YODD			SET UP INDEX REGISTERS			46960
01704	0306214		STA YIND			KILL ANY CHARACTER COUNT LEFT FROM LAST			46970
01705	0003164		LDA N2			LINE OUTPUT			46980
01706	2617777		RRU TOP			REAL TIME INPUT CODE			46990
		REM				SINCE OBJECT SPR TO THIS ROUTINE LET EXEC			47000
		REM				RETURN DIRECTLY			47010
		REM				INDONE CHECKS TO SEE IF THE FLAG WHICH IS			47020
		REM				SET BY CARRIAGE RETURN IN INCONV HAS BEEN			47030
						SET. IF IT HAS NOT AN ERROR EXISTS.			47040
01707	0000004	INDONE	LDA XR10						47050
01710	2514001		BMI						47060
01711	2620001		RRU 1	1		THIS IS THE WAY THINGS SHOULD BE			47070
01712	2504002		LDZ						47080
01713	2504004		LQA						47090
01714	0003206		LDA N13			SET UP MESSAGE NO.			47100
01715	0721757		SPR RMESS	1		OUTPUT ERROR MESSAGE			47110
01716	0627137		LDX WAI	1		UPON RETURN GO TO BEGINNING OF LINE			47120
01717	2620004		RRU 4	1					47130
		REM				TRAP MODE ROUTINE			47140
01720	1726213	TRAP	STX TRPXR	1		SAVE EXIT			47150
01721	2514730		BAR BDC	7					47160
01722	2601743		RRU DVDC			DIVIDE CHECK			47170
01723	2514726		BAR BUC	7					47180
01724	2601734		RRU UFL			UNDERFLOW			47190
01725	2514721		PAR BMI	7		OVERFLOW ROUTINE			47200
01726	1002652		DLD NINF			SUPPLY NEGATIVE INFINITY FOR NEG OFL			47210
01727	2516721		RAP RPL	7					47220
01730	1002650		DLD PINF			OTHERWISE SUPPLY POSITIVE INFINITY			47230
01731	1306250		DST TRPST			HOLD VALUE TO BE OUTPUT			47240
01732	0003172		LDA OFLNUM			CODE FOR ERROR MESSAGE ROUTINE			47250
01733	2601746		RRU TRP1						47260
01734	2514722	UFL	RAP BZF	7		UNDERFLOW ROUTINE			47270
01735	1001402		DLD FZERO			SUPPLY 0 FOR NFL POINT			47280
01736	2516722		RAP BNZ	7					47290
01737	1002654		DLD FIXMIN			SUPPLY FIX POINT MIN INF FOR FIX MODE			47300
01740	1306250		DST TRPST			HOLD VALUE TO BE OUTPUT			47310
01741	0003173		LDA UFLNUM			CODE FOR RMESS			47320
01742	2601746		RRU TRP1						47330
01743	1002650	DVDC	DLD PINF			SUPPLY + INFITY FOR DIVIDE CHECK			47340
01744	1306250		DST TRPST			HOLD			47350
01745	0003171		LDA DVDCNUM			FOR RMESS			47360
01746	2504004	TRP1	LQA			HOLD MESSAGE NUMBER			47370
01747	2504022		LDQ			SET CONTINUE FLAG			47380
01750	2504003		XAR			GET CODES IN RIGHT ORDER			47390
01751	0721757		SPR RMESS	1		OUTPUT APPROPRIATE ERROR MESS			47400
01752	3006250		FLD TRPST			LOAD VALUE TO BE SUPPLIED			47410
01753	0626213		LDX TRPXR	1					47420
01754	3500004		RIN						47430
01755	3100001		SET TRPMODE						47440
01756	2620000		RRU 0	1		GET OUT OF TRAP AND RETURN TO PROG			

	REM		RUM TIME ERROR MESSAGE ROUTINE	47450
	REM		ERROR MESSAGES MAY BE IN UPPER MEMORY.	47460
	REM		MSTAB-LOWER 8K-CONTAINS WORD PAIRS	47470
	REM		THE FIRST WORD CONTAINS THE STARTING	47480
	REM		LOCATION OF THE MESSAGE.	47490
	REM		THE SECOND WORD CONTAINS THE	47500
	REM		2S COMPLEMENT OF THE NUMBER OF WORDS	47510
	REM		IN THE MESSAGE	47520
			MULTIPLY CODE NUMBER BY 2	47530
01757	2512001	RMESS		47540
01760	1306252		SAVE EXIT	47550
01761	1726254		SAVE VALUE OF LINE POINTER FOR OUTPUT	47560
01762	0006214		BUFFER	47570
01763	0306227		BETTER SAFE THAN SORRY	47580
01764	2506016		SET UP A CARRIAGE RETURN	47590
01765	0664001		2 FILLS AND CARRIAGE RETURN	47600
01766	0002672			47610
01767	0364100			47620
01770	1460001			47630
01771	1764001		GET MESSAGE NUMBER	47640
01772	0626252		LOOK UP LOCATION AND LENGTH	47650
01773	1022732		OUTPUT THE LABEL	47660
01774	0721651		GET OUT BUF POINTER	47670
01775	0664001		IF FLAG IS 0 DO NOT OUTPUT LINE NO.	47680
01776	0006253			47690
01777	2514002			47700
02000	2602022		PLACE A @IN@ IN THE LINE	47710
02001	0003630			47720
02002	0364100		INCREMENT POINTER	47730
02003	1460001		SAVE	47740
02004	1764001		GET LOCATION WHERE CURRENT LINE NO IS STORED	47750
02005	0627137		GET THE LINE NO.	47760
02006	0020001		MAKE INTO DOUBLE WORD LENGTH INTEGER	47770
02007	2504006		GET RETURN ADDRESS FOR NEXT SUB CALL	47780
02010	0722012		ENTERED UPON RETURN FROM YINT	47790
02011	2602022		SET UP RETURN FORM YINT	47800
02012	1726226		SAVE INDEX 2	47810
02013	1746225		INITIALIZE XR3 FOR YINT	47820
02014	0662724		SET SIGN OF LINE NO, TO BLANK	47830
02015	0002671			47840
02016	0306150		YINT IS IN UPPER BANK	47850
02017	0622710		NO. TO BE OUTPUT IS NOW IN A AND Q	47860
02020	2504002		OUTPUT THE LINE NUMBER	47870
02021	2627250		CARRIAGE RETURN AND CHECK FOR FULL OUT BUF	47880
02022	0721564	RM1	GET CONT/TERM FLAG	47890
02023	0006253		IF NEGATIVE TERMINATE	47900
02024	2514001			
02025	2601406		OTHERWISE RESTORE LINE POINTER	47910
02026	0006227			47920
02027	0306214		IF INTERRUPTED LINE WAS AT BEGINNING	47930
02030	2514002			
02031	2602054			
02032	2504004		HOLD NEW YIND IN Q	47940
02033	0622726		USE XR1 FOR COUNTER	47950
02034	0004001			47960

02035	0102703		ADD EXOCLOC	
02036	2506016		SET PBK	
02037	2702044		STO **5	
02040	2504001		LAD	
02041	2504522		NEG	
02042	2702046		STO **4	
02043	0002700		LDA BLANKS	
02044	0320000		STA 0	1
02045	1420001		INX 1	1
02046	0520000		RXH 0	1
02047	2602051		RRU **2	
02050	2602044		BRU **4	
02051	2504001		LAD	
02052	0104001		ADD EXON	
02053	0304001		STA EXON	
02054	2506015	RM2	SET PST	
02055	0626254		LDX MSXR	1
02056	2620001		BRU 1	1
02057	2504102	RETER	LMO	
02060	2504004		LQA	
02061	0003167		LDA EXNS	
02062	2601757		RRU RMES	
02063	2514001	TEST	RMI	
02064	2602072		RRU TEST3	
02065	2514722	TEST2	RAP BZF	7
02066	2620001		BRU 1	1
02067	2514721		RAP RMI	7
02070	2620001		BRU 1	1
02071	2620002		RRU 2	1
02072	2514721	TEST3	RAP RMI	7
02073	2620002		RRU 2	1
02074	2620001		BRU 1	1
			REM	
			REM	
			REM	
			REM	
			REM	
02075	1307116	MAT10	DST MAT	
02076	1001402		DLD FZERO	
02077	1307122		DST MATB	
02100	0002725		LDA MIN	
02101	2602130		BRU MAT1	
02102	1307116	MAT11	DST MAT	
02103	2602100		BRU **3	
02104	1307116	MAT12	DST MAT	
02105	1001402		DLD FZERO	
02106	1307122		DST MATB	
02107	0002726		LDA ZERO	
02110	2602130		RRU MAT1	
02111	1307116	MAT13	DST MAT	
02112	2602107		BRU ** 3	
02113	2514001	MAT20	RMI	
02114	2602126		RRU MAT1-2	
02115	2511013		SRO 11	

CONSTRUCT STORE INSTRUCTION

FORM TWO'S COMP OF YIND
CONSTRUCT A BXH
3 BLANKS
CONSTRUCTED
INCREMENT COUNTER
CONSTRUCTED

LOOP ON STORE OPERATION
GET NO. OF WORDS ADDED
INCREMENT OUT BUF POINTER

RESTORE EXIT
EXIT
RETURN ENCOUNTERED BEFORE A GOSUB
SET TERMINATE FLAG
MESSAGE NUMBER

YTST CHECKS TO SEE IF THERE IS UNREAD DATA
AVAILABLE IN THE DATA REGION. IF
THERE IS CONTROL RETURNS, OTHER-
WISE A TERMINAL MESSAGE IS GIVEN AND
THE RUN ENDS.

47970
47980
47990
48000
48010
48020
48030
48040
48050
48060
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48100
48110
48120
48130
48140
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48160
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48210
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48260
48270
48280
48290
48300
48310
48320
48330
BAS48340
48350
48360
BAS48370
BAS48380
BAS48390
BAS48400
BAS48410
48420
48430
BAS48440
BAS48450
BAS48460
BAS48470
BAS48480
48490
BAS48500

02116	2102723	CAR EXN10		48510
02117	2504012	NOP		48520
02120	2602122	RRU **2		48530
02121	2602212	RRU MAT2		48540
02122	0300003	STA XR03		48550
02123	2504002	LDZ		48560
02124	2572200	SLD 0	3	48570
02125	2620001	BRU 1	1	BAS48580
02126	0002726	LDA ZERO		BAS48590
02127	2620001	BRU 1	1	BAS48600
02130	0307126	STA MATT		BAS48610
02131	1727127	STY MATT+1	1	BAS48620
02132	0007117	LDA MAT+1		BAS48630
02133	2511011	SRO 9		BAS48640
02134	0307130	STA MATTA		48650
02135	0002726	LDA ZERO		BAS48660
02136	2512211	SLD 9		BAS48670
02137	0307131	STA MATTA+1		48680
02140	0007121	LDA MATTA+1		48690
02141	2514001	RMI		BAS48700
02142	2602212	BRU MAT2		BAS48710
02143	1007120	DLR MATA		48720
02144	0722113	SPR MAT20	1	BAS48730
02145	0307132	STA MATTB		48740
02146	0207130	SUP MATTA		48750
02147	2516001	RPL		BAS48760
02150	2602212	BRU MAT2		BAS48770
02151	0007122	LDA MATB		48780
02152	2516002	RNZ		48790
02153	2602156	BRU MAT5		48800
02154	0307133	STA MATTB+1		48810
02155	2602167	BRU MAT6		48820
02156	0007123	LDA MATB+1		48830
02157	2514001	RMI		BAS48840
02160	2602212	RRU MAT2		48850
02161	1007122	DLR MATB		48860
02162	0722113	SPR MAT20	1	BAS48870
02163	0307133	STA MATTB+1		48880
02164	0207131	SUB MATTA+1		48890
02165	2516001	RPL		BAS48900
02166	2602212	BRU MAT2		48910
02167	0007132	LDA MATTB		48920
02170	2504006	MAQ		BAS48930
02171	1507131	MPY MATTA+1		48940
02172	2504005	XAQ		BAS48950
02173	0107133	ADD MATTB+1		48960
02174	2512001	SLA 1		BAS48970
02175	0107116	ADD MAT		BAS48980
02176	0307116	STA MAT		BAS48990
02177	0007126	LDA MATT		BAS49000
02200	2514001	RMI		BAS49010
02201	2602207	BRU MAT4		BAS49020
02202	0627116	LDY MAT	1	49030
02203	1007124	DLR MATC		49040

ERROR-- SUBSCRIPT UNREASONABLY LARGE
SHIFT IN INTEGER PART

RUN-TIME, LOWER MEMORY. SERVICE ROUTINES

000105

	02204	1320000		DST 0	1		49050
	02205	0627127		LDX MAT+1	1		BAS49060
	02206	2620001		BRU 1	1		BAS49070
	02207	0627116	MAT4	LDX MAT	1		49080
A	02210	3020000		FLD 0	1		49090
	02211	2602205		RRU MAT4-2		EXIT	49100
	02212	2504102	MAT2	LMO		SUBSCRIPT ERROR	49110
	02213	2504004		LQA		SET TERMINATE FLAG	49120
	02214	0003170		LDA EXN6		MESSAGE NUMBER	49130
	02215	2601757		RRU RMESS			49140
	02216	2504202	YTIME	LAC		CHECK FOR PROGRAM OVER TIME LIMIT	49150
				REM		NOMINAL LIMIT 64 SEC UNLESS SPEC BY TESTER	49160
	02217	0204000		SUP TIME		CURRENT ELAPSED TIME OF PROGRAM RUN	49170
	02220	2107141		CAR TREF			49180
	02221	2620001		BRU 1	1	STILL OK	49190
	02222	2620001		BRU 1	1	IN LAST SIXTH OF SECOND	49200
	02223	2504102		LMO		SET TERMINATE FLAG	49210
	02224	2504004		LQA			49220
	02225	0003166		LDA N4		SET UP MESSAGE NO.	49230
	02226	2601757		RRU RMESS			49240
				REM		PUSH SAVES THE RETURN ADDRESS FOR GOSUB	49250
	02227	2506053	PUSH	SXG 2			49260
	02230	0537536		RXW EXL-RST	1		49270
	02231	2602237		RRU PERR		TOO MANY GOSUBS RUNNING AT ONCE	49280
	02232	0000001		LDA XR01			49290
	02233	0326260		STA RST	1		49300
	02234	1420001		INY 1	1		49310
	02235	2506013		SXG 0			49320
	02236	2620001		BRU 1	1		49330
				REM		POP POPS UP RETURN ADDRESS AND RETURNS TO IT	49340
	02237	2506013	PERR	SXG 0			49350
	02240	2504102		LMO		SET TERMINATE FLAG	49360
	02241	2504004		LQA			49370
	02242	0003205		LDA N12		MESSAGE NUMBER	49380
	02243	2601757		RRU RMESS			49390
	02244	0000011	POP	LDA XR21			49400
	02245	2504112		SBO			49410
	02246	0300011		STA XR21			49420
	02247	2506053		SXG 2			49430
	02250	0026260		LDA RST	1		49440
	02251	0300001		STA XR01			49450
	02252	2506013		SXG 0			49460
	02253	2620002		RRU 2	1		49470
				NAM		RUN-TIME, LOWER MEMORY. ARITH SUBROUTINES	49480

			SJT		POWER DOES JUST THAT AND DETERMINES	49490
			REV		WHETHER THE EXPONENT IS INTEGER OR REAL	49500
			REM		AND CHECKS FOR CERTAIN ERROR CONDITIONS	49510
			REM		EXP IN AX AND BASE IN QX	49520
02254	3306222	POWER	FST POWA		SAVE RETURN	49530
02255	1726215		STX POWXR	1	EXP IN A AND Q	49540
02256	1006222		DLN POWA		PUT BASE IN AX	49550
02257	3500002		XAO	A	SAVE BASE	49560
02260	3306220		FST POWB		CHECK FOR BASE ZERO	49570
02261	2514722		SAR RZE	7		49580
02262	2602346		BRU BASEZ			49590
02263	0006221		LDA POWB+1		STORE SIGN OF BASE IN BASS	49600
02264	2002650		EXT PINF		CHOP OFF EVERYTHING BUT SIGN	49610
02265	0306216		STA BASS			49620
02266	3500002		XAO	A	EXPONENT IN AX, BASE IN QX	49630
02267	2514722		SAR RZE	7	EXPONENT ZERO	49640
02270	2602365		BRU EXPZ			49650
02271	0722636		SPR ICHKL	1	LOWER MEM ENTRY TO INTCHK	49660
02272	2602372		BRU EXPR		REAL EXPONENT	49670
02273	0006223		LDA POWA+1		GET SECOND WORD OF EXPONENT	49680
02274	2002650		EXT PINF		CHOP OFF EVERYTHING BUT SIGN BIT	49690
02275	0306217		STA EXPS		SAVE SIGN OF EXPONENT	49700
02276	2516001		RPL			49710
02277	2602303		BRU POW1		POSITIVE EXPONENT	49720
02300	3100002		MAQ	A		49730
02301	3502656		FMP FMONE		MAKE EXPONENT POSITIVE	49740
02302	3306222		FST POWA		SAVE	49750
02303	1006222	POW1	DLN POWA		FETCH EXPONENT	49760
02304	2510013		SRA 11		CHOP OFF ALL BUT MANTISSA	49770
02305	0203246		SUR EXN30			49780
02306	2504522		NEG		FORM 30-EXP(EXPONENT)	49790
02307	0300001		STA XRD1			49800
02310	0006222		LDA POWA		RESTORE EXPONENT	49810
02311	2002707		EXT MEXP		GET EXPONENT BITS OUT OF THE WAY	49820
02312	2531000		SRA 0	1	SHIFT EXP INTO FIX POINT INTEGER	49830
02313	3001400		FLD FONE			49840
02314	3306222		FST POWA		INITIALIZE RUNNING ANSWER	49850
02315	3006220		FLD POWB		START WITH BASE IN AX	49860
02316	2602322		BRU POW3			49870
02317	3100002	POW5	MAQ	A		49880
02320	3506220		FMP POWB			49890
02321	3306220		FST POWB		GET NEXT 2**N POWER OF BASE	49900
02322	2504005	POW3	XAO			49910
02323	2516000		REV		IS THE NEXT 2**N POWER IN	49920
02324	2602331		BRU POW2		NO	49930
02325	3100002		MAQ	A	YES	49940
02326	3506222		FMP POWA			49950
02327	3306222		FST POWA		POWA HOLDS RUNNING PRODUCT	49960
02330	3006220		FLD POWB			49970
02331	2504005	POW2	XAO		GET EXPONENT STRAIGHTENED OUT	49980
02332	2511001		SRA 1		ADJUST TO LOOK FOR NEXT POWER	49990
02333	2201402		DCR FZERO			50000
02334	2602317		BRU POW5			50010
02335	2602337		BRU **2			50020

02336	2602317	RRU POWB		NOT FINISHED YET	50030
02337	0006217	LDA EXPS		CHECK SIGN OF EXPONENT	50040
02340	2516001	RPL			50050
02341	2602367	RRU POWEX		COMPLETELY FINISHED	50060
02342	3001400	FLD FONE			50070
02343	3500005	COX		\$\$\$\$\$	50080
02344	3606222	FDV POWA		COMPUTE 1/ANSWER	50090
02345	2602370	RRU POWEX1			50100
02346	3500002	BASEZ XAQ	A	PUT EXP IN AX BASE IN QX	50110
02347	2514721	RAR BMI	7		50120
02350	2602357	RRU **7			50130
02351	2514722	RAR RZE	7		50140
02352	2602355	RRU **3			50150
02353	3001402	FLD FZERO		EXPONENT POSITIVE	50160
02354	2620001	RRU 1	1	EXIT	50170
02355	3001400	FLD FONE		SUPPLY 1 FOR 0**0	50180
02356	2620001	RRU 1	1	EXIT	50190
02357	2504022	LDO		SET CONTINUE FLAG FOR ERROR MESS.	50200
02360	2504004	LQA		WHEN EXPONENT IS NEGATIVE	50210
02361	0002723	LDA EXN10		MESSAGE NUMBER	50220
02362	0721757	SPR RMESS	1		50230
02363	3002650	FLD PINF		SUPPLY POSITIVE INFINITY FOR ZERO TO A NEG	50240
02364	2602370	RRU POWEX1			50250
02365	3001400	FLD FONE		EXPONENT ZERO	50260
02366	2620001	RRU 1	1	EXIT	50270
02367	3006222	POWEX FLD POWA			50280
02370	0626215	POWEX1 LDX POWXR	1	RESTORE EXIT	50290
02371	2620001	RRU 1	1		50300
02372	3006220	EXPR FLD POWB		REAL EXPONENT, LOAD BASE	50310
02373	0006216	LDA BASS		CHECK SIGN OF BASE	50320
02374	2514001	RMI			50330
02375	2602403	RRU EXPR1			50340
02376	0722630	EXPR2 SPR LOG32	1		50350
02377	3100002	MAC	A		50360
02400	3506222	FMP POWA		MULTIPLY BY EXPONENT	50370
02401	0722617	SPR EXP2	1		50380
02402	2602370	RRU POWEX1			50390
02403	2504022	EXPR1 LDO		SET CONTINUE FLAG	50400
02404	2504004	LQA			50410
02405	0003204	LDA EXN11		MESSAGE NO.	50420
02406	0721757	SPR RMESS	1		50430
02407	3006220	FLD POWB		TAKE ABSOLUTE VAL OF BASE	50440
02410	3100002	MAC	A		50450
02411	3502656	FMP FMONE			50460
02412	3306220	FST POWB			50470
02413	2602376	RRU EXPR2			50480
		REV		INT FUNCTION	50490
		REV		FORMS INTEGER PART OF NUMBER IN AX	50500
		REV		AND RETURNS WITH ANSWER IN AX	50510
02414	3307070	INT FST INTARG			50520
02415	2516721	RAR RPL	7		50530
02416	2602425	RRU INT2			50540
02417	0002725	LDA MIN			50550
02420	0307075	STA INTF			50560

02421	3200005	CAX	\$\$\$\$\$	50570
02422	3207070	FSU INTARG		50580
02423	3307070	FST INTARG		50590
02424	2602427	BRU INT3		50600
02425	0002726	INT2 LDA ZERO		50610
02426	0307073	STA INTF	NUMBER POSITIVE	50620
02427	0007070	INT3 LDA INTARG	GET PART OF ARG WITH EXPONENT	50630
02430	2510013	SRA 11		50640
02431	0307072	STA INTEXP	SAVE EXPONENT	50650
02432	2514001	BMI		50660
02433	2602506	BRU INT7		50670
02434	2514002	RZF		50680
02435	2602506	BRU INT7		50690
02436	2103204	CAR EXN11		50700
02437	2602467	BRU INT5		50710
02440	2602503	BRU INT8		50720
02441	0203246	SUB EXN30		50730
02442	2516001	BPL		50740
02443	2602457	BRU INT4		50750
02444	2506016	SET PBK		50760
02445	2504522	NEG		50770
02446	0102705	ADD EXSRA		50780
02447	0302453	STA ++4		50790
02450	0102702	ADD EXSLA		50800
02451	0302454	STA ++3		50810
02452	0007071	LDA INTARG+1		50820
02453	2510000	SRA 0		50830
02454	2512000	SLA 0		50840
02455	0307071	STA INTARG+1	SAVE INTEGER PART OF MANTISSA	50850
02456	2506015	SET PST		50860
02457	0007073	INT4 LDA INTF		50870
02460	2516001	BPL		50880
02461	2602465	BRU INT6		50890
02462	3200005	CAX	\$\$\$\$\$	50900
02463	3207070	FSU INTARG	RECOMPLEMENT IF ARG WAS NEGATIVE	50910
02464	2620001	BRU 1		50920
02465	3007070	INT6 FLD INTARG	LOAD RESULT	50930
02466	2620001	BRU 1		50940
02467	2506016	INT5 SET PBK		50950
02470	0003204	LDA EXN11		50960
02471	0207072	SUB INTEXP		50970
02472	0102705	ADD EXSRA		50980
02473	0302477	STA ++4		50990
02474	0102702	ADD EXSLA		51000
02475	0302500	STA ++3		51010
02476	0007070	LDA INTARG		51020
02477	2510000	SRA 0		51030
02500	2512000	SLA 0		51040
02501	0307070	STA INTARG		51050
02502	2506015	SET PST		51060
02503	0002726	INT8 LDA ZERO		51070
02504	0307071	STA INTARG+1		51080
02505	2602457	BRU INT4		51090
02506	3200005	INT7 CAX	\$\$\$\$\$	51100

02507	2620001		BRU 1	1		51110
02510	2516721	ABS	BAR BPL	7	\$\$\$\$\$ WAIT FOR AAU IN 225	51120
02511	2620001		BRU 1	1		BAS51130
02512	3306162		FST TEMP+10			BAS51140
02513	3200005		CAX		\$\$\$\$\$	51150
02514	3206162		FSU TEMP+10			BAS51160
02515	2620001		BRU 1	1		BAS51170
02516	1726212	LOG	STX LOGXR	1	SAVE RETURN	51180
02517	2514721		BAR BMI	7		51190
02520	2602525		BRU **5		ERROR IF ARGUMENT IS NEGATIVE	51200
02521	2514722		BAR BZE	7		51210
02522	2602535		BRU **11		ERROR IF ARGUMENT IS ZERO	51220
02523	0626212		LDX LOGXR	1	RESTORE EXIT	51230
02524	2602625		BRU LOGSE			51240
02525	2504022		LDO			51250
02526	2504006		MAQ		SET CONTINUE FLAG	51260
02527	0003164		LDA EXN2			51270
02530	3307075		FST LOGARG		SAVE ARGUMENT	51280
02531	0721757		SPR RMESS	1	GIVE ERROR MESSAGE	51290
02532	3007070		FLD LOGARG		RESTORE ARGUMENT	51300
02533	0722510		SPR ABS	1	TAKE ABSOLUTE VALUE	51310
02534	2602523		BRU **9		GO TO LOG ROUTINE	51320
02535	2504022		LDO		SET CONTINUE FLAG	51330
02536	2504004		LQA			51340
02537	0003165		LDA N3		SET MESSAGE NO. FOR LOG(0)	51350
02540	0721757		SPR RMESS	1	OUTPUT ERROR MESSAGE	51360
02541	3002652		FLD NINF		SUPPLY NEGATIVE INFINITY	51370
02542	0626212		LDX LOGXR	1	RESTORE EXIT	51380
02543	2620001		BRU 1	1	RETURN	51390
02544	1006246	RND	DLD RND1		RANDOM NUMBER GENERATOR A LA KIP MOORE	51400
02545	1103160		DAD RNDK			51410
02546	2512205		SLD 5			51420
02547	1106246		DAD RND1			51430
02550	2002707		EXT MEXP			51440
02551	2512200		SLD 0			51450
02552	1306246		DST RND1			51460
02553	3006246		FLD RND1			51470
02554	3500005		COX		DONT NORMALIZE NONSENSE	51480
02555	3100005		NOX			51490
02556	2620001		BRU 1	1		51500
02557	1726212	SQR	STX SQRXR	1	SAVE EXIT	51510
02560	2516721		BAR BPL	7	TEST FOR PLUS OR ZERO	51520
02561	2602570		BRU **7			51530
02562	3307072		FST SQT		SAVE ARGUMENT	51540
02563	2504022		LDO		SET MESSAGE NUMBER	51550
02564	2504004		LQA		SET CONTINUATION FLAG	51560
02565	0721757		SPR RMESS	1	GIVE ERROR MESSAGE	51570
02566	3007072		FLD SQT		RESTORE ARGUMENT	51580
02567	0722510		SPR ABS	1	TAKE ABSOLUTE VALUE	51590
02570	0626212		LDX SQRXR	1	RESTORE EXIT	51600
02571	2602606		BRU SQF		GO TO SQUARE ROOT ROUTINE	51610
02572	3306172	TAN	FST TEMP+16			BAS51620
02573	1726167		STX TEMP+15	1		BAS51630
02574	0722614		SPR COS	1		BAS51640

RUN-TIME, LOWER MEMORY, ARITH SUBROUTINES

000110

02575	3306170	FST TEMP+16	
02576	3006172	FLD TEMP+18	
02577	0722611	SPR SIN	1
02600	3606170	FDV TEMP+16	
02601	0626167	LDX TEMP+15	1
02602	2620001	BRU 1	1
		NAM	

ENTRANCE VECTORS FOR RUN TIME ROUTINES

BAS51650
BAS51660
BAS51670
BAS51680
BAS51690
BAS51700
51710

ENTRANCE VECTORS FOR RUN TIME ROUTINES

000111.

			EJT			51720
			REM			51730
02603	1727070	ATANF	STX B	1	ARCTAN ENTRANCE VECTOR	51740
02604	0622710		LDX UPBIT	1		51750
02605	2625443		BRU ARCTAN	1		51760
			REM		SQUARE ROOT ENTRANCE VECTOR	51770
02606	1727070	SGF	STX B	1		51780
02607	0622710		LDX UPBIT	1		51790
02610	2625621		BRU SGF2	1		51800
			REM		SIN/COS ENTRANCE VECTORS	51810
02611	1727070	SIN	STX B	1		51820
02612	0622710		LDX UPBIT	1		51830
02613	2625665		BRU SINF	1		51840
02614	1727070	COS	STX B	1		51850
02615	0622710		LDX UPBIT	1		51860
02616	2625664		BRU COSF	1		51870
			REM		ENTRANCE VECTORS FOR EXP2 AND EXP	51880
02617	1727070	EXP2	STX B	1		51890
02620	0622710		LDX UPBIT	1		51900
02621	2626127		BRU EEXP2	1		51910
02622	1727070	EXP	STX B	1		51920
02623	0622710		LDX UPBIT	1		51930
02624	2626111		BRU EXPSUB	1		51940
			REM		ENTRANCE VECTORS FOR LOG	51950
02625	1727070	LOGSE	STX B	1		51960
02626	0622710		LDX UPBIT	1		51970
02627	2626261		BRU LNSUB	1		51980
02630	1727070	LOGR2	STX B	1		51990
02631	0622710		LDX UPBIT	1		52000
02632	2626263		BRU LOG2	1		52010
02633	1726226	YUNF	STX UNFL3	1	ENTRANCE VECTOR FOR YUNF(U)	52020
02634	0622710		LDX UPBIT	1		52030
02635	2626742		BRU YUNFU	1		52040
02636	1726255	ICHKL	STX ICHXR	1	ENTRANCE VECTOR FOR INTCHK	52050
02637	0622710		LDX UPBIT	1		52060
02640	2626767		BRU INTCHK+11			52070
02641	2506033	INCON	SXG 1		GET UP TO INCONV	52080
02642	0642710		LDX UPBIT	2		52090
02643	2647356		BRU INCONV	2		52100
02644	1727070	YTST	STX B	1		52110
02645	0622710		LDX UPBIT	1		52120
02646	2627444		BRU YTSTUP	1		52130
			NAM		RUN-TIME GARBAGE CONSTANTS	52140

RUN-TIME GARBAGE CONSTANTS

000112

02650	1777777	PINF	OCT 1777777	
02651	1777777		OCT 1777777	
02652	1774000	NINF	OCT 1774000	
02653	2000001		OCT 2000001	
02654	2000000	FIXMIN	OCT 2000000	
02655	2000001		OCT 2000001	
	01400	FONE	EQU EXC	
	01402	FZERO	EQU EXC+2	
02656	0006000	FMONE	FDC -1	
02657	2000000			
	02657	SIGN	EQU FMONE+1	
02660	0001400	EXOENR	OCT 1400	
02661	0633144	OUT52	ALF TIM	
02662	0251360		ALF E#	
02663	0604431	OUT53	ALF MI	
02664	0456233		ALF NS.	
02665	0606225	OUT54	ALF SE	
02666	0236233		ALF CS.	
02667	0000033	PER	ALF 00.	
02670	0006000	BL20	ALF 0 0	
02671	0000060	BL	ALF 00	
02672	0777737	CRT	OCT 0777737	
02673	0007700	FILL2	OCT 0007700	
02674	0006000	ZBZ	ALF 0 0	
02675	0770060	FZB	OCT 770060	
02676	0000077	FILL	DEC 63	
02677	0777755	BLEOM	OCT 0777755	
02700	0606060	BL32	ALF	
02701	0377272	CRLF	OCT 0377272	
02702	0002000	EXSLA	OCT 0002000	
02703	0004100	EXOLOQ	DEC EXO	
02704	0027440	INLOC	DEC INRET-1	
02705	2510000	EXSRA	SRA 0	
02706	0620000	LDX01	LDX 0	1
02707	3774000	MEXP	OCT 3774000	
02710	0020000	UPBIT	DEC 8192	
02711	0000400	O400	OCT 400	
02712	0000200	O200	OCT 200	
02713	3777776	NM2	DEC -2	
02714	0007200	DLOC	DEC 0	
02715	3700002	DWRITE	OCT 3700002	
02716	1200004	DREAD	OCT 1200004	
02717	0303240	TENT	DEC 100000	
02720	0023420		DEC 10000	
02721	0001750		DEC 1000	
02722	0000144		DEC 100	
02723	0000012	EXN10	DEC 10.	
02724	0000001	EXN1	DEC 1	
02725	3777777	MIN	DEC -1	
02726	0000000	ZERO	DEC 0	
02727	0000040	EX32	DEC 32	
	30055	D12	EQU E12	
	00011	L12	EQU E13-E12	

PLUS INFINITY

SMALLEST NEGATIVE FLOATING NUMBER

SMALLEST SIGNED FIXED NO.

END OF OUTPUT BUFFER

USED IN INCONV

FUDGE FOR SCREWED UP DEC PSEUDO

52150
52160
52170
52180
52190
52200
52210
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52230
52240

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RUN-TIME GARBAGE CONSTANTS

000113

	30066	D13	EQU E13
	00017	L13	EQU E14-E13
02730	0000074	SIXTY	DEC 60
			NAM

RUN TIME LOWER MEMORY CONSTANTS

52680
52690
52700
52710

			EJT
			REM
02732	0027727	MSTAB	DEC ER0
02733	3777774		DEC ER0-ER1
02734	0027733		DEC ER1
02735	3777765		DEC ER1-ER2
02736	0027746		DEC ER2
02737	3777770		DEC ER2-ER3
02740	0027756		DEC ER3
02741	3777774		DEC ER3-ER4
02742	0027762		DEC ER4
02743	3777763		DEC ER4-ER5
02744	0027777		DEC ER5
02745	3777771		DEC ER5-ER6
02746	0030006		DEC ER6
02747	3777772		DEC ER6-ER7
02750	0030014		DEC ER7
02751	3777772		DEC ER7-ER8
02752	0030022		DEC ER8
02753	3777775		DEC ER8-ER9
02754	0030025		DEC ER9
02755	3777774		DEC ER9-ER10
02756	0030031		DEC ER10
02757	3777767		DEC -9
02760	0030042		DEC ER11
02761	3777765		DEC -11
02762	0030055		DEC D12
02763	3777767		DEC -L12
02764	0030066		DEC D13
02765	3777761		DEC -L13
			REM
02766	3777777	/2105	DDC -1
02767	3777777		
	02707	/2107	EQU MEXP
02770	0003777	/2109	OCT 0003777
	02726	/2111	EQU ZERO
			REM
02772	0007110	/2203	FDC 1.570796
02773	0773250		3267981
	01402	/2209	EQU FZERO
	02707	/2212	EQU MEXP
	02766	/2216	EQU /2105
02774	1400000	/2218	OCT 1400000
	01400	/2224	EQU FONE
	02656	/2225	EQU FMONE
02776	0400000	/2227	OCT 0400000
02777	0000000		OCT 0000000
03000	0000023	/2232	DDC .0001514
03001	1553672		841982
03002	3776633		DDC -.004673
03003	2631634		7655782
03004	0024315		DDC .0796896
03005	0127545		792682
03006	3532504		DDC -.645963

MSTAB IS DESCRIBED IN RMSS

SQUARE ROOT CONSTANTS

SIN/COS CONSTANTS

52720
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52990
53000
53010
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BAS53050
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53070
BAS53080
BAS53090
53100
53110
53120
BAS53130
53140
53150
BAS53160
BAS53170
BAS53180
BAS53190
53200
BAS53210
53220
BAS53230
53240

RUN TIME LOWER MEMORY CONSTANTS

000115

03007	2372252		71106B2
03010	0622077	DDC	1.570796
03011	0651010		3184782
03012	0000036	/2235	DEC 30
			REM
	01402	/2311	EQU EXC+2
	02707	/2304	EQU MEXP
03013	0000035	/2313	DEC 29
	02776	/2318	EQU /2227
		/2324	DDC -.004054
03014	3776754		05882
03015	3201430		.0218612
03016	0005461	DDC	28882
03017	0624353	DDC	-.055909
03020	3761537		886182
03021	3436073	DDC	.0964200
03022	0030535		44182
03023	1737201	DDC	-.139085
03024	3734311		335182
03025	3472247	DDC	.1994653
03026	0063040		59932
03027	0513327	DDC	-.333298
03030	3652531		560582
03031	3620356	DDC	.9999993
03032	0377777		32982
03033	1646355	/2326	DDC .7853981
03034	0311037		63482
03035	1325042	/2315	DDC 1.570796
03036	1444176		3267981
03037	1524207		REM
		/6121	DEC -25
03040	3777747	/6136	DEC 8
03041	0000010	/6113	FDC 1.442695
03042	0006705		041B1
03043	0507312		FDC 3.321928
03044	0013244		094B2
03045	1517022	/6118	FDC 282
03046	0012000		
03047	0000000	/6111	OCT 0012557
03050	0012557		OCT 1412425
03051	1412425	/6149	DDC 101890E-
03052	0000000		10
03053	0066516		OCT 0
03054	0000000		OCT 1305363
03055	1305363		DDC 15252780
03056	0000007		E-10
03057	1774566	DDC	1540353B
03060	0000120		0E-10
03061	1411044	DDC	13333558
03062	0001273		80E-10
03063	0077743	DDC	96181291
03064	0011662		80E-10
03065	1255573	DDC	55504108
03066	0070654		780E-10
03067	0215352		

ARCTAN CONSTANTS
DOUBLE LENGTH ZERO

EXP CONSTANTS

BAS53250
53260
BAS53270
53280
53290
53300
53310
BAS53320
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BAS53340
BAS53350
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BAS53370
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BAS53390
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BAS53470
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53770

RUN TIME LOWER MEMORY CONSTANTS

000116

03070	0365773	DDC	24022650
03071	1577714		7080E-10
03072	1305620	DDC	69314718
03073	1376777		0690E-10
	01402	/6104	EQU FZERO
	02724	/6141	EQU EXN1
03074	1000000	/6152	OCT 1000000
		REM	
03075	3777745	/5123	DEC -27
03076	1305620	/5117	DDC .6931471
03077	1376777		80690
03100	0512577	/5146	DDC 1.291991
03101	1630665		41982
03102	3527027	/5147	DDC -2.63990
03103	2725751		90984
03104	3127672	/5145	DDC -1.65677
03105	3337161		8579882
03106	3600000	/5148	DDC -0.582
03107	2000000		
03110	0552023	/5144	OCT 0552023
03111	1463200		OCT 1463200
03112	0003777	/5113	OCT 0003777
	01400	/5106	EQU FONE
	01402	/5120	EQU FZERO
		REM	
03113	0006025	UNFLTA	OCT 0006025
		REM	
03114	0006000	BDC30	FDC 181
03115	0000000		
03116	0022400		FDC 1084
03117	0000000		
03120	0037100		FDC 1E2B7
03121	0000000		
03122	0072342		FDC 1E4814
03123	0000000		
03124	0156765		FDC 1E8B27
03125	1604000		
03126	0332160		OCT 332160
03127	1571160		OCT 1571160
03130	0656356		OCT 656356
03131	0265552		OCT 265552
03132	1527023		OCT 1527023
03133	1403722		OCT 1403722
03134	0000000	BDC40	DDC 0
03135	0000000		
03136	0464202	BDC42	DEC .3010380
03140	0003146	BDC43	OCT 0003146
03141	0631463		OCT 631463
03142	0603300	BDC44	OCT 603300
03143	0403300	BDC45	OCT 403300
03144	0000012	BDC46	OCT 12
03145	0006000	BDC47	OCT 6000
03146	0002000	BDC48	OCT 2000
03147	0006060	BDC49	OCT 6060

CONSTANTS FOR LOG

YUNF CONSTANTS

BDC4 CONSTANTS

53780
53790
53800
53810
53820
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53840
53850
53860
53870
53880
53890
53900
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53970
53980
53990
54000
54010
54020
54030
BAS54040
BAS54050
BAS54060
BAS54070
BAS54080
BAS54090
BAS54100
BAS54110
BAS54120
BAS54130
BAS54140
BAS54150
BAS54160
BAS54170
BAS54180
BAS54190
BAS54200
BAS54210
BAS54220
BAS54230
BAS54240

RUN TIME LOWER MEMORY CONSTANTS

000117

03150	2511000	BDC50	SRD 0
03151	0014000	BDC54	OCT 0014000
03152	3777776	BDC55	OCT 3777776
03154	0000000	BDC56	OCT 0000000
03155	0002536		OCT 0002536
03156	0146314	BDC57	OCT 0146314
03157	1463150		OCT 1463150
03160	0301744	RNDK	OCT 0301744
03161	0003661		OCT 0003661
		NAM	

.K TIMES 10 TO -8

.1+1 IN LAST PLACE

CONSTANT FOR RND

COMPILE TIME CONSTANTS

BAS54250
BAS54260
BAS54270
BAS54280
BAS54290
BAS54300
BAS54310
54320
54330
54340

COMPILE TIME CONSTANTS

000118

03162	0000000	S	DEC	0	CHARACTER	DEPTH IN TABLE	54350
03163	0000001	N1	DEC 1	1	0	0	TEA54360
03164	0000002	TWO	DEC 2	2	1	1	TEA54370
03165	0000003	N3	DEC 3	3	2	2	TEA54380
03166	0000004	N4	DEC 4	4	3	3	TEA54390
03167	0000005	N5	DEC 5	5	4	4	TEA54400
03170	0000006	N6	DEC 6	6	5	5	TEA54410
03171	0000007	N7	DEC 7	7	6	6	TEA54420
03172	0000010	N8	DEC 8	8	7	7	TEA54430
03173	0000011	N9	DEC 9	9	8	8	54440
03174	3777754		DEC -20	/	9	9	TEA54450
03175	3777763		DEC -13	COLON	10	10	54460
03176	3777766		DEC -10	QUOTE	11	11	TEA54470
03177	3777754		DEC -20	SEMI COLON	12	12	TEA54480
03200	3777767		DEC -9	EQUAL	13	13	TEA54490
03201	3777754		DEC -20	REVERSE SLASH	14	14	TEA54500
03202	3777777		DEC -1	+	15	15	TEA54510
03203	0000012	TEN	DEC 10	A	16	16	TEA54520
03204	0000013	N11	DEC 11	B	17	17	TEA54530
03205	0000014	N12	DEC 12	C	18	18	TEA54540
03206	0000015	N13	DEC 13	D	19	19	TEA54550
03207	0000016	N14	DEC 14	E	20	20	54650
03210	0000017	N15	DEC 15	F	21	21	TEA54660
03211	0000020	N16	DEC 16	G	22	22	TEA54670
03212	0000021	N17	DEC 17	H	23	23	TEA54680
03213	0000022	N18	DEC 18	I	24	24	TEA54690
03214	3777754		DEC -20	NOT USED	25	25	TEA54700
03215	3777765		DEC -11	.	26	26	TEA54710
03216	3777764		DEC -12	NOT USED	27	27	TEA54720
03217	3777754		DEC -20	NOT USED	28	28	TEA54730
03220	3777754		DEC -20	LESS THAN	29	29	TEA54740
03221	3777770		DEC -8	CR	30	30	TEA54750
03222	3777776		DEC -2	-	31	31	TEA54760
03223	0000023	N19	DEC 19	J	32	32	TEA54770
03224	0000024	N20	DEC 20	K	33	33	TEA54780
03225	0000025	N21	DEC 21	L	34	34	TEA54790
03226	0000026	N22	DEC 22	M	35	35	TEA54800
03227	0000027		DEC 23	N	36	36	TEA54810
03230	0000030	N24	DEC 24	O	37	37	54820
03231	0000031	N25	DEC 25	P	38	38	54830
03232	0000032	N26	DEC 26	Q	39	39	TEA54840
03233	0000033		DEC 27	R	40	40	TEA54850
03234	3777754		DEC -20	NOT USED	41	41	54860
03235	0000044		DEC 36	\$	42	42	TEA54870
					43	43	54880

 S TABLE IS USED IN THE COMPILATION
 OF ARITHMETIC EXPRESSIONS AND FOR THE
 ASSIGNMENT OF STORAGE TO VARIABLES.
 IN PARTICULAR IT IS USED IN THE VAR
 AND ARITH SUBROUTINES

COMPILE TIME CONSTANTS

000119

03236	3777775		DEC -3	*	44	TEA54890
03237	3777754		DEC -20	NOT USED	45	TEA54900
03240	3777754		DEC -20	GREATER THAN	46	TEA54910
03241	3777773		DEC -5	UP ARROW	47	54920
03242	3777754		DEC -20	NOT USED	48	TEA54930
03243	3777774		DEC -4	/	49	TEA54940
03244	0000034	N28	DEC 28	S	50	TEA54950
03245	0000035		DEC 29	T	51	54960
03246	0000036	N30	DEC 30	U	52	TEA54970
03247	0000037	N31	DEC 31	V	53	TEA54980
03250	0000040	N32	DEC 32	W	54	TEA54990
03251	0000041		DEC 33	X	55	55000
03252	0000042		DEC 34	Y	56	55010
03253	0000043		DEC 35	Z	57	55020
03254	3777754		DEC -20	NOT USED	58	TEA55030
03255	3777762		DEC -14	,	59	TEA55040
03256	3777762		DEC -14	NOT USED	60	TEA55050
03257	3777772		DEC -6	% AND SQ BRACK	61	TEA55060
03260	3777771		DEC -7	AND SQ BRACK	62	TEA55070
03261	3777754		DEC -20	NOT USED	63	55080
			REM	END OF TABLE S		TEA55090
			REM	*****		TEA55100
			REM	*****		TEA55110
			REM	*****		TEA55120
			REM	SYMBOL TABLE S2 IS USED IN THE		TEA55130
			REM	CHARACTER TRANSLATION ROUTINE		TEA55140
			REM	NEGATIVE CODES HAVE THE FOLLOWING MEANING--	55150	
			REM	-12 COPY EXACTLY DO NOT DELETE BLANK	TEA55160	
			REM	-31--CR#END OF LINE,BEGIN COMPILE	TEA55170	
			REM	-45 EOM IF ENCOUNTERED THEN NO END	TEA55180	
			REM	-63 AND -48 DELETED FROM LINE	TEA55190	
			REM	CHARACTERS WITH POSITIVE CODES ARE CON-	TEA55200	
			REM	VERTED DIRECTLY TO THAT CODE	TEA55210	
			REM		55220	
			REM	CHARACTER	TEA55230	
03262	0000000	S2	DEC 0	0	TEA55240	
03263	0000001		DEC 1	1	TEA55250	
03264	0000002		DEC 2	2	TEA55260	
03265	0000003		DEC 3	3	TEA55270	
03266	0000004		DEC 4	4	TEA55280	
03267	0000005		DEC 5	5	TEA55290	
03270	0000006		DEC 6	6	TEA55300	
03271	0000007		DEC 7	7	TEA55310	
03272	0000010		DEC 8	8	TEA55320	
03273	0000011		DEC 9	9	TEA55330	
03274	0000012		DEC 10	/	TEA55340	
03275	0000013		DEC 11	COLON	TEA55350	
03276	0000075		DEC 61	LEFT PAREN	55360	
03277	0000015		DEC 13	SEMICOLON	TEA55370	
03300	0000016		DEC 14	EQUAL	TEA55380	
03301	0000017		DEC 15	REVERSE SLASH	TEA55390	
03302	0000020		DEC 16	+	TEA55400	
03303	0000021		DEC 17	A	TEA55410	
03304	0000022		DEC 18	B	TEA55420	

COMPILE TIME CONSTANTS

000120

03305	0000023	DEC 19	C	TEA55430
03306	0000024	DEC 20	D	TEA55440
03307	0000025	DEC 21	E	TEA55450
03310	0000026	DEC 22	F	TEA55460
03311	0000027	DEC 23	G	TEA55470
03312	0000030	DEC 24	H	TEA55480
03313	0000031	DEC 25	I	TEA55490
03314	3777701	DEC -63	BELL--NEVER INPUT	TEA55500
03315	0000033	DEC 27	.	TEA55510
03316	3777764	DEC -12	QUOTE	TEA55520
03317	3777701	DEC -63	QUESTION MARK	55530
03320	0000036	DEC 30	LESS THAN	TEA55540
03321	3777741	DEC -31	CR	TEA55550
03322	0000040	DEC 32	-	TEA55560
03323	0000041	DEC 33	J	TEA55570
03324	0000042	DEC 34	K	TEA55580
03325	0000043	DEC 35	L	TEA55590
03326	0000044	DEC 36	M	TEA55600
03327	0000045	DEC 37	N	TEA55610
03330	0000046	DEC 38	O	TEA55620
03331	0000047	DEC 39	P	TEA55630
03332	0000050	DEC 40	Q	TEA55640
03333	0000051	DEC 41	R	TEA55650
03334	3777720	DEC -48	TAB	TEA55660
03335	0000053	DEC 43	\$	55670
03336	0000054	DEC 44	*	55680
03337	3777723	DEC -45	EOM	TEA55690
03340	0000056	DEC 46	GREATER THAN	TEA55700
03341	0000057	DEC 47	UP ARROW	55710
03342	3777720	DEC -48	SPACE	TEA55720
03343	0000061	DEC 49	/	TEA55730
03344	0000062	DEC 50	S	TEA55740
03345	0000063	DEC 51	T	TEA55750
03346	0000064	DEC 52	U	TEA55760
03347	0000065	DEC 53	V	TEA55770
03350	0000066	DEC 54	W	TEA55780
03351	0000067	DEC 55	X	TEA55790
03352	0000070	DEC 56	Y	TEA55800
03353	0000071	DEC 57	Z	TEA55810
03354	3777701	DEC -63	LINE FEED--NEVER INPUT	TEA55820
03355	0000073	DEC 59	,	TEA55830
03356	0000076	DEC 62	RIGHT PAREN	55840
03357	0000075	DEC 61	LEFT BRACKET	TEA55850
03360	0000076	DEC 62	RIGHT BRACKET	TEA55860
03361	3777701	DEC -63	FILL	TEA55870
		REM	END OF TABLE S2	55880
		REM	*****	55890
03362	0000000	DEC 0		55900
03363	0000000	DEC 0		55910
03364	0000000	DEC 0		55920
03365	0000000	DEC 0		55930
03366	0000000	DEC 0		55940
03367	0000000	DEC 0		55950
03370	0000000	DEC 0		55960

COMPILE TIME CONSTANTS

000121

03371	0000000	DEC 0	55970
03372	0000000	DEC 0	55980
03373	0000000	DEC 0	55990
03374	0000000	DEC 0	56000
03375	0000000	DEC 0	56010
03376	3777777	DEC -1	56020
03377	3777777	DEC -1	56030
03400	3777777	DEC -1	56040
03401	0000000	DEC 0	56050
03402	0000000	DEC 0	56060
03403	0000000	DEC 0	56070
03404	0000000	DEC 0	56080
03405	0000000	DEC 0	56090
03406	0000000	DEC 0	56100
03407	0000000	DEC 0	56110
03410	0000000	DEC 0	56120
03411	0000000	DEC 0	56130
03412	0000000	DEC 0	56140
03413	0000000	DEC 0	56150
03414	0000000	DEC 0	56160
03415	0000000	DEC 0	56170
03416	0000000	DEC 0	56180
03417	0000000	DEC 0	56190
03420	3777777	DEC -1	56200
03421	3777777	DEC -1	56210
03422	0000000	DEC 0	56220
03423	0000000	DEC 0	56230
03424	0000000	DEC 0	56240
03425	0000000	DEC 0	56250
03426	0000000	DEC 0	56260
03427	0000000	DEC 0	56270
03430	0000000	DEC 0	56280
03431	0000000	DEC 0	56290
03432	0000000	DEC 0	56300
03433	0000000	DEC 0	56310
03434	0000000	DEC 0	56320
03435	0000000	DEC 0	56330
03436	0000000	DEC 0	56340
03437	0000000	DEC 0	56350
03440	3777777	DEC -1	56360
03441	0000000	DEC 0	56370
03442	0000000	DEC 0	56380
03443	0000000	DEC 0	56390
03444	0000004	DEC +4	56400
03445	0000005	DEC +5	56410
03446	0000000	DEC 0	56420
03447	0000000	DEC 0	56430
03450	0000000	DEC 0	56440
03451	0000000	DEC 0	56450
03452	0000000	DEC 0	56460
03453	0000000	DEC 0	56470
03454	0000000	DEC 0	56480
03455	0000003	DEC +3	56490
03456	0000000	DEC 0	56500

COMPILE TIME CONSTANTS

000122

03457	0000001	DEC +1		56510
03460	0000002	DEC +2		56520
03461	0000000	DEC 0		56530
		REM		56540
03462	0000074	N60 DEC 60		56550
	00000	U EQU 0		56560
03463	0017326	VARLOC DEC VARTAB		56570
03464	0007724	PLOC LDA P		BAS56580
03465	0006750	GLOC LDA G		BAS56590
03466	0005634	IRLOC LDA EXIR		BAS56600
03467	0006522	LLLOC LDA EXL		BAS56610
	03464	VLAST EQU PLOC		56620
03470	3777700	M3 OCT 3777700		BAS56630
03471	1000000	ZDLD DLD 0		BAS56640
03472	3500000	ZFMP FMP 0		BAS56650
03473	3600000	ZFDV FDV 0		BAS56660
03474	3777000	MAR OCT 3777000		BAS56670
03475	0007636	DIMLOC LDA DIMX		BAS56680
03476	0006004	EXULOC LDA EXU		BAS56690
03477	0007602	FNTLOC LDA FNT		56700
03500	0022400	FLTW OCT 0022400		BAS56710
03501	0000000	OCT 0000000		BAS56720
03502	0037100	OCT 0037100		BAS56730
03503	0000000	OCT 0000000		BAS56740
03504	0072342	OCT 0072342		BAS56750
03505	0000000	OCT 0000000		BAS56760
03506	0156765	OCT 0156765		BAS56770
03507	1604000	OCT 1604000		BAS56780
03510	0302160	FDC 1E16R54		BAS56790
03511	1571157			
03512	0656356	FDC 1E32B107		BAS56800
03513	0265552			
03514	1527023	FDC 1E64B213		BAS56810
03515	1403722			
03516	3047200	READZ2 FLD D 2		BAS56820
03517	1440002	READZ3 INX 2 2		BAS56830
03520	0722644	READZ SPB YTST 1		BAS56840
03522	0004760	FLTM LDA FLTA		56850
03523	3777761	DEC -15		56860
03524	0000001	FLTY DEC 1		BAS56870
03525	0146314	DEC 1E-180		BAS56880
03526	0012172	DEC 1E-280		BAS56890
03527	0001014	DEC 1E-380		BAS56900
03530	0000064	DEC 1E-480		BAS56910
03531	0000005	DEC 1E-580		BAS56920
03532	0000000	DEC 0		56930
03533	0000000	DEC 0		56940
03534	3206004	ZAR FSD EXU		BAS56950
03535	3001402	FLD EXC+2		BAS56960
03536	3306004	FST EXU		BAS56970
03537	3100002	MAQ A		BAS56980
03540	0722622	SPB EXP 1		BAS56990
03541	0722515	SPB LOG 1		BAS57000
03542	0722075	SPB MAT10 1		BAS57010

*****END OF TRANSLATION TABLES*****

JUST TO KEEP FROM REWRITING ALL REF

COMPILE TIME CONSTANTS

000123

	03543	0722102	SPR MAT11	1		BAS57020
	03544	0722104	SPR MAT12	1		BAS57030
	03545	0722111	SPR MAT13	1		BAS57040
	03546	1307122	DST MATB			57050
	03547	3307120	FST MATA			57060
	03550	3307124	FST MATC			57070
	03551	3307122	FST MATB			57080
	03552	0002510	QABS LDA ABS			BAS57090
	03553	0002503	QATN LDA ATANF			57100
	03554	0002514	QCOS LDA COS			BAS57110
	03555	0002522	QEXP LDA EXP			BAS57120
	03556	0002414	QINT LDA INT			57130
	03557	0002516	QLOG LDA LOG			BAS57140
	03560	0002544	QRND LDA RND			BAS57150
	03561	0002611	QSIN LDA SIN			BAS57160
	03562	0002557	QSQR LDA SQR			BAS57170
	03563	0002572	QTAN LDA TAN			BAS57180
	03564	0721651	ZLAB SPR YLAB	1		BAS57190
	03565	0722633	ZUNF SPR YUNF	1		BAS57200
	03566	0721477	ZTAB SPR YTAB	1		BAS57210
	03567	0721672	ZCRT SPR YCRT	1		BAS57220
	03570	0721564	ZCRTB SPR YCRTB	1		57230
	03571	2600000	ZBRU BRU 0			BAS57240
	03572	0720000	ZSPR1 SPR 0	1		BAS57250
	03573	2620001	ZRET BRU 1	1		BAS57260
A	03574	3000000	ZFLD FLD --			57270
	03575	3006150	ZFLDT FLD TEMP			BAS57280
A	03576	3300000	ZFST FST --			57290
	03577	3306150	ZFSTT FST TEMP			BAS57300
	03600	3306152	ZFSTT2 FST TEMP+2			BAS57310
A	03601	3100000	ZFAD FAD --			57320
A	03602	3200000	ZFSU FSU --			57330
	03603	3206150	ZFSUT FSU TEMP			BAS57340
	03604	3206152	ZFSUT2 FSU TEMP+2			BAS57350
T	03605	2516721	ZBAP BAP BPL			BAS57360
T	03606	2514721	ZBARM BAR BMI			BAS57370
T	03607	2514722	ZBARZ BAR BZE			BAS57380
T	03610	2516722	ZBARN BAR BNZ			57390
	03611	2601406	ZOUT BRU OUTPUT			BAS57400
	03612	0000000	DEC 0			57410
	03613	0700000	ZSPR0 SPR 0	0		BAS57420
	03614	0722063	ZTST SPR TEST	1		57430
	03615	0722065	ZTST2 SPR TEST2	1		57440
	03616	0722216	ZTIM SPR YTIME	1		57450
	03617	3101400	ZFAD1 FAD EXC			57460
	03620	3201400	ZFSU1 FSU EXC			57470
	03621	3500005	ZCQX CQX			57480
	03622	0722227	ZPUSH SPR PUSH	1		57490
	03623	2602244	ZPOP BRU POP			57500
	03624	1727137	ZSTNR STY WAI	1		57510
	03625	0002055	RELOC DEC RETER=2	1	FOR ERROR MESSAGE ROUTINE AT COMP TIME	57520
	03626	2504012	ZNOP NOP			57530
	03627	0722254	POWSPR SPR POWER	1		57540
	03630	0314560	ERIN AL IN			57550

COMPILE TIME CONSTANTS

000124

```

03631 0006060 BL2 ALF 0
03632 0006037 BLCR OCT 0006037
03633 0006000 06000 OCT 6000
03634 0004100 ELOC LDA E
03635 3777770 NM8 DEC -8
03636 3777772 NM6 DEC -6
03637 0721630 ZSHT SPR YSHT 1
03640 0000362 N242 DEC 242
03641 0017774 VINIT OCT 17774
03642 0100000 4BIT Z01 0
03643 0314425 IME ALF IME
03644 2601720 TRPSR BRU TRAP
03645 2601720 BRU TRAP
03646 0017327 VARMOV DEC VARTAB+1
03647 3777330 DEC -296
03650 0007603 FNTMOV DEC FNT+1
03651 3777745 DEC -27
03652 0007637 DIMMOV DEC DIMX+1
03653 3777713 DEC -53
03654 0004721 VCMOV DEC VC+1
03655 3777720 DEC -48
03656 0004101 CLNMOV DEC EX0+1
03657 3776100 DEC E-UX
03660 0004720 MOVDS DEC VC
03661 3777745 DEC -11
03662 3700000 MOP OCT 3700000
03663 2400000 ZMOV MOV 0
                                REM
03664 0476463 PUT ALF PUT
03665 0721701 ZINCL SPR INCALL 1
03666 0722641 ZINCON SPR INCON 1
03667 0721707 ZINDN SPR INDONE 1
                                ONE EQU N1
                                N2 EQU TWO
                                EXN2 EQU N2
                                EXN3 EQU N3
                                EXN5 EQU N5
                                EXN6 EQU N6
                                EXN7 EQU N7
                                EXN11 EQU N11
                                EXN22 EQU N22
                                EXN30 EQU N30
                                EXN31 EQU N31
                                YCRT4 EQU EXN31
                                YCRT5 EQU FILL
                                BLANKS EQU BL32
                                OFLNUM EQU N8
                                UFLNUM EQU N9
                                DVDNUM EQU N7
                                NAM

```

FIRST AVAILABLE LOCATION FOR VARIABLES

CLEAN UP 6K AREA FOR DEBUGGING

COMPILE TIME CONSTANTS NEEDED FOR INPUT

WORKING STORAGE FOR RUN TIME ROUTINES

57560
57570
57580
57590
57600
57610
57620
57630
57640
57650
57660
57670
57680
57690
57700
57710
57720
57730
57740
57750
57760
57770
57780
57790
57800
57810
57820
57830
57840
57850
57860
57870
57880
57890
57900
57910
57920
57930
57940
57950
57960
57970
57980
57990
58000
58010
58020
58030
58040
58050

WORKING STORAGE FOR RUN TIME ROUTINES

000125

```

EJT
REM
07070 /2302 EQU B
07100 /2303 EQU B+8
07076 /2306 EQU B+6
07077 /2307 EQU B+7
07101 /2308 EQU B+9
07072 /2310 EQU B+2
07074 /2316 EQU B+4
REM
07072 /2102 EQU B+2
07070 /2108 EQU B
07074 /2110 EQU B+4
06212 SQRXR EQU WS+12
07072 SQT EQU /2102
REM
07070 /2202 EQU B
07072 /2205 EQU B+2
07076 /2207 EQU B+6
07077 /2208 EQU B+7
07100 /2210 EQU B+8
07101 /2211 EQU B+9
07074 /2230 EQU B+4
REM
06215 POWXR EQU WS+15
06220 POWB EQU WS+18
06222 POWA EQU WS+20
06216 BASS EQU WS+16
06217 EXPS EQU WS+17
REM
07070 /6105 EQU B
07072 /6134 EQU B+2
07074 /6109 EQU B+4
07076 /6128 EQU B+6
07102 /6119 EQU B+10
REM
07070 /5138 EQU B
07072 /5112 EQU B+2
07074 /5114 EQU B+4
07076 /5107 EQU B+6
07100 /5152 EQU B+8
07102 /5143 EQU B+10
06230 LOGT EQU WS+26
06212 LOGXR EQU WS+12
07070 LOGARA EQU /5138
REM
06256 ICHK1 EQU WS+48
06255 ICHXR EQU WS+47
REM
06214 YIND EQU WS+14
06227 YINDT EQU WS+25
07140 YODD EQU B+40
REM
REM

```

ARCTAN WORKING STORAGE

SQUARE ROOT WORKING STORAGE

SIN/COS WORKING STORAGE

POWER WORKING STORAGE

MEMORY ALLOCATION FOR EXP

WORKING STORAGE FOR LOG

INTCHK WORKING STORAGE

WORKING STORE FOR YTAB,YCRT,AND YSHT

HOLD NO. OF FILLS OUTPUT AND NOT ACCOUNTED
FOR IN YIND
YLAB WORKING STORAGE

```

58060
58070
58080
58090
58100
58110
58120
58130
58140
58150
58160
58170
58180
58190
58200
58210
58220
58230
58240
58250
58260
58270
58280
58290
58300
58310
58320
58330
58340
58350
58360
58370
58380
58390
58400
58410
58420
58430
58440
58450
58460
58470
58480
58490
58500
58510
58520
58530
58540
58550
58560
58570
58580
58590

```

WORKING STORAGE FOR RUN TIME ROUTINES

000126

07104	YLABXR	EQU B+12
		REM
06224	UNFL1	EQU WS+22
06225	UNFL2	EQU WS+23
06226	UNFL3	EQU WS+24
06240	WORD	EQU WS+34
		REM
07070	INTARQ	EQU B
07072	INTEXD	EQU B+2
07073	INTF	EQU B+3
		REM
06232	BDC61	EQU WS+28
06233	BDC62	EQU WS+29
06234	BDC63	EQU WS+30
06236	BDCARQ	EQU WS+32
		REM
06246	RND1	EQU WS+40
		REM
07116	MAT	EQU B+22
07120	MATA	EQU B+24
07122	MATB	EQU B+26
07124	MATC	EQU B+28
07126	MATT	EQU B+30
07130	MATTA	EQU B+32
07132	MATTB	EQU B+34
		REM
06252	MTEMP	EQU WS+44
06254	MSXR	EQU WS+46
05633	XTEM	EQU EXD+859
		REM
06213	TRPXR	EQU WS+13
06250	TRPST	EQU WS+42
07137	WAI	EQU B+39
		REM
07136	DATAN	EQU B+38
		REM
07141	TREF	EQU B+41
		REM
		NAM

YUNF WORKING STORAGE

INT FUNCTION WORKING STORAGE

BDCA WORKING STORAGE

RND WORKING STORAGE

MAT WORKING STORAGE

RMESS WORKING STORAGE

VERY TEMPORARY INDEX STORAGE

TRAP WORKING STORAGE

CONTAINS LOCATION MINUS ONE OF LAST LINE TO BE EXECUTED

CONSTANT FOR A RUN INDICATING AMOUNT OF DATA AVAILABLE IN DATA AREA

TIME REFERENCE

WS THRU WS+7 NOT USED

COMPILE TIME WORKING STORAGE 6K AREA

58600
58610
58620
58630
58640
58650
58660
58670
58680
58690
58700
58710
58720
58730
58740
58750
58760
58770
58780
58790
58800
58810
58820
58830
58840
58850
58860
58870
58880
58890
58900
58910
58920
58930
58940
58950
58960
58970
58980

```

04720      EJT
04720      ORG VC
04720      APF      BSS 1
04721      ARR      BSS 4
04725      ARUL     BSS 1
04726      ARTP     BSS 6
04734      CTEM     BSS 2
04735      CXTEM    BSS 1
04737      DEFT     BSS 1
04740      ENDL     BSS 1
04741      EXLN     BSS 1
04742      FLTC     BSS 1
04743      FLTD     BSS 1
04744      FLTE     BSS 1
04745      FLTN     BSS 1
04746      FLTR     BSS 4
04752      FLTS     BSS 2
04754      FLTT     BSS 2
04756      FLTX     BSS 2
04760      FLTA     BSS 16
05000      FN       BSS 1
05001      GN       BSS 1
05002      IFT      BSS 1
05003      INSTT    BSS 1
05004      IP       BSS 1
05005      IRS      BSS 1
05006      IRN      BSS 1
05007      NN       BSS 1
05010      READX    BSS 1
05011      STX3     BSS 1
05012      ERMV     BSS 2
05014      ULOC     BSS 1
05015      VART     BSS 5
05022      VAVAIL   BSS 1
05023      SAVLEN   BSS 1
05024      ENDF     BSS 1
07135      ER       EQU B+37
07107      TFLAG    EQU B+15
05042      BEGL     EQU T+10
05016      VAR7     EQU VART+1
00000      XR00     EQU 0
00001      XR01     EQU 1
00002      XR02     EQU 2
00003      XR03     EQU 3
00004      XP10     EQU 4
00006      XP12     EQU 6
00007      XP13     EQU 7
00011      XR21     EQU 11
              REM
              REM
              REM
05000      LOR      EQU 5000
05000      LOAD     EQU +
00000 1005004      DLO LDON1

```

```

COMPILE TIME 6K WORKING STORAGE      58990
FLAG USED BY TRANS FOR LITERAL PRINT 59000
BAS59020
59030
59040
59050
59060
59070
POINTS TO LAST WORD IN L REGION      59080
CONSTANT REGION POINTER (RELATIVE)   59090
59100
59110
59120
COUNT OF CHAR IN FLTA               59130
59140
BAS59150
BAS59160
BAS59170
59180
F-TABLE POINTER                      59190
GO-TABLE POINTER                     59200
59210
TEMPORARY STORAGE FOR INST           59220
SAVES CHARACTER POINTER FOR LIST     59230
SAVES WORD POINTER FOR LIST          59240
59250
59260
FLAG TO SEE IF DATA IS NECESSARY    59270
59280
CONSTANTS FOR MOVING COMP TIME ER MESSAGES 59290
BEGINNING OF SOURCE PROG (ABSOLUTE)  59300
59310
NEXT LOCATION OF AVAILABLE SPACE      59320
59330
59340
59350
TEACH OR REGULAR BASIC               59360
LOCATION OF BEGINNING OF LINE IN SOURCE 59370
BAS59380
59390
59400
59410
59420
59430
59440
59450
59460
THE LOAD ROUTINE IS USED WHEN        59470
PREPARING THE SYSTEM TO BE STORED ON 59480
THE DISK BY THE 235 EXEC.            59490
59500
59510
59520

```

COMPILE TIME WORKING STORAGE 6K AREA

000128

05001	2401400	MOV WORK
05002	2640001	RRU 1
05004	0031400	LDCON1 OCT 31400
05005	3775400	DEC -1280
2605000		END LOAD

2

RETURN TO EXEC TO COMPLETE LOADING

59530
59540
59550
59560
59570