



SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
151			PHAS14	LDPH	VARBL TWO,LOADAD,BEGN14,,,14					MACRO			
			*	PHAZ	LDPH [PHASID],LOADAD,ENTAD[,SKIPFG,SKIP],[NUMBER][,HALT]					GEN			
			*	XFR	PHASZ PROHIBITED IN A MACRO					GEN			
			*							GEN			
			*	LOAD	A BLOCK					GEN			
			*							GEN			
152			)6J004	EQU	110 PHASE ID			0110		GEN			
153			)6K004	EQU	700 LOAD NEXT PHASE			0700		GEN			
154			)6L004	EQU	704 TAPE READ INSTRUCTION			0704		GEN			
155			)6M004	EQU	728 TAPE ERROR HANDLER			0728		GEN			
			*							GEN			
156				ORG	201				0201				
157			PHAS14	EQU	*&1			0201		GEN			
158				LCA	)9J004,)6J004	7	0201	L 252 110		GEN	4	252	110
159				BCE	)6K004,)6K004,1	8	0208	B 700 700 1	Q: LOADING FROM CARDS?	GEN	4	700	700
160				BCE	)6K004,)6L004&4,0	8	0216	B 700 708 0	Q: LOADING FROM AUTOCODER TAPE?	GEN	4	700	708
161				RTW	1,LOADAD	8	0224	L %U1 838 R	READ THE BLOCK	GEN	4	%U1	838
162				BER	)6M004	5	0232	B 728 L	Q: TAPE ERROR?	GEN	4	728	
163				CS	BEGN14,)9R004	7	0237	/ 849 256	ENTER THE BLOCK	GEN	5	849	256
164			)9J004	DCW	@VARBL TWO@	9	0252		PHASE ID	GEN	5		
165				DC	#1	1	0253			GEN	5		
166				DC	@14@	2	0255		PHASE NUMBER	GEN	5		
167			)9R004	DCW	@}@	1	0256			GEN	5		
168				XFR	PHAS14				B 201		5	201	
169			*										
170				ORG	BEGIN3				0838				
171			LOADAD	EQU	*&1			0838	LOAD ADDRESS				
172	*	840	TOPCD9	DCW	#3 TOP OF CODE & X00 - 1 IS BOTTOM OF HASH	3	0840				6		
173	*	845	DIFF	DCW	#5 DIFF = TOPCOR-1 - TOPCD9 IS SIZE OF HASH	5	0845				6		
174	*	848	BNDRY	DCW	#3 TOP OF HASH TABLE	3	0848				6		
175	*	849	BEGN14	MCW	83,X3	7	0849	M 083 099			6	083	099
176		856		BCE	TOOBIG,X1,\$	8	0856	B /65 089 \$			6	1165	089
177		864		SBR	TBLBOT,2&X3	7	0864	H T10 0?2			6	1310	002+3
178		871		MCW	X2,X3	7	0871	M 094 099			7	094	099
179			*										
180			*	CLEAR FROM	BELOW THE BOTTOM TRANSFORMED STATEMENT DOWN								
181			*	TO	FREBOT.								
182			*										
183		878	CLRLP	CS	0&X3	4	0878	/ 0?0			7	000+3	
184		882		SBR	X3	4	0882	H 099			7	099	
185		886		C	X3,KFREE	7	0886	C 099 T13			7	099	1313
186		893		BU	CLRLP	5	0893	B 878 /			7	878	
187			*										
188			*	MOVE	TRANSFORMED STATEMENTS DOWN TO FREBOT								
189			*										
190		898		SBR	X1,FREBOT	7	0898	H 089 N99			7	089	2599
191		905		MN	0&X1	4	0905	D 0 0			7	000+1	
192		909		SAR	X1	4	0909	Q 089			8	089	
193		913	MORE	MCM	0&X2	4	0913	P 0!0			8	000+2	
194		917		SAR	NEXTX2&6	4	0917	Q 939			8	939	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
195		921		MCM	0&X2,1&X1	7		0921	P 0!0 0 1		8	000+2	001+1
196		928		MN		1		0928	D		8		
197		929		SBR	X1	4		0929	H 089		8	089	
198		933	NEXTX2	SBR	X2,0	7		0933	H 094 000		8	094	000
199		940		BCE	MORE,0&X1,	8		0940	B 913 0 0		8	913	000+1
200		948		MN	0&X2	4		0948	D 0!0		9	000+2	
201		952		CW		1		0952	)		9		
202		953		SW	0&X1	4		0953	, 0 0		9	000+1	
203		957		C	X2,TBLBOT	7		0957	C 094 T10		9	094	1310
204		964		BU	MORE NO	5		0964	B 913 /		9	913	
205			*										
206			*		X2 IS NOW AT THE BOTTOM OF THE ARRAY TABLE AND								
207			*		X1 IS AT THE TOP OF THE MOVED-DOWN TRANSFORMED CODE								
208			*										
209	969			CW	0&X2	4		0969	) 0!0		9	000+2	
210	973			CW		1		0973	)		9		
211	974			SBR	TOPCD9,2&X1	7		0974	H 840 0 2		9	840	002+1
212	981			MN	ZONES-32,TOPCD9 99	7		0981	D S75 840		10	1275	840
213	988			MN		1		0988	D		10		
214	989			MCW	TOPCOR,X3	7		0989	M 688 099		10	688	099
215	996			MN	0&X3	4		0996	D 0?0		10	000+3	
216	1 000			SW		1		1000	,		10		
217	1 001			SAR	83 TOPCOR-2	4		1001	Q 083		10	083	
218	1 005			SBR	X3	4		1005	H 099		10	099	
219	1 009	CLRLP2	CS	0&X3	CLEAR THE ARRAY TABLE AND	4		1009	/ 0?0		10	000+3	
220	1 013		SBR	X3	TRANSFORMED CODE AT TOP OF CORE	4		1013	H 099		10	099	
221	1 017		C	X3,TOPCD9	DOWN TO TOP OF CODE & X00 ?	7		1017	C 099 840		11	099	840
222	1 024		BU	CLRLP2	NO, MORE TO DO	5		1024	B  09 /		11	1009	
223			*										
224			*		COMPUTE TOPCD9 (HASH TABLE BASE), DIFF (10 * SIZE OF HASH								
225			*		TABLE) AND BNDRY (TOP OF HASH TABLE)								
226			*										
227	1 029		MCW	KLESS,0&X3		7		1029	M T14 0?0		11	1314	000+3
228	1 036		MCW	83,TOCONV		7		1036	M 083 S73		11	083	1273
229	1 043		B	CONV5	CONVERT TOPCOR-1 TO DECIMAL	4		1043	B /99		11	1199	
230	1 047		MCW	W5,DIFF		7		1047	M T19 845		11	1319	845
231	1 054		MCW	TOPCD9,TOCONV	CONVERT TOPCD9 TO DECIMAL	7		1054	M 840 S73		12	840	1273
232	1 061		B	CONV5		4		1061	B /99		12	1199	
233	1 065		S	W5,DIFF	DIFF = TOPCOR-1 - TOPCD9	7		1065	S T19 845		12	1319	845
234	1 072		A	DIFF-1,W6	DIFF / 10	7		1072	A 844 T25		12	844	1325
235	1 079		A	W6	DIFF / 5	4		1079	A T25		12	1325	
236	1 083		A	DIFF-1,W6	DIFF / 5 + DIFF / 10 = 3 * DIFF / 10	7		1083	A 844 T25		12	844	1325
237	1 090		A	W5,W6	TOPCD9 + DIFF * 0.3	7		1090	A T19 T25		13	1319	1325
238	1 097		MCW	W6-3,X3	(TOPCD9 + DIFF * 0.3) / 1000	7		1097	M T22 099		13	1322	099
239	1 104		A	X3	2 * (TOPCD9 + DIFF * 0.3) / 1000	4		1104	A 099		13	099	
240	1 108		MZ	ZONES-31&X3,W6-2		7		1108	Y SG6 T23		13	1276+3	1323
241	1 115		MZ	ZONES-30&X3,W6	TO MACHINE ADDRESS	7		1115	Y SG7 T25		13	1277+3	1325
242	1 122		MCW	W6,X3		7		1122	M T25 099		13	1325	099
243	1 129		SW	2&X3		4		1129	, 0?2		14	002+3	
244	1 133		MCW	KLESS		4		1133	M T14		14	1314	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
245	1	137		SBR	BNDRY	4		1137	H 848		14	848	
246	1	141		MCW	X1,X2	7		1141	M 089 094		14	089	094
247	1	148		MN	0&X2	4		1148	D 0!0		14	000+2	
248	1	152		SAR	X1	4		1152	Q 089		14	089	
249				*									
250				*	DONE								
251				*									
252	1	156		BSS	SNAPSH,C	5		1156	B 333 C		14	333	
253	1	193		B	LOADNX	4		1161	B 700		14	700	
254				*									
255				*	PROGRAM IS TOO BIG								
256				*									
257	1	197	TOOBIG	CS	332	4		1165	/ 332		15	332	
258	1	201		CS		1		1169	/		15		
259	1	202		CC	1	2		1170	F 1		15		
260	1	204		MCW	ERROR2,270	7		1172	M T61 270		15	1361	270
261	1	211		W		1		1179	2		15		
262	1	212		CC	1	2		1180	F 1		15		
263	1	214		BCE	HALT,CDOVLY,1	8		1182	B /95 700 1		15	1195	700
264	1	222		RWD	1	5		1190	U %U1 R		15	%U1	
265	1	227	HALT	H	HALT	4		1195	. /95		15	1195	
266				*									
267				*	CONVERT TOCONV FROM MACHINE TO DECIMAL								
268				*									
269	1	231	CONV5	SBR	CONVX&3	4		1199	H S68		15	1268	
270	1	235		MN	TOCONV,W5	7		1203	D S73 T19		16	1273	1319
271	1	242		MN		1		1210	D		16		
272	1	243		MN		1		1211	D		16		
273	1	244		MCW		1		1212	M		16		
274	1	245		MZ	TOCONV,ZONES-32	7		1213	Y S73 S75		16	1273	1275
275	1	252		MZ	TOCONV-2,ZONES-33	7		1220	Y S71 S74		16	1271	1274
276	1	259		NOP	ZONES-34	4		1227	N S73		16	1273	
277	1	263		SAR	X3	4		1231	Q 099		16	099	
278	1	267	CONVL	C	4&X3,ZONES-32 LOOK FOR CORRECT ZONES	7		1235	C 0?4 S75		16	004+3	1275
279	1	274		SAR	X3	4		1242	Q 099		17	099	
280	1	278		A	KP1,W5-3 ADD ONE TO THOUSANDS	7		1246	A T62 T16		17	1362	1316
281	1	285		BU	CONVL	5		1253	B S35 /		17	1235	
282	1	290		MZ	KB1,W5-3	7		1258	Y T63 T16		17	1363	1316
283	1	297	CONVX	B	0	4		1265	B 000		17	000	
284				*									
285				*	DATA								
286				*									
287	1	305	TOCONV	DCW	@0J @	5		1273			17		
288	1	339	ZONES	DCW	@9999Z9R9I99ZZRZIZ9RZRRRIR9IZIRIII@	34		1307			18		
289	1	342	TBLBOT	DCW	#3	3		1310			18		
290	1	345	KFREE	DSA	FREBOT	3		1313	N99		19	2599	
291	1	346	KLESS	DCW	@<@	1		1314			19		
292	1	351	W5	DCW	#5	5		1319			19		
293	1	357	W6	DCW	#6	6		1325			19		
294	1	402	ERROR2	DCW	@MESSAGE 2 - OBJECT PROGRAM TOO LARGE@	36		1361			20		

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
295	1	403	KP1	DCW	&1	1		1362			20		
296	1	404	KB1	DCW	#1	1		1363			20		
297	1	405	GMWM	DCW	@}@	1		1364		GMARK	20		
298				XFR	BEGN14				B 849		21	849	
299			CLRME	CLRA	BEGN14, GMWM					MACRO			
			*	CLRA	CLRBOT, CLRTOP [, ORG, GMWMAD]					GEN			
			*							GEN			
			*	CLEAR CORE	AFTER A PHASE USING THE CLRTOP ADDRESS					GEN			
			*							GEN			
300				ORG	201				0201				
			*							GEN			
			*	CLEAR DOWN	TO CLRBOT & X00 THE EASY WAY					GEN			
			*							GEN			
301			CLRME	EQU	*&1			0201					
302			)0J005	CS	GMWM CLEAR FROM CLRTOP	4		0201	/ T64	GEN	22	1364	
303				SBR	)0J005&3	4		0205	H 204	GEN	22	204	
304				SBR	)0L005&6	4		0209	H 250	GEN	22	250	
305				C	)0J005&3,)0M005 DOWN TO CLRBOT & X00?	7		0213	C 204 261	GEN	22	204	261
306				BU	)0J005	5		0220	B 201 /	GEN	22	201	
			*							GEN			
			*	NOW CLEAR	DOWN TO CLRBOT THE HARD WAY					GEN			
			*							GEN			
307			)0K005	C	)0L005&6,)0N005	7		0225	C 250 264	GEN	22	250	264
308				BU	)0L005	5		0232	B 244 /	GEN	22	244	
309				CS	LOADNX,)0Q005 LOAD THE NEXT BLOCK AT 1	7		0237	/ 700 271	GEN	23	700	271
310			)0L005	LCA	)0P005,0-0 CLEAR WITH BLANK AND WORD MARK	7		0244	L 265 000	GEN	23	265	000
311				SBR	)0L005&6	4		0251	H 250	GEN	23	250	
312				B	)0K005	4		0255	B 225	GEN	23	225	
313			)0M005	DSA	)0R005 CLRBOT & X00 - 1	3		0261	899	GEN	23	899	
314			)0N005	DSA	BEGN14 CLRBOT	3		0264	849	GEN	23	849	
315			)0P005	DCW	#1	1		0265		GEN	23		
316				DC	@CLRA @ IDENTIFY IN A DECK, TAPE, OR DUMP	5		0270		GEN	23		
317			)0Q005	DCW	@}@	1		0271		GEN	23		
318				ORG	BEGN14&X00				0900				
319			)0R005	EQU	* CLRBOT & X00 - 1			0899		GEN			
320				XFR	CLRME				B 201		24	201	

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
)0J005	0201: 0	)0K005	0225: 0	)0L005	0244: 0	)0M005	0261: 0	)0N005	0264: 0	)0P005	0265: 0
)0Q005	0271: 0	)0R005	0899: 0	)6J004	0110: 0	)6K004	0700: 0	)6L004	0704: 0	)6M004	0728: 0
)9J004	0252: 0	)9R004	0256: 0	BEGIN3	0838: 0	BEGN14	0849: 0	BNDRY	0848: 0	CDOVLY	0700: 0
CLRLP	0878: 0	CLRLP2	1009: 0	CLRME	0201: 0	CONV5	1199: 0	CONVL	1235: 0	CONVX	1265: 0
DIFF	0845: 0	ERROR2	1361: 0	FREBOT	2599: 0	GMWM	1364: 0	HALT	1195: 0	KB1	1363: 0
KFREE	1313: 0	KLESS	1314: 0	KP1	1362: 0	LOADAD	0838: 0	LOADNX	0700: 0	MORE	0913: 0
NEXTX2	0933: 0	PHAS14	0201: 0	PHASLD	0381: 0	SNAPEX	0564: 0	SNAPSH	0333: 0	TBLBOT	1310: 0
TOCONV	1273: 0	TOOBIG	1165: 0	TOP3	2600: 0	TOPCD9	0840: 0	TOPCOR	0688: 0	TPERR	0728: 0
TPREAD	0704: 0	W5	1319: 0	W6	1325: 0	X1	0089: 0	X2	0094: 0	X3	0099: 0
ZONES	1307: 0										

## UNREFERENCED SYMBOLS

PHASLD SNAPEX TOP3 TPERR TPREAD