

LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT

ASM H V 05 18.45 09/03/76

				1		PRINT	OFF	SUPPRESS LISTING OF MACROS	0.04
				1036		PRINT	ON, GEN, NODATA		0.044
				1037		GBLA	&@ (256)		0.046
				1038	*DEFINITIONS				1.

LIFE (FAST VERSION)

(LIFE on ORVYL)

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 18.45 09/03/76
000000				1040	FASTLIFE CSECT	3.
				1041	ASCII , DEFINE ASCII CHARACTER SET	3.002
				1078	*PROGRAM BE EDWARD H. FRANK	4.
				1079	*	5.
				1080	*COPYRIGHT 1976 BY THE AUTHOR AND SLAC	6.
				1081	*	7.
				1082	*MAY NOT BE COPIED BY ANY MEANS WITHOUT THE PERMISSION OF	8.
				1083	* THE AUTHOR	9.
				1084	*DEFINITIONS	10.
				1085	*INCLUDE #VGTDEFNS USER VGT GRO CG ON CAT	11.
				1086	*****	11.001
				1087	*	11.002
				1088	THE VGT - VIDEO GRAPHICS TERMINAL	11.003
				1089	*	11.004
				1090	**** HARDWARE DEFINITIONS ****	11.005
				1091	*	11.006
				1092	*	11.007
				1093	*****	11.008
				1094	* UPDATE LIST 23 MAY 76 LJS	11.009
				1095	* 3 AUG 76 MRD	11.01
				1096	* 5 AUG 76 LJS	11.011
				1097	* 30 AUG 76 EHF (ADDED MODESET2)	11.012
				1098	*	11.013
				1099	MEMORY MAP	11.014
				1100	*	11.015
00400				1101	K EQU 1024	11.016
00000				1103	ROM EQU 0*K	11.017
02000				1105	CPURAM EQU 8*K	11.018
00400				1107	CPURAMSZ EQU 1*K	11.019
02800				1109	CHGENROM EQU 10*K	11.02
03000				1111	CHGENRAM EQU 12*K	11.021
04000				1113	RAM EQU 16*K	11.022
04400				1115	WRAPADDR EQU 17*K	11.023
				1117	*	11.024
				1118	*	11.025
				1119	I/O	11.026
				1120	*	11.027
				1121	*	11.028
				1122	*	11.029
				1123	INPUT PORTS	11.03
				1124	*	11.031
00084				1125	KEYBOARD EQU X'84' (PORT)	11.032
00085				1127	STATBITS EQU X'85' (PORT)	11.033
00010				1129	KBNEWCHR EQU X'10'	11.034
00008				1131	FRAMECNT EQU X'08'	11.035
00004				1133	FRAMEINT EQU X'04'	11.036
00002				1135	KBATTN EQU X'02'	11.037
00001				1137	KBRPT EQU X'01'	11.038
00041				1139	URTSTAT EQU X'41' (PORT)	11.039
00001				1141	URTTXRDY EQU X'01'	11.04
00002				1143	URTRXRDY EQU X'02'	11.041
00038				1145	URTFERR EQU B'00111000'	11.042
00020				1147	URTTREVBK EQU B'00100000'	11.043
00001				1149	URTRCV EQU X'01' (PORT)	11.044
00086				1151	ATODVAL EQU X'86' (PORT)	11.045

00087 1153 PARIN EQU X'87' (PORT)
00001 1155 PRTREADY EQU X'01'
00083 1157 SCRWHEEL EQU X'83' (PORT)

PARALLEL DATA INPUT
VERSATEC PRINTER READY BIT
SCROLLING WHEEL POSITION

11.046
11.047
11.048

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 18.45 09/03/76
				1160 *		11.05
				1161 *	OUTPUT PORTS	11.051
				1162 *		11.052
00082	1163	RSFRMINT	EQU	X'82'	(PORT) RESET FRAME INTERRUPT	11.053
00083	1165	RSURTINT	EQU	X'83'	(PORT) RESET USART INTERRUPT	11.054
00084	1167	DISADDRH	EQU	X'84'	(PORT) HIGH-ORDER DISPLAY ADDRESS	11.055
00085	1169	DISADDRL	EQU	X'85'	(PORT) LOW-ORDER DISPLAY ADDRESS	11.056
00086	1171	BELL	EQU	X'86'	(PORT) BEEPER	11.057
00087	1173	CHLINE1	EQU	X'87'	(PORT) 1ST LINE OF ROW 1 TO DISPLAY	11.058
00080	1175	MODESET	EQU	X'80'	(PORT) CONTROL BITS:	11.059
00080	1177	REVRSVID	EQU	X'80'	REVERSE VIDEO CONTROL	11.06
00040	1179	SCRNBLNK	EQU	X'40'	SCREEN BLANKING CONTROL	11.061
00020	1181	NOROMCHR	EQU	X'20'	NO ROM CHARS (RAM ONLY) IN TEXT MODE	11.062
0000C	1183	URTCLOCK	EQU	X'0C'	USART EXTERNAL/INTERNAL CLOCK CONTRL	11.063
00010	1185	GRAPHMD	EQU	X'10'	GRAPH MODE	11.064
00002	1187	QUICKMD	EQU	X'02'	QUICK MODE FOR RAM ACCESS	11.065
00001	1189	SIXTNMD	EQU	X'01'	16 RASTERS/ROW MODE	11.066
000A6	1191	MODESET2	EQU	X'A6'	(PORT) MORE MODEBITS	11.067
00080	1193	HIGHWRAP	EQU	X'80'	WRAP TO X'7600'	11.068
00040	1195	ATODSTRT	EQU	X'40'	START A/D CONVERSION (20 USEC.)	11.069
00041	1197	URTCTL	EQU	X'41'	(PORT) USART CONTROL BITS:	11.07
00057	1199	URTINTRS	EQU	B'01010111'	INTERNAL RESET (TO SET MODE)	11.071
0007A	1201	URTMODE	EQU	B'01111010'	ASYNCR, EVEN PARITY, 7BITS, 16XCLK	11.072
00079	1203	URTX1MD	EQU	B'01111001'	ASYNCR, EVEN PARITY, 7BITS, 1XCLK<--	11.073
0000F	1205	URTBREAK	EQU	B'00001111'	SEND BREAK	11.074
00007	1207	URTRSERK	EQU	B'00000111'	RESET BREAK	11.075
00017	1209	URTRSERR	EQU	B'00010111'	RESET RCV ERR, RCV ENB, DTR, XMT ENB	11.076
00001	1211	URTXMT	EQU	X'01'	(PORT) USART TRANSMITTED CHARACTER	11.077
0008E	1213	URTSPEED	EQU	X'8E'	(PORT) USART BAUD RATE; 4 BITS RCV, 4 XMIT	11.078
00096	1215	KBRESET	EQU	X'96'	(PORT) RESET KB STROBE FF (IE 'KBNEWCHR')	11.079
0009E	1217	ATODSEL	EQU	X'9E'	(PORT) SELECT ANALOG SOURCE BY 1 OF A3-A0	11.08
000AE	1219	KBCLICK	EQU	X'AE'	(PORT) KEYBOARD CLICK	11.081
00086	1221	PAROUT	EQU	X'86'	(PORT) PARALLEL DATA OUT	11.082
000BE	1223	PARRESET	EQU	X'BE'	(PORT) PARALLEL OUTPUT RESET	11.083
	1225	*INCLUDE			VGTRAMAP USER VGT GRD CG DN CAT	12.
00080	1226	CMDKEY	EQU	X'80'		12.001

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 18.45 09/03/76
1229					*****	12.003
1230	*				HERE ARE THE COROUTINE MACRO DEFINITIONS	12.004
1231					*****	12.005
1232					MACRO	12.006
1233	&L				CCB &STACKSZ=32	12.007
1234					GBLA &CCBLEN	12.008
1235					AIF (K'&L GT 6).ERR LENGTH OF NAME<7	12.009
1236	&L				DS 0X	12.01
1237	&L.SP				DS 2 THIS STACKPTR IS 2 BECAUSE WE DO A	12.011
1238	.*				DOUBLE STORE OF HL TO &L.SP BELOW	12.012
1239	&L.CS				DS 1 POINTER TO CHARACTER SOURCE CCB	12.013
1240	&L.CP				DS 1 POINTER TO CHARACTER PROC. CCB	12.014
1241					DS &STACKSZ HERE IS THE STACK	12.015
1242	&L.ST				DS 0 THE END OF IT	12.016
1243	&CCBLEN				SETA &CCBLEN+&STACKSZ+4 INCREMENT COUNTER	12.017
1244					AIF (&CCBLEN LT 256).OK AND MAKE SURE WE STAY ON ONE PAGE	12.018
1245					MNOTE 8, '***ERROR*** CONTROL BLOCKS EXCEED 255'	12.019
1246	.OK				MEXIT	12.02
1247	.ERR				MNOTE 8, '***ERROR*** COROUTINE NAME TOO LONG'	12.021
1248					MEND	12.022
1250					MACRO	12.024
1251	&LABEL				CCBSET &CCB,&EP=,&CS=,&CP=	12.025
1252					AIF ('&LABEL' EQ '').SKIP	12.026
1253	&LABEL				EQU *	12.027
1254	.SKIP				ANOP	12.028
1255					AIF ('&EP' EQ '').A1	12.029
1256					LODI A,&CCB.ST-6,> SET THE INITIAL ENTRY POINT	12.03
1257					ST A,&CCB.SP PUT IT IN THE STACK POINTER	12.031
1258					LODI HL,&EP SET THE INITIAL ENTRY POINT	12.032
1259					ST HL,&CCB.ST-2	12.033
1260	.A1				AIF ('&CS' EQ '').A2	12.034
1261					LODI A,&CS.SP,>	12.035
1262					ST A,&CCB.CS STORE CHARACTER SOURCE CCB LOCATION	12.036
1263	.A2				AIF ('&CP' EQ '').A3	12.037
1264					LODI A,&CP.SP,>	12.038
1265					ST A,&CCB.CP SIMILARLY FOR CHARACTER PROC.	12.039
1266	.A3				ANOP	12.04
1267					MEND	12.041
1269					MACRO	12.043
1270	&LABEL				RESUME &CURTASK,&NEWTASK	12.044
1271	&LABEL				LODI HL,-6	12.045
1272					ADD HL,SP PREPARE TO STORE BC,DE	12.046
1273					ST HL,&CURTASK.SP	12.047
1274					LODI L,&CURTASK.&NEWTASK,> HL NOW POINTS AT &CCB.CP OR CS	12.048
1275					CALL RESUMER CALL GLOBAL ROUTINE	12.049
1276					MEND	12.05
1278					MACRO	12.052
1279	&LABEL				CALL @ &TASK THIS IS FOR CALL INDIRECTS	12.053
1280	&LABEL				LD HL,&TASK GET THE ROUTINE ADDRESS	12.054
1281					CALL JUMPER AND CALL GLOBAL ROUTINE	12.055
1282					MEND	12.056

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 18.45 09/03/76
				1284	*****	12.058
				1285	*	12.059
				1286	*	12.06
				1287	ASSEMBLY CONSTANTS AND RAM LOCATIONS	12.061
				1288	*****	12.062
				1289	*	12.063
	04400			1290	ITEXT EQU X'4400'	12.064
	00051			1292	LINESIZE EQU 81	12.065
	00025			1294	NLINES EQU 37	12.066
	00BB5			1296	SCRNSIZE EQU LINESIZE*NLINES	12.067
	058F0			1298	GRAPHEVN EQU X'10000'-(512+15+1)*LINESIZE	12.068
	0AA41			1300	GRAPHODD EQU GRAPHEVN+257*LINESIZE	12.069
	0048F			1302	TOPOFF EQU 15*LINESIZE	12.07
	0000D			1304	CHARHITE EQU 13	12.071
	0BC00			1306	ITXTSIZE EQU X'10000'-ITEXT	12.072
	0000E			1308	IWASTED EQU ITXTSIZE-ITXTSIZE/LINESIZE*LINESIZE	12.073
				1310	*	12.074
000000		02000		1311	ORG CPURAM	12.075
				1313	*	12.076
002000				1314	DISPL CCB	12.077
002000				1316	DISPLAY COROUTINE	
002002				1317		
002003				1318		
002004				1319		
		02024		1320		
002024				1321	LOADER CCB	12.078
002024				1323	PATCHING COROUTINE	
002026				1324		
002027				1325		
002028				1326		
		02048		1327		
002048				1328	HEXER CCB	12.079
002048				1330	PROCESSES ADDRESSES	
00204A				1331		
00204B				1332		
00204C				1333		
		0206C		1334		
00206C				1335	GETCHR CCB	12.08
00206C				1337	COROUTINE TO GET NEW CHAR	
00206E				1338		
00206F				1339		
002070				1340		
		02090		1341		
				1342	*	12.081
		00070		1343	ALIGN 0,256,FILL=	12.082
				1345		
002090				1346	CURSLOC DS 2	12.083
002100				1348	CURSX DS 1	12.084
002102				1350	CURSCTR DS 1	12.085
002103				1352	CURSCHAR DS 1	12.086
002104				1354	PREVCHAR DS 1	12.087
002105				1356	*	12.088
				1357	ESCCHAR DS 1	12.089
002106				1359	PRVCCHAR DS 1	12.09
002107				1361	KEYCTR DS 1	12.091
002108					COUNT FOR CHAR REPEAT	

002109		1363 KEYSAVED DS	1	CHAR TO BE REPEATED	12.092
00210A		1365 NXTCHL1 DS	2	ADDR OF NEXT CHL1TAB ENTRY TO USE	12.093
00210C		1367 NXTDISA DS	2	NEXT DISPLAY ADDR TO BE LOADED	12.094
00210E		1369 SAVDISA DS	2	SAVED DISPLAY ADDRESS AT "HOME" TIME	12.095
002110		1371 SCRCTR DS	1	SCROLL COUNTER	12.096
002111		1373 BRKSTATE DS	1	IS BREAK BEING ISSUED	12.097
002112		1375 TIME DS	4	HHMMSSTT, IN DECIMAL	12.098
002116		1377 TIMELOC DS	2	LOCATION OF TIME MSG	12.099
002118		1379 CLRFLG DS	1	MSB=1 FOR CLR NEEDED, LSB FOR BANNER	12.1
		1381 *		X'C0' FOR CLR TO ZERO, NOT BLANK	12.101
002119		1382 FLAGS DS	1	MISCELLANEOUS FLAGS	12.102
	00080	1384 FULLDUPL EQU	X'80'	FULL DUPLEX MODE	12.103
	00001	1386 TABREF EQU	X'01'	HAVE TABS BEEN CLEAR?	12.104
		1388 *			12.105
		1389 * COROUTINE CONTROL BLOCKS...			12.106
		1390 *			12.107
		1391 *			12.108
00211A		1392 SOURCE DS	2	CURRENT CHARACTER SOURCE	12.109
00211C		1394 PATSTAT DS	1	PATCHING STATUS	12.11
	00080	1396 LOUSYPAR EQU	X'80'	PARITY NJ GOOD	12.111
		1398 NOTHEX EQU	X'40'	NONHEX CHAR RECVD	12.112

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 18.45 09/03/76
			00040	1399		
			00020	1400	TYPERR EQU X'20'	BAD PATCH TYPE 12.113
			00010	1402	CKSMERR EQU X'10'	CHECKSUM BAD 12.114
			00008	1404	PATFAIL EQU X'08'	PATCH DID NOT STICK 12.115
			00001	1406	PATCHING EQU X'01'	INDICATES PATCHING BEING DONE 12.116
00211D				1408	PATCKSM DS 1	CHECKSUM 12.117
00211E				1410	PATCNT DS 1	COUNTER 12.118
				1412	*	12.119
00211F				1413	MODEBITS DS 1	CURRENT MODE BITS (SEE "MODESET") 12.12
002120				1415	PUTPTR DS 2	NEXT FREE BUFFER LOCATIN 12.121
002122				1417	GETPTR DS 2	NEXT BUFFERED CHAR TO PRCESS 12.122
002124				1419	LCLMODE DS 1	SEND TO COMPUTER=0,NOT=ANYTHING 12.123
			00004	1421	NORCV EQU X'04'	12.124
			00002	1423	NOSEND EQU X'02'	12.125
			00020	1425	PATFLAG EQU X'20'	12.126
002125				1427	SAVSTK DS 2	12.127
002127				1429	POINTER DS 2	CURRENT CHARACTER TO BE SENT 12.128
002129				1431	HEXADDR DS 2	12.129
00212B				1433	INTROUT DS 2	ADDRESS OF INTERRUPT HANDLER 12.13
00212D				1435	FOOADDR DS 2	HANDLER FOR UNDEF. COMMANDS 12.131
00212F				1437	PREVSCRL DS 1	PREVIOUS SCROLLING POSITION 12.132
				1439	*	TO GETCHAR IF GETBUF IS NOT SOURCE 12.133
002130				1440	CRLFOVR DS 1	12.134
002131				1442	CNTLOMD DS 1	IS COPY OF FLAGS FOR FULLDPLX FAKE 12.135
002132				1444	ALLOWGMD DS 1	0=ALLOW GRAPH MODE, NZ = NO GMODE 12.136
				1446	*	12.137
002133				1447	XMITSTAT DS 1	1 IF XMITBUF IS FULL, 0 OTHERWISE 12.138
002134				1449	XMITTYPE DS 1	12.139
002135				1451	XMITGET DS 2	ADD OF WHERE TO GET CHAR TO SND 12.14
002137				1453	XMITPUT DS 2	ADD OF WHERE TO PUT CHAR IN BUF 12.141
002139				1455	XMITSAV DS 2	SAVED XMIT POINTER 12.142
00213B				1457	CRCNT DS 1	NUMBER OF <CR> IN XMIT BUF 12.143
00213C				1459	DC1CNT DS 1	WHETHER OR NOT DC1 HAS BEEN SENT 12.144
				1461	*	(I.E. CLEAR TO SEND) 12.145
				1462	*	MUST FOLLOW CRCNT 12.146
00213D				1463	SHIFTMD DS 1	WHICH CHAR SET TO USE 12.147
00213F				1465	XMITHAN DS 2	ADD OF XMITING ROUTINE 12.148
002140				1467	HTABTAB DS 10	TABTABLE 12.149
				1469	*****	12.15
				1470	*	12.151
				1471	*	12.152
				1472	*	12.153
				1473	*	12.154
				1474	*****	12.155
00214A				1475	TEKXXX DS 0X	STORGE FOR 5-BIT COORD ADDRESSES 12.156
00214A				1477	TEKXHI DS 1X	(ORDER-DEPENDENT) 12.157
00214B				1479	TEKXLOW DS 1X	12.158
00214C				1481	TEKYHI DS 1X	12.159
00214D				1483	TEKYLOW DS 1X	12.16
				1485	*	12.161
00214E				1486	GRAPHPOS DS 4X	CURRENT BEAM POSITION (10 BIT NOS.) 12.162
				1488	*	12.163
002152				1489	#QUADS DS X	# OF QUADRANTS FOR THE VECTOR 12.164
				1491	*	12.165
002153				1492	VECTEMP DS 5X	TEMP SAVE FOR VECTOR RTN 12.166

002158		1494	GRAPTEM	DS	4X	TEMP SAVE FOR GRAPH RTN	12.167
		1496	*				12.168
00215C		1497	CHARPOS	DS	2X		12.169
00215E		1499	DIREC1	DS	1X		12.17
00215F		1501	DIREC2	DS	1X		12.171
002160		1503	TYPE	DS	1X		12.172
	02102	1505	XOFF	EQU	CURSX		12.173
		1507		DS	1X		12.174
002161		1509	*				12.175
	058F0	1510	EVENADD	EQU	GRAPHEVN		12.176
	0AA41	1512	ODDADD	EQU	GRAPHODD		12.177

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 18.45 09/03/76	
			05151	1514	NEXT	EQU	ODDADD-EVENADD	12.178
002162				1516	EVENODD	DS	1X	12.179
			02800	1518	ROMGEN	EQU	CHGENROM	12.18
				1520	*			12.181
002163				1521	XMASK	DS	1X	12.182
002164				1523	MARGIN	DS	1X	12.183
			02104	1525	GRPOL DC	EQU	CUR SCHAR	12.184
002165				1527	GRPCSET	DS	2X	12.185
002167				1529	TEXT	DS	2	12.186
002169				1531	MTEXT	DS	2	12.187
002168				1533	TEXTTOP	DS	2	12.188
00216D				1535	TEXTBOT	DS	2	12.189
00216F				1537	WASTED	DS	2	12.19
002171				1539	GRPDRAW	DS	3	12.191
				1541	*			12.192
			00008	1542	CURSTIME	EQU	8	12.193
			00014	1544	KEYRPTD	EQU	20	12.194
			00003	1546	KEYRPTR	EQU	3	12.195
			00004	1548	SCROTIME	EQU	4	12.196
			00006	1550	SCRSTIME	EQU	6	12.197
			00030	1552	SCRPTIME	EQU	48	12.198
				1554	*			12.199
			01C00	1555	HELPINFO	EQU	ROM+7*K	12.2
				1557	*			12.201
				1558	*			12.202
			023FF	1559	STACK	EQU	CPURAM+CPURAMSZ-1	12.203
				1561	*			12.204
				1562	*			12.205
002174			04000	1563		ORG	RAM	12.206
004000				1565	XMITBUF	DS	256	12.207
			04100	1567	XMITEND	EQU	*	12.208
				1569	*			12.209
				1570	*			12.21
			04100	1571	BUFFER	EQU	*	12.211
				1573	*			12.212
			04400	1574	BUFEND	EQU	X'4400'	12.213
				1576	*			12.214

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 18.45 09/03/76
1578					MACRO	12.216
1579	&LABEL				CMDEF &CHAR,&ROUTINE	12.217
1580	.*					12.218
1581	.*				DEFINE AN ENTRY IN THE COMMAND DEFINITION TABLE	12.219
1582	.*					12.22
1583					AIF ('&LABEL' EQ '').NOLABEL	12.221
1584	&LABEL				EQU *-2	12.222
1585	.NOLABEL				ANOP	12.223
1586					DC X'&CHAR',AL2(&ROUTINE-VGT)	12.224
1587					MEND	12.225
1589					MACRO	12.227
1590	.*					12.228
1591	.*				MULTIPLY	12.229
1592	.*					12.23
1593	&NAME				MULT &A	12.231
1594	&NAME				DS 0X	12.232
1595					AIF ('&A' NE '80').CHK81	12.233
1596					ADD HL,HL	12.234
1597					ADD HL,HL	12.235
1598					ADD HL,HL *8	12.236
1599					ADD HL,HL *16	12.237
1600					LOD D,H	12.238
1601					LOD E,L SAVE IT	12.239
1602					ADD HL,HL	12.24
1603					ADD HL,HL *64	12.241
1604					ADD HL,DE	12.242
1605					MEXIT	12.243
1606	.CHK81				AIF ('&A' NE '81').ERROR	12.244
1607					LOD DE,HL	12.245
1608					ADD HL,HL	12.246
1609					ADD HL,HL	12.247
1610					ADD HL,HL	12.248
1611					ADD HL,HL	12.249
1612					XCH HL,DE	12.25
1613					ADD HL,DE	12.251
1614					XCH HL,DE	12.252
1615					ADD HL,HL	12.253
1616					ADD HL,HL	12.254
1617					ADD HL,DE	12.255
1618					MEXIT	12.256
1619	.ERROR				MNOTE 12,'NOT MULT BE 80 OR 81'	12.257
1620					MEND	12.258
1622					MACRO	12.26
1623	&LABEL				DSALFINE	12.261
1624	.*				THIS IS A HUMOROUS MACRO WHICH MERELY COJSES A SUBROUTINE	12.262
1625	.*				TO REPEAT ITSELF BEFORE RETURNING.	12.263
1626					AIF ('&LABEL' EQ '').NOLABEL	12.264
1627	&LABEL				EQU *	12.265
1628	.NOLABEL				ANOP	12.266
1629					CALL *+3	12.267
1630					MEND	12.268
004100		02300	1631		ORG X'2300' PLACE FOR 3 LINE BUFFER	13.

002300	00023	1633	PAGE	EQU	(*-FASTLIFE)/256	PAGE WE ARE ON	14.
002351		1635	LINE1	DS	81		15.
0023A2		1637	LINE2	DS	81		16.
		1639	LINE3	DS	81		17.
	0004F	1641	LINELEN	EQU	79	NUMBER OF CHARACTERS WE CARE ABOUT	18.
		1643	*				19.
		1644		MACRO			20.
		1645		NEIGH	®,&N	NEIGHBOR JDATE MACRO	21.
		1646		AIF	('&N' NE '-1').NL		22.
		1647		LOD	L,®	GET REGISTER TO UPDATE	23.
		1648		DEC	L	MOVE TO LEFT	24.
		1649		AGO	.NR	GO DO UPDATE	25.
		1650	.NL	ANOP	,	NEIGHBOR IS TO THE RIGHT	26.
		1651		AIF	('&N' NE '1').MID		27.
		1652		INC	®		28.
		1653	.MID	ANOP			29.
		1654		LOD	L,®	GET UPDATE REGISTER	30.
		1655	.NR	ANOP	,	HERE TO UPDATE THINGS	31.
		1656		INC	M	UPDATE BUFFER.	32.
		1657		MEND		AND THATS ALL	33.
		1658	*				34.
		1659	*				35.
		1660	*				36.
		1661	*				37.
0023F3	02200	1662		ORG	X'2200'	I DON'T NOW WHERE	38.
		1664	*				39.
		1665	*			FIRST WE INITILIZE THINGS	40.
	02200	1666	START	EQU	*	MAIN LIFE LOOP	41.
002200 3E23		1668		LODI	A,35	NUMBER OF LINES ON THE SCREEN	42.
002202 F5		1670		PUSH	FA	SAVE THAT	43.
002203 06F3		1672		LODI	B,3*81	NUMBER OF BYTES TO CLEAR IN BUFFER	44.
002205 110023		1674		LODI	DE,LINE1	WHERE TO START CLEARING	45.
002208 3EFD		1676		LODI	A,-3	THING TO SET THEM TO	46.
00220A 12		1678	CLRLP1	ST	A,(DE)	PUT IT OJT	47.
00220B 13		1680		INC	DE	MOVE TO NEXT ONE	48.
00220C 05		1682		DEC	B	SEE IF DONE	49.
00220D C20A22		1684		JMP	NZ,CLRLP1	NOT DONE --> THEN CONTINUE	50.
		1686	*				51.
		1687	*				52.
002210 2A0C21		1688		LD	HL,NXTDISA	TOP OF PAGE	53.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 18.45 09/03/76
002213	010123			1690		LODI BC,LINE1+1	54.
002216	1E52			1692		LODI E,LINE2+1,>	55.
002218	16A3			1694		LODI D,LINE3+1,>	56.
				1696	*		57.
				1697	*		58.
				1698	*		59.
				1699	*		60.
		0221A		1700	CHECK		NOW THINGS ARE INITIALIZED
00221A	E5			1702	EQU *	MAIN CHECKING LOOP	61.
00221B	D5			1704	PUSH HL	SAVE LINE TO UPDATE	62.
00221C	115100			1706	PUSH DE		63.
00221F	19			1708	LODI DE,LINELEN+2	MOVE TO LINE WE ARE CHECKING	64.
002220	D1			1710	ADD HL,DE		65.
002221	D5			1712	POP DE	GET BACK DE	66.
002222	E5			1714	PUSH DE	SAVE DE	67.
002223	C5			1716	PUSH HL	SAVE NON UPDATED ADDRESS	68.
002224	064F			1718	PUSH BC	SAVE C	69.
002226	3E20			1720	LODI B,LINELEN	NUMBER OF THINGS TO CHECK	70.
		02228		1722	CHKLOOP	LODI A,' '	THING TO COMPARE AGAINST
002228	BE			1724	EQU *	INNER LOOP OF CHECK	72.
002229	23			1726	CMP M	SEE IF ANYTHING IN DISPLAY LOCATION	73.
00222A	CA4A22			1728	INC HL	GO TO NEXT LOCATION	74.
00222D	E5			1730	JMP Z,DEADCELL	NOBODY'S HOME.	75.
00222E	2623			1732	PUSH HL	SAVE DISPLAY LOC	76.
002230	69			1734	LODI H,PAGE	PAGE IN MEMORY LINE BUFFER IS ON	77.
002231	34			1736	NEIGH C,	ABOVE ME	78.
002232	69			1737	NEIGH C,-1	ABOVE LEFT	79.
002233	2D			1739			
002234	34			1740			
002235	0C			1741	NEIGH C,1	ABOVE RIGHT	80.
002236	69			1743			
002237	34			1744			
002238	6B			1745	NEIGH E,-1	MY LEFT	81.
002239	2D			1747			
00223A	34			1748			
00223B	1C			1749	NEIGH E,1	MY RIGHT	82.
00223C	6B			1751			
00223D	34			1752			
00223E	6A			1753	NEIGH D,	BELOW ME	83.
00223F	34			1755			
002240	6A			1756	NEIGH D,-1	BELOW LEFT	84.
002241	2D			1758			
002242	34			1759			
002243	14			1760	NEIGH D,1	BELOW RIGHT	85.
002244	6A			1762			
002245	34			1763			
				1764	*		86.
				1765	*		87.
				1766	*		88.
002246	E1			1767	POP HL	THATS ALL THE UPDATING	89.
002247	C34D22			1769	JMP CHKDONE	GET BACK DISPLAY POSITION	90.
		0224A		1771	DEADCELL	SEE IF DONE WITH THIS ROW.	91.
00224A	0C			1773	EQU *	HERE IF CELL IS DEAD	92.
002248	14			1775	INC C		93.
00224C	1C			1777	INC D		94.
				1779	INC E		95.
				1779	*		

00224D 05
00224E C22822

0224D 1780 *
1781 CHKDONE EQU *
1783 DEC B
1785 JMP NZ,CHKLOOP

HERE TO SEE IF DONE WITH CUR. LINE
DECREASE COUNT
NOT, DONE KEEP ON TRUCKING.

96.
97.
98.
99.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 18.45 09/03/76
				1788 *		101.
				1789 *	NOW WE TAKE TOP LINE OF BUFFER, AND OUPUT UPDATES TO	102.
				1790 *	DISPLAY.	103.
				1791 *		104.
				1792 *		105.
002251	C1			1793	POP BC	106.
002252	E1			1795	POP HL	107.
002253	D1			1797	POP DE	108.
002254	E3			1799	XCH HL,(SP)	109.
002255	D5			1801	PUSH DE	110.
002256	C5			1803	PUSH BC	111.
002257	1E4F			1805	LODI E,LINLEN	112.
002259	0623			1807	LODI B,PAGE	113.
		0225B		1809	NXTGENLP EQU *	114.
00225B	0A			1811	LD A,(BC)	115.
00225C	B7			1813	IDR A	116.
00225D	CA6922			1815	JMP Z,BIRTH	117.
002260	3C			1817	INC A	118.
002261	CA6C22			1819	JMP Z,STABLE	119.
002264	1620			1821	LODI D,' '	120.
002266	C36B22			1823	JMP STNXTGEN	121.
		02269		1825	BIRTH EQU *	122.
002269	167F			1827	LODI D,@DEL	123.
		0226B		1829	STNXTGEN EQU *	124.
00226B	72			1831	LOD M,D	125.
		0226C		1833	STABLE EQU *	126.
00226C	23			1835	INC HL	127.
00226D	0C			1837	INC C	128.
00226E	1D			1839	DEC E	129.
00226F	C25822			1841	JMP NZ,NXTGENLP	130.
002272	C1			1843	POP BC	131.
002273	D1			1845	POP DE	132.
002274	E1			1847	POP HL	133.
002275	F1			1849	POP FA	134.
002276	3D			1851	DEC A	135.
002277	CA0022			1853	JMP Z,START	136.
00227A	F5			1855	PUSH FA	137.
00227B	794B5A57			1857	LOD ACED,CEDA	138.
00227F	E5			1859	PUSH HL	139.
002280	C5			1861	PUSH BC	140.
002281	4A			1863	LOD C,D	141.
002282	2E4F			1865	LODI L,LINLEN	142.
002284	3EFD			1867	LODI A,-3	143.
		02286		1869	CLRLP2 EQU *	144.
002286	02			1871	ST A,(BC)	145.
002287	0C			1873	INC C	146.
002288	2D			1875	DEC L	147.
002289	C28622			1877	JMP NZ,CLRLP2	148.
00228C	C1			1879	POP BC	149.
00228D	E1			1881	POP HL	150.
00228E	C31A22			1883	JMP CHECK	151.
				1885	END	152.002

SYMBOL	LEN	VALUE	DEFN	REFERENCES
@DEL	00001	0000007F	1076	1828 1828
@0277	00001	00000070	1344	1345
BIRTH	00001	00002269	1826	1816 1816 1816
CHECK	00001	0000221A	1701	1884 1884 1884
CHGENROM	00001	00002800	1110	1519
CHKDONE	00001	00002240	1782	1770 1770 1770
CHKLOOP	00001	00002228	1723	1786 1786 1786
CLRLP1	00001	00220A	1679	1685 1685 1685
CLRLP2	00001	00002286	1870	1878 1878 1878
CPURAM	00001	00002000	1106	1312 1560
CPURAMSZ	00001	00000400	1108	1560
CURCHAR	00001	002104	1353	1526
CURSX	00001	002102	1349	1506
DEADCELL	00001	0000224A	1772	1729 1729 1729
EVENADD	00001	000058F0	1511	1515
FASTLIFE	00001	00000000	1040	1312 1344 1344 1564 1632 1534 1553 1675 1675 1675 1685 1685 1685 1689 1689
				1689 1691 1691 1691 1693 1693 1695 1695 1729 1729 1729 1770 1770 1770 1786
				1786 1786 1816 1816 1816 1820 1820 1820 1824 1824 1824 1842 1842 1842 1842 1854
				1854 1854 1878 1878 1878 1884 1884 1884
				1301 1511
GRAPHEVN	00001	000058F0	1299	1301 1511
GRAPHODD	00001	0000AA41	1301	1513
ITEXT	00001	00004400	1291	1307
ITXTSIZE	00001	00008C00	1307	1309 1309
K	00001	00000400	1102	1104 1106 1108 1110 1112 1114 1116 1556
LINELEN	00001	0000004F	1642	1707 1707 1707 1719 1719 1806 1806 1866 1866
LINESIZE	00001	00000051	1293	1297 1299 1301 1303 1309 1309
LINE1	00081	002300	1636	1675 1675 1675 1691 1691 1691
LINE2	00081	002351	1638	1693 1693
LINE3	00081	0023A2	1640	1695 1695
NLINES	00001	00000025	1295	1297
NXTDISA	00002	00210C	1368	1689 1689 1689
NXTGENLP	00001	00002258	1810	1842 1842
ODDADD	00001	0000AA41	1513	1515
PAGE	00001	00000023	1634	1733 1733 1808 1808
RAM	00001	00004000	1114	1564
ROM	00001	00000000	1104	1556
STABLE	00001	0000226C	1834	1820 1820 1820
START	00001	00002200	1667	1854 1854 1854
STNXTGEN	00001	00002268	1830	1824 1824 1824

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NO STATEMENTS FLAGGED IN THIS ASSEMBLY

OVERRIDING PARAMETERS- TERM,LINECOUNT(115)

OPTIONS FOR THIS ASSEMBLY

NODECK, OBJECT, LIST, XREF(SHORT), NORENT, NOTEST, BATCH, ALIGN, ESD, RLD, TERM, LINECOUNT(15),

FLAG(0), SYSPARM()

NO OVERRIDING DD NAMES

508 CARDS FROM SYSIN
900 LINES OUTPUT1045 CARDS FROM SYSLIB
5 CARDS OUTPUT

ASP JOB NO. = 2566

FRIDAY SEPTEMBER 03, 1976 (76.247)

INPUT STATEMENTS (INCLUDING DD *) = 000532

//VGTCG021 JOB VGT\$CG,CLASS=E

0.002

ELAPSED TIME ON MAIN = SYA (A8) = 000.79, START TIME = 18.45.17

DDNAME = SYMSG	PRINTED ON PRT4	, LINES = 000151
DDNAME = ASM.MCS80.SYSTEM	PRINTED ON PRT4	, LINES = 000007
DDNAME = CLEANUP.OUT	PRINTED ON PRT4	, LINES = 000610

LINES OUTPUT FOR THIS JOB = 000768

CARDS FROM MAIN FOR THIS JOB = NONE
